Peregrine

Desktop Inventory User's Guide

For use with Desktop Inventory 8.0

PART NO: DPDI-8-EN03

Peregrine SYSTEMS

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Contents

Introducing Desktop Inventory

This User's Guide provides information about some of the components of the Desktop Inventory software.

It contains details of the applications, a description of the features and details of how you would use the applications.

Knowledge Requirements

As an Desktop Inventory user, you need a basic knowledge of the Desktop Inventory software.

Organization of This Guide

This guide is organized around the main functions associated with the Desktop Inventory software. The following table shows you which part of the manual you need to reference to find the information you require.

To...	Look here
Read an overview of Desktop Inventory and it's components	*Introduction to Desktop Inventory* on page 27
Learn about the deployment of Scanners for Networks, Servers and the different methods of Scanner execution.	*Scanner Deployment* on page 41
Convert old FSF files to Desktop Inventory scan files using the FSF Converter application.	*The FSF Converter* on page 67

To...	Look here
Learn about the XML enrichment process and how to configure it.	*XML Enricher* on page 77
Generate new Scanners using the Scanner Generator	*Scanner Generator* on page 105
Run Scanners on your computer population	*The Scanners* on page 235
Learn how to perform application teaching and how to plan for software recognition projects.	*Application Recognition and Teaching* on page 595
Analyze the data collected by the Scanners. This includes, viewing the data, exporting, filtering, reporting and running scripts.	*Analysis Workbench* on page 299
View and edit a collection of SAIs	*SAI Editor* on page 651
View the scan file data in Viewer.	*Introduction to Viewer* on page 714
Find answers to some frequently asked questions	*Frequently Asked Questions* on page 767

Contacting Peregrine Systems

For technical support on this or any other product from Peregrine Systems, Inc., refer to the Customer Support Web site at:

http://support.peregrine.com

1 CHAPTER Introduction to Desktop Inventory

In this chapter you will find information about the following topics

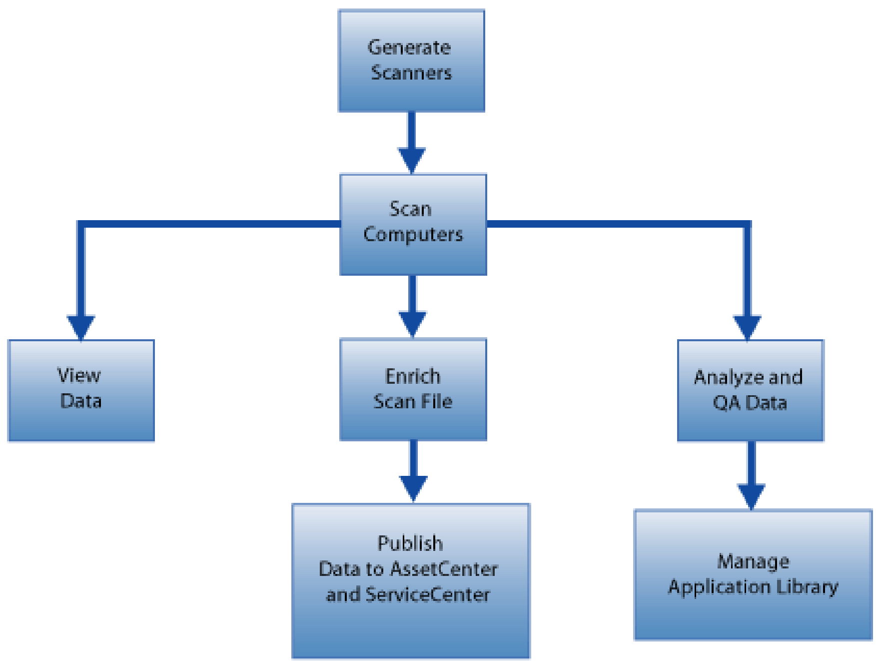
Introduction to Desktop Inventory

Desktop Inventory collects and maintains an up-to-date view of all desktops and servers in your organization.

The product is able to support all inventory management projects, from the smallest operational requirement, through to the tactical inventory and ultimately the enterprise level strategic solution.

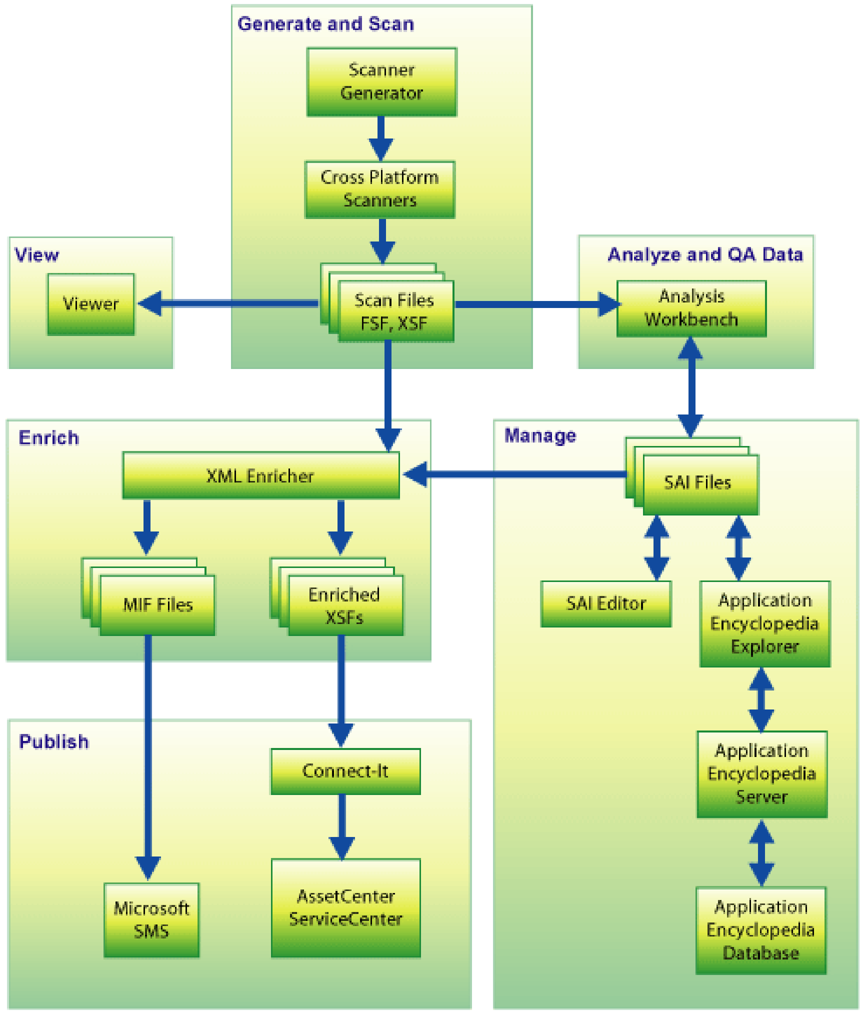
Overview of Desktop Inventory Processes

The following diagram shows an overview of the processes that take place in Desktop Inventory.



Interaction of Desktop Inventory Components

The following diagram shows at the interaction of the various Desktop Inventory components and how they fit into the processes shown in the previous diagram.



Scanners and Scanner generation

Scanner Generator

Scanner generation is the process of creating one or more executable programs with a desired configuration. These will subsequently be run across a computer population.

Scanners can collect three different types of information:

- Software Information
- Hardware and configuration Information
- User or Asset Information

The Scanner can be configured to collect any or all of the three types of information described. The details recorded for each computer within each main category depend on the options and settings selected when the Scanner is generated and the configuration of the computer.

The Scanner Generator also provides a set of options for controlling the behavior of the Scanner as each computer is scanned, under both normal and exceptional conditions (such as when an error occurs).

Additional Data File Recognition is also provided through plug-ins. These plug-ins can be used to scan data files and add information to be stored in the scan file, and can be used to implement support for new archive types.

Further Information

For further information about the Scanner Generator, refer to *Scanner Generator* on page 105.

Scanners

Cross-platform Scanners collect in depth data for a wide range of PC and server-based operating systems, including HP/UX, Sun Solaris, Linux, AIX, DOS, OS/2, Windows 3.1x, 95,98, ME, 2000, 2003 and XP.

The data collected provides an accurate reflection of the device's contents and is complete enough to be used for several purposes, including detailed Asset Tracking and Management, Software Licence Management, and Service Desk.

In their default configuration, the Scanners are configured to collect comprehensive hardware and configuration information, software information for license management purposes, and basic user information.

Using the Scanner Generator, the Scanners can be configured to collect more or less information and to restrict access to parts of the user interface if so desired.

A Scanner scans each computer and delivers the results in a data file called a scan file. This scan file can be in one of two formats:

- FSF - Fingerprint Save File
- XSF - Compressed standard XML file

The FSF format is an optimized compressed binary file format that can only be read by the Desktop Inventory components, whereas the XSF file is a standard zip compressed XML file that can be read by any tool capable of reading XML files.

The information in the scan files can subsequently be analyzed, for example using Viewer and Analysis Workbench.

A Scanner configured with the Scanner Generator combines the following features:

- Scans computers across multiple platforms
- Provides network independence for maximum flexibility to allow networked, stand-alone and portable computers to be easily inventoried.
- Scans multiple disk formats - FAT, HPFS and NTFS drives, and compressed drives such as Double/Drive Space (non-UNIX Scanners).
- Scans archived files - ZIP, ARJ, ARC, LHA (non-UNIX Scanners).
- Collects selected files such as system configuration files for further analysis.
- Scans any file type (not just program files). This enables software application recognition at analysis time.
- Provides Plug-in ability to capture and store proprietary internal file data (non-UNIX Scanners).
- Collects the complete set of SMBIOS data - where supported.
- Collects a comprehensive list of hardware and configuration items for all platforms, including serial numbers for several key components.

Further Information

For further information about the Scanners, refer to *The Scanners* on page 235.

Remote Scanner

At some stage during an inventory, machines or other assets may be encountered which cannot be scanned using the Scanner. These may be non PC compatibles such as Novell servers or PCs which are faulty or performing uninterruptible tasks. Whilst it may not be possible to scan these machines electronically, it may be desirable to include their details in subsequent analysis and reports.

Remote Scanner is an application that creates scan files from a remotely conducted software scan combined with manually entered hardware information consistent with the scanned inventory results.

Scan files created with the Remote Scanner contain asset information and any hardware details entered. Software information is scanned by way of network accessible directories.

Further Information

For further information about the Remote Scanner, refer to *The Remote Scanner* on page 281.

Analysis Tools

Analysis Workbench

Analysis Workbench is one of the key components in the inventory process. This is where results are consolidated and quality tested, various analysis tasks are performed and reports and exports of the inventory data are produced.

Analysis Workbench can be used for both high level management style reporting, such as how many machines can run the latest release of Windows or conform to the company standard with respect to hardware and software applications, as well as for detailed configuration analysis and forensic investigation.

The basic analysis of data usually consists of viewing, querying and reporting on three types of information:

- Software files that are recognized as belonging to a particular application.
- Unidentified software and files that may belong to unrecognized applications.
- Hardware and asset data.

Analysis Workbench uses a Software Application Index (SAI) containing application and version descriptions to identify the files found during the inventory. When scan results are loaded, each file is checked against this database and this is how Desktop Inventory performs software identification. Any unrecognized files can be tagged for further investigation, and when identified, their details can be added to the SAI file so they will be correctly identified in the future.

Analysis Workbench provides several ways of viewing the data, using a series of different views of results, that is, by machine, applications, file or directories.

All the information required for the analysis and consolidation of data collected for a computer population is contained in the population of scan files created when every computer is scanned.

Analysis Workbench also allows the editing of user entered asset information. This is a very important activity because data consistency is essential to ensure reports are produced cleanly.

Further Information

For further information about the Analysis Workbench, refer to *Analysis Workbench* on page 299.

Viewer

The Viewer is a stand-alone program aimed at technical support and Help Desk staff who need detailed configuration analysis and diagnostics.

Viewer provides a convenient way of displaying all of the software, hardware and asset information collected for an individual computer, and allows a detailed comparison of two scan files to be performed.

The Viewer quickly and conveniently displays:

- Details of all software scanned, presented in an explorer style view.
- User entered asset information.
- Detailed and summarized hardware and configuration information.
- The contents of key files collected during the inventory, such as system configuration files (Config.sys and Autoexec.bat).
- Details of all logical drives scanned.
- Details of any applications recognized.

Each scan file is loaded into a new window, enabling multiple scan files to be viewed at the same time. This allows for a direct comparison between two scan files to be made.

Further Information

For further information about the Viewer, refer to *Introduction to Viewer* on page 714.

Application Recognition

Application recognition is the process of determining what software is installed on a machine. The process takes place after scanning, when a scan file is loaded into the Viewer or Analysis Workbench components, or when it is processed by the XML Enricher.

The recognition process is driven by a Recognition Engine built into the components mentioned previously, which makes use of the Application Library supplied with the product. The Application Library stores the information required by the Recognition Engine to determine which applications are installed on a machine. It is updated on a regular basis.

Application Recognition is always done using one or more SAI (Software Application Index) files. Desktop Inventory ships with 4 Master SAI files (containing libraries for English/International, French and German applications and UNIX applications), as well as an empty User SAI.

To extend the application library, the simplest way is to use Analysis Workbench or SAI Editor to add entries to the User SAI. For more comprehensive editing needs, the ApE Explorer can be used.

Further Information

For further information about the Application Recognition, refer to *Application Recognition and Teaching* on page 595.

Application Encyclopedia (ApE)

An important part of Desktop Inventory is the application library used in the application recognition process.

The Application Encyclopedia (ApE) implements this library using a relational database.

The ApE Server can be installed as a Windows Service on Windows NT and later, and is used to access the contents of the database.

The ApE Explorer is used to browse and edit the contents of an ApE database, as well as import new Master SAI files and export the contents of the database to SAI files usable by Analysis Workbench, Viewer and the XML Enricher.

Further Information

For further information about ApE Server and ApE Explorer, refer to the document entitled *Application Encyclopedia User's guide*.

SAI Editor

The SAI Editor presents a view of Software Application Index (SAI) files.

The Editor allows you to:

- View and edit a collection of SAI files
- Create new User SAIs
- Move and copy item between SAIs
- Delete items in SAIs
- Export the contents of an SAI to XML format, either as a summary or the entire contents.
- Display licence relationships.
- Add and edit existing licence relationships.

The Editor is available as a standalone tool from the Start menu or from Analysis Workbench, where it can be used to review and edit work on SAIs during a teaching session.

Further Information

For further information about the SAI Editor, refer to *SAI Editor* on page 651.

Other Tools

SAI Update Wizard

The Software Application Index Update Wizard is a utility that allows new Master and National application libraries to be installed without compromising the integrity of existing custom libraries.

Further Information

For further information about the SAI Update Wizard, refer to *The SAI Update Wizard* on page 641.

XML Enricher

The XML Enricher is a process that runs in the background as a Windows Service and automatically adds application data to new scan files, and then saves them in the XSF format. This process is called scan file enrichment.

Further Information

For further information about the XML Enricher, refer to *XML Enricher* on page 77.

FSF Converter

The FSF converter is used to convert old InfraTools Desktop Discovery Fingerprint files (FSFs) to Desktop Inventory version 8.0 scan files in XSF format.

The FSF converter accepts FSFs from InfraTools Desktop Discovery version 4.40 to version 6.03 (FSF version 4.32 to 6.00).

Further Information

For further information about the FSF Converter, refer to *The FSF Converter* on page 67.

Using Desktop Inventory Data with Other Peregrine Applications

The scan files generated by Desktop Inventory can be invaluable when setting up an Asset Tracking, Asset Management or Help Desk system because it allows accurate and comprehensive data of the actual infrastructure to be made available to such applications.

Peregrine's Connect-It v3.3.2 with the additional Desktop Inventory 8.0 connector can make use of Desktop Inventory xml.gz scan files and can be used to transfer a subset of the collected data to other applications such as AssetCenter or ServiceCenter.

Further Information

For further information about using Desktop Inventory and Connect-It to get data into AssetCenter, refer to the documentation supplied with Connect-It.

Using Desktop Inventory with Network Discovery

When used with Peregrine Network Discovery, the process of maintaining an up-to-date IT asset inventory is automated.

A flexible Web-based User Interface is used to configure schedules for distribution and execution of Scanners, retrieval of scan files and other functions. After Desktop Inventory has been configured, inventory data is automatically collected, analyzed and published both as internal reports and through a well-structured database accessible through ODBC.

Further Information

- Information about what you need to do to set up the software can be found in the document entitled “Using Network Discovery with Desktop Inventory and Desktop Administration”.
- An introduction to what can be achieved can be found in the section entitled *Using Desktop Inventory with Network Discovery* on page 45.

Using Desktop Inventory with Non Peregrine Products

Desktop Inventory publishes the data in XML scan file format (.xsf). This allows the scan data to be augmented with application recognition information using the XML Enricher.

The data can then be read with third party XML tools.

CHAPTER

2 Scanner Deployment

In this chapter you will find information about the following topics:

Methods of Scanner Deployment

In This Section...

Introduction

Desktop Inventory's Scanners are stand-alone executables that can be run in a number of ways.

Once you have configured and generated the correct type of Scanners for your computer population, the next issue you will face is how to execute them.

Walkround Inventory

When starting your inventory project it may be necessary to ini tally conduct a walkround inventory. There may be machines that are not connected to the network, or there may be a closet full of older or broken machines which may only be discovered by physically finding then.

All of these machines need to be accounted for as part of a sound asset management program. Additionally, there is user asset information such as user first name, last name and location which must initially be manually entered.

With a walkround inventory, you can execute the Scanner from a floppy disk or connect to a network share and run it from there.

Using Peregrine Network Discovery

Further information about using Peregrine Network Discovery to deploy Scanners can be found in the document entitled *Using Network Discovery with Desktop Inventory and Desktop Administration*.

Using a Login Script Over the Network

Optimally, a company will want to implement an inventory of their computer population on a regular basis. A timely policy will keep up-to-date data on all hardware, software and user asset information. An on-going inventory policy will account for moves, additions and changes. Obviously, performing a walkround on a timely basis would be highly impractical. Most companies will want to automate the process as best they can. One effective way to launch a scan to a wide computer population on a regular scheduled basis is by way of a user login script. For more information, refer to *Using a Login Script Over the Network* on page 43.

Using Peregrine Desktop Administration

Using a remote control tool such as Peregrine Desktop Administration allows an administrator to take control of a remote desktop and execute the Scanner from a remote location. This is advantageous to identify particular desktops that need to be inventoried or re-inventoried in special cases. After an administrator takes control of the remote desktop, they simply need to trigger the Scanner executable which will most likely be housed on a network drive.

Using a Distribution Tool Such As SMS

The advantage of a distribution tool, such as Microsoft's SMS is, it allows an administrator to determine at their discretion when an inventory needs to take place. An administrator has the power from their System Management Console to push a command onto a remote machine at their will. This could include the execution of a Scanner. The disadvantage of a product such as SMS is that an agent must be present on each desktop that the administrator would like to control. this requires time and expertise. Desktop Inventory comes with a the capability to produce MIF files. These basically allow all SMS clients who are scanned to have their scan files converted to a standard MIF format which SMS can store, read and process.

Command Line Execution

Although the options for the Scanner are normally set using the Scanner Generator, it may be necessary to change some settings to allow better operation on some machines being scanned. This may be to accommodate a 'quirky' machine or to simply change the name given to the scan file. The advantage of running a Scanner from the command line is that there are numerous switches available to override options configured in the Scanner Generator. In addition, new features become available such as the option to run a scan on a scheduled basis.

For more information about command line options for the Scanners refer to *Command Line Options and Switches* on page 239.

Using Desktop Inventory with Network Discovery

In This Section...

Introduction to Using Desktop Inventory with Network Discovery

When used with Network Discovery, the process of maintaining an up-to-date IT asset inventory using Desktop Inventory can be automated.

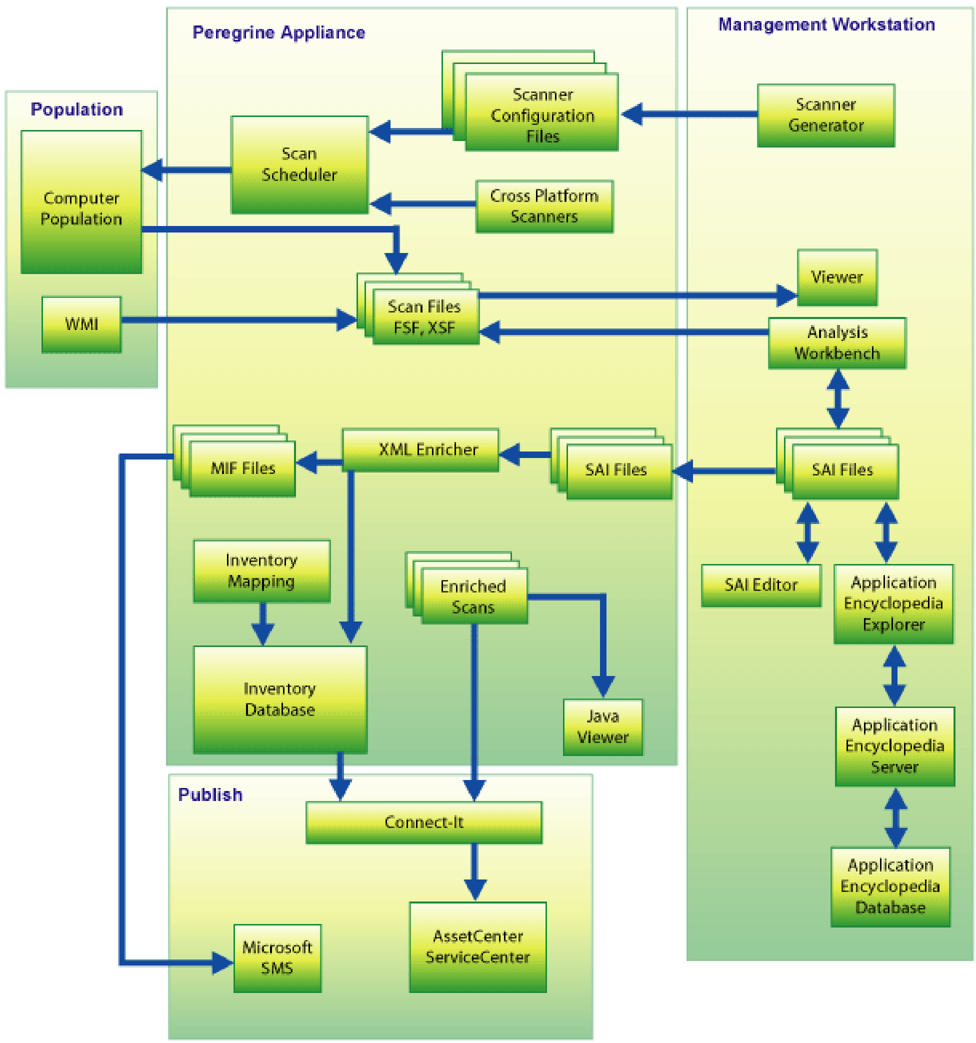
A flexible Web-based User Interface is used to configure schedules for distribution and execution of Scanners, retrieval of scan files and other functions. After Desktop Inventory has been configured, inventory data is automatically collected, analyzed and published both as internal reports and through a well-structured database accessible through ODBC.

Further Information

Information about what you need to do to set up the software can be found in the document, *Using Network Discovery with Desktop Inventory and Desktop Administration*.

The Interaction of the Components of Desktop Inventory and Network Inventory

The following diagram shows at a high level the interaction of the main components of Desktop Inventory and Network Discovery.



The Peregrine Appliance

The Peregrine appliance (sometimes referred to as the appliance) can be made responsible for collecting the scan files generated by the Scanners and storing them centrally.

The Scanners are distributed to individual computers from the appliance using the listener. The appliance maintains a schedule dictating which computers will be scanned and when.

When a particular computer needs to be scanned, the appliance contacts the Listener on the computer, sends a copy of the appropriate Scanner configuration file and a copy of the latest Scanner to the computer, executes it, and retrieves the scan file.

Note: Listener Agents must be deployed to all computers where automatic scan scheduling and scan file retrieval will take place.

Retrieved scan files are stored in a directory on the appliance. A background process, the XML Enricher, polls this directory for new scan files and processes them so they can be added to the appliance's inventory database. It also enriches the scan files with application data and stores these as compressed XML files accessible from a network share.

The Automatic Deployment of Scanners

Peregrine Network Discovery discovers the devices and then Scanners can be automatically deployed to the target computer.

Important: Automatic deployment of Scanners is supported on all Win32 platforms. Scanners must be deployed by more traditional means for DOS, UNIX and OS/2 platforms.

Scheduling of Scan Execution

It is possible to specify a schedule for computer scanning. The schedule serves at least two purposes:

- First, although the execution of a scan is designed to be as unobtrusive as possible to the user of a computer, some users do notice and find it distracting. So scans can be scheduled to run at a time of day that tends not to conflict with users.

- Second, the currency of the inventory depends on the frequency of scan execution. For example, some users want the data refreshed every week, others every month. So the frequency of scans can be specified.

Collection and Storage of Scan Files

A Scanner writes a scan file to the local disk of the scanned computer, and the scan file is transferred to the appliance for storage and processing. There are a several ways in which the scan file can be transferred:

- The appliance contacts the computer and transfers the scan file from the computer. This is the typical case for computers that are permanently connected to the network. The collection of scan files is scheduled and controlled to minimize impact on the network. For example, you can specify what times of day are appropriate for scan file collection, how many files can be transferred in parallel, and how much network bandwidth scan collection is allowed to consume.

Note: Collection of scan files is decoupled from the execution of a scan. You can schedule scans for one time of day, but collect the scan files some time later using a different schedule.

- Some computers, for example laptops, are only occasionally connected to the network. In this case, the scan file can be transferred whenever that computer connects. Because the connection speed may be slow and the connection time short, the transfer mechanism gracefully recovers when the connection is interrupted and can be resumed when the connection is re-established.
- Some computers may never be network accessible to the appliance, for reasons of network topology or security. In this case, it is the responsibility of the administrator to transfer the scan files from such computers to the appliance. The appliance supports an SMB network mountable drive for this purpose. The administrator can simply map this network drive and copy as many scan files as required to it.

After a scan file is transferred to the appliance, it is further processed to recognize software applications (XML enrichment process) and added to the inventory information stored in the Inventory Database. The resulting enriched scan file is stored on the appliance for subsequent access by tools such as Viewer, Analysis Workbench or Connect-It. This enriched scan file is always stored in compressed XML format. At most one scan file for each computer is stored, and the name of the scan file is normally derived from the Asset Tag uniquely identifying the machine. The enriched scan files are optionally backed up along with other appliance data.

The Listener

The Listener (occasionally referred to as the Agent) is installed as a service on a remote computer. This service enables the computer to be securely controlled by managers at any given time. In Windows NT and 2000, a manager can instantly deploy this service on computers using the QuickDeploy function.

The Listener is able to perform tasks on a computer on behalf of Peregrine applications.

The Listener is available on the Win32 platform only. For security reasons, Listener communications are encrypted and authenticated. The Listener listens and performs requests for Network Discovery. For example, it can install a Scanner, execute a scan, or transfer a scan file to the appliance.

If a computer is not connected to the network, the Listener is able to detect when a connection is established and inform the appliance. Thus the appliance is now able to discover, scan, and collect scan files from, computers that are only temporarily connected to the network.

The Listener component must be installed on every workstation that will be part of the inventory process. This can be done automatically for some Windows-based computers using the QuickDeploy feature, or it may have to be done manually.

When installed, the Listener is capable of communication with an installed appliance. This communication is largely one-way, initiated by the appliance. The Listener is not able to initiate file transfers.

The Listener is a shared component that is also used by Peregrine Desktop Administration.

Scan File Enrichment

The XML Enricher is a process that runs in the background on the appliance. It automatically adds application data to new scan files, and then saves them in the xml.gz format. This process is called scan file enrichment.

Network Inventories

In This Section...

Important: Peregrine cannot provide support in the writing of login scripts. Sample login scripts have been included in this section to provide you with a feel for what can be achieved.

Network Inventory Introduction

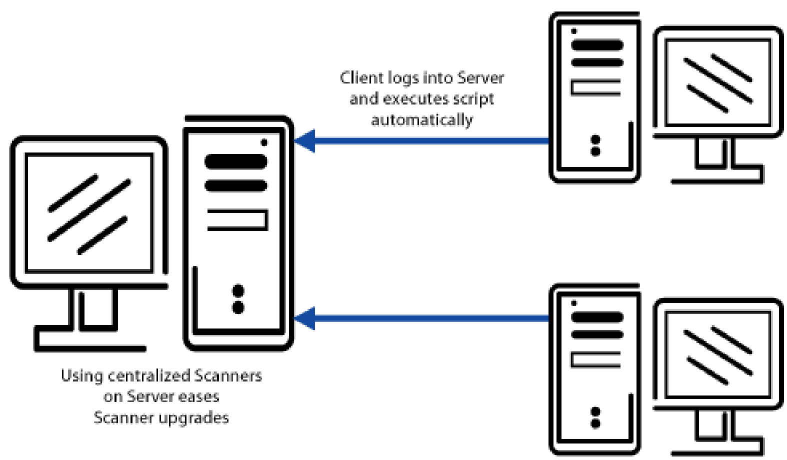
Deploying an inventory over the network on a scheduled basis is the optimum method of maintaining timely inventory data. It is the fastest means of gaining inventory data across a computer population in the shortest period of time.

For Desktop Inventory, login scripts is the best way of accomplishing this if no software distribution mechanism is in place. This chapter discusses implementing a network inventory using login scripts.

Specific login scripts will vary greatly from company to company, so discussion focuses around the processes and order of execution when implementing a network inventory using login scripts.

Network inventory can be looked at in two ways:

- Using servers purely as a data repository for initial walkround inventories, and optionally launching the Scanner from the server instead of calling the Scanner from floppy disk.
- Re-inventory of workstations on a controlled basis at a time determined by the administrator, usually when a group of users log in. The Scanner can then be triggered from a batch file by way of a login script.



What Is a Network Inventory?

A network inventory is defined as the execution of an instruction across a network by a client computer which will:

- Execute an inventory on the client computer.
- Save the resulting data to a location on the network.

How Is a Network Inventory Deployed?

Consider the following options:

- Manually deployed over the network through a remote control tool.
- Automatically deployed using login scripts.

- Automatically deployed using a 3rd party software distribution tool.
- User connects over a network to a share point and executes the Scanner.
- Using the Systems Task Scheduler or the AT command in Windows Servers. This is a utility in all Windows NT systems that can schedule the Scanner for you and allow the Scanner to be executed at any time.
- For UNIX Scanners, you can use a CRON job. The CRON job will need to copy the Scanner to the local computer and execute it there.

Note: Scanners should be designed and tested before you start any scheduling procedures.

What Is Needed For A Network Inventory?

Before one can successfully set up a regular network inventory, there are things that need to be in place. These include:

1. Any required network directories: this includes the location that your trigger mechanism will take the Scanners from, the location of the Scanners to refill from (in the case of offsite refilling being enabled). A location also needs creating to save the scan file back to – this is further discussed in item 3, the collection point.
2. An execution trigger: Something needs to execute the Scanner. The user can execute it from a network location, it can be executed by a login script or you can use some form of distribution tool (such as Microsoft SMS) to accomplish this. A further option would be to manually execute the Scanner on each workstation using some form of remote control software.
3. A collection point: There needs to be a location that all of the Scanners write their data to. This is usually set up in the “Offsite Save Path” field of the Scanner, and usually contains either a UNC name for a network location or a drive path that is mapped to the same network location on all of the machines in the population.
4. Set tags: Each machine in the population needs to be uniquely identifiable. This means that one needs to have a scheme to generate asset tags, or unique asset identifiers, for each asset.

What to Consider When Setting Up a Network Inventory

When doing the initial inventory, there are some things that need to have special consideration:

- Stand-alone machines: Machines that aren't networked need to be manually inventoried using a floppy disk to transport the Scanner and the resulting scan file.
- Users not running login script or distribution client software: How do you intend to have the Scanner launched on these assets?
- Different client operating systems: Ensure that you have a mechanism for distributing the proper Scanner for each operating system in use in the organization.
- Capacity planning at the collection point: The average size of a Desktop Inventory scan file is around 200 kilobytes. Take into account the fact that you might want to maintain a history of scans.
- Network traffic: Ensure that you don't run the whole corporation's scans simultaneously, or you risk flooding your network.
- The amount of asset data to be collected: What information do you require from each user?

Note: Usually, the initial inventory will require a number of fields of user data to be captured and entered at the workstation. Inform users that they must input this data carefully and accurately so as not to corrupt the asset data.

Why Do a Walkround Inventory First?

It is usually a good idea to perform a walkround inventory – going from machine to machine and manually starting the Scanner (from either a network location or a floppy disk) before setting up any network scanning mechanisms. While expensive and labor-intensive the initial walkround inventory has several advantages:

- Assists in the planning process – you get an accurate idea of where exactly everything is and who has it. You also get an opportunity to answer the users' questions and let them know why you're doing the inventory – understanding this can prevent users from deliberately entering incorrect data in the future.
- Provides an accurate picture to measure the success of a network inventory: if you have an accurate idea of where everything is, you can tell if your network inventory has missed clusters of assets.

- Accounts for all machines not in use or not connected to the network.
- Gives you an opportunity to implement an asset numbering scheme if one is not already in place.

Permission Considerations

For both the scan file directory and Scanner directory, correct permissions must be placed to be able to execute a Scanner from the appropriate directory and save the offsite scan file to the appropriate central repository.

Permissions for the Scan File Directory

- Everyone has **Change** permission
- Domain administrators have **Full Control** permission

Permissions for the Scanner Directory

- Everyone has **Execute and possibly Read** permission
- Domain administrators have **Full Control** permission

What Does the Inventory Create?

- An offsite scan file (**AssetId.fsf** or **AssetId.xsf**) which can be stored on the server or on a floppy disk.
- An onsite (local) scan file (**local$.fsf** or **local$.xsf**) is stored in the c:\infrtool directory on DOS machines, in the ~/infrtool directory on UNIX machines and in the <Application Data>\Peregrine directory on Windows 2000 and later machines. The local scan file is always saved with Hidden and Read-Only attributes (Windows Scanners only).
- A log file is also saved with the offsite scan file (Windows Scanners only).

The asset identifier information is stored in three places on the workstation:

- **Asset.bat** which is stored in **C:**
- In a key called ‘AssetNumber’ in the [AuditScanner] section of c:\InfrTool.ini.
- In a key called ‘AssetNumberBackup’ in the [Desktop Discovery] section of system.ini.

Note: Saving the asset identifier in multiple places helps prevent the machine from “losing” its asset tag and is used when a machine is re-inventoried.

Example: Login Script Based Network Inventory

There are several sample scripts provided in *Example Network Inventory Scripts* on page 791 to assist you in setting up an effective network audit. This section provides a more detailed description of these scripts. The network clients supported are Windows 9x (95, 98, Millennium) and Windows NT (NT 4, 2000, XP).

Using these scripts to set up an inventory requires that you to do the following:

- Create the directories that the scripts and Scanner will write to and read from. All of these directories have the same parent.
  - Scanners: this is the location where the Scanner executables reside.
  - Scans: this is the collection point (see *What Is Needed For A Network Inventory?* on page 52).
  - Refill: This is the offsite refill location for the Scanner. Users only require read permission on this directory.
  - Log: An optional location that the scripts will write any system messages that occur during scanning to. This is useful for troubleshooting any problems.
  - Excluded: If a scan does not succeed on a client, the script will write a file in the form "<ASSETTAG>.fal" to this location. This will prevent the Scanner from running the next time, and will also indicate that something went wrong during scanning.
- Invoke the script "audit.bat" from a workstation's login script.

The Directories

This example assumes that the directories are organized with user permissions in mind.

The five directories used during the network inventory in this example are:

- **Scanners**, containing all batch and executable files that are run during the network inventory. A trigger to launch the main script, **Audit.bat**, is typically be placed with the NT domain login script. Users need **Read** and **Execute** permissions over files inside this directory.
- **Scans** Directory that the Scanner is configured to save back to. Users need **Write** permissions to this directory.

- **Refill** Directory that the Scanner is configured to refill from. Users need **Read** permission to this directory.
- **Log** Contains an optional **Audit.log** file that maintains a log of any system messages that occur during the inventory. This file can be useful for tracking any errors that occur during the inventory process. Users need **Write** permissions to this directory.
- **Excluded.** This is used if an inventory has not been successful on a client. In some cases, it may be desirable to exclude that particular client machine from being repeatedly inventoried, until the problem has been located and corrected. A **.fal** file is created (a flag file for a given asset number). The specified client is excluded from being inventoried until Technical Support clear the fault. It may be desirable to <u>not</u> create flags in cases of 'User Termination'. This directory is optional but is useful for system administration purposes.

Overview of the Process

The following steps are carried out in this example:

- The remote access clients are detected
- **Audit.bat** is started
- The client operating system is detected
- Under Windows 95 environment space needs to be allocated, so a **.pif** file is created. This is so that there is enough space to create environment variables. The **95audit.bat** file is then called.
- In Windows NT, a local environment is created inside the **NTaudit.cmd** file, therefore a **.pif** is not needed. The **NTaudit.cmd** file is called.
- The main scripts (**95audit.bat** for Windows 95/98/Me and **NTaudit.cmd** for Windows NT), carry out the following:
  - Set up variable locations being used and the frequency of inventory.
  - Activate the workstation identifier. This example uses the computer name as the identifier.
  - Check for flag files for any excluded machines.
  - Check for the presence of **InfrTool.ini** file. If it is not present, it will be recreated.
  - Execute the Scanner with the **scandays** switch which allows the Scanner to check the age of the fingerprint. If the age of the scan file to be refilled from is older that the scan date, then you will get a full scan, otherwise the Scanner terminates.

- Check the error codes
- Check that the scan file has been created
- Log various system messages.

The Scripts

The high level of what actually happens from login script to audit script termination is as follows:

- The user logs in, and their login script is executed.
- The login script calls "audit.bat".
- "audit.bat" detects the operating system that is running and either launches the appropriate audit script (either "95audit.bat" or "NTaudit.bat") or exits after displaying a brief "Operating system not supported" message.
- The audit script checks that no applicable ".fal" file appears in the "excluded" directory, checks for the existence of "c:\infrtool.ini" and launches the Scanner.
- The Scanner executes, and exits when it is finished.

The Audit.bat File

The **Audit.bat** files uses an executable called **IDDKind.exe** (which is located in the **\Peregrine\Desktop Inventory\8.0.0\Scanner Generator** directory) to detect the client operating system. It returns the following return codes (error levels) corresponding to the client operating system detected:

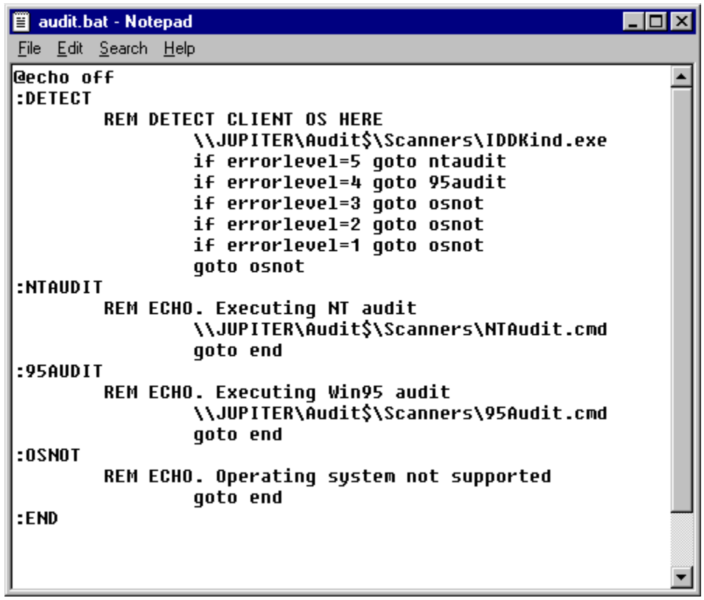
- 1. Dos
- 2. Win 3.x
- 3. OS/2
- 4. Win95/98/Me
- 5. WinNT/2000/XP

If the client is running Windows NT, it starts a Windows NT inventory by executing the **NTaudit.cmd** file.

If the client is running Windows 95, it starts a Windows 95 inventory by executing the **95audit.pif** file.

If the client operating system is not supported the following message is displayed:

Operating system not supported




```
@echo off
:DETECT
        REM DETECT CLIENT OS HERE
                \\JUPITER\Audit$\Scanners\IDDKind.exe
                if errorlevel=5 goto ntaudit
                if errorlevel=4 goto 95audit
                if errorlevel=3 goto osnot
                if errorlevel=2 goto osnot
                if errorlevel=1 goto osnot
                goto osnot
:NTAUDIT
        REM ECHO. Executing NT audit
                \\JUPITER\Audit$\Scanners\NTAudit.cmd
                goto end
:95AUDIT
        REM ECHO. Executing Win95 audit
                \\JUPITER\Audit$\Scanners\95Audit.cmd
                goto end
:OSNOT
        REM ECHO. Operating system not supported
                goto end
:END
```

Refer to *Example Network Inventory Scripts* on page 791 for an example **Audit.bat** file.

The NTaudit.cmd File

- The first part of the **NTaudit.cmd** file sets environments locally.
- Windows 95 does not allow environments to be set locally.
- A Drive Variable is set to **\\Jupiter\audit$**

  This is the collection point.
- Hidden (that is, $ shares) are not visible to users when they browse the network and therefore are a little more secure.
- A variable is set for the Scanner repeat frequency.
- The computer name is set as the unique identifier.
- A check is made to see if any file flags have been raised for clients to be excluded from the inventory.
- A check is made to see if the **Infrtool.ini** file exists. If not, a new one is created.

- The Scanner is launched and a message is displayed on-screen.
- A check is made for any errors that may have occurred during the inventory. The errors are as follows:

Error Level	Description
ErrorLevel 6 is PLUGERR	The Scanner was terminated by a plug-in. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 5 is TOOEARLY	The scan is not required yet. That is, it is earlier than the **scandays** variable set earlier in the file. A message is displayed.
ErrorLevel 4 is FATAL	A fatal exception occurred. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 2 is USERBAD	A user terminated the Scanner. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 1 is EXECPT	An unspecified exception occurred. An error message is displayed and an entry is added to the log file and the **.fal** flag file.

  ErrorLevel 3 is not used. This is reserved for use when the Scanner has been executed with the **/?** (help) switch. This situation would never arise in an automated Scanner execution. If no errors are reported, the error level is set to 0.

- The scan is given **passed** status if an offsite scan file exists and the ErrorLevel was 0. An entry is written to the log.
- The scan is given **failed** status if an offsite scan file does not exist or an ErrorLevel other than 0 was detected. An entry is written to the log and the **.fal** flag file is created for that asset number.
- The environment variables (**ASSETNO** and **PDIDRV**) are reset if necessary.

The 95audit.bat File

- A Drive Variable is set to **\\Jupiter\audit$**

  This is the collection point.

  Hidden (that is, **$** shares) are not visible to users when they browse the network and therefore are a little more secure.

- It sets the asset number as an environment variable. If the asset number (taken from **asset.bat**) does not exist, a scan is triggered.
- A check is made to see if any file flags have been raised for clients to be excluded from the inventory.
- A check is made to see if the **Infrtool.ini** file exists. If not, a new one is created.
- The Scanner is launched and a message is displayed on-screen. In Windows 95, the default behavior for launching batch jobs is to have them running in the background. This differs between Windows NT and Windows 95. In Windows 95, it is necessary to use the **/w** switch to instruct it to wait.
- A check is made for any errors that may have occurred during the inventory. The errors are as follows:

Error Level	Description
ErrorLevel 6 is PLUGERR	The Scanner was terminated by a plug-in. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 5 is TOOEARLY	The scan is not required yet. That is, it is earlier than the **scandays** variable set earlier in the file. A message is displayed.
ErrorLevel 4 is FATAL	A fatal exception occurred. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 2 is USERBAD	A user terminated the Scanner. An error message is displayed and an entry is added to the log file and the **.fal** flag file.
ErrorLevel 1 is EXECPT	An unspecified exception occurred. An error message is displayed and an entry is added to the log file and the **.fal** flag file.

ErrorLevel 3 is not used. This is reserved for use when the Scanner has been executed with the **/?** (help) switch. This situation would never arise in an automated Scanner execution. If no errors are reported, the error level is set to 0.

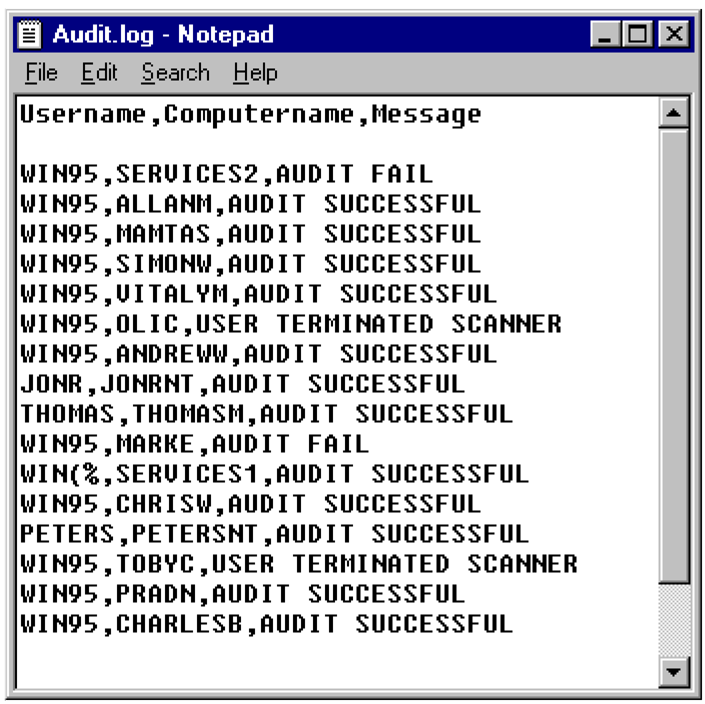
- The scan is given **passed** status if an offsite scan file exists and the **ErrorLevel** was 0. An entry is written to the log.

- The scan is given **failed** status if an offsite scan file does not exist or an **ErrorLevel** other than 0 was detected. An entry is written to the log and the **.fal** flag file is created for that asset number.
- The environment variables (**ASSETNO** and **PDIDRV**) are reset if necessary.

Refer to *Example Network Inventory Scripts* on page 791 for an example **95audit.bat** file.

The Inventory Log

Creating a log during a network inventory can be a useful tool in controlling the resulting data. It is a simple way to find out if someone has aborted an attempted scan or to locate failed scans. The inventory log can be created in Comma Separated Variable (CSV) format so it can easily be imported into another application such as Microsoft Excel to sort, filter and analyze the logged data.



Sample Code

The following code shows how to add a line containing “Audit Successful” to the log file. The code is placed after the “SCANPASS” label, assuming that the full script contains a GOTO SCANPASS when the scan is successful.

```
:SCANPASS
REM OFFSITE SCANFILE EXISTS, AUDIT SUCCESSFUL, WRITING TO LOG
   ECHO.WIN95,%Computername%,Audit Successful>> %PDIDRV%\AUDIT.LOG
```

Server Inventories

Scanning servers is an integral part of an overall inventory. Because most important company data is kept on a server it is important to know the process and some of the considerations involved in server scanning. This sections takes a close look at two types of server inventories:

- Windows NT/2000 servers
- Novell Netware servers

Scanning NT Servers

An NT server can be inventoried in very much the same way as an NT workstation. The inventory can take place directly on the server with the Scanner executed from the Windows interface. A Desktop Inventory Scanner can be run while an NT server is serving users. To avoid a performance impact during the scan, use Scanner Generator to configure the server Scanners to run at low priority.

It can be difficult to locate asset information (for example, serial number, make) from the system units themselves because the location of servers in server rooms makes access to items such as serial numbers difficult. To make asset collection easier, check whether a server list with the asset details already exists. Many network teams compile this type of information for server maintenance contracts (but normally do not bother for workstations).

Identify when the server can be accessed. Usually a server is only available out of normal working hours. Always ensure that there has been a recent system backup before carrying out a scan of the server. This will ease the disaster recovery process if the server does develop a fault either while scanning or while performing a startup/shutdown.

When electronically scanning NT servers use a 'local administrator' account. With administrator access rights, the Scanner will be able to collect a detailed inventory of the hardware on the machine.

If administrator level access is not available then use a 'backup operator' account instead. The Scanner may be unable to collect certain pieces of information in this case.

Avoid using a standard user account. The Scanner will be able to collect only a minimum of hardware information with user rights.

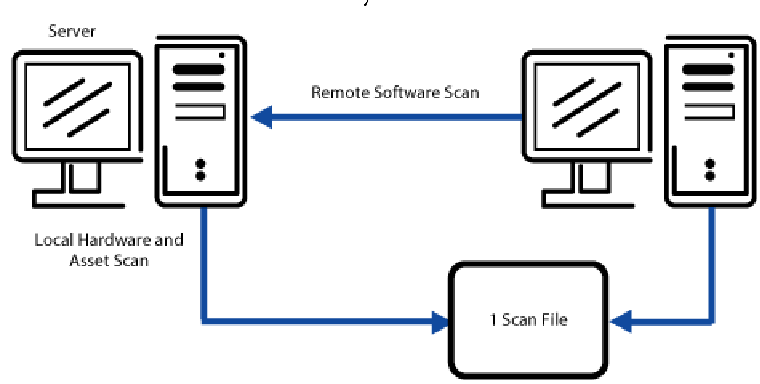
Scanning Novell Netware Servers

Scanning a Netware server is a two-stage process:

- Scanning hardware from DOS while it is down.
- Scanning software while the server is running.

Because of the Netware architecture, native processes running on the OS are able to bring down the server easier than in other operating systems that are designed to also function as application servers. The two stages are necessary because Desktop Inventory does not include a native Scanner that can run as a process on a running Netware server.

Perform the hardware scan first, followed by a remote scan using the Remote Scanner. The Remote Scanner is able to read the hardware scan collected from the DOS scan, and incorporate it into a single scan file containing the hardware data as well as the remotely collected software data.



DOS Hardware Scan

This stage must be performed after the Netware server has been brought down and exited to a DOS environment. When bringing down the server, ensure that a recent system backup is available, any active users have been advised of the shutdown, and that any active NLM modules can be correctly closed.

If shutting down the server is not an option, it is still possible to store information about your Netware servers; refer to the next section.

When DOS is available, a Desktop Inventory DOS Scanner can be run on the server. This Scanner can be used to capture asset details and hardware information.

Because the DOS partition is often limited to a size which has just sufficient space to store the support files needed to load Netware, there may not be enough space for the Scanner to create a temporary file. This needed to hold the scan information and may result in a 770 error. If this happens, set the TEMP environment variable to point to the inventory floppy disk, "SET TEMP=A:\".

Another problem is that **Autoexec.bat** on the server may try and load Netware immediately. It is necessary to break into this boot sequence to get to DOS to run the Scanner. If this is not possible, then boot from a bootable floppy disk with the TEMP variable pointing to the floppy disk.

While the server is in DOS and the scan is in progress, the server will not be available to users. However, because the scan is limited to asset information, hardware test and any small DOS partitions, the time required to scan is very short. Usually the time consuming element is ensuring that all users are logged out before the server is taken down.

Because it is necessary to shut down a Novell server before a hardware inventory, it is good practice to try and restart the server before attempting an inventory. Because servers are rarely turned off, there may be problems reloading the server and its services. If a problem is found at this point, the inventory process can be eliminated as the source of the problem.

Scanning Software Using the Remote Scanner

Because Desktop Inventory does not include a native Netware Scanner, it is not possible to scan the Netware volumes from the server itself. Fortunately, the Remote Scanner provides a good solution that allows the relevant information to be captured without risking a problem that could bring down the server.

The Remote Scanner can scan all of the network shares published by the server, and integrate the hardware scan collected with the DOS Scanner earlier. Because the hardware on your Netware server is unlikely to change, running the Remote Scanner regularly is sufficient to maintain an up-to-date inventory of your Netware servers.

If the server could not be brought down or a hardware scan of the machine is unavailable for other reasons, the Remote Scanner allows the hardware data to be typed in, similar to the asset questionnaire. The supplied hardware information is then available for use in other Desktop Inventory tools, just as if it had been detected by the Scanner itself.

For more information refer to *The Remote Scanner* on page 281.

A Potential Problem Running a Scan on Netware 4 or 5

To scan a file, the Scanner opens it. Netware 4 or 5 decompresses files when they are opened, if compression has been applied. This means that the disk may fill rapidly and slow down the server when a software scan is performed. Generally, printing is the first service impacted. Netware compression is not dynamic, so uncompressed files will not recompress after being read.

To overcome this problem, do one of the following:

- Create a file in the same directory as the Scanner. Name the file override.ini. This is an ini file that allows Scanner Generator settings for the software scan to be changed without regenerating the Scanner. Add the following lines to the file:
  [exclude]
  file=*.*
  This excludes all files from being opened, although file details may still be recorded in the scan file. Because the file is not opened or a signature calculated, this speeds up the scan (although the data collected is less complete than without the exclusion).
- Create a Scanner version with Ignore file signatures for specific files.

These are a number of issues to consider with these approaches. No header information is captured when files are not opened by the Scanner, which makes file identification difficult. Any stored file included in the exclusion will not be opened for the contents to be saved as part of the scan file. No plug-in data will be captured, if the file is not opened.

This technique can also be used on the rare occasion that the software scan fails on a specific file. This file name can be included in the override.ini file and the scan re-run. Again the file name will be recorded but no detail will be stored. This facility can be used with NT servers but may not be necessary, as the file decompression and recompression is dynamic.

3 CHAPTER The FSF Converter

This chapter provides information about the following topics:

What the FSF Converter Is Used For

The FSF converter is used to convert old InfraTools Desktop Discovery Fingerprint files (FSFs) to the Desktop Inventory version 8.0 **.xsf** format.

The FSF converter accepts FSFs from InfraTools Desktop Discovery version 4.40 to version 6.03 (FSF version 4.32 to 6.00).

Note: To achieve the best quality of data re-scan your computer population instead of converting all your existing fingerprint files. The Desktop Inventory Scanners collect a lot more information than the InfraTools Desktop Discovery Scanners.

Warning: Scan files created with Desktop Inventory software cannot be read by InfraTools Desktop Discovery software. That is, there is no backward compatibility.

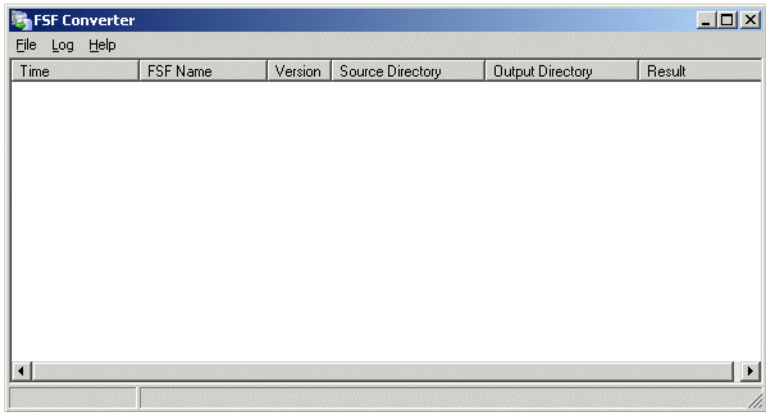
Starting the FSF Converter

To start the FSF Converter:

- From the Windows **Start** menu select **Programs|Desktop Inventory 8.0.0|FSF Converter**.

The FSF Converter Workspace

When starting the FSF Converter for the first time, you will be presented with a blank log page.



Three menus are available:

Menu item	Function
File menu	
Convert FSFs...	Displays the FSF conversion wizard.
Exit	Exits from the FSF Converter program
Log menu	
Copy to Clipboard	Copies the entries in the log window to the clipboard.
Copy to File	Allows you to save the entries in the log window to a .tsv (tab separated) file.
Clear Log	Clear any entries from the log window.
Help menu	
About	Provides information about the software.

Converting Your FSFs

There are three steps to converting your FSF files

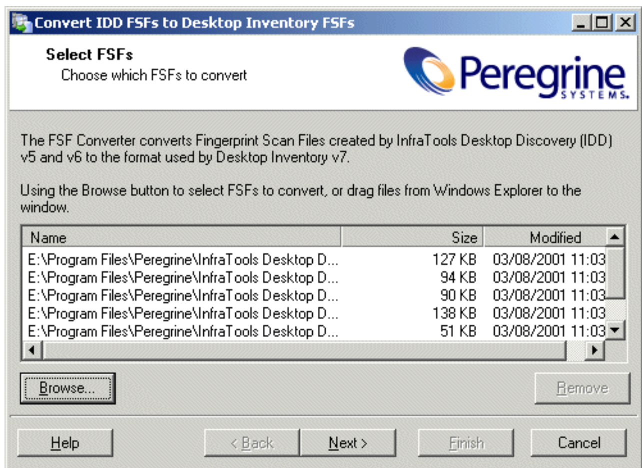
- *Choose Which FSFs to Convert*

- *Select Output Directory*
- *Choose a Scanner Configuration*

Choose Which FSFs to Convert

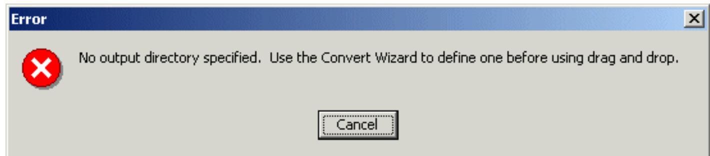
To convert old FSFs to the Desktop Inventory version 8.0 .xsf format:

1. Select the **Convert FSF...** option from the **File** menu. The **Conversion Wizard** appears.



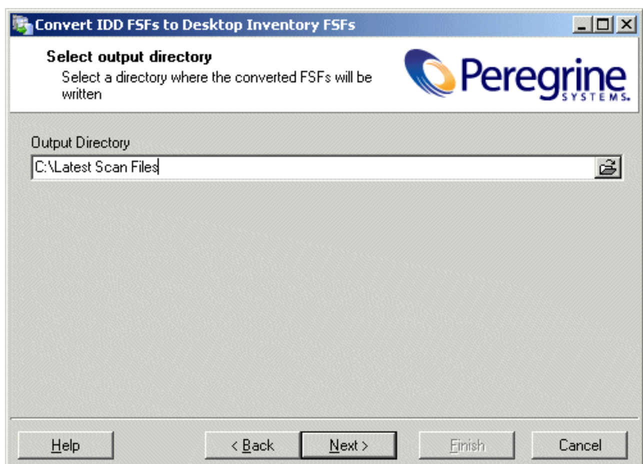
2. Choose which FSFs to convert. This can be done with the **Browse** button or by dragging the files from the Windows Explorer to the wizard.
3. You can remove currently selected (highlighted) items from the list by:
   - Clicking the **Remove** button.
   - pressing the **DEL** key when the list has focus.
4. The **Next** button is enabled when at least one file is in the list. Click **Next** to continue.

Note: After the wizard has been used once, the conversion process can be started by dropping files on the previous window without using the wizard. In this case, the settings from the previous run will be used. If the wizard has never before been used, an error message is displayed.



Select Output Directory

1 The second page of the wizard is used to choose the output directory for the converted files.

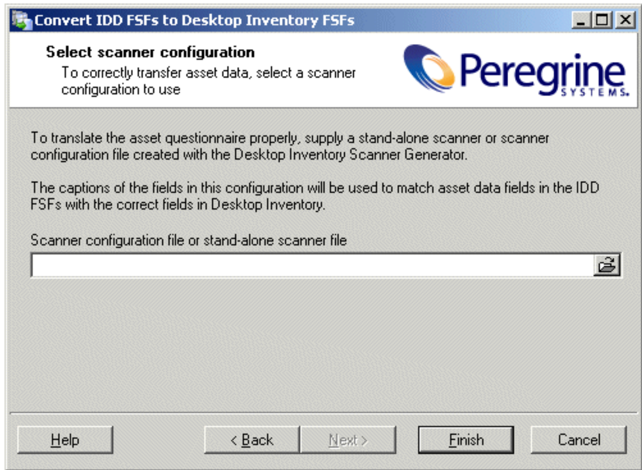


Note: The directory must already exist.

2 The **Next** button is enabled when this field is not blank. Click **Next** to continue.

Choose a Scanner Configuration

1 On the last page, choose a Scanner configuration to use for converting asset data.



This step is optional and the wizard allows the **Finish** button to be clicked if the entry field is blank or contains the file name of a valid Desktop Inventory version 8.0 Scanner or Scanner configuration file.

The reason for doing this is because of the lack of compatibility between the asset questionnaires for InfraTools Desktop Discovery and Desktop Inventory version 8.0.

You will have to configure a new Scanner using Desktop Inventory version so that the captions can be matched up with those that were used in the Desktop Discovery scans.

For example, in the screen shot on page 74, the field called 'Numero d'actif' has been set up as the asset number field in the old questionnaire. To ensure that data from this field is stored in the asset number field in Desktop Inventory, configure a new Scanner and set up a user prompt for the asset field as 'Numero d'actif' so that the two can be consolidated.

This must be done for all fields that were customized in the Desktop Discovery software and deviated from the standard questionnaire supplied. In the example the following fields would automatically be consolidated without you having to do anything:

- Department
- Office Location
- Telephone Extension
- Time Zone

You would have to set up prompts for the following fields in the new Scanner configuration so that they could be matched up.

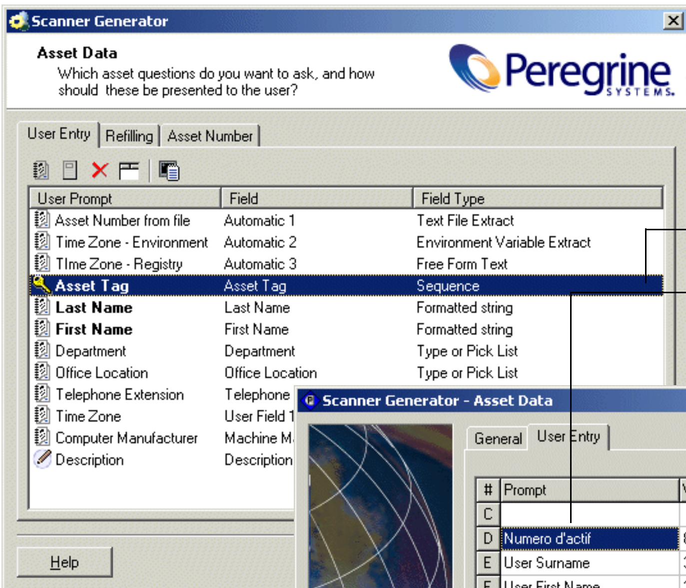
- User Surname
- User First Name

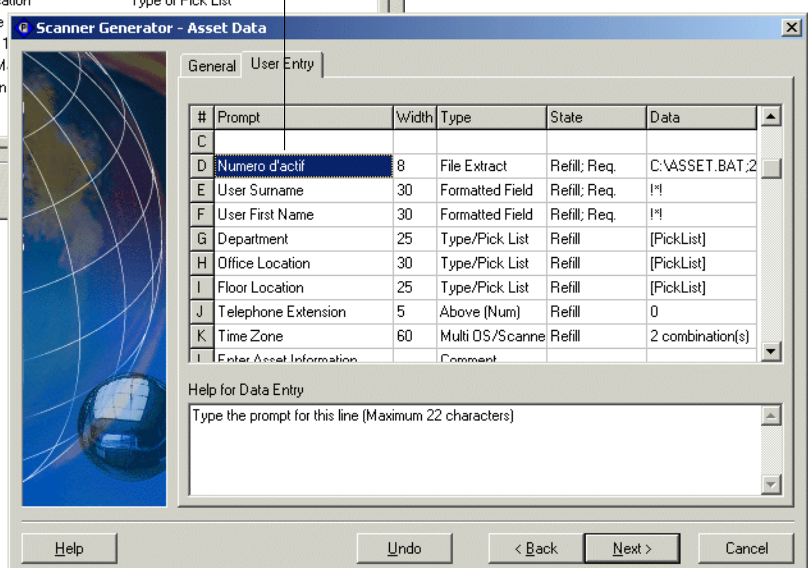
2 After you have configured a new Scanner which reflects the asset fields correctly, use the configuration file from this Scanner in this page of the wizard.

3 When the **Finish** button is pressed, the selected files are converted.

Verifying the Results

To verify the result of the conversion, load a converted **XSF** scan file into the Desktop Inventory Viewer and navigate to the **Hardware and Configuration** tab. Click on the **Asset Data** folder and inspect the data to verify that the desired asset data fields were converted correctly.





In the old software, the asset number field had been set up as 'numero d'actif'.
In the new software, this will not match up to the Asset Tag field. You will have to configure a new Scanner and set up the user prompt for the Asset Tag field called 'numero d'actif'.
This may also be the case for other fields.

The following fields will match up:
Department
Office Location
Telephone Extension
Time Zone

You would have to set up prompts for the following fields in the new Scanner configuration so that they could be matched up.
User Surname
User First Name

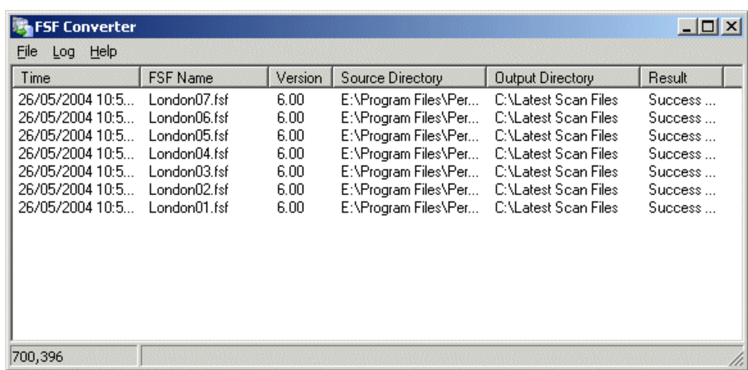
How the Asset Data Conversion Works

When converting asset data, each field in the old questionnaire is inspected in turn. If the 'prompt' of the field matches the 'user prompt' of a field in the new configuration, the data is transferred. If not, the converter looks for a matching field name and transfers the data if a match is found. Thus, a department field from InfraTools Desktop Discovery will be transferred to the Desktop Inventory field with a prompt of **Department** if it exists, or else to the **Department** field.

Note: Field contents are validated, invalid values are discarded. This means that any converted value is validated against the constraints defined in the new Scanner setup. For example, if a field was Free Form in InfraTools Desktop Discovery and is defined as Numeric in Desktop Inventory, only values that are valid when interpreted as a number are converted.

The FSF Converter Log

For each file converted, a line is added to the main converter log window showing a time stamp, the file name, the FSF version, where it was found, where the converted **.xsf** file is stored. A Result which is '**Success**' if the conversion is successful and an error message if it is not. is also shown.



During the conversion process, a dynamic progress indicator is shown and another import process cannot be started.

The log shown in the main window is persistent, that is, it is stored when the program exits and is reloaded when it starts.

Data items can be sorted by clicking on the column headers.

To clear the log:

- Select the **Clear Log** option from the **File** menu.

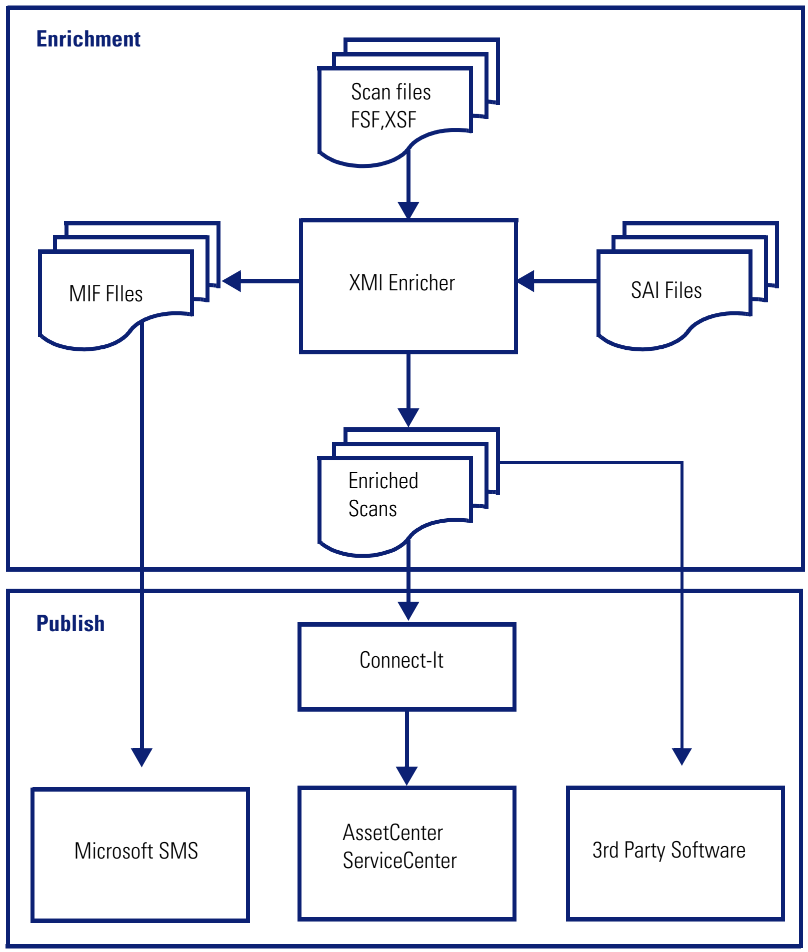
4 XML Enricher

CHAPTER

In this chapter you will find information about the following topics:

What Is the XML Enricher?

The XML Enricher is a process that runs in the background and automatically adds application data to scan files. This process is called scan file enrichment.



Further Information

- You can find further information about the XML Enricher and application recognition in *Application Recognition and Teaching* on page 595.
- You can find further information about the XML Enricher as it is used in Aware mode with Network Discovery in the document entitled *Using Network Discovery with Desktop Inventory and Desktop Administration*.

Operating Principles

In this section...

The Enrichment Process

When the XML Enricher is running, it looks for new scan files (**xsf, fsf** or **dsf** format) in a predefined directory. The interval, in seconds, the enricher waits between checking for new scan files can be adjusted.

If a file is found, it processes the file using SAI (Software Application Index) application recognition.

Note: The XML Enricher can only load SAIs from non-network locations

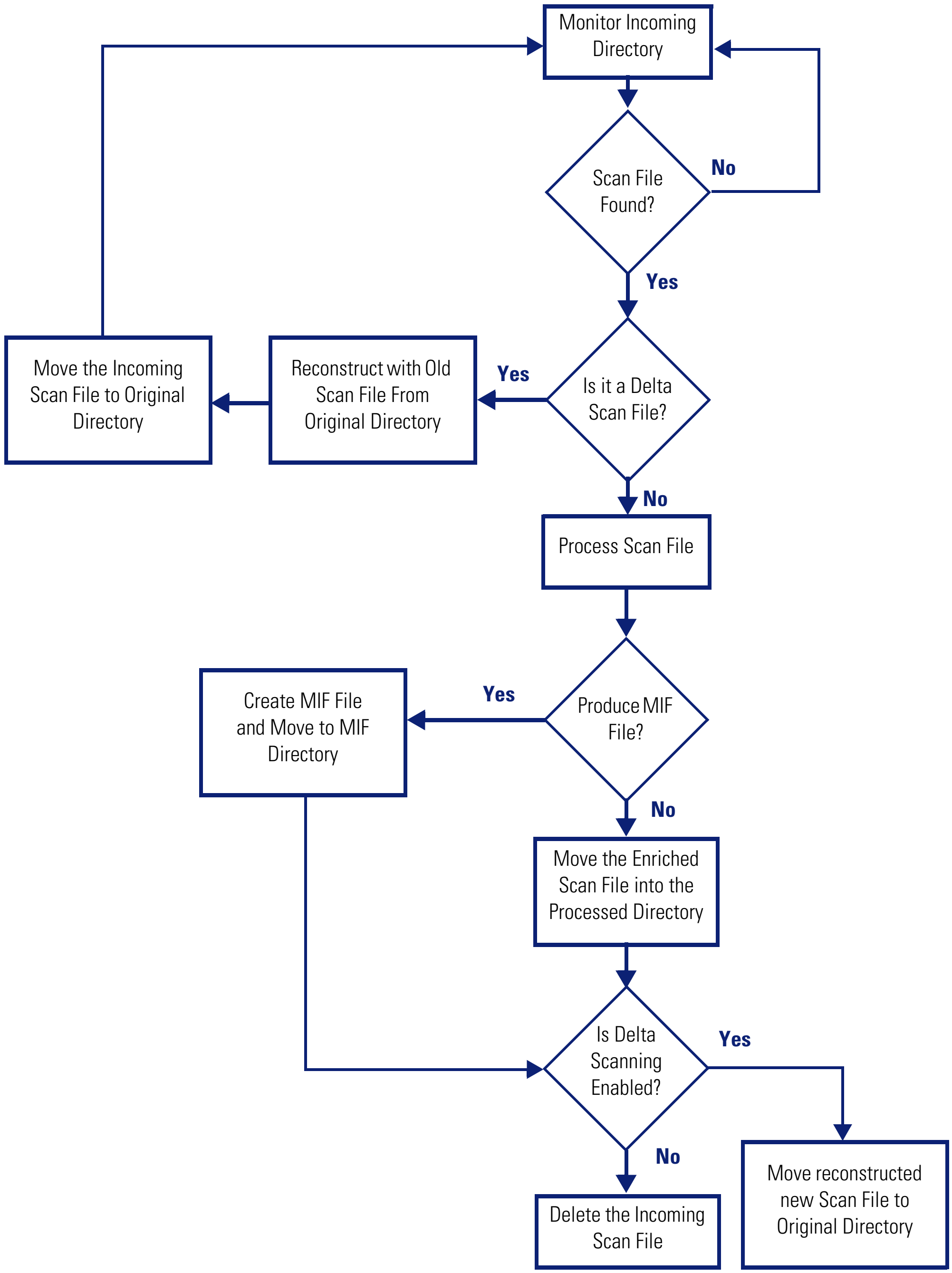
Information about recognized applications is added to the file data and a separate **<applicationdata>** section is added to the XML file.

You can set up Viewer and Analysis Workbench to use the processed scan files in the **Processed** directory for analysis or the processed scan file can be consumed by a Connect-It script.

The XML Enricher can also be used to re-enrich scan files that were enriched previously. This can be useful after applying a significant update to the library.

As a guideline, on a fast machine an average sized scan file (200-300Kb) will take 3 to 4 second to process.

The following flowchart shows how the enrichment process works for normal (FSF and XSF) and delta (DSF) scan files. The default directories have been used to illustrate this process.



Monitor Incoming Directory
Scan File Found?
No
Yes
Is it a Delta Scan File?
Yes
Reconstruct with Old Scan File From Original Directory
Move the Incoming Scan File to Original Directory
No
Process Scan File
Produce MIF File?
Yes
Create MIF File and Move to MIF Directory
No
Move the Enriched Scan File into the Processed Directory
Is Delta Scanning Enabled?
Yes
Move reconstructed new Scan File to Original Directory
No
Delete the Incoming Scan File

Processing Normal Scan Files

At the end of the process, a new enriched scan file in **.xsf** format is created. If delta scanning was enabled in the parameters for the Scanner used to produce the scan file, the incoming scan file gets stored in the **Original** directory for future use by the delta scan processing. If delta scanning was disabled, the incoming scan file is deleted.

If an error occurs, the original scan file is moved to a failure directory and is not deleted.

Important: If an enriched scan file for the same asset already exists, the old file is overwritten.

Processing Delta Scan Files

When a delta scan is found, a check is carried out to see if delta scan processing has been enabled (the **cfgActions** section of the **xmlenricher.ini** file should contain **eaApplyDelta**). See *XmlEnricherConfig Section* on page 96 for further information about this setting.

If this is the case, the delta scan file is used in conjunction with the previous version of the scan file located in the **Original** directory to reconstruct the new full version of the scan file. This full version is then moved into the **Incoming** directory, where it gets processed in the same way as other normal scan files

At the end of the process, the reconstructed scan file in .xsf format is moved to the original directory, ready for the next time a delta scan is found for this particular scan file instance.

Important: By default delta scan file processing is enabled in the XML Enricher. If you do not want to use delta scan file processing, disable delta scan file processing in the **cfgActions** section of the **xmlenricher.ini** file. This will save you processing time. See *XmlEnricherConfig Section* on page 96 for further information about this setting. If delta scan files are encountered when this setting is turned off, they will not be processed and will be moved to the **Failed Delta** directory. The **Failed Delta** directory location is configured in the **cfgDirDelta** setting of the **xmlenricher.ini** file.

Setting up the Scanner to Handle Delta Scan Files Correctly

For the delta scan file processing in the XML Enricher to work correctly, ensure that you do the following:

1. Configure the Scanner to save results to the XML enricher **Incoming** directory. This is done in the **Save result to network** (**off-site**) field on the Scanner Generator **Scanner Options|Saving** tab page.

   You can also use the command line option **-p:<path>** with the Scanner to override the selection made in the Scanner Generator.

2. Set the separate refilling path to the path specified in the **cfgDirOriginal** setting of the **xmlenricher.ini** file. Use the **Use separate path for refilling** setting on the Scanner Generator **Asset Data|Refill** tab page to do this. Point it to the following location:

   `<ServerName>/Scans/Original`

   This will ensure that the **Original** directory will contain the original scan file to be reconstructed with.

   You can also use the Scanner **-r:<path>** command line option to specify the location of this directory.

Important: Delta scanning in stand-alone mode will only work if the Scanner has been configured to collect Asset Data.

Delta Calculation Command Line Utility

A command line utility can be used for calculating the delta between two scan files and applying a delta scan file to a full scan file. This utility is not used by any of the Desktop Inventory components - delta scan file processing is built into them. It is only provided for technical support purposes and can also be used to create custom delta scan processing, which is different to the built in delta scan support.

This utility is called **FSFDelta.exe** and can be found in the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Scanner Generator

The convention for using this command line utility is as follows:

FSFDelta OldFile NewFile DeltaFile

Where:

- [FSFDelta] is the command
- [OldFile] is the name and path to the old scan file - Enter the full scan file name (for example Test.fsf or Test.xsf)
- [NewFile] is the name and path to the latest scan file - Enter the full scan file name (for example Latest.fsf or Latest.xsf)
- [DeltaFile] is the name and path to the delta scan file produced. If no extension is specified for this file, the default **.dsf** is assumed.

Note: If you have all three of these files contained in the same directory as the FSFDelta utility then you do not have to specify the full path to these files.

To create a delta scan file, run **FSFDelta** specifying the two input scan file names and the name of the output delta scan file. **FSFDelta** compares the two full scan files specified and creates a delta scan file containing the differences between them.

To perform the reverse process of reconstructing the new version of the full scan file out of the previous scan file and a delta scan file, run **FSFDelta** with the **–d** command line switch, specifying the input **OldFile** name and **DeltaFile** names and the output **NewFile** name.

FSFDelta will apply the differences in **DeltaFile** to **OldFile** to reconstruct the new version of the scan file in **NewFile**.

The XML Enricher Directory Structure

The enricher uses a directory structure such as the following, based on a 'base directory' that can be configured during installation.

By default, the base directory is **C:\Scans**

The following table shows the various default directories that are used by the XML Enricher.

Directory	Explanation
C:\Scans	The base directory
C:\Scans\db	For internal use only
C:\Scans\deferred	Aware mode only. See the document entitled "Using Network Discovery with Desktop Inventory and Desktop Administration".
C:\Scans\deferred\Firstscan	Aware mode only. See the document entitled "Using Network Discovery with Desktop Inventory and Desktop Administration".
C:\Scans\Failed	The base failure directory. Failed scans are moved to a subdirectory of this one.
C:\Scans\Failed\Corrupt	Scans that cannot be read or may not be scan files are moved here.
C:\Scans\Failed\Delta	If the original scan file is missing or there is an error applying the delta scan file to the original one, then those delta scan files will be moved here.
C:\Scans\Failed\Error	When any other error occurs, scan files are moved here.
C:\Scans\Failed\Filter	Aware mode only. See the document entitled "Using Network Discovery with Desktop Inventory and Desktop Administration".
C:\Scans\Failed\Licence	If the number of processed scan files exceed the maximum number of licences, new scans are moved here.
C:\Scans\Failed\Old	Aware mode only. See the document entitled "Using Network Discovery with Desktop Inventory and Desktop Administration".

Directory	Explanation
C:\Scans\Incoming	The incoming directory. The enricher looks for new scan files here.
C:\Scans\Mif	The MIF directory. If enabled, MIF files are created here.
C:\Scans\Original	This folder is used for delta scanning. It stores copies of original scan files, which are then used in conjunction with delta scan files to recreate the new version of the scan file.
C:\Scans\Processed	The processed directory. Enriched scan files are created here.

Log Files

Whenever enrichment of a scan file fails, an entry describing the occurrence is added to a file named **log.txt** in the relevant failed subdirectory.

For example, the following is an excerpt from **log.txt** from the Licence directory:

```
2004-May-28 13:21:08.000 - Asset19 (Licence limit reached)
2004-May-28 13:21:29.125 - Asset292 (Licence limit reached)
```

The format of a line in the log file is

<date> <time> - <AssetTag> (<Failure reason>).

The XML Enricher also adds entries to the Windows Event Log (Application Log) in the following circumstances:

- When it starts up and shuts down.
- When it starts enrichment of a new scan file.
- If an error occurs.

You can specify the level of logging you require by editing the **xmlenricher.ini** file. See *Configuring the XML Enricher Using xmlenricher.ini* on page 93 for more information.

System Requirements

In this section...

Disk Space Requirements

The base directory must point to somewhere with lots of free disk space. As an estimate, each scan file is 200kB in size (assuming default Scanner options were used). For example, if you are licensed for 5000 devices, 1GB disk is recommended.

Important: If you enable the delta scanning feature, you will need to have twice the disk space available.

It is important to make sure that the Windows temporary directory is located on the same drive as the base scans directory. The Windows temporary directory is configured in the TEMP environment variable. See *XmlEnricherConfig Section* on page 96 for further information about configuring this setting.

Operating System Requirements

These are the platforms on which the XML Enricher component can run:

- Windows NT 4.0 with SP6
- Windows 2000
- Windows XP
- Windows 2003 Server

Structure of the Enriched XSF File

Scanfile.dtd describes the structure of the scan file in standard DTD format. By default this file can be found in the following location:

`Program Files\Peregrine\Desktop Inventory\8.0.0\Common`

Note: The file is a text file, but is easiest to read with an XML reader.

An **xsf** scan file contains a sequence of elements, each of which have various attributes. Root elements are:

- <hardwaredata>
- <applicationdata>
- <filedata>
- <storedfiles>
- <configurationdata>

The XML Enricher and Connect-It

If using Connect-It 3.01 or later, use the enriched XSF file to describe the format of the scan file to Connect-It.

The enriched scans generated by the XML Enricher are used by Connect-It to populate AssetCenter and Service Center. However, parsing the file data in Connect-It can take a long time, therefore a few key fields from the file data are available in the <**applicationdata**> section to speed up the process.

- **Last used time for each application**

  This attribute is added to each recognized application, containing the estimated Last Used time. This data is calculated at the Last Accessed Time of the Main file of the application. If multiple Main files are identified, the newest time is used.

Important: In Scanner Generator, ensure that the '**Preserve Last Access File Date**' option is enabled in the **File Identification** sub tab. See *Specifying Whether the Scanner Will Identify Files Based on Their Content* on page 141 for more information. Otherwise the Scanner will set the access time of the machine as the Last Accessed date.
This data is collected for Win32 and UNIX Scanners only.

- **Directory name for each application**

  An attribute containing the 'main' directory for the application is added to each recognized application. This data is simply the directory containing the first main file identified for the application.

An Example of How the data is stored

The following is an example of several sections in an **xml.gz** file.

```
<?xml version="1.0" encoding = "UTF-8" ?>
<inventory codepage="1251" locale="English (United States)" fsfmajorver="7"
fsfminorver="5" enricherver="8.0.0.3125">

<hardwaredata>
  <hwAssetData type="shell">
    <hwAssetDescription type="attrib">Dallas (15950 North Dallas Parkway) - -
(Pentium III, 448MHz, 256Mb)</hwAssetDescription>
    <hwAssetTag type="attrib">000590 </hwAssetTag>
    <hwAssetUserLastName
type="attrib">tod.brown@peregrine.com</hwAssetUserLastName>
    <hwAssetUserJobTitle type="attrib">Dallas (15950 North Dallas
Parkway)</hwAssetUserJobTitle>
  </hwAssetData>
  <hwMemoryData type="shell">
    <hwMemTotalMB type="attrib">256</hwMemTotalMB>
    <hwSwapFiles type="shell">
      <hwSwapFiles_value type="shell_value">
        <hwMemSwapFileName
type="attrib">C:\pagefile.sys</hwMemSwapFileName>
        <hwMemSwapFileSize type="attrib">203</hwMemSwapFileSize>
      </hwSwapFiles_value>
    </hwSwapFiles>
    <hwDOSMemoryData type="shell">
      <hwMemConventional type="attrib">640</hwMemConventional>
    </hwDOSMemoryData>
    <hwCMOSMemory type="shell">
      <hwMemExtended type="attrib">260724</hwMemExtended>
      <hwMemCMOSTotal type="attrib">261364</hwMemCMOSTotal>
      <hwMemCMOSConventional type="attrib">640</hwMemCMOSConventional>
    </hwCMOSMemory>
  </hwMemoryData>
</hardwaredata>
<applicationdata>
   <recogconfig>
```

```
<sai name="C:\Program Files\Peregrine\Desktop
Inventory\8.0.0\Common\User.sai" desc="User SAI File" date="14/04/2004"
type="Editable"/>
 <sai name="C:\Program Files\Peregrine\Desktop
Inventory\8.0.0\Common\Master.sai" desc="" date="07/05/2004"
type="Master"/>
<application version="6.4.09"
      release="6.4"
      name="Windows Media Player"
      publisher="Microsoft"
      language="English"
      os="Windows 2000"
      type="Interactive Media Tools"
      maindir="C:\Program Files\Windows Media Player"
      lastUsed="2003-09-26 00:00:00"
      versionid="9978"
      releaseid="582"
      licencedby="11907"
      licencedbyrelease="84"
/>
<application version="6.0 sp1"
      release="6.0"
      name="Internet Explorer"
      desc="Microsoft Internet Explorer"
      publisher="Microsoft"
      language="English"
      os="Windows 98/NT/2K/ME/XP"
      type="Web Browsers"
      maindir="C:\Program Files\Internet Explorer"
      lastUsed="2004-05-05 00:00:00"
      versionid="12790" releaseid="131"
/>
</applicationdata>
<filedata>
  <dir name="C:\" date="2048-00-00 00:00:00" contains="-1">
   <file name="AUTOEXEC.BAT" size="0" modified="2000-04-03 13:51:04" attr="a"/>
   <file name="BOOT.INI" size="288" modified="2000-04-03 15:14:38" attr="rsa"/>
   <file name="sd_settings.ini" size="462" msdos="SD_SET~1.INI"
modified="2001-06-14 09:08:44" attr="a">
    <verinfo name="DOS 8.3 Name" value="SD_SET~1.INI"/>
```

```
    </file>
  </dir>
</filedata>
<storedfiles>
<storedfile type="storedfile" name="SYSTEM.INI" size="217" istext="1"
istruncated="0" dir="C:\WINNT\SYSTEM.INI">
    <contents encoding="text">; for 16-bit app support
[386Enh]
woafont=dosapp.fon
EGA80WOA.FON=EGA80WOA.FON
EGA40WOA.FON=EGA40WOA.FON
CGA80WOA.FON=CGA80WOA.FON
CGA40WOA.FON=CGA40WOA.FON
[drivers]
wave=mmdrv.dll
timer=timer.drv
[mci]
</contents>
  </storedfile>
</storedfiles>
</inventory>
```

An Explanation of the <applicationdata> Element

In an enriched XML scan file, the <**applicationdata**> section contains a list of applications identified on the machine along with the version IDs.

```
<applicationdata>
  <application version="6.0 sp1"
        release="6.0"
        name="Internet Explorer"
        desc="Microsoft Internet Explorer"
        publisher="Microsoft"
        language="English"
        os="Windows 98/NT/2K/ME/XP"
        type="Web Browsers"
        maindir="C:\Program Files\Internet Explorer"
        lastUsed="2004-05-05 00:00:00"
        versionid="12790"
        releaseid="131"
  />
  <application version="6.0 sp1"
         release="6.0" name="Outlook Express"
        publisher="Microsoft"
        language="English"
        os="Windows 98/NT/2K/ME/XP"
        type="Communications"
        maindir="C:\Program Files\Outlook Express"
        lastUsed="2004-05-05 00:00:00"
        versionid="12792"
        releaseid="372"
        licencedby="12790"
        licencedbyrelease="131"
  />
</applicationdata>
```

The example above could be found for a machine with just two applications on it: Microsoft Internet Explorer and Microsoft Outlook Express. The “licencedby” attribute indicates that Microsoft Outlook Express is licensed by Microsoft Internet Explorer. In other words, while both are licensable applications, this machine requires 1 licence for Microsoft Internet Explorer - with this licence, no separate Outlook Express licence is required.

Starting and Stopping the XML Enricher Service

The XML Enricher is a Windows service. The Desktop Inventory installation program starts this service automatically.

Important: You must make sure that the XML Enricher is started and configured if you want application data to be added to your scan files.

There will be times when you will need to stop and start the XML Enricher service manually. For example, when you make any configuration changes to the **xmlenricher.ini** file.

To manually start the xml enricher service:

1 Type the following command in a command prompt window:

```
net start enricher
```

2 To stop the service, type:

```
net stop enricher
```

Configuring the XML Enricher Using xmlenricher.ini

In this section...

Changing the XML Enricher settings

The XML Enricher does not have a user interface. Its settings are read from an ini file when the service is started.

The ini file is called **xmlenricher.ini** and can be found in the same directory as the executable. By default, this is:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\XML Enricher.

To change the XML Enricher settings:

1. Stop the service.
2. Edit the ini file.
3. Start the service again.

The ini File Sections

The ini file can contain four main configurable sections:

- *RecognitionConfig Section*
- *XmlEnricherConfig Section*
- *AssetFieldConfig Section*
- *RecognitionConfig.RecognitionConfig_cfgSAIFiles Section*

The options available in each are described in the following sections.

Note: Some of the settings have not been documented as they are for internal use only.

RecognitionConfig Section

The **RecognitionConfig** section is where the application recognition setup is defined. It corresponds to the controls available on the **Recognition** tab of the **Options** dialog box in Viewer and Analysis Workbench.

The easiest way to edit the recognition settings is to start Viewer, change the settings and copy the [**RecognitionConfig**] section from Viewer's ini file (Viewer.ini) to the **xmlenricher.ini** file.

```
[RecognitionConfig]
cfgAutoIdentifyDeviceDriverFiles=True
cfgExtensions=EXE;COM;DLL
cfgFilterFlags=[ffeAll,ffeExeOnly]
cfgForceLanguage=False
cfgJunkBeforeFiltered=False
cfgNextSAIID=0
cfgPreferredLanguageCode=
cfgRecognition=rtSai
cfgReprocess=True
cfgUseEnriched=True
```

cfgUseJunkFilter=False

Option	Explanation
cfgAutoIdentifyDeviceDriverFiles True/False	When enabled (the default), files that cannot be identified by the standard SAI recognition and have the Device Driver attribute will be marked as recognized in the enriched scan file.
cfgExtensions	This is a recognition filter that determines which of the files are sent to the recognition engine for processing (ignored if ffeInclExt is not specified).
cfgFilterFlags	Decides what files to process for recognition ■ ffeAll (all files) ■ ffeExeOnly (only executable files) ■ ffeNoArc (don't load files in archives) ■ ffeInclExt (include the files with extensions listed in cfgExtensions) Items must be separated by comma and enclosed in square brackets.
cfgForceLanguage True/False	Check the **Override OS Language box** if you want the recognition engine to overlook the operating system locale setting and take the setting you specified in the **Preferred language** box.
cfgPreferredLanguageCode	Preferred language is used for cases when the recognition engine encounters more than one language version of the same file– for example, Microsoft Word in English and in French. Because these versions are equally recognized, this setting instructs the recognition server on which of the versions to select.
cfgRecognition	Chooses the recognition method that will be used (one of rtSAI, rtNone, rtInstalled).
cfgReprocess True/False	If this option is enabled, the recognition engine defers its final recognition decision until all the files in all the directories on the machine have been read. If disabled, machine-based recognition does not take place and recognition data is returned after each directory is loaded. A time overhead of about 10% is normal when Level 3 Recognition is enabled.

Option	Explanation
cfgUseEnriched True/False	If SAI recognition is not used and the Installed Applications option is used for recognition, then the application data from the enriched scan file is used instead of running 'real' recognition.
cfgUseJunkFilter True/False	Some files may be executable but are of no interest for licensing or other purposes. These files are often identifiable via the file name for example, TMP000001.$$$. This option is a way for the recognition engine to ignore such files, by allowing one or more file name masks to be specified as 'junk'. These files are not passed to the recognition engine and will be marked as junk

XmlEnricherConfig Section

This section controls the behavior of the enricher process.

Note: If the **xmlenricher.ini** file is deleted, the settings shown here (the defaults) are used.

```
[XmlEnricherConfig]
cfgActions=[eaEnrichXml,eaMIFExport,eaApplyDelta]
cfgDeltaThreads=2
cfgDirDelta=c:\Scans\failed\delta
cfgDirError=c:\Scans\failed\error
cfgDirFailed=c:\Scans\failed\corrupt
cfgDirIncoming=c:\Scans\incoming
cfgDirLicence=c:\Scans\failed\licence
cfgDirMIF=c:\Scans\mif
cfgDirOriginal=c:\Scans\original
cfgDirProcessed=c:\Scans\processed
cfgDirTemp=C:\WINDOWS\system32\config\systemprofile\Local Settings\Temp\
cfgLogActions=[logStartup,logEnrich,logMisc,logMoveFile,logShutdown,logDelta]
cfgLogFileMaxSize=1024
cfgLogLevels=[llInfo,llError]
cfgMaxMemoryMB=128
cfgMifExportSMSOnly=True
cfgPollInterval=20
```

cfgSortBlankStrings=Unknown
cfgSortScanFilesBy=hwHostOS

Note: Care needs to be taken to ensure that directories are located on the same logical drive as all other directories used by the enricher. This is because the enricher moves files around between various directories and when the directories are on the same drive, the file move operation is very quick. When they are on different drives, however, the file move operation effectively becomes a copy and delete operations and therefore takes much longer to execute.

Option	Explanation
cfgActions	Contains a list of actions the enricher takes on new scan files and must consist of one or more of **eaEnrichXml** and **eaMIFExport** separated by commas and enclosed in square brackets. ■ If **eaEnrichXml** is defined, the enricher will perform XML Enrichment. ■ If **eaMIFExport** is defined, the enricher will produce MIF files from scan files. ■ If **eaApplyDelta** is defined, the enricher will enable delta scan file processing and search for delta scan files in the incoming directory to reconstruct new scan files.
cfgDeltaThreads	An integer value specifying the number of threads that the enricher uses to reconstruct the complete scan files from previous version of the scan files and the incoming delta files. The value must be between 1 and 8. If this parameter is not specified in the ini file, a default value is used. It equals to the number of processors utilized by the operating system.
cfgDirDelta	This directory is used to store failed delta scan files. By default this directory is: c:\Scans\failed\delta If an original file is missing or if an error occurs when applying the delta scan file to the original one, then those delta scan files will be moved here.
cfgDirError	This directory is used to store scan files that have had errors during processing. By default this directory is: c:\Scans\failed\error

Option	Explanation
cfgDirFailed	This directory is used to store files that cannot be read or may not be scan files. By default this directory is: c:\Scans\failed\corrupt
cfgDirIncoming	This directory stores the incoming scan files to be processed. The XML Enricher looks for new scan files here. By default this directory is: c:\Scans\incoming
cfgDirLicence	If the number of processed scan files exceed the maximum number of licences, new scans are moved here. By default this directory is: c:\Scans\failed\licence
cfgDirMIF	This directory stores any MIF files created by the XML Enricher. By default this directory is: c:\Scans\mif
cfgDirOriginal	This directory stores copies of original scan files. These are then used in conjunction with delta scan files to reconstruct the new version of the scan files. By default this directory is: c:\Scans\original
cfgDirTemp	This directory specifies where the enricher stores its temporary files. If not specified, by default the Windows TEMP location is normally used. However, care needs to be taken to ensure that this directory is located on the same logical drive as all other directories used by the enricher. If unsure, create the cfgDirTemp entry in the ini file manually to point to a directory on the same local drive as all the others (for example, c:\scans\temp).

<table>
<tr><th>Option</th><th>Explanation</th></tr>
<tr><td>cfgLogActions</td><td>Contains a list of the types of items you are interested in logging.
■ logStartup - logs the startup of the enrichment process.
■ logEnrich - logs the act of enriching (including, opening a scan file, application recognition and the creation of a new file).
■ logMisc - any other messages.
■ logMovefile - adds a log line when the file has been 'moved' from one directory to another one.
■ logShutdown - adds a log line when you instruct the enricher to stop.
■ logDelta - logs all delta scan specific messages.
If no log actions are specified then there will still be a Startup message output in the log file.</td></tr>
<tr><td>cfgLogLevels</td><td>Contains a list of logging levels
■ llInfo - high level messages
■ llError - error messages</td></tr>
<tr><td>cfgLogFileMaxSize</td><td>Specifies the maximum size of the log files in kilobytes.
The value should be between 0 and 2097151.
If a non zero value is specified, the enricher will not allow the log file to exceed the size specified. When the log file grows larger than the maximum, the enricher purges old entries at the beginning of the file, keeping the newer entries at the end.
If zero is specified, the enricher does not put any restrictions on the size of the file (this is not recommended as the file could potentially grow to be huge).
If the option is not specified in the ini file, a default of 1024K (or 1M) is used.</td></tr>
<tr><td>cfgMaxMemoryMB</td><td>If the figure specified here is reached between processing scans, the enricher will terminate.</td></tr>
<tr><td>cfgMifExportSMSOnly</td><td>Must be either True or False. When True, only scan files with a value in the hwOSMIFPath field will cause a MIF file to be produced (that is, machines where the SMS client is installed). If False, MIF files will be generated for all scan files.</td></tr>
</table>

Option	Explanation
cfgPollInterval	Is the time, in seconds, the enricher will wait between checking for new scan files.
cfgSortBlankStrings	This is used in conjunction with the **cfgSortScanFilesBy files** option. It allows you to specify what value to use for each sorting criteria in case the value in the particular scan file is blank or does not exist.
cfgSortScanFilesBy	Helps you organize your scan files in the processed directory. You can group your scan files based on hardware fields. Please see section after this table for more information.

The remaining entries (**cfgDirXXX**) all contain references to directories; each of the directories mentioned previously can be individually configured. See *The XML Enricher Directory Structure* on page 85 for an explanation of these directories.

cfgSortScanFilesBy

If this item is non-blank, it specifies a list of hardware field names (hwXXX) separated by colons (see the document entitled *Data Collected by the Scanners* describing Scanner hardware data fields, for a description of hardware field names that can be used here).

The value of each hardware field will be used as part of the directory structure under the **Processed** directory. For example, if **hwHostOS** is used for sorting and the scan file is of a Windows XP computer, the scan files will by default be put into the following directory:

```
c:\scans\processed\Windows_XP_Professional
```

A scan file for a Windows 98 box will go into the following directory:

```
c:\Scans\processed\Windows_98
```

Another example:

The **hwAssetDepartment** field can be used to sort processed scan files based on the department entered in the asset data. If both of them are used, for example, “hwAssetDepartment, hwHostOS”, a two level output directory structure will be used.

A scan file of a Windows XP computer from the Development department will go into the following directory:

```
c:\scans\processed\Development\Windows_XP_Professional
```

If the hardware field you have chosen is blank in a scan file, that file will be moved to a blank directory (set up in the **cfgSortBlankStrings** option). This can be configured in the **cfgSortBlankStrings** setting.

Using our last example, if **cfgSortBlankStrings** is set to "unknown,not detected", a scan file of a Windows XP computer where the **Department** asset field is blank will go into the following directory:

```
c:\scans\processed\unknown\Windows_XP_Professional
```

AssetFieldConfig Section

Each of the Analysis Asset fields is defined in its own section. The first field has a section name [**Field_AssetFieldConfig_0**], with Line_N fields containing the actual setup.

The easiest way to edit the settings is to start Viewer, change the settings for Analysis Asset fields and copy the [**AssetFieldConfig**] section from Viewer's ini file (Viewer.ini) to the xmlenricher.ini file.

RecognitionConfig.RecognitionConfig_cfgSAIFiles Section

This section defines the Software Application Index (SAI) files to use when SAI recognition is used. Again, copying this information from **Viewer.Ini** is the easiest way of editing it.

If this section is not present in the ini file, the enricher automatically searches the **Peregrine\Desktop Inventory\8.0.0\Common** directory for SAI files and uses the appropriate SAI files in this directory for recognition.

It searches for Master.SAI and User.SAI:

- If the locale is France, it adds French.SAI.
- If the locale is Germany is adds German.SAI.

Note: The XML enricher can only load SAIs from non-network locations.

Here is an example of this section:

```
[RecognitionConfig.RecognitionConfig_cfgSAIFiles]
```

```
Count=2
Item0=C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\User.sai
Item1=C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Master.sai
```

Running Multiple XML Enricher Services

This section provides details about how to create multiple XML Enricher services that can be run simultaneously to process scan files from different directories and optionally using different recognition files.

You will find information about the following topics:

Background Information

The XML Enricher is a service that processes scan files from an incoming directory and puts the processed scan file into a processed directory. The Enricher adds application information to the enriched scan file.

If problems are encountered, a separate directory structure is available for handling failures in conjunction with log files to detail the nature of the failure.

The Enricher service can only monitor a single incoming path. Therefore, to handle multiple directory paths or scan files requiring different recognition, it is necessary to create multiple services that can call on different configurations. The configuration information for each service is held in renamed copies of the **XMLEnricher.ini** file.

Creating the XML Enricher Services

The XML Enricher executable can be run to create more services using the following syntax:

```
"XML Enricher Service.exe" /install /name:<Name> /display:<DisplayName>
```

To uninstall a service use the following syntax:

```
"XML Enricher Service.exe" /uninstall /name:<Name>
```

The new XML Enricher Services use the settings from a file named <**Name**>**.ini** in the same directory as the XML Enricher executable itself. If this file does not exist, the new XML Enricher creates the file and populates it with default settings.

Note that parameters with spaces in them should be in quotes. For example:

```
"XML Enricher Service.exe" /install /name:MySvc "/display:My Service"
```

Setting Up Extra XML Enrichers

The main file of the XML Enricher, XML Enricher Service.exe can be found in the XML Enricher directory. By default, this directory is:

```
C:\Program Files\Peregrine\Desktop Inventory\8.0.0\XML Enricher
```

This file can be used to add more instances of the XML Enricher service.

The following example shows you how to add two new XML Enricher services.

To add two new services:

1. Open a command prompt.
2. Navigate to C:\Program Files\Peregrine\Desktop Inventory\8.0.0\XML Enricher
3. Run the following command line from this directory:

   "XML Enricher Service.exe" /install /name:xmlscans2 "/display:XML Enricher for Scans2"

   A new service will be created and will use the settings in the **xmlscans2.ini** file.
4. You can start this service by typing the following at the command prompt:

   net start xmlscans2
5. Run the following command line from this directory:
6. "XML Enricher Service.exe" /install /name:xmlscans3 "/display:XML Enricher for Scans3"

   A new service will be created and will use the settings in the **xmlscans3.ini** file.
7. You can start this service by typing the following at the command prompt:

   net start xmlscans3

Note: The /display parameter is optional. If it is specified, the parameter is used to name the service when it is shown in the list of Services. If it is omitted, the service name from the **/name** parameter is used.

Removing a Service

To remove the xmlscans2 service:

Use the **/uninstall** command line switch:

```
"XML Enricher Service.exe" /uninstall /name:xmlscans2
```

Note the quotes around those parameters that have spaces in them. The service name must not have any special characters in it (including spaces). The quotes are used in the command line to run the service.

Changes to the INI File

If any changes are made to the ini files it is necessary to stop the associated service and then restart it so that the contents of the ini file is re-read.

The service can be stopped and restarted from the Windows Services window. The alternative is to use the following command prompts:

```
Net stop <servicename>
Net start <servicename>
```

CHAPTER

5 Scanner Generator

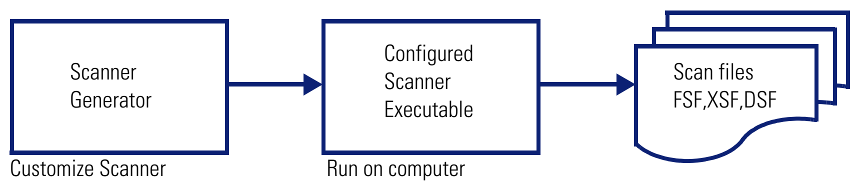
In this chapter you will find information about the following topics:

Introduction to the Scanner Generator

After defining requirements, the next step in an IT asset inventory is to collect data. This is accomplished using the Desktop Inventory Scanner Generator and then running the generated Scanners.

The Scanner is configured and generated in Scanner Generator according to the specifications determined in the planning stage of the inventory. Then the Scanner is run across the computer population to collect inventory data.

The Scanner Generator is used to both configure and define the level of information to be collected. One or more Scanner executable programs with the desired configuration are then generated and subsequently run across a computer population.



Scanners can collect three different types of information and can be configured to collect any or all of them. The details recorded for each computer within each main category depend on the options and settings selected when the Scanner is generated and the configuration of the computer.

The Scanner Generator also provides a set of options for controlling the behavior of the Scanner as it scans each computer, under both normal and exceptional conditions (such as when an error occurs).

The Scan File Formats

The information collected from each computer can be stored in three formats:

- Fingerprint Save File (FSF) - with the file extension **.fsf**
- Compressed XML (XSF) - with the file extension **.xfs**
- Delta Scan File (DSF) - with the extension **.dsf**

Note: In previous releases of Desktop Inventory the **.xfs** extension was known as **.xml.gz**). The file format is the same.

It is from these files that the information collected can be viewed and analyzed.

FSF Scan File

The FingerPrint Save File (.fsf) is a proprietary format created by Desktop Inventory.

XSF Scan File

The compressed XML scan file format (.xsf) allows the scan data to be augmented with application recognition information. The uncompressed XML data inside these scan files is compressed using gzip compression. The files can be uncompressed using gzip, WinZip or any other program that supports gzip decompression.

Further information about the XSF format can be found in the *XML Enricher* Chapter.

DSF Scan File

Instead of sending a full scan file to a server after every scan, the Scanners can calculate the difference (the ‘delta’) between the last full scan and the current one and transfer just this in Delta Scan File format (DSF). This can dramatically reduce the network bandwidth used when using Desktop Inventory. Delta Scan files cannot be viewed in the analysis tools (Analysis Workbench and Viewer).

The Components of a Scanner

A Scanner consists of two files:

- **The Scanner executable file**

  This file is an executable file. It contains the constant parts of the Scanner:

  - strings
  - bitmaps
  - database files
  - the Scanner executable code
  - plug-ins

- **The Scanner configuration file**

  The configuration file is a binary file containing the settings for the Scanner you are currently configuring.

The Self-Contained Scanner Executable

The Scanner Generator generates self-contained Scanner executables that consist of a combination of the two files listed previously.

Scanner Support

FSF files can be created by any Scanner, while XSF files can only be created by the Win32 and UNIX Scanners. Although the Remote Scanner is a Win32 program, it does not support XSF files. DSF files can be created by all Scanners except the DOS Scanner.

Scan File Compression

All Scanners (except the DOS Scanner) compress the scan file on saving. Even though scan files are compressed, the asset entry information can still be edited in the analysis tools (Viewer and Analysis Workbench).

Information the Scanners Can Collect

The three types of information collected are:

- *Hardware and Configuration Information*
- *Software Information*
- *User or Asset information*

Hardware and Configuration Information

Hardware information is detected automatically. The Scanners collect and store from 100 to 1500 hardware items for a computer depending on the type and manageability options available on the computer.

The Scanner Generator allows a subset of the hardware collection to be disabled. Normally this is not required but may be desirable to decrease scan file size or scan time.

The hardware details that can be defined and recorded by the Scanner include the following:

- The processor type and BIOS details.
- The memory size and configuration details.
- The computer bus type and details of the attached cards.
- The hard disk drive specifications (including the total size and free space).

- The network type and ID (if applicable). Comprehensive detection of network settings, including detection of multiple network adapters, TCP/IP settings, gateways, DNS servers, subnet masks, DHCP status.
- The monitor and video display adapter details.
- The type of keyboard and mouse driver installed and details of the I/O ports.
- The version and other details of the Operating System the computer is running under.
- The expansion (or adapter) cards detected.
- The hardware data information from System Management BIOS (SMBIOS).

Further Information

For a comprehensive list of hardware data the Scanners can collect, refer to the document entitled *Data collected by the Scanners*.

Software Information

Software information is scanned automatically, and consists of detailed information about the files and directories on the drives scanned. The information collected about files can be defined (including the file types and the level of information collected). It is possible to define which drives are to be scanned, based on either the media or format of the drive or to use the targeted scanning option to scan just a set of directories. Specific files can be collected (that is, stored in the scan file) for further analysis or for error recovery purposes. It is also possible to configure the level of file detail stored in the scan file and filters can be set up that specify directories or files to be included or excluded from being stored.

User or Asset information

User or asset information, which during an initial inventory may have to be entered manually, includes any information which may or may not be available electronically (such as office location, floor). It usually includes the asset number which is used to uniquely identify each computer. On subsequent inventories, the asset information entered during the initial inventory can optionally be re-used. As part of the detailed asset information configuration, an asset questionnaire is defined. This is presented to the user as a list of entry fields which can be filled in and the content recorded in the scan file. Asset data fields can also be automatically populated, and the data extracted from, for example, text files, the Windows registry and environment variables.

System Requirements

To run Scanner Generator, it is recommended that you have:

- A Pentium III, 500 MHz with 256 MB memory.
- Windows 2000, and 1 GB disk free.

Supported Platforms

Scanner Generator runs on the following platforms:

- Windows 95
- Windows 98
- Windows NT 4.0
- Windows ME
- Windows 2000
- Windows XP
- Windows 2003 Server
- Windows Media Server
- Windows for Tablet PCs

Scanners can be generated for the following operating systems:

Scanner	Runs on...
DOS Scanner	DOS 3.3 or later
Windows 16-bit Scanner	Windows 3.1x

Scanner	Runs on...
■ Windows 32-bit Scanner ■ No-UI 32-bit Scanner ■ Remote Scanner	■ Windows 95 ■ Windows 98 (includes Windows 98 SE) ■ Windows NT 4.0 (includes Windows NT Server) ■ Windows ME ■ Windows 2000 (includes Windows 2000 Server) ■ Windows XP ■ Windows 2003 ■ Windows 2003 Server ■ Windows Media Server ■ Windows for Tablet PCs
OS/2 Scanner	OS/2 2.1 or later and OS/2 Warp
UNIX Solaris Scanner	Solaris 2.5, 2.6, 7, 8 and 9 on SPARC
UNIX HP-UX Scanner	HP-UX 10.2 and 11.0, 11i on HPPA
AIX Scanner	AIX 4.3, 5.0, 5.1, 5.2 on IBM R6000
Linux Scanner	Any distribution with a 2.2x, 2.4x or 2.6x kernel on i386

Starting the Scanner Generator

To start Scanner Generator:

▶ From the Windows **Start** menu select **Programs|Desktop Inventory 8.0.0|Scanner Generator**.

The Scanner Generator appears.

Exiting the Scanner Generator

To exit the Scanner Generator, either:

▶ Click the **Cancel** button, or

▶ Click the Windows close icon in the top right of the page.

A message appears, informing you that you are now exiting the Scanner Generator.

The Scanner Generator User Interface

In This Section...

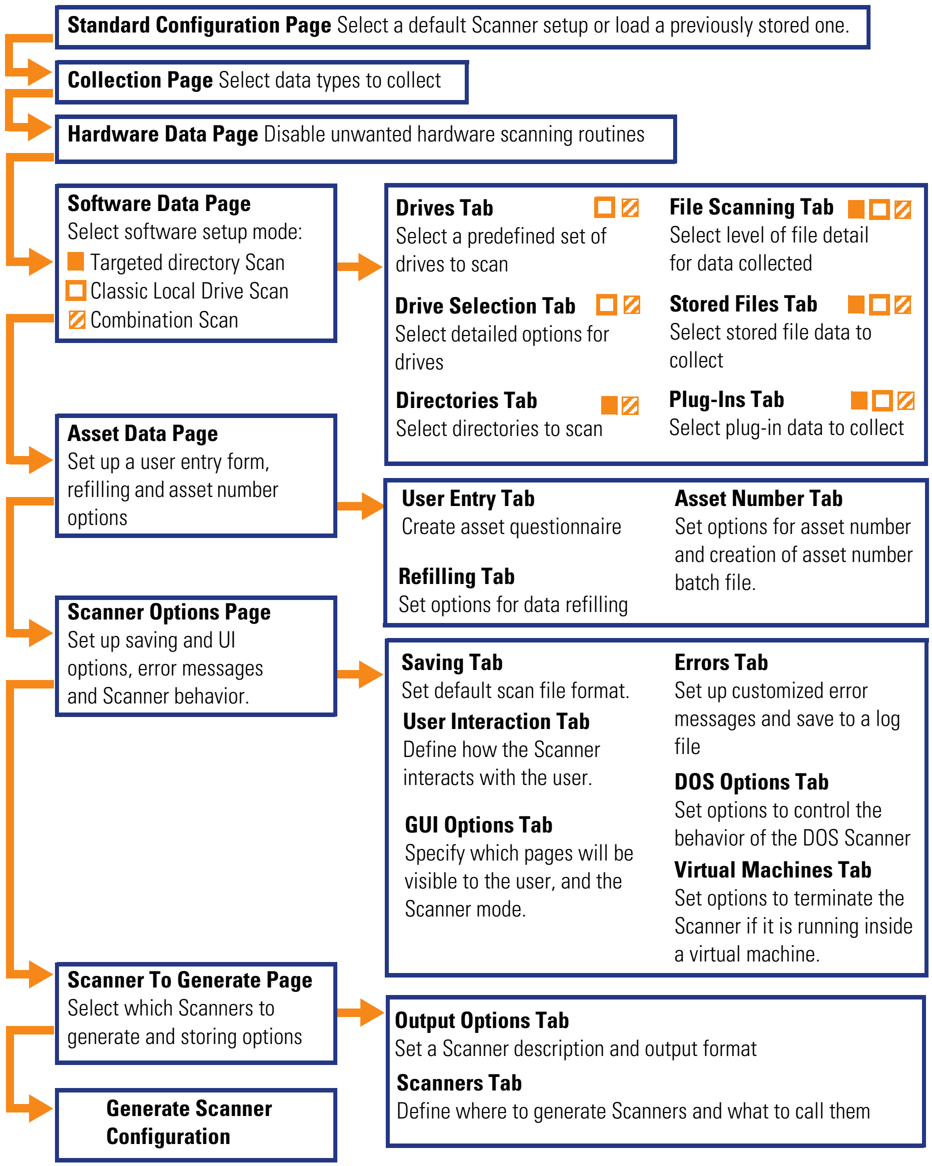
Navigation Between the Pages

You can navigate between the different pages of the Scanner Generator using the following buttons:

Button	Function
Next	Move to the following page after the settings on the page reflect your requirements.
Back	Return to a previous page to edit your previous settings.
Generate	Execute the final action of the Scanner Generator. That is, generate self-contained Scanner executables.
Finish	The **Generate** button changes to a **Finish** button after the Scanners have been successfully generated. Click this button to exit from the Scanner Generator when you have finished.
Cancel	Cancel the execution of the Scanner Generator completely.
Help	Obtain help for the tab pages you are currently on.

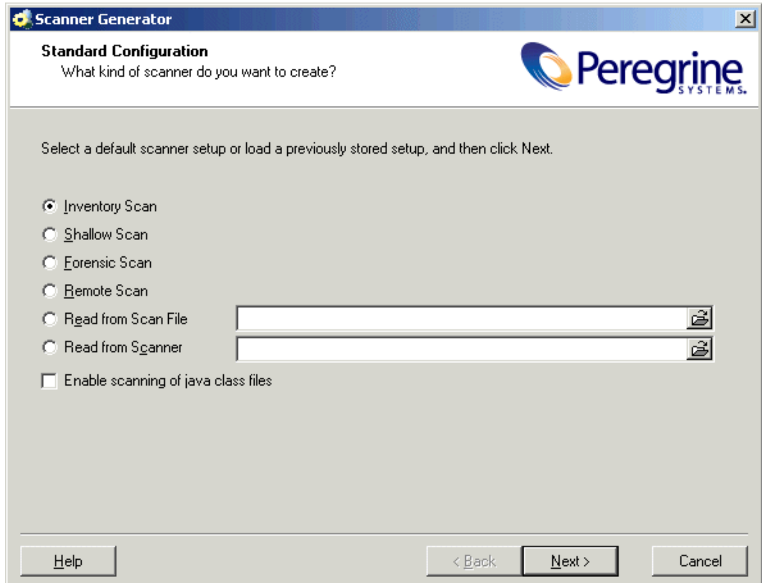
The Scanner Generator Pages

The Scanner Generator is composed of a succession of pages. Each of these pages displays information or requires user input, such as selection of options or entry of data items.



The Standard Configuration Page

This page is used to select a preset configuration for the Scanners. It is a starting point only and the settings can be amended as required.



To select the type of Scanner to create:

▶ Start by selecting one of the Scanner default settings:

- Inventory Scan (default)

  Defines a set of options suitable for a general inventory. Enough software information is collected to allow comprehensive inventory analysis. All hardware information is collected and a standard asset questionnaire is defined.

- Shallow Scan

  Defines a set of options to allow very quick scans. Because hardware scanning is very fast, all hardware items are collected, but limited software scanning takes place and the data collected is not sufficient to perform reliable software licence recognition.

- Forensic Scan

  If scanning time is not a critical factor, the Forensic Scan option can be used to collect the maximum amount of information. This, however, extends the scanning time significantly. Use this option in special cases only.

- Remote Scan

  Selects the predefined options for the Remote Scanner. The Remote Scanner is used to perform a software scan of a remote computer. Refer to *The Remote Scanner* on page 281.

- Read from Scan file

  Reads the settings from an existing scan file (**.fsf or .xsf**) file.

  Click the button and navigate to the scan file stored on a local disk drive or network drive.

- Read from Scanner

  Reads the settings selected for a previously configured Scanner executable. For example, if a previous Scanner contains lists of departments, machines make use of this data by taking the configuration options from the old Scanner and using them in the new one. You can make any amendments to the configuration as necessary.

  Click the button and navigate to the Scanner executable stored on a local disk drive or network drive.

- Enable scanning of Java class files

  This setting deals with Java scanning. Enabling this setting will do the following:

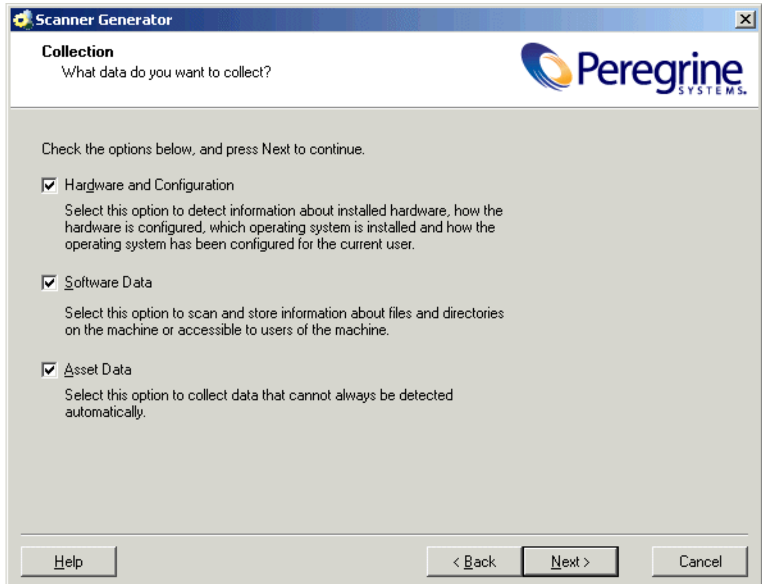
  - Java .class files will be stored in the scan file
  - Java specific environment variables for targeted scanning will be enabled.
  - Win32 Scanner will add the location of the Java Home directory to the list of directories for a targeted scan.

Note: For options (**e**) or (**f**), dropping a scan file or Scanner from Windows Explorer also works.

Click the **Next** button to continue to the **Collection** page.

The Collection Page

The **Collection** page is used to select the type of computer data to collect.



Tip: When carrying out initial Scanner deployments you might want to use hardware and asset data collection to establish basic information for the target machine. This can be followed up later by a more comprehensive scan that includes software data.

Selecting the Type of Data to Be Collected

The selections you make on this page determine which of the data detail pages will be displayed.

To select the type of data to be collected:

1 Select from the following options as required:

- **Hardware**

  Includes details of the processor, memory configuration, computer bus, attached cards, hard disks, attached drives, monitor, video adapter, keyboard, mouse, OS version, network protocols and addresses.

  See *The Hardware Data Page* on page 119

- **Software Data**

Consists of detailed information about files and directories on all scanned drives. The information collected about files can be defined (including the file types inventoried and the level of information collected). It is possible to define which drives are to be scanned, based on either the media or format of the drive, as well as determine which files are registered in the scan file and which are ignored.

See *The Software Data Page* on page 125

- **Asset Data**

  During an initial inventory this may have to be entered manually. It includes any information which may or may not be available electronically (such as office location, floor). It usually includes the asset number which is used to uniquely identify each computer. On subsequent inventories, the asset information entered during the initial inventory can optionally be re-used.

  The Asset Data Page on page 158

2 Click the **Next** button to view specific data settings for each of the options.

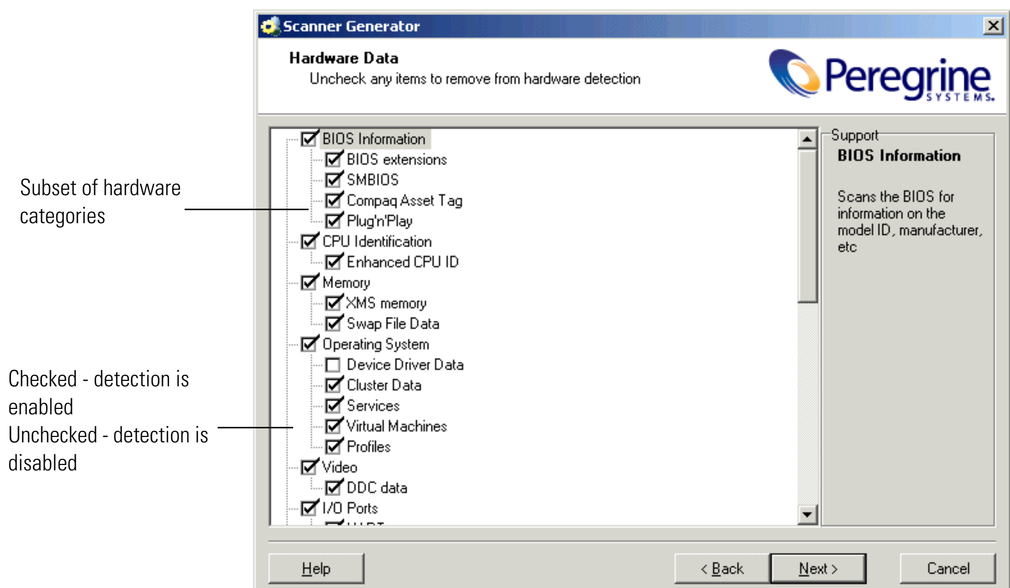
The Hardware Data Page

The **Hardware Data** page displays a subset of the hardware categories the Scanner can collect. It is used to disable specific hardware detection routines.

Normally all hardware options are selected. Routines only need to be removed if there is a known problem scanning these hardware items. The hardware options have equivalent command line options that can be used at run-time.

Further Information

- You can find more information about Scanner command line options in the section entitled *Command Line Options and Switches* on page 239 in the Scanners Chapter.
- For a comprehensive list of hardware data the Scanners can collect, refer to the document entitled *Data collected by the Scanners*.



The left side of this page shows a subset of the hardware categories detected by the Scanner. To expand a category, select the check box.

Check box	Indicates that the routine is...
Checked	Enabled
Unchecked	Disabled

The right side of this page is a **Support** panel which shows a description of each hardware item (displayed as the mouse pointer passes over each item in the list box).

Important: By default most of the categories are shown selected. This indicates that the hardware detection routine for that particular category is enabled.

The only two hardware options which are unchecked by default are:

- **DMI 1.x version.** This is because most early implementations of DMI 1.x are unstable. Enabling this setting when scanning a population of machines is not recommended.
- **Device Driver Data.** This is because it usually takes a long time to perform this detection. You can enable the detection of this hardware category to take advantage of the automatic device driver recognition.

Disabling Specific Hardware Detection Routines

You can disable the hardware detection routines for specific categories. All other hardware detection will take place as usual.

To disable specific hardware detection routines:

1. Clear the check box next to that particular category to remove it from hardware detection.
2. Click the **Next** button to continue.

Hardware Categories

Options	Description
BIOS information	Collects information about the computer BIOS, including the computers asset tag, the BIOS date, ID, manufacturer and revision (where applicable).
BIOS extensions	Detects installed BIOS extensions, such as video or SCSI BIOS.
SMBIOS	Collects hardware data from System Management BIOS.
Compaq Asset Tag	Determines asset tags on Compaq computers that support Intelligent Manageability.
Plug'n'Play	Provides details of whether the BIOS installed on the computer is Plug and Play compatible. If the BIOS supports Plug and Play specification, the version of the specification is collected.
CPU Identification	Identifies the CPU (model), establishes if it has got FPU (numeric coprocessor), MMX (MultiMedia eXtensions) and ISSE/SSIMD capability and reports the speed of the CPU, cache characteristics. For newer Intel and compatible processors, the manufacturer, model, family and stepping ID are reported.
Enhanced CPU ID	This applies to DOS Scanners only. Attempts to correctly identify 32-bit processors (386s, 486s and Pentiums) using a method not compatible with Windows. If unchecked, some CPUs will not identify correctly.
Memory	Detects the total amount of memory installed on the computer, including the amount of conventional and extended memory. The amounts of memory available with the XMS, EMM and DPMI specifications are also collected together with the version of the driver and the specification, where possible. XMS, EMM and DPMI are applicable to DOS and Win16 Scanners only.
XMS Memory	Determines the amount of XMS memory. Applicable to DOS and Win16 Scanners only.
Swap File data	Collects data about swap files used for virtual memory.

Options	Description
Operating System	Collects information about the operating system and its configuration. Information about DOS or the DOS subsystem is also provided where applicable.
Device Driver Data	When this option is enabled, the Windows 32-bit Scanner enumerates all devices to determine which files are used as device drivers. Each file in this list is given the 'Device Driver' attribute when stored in the scan file. The device driver option is now disabled by default to increase speed of the hardware scanning.
Cluster Data	Collects information about Windows Server Cluster membership. It detects that the machine is part of a cluster, the name and description of the cluster and the list of nodes connected to the cluster.
Services	Collects information about installed operating system services.
Virtual Machines	Detects whether the Scanner is running in VMWare, Virtual PC or Terminal Services. From an asset management point of view, it is important to be able to determine which scanned machines are virtual (for example, so you don't pay too much maintenance for too many machines).
Profiles	Collects data about user profiles.
Video	Records details of the Video Display Adapter, which include the adapter type (EGA, XGA, VGA and so on) and model/manufacturer, where possible. In Windows and OS/2, the current desktop resolution and number of colors are also picked up.
DCC Data	When connected to a VESA DDC compliant monitor, collects full monitor information.
I/O Ports	Detects and reports on the number of serial and parallel ports, the I/O address for each, and for serial ports, the UARTs attached.
UARTs	Detects the UARTs associated with each serial port.
SCSI/ASPI Detection	Checks for the presence of an ASPI (Advanced SCSI Programming Interface) driver for a SCSI adapter. If the driver is available, the host SCSI adapter name is reported.
SCSI/IDE/ATAPI devices	Detects installed devices, such as hard drives, CD-ROMs, tape drives and other such devices.

Options	Description
SCSI/IDE/ATAPI serial numbers	Detects serial numbers of the installed devices (where available).
Network Information	Detects the network configuration, including Logon Name, Workgroup Name, Machine ID and Domain Name. Detects information such as multiple network adapters, gateways, DNS servers, subnet masks, DHCP status. Information about installed network protocols (TCP/IP, NetBIOS/NetBEUI, IPX/SPX) and network addresses is also provided.
TCP/IP	Collects information about an installed TCP/IP protocol. This information includes domain, DNS Servers, Node type, NetBIOS Scope ID, WINS proxy status, NetBIOS resolution status. Network adapter information (including description, IP address, IP routing status, subnet mask, default gateways, DHCP status, DNS suffix, autoconfiguration status) is also provided.
IPX/SPX	Collects information about the IPX/SPX protocol.
NetBIOS/NetBeui	Collects information about the NetBIOS or NetBEUI protocol.
Shared Devices	Collects information about shared devices, such as disks and printers.
Keyboard & Mouse	Reports on the type of keyboard attached (extended or normal); whether a mouse is connected and mouse driver is loaded; the mouse brand and version of the driver, number of buttons and type of connection (serial, PS/2, bus).
Detect mouse without the driver	Attempts to detect information about the mouse if a driver is not loaded. Applicable only to Win16 Scanners when no DOS mouse driver is installed.
Disk Drives	Collects advanced information about all attached disk drives. This information includes the type of the drive (floppy disk, hard disk, CD-ROM, network), the type of the file system (FAT, NTFS, HPFS), amount of total and free space, location of the hard drive partitions on the physical hard disk and so on.
Partition Table Scan	Identifies location of hard drive partitions on physical hard disk(s) and matches them with logical drive letters.

Options	Description
Bus Detection	Detects the architecture of the bus used in the PC – ISA, EISA, PCI, MCA or PCMCIA.
EISA	Detects and reports details of EISA cards.
MCA	Detects and reports details of MCA cards.
PCI	Detects and reports details of PCI cards.
PCMCIA	Detects and reports details of PCMCIA cards.
ISA PnP Cards	Detects and reports details of ISA Plug and Play cards.
USB Data	Detects and reports details of the USB host adapters, hubs and devices attached to them.
Note: If the bus types checked for by the Scanner are not available, the tests for checking the cards will not be performed.	
Peripherals	Checks for installed peripherals, such as printers, modems and sound cards.
DMI Information	Collects information about the Desktop Management Interface.
DMI 1.x Version	Detects the version of the Desktop Management Interface and the description of the DMI layer. **Note:** The DMI version 1.x layer is a potential problem and enabling this setting is not recommended.
DMI 2.x Version	Detects the version of the Desktop Management Interface and the description of the DMI layer.
UNIX system configuration	Collects the UNIX configuration information.

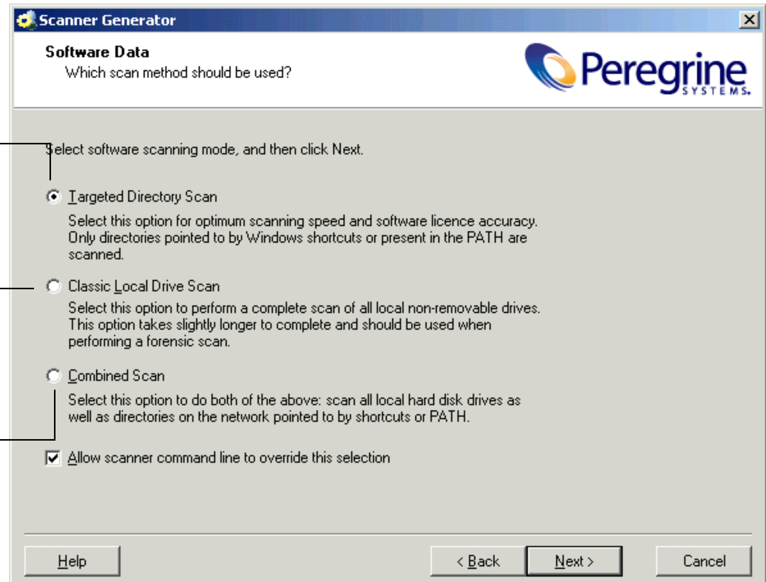
The Software Data Page

The **Software Data** page is used to select the software scanning method. The choice of scan method determines how extensive the software scan will be.

Displays the Directories, File Scanning, Stored Files and Plug-ins tabs

Displays the Drives. Drive Selection, File Scanning, Stored Files and Plug-ins tabs

Displays the Drives, Drive Selection, Directories, File Scanning, Stored Files and Plug-ins tabs



Selecting a Preset Software Scanning Mode

Three preset modes are available in this page of the Scanner Generator. Depending on which of these modes you select different sets of tab pages will be displayed when you click the **Next** button.

Each of the tab pages are described in the next section, even though you might not see all of them depending on the choice you make on this tab page.

Under most circumstances, the default settings (which are determined by the presets chosen on the **Standard Configuration** page) are satisfactory for defining the software information collected, but the Scanner Generator allows the default options to be modified to create custom settings.

Note: This page is not shown if Remote Scanner was selected on the **Standard Configuration** page.

To select a preset software scanning mode, select one of the following:

1. **Targeted Directory Scan**

   Select this option for optimum scanning speed and software licence accuracy. Only selected locations are scanned, which are identified by the Scanner from various sources, such as Windows shortcuts, Services, file associations and environment variables. The tab pages shown when you click **Next** are:

   - Directories
   - File Scanning
   - Stored Files
   - Plug-ins

2. **Classic Local Drive Scan**

   Select this option to perform a complete scan of all local non-removable drives. This option takes longer to complete and is used when performing a forensic scan. The tab pages shown when you click **Next** are:

   - Drives
   - Drive Selection
   - File Scanning
   - Stored Files
   - Plug-ins

3. **Combined Scan**

   Select this option to do both of the previous options: scan all local hard drives as well as directories on the network pointed to by shortcuts, file associations and environment variables, such as PATH. The tab pages shown when you click **Next** are:

   - Drives
   - Drive Selection
   - Directories
   - File Scanning
   - Stored Files
   - Plug-ins

Enabling the Command Line Override Option

The **Allow Command Line Override** option is available for overriding the drive selection configured in the Scanner Generator.

If you select this check box, the default drive selection specified can be overridden by specifying a list of drive letters or directories to scan on the command line.

An example of a command line override is:

`ScanW32 C: N: Z:`

or

`ScanW32 C:\Windows D:\Test`

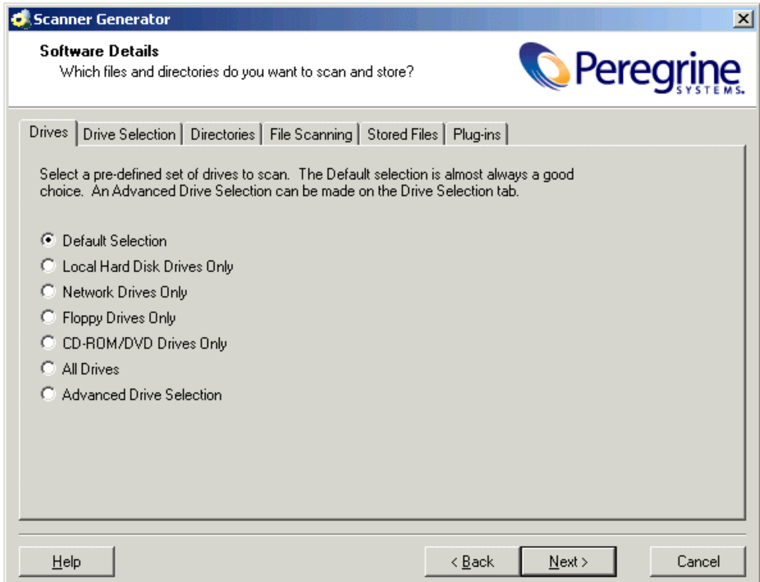
If you clear this check box, you cannot change the scan selection by specifying drive letters and/or paths on the command line.

Further Information

You can find more information about Scanner command line options in the section entitled *Command Line Options and Switches* on page 239 in the Scanners Chapter.

The Drives Tab

The **Drives** tab page is used to define which of the drives are to be scanned when using either **Classic Local Drive Scan** or **Combined Scan**.



Further Information

You can find information about how Scanners assign and use drive letters, what the volume list means in the section entitled *How Drive Letters and Volumes Are Assigned* on page 231.

Selecting a Predefined Type of Drive to Scan

Options are provided for scanning all drives or just a particular type of drive, for example, local, network and floppy drives, as well as drives not usually accessible to DOS (to cater for computers running under different operating environments, for example, Windows NT 4.0 and OS/2).

The default drive selection provides an option for scanning a standard set of drives, and facilities for defining a custom set of drives and alternative options for defining a custom set of drives.

When selected, you can review and modify the detailed options by clicking the **Drive Selection** tab.

To select a predefined type of drive to scan:

1 Select the Scanner configuration that has the closest settings to the Scanner you want (usually the **Default Selection**).

Scanner Configuration	Description
Default Selection	This setting selects sensible defaults for a standard inventory scan. Only fixed local drives are scanned. It also includes other non-network and non-SUBST'ed device driven drives.
Local Hard Disk Drives Only	This setting instructs the Scanner to scan only hard disk drives.
Network Drives Only	This setting instructs the Scanner to scan only drives attached to the network.
Floppy Drives Only	This setting instructs the Scanner to scan floppy disk drives only (in NT/2000/XP/2003 you can remap a floppy to any other drive letter).
CD-ROM/DVD Drives Only	This setting enables the scan of CD-ROM and DVD drives only.
All Drives	This setting instructs the Scanner to scan all available drives.
Advanced Drive Selection	This setting allows the selection of any other configuration.

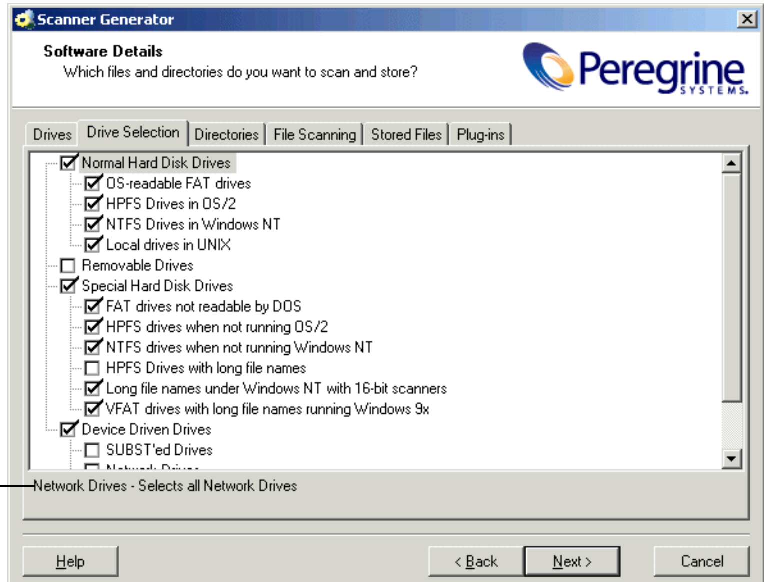
2 Click the **Drive Selection** tab.

3 Modify the settings to achieve the configuration you need.

When you return to the **Drives** tab after modifying the advanced configuration the **Advanced Drive Selection** option will be automatically selected.

The Drive Selection Tab

The **Drive Selection** tab page is used to create a customized drive selection.



The status bar shows a description of each item in the list (displayed as the mouse pointer passes over each item in the list box)

Creating a Customized Drive Selection

You can create a customized drive in the following ways:

- Define the specific types of drives scanned from this tab page.
- Take the settings for the drive type already selected in the **Drives** tab page and modify them.

The drives listed on this tab page apply to non standard disk selections.

To create a customized drive selection select the appropriate check boxes as required:

1 **Normal Hard Disk Drives**

These are hard disk drives visible and mounted by the current operating system. In DOS, Windows and OS/2, normal hard disk drives are assigned drive letters by the operating system and are usually included in the scanning process.

Drive Selection	Description
OS-readable FAT drives	Scans normal FAT drives accessible to the Operating System.
HPFS Drives in OS/2	Scans HPFS drives that OS/2 can access.
NTFS Drives in Windows NT	Scans NTFS drives that Windows NT/2000/XP/2003 can access.
Local drives in UNIX	Selects all normal partitions used in UNIX (ufs, ext2, ext3, tmps, etc.)

2 Removable Drives

Removable drives are drives with non fixed media that can be removed or exchanged. Removable drives are normally not included for scanning.

Drive Selection	Description
CD-ROM/DVD Drives	Scans the contents of CD-ROM and DVD drives.
Floppy Drives	Scans floppy drives.
Other Removable Drives	Scans other removable drives (for example, SyQuest drives). Scanning removable media is not usually recommended, as the content of these drives vary depending on the media currently in the drive.

3 Special Hard Disk Drives

This group covers hard disk partitions not included in the **Normal Hard Disk Drives** category. Drives in this group are either not supported by the current operating system (such as FAT32 drives in Windows NT Version 4 or below or NTFS drives in DOS), or access to the drives may be restricted.

For these drives, the DOS, Win16, Win32 and OS/2 Scanners can employ sophisticated scanning algorithms that bypass the operating system and avoid the restrictions it imposes. Drives that are not assigned a drive letter by the operating system are assigned a lower case drive letter for analysis purposes.

Drive Selection	Description
FAT drives not readable by DOS	Scans drives with FAT partitions (not readable by DOS). Normally all FAT drives are accessible by DOS. The exception is multiple primary FAT partitions on the same physical hard disk or FAT drives that are not mounted in Windows NT/2000/XP/2003.
HPFS drives when not running OS/2	Scans HPFS Drives when not running OS/2.
NTFS drives when not running Windows NT	Scans NTFS drives when not running Windows NT/2000/XP/2003.
HPFS drives with long file names	Enables long file name processing when running DOS Scanners under OS/2.
Long file names under Windows NT with 16-bit scanners	Enables long file name processing when running 16-bit Scanners under Windows NT/2000/XP/2003.
VFAT drives with long file names running Windows 9x	Enables 16-bit Scanners to scan FAT drives with long file name under Windows 95/98/ME.

4 Device Driven Drives

These drives are any drives that do not fall into any of the previous categories, and may or may not have local physical media associated with them. In DOS, and OS/2 these drives always have drive letters associated with them and include networked drives and compressed drives.

Drive Selection	Description
SUBST'ed Drives	Scans 'virtual' drives created using the operating system substitute command - **SUBST**. This is not normally desirable as a substituted drive can be scanned using both its true drive letter and substituted letter. Use this option with caution.
Network Drives	Scans network drives. Note that network drives can be scanned by multiple computers. Use this option with caution.

Drive Selection	Description
Compressed Drives (DoubleSpace, DriveSpace, Stacker)	Scans compressed drives (DoubleSpace, DriveSpace and Stacker drives).
Other Device Driven Drives	Scans drives created using other devices drives (for example, RAM drives). Note that scanning drives created using device drivers can lead to false reporting of files on a computer. Use this option with caution.

Using the .override.ini File to Include or Exclude File Systems

It may be possible, particularly on UNIX systems, that some file systems are not in the list on this page. You can create an **.override.ini** file where you can specify any additional file systems you want to include or exclude during scanning.

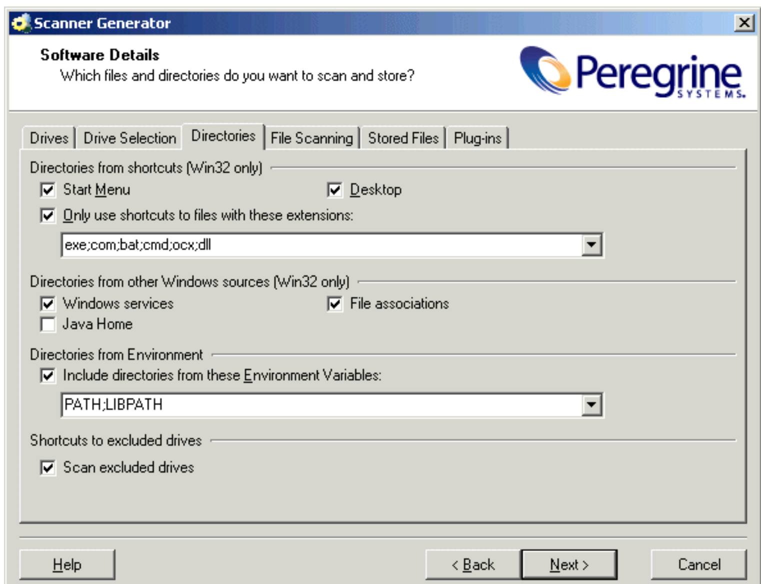
For further information about the **.override.ini** file and how to create it, see *Overriding Scanner Generator Settings with Override Files* on page 253.

The Directories Tab

The **Directories** tab is used to specify which directories you want to scan when using **Targeted Scan** or **Combined Scan**.

The settings allow you to specify the directories you want to add to the list of directories to scan. For 32-bit Windows Operating Systems, you also have the ability to scan desktop and Start menu shortcuts.

By scanning only selected directories rather than complete drives, software scanning is made faster.



Selecting the Directories to Scan

To select the directories to scan, select the options as required:

1 **Directories from Windows shortcuts (Win32 only) group**

- **Start menu**

  This option will scan the directories that are pointed to by shortcuts on the Start menu.

- **Desktop**

  This option will scan the directories that are pointed to by shortcuts on the desktop.

- **Only use shortcuts to files with these extensions**

  When checked, only shortcuts that point to files with one of the extensions specified will be scanned.

2 **Directories from other Windows sources (Win32 only) group**

- **Windows services**

  Check this box to include directories containing Windows Services for targeted scanning.

- **File associations**

  Check this box if you want the Scanners to add directories containing applications that are associated with various file types (for example NotePad for .txt files) to the list of targeted directories to scan.

- **Java Home**

  Check this box if you want the Scanners to add the Java Home directory to the list of directories for a targeted scan.

Note: If you checked the **Enable scanning of Java class files** on the **Standard Configuration** page, this option is selected by default.

3 **Directories from Environment group**

The paths included in the environment variables specified here will also be added to list to scan if you enable this checkbox. If multiple environment variables are supplied, their names must be separated by a semicolon (;).

4 **Shortcuts to excluded drives**

- **Scan excluded drives**

  When checked, this option forces all directories pointed to by shortcuts to be scanned. If unchecked, the directories that are located on the drives that are excluded by the drive selection on the **Drives** and **Drive Selection** tabs will not be scanned.

  When this option is cleared, the Scanners may scan directories on network volumes. This is particularly useful when scanning for software licenses as the Scanner will detect files that are part of a network install that is accessible from the machine.

The File Scanning Tab

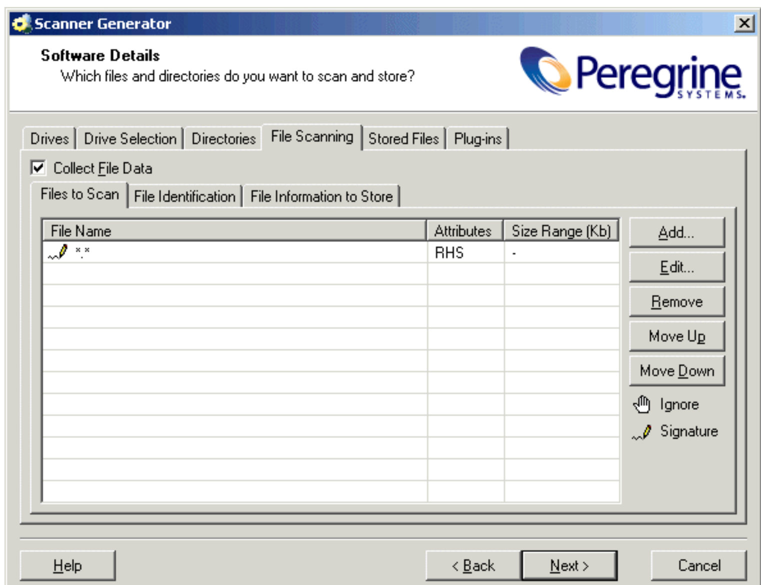
The **File Scanning** tab is used to specify the level of detail for the information collected about files and directories and the methods used to check and identify files.

This tab page contains three sub tabs:

- *Files to Scan Sub Tab*
- *File Identification Sub Tab*
- *File Information to Store Sub Tab*

Files to Scan Sub Tab

The **Files to Scan** sub tab is used to specify how much information is collected about files and the checking processes used.



Using the options on this page, it is possible to define which files get signatured based on criteria such as file extension, attributes or size.

The Files to Scan List Box

The **File to Scan** list box displays the checking methods used for processing files. You can build up a prioritized list of filters which specify a sequence of checking processes to be used.

The checking processes are denoted by the following icons:

Icon	Meaning
	Ignore the specified type of file. **Note:** In this case, Ignore means do not open the file. Its name, size and attributes may be still picked up in the scan file.
	Collect file signatures for the specified type of file. A signature is a checksum of the first 8 KB of the file.

- The sequence and priority of a file processing entry can be reordered by clicking on the row and dragging it up or down to its new location. This can also be achieved by using the **Move Up** and **Move Down** buttons.
- Multiple **File Name** entries can be made on each line if they are separated by a semicolon.
- Entries can be edited by double-clicking on them.

Timing Considerations

Only files that have signatures enabled are opened and are available for further processing. If a copy of the file name is all that is required, use the following command.

```
Ignore *.*
```

The file name, size and attributes may still be picked up in the scan file but no signatures will be calculated. Scanning time will be greatly reduced but because less data is collected, application recognition accuracy may be adversely affected.

File Signatures

The signature is an ISO checksum (CRC) of the first 8K of the file. To calculate the signature, the Scanner opens the file and reads the first 8K from it. Collecting signatures helps to establish the file's identity. Two different files rarely have the same signature. Signatures are used by the software recognition in analysis tools to improve software application recognition. Also, only those fields for which signatures were collected can optionally be identified by the Scanner (see *File Identification Sub Tab* on page 141).

The Importance of the Order of Process Selections

The order in which process selections occur is important. For example, use **Ignore** first before making **Signature** process selections.

This ensures that the **Ignore** items are processed first before a file needs to be opened. It may be necessary to ignore certain files, the content of which is constantly changing.

For example, files that are normally used as swap files (386part.par, pagefile.sys, swapper.dat, win386.swp) or files that contain volumes of compressed drives, such as DriveSpace, DoubleSpace or Stacker (Dblspace.0??, Drvspace.0??, Stackvol?.sys).

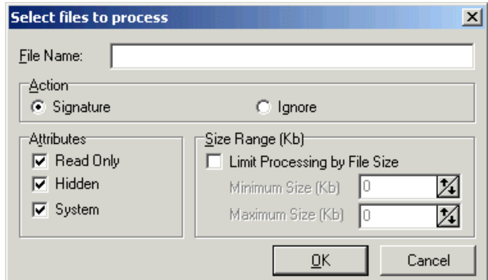
Important: When conducting a remote scan of Novell Netware compressed volumes, use the setting to Ignore all files. This is because the collection of signatures for compressed files results in NetWare decompressing the files, which uses a lot of server resources and reduces the available disk space.

Specifying the Information Collected About Files and the Checking Methods Used

A Scanner configured using the Scanner Generator scans selected files on the drives or in the directories selected.

To specify the information collected about files and the checking methods used:

1. In the **Files to Scan** sub tab, select the **Collect File Data** check box. This option activates the controls on this tab page.
2. Click the **Add…** button. The following dialog box appears.



3 In the **File Name** box, specify the relevant wildcard file type to process.

For example, ***.tmp** means all files with **tmp** extension. Multiple specifications, separated with semicolons, are also accepted.s

4 In the **Action** group box select one of the following options:

- **Signature**

  Collect file signatures for the specified type of file.

- **Ignore**

  Ignore the type of file specified in the **File Name** box.

5 In the **Attributes** group box, select from the following options as required:

- **Read Only**

  Files with the read-only attribute are capable of being displayed, but not modified or deleted.

- **Hidden**

  Files with the hidden attribute are not normally visible to users. For example, hidden files are not listed when you execute the DOS DIR command. However, most file management utilities allow you to view hidden files.

- **System**

  Files with the System attribute.

If a given attribute is not selected, the entry will not match, even if the file name does.

6 In the **Size Range (Kb)** group, if required, select the **Limit Processing by File Size** check box and specify the maximum and minimum file sizes. Only files within this size range will be processed.

7 Click **OK**.

File Action Options - Example 1

File Name	Attributes	Size Range (Kb)
*.tmp	RHS	-
386part.par;pagefile.sys;swapper.dat;win386.swp	RHS	-
Dblspace.0??;Drvspace.0??;Stackvol?.sys	RHS	-
.	RHS	-

These entries in this list box mean:

1: Ignore (do not open) any files (including read-only, hidden or system) with a **.tmp** extension.

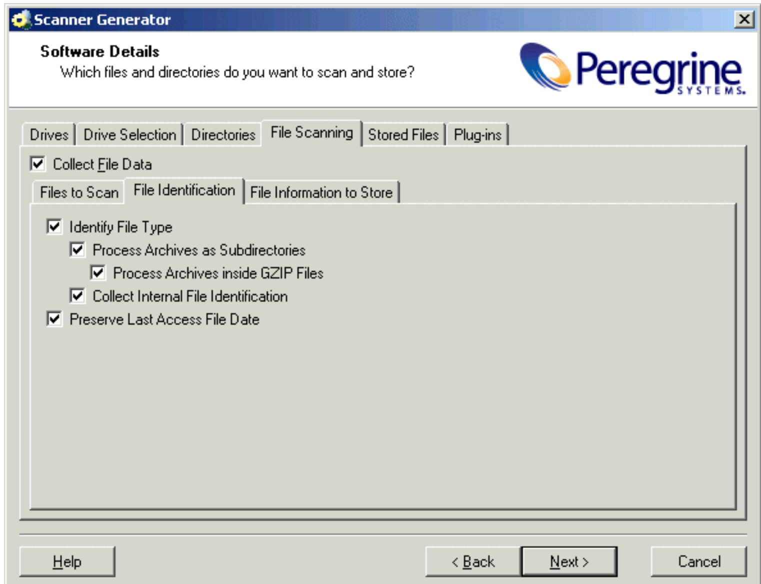
2-3: Ignore the following files, including files with read-only, hidden and system attributes:

- Files that are normally used as swap files:
  - 386part.par
  - pagefile.sys
  - swapper.dat
  - win386.swp
- Files that contain volumes of compressed drives, such as DriveSpace, DoubleSpace or Stacker.
  - Dblspace.0??
  - Drvspace.0??
  - Stackvol?.sys

4: Calculate file signatures for all files, including files with read-only, hidden and system attributes.

File Identification Sub Tab

The **File Identification** sub tab page is used to determine whether the Scanner will identify files based on their content.



Specifying Whether the Scanner Will Identify Files Based on Their Content

To specify whether the Scanner will identify files based on their contents:

1. Ensure that the **Collect File Data** check box is selected. This option activates the controls on this tab page.
2. Select the options as required:

- **Identify File Type**

  Instructs the Scanner to check every file that was selected for signatures to identify all executable and archive files. The Scanner can identify **LZH**, **LHA**, **ZIP**, **ARJ**, (**CAB** with plug-in), **ARC** and **PAK** archives. Selecting this check box will enable two further options:

  - **Process Archives as Subdirectories**

    Treats archive files as subdirectories and lists the files included in each archive (it does not extract information from within these files). If this check box is not selected, archive files are not scanned for embedded files and directories.

A further option is made available:

Process Archives inside GZIP files

This option enables the handling of archives located in gzip files (such as .tar.gz files). These are tar archives that were compressed using gzip. Checking this option will instruct the Scanner to process such archives.

- **Collect Internal File Identification**

  Collects internal file information included in the executable file, for example, version data and legal copyright.

- **Preserve Last Access File Date**

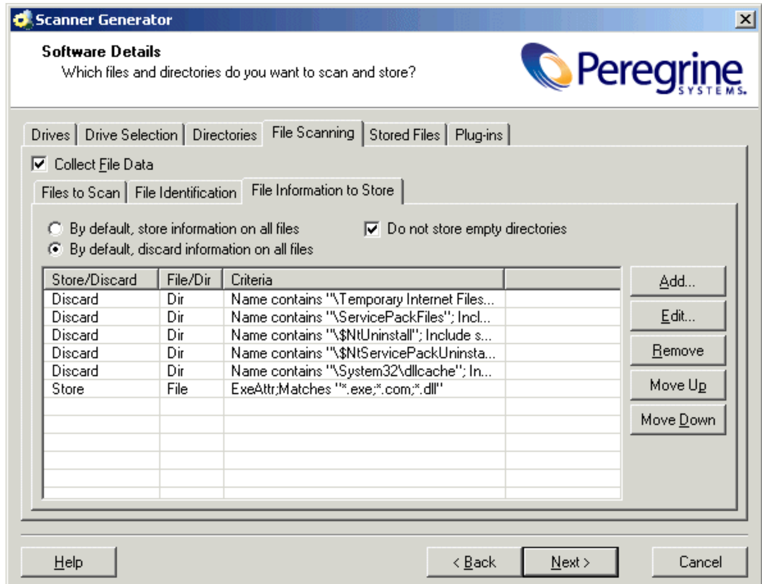
  Collects the Last Accessed time stamp for files (where available). The support for the Last Accessed time stamp varies depending on the Operating System and file system used.

  Only the Win32 and UNIX Scanners support this feature.

Important: When this option is enabled, the XML Enricher can make use of this feature to accurately estimate the time when recognized applications were last executed.

File Information to Store Sub Tab

The **File Information to Store** sub tab is used to define what file details to store in the scan file.



Adding, Editing or Removing File Filter Storage Criteria

The three options at the top of the page sets the default to either:

- **By default, store information on all files** - If selected, and no other options are specified, then information about all files is stored in the scan file.
- **By default, discard information on all files** - If selected, and no other options are specified, then no file data at all is stored in the scan file.
- **Do not store empty directories** - This option is selected by default. When checked, the Scanner discards information about directories that have no files in them. This can include directories that may have files in them, but you have set up the Scanner not to scan for these particular types of file.

In addition to the default settings, you can define a prioritized list of filters, in a manner similar to that of the **File to Scan** page.

Each filter can specify directories or files to be included or excluded from being stored. Each file and directory entry found during scanning is looked up in the list, and the first matching entry determines whether the entry is stored or not.

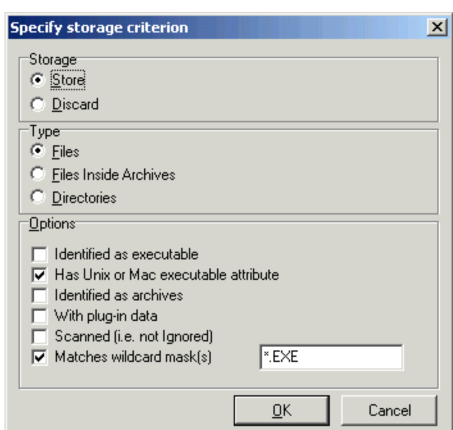
- Multiple filter criteria can be specified on each line if they are separated by a semicolon.
- Entries can be edited by double-clicking on them.
- The sequence and priority of an entry can be reordered by clicking on the row and dragging it up or down to its new location. This can also be achieved by using the **Move Up** and **Move Down** buttons.

To add, edit or remove file filter storage criteria

- To add another filter criteria, click **Add…**.
- To edit an existing filter criteria, click **Edit…** or double-click on the entry.
- To remove an existing filter criteria, click **Remove**.

Important: The options chosen here can dramatically affect both scanning speed and scan file size. Under normal circumstances, the default options are adequate.

If you clicked **Add** or **Edit**, then the **Specify storage criterion** dialog box appears.



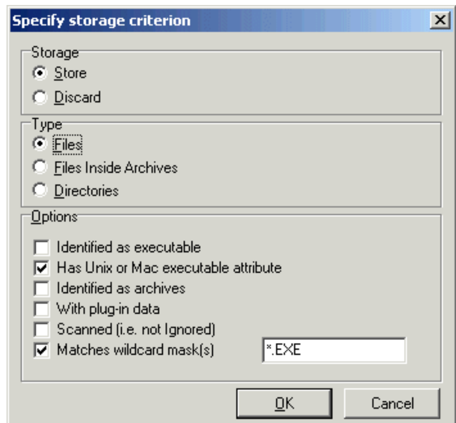
This dialog box has three types (shown in the **Type** group box):

- Files

- Files Inside Archives
- Directories

Including or Excluding Files Based on the File Name or Scanned Attributes

Follow this procedure if you selected the **Files** Type in the **Specify storage criterion** dialog box.



To include or exclude files based on the file name or scanned attributes:

1 Choose one of the options **Store** or **Discard** from the **Storage** group box. This determines whether a matching file is stored in the scan file, or discarded. Discarded entries are not available for analysis.

2 Select the **Files** option in the **Type** group box.

3 Check the **Matches wildcard mask**(s) option.

4 Specify a list of wildcards separated by a semicolon (;). For example, when scanning of Java class files is enabled (see *The Standard Configuration Page* on page 115), the entry to include *.class files inside archives is added to the default configuration. This causes the Scanner to only store the information about files with the .class extension found inside of archives.

5 Files can also be stored or discarded based on attributes not known until the file has been scanned. Select from the following in the **Options** group box:

   - **Identified as executable** Files that are identified as any kind of executable (that is, not just .exe and .com files). If **Identify file type** is not checked this has no effect.

- **Has Unix or MAC executable attribute** UNIX allows three different levels of access to a file for three different categories of people: owner, group and other.
  - **Read** View the file or directory without making changes.
  - **Write** Make changes to the file or directory.
  - **Execute** Execute the file or directory.

Checking this option would cause the Scanner to store or discard files that have the executable file access.

- **Identified as archives** Files that are identified as compressed, such as .ZIP, .LZH, or are identified as such by an archive scanning plug-in. If **Identify file type** is not checked this has no effect.
- **With plug-in data** Files that have plug-in data associated with them.
- **Scanned** (**i.e. not Ignored**) Includes all files that are not ignored on the **File Scanning** page.
- **Matches wildcard mask**(**s**) Includes files that match the wildcards specified here.

Explanation of the Operation

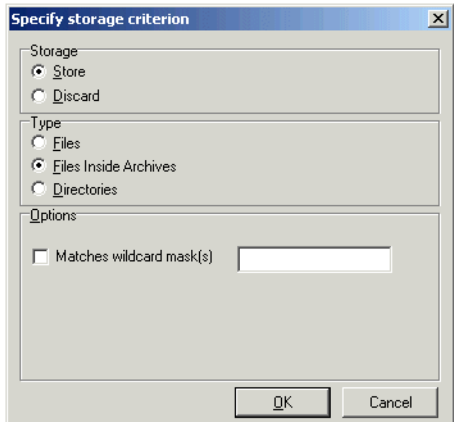
All file check box options specified are OR-ed together, that is, the entry is considered a match if any of the selected entries match.

For example, if **Executable** and **With plug-in data** are specified, this includes all executables, as well as all files with plug-in data. There is no way to select just executables with plug-in data.

The order and content of these options can affect scanning speed and function significantly. If the default is **Discard**, and a **Store - Identified as executable** entry is included, all files have to be scanned before the Scanner can determine if they are to be discarded.

Including or Excluding Files Based on the Files Inside Archives

Follow this procedure if you selected the **Files Inside Archives** Type in the **Specify storage criterion** dialog box.

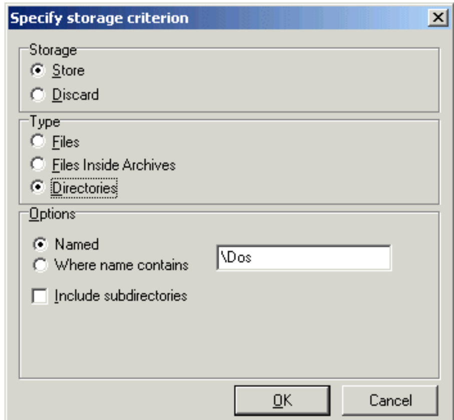


To include or exclude files based on the files inside archives:

1. Choose one of the options **Store** or **Discard** from the **Storage** group box. This determines whether a matching file inside an archive is stored in the scan file, or discarded. Discarded entries are not available for analysis.
2. Select the **Files Inside Archives** option in the **Type** group box.
3. Check the **Matches wildcard mask(s)** option.
4. Specify a list of wildcards separated by a semicolon (;). Files discarded in this way are not scanned either, and a wildcard filter can speed up the scanning process.

Including or Excluding Files Based on the Directory

Follow this procedure if you selected the **Directories** Type in the **Specify storage criterion** dialog box.



To include or exclude files based on the directory:

1 Choose one of the options **Store** or **Discard**. This determines whether a matching directory is stored in the scan file, or discarded. Discarded entries are not available for analysis.

2 Select the **Directories** option in the **Type** group box.

3 Select from the following in the **Options** group box:

- **Named** If this option is selected, the directory name specified in the entry field must match 100%(however, it is not case-sensitive) in order for a match to be established. The directory name must begin with a path separator to match any entries, but must not include a drive letter. The root directory \ or / cannot be excluded in this way.
- **Where name contains** If this option is selected, the name specified in the entry field is a partial string; any directory containing this string in its name is considered a match. Typical examples of entries would be:
  - **\Private** would match any directory where a directory starts with Private.
  - **Temporary** which would match any directory with Temporary anywhere in the name.
- **Include subdirectories** For either of the directory options, there is an option to include subdirectories of matching entries as well. This is particularly useful for discarding entire directory trees, such as recycle folders, temporary Internet files and private directories.

Explanation of the Operation

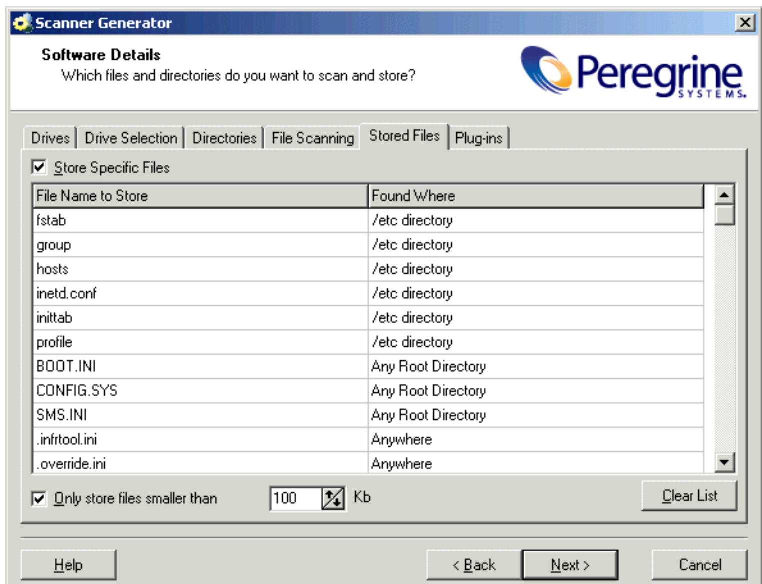
The contents of filtered directories are not stored in the scan file. If the **Do not store empty directories** (page 143) option is checked, filtered directories are considered to be empty and are not stored in the scan file either. If this option is unchecked, the filtered directories are represented in the Directories and Files tab of the Viewer application by a no entry icon .

Directories are filtered prior to scanning (that is, directories that will not be stored are not scanned at all). Consequently, directory filters may speed up scanning.

The Stored Files Tab

The **Stored Files** tab is used to allow specific files to be collected and stored (embedded) in the scan file created for each computer scanned. The types of files usually collected are system configuration files. These files can be viewed in Viewer or exported from Analysis Workbench.

If a targeted directory scan selection was made earlier and does not include a specific directory in which a stored file may be found (including the root directory), then any required stored file must be specifically defined here with the full path.



The dialog box shows a list with two columns:

- *File Name to Store Column*
- *Found Where Column*

File Name to Store Column

This column displays a default list of system files. The name of the files can include wildcard characters unless a specific directory is used.

For example, collecting the **Config.sys** file for each computer scanned across a population provides a snapshot of the system configuration for each computer. This enables the analysis and consolidation of system configuration across the computer population.

Other commonly collected files are Net.cfg, Profile.ini, AutoExec.Bat, Win.ini, System.ini and Boot.ini.

There are two Desktop Inventory specific files included in the list:

- **InfrTools.ini** - This holds information specific to Desktop Inventory modules.
- **override.ini** (non UNIX) and **.override.ini** (UNIX)

  This is an ASCII file used by the Scanner at run-time to store a list of files to be ignored (that is not opened at run-time).

Enabling the Controls on the Stored Files Page

To enable the controls on the Stored Files page:

Select the **Store Specific Files** check box to enable the controls on this page.

Adding Another File to the List of Files Stored

To add another file to the list of files stored:

1. Enter a file name at the bottom of the **File Name to Store** column (or overwrite an existing entry).
2. Select an option from the drop-down list in the **Found Where** column.

Deleting a File From the File Name to Store Column

To delete a file from the File Name to Store column:

1. Highlight the file name.
2. Press the **Delete** key or right-click on the entry and select the **Delete** option from the shortcut menu.

Clearing the Entire List of Files to Be Stored

To clear the entire list of files to be stored:

1. Select the **Clear List** button. A confirmation message is displayed.
2. Select the **Yes** button to clear the list.

Limiting the Size of Files to Be Stored

To limit the size of files to be stored:

1. Select the **Only store files smaller than** option.
2. In the **Kb** box, use the arrows to select a value for the upper size limit or type the value directly into the edit box.

Note: Not restricting the size of files collected could result in very large scan files when large files are collected and stored.

Found Where Column

This column shows the location where the files to be stored can be found.

Changing the Directories That Are Scanned to Locate the Files

To change the directories that are scanned to locate the files

1. Click on an entry in the **Found Where** column.
2. Change the setting by selecting an option from the drop-down list.

Setting	Description
Any Root Directory	Only stores the file if it is found in a root directory.
Root of Boot Drive	Only stores the file if it is found in the root of the boot drive.
Anywhere	Store the file wherever it is located.
/etc directory	Only stores the file if it is found in the Unix /etc directory.

Setting	Description
/var directory	Only stores the file if it is found in the Unix /var directory.
Specific directory	A specific copy of the file is collected irrespective of whether it is included in the software scan or not. For example, the list of specific stored files could be configured to be: C:\Documents\config.txt Z:\net.ini /etc/fstab In this case, the Scanner will store the config.txt file from the C: drive (when scanning PCs), the net.ini on the Z: drive (if it is available, and only on PCs) and a file named fstab in the /etc directory (when scanning UNIX machines).

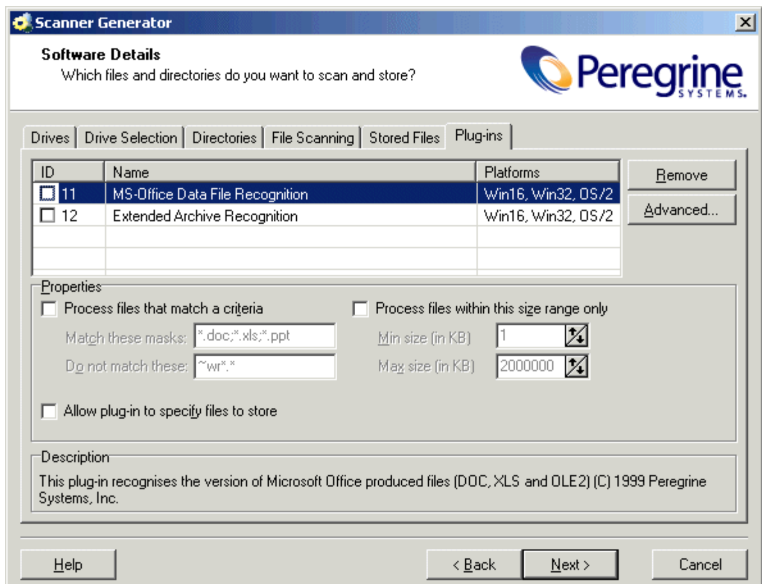
Note: Files will only be stored if the directory where the file is located is included in the software scan, unless the **Specific directory** is specified.

The Plug-ins Tab

The **Plug-ins** tab is used to enable, disable and configure plug-ins for the Scanner.

Plug-ins extend the functionality of the base Scanner. This is achieved by using extra library functions to provide additional data.

Important: Plug-ins are currently supported by the Win16, Win32 and OS/2 Scanners only.



Plug-ins Provided As Part of the Scanner Generator

Two plug-ins are provided as part of the Scanner Generator.

- **Extended Archive recognition**

  This plug-in extends the functionality of the Scanner by adding CAB archive processing to the Scanner. This displays the file list contained in Microsoft Cabinet (CAB) compressed files.

- **MS Office Data File recognition**

This plug-in determines the version used to create Word, Excel and other OLE2 document files. For these documents, the Title, Subject, Author, Comment and Keyboard fields can be extracted.

Note: The OLE Scanner plug-in may not always handle Office 2000 and Office XP files correctly. When doing enterprise-wide scans, it is recommended that this plug-in is not used.

Enabling or Disabling a Plug-In

The **Plug-ins** page shows a list of existing plug-ins that are currently installed, along with check boxes used to enable/disable a given plug-in.

To enable or disable a plug-in:

▶ Select the check box next to the entry to include/exclude it from the Scanner.

Check Box	Status
Checked	Plug-in enabled
Unchecked	Plug-in disabled

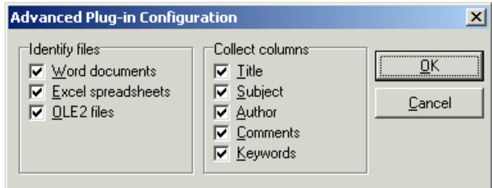
Setting Advanced Options for a Plug-In

Depending on the specific plug-in advanced options may be available.

To set advanced options for a plug-in:

1. Select the plug-in that you want to set advanced properties for. If Advanced properties are available for that plug-in, the **Advanced...** button will become enabled.
2. Click the **Advanced...** button. The **Advanced Plug-in Configuration** dialog box is displayed.

   Currently, only the **MS-Office Data File Recognition** (plug-in ID 11) plug-in has advanced configurable options. This plug-in has options to identify the specific file types to be read.
3. From these files the specific columns to be displayed can be selected. Select the options as required.



Future plug-ins, or third party plug-ins may define their own advanced plug-in property dialog boxes.

Setting the Properties for a Plug-In

To set the properties for a plug-in

1 Click on a plug-in in the list.

2 Set the options in the **Properties** group box.

This group box is used to specify various filters based on file size, location or file name. Only files matching the filter are sent to the plug-in to be processed.

- **To filter by the type of file:**

  Enable the **Process files that match a criteria** box and specify the matching parameters.

  This box accepts DOS wildcard characters, using * and **?** as well as normal alphanumeric characters. Multiple file types must be separated by a semicolon. For example, *.doc ; *.xls

- **To filter by size:**

  Select the **Process files within this size range only** check box and specifying the maximum and minimum size of the range in which the file size must lie. This allows you to specify only files of a size reasonable for the plug-in in question. For example, files with a size less than 100 bytes are unlikely to be valid OLE2 documents.

- **Allow plug-in to specify files to store**

  When enabled, this option allows the plug-in to specify that files will be stored in the scan file. None of the default plug-ins use this option. Plug-ins may use this option to provide a way of dynamically adding specific files to the list of files to store in the scan file, after having inspected the contents of the file.

Removing an Existing Plug-In

To remove an existing plug-in:

1. From the list, click on the plug-in to remove.
2. Click the **Remove** button. A confirmation message is displayed.
3. Click the **Yes** button. The files associated with a particular plug-in are deleted from the **Program Files\Peregrine\Desktop Inventory\8.0.0\Common** directory.

Note: Because removing the plug-in deletes files associated with it, ensure that copies of the plug-in files exist in another directory.

Creating Customized Plug-Ins

Desktop Inventory includes an SDK (Software Development Kit) for writing custom plug-ins.

Please refer to the document entitled *Scanner Plugin SDK Developer's Guide* for further details.

The Asset Data Page

The **Asset Data** page is used to define and set up the asset data collected by the Scanners.

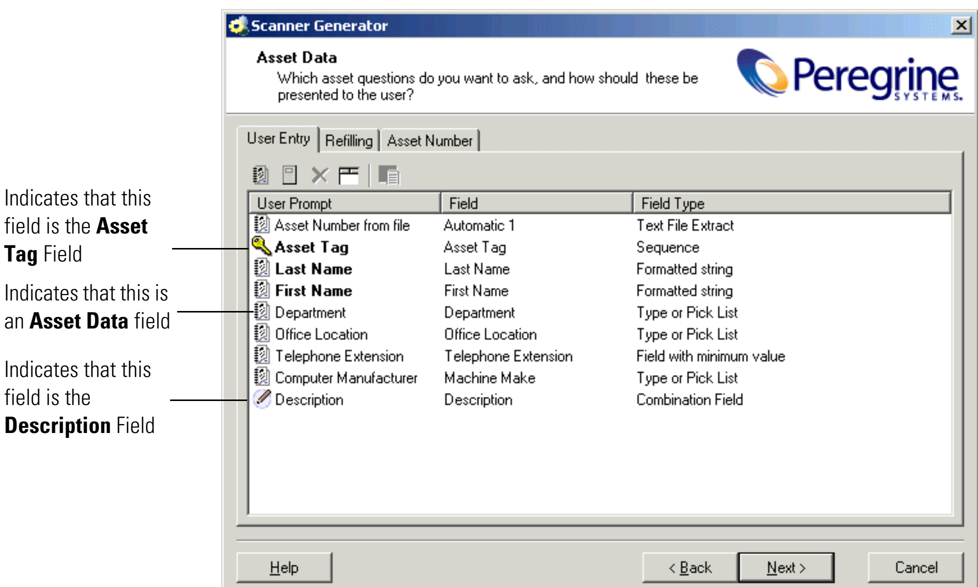
The **Asset Data** page has three tabs:

- *The User Entry Tab* - Used to create an asset questionnaire
- *The Refilling Tab* - Used to set options that are used to prepare for re-scans
- *The Asset Number Tab* - Used to create an asset number batch file

After the asset data settings have been configured, click the **Next** button to continue.

The User Entry Tab

The **User Entry** tab is used to create an asset questionnaire which collects customized asset information as each computer is scanned.



A default list of entries is displayed initially. These can be modified to create a custom list of entries.

Asset Questionnaire Definition

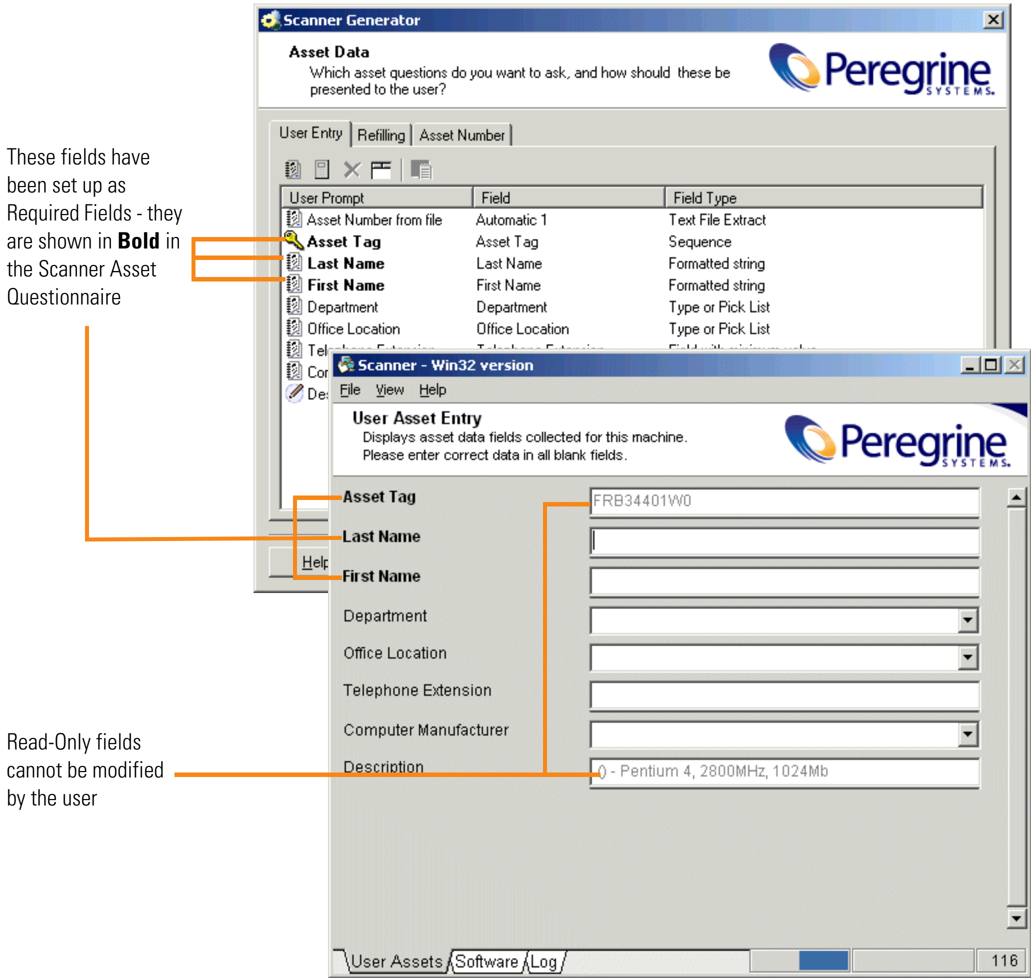
Information that is not automatically collected by the Scanner can be entered manually as each computer is scanned. The information collected is usually referred to as asset data, and includes details about users, departments, physical assets, equipment, and any other information that is useful to record.

Asset information that is manually entered, is defined using the **User Entry** form. This form allows:

- Fields for the information recorded to be defined.
- The page display for the user prompted information to be fully customized.

The effect is to present the user with a dynamic asset questionnaire, which prompts for and records specific information, as each computer is scanned.

The following figure shows a user entry form in the Scanner Generator and the resulting asset questionnaire page that is presented to a user when the Scanner is run.



The User Entry Form Layout

The **User Entry** form is made up of a number of rows and three columns. Each row in the form is used to define an entry for the asset questionnaire and results in one item being collected during the inventory.

The asset questionnaire is built up by using the combination of up to 23 predefined standard fields, 30 user fields and 28 automatic fields to create a fully customized data entry form.

The User Entry Form Toolbar

A toolbar is displayed at the top of the user entry form. The buttons have the following functions:

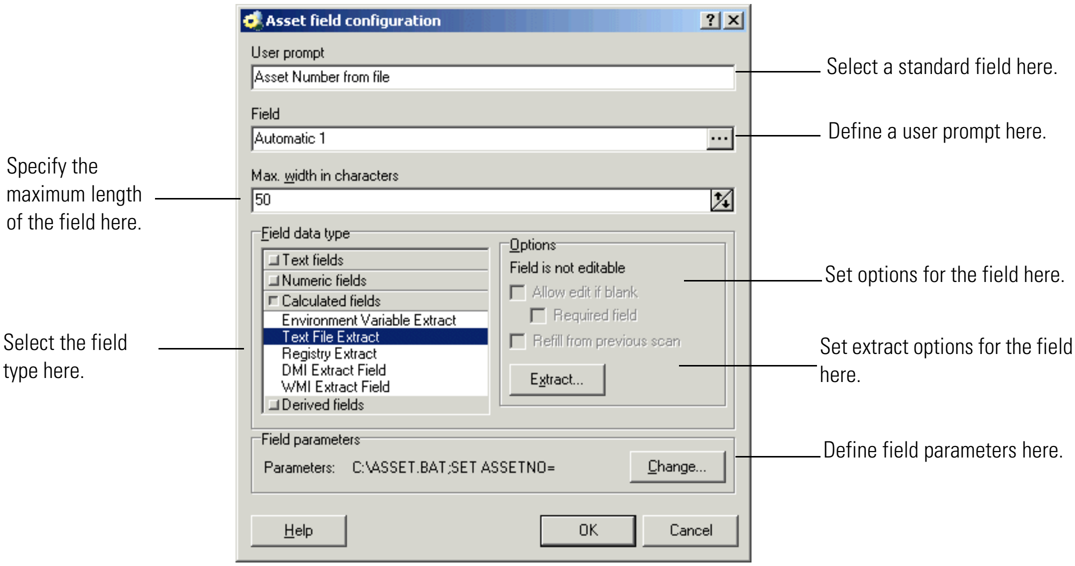
Button	Function	Shortcut
	Create a new field. The **Choose Field** dialog box appears.	Ctrl+N
	Create a new label field A dialog box is displayed allowing you to enter the text to show in the label. This field type is used only to provide information to a user during the scan. **Note:** The limit on the length of labels is 255 characters.	Ctrl+L
	Delete field	None
	Delete all fields Clear all the entries in the **User Entry** form. A confirmation message is displayed before the entries are cleared.	None
	Edit the type and settings for field. The **Asset field configuration** dialog box appears, which allows you to edit the asset entry information for the field.	Ctrl+T

Each of the toolbar functionality is also available using a right-click menu.

To further configure the field, double-click on the row or click the Edit button  to bring up the **Asset field configuration** dialog box.

The Asset Field Configuration Dialog Box

This dialog box is where the major part of the asset field configuration takes place.



Setting Up a New Asset Field

Each row in the form has three columns. Each of these columns must be configured for a new asset field.

The following table shows the steps that are required in setting up a new asset field and the pages they are described on:

Step	Title	See...
1	Choose a standard field	page 163
2	Set up a user prompt	page 166
3	Specify the maximum number of characters the user can enter in the field	page 167
4	Choose the field data type	page 167
5	Set up field options	page 171
6	Set up field parameters	page 172

Step	Title	See...
7	Set up extract options for calculated fields	page 194
8	Correct the order of the fields in the form	page 195

Step 1: Choosing a Standard Field

To make the task of entering data as simple as possible, and to avoid discrepancies due to typing and naming conventions, the Scanner Generator provides several predefined standard field types with automatic validation controls.

The standard asset fields indicate to which hardware field the asset field will be mapped. For example, if you choose Employee ID as the standard field, the data contained in this field will be mapped to the Employee ID field, while allowing you to customize the prompt displayed on-screen (for example, by translating it to French).

There are two special standard fields that you need to understand before proceeding with this step.

Description Field

The **Description** field is represented by the icon and can be configured to contain a brief description of the computer. This field is normally read-only and by default is configured to be of type **Combination**. It combines information from several hardware and asset fields.

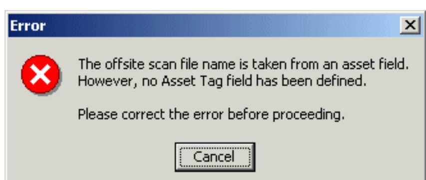
When loading data from scans into the analysis tools (Analysis Workbench and Viewer), the contents of the description field are displayed for each scan file to help identify them.

Asset Tag Field

The **Asset Tag** field is represented by the icon. It contains a unique identifier for the machine. It is normally populated from a sequence of hardware fields such as MAC Address, Serial Number, Dell or Compaq Asset tag.

The asset number entered in this field is usually used to name the scan file the scan results are recorded to.

If you have not configured an asset tag field in the questionnaire and the Asset Number Source is set to Asset Field, you will not be allowed to proceed to the next page and a warning will appear.

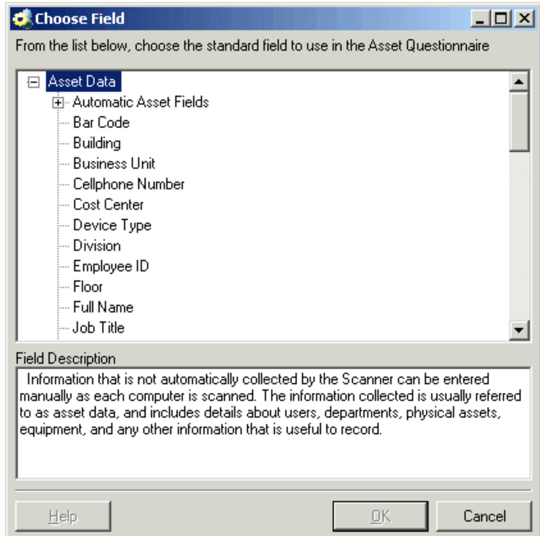


Refer to *The Asset Number Tab* on page 201 for more information about setting the Asset Tag options.

Important: It is strongly recommended that **Description** and **Asset Tag** fields are included in your asset questionnaire.

To choose a standard field:

1. Click the icon.
2. The **Choose Field** dialog box is displayed, showing all standard fields not currently in use.



3 Choose a new standard field from the list.

Field	Description	Field mapped to in the hwAssetData table
Asset Tag	The Asset Tag field contains a unique identifier for the machine.	hwAssetTag
Automatic Asset Fields	These asset data fields can be automatically populated from data extracted from text files, the Windows registry or environment variables. These fields are automatic and are not displayed when the Scanner runs. You can configure up to 28 automatic fields, which can then be used in the calculation of derived or calculated fields.	hwAssetAutomatic1..28
Bar Code	For machines with bar codes on them, use this field to allow the bar code to be entered or stored	hwAssetBarCode
Building	Identified the building containing the machine	hwAssetBuilding
Business Unit	Name of business unit	hwAssetBusinessUnit
Cellphone Number	Cell/Mobile phone number of user.	hwAssetCellphoneNumber
Cost Center	Cost center description or code	hwAssetCostCenter

Field	Description	Field mapped to in the hwAssetData table
Device Type	Device type of the machine (Server, Notebook, Tower and so on)	hwAssetDeviceType
Division	Division description or code	hwAssetDivision
Employee ID	Employee ID as used in the organization.	hwAssetEmployeeID
Floor	The floor on which the machine is located	hwAssetFloor
Full Name	Full name of user	hwAssetFullName
Job Title	Job title of user	hwAssetUserJobTitle
Machine Model	Model of the machine. This data can be populated from SMBIOS using a Sequence Field on machines supporting SMBIOS.	hwAssetMachineModel
Printer Asset Tag	Asset tag of a local printer attached to the machine, if any	hwAssetPrinterAssetTag
Printer Description	Contains a description of a local printer attached to the machine, if any	hwAssetPrinterDescription
Room	Description, name or number of the room containing the machine	hwAssetRoom
Section	Section description or code	hwAssetSection
Telephone Number	Full direct telephone number of user	hwAssetTelephoneNumber
User Field	These are user-defined fields that are displayed in the asset questionnaire. You can configure up to 30 User fields.	hwAssetUserField1..30

4 Click OK to return to the user entry form.

Step 2: Setting Up a User Prompt

This text prompt is used to identify each data input item on the asset questionnaire and to inform the user what information to enter (Scanner Generator truncates the prompt at 22 characters).

To set up a user prompt:

1. Double-click on the row to bring up the **Asset field configuration** dialog box.
2. To change the user prompt, change the entry in the **User prompt** field.

The text entered here will be displayed as an on-screen text prompt when the user sees the asset questionnaire.

Step 3: Specifying the Maximum Number of Characters the User Can Enter in the Field

To specify the maximum number of characters the user can enter in the field:

▶ Enter a numeric value in the **Max. width in characters** field.

Step 4: Choosing the Field Data Type

There are two classes of fields:

- **User entered (numeric or text)** - These asset data fields require manual input or selection from the user.
- **Calculated (automatic or derived)** - These asset data fields can be automatically populated, and the data extracted from text files, the Windows registry and environment variables. All automatic data entry fields can be given a default value.

To chose the field data type:

▶ In the **Asset field configuration** dialog box, choose a standard field type from the **Field data type** list.

The following table describes the types of fields used to input user asset data and whether they are user entered or calculated.

Text Fields

These fields allow the user to enter text or select entries from a predefined list (pick list).

Field	Description
Free Form Text (user entered)	Allows the user to enter free text that is not formatted or restricted in any way (except length). A **Free Form Text** field allows the user to enter text from the keyboard without any restrictions on the characters entered.
Pick List (user entered)	Displays a predefined drop-down list of options for the user to select an entry.

Field	Description
Type or Pick List (user entered)	Displays a predefined drop-down list, from which an entry can be selected. If the required option is not in the list, the required data can be typed in by the user.
Formatted String (user entered)	Accepts data entered in a predefined format according to a specified mask, that is, restricting input to numeric, letters and so on. This is useful for ensuring data consistency and can be used to force letters to upper case or to conform to a certain standard. For example, A preformatted telephone number: 0208 563 2359 could be set up as the following formatted string: 0208 563 [####]

Numeric Fields

These fields accept numerical values only. This forces entries to be:

- Above or equal to a defined minimum value.
- Below or equal to a defined maximum value
- Between an upper and lower limit

Field	Description
Field with minimum value (user entered)	Accepts a numeric value that is greater than or equal to a specified number.
Field with maximum value (user entered)	Accepts a numeric value that is less than or equal to a specified number.
Field with a valid range of values (user entered)	Accepts a numeric range that is between two specified numbers (which form the inclusive upper and lower limits of the range).

Calculated Fields

These asset data fields can be automatically populated from data extracted from text files, the Windows registry, environment variables and so on.

Note: Calculated asset fields do not work with the Remote Scanner as it does not run on the computer being scanned.

Field	Description
Environment Variable Extract (calculated)	Accepts data from a specified environment variable set in the operating system.
Text File Extract (calculated)	Extracts information from a single line in a named text file. This field type is normally used for the **Asset Number** field. This is used to extract the asset number from the file Asset.bat on the line containing the text: SET ASSETNO= Other useful file extracts include the predefined **SMS**, which extracts the SMS Unique Machine ID.
Registry Extract (calculated)	This field type extracts its value from the Windows registry. The **Data** field must contain a valid registry key name to extract from, for example: HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\TimeZoneInformation\StandardName
DMI Extract (calculated)	The **DMI** field allows you to select the search criteria for the DMI attribute, the value of which you wish to have in this field. DMI extract fields are supported by the Win32 and OS/2 Scanners only.
WMI Extract (calculated)	This field type allows you to extract and store pieces of data on Windows 32-bit systems available through the WMI interface. The Win32 Scanner will populate this field (if set up) on systems where WMI is enabled.

Derived Fields

Derived fields are those that have dependencies on the data of other types of fields. In other words, the data they contain is derived from other fields.

Field	Description
Sequence (derived)	The **Sequence** field allows you to define a sequence of up to ten asset or hardware fields. Each of these fields returns a value depending on the machine or environment running. The value returned as the result of the sequence field will be the first of these fields which contains a non-blank value.
OS/Scan (derived)	Allows a single field to collect different information for different operating systems. For example, you may want to extract information from a file only on machines running Windows 95. For each valid combination of Scanner and operating system, a separate asset field must be defined. When the Scanner is executed the appropriate asset entry is selected.
Combination (derived)	The **Combination** field uses a substitution string to replace occurrences of %1, %2 and so on. placeholders with the actual values of hardware or asset fields. An example of a Combination field can be found in the **Description** field of the default asset questionnaire. Up to five fields can be combined into one.

Step 5: Setting Up Field Options

You will notice that depending upon the field data type you selected in the previous step, the options available for that field data type change accordingly.

In summary the options are grouped as follows:

1 **For a text or numeric field**

The field is editable by default. This means that unless you change the settings here, the user will always be able to change the information in this field. The options are:

- **Allow edit only when blank**

  Only allow the user to enter or change data in this field if the field is empty. The only way a field of this type can be non-blank is if it is refilled.

- **Required Field**

  Designate this field as 'required'. The field is displayed in **bold** text in the Asset data page and the Scanner and must be filled in. The Scanners will not save a scan file until a non-blank value is entered.

- **Refill from previous scan**

  The field will be refilled with data from a previous scan. You can set up various refilling parameters from the Refilling tab of the Asset Data page. See page 196 for more information.

2 **For a calculated or derived field**

The field is not editable by default. This means that unless you change the settings here, the user will not be able to enter or change the information in this field. Generally, for automatic and derived fields you do not want users to be able to change or enter data into these types of fields because the information is obtained from elsewhere. The options are:

- **Allow edit if blank**

  This option can be set so that if the data for an automatic or derived field cannot be successfully obtained, the user will be able to enter some data manually into the field. When you select this option, a further option to make the field a 'Required' field is made available.

- **Refill from previous scan**

The field will be refilled with data from a previous scan. You can set up various refilling parameters from the **Refilling** tab of the **Asset Data** page. See page 196 for more information.

Step 6: Setting Field Parameters

Field parameters need to be set for the following types of fields:

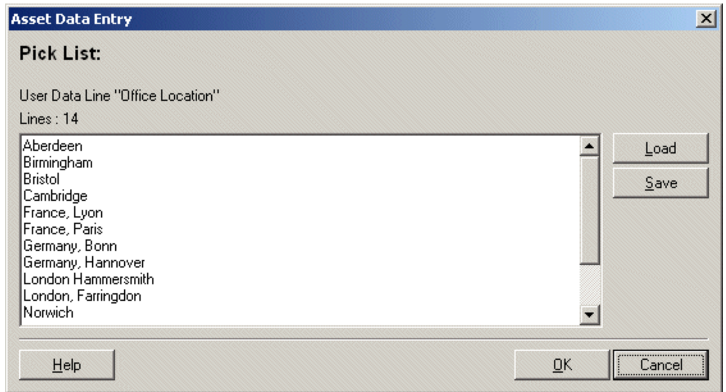
Field	See...
Pick List	page 172
Type or Pick List	page 174
Formatted String	page 174
Numeric	page 176
Environment Variable Extract	page 177
Text File Extract	page 177
Registry Extract	page 179
DMI Extract	page 181
WMI Extract	page 184
Sequence	page 187
OS/Scan	page 188
Combination	page 192

Setting Pick List Field Parameters

A pick list consists of a fixed list of entries that provide the entry options. The only entry choices available to the user are from this list.

To set pick list field parameters:

1 After you have selected **Pick List** as the data field type, click the **Change...** button next to the **Field Parameters** box.



2 Click in the list box and type the text into the scrolling list area. Enter a list of predefined entries that you want to provide, or add, modify or delete existing entries.

Important: The limit on the size of pick lists in the DOS Scanner is 8k. The size of the lists in any other Scanners is restricted to 4000 entries. Scanner Generator displays a warning if the size is greater 8K indicating that the pick lists will be truncated for DOS Scanners. Although the size is not limited for non-DOS Scanners, it is not advisable to create too large lists as they increase the size of the Scanner configuration that will be stored in the Scanner itself.

3 You can also generate a list in a text editor (for example, in Notepad) and load in this dialog box. A sample of the entries in such a file could be as follows entries in a Department pick list.

```
Accounts
Corporate Finance
Development
Facilities Management
Legal
Management
```

To load a list of text entries from a text file, click the **Load** button to browse the directories and select a file. A file loaded using this option must be an ASCII text file.

4 This list can also be used in the Analysis Workbench to provide query selection criteria for machines.To save a list so that it can be re-used, click the **Save** button to select a destination and file name for the file. A file saved using this option is an ASCII text file.

5 Click **OK** to return to the Asset Field configuration dialog box.

Setting Up Pick List or Type/Pick List Parameters

This uses a list in the same way as in the pick list but with the additional option of allowing data entry of an item that does not appear in the list.

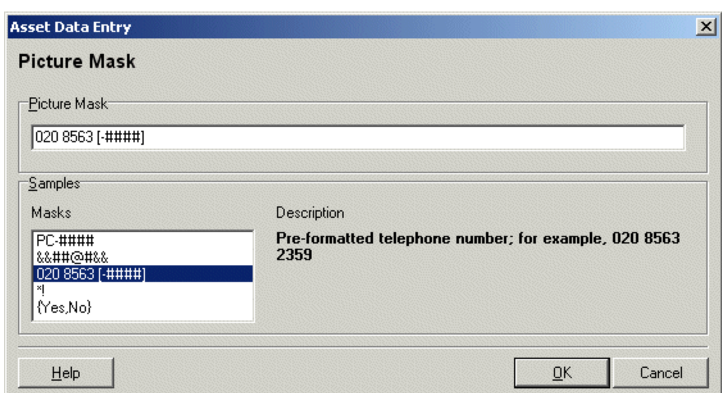
Use this option when generating an initial walkround Scanner, to allow for unexpected additions.

Setting Up Formatted String Parameters

This field is set up to force data entry to conform to a particular mask of characters.

To set up formatted string parameters:

1 After you have selected **Formatted string** as the data field type, click the **Change...** button next to the **Field Parameters** box.



2 Create a picture mask for the formatted string field using character combinations from the picture characters provided.

The following characters can be used to create a picture mask:

Character	Stands for
#	Numeric digit.
?	Any letter (uppercase or lowercase).
&	Any letter (convert to uppercase).
@	Any character.
!	Any character (convert to uppercase, if alphabetical).
*	The next character following the * in the mask can be repeated zero or more times.
[abc]	Optional characters a, b, or c.
{a,b,c}	Grouping operators a, b, or c can supply a set of alternatives separated by commas. So {a,b,c} means accept either character 'a', 'b' or 'c'. Any other character will be erroneous.

Note: Semicolon (;) interprets the next character as a literal, not as a special picture string character.

If any other character is used in a picture mask, it is treated as a constant. When a value with a picture validity check is entered into a field, at the point where a constant is specified, it is automatically inserted.

3 Click **OK** to return to the Asset Field configuration dialog box.

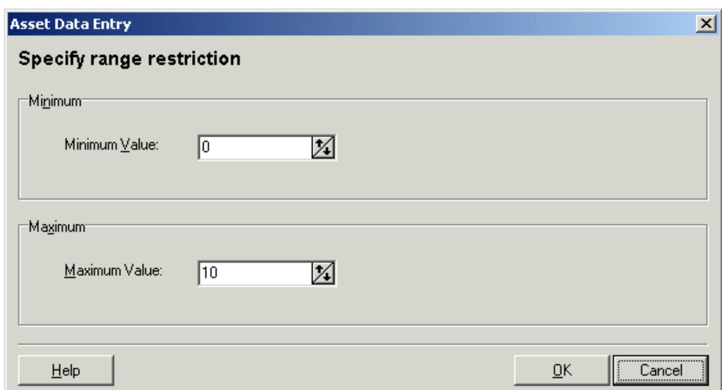
Example of Formatted String Parameters

Character string	Stands for
PC-####	Asset number; for example, PC-2085
&###	Room number; for example, D502
020 8563 [####]	Preformatted telephone number; for example, 020 8563 2359
*!	Creates a mask that accepts any number of characters and converts them to upper case.
{Yes, No}	Either **Yes** or **No**

Setting Up Numeric Field Parameters

These fields accept numerical values only. This forces entries to be:

- Above or equal to a defined minimum value
- Below or equal to a defined maximum value
- Between an upper and lower limit (inclusive)



To set up numeric field parameters:

1 After you have selected a **Numeric** field as the data field type, click the **Change...** button next to enter the parameters as follows:

- If you selected **Field with minimum value**, then enter the lower limit for the value into the **Field parameters** box.
- If you selected **Field with maximum value**, then enter the upper limit for the value into the **Field parameters** box.

- If you selected **Field with a valid range of values**, then enter the upper and lower limits. For example, 0-10 indicates that values between 0 and 10 will be accepted, including the values 0 and 10.

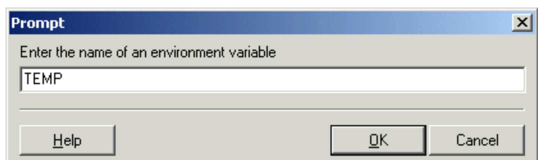
2 Click **OK** to return to the **Asset field configuration** dialog box.

Setting Up Environment Field Parameters

This field is set up to read the value contained in an operating system's environment string. For example, you may have the Host Name, or SMS ID stored in an environment variable and want this to be automatically picked up by the Scanner.

To set up environment field parameters:

1 After you have selected an **Environment Variable Extract** as the data field type, click the **Change...** button.



2 Enter the name of the environment variable in the **Prompt** dialog box. Examples of environment variables are TEMP or PATH.

3 Click **OK** to return to the **Asset Field configuration** dialog box.

Setting Up Text File Extract Field Parameters

If using environment variables in the file path, they must be in uppercase. For example, %WINDIR%\SMSCFG.INI

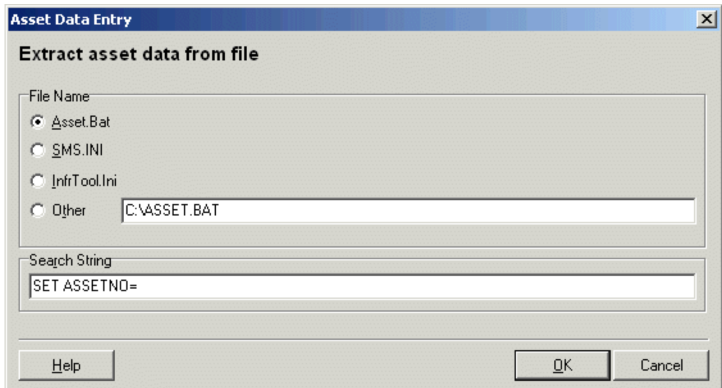
This field searches a named text file for a defined character string and makes an automatic entry of the characters between the search string and the end of the line.

This field type is normally used for the **Asset Number** field. This is used to extract the asset number from the file Asset.bat on the line containing the text:

```
SET ASSETNO=
```

To set up the Text File Extract field parameters:

1. After you have selected a **Text File Extract** field as the data field type, click the **Change...** button.



2. In the **File Name** group select the name of the file that the information is to be extracted from. There are three predefined file names and search strings:
   - **Asset.bat** Extracts the asset number on the line starting **SET ASSETNO=** in the **Asset.bat** file. This file may have been created by an earlier scan.
   - **Sms.ini** Extracts the SMS ID on the line starting **SMS Unique ID=** in the **SMS.ini** file.
   - **InfrTool.ini** Extracts the asset number on the line starting **ASSETNUMBER=** in the **InfrTool.ini** file. This file may have been created by an earlier scan.
3. Select the **Other** option to specify another file to extract from.
4. Type the name and path to the file in the box.

   A UNC path can also be entered as the path. The format for the UNC path is:

   \\servername\sharename\path\

   For example,

   \\DesktopInventoryServer\Desktop Inventory\Asset.bat

Note: Entries in this field are case-sensitive. This is applicable to UNIX only because in Windows and DOS the case does not matter.

Using environment variables

You can use an environment variable in the file extract asset 'Other' field. The environment variable name must be in upper case for this to happen. If it is not, the string is interpreted as a literal.

For example, if the path is

`%WINDIR%\SMS.INI`

Then the final path (assuming WinDir=C:\WINNT) will be

`C:\WINNT\SMS.INI`

But if the path is

`%WinDir%\SMS.INI`

Then no substitution will take place and the file extract will fail. This is done to ensure that it's possible to extract files from a directory or a file that has one or more % signs in the name.

Another example of using an environment variable is as follows:

You can type:

`%HOME%\.bashrc`

or

`%SYSTEMDIR%\win.ini`

Then the %HOME% will be replaced with the value of the environment variable HOME

Note: This is applicable to all platforms and UNIX notation of the form $NAME is not supported.

5 Enter the **Search String**. This determines what information is to be extracted. Any text that appears on the line after the search string is extracted (up to the total number of characters set by the field width).

Note: In the file being extracted from, if a comment is on the same line as the search string, then the comment will also be returned. In other words, white space is counted in the search string. Ensure that any comments in the file are placed on separate lines from the search string. This is particularly relevant to UNIX users.

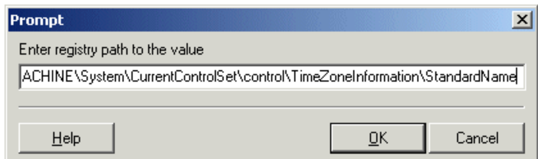
6 Click **OK** to return to the **Asset Field configuration** dialog box.

Setting Up Registry Extract Field Parameters

This type of field searches the Windows registry for the defined key and makes an automatic entry of the key value. This extract field is applicable to Windows only.

To set up registry extract field parameters:

1 After you have selected a **Registry Extract** field as the data field type, click the **Change...** button.



2 Type the full path to the registry value you want to have in this field in the form **RegistryKey\Value**.

For example, to find out whether the Screen Saver is active on the system, you can use the following registry extract field:

```
HKEY_CURRENT_USER\Control Panel\Desktop\ScreenSaveActive
```

In Windows the paths to various registry values can be found by viewing the content in the **Registry Editor**. For more information about the Registry Editor refer to the documentation supplied with Windows.

3 Click **OK** to return to the **Asset Field configuration** dialog box.

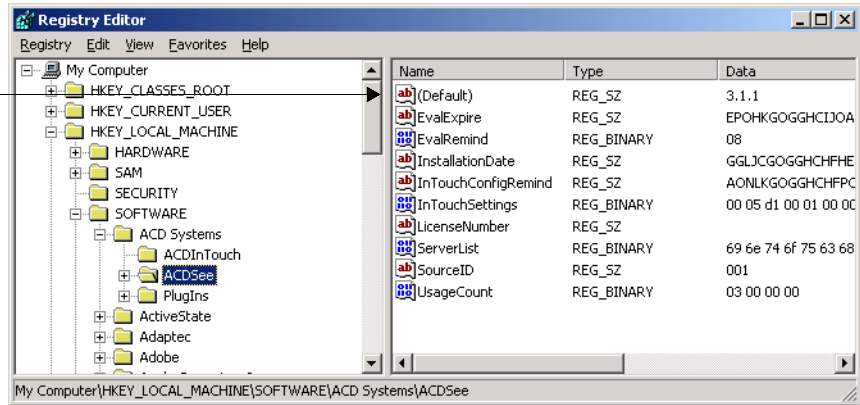
Warning: Do not change any of the settings in the Registry Editor. Doing this could result in lost registry settings and may cause some of your applications to fail.

Extracting the Registry (Default) Value

Sometimes, you may want to extract the (default) value for a registry entry.

The following screenshot shows the regedit screen with a (default) value.

The (default) value



To extract the (default) value from the registry:

- End the registry extract value command in a backslash

For example, to extract the value of "3.1.1", the following key will be used:

"HKEY_LOCAL_MACHINE\SOFTWARE\ACD Systems\ACDSee\".

Setting Up a DMI Extract Field

Desktop Management Interface (DMI) data is organized as a collection of **Components**. Components are physical or logical entities on a system, such as hardware, software or firmware.

Important: DMI extract fields are supported by the Win32 and OS/2 Scanners only.

Components have one or more named **Attributes** that collectively define the information available to a management application. Attributes are collected into named **Groups** for ease of reference. Groups may be scalar or may be replicated, such as the set of attributes for each instance of a network interface table. Replicated groups are called **Tables**, and a row (instance) of a table is referred to by a set of attributed that form a **Key**.

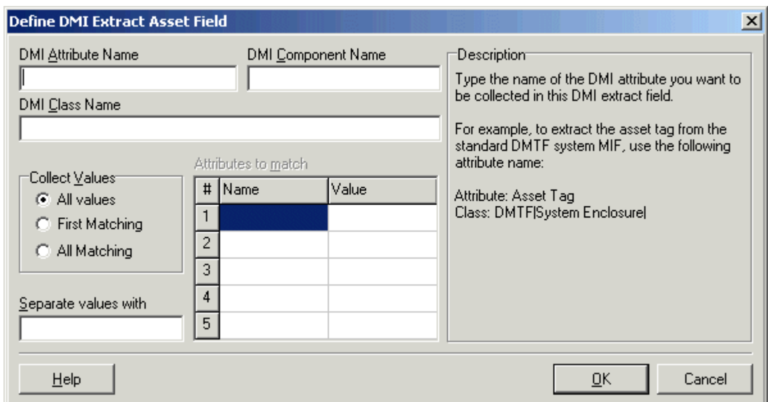
Definitions

- **Component** - Any hardware, Software or Firmware element contained in (or primarily attached to) a computer system.
- **Attribute** - A piece of information about a component.

- **Group** - A collection of attributes. A group with multiple instances is called a table.
- **Class string** - A text string that identifies a group outside the context of a particular component declaration. Identical group definitions will have identical class strings.

To set up a DMI extract field:

1 After you have selected a **DMI Extract** field as the data field type, click the **Change...** button.



2 Define the search criteria for the DMI attribute

Type the name of the DMI attribute that you want to be collected in the **DMI Attribute Name** box. For example, to extract the asset tag from the standard DMTF (Desktop Management Task Force), use the following attribute name:

`Asset Tag`

3 Define the search criteria for the DMI class name

In the **DMI Class Name** box, type the name of the class that identifies the DMI group in which the attribute is located. DMTF defines a number of standard groups, which have the form:

`DMTF|Group|Version.`

For example,

`DMTF|System Enclosure|002`

Partial names are allowed. A group is considered to be match if the beginning of the string entered here is identical to the beginning of the class name.

In the example, if all System Enclosure groups are of interest, a version does not need to be specified, for example:

DMTF|System Enclosure|

4 Define the search criteria for the DMI component name

In the **DMI Component Name** box, type the name of the DMI component that contains the field of interest. Multiple names must be separated by semicolons.

The **Component Name** is usually specified only for standard groups, such as ComponentID, for which the attribute and class names are not enough to identify the attribute or when the standard groups occur more than once. If this field is empty, any component is considered to be a match.

For example, to extract the Manufacturer attribute of a network card, use the following:

DMI Attribute Name: Manufacturer

DMI Class Name: DMTF|ComponentID|

DMI Component Name: LAN Adapter

5 Specify DMI value options

To collect values for a particular attribute, in the **Collect Values** group, select one of the following:

- **All values**

  Select this option to collect all values for an attribute. If the group is a table, all values in the table for the attribute specified are collected and separated with a string defined in the **Separate values with** box.

  Specify the string of characters that are used to separate multiple values of a table attribute. For example, a comma or a semicolon can be used, provided they are unlikely to be part of the value itself.

- **First matching**

  Select this option to collect a specific value for an attribute to match, in the grid on the right. If the attributes to match are not key attributes, there may be more than one value that matches the criteria. This option forces only the first matching value to be collected.

- **All matching**

Select this option to collect a specific value for an attribute in a table group. Specify the attributes to be matched in the grid on the right. If the attributes to be matched are not key attributes, there may be more than one value that matches the criteria. This option forces all matching attributes to be collected and separated with a string specified in the **Separate values with** box:

Specify the string of characters that are used to separate multiple values. For example a comma or a semicolon can be used, provided they are unlikely to be part of the value itself.

6 Specify a set of attribute names and attribute value pairs to match.

The values of an attribute will only be collected if all attributes to match have got the values specified in the **Attributes to match** grid. This option is normally used for attributes inside table groups. For example, to collect a description of the device that occupies IRQ3, the following can be used:

DMI Attribute Name: IRQ Description

DMI Class Name: DMTF|IRQ|

Attributes to match: Name=IRQ Number

Value=3

7 Click OK to return to the **Asset Field configuration** dialog box.

Setting Up a WMI Extract Field

Some data on Windows operating systems is only available via the WMI interface. This type of field allows the Scanner to be configured to extract and store specific pieces of WMI data. The Win32 Scanner will populate this field on computers where WMI is enabled.

Windows Management Instrumentation (WMI)

Windows Management Instrumentation (WMI) is a component of the Microsoft Windows operating system that provides management information.

WQL

Windows Management Instrumentation Query Language (WQL) is a subset of SQL that is used to make data queries inside WMI.

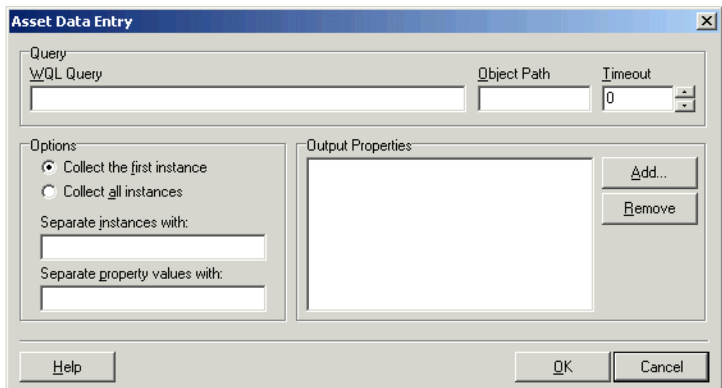
Further Information

For further information about WMI and WQL refer to the Microsoft MSDN website.

To set up a WMI extract field:

1 After you have selected a **WMI Extract** field as the data field type, click the **Change...** button

.



2 Enter the **WQL query**. For example:

select Name,CurrentClockSpeed from Win32_Processor

The above query collects the name and the frequency properties of the installed processor.

3 Enter the **Object Path**

The Object Path should usually be

root\cimv2

This is the default path for CIM v2 data provided by WMI.

4 Enter the **Timeout** - This specifies the number of seconds to wait until the query returns a single instance of the queried data. If no data is returned within this period, the query will return nothing and the value of the field will be blank.

You can use -1 to wait indefinitely until the query returns data. However, since this may cause the query to hang, therefore it is not recommended.

5 Enter the **Output Properties**

These are properties whose value is required in the asset field. The WQL query returns an instance of the WMI class which can have many properties. The required ones need to be specified manually.

For example,

select * from Win32_Processor

This will return all properties for processor, but if **Name** is required, it should be specified in the **Output Properties** list box.

6 Specify any **Options**

Collect First Instance and **Collect all Instances**

These options specify whether the first returned instance or all returned instances should be used.

For example, if there are several processors in a computer you can choose to have the information about the very first processor or have the information about all processors.

If all instances are requested, their values will be separated with the string specified in the **Separate instances with** field.

When multiple properties are specified, the values returned by the query will be separated with the string specified in the **Separate property values with** field.

7 Click **OK** to return to the **Asset Field configuration** dialog box.

An Example WML Extract Field Setup

Options	Entry
WML Query	select Name,CurrentClockSpeed from Win32_Processor Object Path: root\cimv2
Timeout	10
Properties	Name, CurrentClockSpeed
Options	Collect all instances Separate Instances with **;** Separate propety values with **,**

When executed on a computer with 4 CPUs it produces the following output in the WMI Extract asset field:

Intel(R) Xeon(TM) CPU 2.80GHz,2790; Intel(R) Xeon(TM) CPU 2.80GHz,2791; Intel(R) Xeon(TM) CPU 2.80GHz,2791; Intel(R) Xeon(TM) CPU 2.80GHz,2791

If only the first instance is requested, this will be the value:

Intel(R) Xeon(TM) CPU 2.80GHz,2790

Setting Up a Sequence Field

The sequence field is used to test multiple entries from hardware and asset fields. The entries are tested until a non-empty value is found, This can be modified so that certain values can be ignored so that the test fails.

The sequence field can be used to select the desired element of a hardware field that can have multiple values. For example, when trying to identify the MAC address on a machine, fake MAC addresses of PPP adapters etc. can be filtered out by specifying them in the **Ignore Strings** option.

The sequence asset field allows up to ten asset or hardware fields to be specified. Each of these fields return a value depending on the machine or environment running.

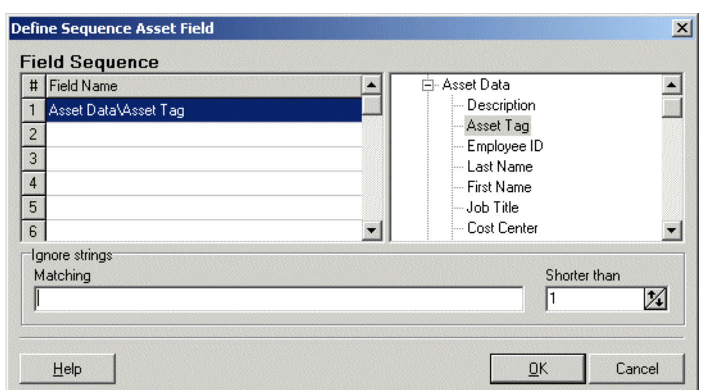
The value returned as the result of the sequence field, will be the first of these fields which contains a non-blank value. If all values are blank, then the user can be allowed to type a manual entry instead.

A blank field can be defined based on either of the two following criteria:

- The string matches one of a set of 'ignore' strings.
- A field is considered blank if the length of the field is shorter than the number specified.

To set up a sequence field:

1 After you have selected a **Sequence** field as the data field type, click the **Change...** button.



2 In the **Define Sequence Asset Field** dialog box, select the field type by expanding the tree on the right side and clicking on the required field.

The entry will now be displayed in the **Field Name** list on the left side.

3 In the **Ignore strings** group box, specify the criteria for a blank field using one or all of the following methods:

- In the **Matching** box, enter a sequence of strings (case-sensitive) separated by semicolons.

  If the content of the field matches (is equal to) any of the strings specified here, the field is considered to be blank. For example, if the text string **Not Found** is entered here, then a field that has the value 'Not Found' is considered to be blank.

  Multiple entries must be separated by semicolons (;), for example:

  'Unknown;Not Tested'.

- You can type a string in the form: ***STRING***

  Here the asterisks (*) are ignored and any string that contains the text between the two asterisks will be ignored too.

- Specify ignore strings that are less than 'n' characters.

  In the **Shorter than** box, use the arrow keys or type in a number to specify the maximum length of text strings that are to be used to define a blank field (between 1 and 255). If the string is shorter than the specified number, then the field will be considered blank.

4 Click **OK** to return to the **Asset Field configuration** dialog box.

Setting Up OS/Scan Field Parameters

The **OS/Scan** fields allow the definition of multiple types of data sources to provide an automatic entry depending on the Scanner used and the operating system being scanned.

This type of asset field is very useful in situations when you want to scan multiple operating systems but want to collect the same piece of information for each from different sources.

For example, a registry key, where source for registry keys is held in different locations for different operating systems. In this case, you can set up an OS/Scan field, which alleviates the need to set up multiple registry key field extract fields.

In addition, it allows you to set up a method to obtain the value when scanning operating systems that have no registry. An example of this is in DOS, where an environment variable or file extract field could be used.

The Multi-OS asset entry field dialog box has two tabs:

- **Other** - Used to set up OS/Scan fields for DOS, Windows 3.x, Windows 95, Windows NT/2000/XP/2003 and OS/2 operating systems.
- **Unix** - Used to set up OS/Scan fields for UNIX Operating systems.

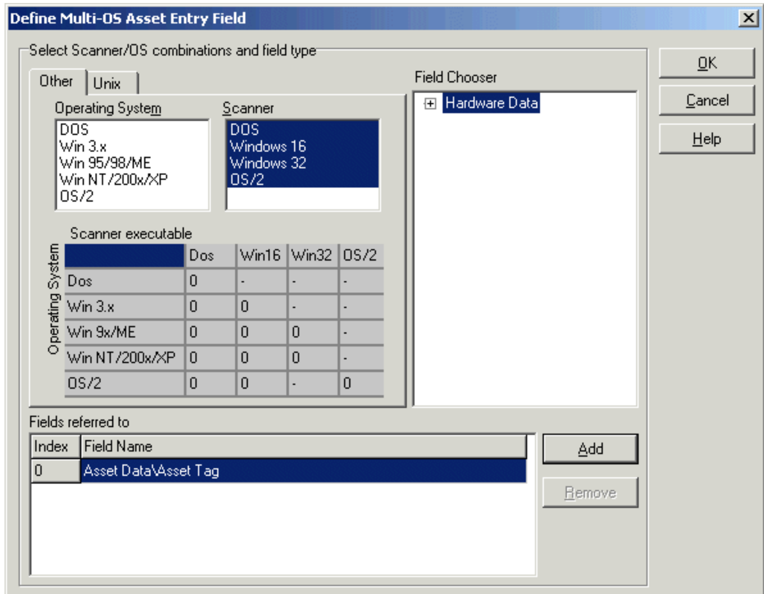
Setting Up OS/Scan Fields for DOS, Windows 3.x, Windows 95, Windows NT/2000/XP/2003 and OS/2

For these operating systems, multiple Scanners are compatible and the OS/Scan field allows the following combinations of Scanners and operating systems to be defined.

Operating System	Scanner
DOS	DOS
Windows 3.x	DOS
Windows 3.x	Windows 16-bit
Windows 95/98/ME	DOS
Windows 95/98/ME	Windows 16-bit
Windows 95/98/ME	Windows 32-bit
Windows NT/200x/XP	DOS
Windows NT/200x/XP	Windows 16-bit
Windows NT/200x/XP	Windows 32-bit
OS/2	DOS
OS/2	Windows 16-bit (in Win-OS/2)
OS/2	OS/2

To set up OS/Scan fields for DOS, Windows 3.x, Windows 9x/ME, Windows NT/200x/XP and OS/2:

1. After you have selected an **OS/Scan** field as the data field type, click the **Change** button. The Define **Multi-OS Asset Entry Field** dialog box appears.
2. Click the **Other** tab.



3 In the **Operating System** list select the operating system(s) that will be affected by this definition. To select multiple operating systems, hold down the **Ctrl** key and click on each one in turn.

4 In the **Scanner** list select the Scanner types that will be affected by this definition. To select multiple Scanner types hold down the **Ctrl** key and click on each one in turn.

5 Select the field that is to be included in this definition from the **Field Chooser** tree. This can be any existing asset field or any hardware/configuration field (except hardware fields where multiple values may be collected, such as CPU type or IP address).

6 Click the Add button. The new definition will be included in the **Fields referred to** list.

7 Click **OK** to return to the **Asset Field configuration** dialog box.

Interpreting The Matrix

The selection matrix is the grid that is displayed in the middle of this dialog box. It shows the current assignments of each of the list items. For each combination of Scanner and Operating System, the number in the matrix refers to a line number in the **Fields referred to** list (a hyphen '-' in the grid indicates that the combination is invalid).

The matrix sorts through the list (the bottom-most entry has the highest priority). The priority can be changed by dragging the a row up or down in the list. If a matching combination is not found it defaults to index 0 (the top most entry in the list).

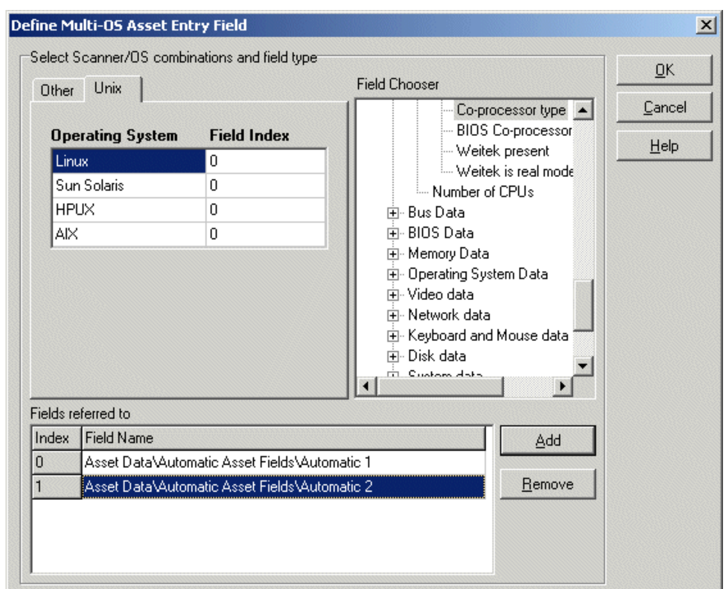
Setting Up Multi OS-Scanner Fields for UNIX Environments

The UNIX environments currently supported are:

- Sun Solaris 2.5, 2.6, 7, 8 and 9
- HPUX 10.2 and 11.0
- Linux Kernel v2.2, 2.4, 2.6
- AIX 4.3, 5.0, 5.1, 5.2

To set up multi OS-Scanner fields for UNIX environments

1. After you have selected an **OS/Scan** field as the data field type, click the **Change** button.
2. Click the **UNIX** tab.



3. Select a row in the UNIX **Operating System** list.
4. If the field to refer to is not already in the list, select the field that is to be included in this definition from the **Field Chooser** tree. Otherwise, just set the field index in the grid.

5 Click the Add button. It is added to the **Fields referred to** list.

6 Click OK to return to the Asset Field configuration dialog box.

Interpreting the Grid

The **Field Index** column has a drop-down list which refers to the line numbers in the **Fields referred to** list.

Because multiple OS-Scanner combinations for the UNIX Scanners do not exist, (that is, an HP-UX Scanner cannot be used on a Solaris machine and so on) the selection matrix logic does not apply here.

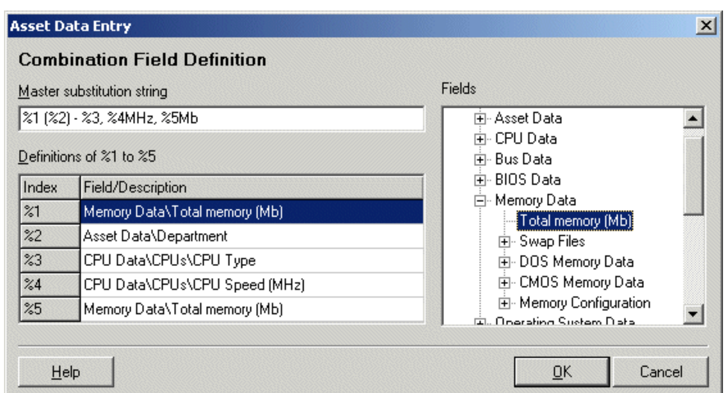
Setting Up a Combination Field

Combination fields can combine up to five asset or hardware fields into a single field. This is particularly useful for the description field.

The combination field is made up by string substitution.

To set up a combination field:

1 After you have selected a **Combination** field as the data field type, click the **Change...** button.



2 Assign a **Master substitution string** by typing the template string in the box. The convention is to use percentage signs followed by a number. For example, '%1 (%2)'

3 The **Definitions** box lists the fields that have been defined for use in the substitution string.

4 To add a field to the **Combination** field, select either the **Asset** or **Hardware** field option and the available fields will be listed in the **Definitions** box.

5 To clear an entry select the **Delete** command from the right-click menu or press the **Delete** key.

6 In the **Definitions of** %1 **to** %5 grid, build up a list of up to five index entries (represented as **%1, %2, %3, %4** and **%5**).

- Click in a row in the grid and from the **Fields** tree select the asset or hardware item that is to be associated with the index. The asset or hardware field will now appear in the **Field/Description** column.
- Continue this for up to five index entries.

7 Define a master substitution string which replaces the percent values (for example, %1) with the appropriate hardware or asset item. An example of a master substitution string is shown in the next section.

8 You can also specify some text before or after the percent notation which will be a constant part of the value of the field.

9 Click OK to return to the Asset Field configuration dialog box.

10 Click OK to return to the asset entry form.

Example of a Master Substitution String

If the master substitution string **%1 (%2) - %3, %4MHz, %5Mb** is defined for the **Description** field in the asset entry form, where the following index definitions apply:

Index	Field/Description	Displayed in asset questionnaire as...
%1	Asset Data\Last Name	Last Name
%2	Asset Data\Department	(Department)
%3	CPU Data\CPUs\CPU Type	-CPU Type
%4	CPU\CPUs\CPU Speed (MHz)	CPU SpeedMHz
%5	Memory Data\Total memory (Mb)	Total MemoryMb

The **Description** field in the Asset Questionnaire may look as follows:

SMITH (Accounts) - Pentium II, 333MHz, 128Mb

Step 7: Setting Extract Options

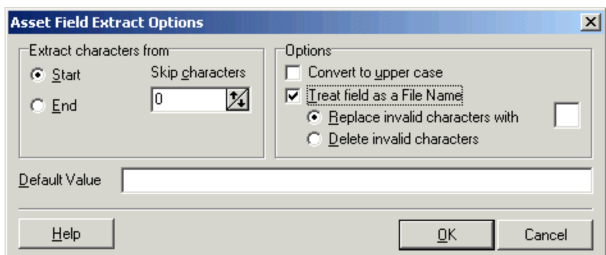
All calculated asset fields defined can be set up so that only part of the string is selected instead of the entire string. They can also be set up, for example, to use the last part rather than the first part of the string. This can be useful for obtaining the last part of an calculated field that is too long.

Various other settings for manipulating the field contents are also available.

To set extract options:

1 After you have selected the field data type, click the **Extract...** button. The button is only enabled for those field that are calculated. This option is not available for user-entered fields.

The **Asset Field Extract Options** dialog box is displayed.



2 In the **Extract characters from** group box, specify whether you want to use the last part or the first part of the string. Select one of the following options:

- **Start** Uses the first part of the string. Use the arrows next to the **Skip characters** box to specify how many characters are to be skipped from the beginning of the string.
- **End** Uses the last part of the string. Use the arrows next to the **Skip characters** box to specify how many characters are to be skipped from the end of the string.

  For example, ‘ABCDEF123’ If you select **End** and skip **4** characters, then the result will be **ABCDE.**

3 In the **Options** group box, select the options as follows:

- **Convert to upper case** Select this option to convert the alphabetic characters to upper case, if required.
- **Treat field as File Name** Select this option to treat the string in the asset field as a file name.

Some characters are invalid in file names, so any invalid characters can be replaced with the character specified in the **Replace invalid characters with** box. For example, underscore '_' is a valid file name character and can be used to replace invalid characters.

If you select the **Delete invalid characters** option then any invalid characters will be deleted.

4 If the extracted field is empty or is not found, then a default value for the string can be specified in the **Default Value** box. For example, if the text string **Not Found** is entered in this box, then an empty field or a field that has not been found will be assigned this default value.

Step 8: Correcting the Order of the Fields in the Form

You will need to consider the order of the fields in the form and move them round accordingly. The rule is:

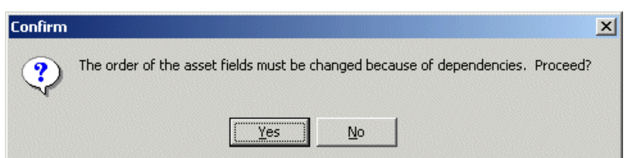
- A field cannot depend on a field that is placed below it in the form.

That is, if you have set up any derived or automatic fields that require data from fields below them in the form, you will have to move them to a position in the form that is above these fields.

To correct the order of the field in the form:

1 Re-order the fields by clicking on a row and dragging the selected line to its new location in the form.

2 When you click the **Next** button in the **Asset Data** page, a confirmation message may be displayed.



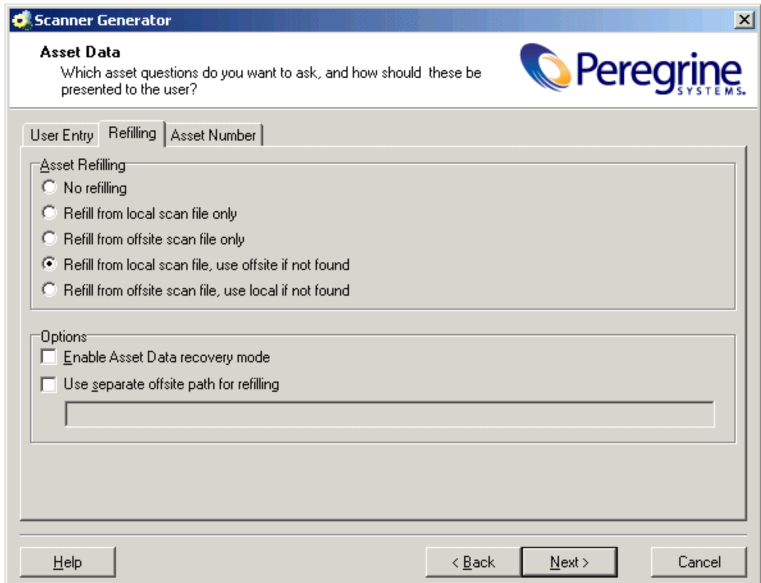
3 Click **Yes** to have the Scanner Generator automatically do this for you.

4 Click **No** to do this manually.

The Refilling Tab

The **Refilling** tab sets options used to prepare for re-scans.

Note: Extract fields are filled in after the refill has completed. This ensures the current state of the machine is recorded.



The tab page is divided into two sections:

- **Asset Refilling** - These options determine where refilled data will be taken from on subsequent scans.
- **Options** - These options are used to refine the asset refilling process.

How Refilling Works

Refilling is used to help reduce the amount of data entry required on re-scans by filling the asset entry fields with data from previous scans.

When a scan starts, the Scanner will attempt to locate an old scan file for the machine to read the asset data from, so that the user need not retype all of the data.

When refilling asset data, the Scanner searches for the scan file to be used for refilling. The following message is output to the log window:

Refilling asset data from <filename>

Where <filename> is the fully qualified scan file name that will be used to refill the asset questionnaire.

If the scan file is a version unknown to the Scanner, the following error message is added to the log:

Unable to refill asset data (Scan file version is x.xx)

The Scanner in Desktop Inventory version 8.0 is capable of refilling from scan files version 4.40 and later.

If the asset questionnaire of the Scanner has changed since the last scan, the old and new asset information is matched up based on the field names and/or captions of the asset fields. The old data is then validated using the new data constraints, if any, and if valid, the refill of that field is permitted.

Asset refilling can take place from either of two files:

The Local Scan File

This is a file saved to the local machine in the directory pointed to by the **LocalDir**= entry in the [**Desktop Discovery**] section of the **InfrTool.ini** file.

The name of the local scan file is always **local$.fsf** or **local$.xsf**.

In the case of DOS, Windows, OS/2 Scanners, the ini file is always stored as **C:\infrtool.ini**. In the case of the UNIX Scanners, the ini file is **.infrtool.ini**, in the home directory of the user account under which the Scanner was run. Note the **.** in front of the file name.

Refer to *Saving Local and Offsite Scan Files* on page 207 for an explanation of the local scan file and where it is saved.

Offsite Scan File

This is a copy of the scan result that has been saved to remote disk (such as floppy disk or network disk).

The offsite scan file name is generated from the asset field that has been designated as a field that will identify this computer across the population.

Specifying a Refill Order

To specify a refill order:

1 In the **Asset Data** page, click the **Refilling** tab.

2 The refill order is set in the **Asset Refilling** group box. It can be one of the following:

- **No refilling** The refilling options are disabled. No data is refilled.
- **Refill from local scan file only** The refilled data is taken from scan file saved on the local machine.
- **Refill from offsite scan file only** The refilled data is taken from a scan file saved on a remote disk (such as floppy disk or network disk). The local scan file, even if present, is not used.
- **Refill from local scan file, use offsite if not found** The refilled data is taken from a scan file saved on the local machine. If no local scan file is found, the refilled data is taken from a scan file saved on a remote disk, if present.
- **Refill from offsite scan file, use local if not found** The refilled data is taken from a scan file saved on a remote disk. If no remote scan file is found, the refilled data is taken from a scan file saved on the local machine, if present.

  By taking the offsite scan file first, it is possible for an administrator to perform a quality check on the asset data (using the asset data editing functionality of Analysis Workbench and Viewer). The updated data is then automatically used on re-scan.

Note: The refill path can be overridden by using the **-r**: command line option. See *Command Line Options and Switches* on page 239 for more information about command line options.

Specifying Options for Refilling

To specify options for refilling

1 Select the **Enable Asset Data recovery mode** check box to ensure that data is not lost if, for some reason, the Scanner does not complete.

When selected, the Scanner saves a backup of the asset questionnaire as soon as it is complete. When the scan file is saved, it deletes this file. If the Scanner is started and it finds this file, it assumes a problem occurred and refills from it.

2 Select the **Use separate offsite path for refilling** check box to specify a separate path to be used for locating the scan files for refilling, which is separate from the path used to store the new scan file.

If the **Use separate offsite path for refilling** check box is not checked, the refilling data is taken from the default save path for the correct platform specified in the **Saving** tab of the **Scanner Options** page (displayed by clicking the **Next** button).

If the **Use separate offsite path for refilling** check box is checked the refilling data is taken from the path specified here.

A UNC path can also be entered as the refill path. The format for the UNC path is:

```
\\Servername\ShareName\path\
```

For example:

```
\\DesktopInventoryServer\Inventory\Scans\
```

Setting up the Refilling Options to Handle Delta Scan Files Correctly

For the delta scan file processing in the XML Enricher to work correctly, ensure that you do the following in this tab page:

Set the separate refilling path to the path specified in the **cfgDirOriginal** setting of the **xmlenricher.ini** file. Use the **Use separate path for refilling** setting on this page to do this.

The **Original** directory on the server that runs the XML Enricher should be shared and its UNC path should be specified here. This enables the Scanner to make sure that the off-site copy of the previous scan file on the server is consistent with the local copy.

Important: Delta scanning will only work if the Scanner has been configured to collect Asset Data.

Locating an Offsite Scan File for Refilling

When the Scanner has determined that an offsite scan file is to be used for refilling, it needs to identify the file name of the scan file from which to refill. Because the offsite save path (or separate refill path) is likely to contain many scan files for different machines, the scan file is assumed to be named **AssetTag.fsf** or **AssetTag.xsf**.

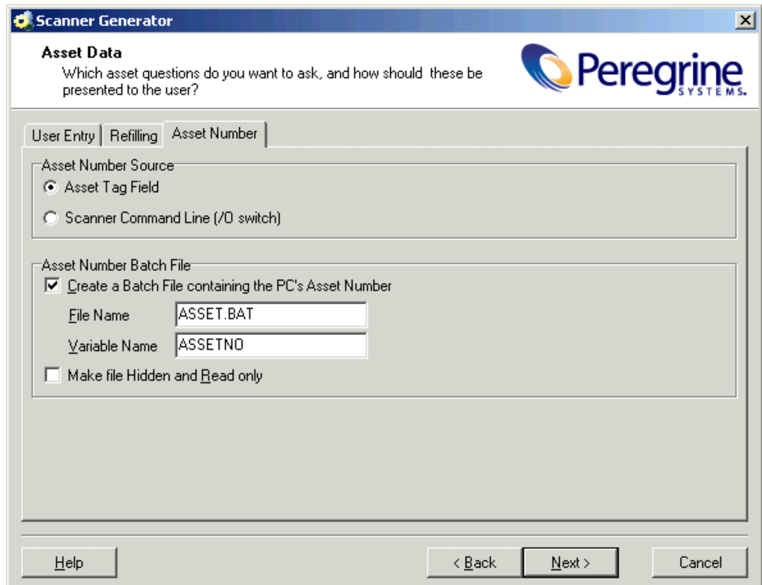
To determine the asset tag (and from that, the file names, the Scanner reads the **InfrTool.ini** file and extracts the value of the **AssetTag**= entry in the [**Deskdisc**] section. If this is not present, or the ini file cannot be found, the Windows Scanners then read the **system.ini** file where the Asset Tag is also stored.

- If neither of these are present, refilling from an offsite scan file fails.
- If multiple scan files are present

  If both **Asset.fsf** and **Asset.xsf** exist, the newest one is used for refilling. However, if the time difference is less than a full day, the **fsf** is used.

The Asset Number Tab

The **Asset Number** tab is used to set options for managing the asset number used to uniquely identify a machine.



The tab is divided into two groups:

- Asset Number Source
- Asset Number Batch File

Asset Number Definition

Each computer that is scanned needs to be identified by a unique Tag known as the **asset tag**.

Asset tags are generally assigned to allow each hardware item to be recorded and identified in an asset management tool, such as AssetCenter. The conventions used depend on the numbering system and asset registering policies adopted by your organization.

After a computer has been scanned, it is important to store the asset number in electronic form on the computer for future identification. This enables the asset number to be picked up automatically (without manual input) when follow-up scans are performed over the network, which crucially allows accurate asset tracking over a long period of time.

Specifying the Source for the Asset Number

To specify how the Asset Tag identifying the machine is chosen:

▶ Select one of the following to use as the source for the asset number:

- **Asset Tag Field:**

  This option will use the value in the **Asset Tag** field that was created in the **User Entry** tab page. This is usually used as the unique key to identify each computer. When this (the default) is selected and an offsite scan file will be saved, an Asset Tag field must be defined in the questionnaire.

- **Scanner Command Line** (**/O switch**)**:**

  An offsite scan file name can also be specified by the -o: command line option. This overrides the scan file name (as well as the path, if specified). To configure this:

  - Select the **Scanner Command Line** (**/O**) option on the **Asset Number** tab page. The scan file name is taken from the command line. This is entered using the /O: command line option when the Scanner is started, using the name specified. For example,

    ```
    ScanW32 -O:FP00017
    ```

Asset Number Batch File Definition

The facilities provided by the Scanner Generator for defining the asset information collected, allow an **asset number batch file** to be automatically created. This batch file stores the asset number automatically in the root directory of drive C.

To ensure that the file is not accidentally removed from the system, the file can be set to be a hidden, read-only file.

The default name of this file is **Asset.bat.** It contains a single meaningful line:

```
SET ASSETNO=<Asset Number of PC>
```

Where **ASSETNO** is the environment variable.

The file created can be called from a script. When this is done, the **ASSETNO** environment variable contains as its value, the asset tag of the machine. This can be useful when performing asset management or support tasks on the machine, such as when opening a help desk ticket with Peregrine Get.Service.

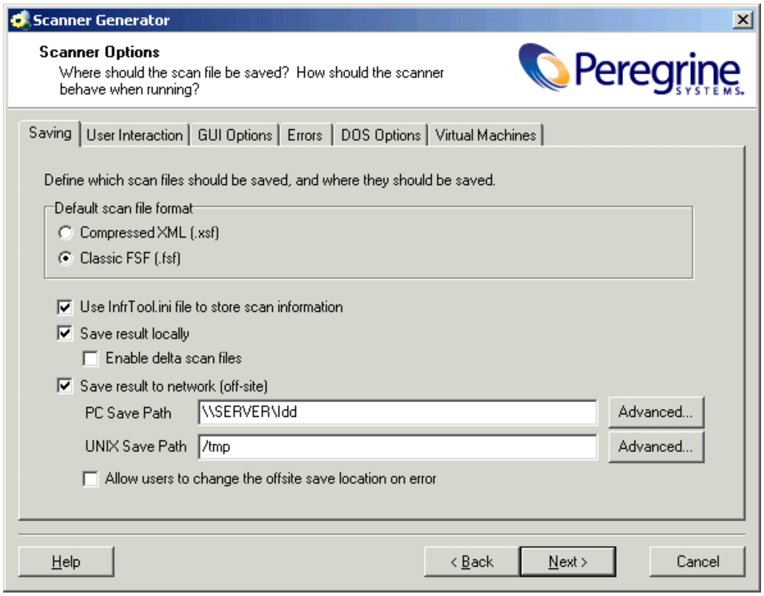
Creating an Asset Number Batch File

To create an asset number batch file:

1. Select the **Create a Batch File containing the PC's Asset Number** option. Two further options are now enabled:
   - **File Name:** To select a different name for the asset number batch file, enter a name in the **File Name** box (otherwise the default name **Asset.bat** is used). This file will run the SET ASSETNO command and will add the variable to the environment.
   - **Variable Name:** The name of the environment variable used in the asset.bat file.
2. Select the **Make file Hidden and Read only** option, to assign read-only and hidden file attributes to protect the asset number batch file.

The Scanner Options Page

The **Scanner Options** page is used to set options for controlling the behavior of the Scanner during the usual scanning process and under exception conditions, as well as options for saving the inventory results.



The Scanner Options page has six tabs:

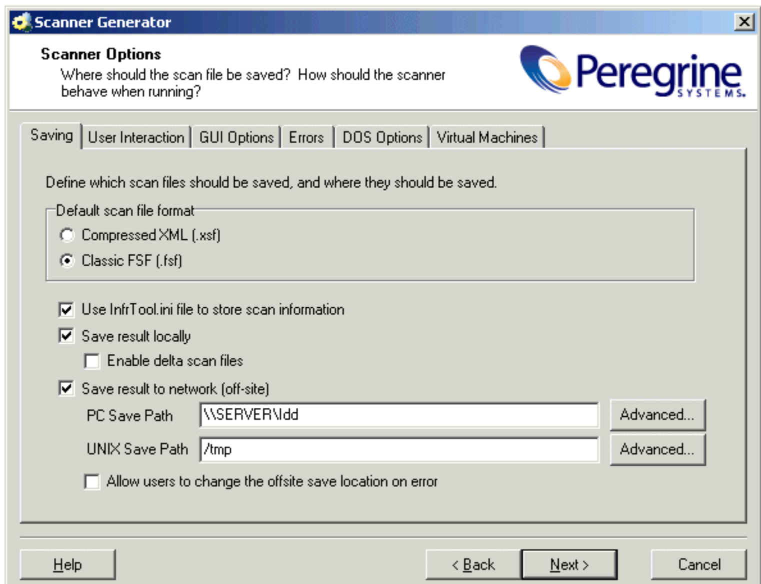
- *The Saving Tab*
- *The User Interaction Tab*
- *The GUI Options Tab*
- *The Errors Tab*
- *The DOS Options Tab*
- *The Virtual Machines Tab*

After the options have been selected as required, click the **Next** button to continue.

The Saving Tab

In This Section...

The **Saving** tab page is used to set options for saving the inventory results.



Setting the Default Scan File Format

This setting determines the type of scan file produced.

- The compressed XML scan file format (.xsf) allows the scan data to be augmented with application recognition information. The uncompressed XML data can be read with XML tools.
- The FSF (.fsf) scan file format is a proprietary format that can be produced by all scanners. FSF scan files are more efficient than XSF files. Analysis tools can process them faster, resulting in shorter loading times.

Both scan file formats can be read by Viewer and Analysis Workbench. FSF scan files can be converted to XML using the FSF Converter or the XML Enricher (the XSF files will also be enriched with application data).

To set the default scan file format:

- Select one of the following:
  - Compressed XML (.xsf)
  - Classic FSF (.fsf)

The default FSF file format is used unless the scan file must be readable before enrichment.

Using InfraTool.ini file to Store Scan Information

When the **Use IntfraTool.ini file to store scan file information** option is selected, the Scanners will look for or create an **infrtool.ini** (non-UNIX) or **.infrtool.ini** (UNIX) file.

The .ini file contains the location of the local scan file (**LocalDir**=<location>) as well as the asset number of the machine (**AssetNumber**=<asset number>).

This check box must always be selected, unless a forensic scan is being performed where the computer being scanned must not be modified in any way:

- In the case of the PC-based Scanners, the ini file is saved to **C:\InfrTool.ini**
- In the case of the UNIX Scanners, the ini file is **.infrtool.ini**, in the home directory of the user account under which the Scanner was run. Note the **.** in front of the file name.

Important: Sometimes the Scanner is run in environments where the root of C:\ is not writable, or where it is undesirable to write to this location. The Scanners can then make use of the **infrtool.ini** file when written to another directory. The alternate directory location can be specified on the command line or by modifying the registry before running the Scanner.

Saving Local and Offsite Scan Files

The Scanners can save two scan files per scan:

- **Local scan file** - Saved to a local directory.
- **Offsite scan file** - Saved to a specified output directory, with its name being derived from the value in the **Asset Tag** field specified as the asset number.

Both of these scan files are saved by default, however, one or the other can be disabled.

Note: You must select at least one of the settings:
- Save result locally
- Save result to network (offsite)

Saving Results Locally

The **Save results locally** option determines whether the scan file is saved to the local machine.

The local scan file is always called **local$.fsf** or **local$.xsf**, and will be saved in the **InfrTool** directory.

1 For 32-bit Windows Scanners

The Win32 Scanner uses the Peregrine subdirectory of the application data directory of all users. The location of this directory varies. For example, on Windows 2000 installed on C:\ it could be

C:\Documents and Settings\All Users\Application Data\Peregrine\

The local scan file can be used for refilling asset fields when the machine is next scanned.

2 For DOS, Win16 and OS/2 Scanners

All partitions are searched and one is selected by the following process:

- The minimum space requirement starts off at 10Mb.
- The first acceptable FAT drive is selected.
- If one is not found, then the first acceptable HPFS or NTFS drive is selected.
- If one is not found, the selection will be repeated, after halving the minimum space requirement.

- If after this, there is still nothing suitable, the save drive is arbitrarily set to C:. After the save drive has been selected, the scan file is saved in the **\Infrtool** for all non-UNIX Scanners directory.

Scan files saved using this option are saved with **Read Only** and **Hidden** file attributes.

Enabling Delta Scanning

The **Enable delta scan files** option enables/disables this feature. It can only be enabled if a local scan file is saved. When delta file scanning is enabled, the Scanner first saves the complete scan file copy offsite by copying the local scan file.

Instead of sending a full scan file to a server after every scan, the Scanners calculate the difference (the delta) between the last full scan and the current one - and transfer just this data. This can dramatically reduce the amount of network bandwidth used when using Desktop Inventory.

Note: This feature is not supported by the DOS Scanner.

The XML Enricher re-assembles the full scan files based on the previous scan and the delta scan. No other Desktop Inventory component uses the delta scan file. The re-assembled scan can however, be used in Viewer and Analysis Workbench. See *Delta Calculation Command Line Utility* on page 84 in the *XML Enricher* Chapter for a description of a standalone utility that can be used to manipulate delta scan files.

Important: Delta scanning will only work if the Scanner has been configured to collect Asset Data.

Setting up the Scanner to Handle Delta Scan Files Correctly

For the delta scan file processing in the XML Enricher to work correctly, ensure that you do the following:

1. Configure the Scanner to save results to the XML enricher **Incoming** directory. This is done in the **Save result to network** (**off-site**) field on this page. See the next section for more information about off-site saving.
2. Set the separate refilling path to the path specified in the cfgDirOriginal setting of the xmlenricher.ini file. Use the Use separate path for refilling setting on the Scanner Generator **Asset Data|Refill** tab page to do this.

For example, if the base scans directory of the XML Enricher on the server named PDIServer was shared as Scans and the default directory structure is used, use the following path:

\\PDIServer\Scans\Original

Saving Results to Network (Offsite)

The **Save result to network (off-site)** option saves the scan file to remote (offsite) disk (such as floppy disk or network drive).

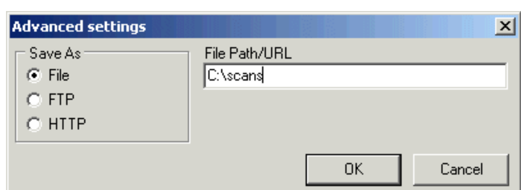
The **Offsite Save Path** can take the following four types of values.

- *Normal File Path*
- *UNC Path*
- *FTP URL*
- *HTTP URL*

Normal File Path

To save to a normal file path:

1 Click the **Advanced...** button.



2 Select the **File** option and enter the path In the **File Path/URL** field.

The full path name (beginning with the drive letter) must be specified in the **PC Save Path** or **Unix Save Path** box. For example,

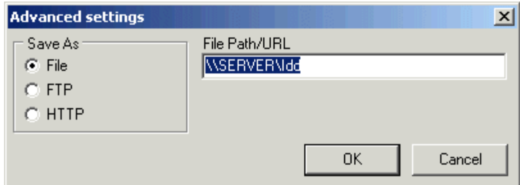
A:\ Inventory\Scans

UNC Path

A UNC path can be entered as the offsite save path.

To save to a UNC path:

1 Click the **Advanced...** button.



2 Select the **File** option and enter the UNC path In the **File Path/URL** field.

The format for the UNC path is:

\\servername\sharename\path\
For example,

\\DesktopInventoryServer\Desktop Inventory\Scans\
The specified UNC path must have write access. Do not specify a file name here.

The offsite save location can be overridden by using the **-p:** or **/p:** command line option. For example,

ScanDos -p:C:\Scanners\
A UNC path can also be entered as the argument to this option. The format for the UNC path is:

\\servername\sharename\path\
For example,

ScanDos -p:\\DesktopInventoryServer\Desktop Inventory\Scans\

If the save location specifies a UNC name (for example, **\\Accounts\Inventory**), the DOS and Win16 Scanners will try to map this to a mounted drive.

If there is no drive mapped to the specified UNC location, the scan file will not be saved. Again, the Win32 is the exception. In Win32, if the UNC name specified is visible to the machine, the scan file will be saved to the specified location, even if it is not mapped to a drive letter.

On UNIX machines, the UNIX save path is used instead, allowing UNIX-style syntax for specifying directories to be used. On UNIX, do not use drive letters, and the UNIX save path must instead start with ‘/’ (root) and point to a directory writable by the Scanner.

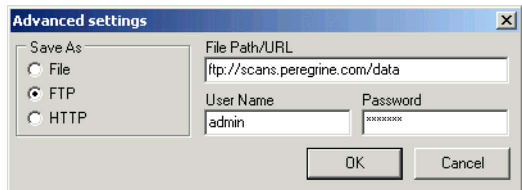
3 Click the **OK** button to return to the **Savings** tab page.

FTP URL

The Win32 and Unix Scanners can save to any FTP server.

To save to an FTP server:

1 Click the **Advanced** button to display the **Advanced Settings** dialog.



2 Select the **FTP** option.

Extra fields are displayed.

3 Enter the **FTP** path and enter a **User Name** and **Password** if one is to be supplied.

4 Click the **OK** button to return to the **Savings** tab page.

Important: When an FTP location is specified with the **–p** Scanner command line option (Win32 and Unix scanners only), the User Name and Password can be encoded into the URL as follows:

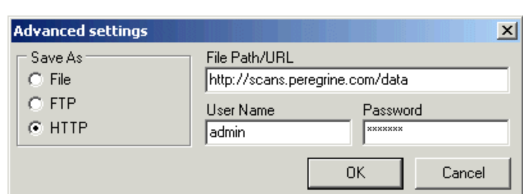
ftp://user:password@host:port/dir

HTTP URL

The Win32 and Unix Scanners can save to an HTTP server if one has been configured to allow writing to a particular directory.

To save to an HTTP server:

1 Click the **Advanced** button to display the **Advanced Settings** dialog.



2 Select the **FTP** option.

Extra fields are displayed.

3 Enter the **FTP** path and enter a **User Name** and **Password** if one is to be supplied.

4 Click the **OK** button to return to the **Savings** tab page.

Important: The User Name and Password cannot be specified for an HTTP location. If the **–p** Scanner command line option is used with an HTTP location, ensure that the location is not password protected. If the User Name and Password is required with HTTP saving, specify it using the setting in the **Advanced Settings** dialog. The **–p** switch should not be used in this case.

Http Saving for Apache and IIS Web Servers

The Web Server needs to be configured to allow execution of the **Put** command. Usually, by default webservers are set to enable **Post** and **Get** commands. You will need to ensure that if you are using http saving that the **Put** command is enabled in the directory.

The following is a quick description of what you would have to enable for http saving on both IIS and Apache.

Setup of Apache 2.0

If you are using basic authentication:

In the bin directory run:

```
htpasswd -c "<path>\htpass" Username
```

You will need to put the following in the **.htaccess** file of the directory that you intend to save in:

```
PUT_EnablePut On
PUT_EnableDelete Off
AuthType Basic
AuthName "Write" AuthUserFile "<path>\htpass"
Require user Username
```

Download the **mod_put.so** file and put it into the modules directory.

Enter the following into the httpd.conf file:

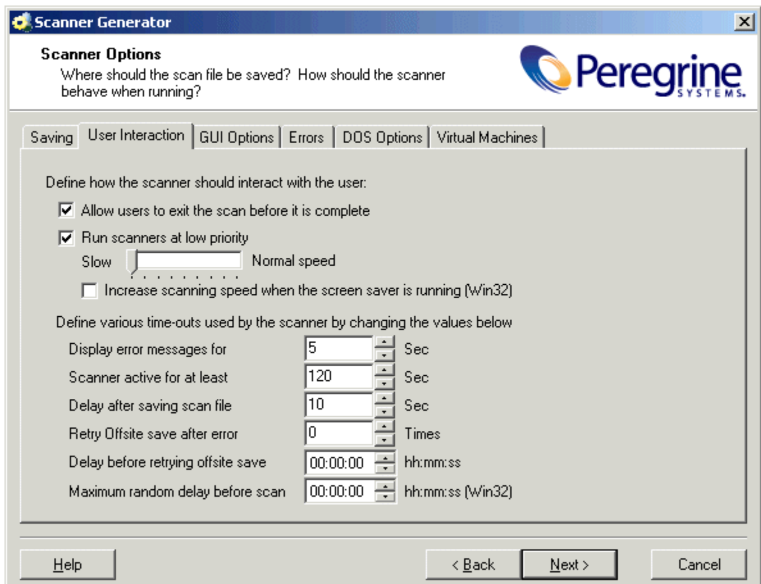
```
LoadModule put_module modules/mod_put.so
```

Setup for IIS

Check the option that allows writing to the desired save directory. Ensure that you have given write access to the Username and Password that you plan on adding to the Scanners http save path.

The User Interaction Tab

The options on this page are used to control the behavior of the Scanner as it scans each computer.



Setting User Interaction Options for the Scanner

These options are used for controlling the behavior of the Scanner as it scans each computer and how it interacts with users.

To set user interaction options for the Scanner, select from the following:

1 **Allow users to exit the scan before it is complete**

Allows users to abort the scanning process (for any reason) by:

- Pressing the **Alt** and **X** keys (DOS, Windows and OS/2 Scanners).
- Selecting **File** -> **Exit** (DOS, Windows and OS/2 Scanners).

Select this check box for walkround inventories, and clear it for a network inventory. If this option is cleared, the Scanner cannot be terminated prior to completing the scan.

2 **Run scanners at low priority**

The Scanners can be set to run at slower than normal speed, so that they do not impact on the users work.

Use the slider control to specify how slow or how fast the Scanner will run. A further option is enabled.

- **Increase scanning speed when the screen saver is running** (Win32)

  This option will allow the Scanner to run at an increased speed when a screen saver is enabled. When this setting is checked, the scanner runs slower. It increases its speed to normal when it detects that the screen saver is running. As soon as the screen saver disappears, the scanner runs slower again.

When the option to run at low priority is checked, the PC-based Scanners allocate CPU resources less aggressively and wait much longer between each file scanned. In UNIX, the Scanner performs a **renice** of itself to run at a lower priority.

Setting Time-Out Options

These options set Scanner time-out settings.

To set up the timer options, select the options as required:

1 **Display error messages for**

If an error occurs during the scan, the Scanner is delayed for the period specified. An error message is displayed. When the time specified has elapsed, the error message is cleared and the scan continues.

2 **Scanner active for at least**

The Scanner is active for at least the number of seconds specified, to allow the entry of the asset details to be completed. Each time a key is pressed during entry of the asset data, the timer is reset to its original value.

This value is used as the starting value for a countdown timer, which is initialized at the start of the software scan. When this time elapses, the Scanner verifies that all required asset fields are filled in.

If the required asset fields are not completed, the user will be prompted for input and the timer is reset to its original value.

If completed, providing the software scan has finished, the Scanner will automatically save the result and exit.

3 **Delay after saving scan file**

Causes the Scanner to delay for the number of seconds specified before exiting, after the scan is completed and the scan file has been saved.

4 **Retry Offsite save after error**

The Scanner will attempt to retry the offsite scan file saving if an error occurs the number of times specified here.

5 **Delay before retrying offsite save**

The Scanners will wait for the time specified here before retrying the offsite scan file saving if an error previously occurred in this process.

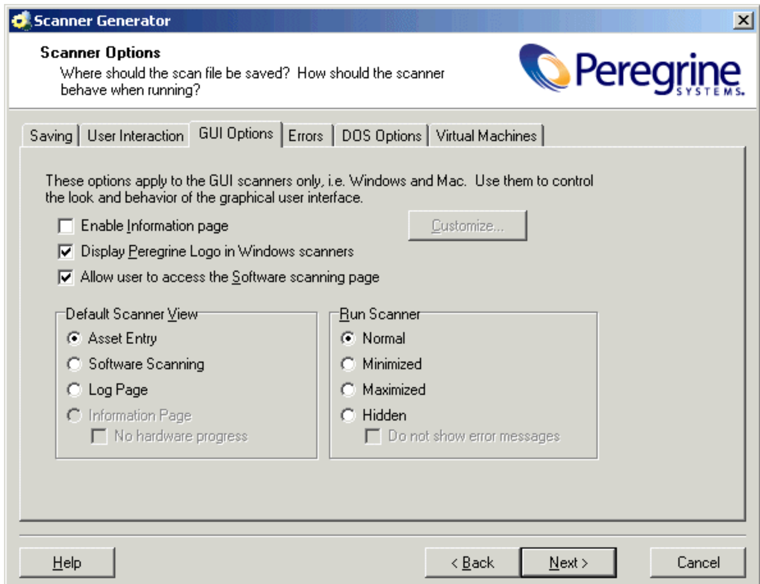
6 **Maximum random delay before scan**

This setting is applicable to the Win32 Scanner only. The Scanner can wait for the amount of time specified here before doing anything on the machine. The default setting for this is 00:00:00 with a maximum allowed value of 23:59:59

If the Scanner is launched via a login script, using this option allows the saving of scan files to be spread over a longer period to avoid overloading the network at busy periods. For example, in the morning when all users come to work, power up their computers and start the Scanners at approximately the same time."

The GUI Options Tab

The **GUI Options** tab page is used to determine which pages (Software Scanning, Asset Entry, Information and Log) are visible to the user, the default page displayed when the Scanner is started and in which mode to run the Scanner (Normal, Minimized, Maximized or Hidden).



The page is divided into three sections:

- GUI Scanners
- Default Scanner View
- Run Scanner

Setting Scanner GUI Options

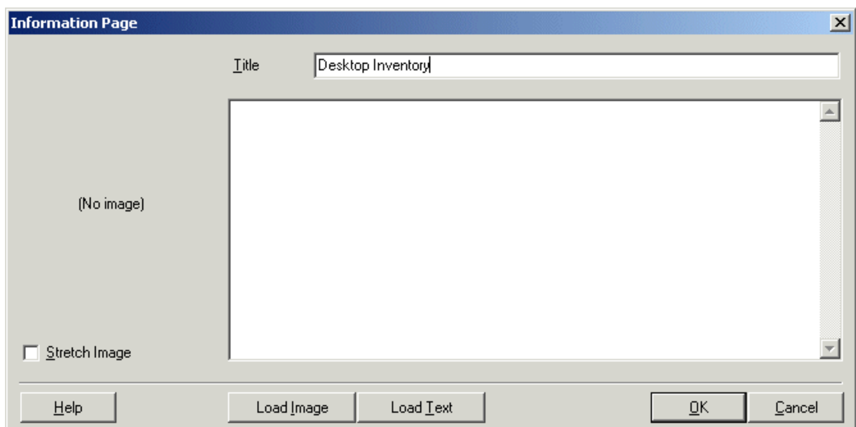
For those Scanners with a graphical user interface (Win16, Win32), various options can be set here.

To set Scanner GUI options, select from the following:

1 **Enable Information Page**

Allows Windows-based Scanners to display an **Information** page. To do this:

After you have selected this option, click the **Customize…** button. The **Information Page** dialog box appears.



The **Information** page allows a user-defined bitmap and text to be displayed while the Scanners runs.

- In the **Title** box, type in the text that you want to appear as the heading of the Information page.
- Click the **Load Image** button to load a prepared bitmap file that you want to be displayed on the **Information** page. The largest allowed size of the bitmap file is 64 KB. The bitmap can be stretched by selecting the **Stretch Image** check box and sizing it using the splitter between the bitmap and text.
- Click the **Load Text** button to load a previously prepared text file or type in the text to be displayed directly into the memo box.
- Click the **OK** button to return to the **User Interface** tab page.

2 **Display Peregrine Logo in Windows Scanners**

This option allows you to remove the Peregrine logo shown at the top of the Scanner page when it is running.

By default, the option is checked and the Peregrine logo is shown.

3 **Allow user to access the Software Scanning page**

This controls viewing access to the **Software** pages. When this option is unchecked, the Software tab is not displayed and the Software page cannot be chosen from the Window menu.

Setting the Default View When the Scanner Is Run

This controls which page is displayed when the Scanner starts.

To set the default view when the Scanner is run:

▶ Select from the following options:

- **Asset Entry**

  This can not be chosen if asset data is not collected.

- **Software Scanning**

  This can not be chosen if the option to allow access to the Software Scanning page is unchecked.

  Log Page

  This option is always available.

- **Information Page**

  This can only be selected if the **Enable information page** option was checked. You can also specify whether you want the hardware scanning progress to be displayed or not.

  If the **No hardware progress** option is checked, the information page is shown even during hardware scanning. If **No hardware progress** is unchecked, the scanning progress window is shown during the hardware scanning stage. After the hardware scanning is finished, the Information page is shown.

Setting the Mode in Which the Scanner Is Run

To set the mode in which the Scanner is run:

▶ Select from the following options:

  Normal

  The Scanner runs like a normal application. The user can of course minimize the application if desired.

- **Minimized**

The Scanner runs minimized and the user can restore the window if desired. If a required asset entry field is blank, the Scanner is restored and the user is prompted for an answer.

- **Maximized**

  The Scanner runs maximized and the user can restore or resize the window if desired.

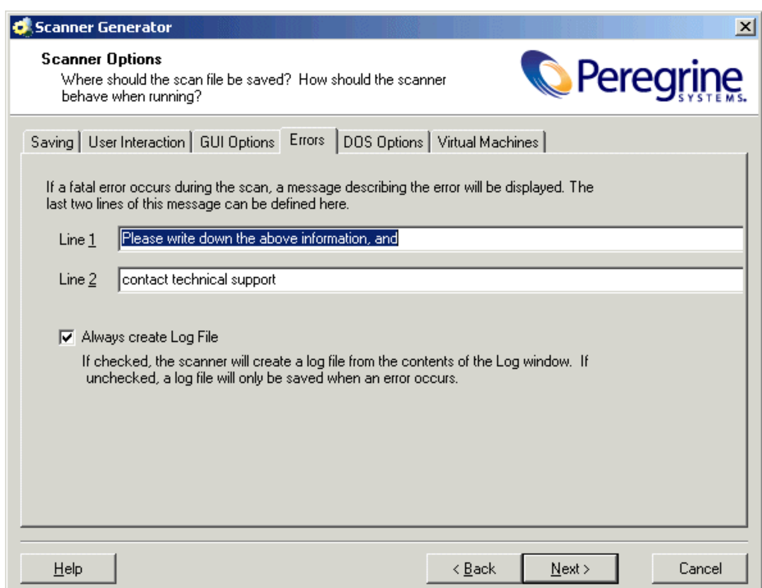
- **Hidden**

  Prevents the Scanner from showing up in the Task bar (do not normally use this option), but otherwise works as **Minimized** mode.

  You can also specify whether error messages are displayed to the user or not. If the **Do not show error messages** option is checked and the Scanner encounters an error, it will exit quietly. If this option is not checked, the Scanner will display the error to the user and if appropriate, ask the user to correct the error. For example, if a required asset field is empty, the Scanner will prompt the user to enter a value.

The Errors Tab

The **Errors** page is used to set up customized error messages in the event that an error causes the Scanner to stop running (sometimes called a fatal error).



Setting Up a Customized Error Message for the Scanner

Two additional error message lines can be set up and displayed.

To set up a customized error message for the Scanner

▶ Type the two lines of text in boxes **Line 1** and **Line 2**. Usually, Line 1 states what to do and Line 2 states who to contact.

Setting Up the Creation of a Log File

The log file stores progress messages for Scanner hardware detection, indicates what directory data is scanned, how long the software scanning took and contains the status of the scan file saving.

To set up the creation of a log file:

▶ Check the **Always Create Log File** option.

A log file is always created if this option is selected (which indicates the successful completion of the scan if no errors are encountered).

Otherwise, a log file is only created if an error is encountered.

Depending on the saving options chosen, the log file is saved to the following locations:

- The same location as the local scan file
- The same location as the offsite scan file (if an offsite location has been specified).
- In the scan file itself (as a stored file).

  The name given to the log file is the same as the name of the scan file. For example, if the scan file is called:

  FSF014.fsf

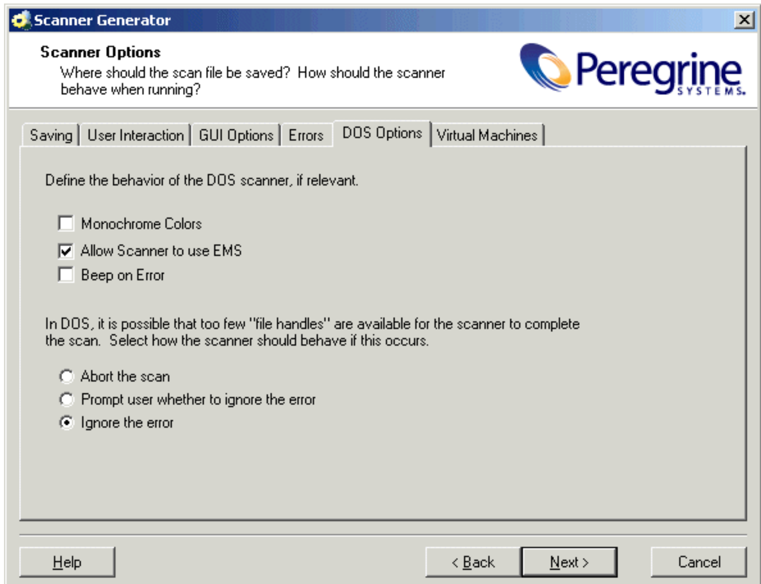
  Then the log file generated will be called:

  FSF014.log

Note: The log file is not stored with the offsite scan file if the offsite scan is saved to an FTP or an HTTP location.

The DOS Options Tab

The **DOS Options** page is used to select options that control the behavior of the DOS Scanner as it scans each computer. If the DOS Scanner is not used, these options have no effect.



This tab page is divided into two sections:

- Behavior of DOS Scanner
- Behavior when too few File Handles available

Setting Up the Behavior of the DOS Scanner

These options are used to control the behavior of the DOS Scanner as it scans each computer. They include options for the screen display and how the program allocates extra memory (if required).

To set up the behavior of the DOS Scanner, select the options as required:

1 **Monochrome Colors**

(DOS and OS/2 Scanners only) Specifies that the Scanner will run with monochrome (black and white only) screen display, instead of the default color display.

2 **Allow Scanner to use EMS**

(DOS Scanners only) Allows the Scanner to use EMS memory for swap space. If this option is cleared, the Scanner uses hard disk space instead.

Note: Enabling this option will speed up the scanning process.

3 **Beep on Error**

Causes the Scanner to beep when an error occurs

Setting Up the Behavior When Too Few File Handles Are Available in DOS

If too few file handles are available when the DOS Scanner is scanning a computer, an error results and the scan is stopped. When too few file handles are available, the Scanner is unable to open files when scanning and cannot complete. In this case the behavior of the Scanner can be controlled, so that the **Config.sys** file is modified to provide a suitable number of file handles when the computer is re-scanned.

To set up the behavior when too few File Handles are available in DOS, select one of the following options:

1 **Abort audit**

This is the default option. The scan is stopped with an error message.

2 **Prompt user whether to ignore error**

Displays an error message, and allows the scan to continue. In many cases, choosing to ignore will cause the Scanner to abort with a fatal error message as it tries to open files and is unable to do so.

3 **Ignore the error**

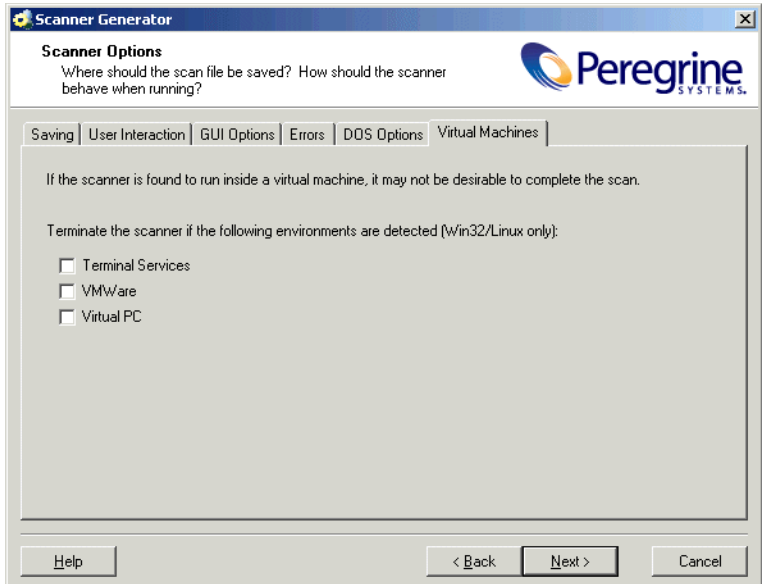
The error is ignored and the scan is continued. However, the Scanner may abort with a fatal error message.

It is strongly recommended that the first option (Abort Audit) is used. Unpredictable results may occur when using either of the other two options.

The Virtual Machines Tab

When the Scanner is run inside a virtual environment, you may not want a full software scan to take place, because this would scan the server for every client.

Settings on this page can instruct the Scanner to exit without doing any processing with a special error level 20, allowing a script that launched the Scanner to handle this situation and launch another Scanner tailored for the virtual environment if required.



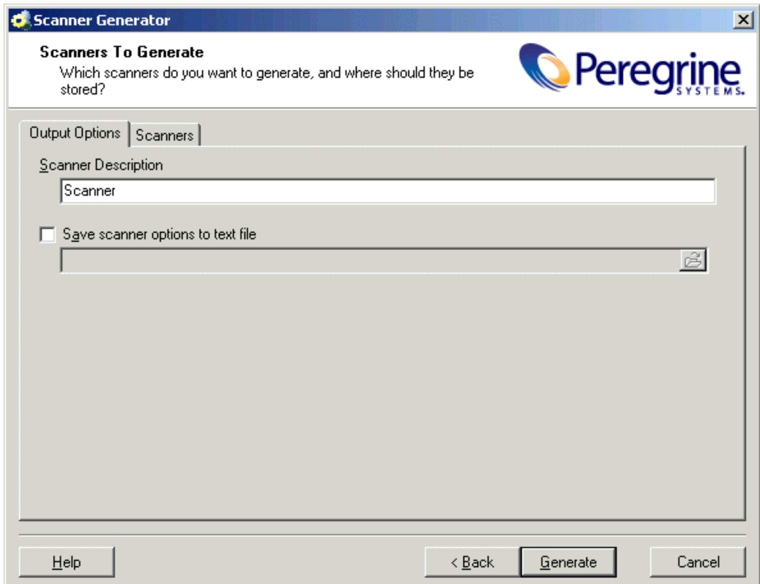
Note: The settings for Virtual Machines are applicable to Linux and Win32 Scanners only.

▶ Select the virtual environment(s) you want the Scanner to terminate for, if detected:

- Terminal Services
- VMWare
- Virtual PC

The Scanners to Generate Page

The **Scanners to Generate** page is used to specify which Scanners to generate and where they will be stored.

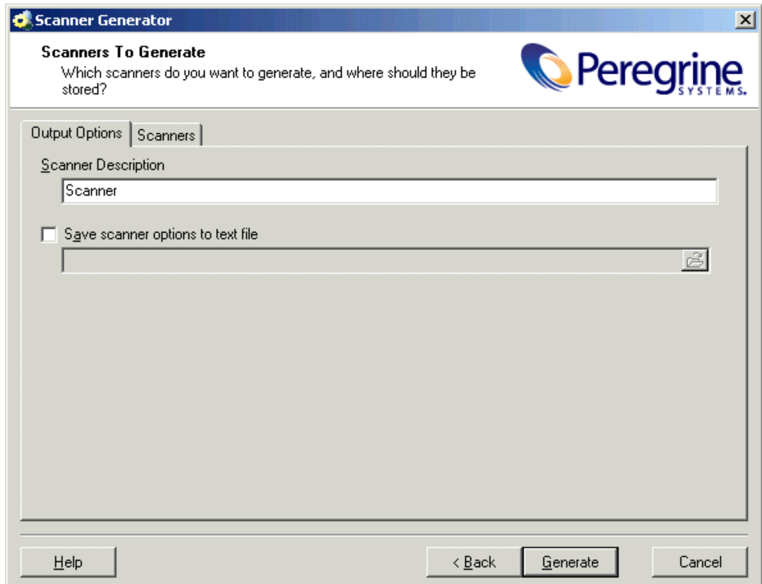


The **Scanners to Generate** page has two tab pages:

- *The Output Options Tab*
- *The Scanners Tab*

The Output Options Tab

The **Output Options** page is used to set up Scanner descriptions, save the configuration to a text file if required.



Setting Up a Scanner Description

These options allow you to specify the Scanner description. You can also optionally produce a text file of the Scanner selections that you have made.

Having a scanner description is very useful for change control if different scanners are being developed for different circumstances.

It is useful for documentation purposes, to have a file with the scanner's configuration stored in a file. If this step is missed, then load the scanner or a scan file derived from it into Scanner Generator and produce the documentation from this.

To set up a Scanner description and save the options to a text file

▶ In the **Scanner Description** box, enter a description to identify the Scanner.

For example

Standard PC Inventory – March 18, 2004

Saving Scanner Options to a Text File

The **Save scanner options to text file** box is used to instruct the Scanner Generator to output a text file containing a complete textual listing of all settings defined elsewhere in the program. Select the check box and specify the path and text file name to which the Scanner options will be saved to. The text file cannot be used by the Scanner Generator, but is intended for user/internal documentation purposes.

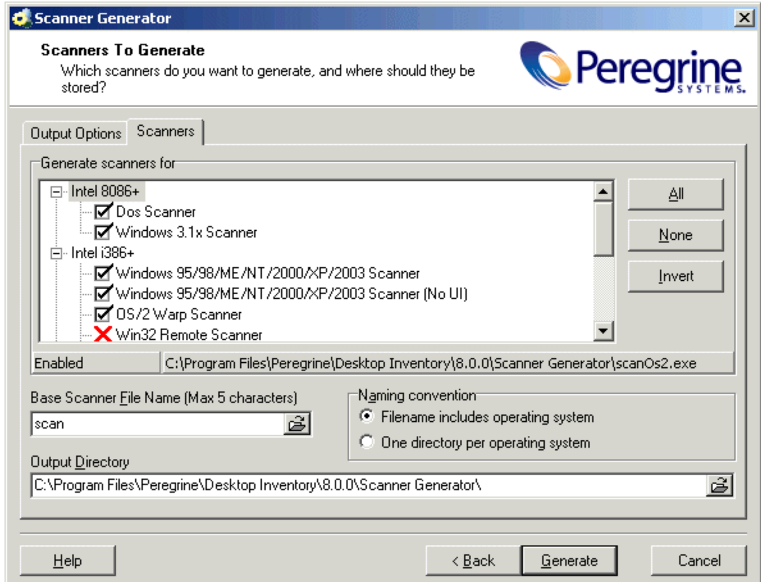
Example Section of the Settings.txt File

You can look at a **Settings.txt file** using a text editor (such as Notepad). The following listing shows a sample section of such a file:

```
Desktop Inventory 8.0 - 18 Mar 2004
General Options:
  - Description : Scanner
  - User can abort Scan
  - INI file is used
  - FSF is saved offsite
      > Save path is \\SERVER\Desktop Inventory
      > FSF Name specified on command line using /O<name>
      - Log file .LOG is always created
      - Fatal Error Message Line 1: Please write down the above information, and
      - Fatal Error Message Line 2: contact technical support
GUI Scanner Options:
  - Scanner runs at normal priority
  - Software page is enabled
  - User is allowed to expand the view
  - Default page: Asset Data
Software scanning is enabled:
  - Scanning Default Drives
  - Drive selection can be overridden by the command line
  - Collection of File Data is enabled
```

The Scanners Tab

The **Scanners** tab is used to select which of the Scanners to generate.



Selecting which Scanners to Generate

The Scanners are presented in a tree view in the **Generate scanners for** list box. Scanners shown with a red cross X are invalid with the current set of options.

As the mouse pointer passes over a Scanner in the list, the status bar (just below the list box) displays the following information for that particular Scanner.

- Whether the Scanner is enabled (meaning it is valid with the current set of options).
- The directory that the Scanner will be generated in. If the Scanner was invalid, then a description of why this is the case is displayed instead.

To select which Scanners to generate:

▶ Select the check boxes next to the Scanner.

Important: The Remote (Win32) option will generate the Win32 Remote Scanner. The Remote Scanner cannot be generated if any of the calculated fields are being used: Registry Extract, DMI Extract, WMI Extract, Environment Extract, File Extract.

Buttons

- **All** - Selects all Scanners
- **None** - Deselects all Scanners
- **Invert** - The Invert button allows the selections to be reversed. This saves having to deselect all the Scanners one by one, when only a single Scanner is required. If all the Scanners are selected, just deselect the one you want and choose **Invert**.

Specifying the Base Scanner File Name and Output Directory

You can define the base name of the Scanner (up to 5 characters). Alternatively for each Scanner, you can either have a file name to identify the operating system or you can use a separate directory for each operating system.

To specify the base Scanner file name and output directory

1 For all selected Scanners, specify a fully qualified file name. The initial part of this file name (up to five characters) can be entered in the **Base Scanner File Name** (**Max 5 characters**) box. The remaining three characters of the file name are used to describe the Scanner executable (DOS, W16, OS/2and so on).

For example, by entering Scan (the default setting) in the **Base Scanner File Name** (**Max 5 characters**) box, the following Scanners can be generated (if they can been selected in the **Generate scanners for** list box):

Scanner File Name	Scanner Type
scanDos.exe	DOS 16-bit
scanW16.exe	Windows 16-bit
scanW32.exe	Windows 32-bit
scanN32.exe	Windows 32-bit (no UI)
scanOs2.exe	OS/2 32-bit
scanR32.exe	Remote (Windows 32-bit)

Scanner File Name	Scanner Type
scansp2	Solaris 2.5/2.6/7/8/9
scanhpx	HP-UX 10.2, 11.0
scanaix	AIX 4.3, 5.0, 5.1, 5.2
scanlnx	Kernel v2.2x, 2.4x, 2.6x

2 In the **Output Directory** box, type in or click the button to specify the directory that the generated Scanners will be saved to.

Setting Naming Conventions for the Scanners

The **Naming conventions** options determine the manner in which Scanner files are named:

To set naming conventions for the Scanners:

1 Select one of the following:

- **Filename includes operating system**

  This option incorporates the Scanner name with the operating system, for example:

  Scandos.exe

  Scanw16.exe

- **One directory per operating system**

  This option dictates that the names of each Scanner generated are the same, but are copied into individual subdirectories which are named as per the operating system.

  For example, a Scanner named **Scan.exe** would appear in directories for all operating system options selected:

  C:\Program files\Peregrine\Desktop Inventory\8.0.0\Dos\Scan.exe

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\W16\Scan.exe

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\W32\Scan.exe

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\N32\Scan.exe

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\Sp2\Scan

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\hpx\Scan

  C:\ Program files\Peregrine\Desktop Inventory\8.0.0\aix\Scan

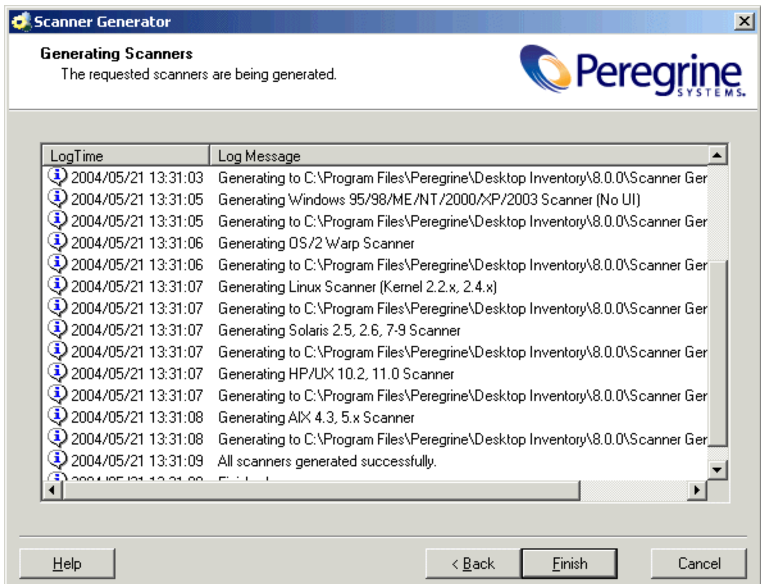
C:\ Program files\Peregrine\Desktop Inventory\8.0.0\lnx\Scan

C:\ Program files\Peregrine\Desktop Inventory\8.0.0\OS2\Scan.exe

2 Click the **Generate** button to create the Scanner executable files.

The Generating Scanners Page

After you have selected the Scanners to be generated and have clicked the **Generate** button, the last page of the Scanner Generator is displayed.



This shows the progress during the generation of the actual Scanner executable. Errors and progress information are shown in the log window.

The contents of this log can be copied to the clipboard by clicking the **To Clipboard** button.

Right-clicking anywhere in the log window displays a shortcut menu which allows you to:

- Save the contents of the window to a log file.
- Copy the contents of the log window to the clipboard.
- Clear the log window.

If a Scanner already exists, with the same name in the chosen directory, then a confirmation message is displayed. This allows you to choose whether to overwrite the existing Scanner.

After the Scanners have been generated, click the **Finish** button to exit the Scanner Generator.

The generated Scanners can be found in the directory specified in the **Scanners** tab of the **Scanners to Generate** page.

How Drive Letters and Volumes Are Assigned

This section outlines how Desktop Inventory assigns and uses drive letters, what the volume list means and related topics.

In This Section....

Enumerating Physical Hard Disks and Partitions

When performing the hardware scan, the Scanners attempt to enumerate physical hard disks in the machine and also enumerates partitions (or 'volumes') on those disks.

This enumeration may not succeed, or may only succeed partially, for several reasons. To access parts of this information, Administrator rights must be available for the Scanner - if it runs with normal user privilege, the hard disk cannot be accessed in low level ('raw') mode, which is what is used for low level scans and partition scans. However, even when in user mode, much information can be extracted from Windows and the Scanner relies on this information if the low level information is not available.

Additionally, when running in operating systems that support the notion of drive letters, the Scanner enumerates all drive letters available to determine which type they are, and attempts to match drive letters with actual partitions enumerated previously.

Finally, on operating systems supporting this, the Scanner enumerates all mount points (which is roughly equivalent to symbolic links for directories), which provides a list of virtual directories that are links to other directories or to partitions/volumes.

The result of the enumeration can consist of the following data, with some parts potentially missing due to access restrictions or operating system restrictions:

- List of valid drive letters
- List of physical disks
- List of partitions from low level scanning of partition tables
- List of volumes retrieved from operating system
- List of mount points

Processing Drives

The mechanism for assigning drive letters to hard disk partitions differs from operating system to operating system. For example, some operating systems support multiple primary FAT partitions simultaneously, whereas others only can ‘see’ one at a time. Some operating systems allow drive letters to be assigned dynamically according the users' wishes, and others assign static drive letters that cannot be changed. Finally, some operating systems do not use drive letters at all.

With the data from the enumeration processes available, the Scanner attempts to determine the type of each drive letter. Drives that are SUBST'ed, point to network shares, RAM disks and so on are easily handled.

Drive letters that refer to hard disk partitions are then processed. The Scanner now attempts to match the three lists of partitions available (drive letters referring to disk drives, the low level scan partition list and the operating system partition list) to create a list of partitions containing the following key fields:

- Drive letter (if applicable)
- Partition type (for example FAT, NTFS)
- Read type (how the Scanner intends to read the partition)
- Physical hard disk reference (on which disk does the partition reside)

- Cylinder/Head/Sector offsets (indicating where on the disk the partition is)
- Total Size/Freespace

At the end of this process, it is possible that some hard disk partitions are still available, detected during the low level or operating systems enumeration but not assigned a drive letter by the operating systems. This can happen in several cases:

- The operating system does not support multiple primary partitions simultaneously. If multiple primary partitions are available on a single disk, the operating system will assign a drive letter to just one of them and cannot access any other ones.
- One or more partitions of an unsupported type exists. For example, FAT32, HPFS or NTFS partitions when in DOS, NTFS partitions in OS/2, Linux partitions outside Linux and so on.
- One or more partitions are not of a type that contains files, such as a Boot manager partition not known by the operating system but used solely for multi-boot systems.
- One or more partitions has not been assigned a drive letter by the user. This can happen in Windows NT/2000/XP/2003, which allow drive letters to be assigned and removed at will.

For any such partitions, the Scanner will assign a lower case drive letter in the range from a: to z:, unless the partition is accessible through one or more mount points or symbolic links. In this case, no lower case drive letter will be assigned to the partition.

Note: The lower case drive letters are different from the upper case variant (C: to Z:), which are used to signify a 'real' drive letter available to the operating system.

Scanning Specific Directories

When the Scanner is launched, it may be desirable to scan only a subset of the partitions/directories selected based on the Scanner Generator configuration. Provided this has not been allowed in the Scanner configuration, it can be done by simply specifying the directory paths or drive letters to scan on the command line, such as this:

```
ScanW32 C:\Windows D:
```

The drive letters specified are case-sensitive. As explained previously, the upper case drive letters match the corresponding operating system assigned drive letters, while lower case drive letters are assigned by the Scanner to those partitions which the operating system cannot access.

To specify lower case drives for scanning, use a lower case letters followed by a a colon (:) to specify these drives, for example:

```
ScanW32 c: a:
```

6 The Scanners

CHAPTER

In this chapter you will find information about the following topics:

Overview of Running a Scanner

The Scanner used to scan each computer can capture any or all of the following types of information, depending on the options selected when the Scanner was configured:

- Information about the hardware configuration.
- Information about the system configuration.
- Information about the software on the drives scanned.
- Information about the physical assets and user details that are recorded using the asset questionnaire.

The information collected by a Scanner is stored in a Fingerprint Save File (FSF) or Compressed XML File (XSF) file. This information can be viewed immediately with Desktop Inventory Analysis Workbench or Viewer, or can be migrated to a third party application.

The key criteria for collecting data is to keep the amount of time spent at each computer to a minimum. It is not realistic to expect users to stop work for more than a few minutes. The process will run a lot more smoothly if users are notified in advance, preferably with an explanation of the purpose of the inventory.

Accuracy is a very important issue. It is cheaper to fix problems at the time of data collection rather than at a later date. Correct Asset Numbers are vital to ensure that the scan files are unique. Data consistency for product names and descriptions are important for reporting purposes.

Select the Scanner that is most appropriate for the computer to be inventoried.

The Scanner Types

Scanners can be generated for the following operating systems:

Scanner	Scanner default name	Platform
DOS Scanner	ScanDos.exe	Dos 16-bit
Windows 16-bit Scanner	ScanW16.exe	Windows 3.1x
Windows 32-bit Scanner	ScanW32.exe	■ Windows 95 ■ Windows 98 (includes Windows 98 SE) ■ Windows NT 4.0 (includes Windows NT Server) ■ Windows ME ■ Windows 2000 (includes Windows 2000 Server) ■ Windows XP ■ Windows 2003 Server ■ Windows Media Server ■ Windows for Tablet PCs
The Remote (Windows 32-bit) Scanner	ScanR32.exe	■ Windows 95 ■ Windows 98 (includes Windows 98 SE) ■ Windows NT 4.0 (includes Windows NT Server) ■ Windows ME ■ Windows 2000 (includes Windows 2000 Server) ■ Windows XP ■ Windows 2003 Server ■ Windows Media Server ■ Windows for Tablet PCs
OS/2 Scanner	ScanOs2.exe	OS/2 2.1 and OS/2 Warp
Solaris Scanner	scansp2	Solaris 2.5, 2.6, 7, 8 and 9 on SPARC
HP-UX Scanner	scanhpx	HP-UX 10.2 and 11.0 on HPPA
AIX Scanner	scanaix	AIX 4.3, 5.0, 5.1, 5.2 on IBM R6000

Scanner	Scanner default name	Platform
Linux Scanner	scanLnx	Any distribution with a 2.2x, 2.4x or 2.6x kernel on i386
MSI Scanner	msiscanner.exe This Scanner is located in **C:\Program Files\Peregrine\Desktop Inventory\8.0.0\ApE Explorer** by default.	■ Windows 95 ■ Windows 98 (includes Windows 98 SE) ■ Windows NT 4.0 (includes Windows NT Server) ■ Windows ME ■ Windows 2000 (includes Windows 2000 Server) ■ Windows XP ■ Windows 2003 Server ■ Windows Media Server ■ Windows for Tablet PCs

The procedure for starting a Scanner depends on the native operating system environment for the computer being scanned.

Viewing the Results of the Scan

Peregrine Desktop Inventory comes with the Viewer program, which allows you to look at the results of your scans. Refer to the *Viewer* Chapter for more information about how to use this application.

For **XSF** scan files, a tool such as gzip or Winzip can be used to extract the XML data contained in them. The XML file contained inside the **XSF** file can be viewed with any text editor or XML viewer such as Internet Explorer.

Command Line Options and Switches

In This Section...

Using Command Line Options to Run the Scanner

Although the options for the Scanner are normally set using the Scanner Generator, it may be necessary to change some settings to allow better operation on some machines. The operation of a Scanner can be modified with the use of the various command line options.

Reasons for Overriding the Options in a Configured Scanner

- The Scanner may encounter a problem with a particular hardware. Using command line options, the problem hardware can be circumvented.

- Command line options can change the configured options such as save path. This allows the scan results to be saved to a local machine without a full network path having to be defined.

How to Use a Command Line Option or Switch

You can specify command line options and switches by:

- Typing the command from a command line (for example, the Windows command prompt, or the UNIX command line). In any case, make sure you supply the path to the Scanner.

  For example,

  ```
  /tmp/scanLnx -?
  ```

  launches the Linux Scanner from the /tmp directory.

- Creating a Windows shortcut. Type the command line option or switch after the quotation marks.

  For example,

  ```
  "C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Scanner Generator\ScanW32.exe" /?
  ```

  launches the Win32 Scanner and displays a list of valid command line options.

- Typing the command in the Windows **Run** command in the Start menu. Type in or navigate to the location where the Scanner executable is located. Type the command line option or switch after the quotation marks.

  For example,

  ```
  "C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Scanner Generator\ScanW16.exe" /?
  ```

Command Line Switch Format

When specifying command line switches use the following command format:

ScannerName [switch]

In the following example, the -10 switch causes the Scanner to scan the C drive and excludes the BIOS from the hardware tests:

```
ScanW32 C: -10
```

or

ScanW32 C: /10

Where:

- ScanW32 is the Windows-based 32-bit [Scanner]
- -10 or /10 is the [switch]

Important: UNIX is case-sensitive. Use the exact name of the Scanner and switches (all switches are lower case).

Command Line Options for Scanners

Valid command line options for the Windows, DOS, UNIX and OS/2 Scanners are shown in the following table:

Note: Only the - prefix is used for the UNIX Scanners. You can use the – or / prefix for all of the other Scanners.

Command Line Option	Function	Scanners
-force or /force	Do not check disk space saving offsite Scan File. This may be useful in situations where the operating system reports insufficient space, but this is actually due to access rights.	Windows DOS OS/2 UNIX
-noarc or /noarc	Disables archive processing.	Windows DOS OS/2
-noplug or /noplug	Do not use plug-ins.	Windows DOS OS/2
-noclassic or /noclassic	Do not use classic software scanning method.	Windows DOS OS/2
-noshortcut or /noshortcut	Do not use shortcuts for software scanning.	Windows DOS OS/2

Command Line Option	Function	Scanners
The **noclassic** and **noshortcut** switches are only useful when the **Combined** software scanning mode is used. In Combined mode both Classic and Targeted scans are enabled. Then by using one of these switches you can disable one of these two methods. If you use are using a Targeted scan for example, and try to disable it by using the -**noshortcut** switch the Scanner will not do any software scanning.		
-noenv or /noenv	Do not use environment variables for software scanning.	Windows DOS OS/2
-nosvc or /nosvc	Do not use services for software scanning.	Windows DOS OS/2
-nofileassoc	Do not use file associations for software scanning.	Windows DOS OS/2
-p:<path> or /p:<path>	Override default offsite save path. For example: ScanDos /p:r:\results A UNC path can also be entered as the argument to this option. The format for a UNC path is: \\servername\sharename\path\ For example, ScanW32 -p:\\Peregrine\DI\scanfiles\ The Scanner must have Write permissions to the specified UNC path.	Windows DOS OS/2 UNIX
-r:<path> or /r:<path>	Override default path for refilling. For example: ScanDos /r:r:\results A UNC path can also be entered as the argument to this option. The format for a UNC path is: \\servername\sharename\path\ For example, ScanW32 -r:\\Peregrine\DI\scanfiles\ The Scanner must have read permissions to the specified UNC path.	Windows DOS OS/2 UNIX

Command Line Option	Function	Scanners
-scandays:<Count> or /scandays:<Count>	Scan only if previous scan was more than Count days ago. Forces the Scanner to perform the scan only if the previous scan was <N> or more days ago. For example: -scandays:7 For example, if the Scanner is launched from a login script every day, it will only perform the scan every week. When the scandays:<N> parameter is specified, the Scanner attempts to check when the last scan was run. If no previous scan file is found, no messages are displayed and the scan runs. If a scan file is found, the following message is added to the log file: "Checking the age of Scan File "%s" Where %s is the full name of the scan file it uses to check it. If there is a problem determining the age of the scan file (for example, if it is a newer version or it is corrupt), it then outputs: The age of the Scan File cannot be determined. If it does manage to obtain the date, it outputs: Last scan was %d days ago. Where %d is substituted for an integer number.	Windows DOS OS/2 UNIX
-scandaysofweek:<Number> or /scandaysofweek:<Number>	Scan only on specified day of week(0-Sun,1-Mon, etc). <N> can be one of the following: ■ 0-Sunday ■ 1-Monday ■ 2-Tuesday ■ 3-Wednesday ■ 4-Thursday ■ 5-Friday ■ 6-Saturday For example: -scandayofweek:5 This will cause the scan to be performed on Fridays only. The **scandays:** and **scandayofweek:** options can be combined. For example, ScanW32 -scandays:14 –scandayofweek:3 This causes the scan to be performed every other Wednesday.	Windows DOS OS/2 UNIX

Command Line Option	Function	Scanners
-inipath:<path>	Specify the location of infrtool.ini. Sometimes the Scanner is run in environments where the root of C:\ is not writable or where it is undesirable to write to this location. The Scanners are able to make use of **infrtool.ini** when it is written to another directory. The alternate directory can be specified on the command line or by modifying the registry before running the Scanner.	Windows DOS OS/2
-noems or /noems	Prevents EMS memory from being used.	DOS
-mono or /mono	Forces monochrome mode (UI is shown without colors).	DOS OS/2
-displayassets	Print the asset questionnaire and exit	UNIX
-incl:<switch>	Switches for re-enabling individual hardware tests that were disabled in the Scanner Generator. To include tests 10, 20 and 50, you would run `-incl:10 -incl:20 -incl:50` See page 251 for a table of hardware tests.	UNIX
-excl:< switch >	Switches for disabling individual hardware tests. To To exclude tests 10, 20 and 50, you would run `-excl:10 -excl:20 -excl:50` See page 251 for a table of hardware tests.	UNIX

Command Line Option	Function	Scanners
-assets	Specifies a file that can contain the asset information and will automatically populate the fields. In Scanner Generator you add the asset fields that you want to populate. For example: ■ Asset Tag ■ Last Name ■ First Name Then in a text file in UNIX you enter the hardware field names: ■ hwAssetTag=Solaris ■ hwAssetUserLastName=Smith ■ hwAssetUserFirstName=John Run the following command: `./scansp2 -assets:<filename>` For every asset field in Scanner Generator you have to have a matching Hardware field in the text file on the UNIX machine or it will not work.	UNIX
-exit_vpc	Terminates the Scanner if it was launched inside Virtual PC.	Windows 32-bit
-exit_ts	Terminates the Scanner if it was launched from within a Windows Terminal Services session.	Windows 32-bit
-exit_vm	Terminates the Scanner if it was launched inside a VMWare virtual machine.	Windows 32-bit Linux
-paths	Using this switch, it is possible to define exactly which directories to scan; the parameter can be repeated as many times as necessary. For example `scan -paths:/etc -paths:/var -paths:/bin` will scan just /etc, /var and /bin and their subdirectories.	UNIX
-unhide	Run the hidden Scanner normally.	Windows 32-bit Linux
-hidden	Run the Scanner hidden.	Windows 32-bit Linux
-hiddennoerrors	Run the Scanner hidden with no errors reported.	Windows 32-bit Linux

Command Line Option	Function	Scanners
<paths>	If one or more paths are specified only these paths are scanned. For example, Scan C:\ D:\Test will scan the C: drive and D:\Test and subdirectories only. This switch is equivalent to the UNIX -paths: switch	Windows 32-bit
-o:<filename> or /o:<filename>	Takes the offsite scan file name from the command line. For example (non UNIX): ScanW32 /o:r:\results\SC002154 Where r:\results\SC002154 is the path to the file SC002154. If a file name is not entered, the file is named **Default.fsf** or **Default.xsf.** If the path is not specified, the file is placed in the directory configured for offsite scan files in the Scanner Generator (see *The Saving Tab* on page 205)	Windows DOS OS/2 UNIX
-<switch> or +<switch>	Disable or Enable hardware tests. See *Using Command Line Switches to Enable and Disable Specific Hardware Tests (PC Scanners)* on page 251.	Windows DOS OS/2
-reaudit or /reaudit	Performs an automatic re-scan with the Remote Scanner. An optional scan file name can be specified in this command line option. This gives the name of the scan file from which the Scanner reads the hardware data. The full syntax is: /Reaudit[HardwareScanFileName] For more information about the Remote Scanner see *The Remote Scanner* on page 281.	Windows Remote Scanner
-? or /?	The full list of command line options can be obtained by running the Scanners with the -? or /? command line option.	Windows DOS OS/2 UNIX

Command Line Software Data Override Option

An option is available which can override the software selection configured in the Scanner Generator by specifying a list of drives and/or directories to scan on the command line.

Note: You must ensure that the **Allow Command Line Override option** is checked in the **Scanner Generator Software Data** tab for this to work.

Use the following command format:

Scanner {scan location} {option}

Scan locations can either be drives (such as C: or F:) or can be directories (C:\Windows)

Multiple scan locations can be specified by separating them with a space.

An example of a command line override is:

ScanW32 C: N: Z: -noplug

or

ScanW32 C:\Windows C:\Programs D: -noplug

Where:

- ScanW32 is the Windows-based 32-bit [Scanner].
- C:\Windows C:\Programs D: are the [scan locations].
- -noplug is the [option].

This will override the software scan selection made in the Scanner Generator and will scan the locations specified. No plug-ins will be used.

Note: When the software scan selection is changed in this way, the local scan file (**local$.fsf** or **local$.xsf**) is only created if the offsite scan file is disabled.

Using Command Line Options to Scan Special Hard Drives

Drives that come under this category are:

- Drives that are not supported by the current operating system (such as FAT32 drives in Windows NT Version 4 or below or NTFS drives in DOS).
- FAT partitions not readable by DOS. Normally all FAT drives are accessible by DOS. The exception is multiple primary FAT partitions on the same physical hard disk.
- HPFS drives when not running OS/2.
- NTFS drives when not running Windows NT/2000/XP/2003.
- Drives where access to the drives may be restricted (such as Boot Manager).
- Partitions that are valid, but are not assigned a drive letter in Windows NT/2000/XP/2003.

Because these drives are not assigned drive letters by the operating system, the Scanner assigns “virtual” drive letters to them. Such virtual drive letters are in lower case, making it easy to distinguish them from normal drive letters.

When running the Scanner, any drive letters specified on the command line are case-sensitive. To scan your C: drive, use an upper case C.

In some cases, it may be desirable to force a scan of one or more “virtual” partitions. To do this, specify the virtual drive letter, followed by a colon.

Example

‘scan a:’ will scan the first virtual partition, if it exists. If both an A: and a: drive exist then because the command line is case-sensitive, drive a: will be scanned.

Example:

```
ScanW16 c: b: -scandayofweek:4
```

or

```
ScanW16 c: b: /scandayofweek:4
```

Where:

- ScanW16 is the Windows-based 16-bit [Scanner].
- c: and b: are the drives to scan [drives].
- -scandayofweek:4 or /scandayofweek:4 is the [option].

Occasionally, it may be useful to run a Scanner without scanning any software. Because it is unlikely that a virtual drive letter z will be used (because this would require 26 unsupported or unmounted partitions to exist), this can normally be achieved by running the Scanner with z: as the parameter:

```
scan z:
```

Specifying an Alternate Path for infrtool.ini

On some Windows computers the root of C:\ is read-only, which makes it impossible for the Scanner to create a **c:\infrtool.ini** file.

This file holds key information needed by the Scanner, such as the asset number of the computer and the path where the local scan file is saved to.

Solution

The default location of infrtool.ini is C:\

A command line option is available to specify a different location for infrtool.ini

-inipath:<path>

where <path> is the desired path, for example:

-inipath:D:\

The root of the D: drive is used.

When this option is specified, the Win32 Scanner saves its value in the Windows registry under:

HKEY_LOCAL_MACHINE\Software\Peregrine Systems\InfrtoolIniPath

This registry value is shared by all users that log on to the computer. The **-inipath** command line option only needs to be specified once. On subsequent runs, the Scanner retrieves the previously specified location of the **infrtool.ini** file from the registry.

Notes

- PC Scanners other than the Win32 Scanner have support for the **-inipath** option, but they do not save the path to the registry. As the result, if the **-inipath** option is used, it must be specified each time the Scanner is run.
- If the path specified in the **-inipath** command line option does not point to a valid directory, the default "C:\" is used.
- Some extremely limited configurations may have access to the registry branch under HKEY_LOCAL_MACHINE as read-only. If the Scanner is not able to save the path under HKEY_LOCAL_MACHINE, it tries to save a backup value under:

  HKEY_CURRENT_USER\Software\Peregrine Systems\InfrtoolIniPath

However, the registry content under HKEY_CURRENT_USER is not shared by all users, so in order for the Scanner to use the same **infrtool** directory for all users using the computer, use the **-inipath** switch at least once each time a new user is running the Win32 Scanner. This only applies to those rare cases when the Scanner is not able to write the registry value under HKEY_LOCAL_MACHINE.

- The registry value holding the path to **infrtool.ini** can also be specified by manually editing the registry prior to running the Win32 Scanner. Tools such as regedit (supplied with Windows), regini (supplied with Windows Resource Kit), etc. can be used for this purpose. The value should be of the string type (REG_SZ).

Warning: This method is not recommended. Use at your own risk. Incorrectly editing the registry may render Windows inoperable.

Viewing Command Line Options in Viewer or Analysis Workbench

If a command line option or switch has been used, it can be viewed in Analysis Workbench or Viewer.

This can be very useful when you want to check if the scan results were obtained from a Scanner that had been run with any special command line options.

For example, if the Scanner had been run with the **-paths** command:

```
scan -paths:/etc -paths:/var -paths:/bin
```

The **-paths** command line option will be displayed in Viewer (**System Data** folder in the **Hardware and Configuration** tab page).

Using Command Line Switches to Enable and Disable Specific Hardware Tests (PC Scanners)

Switches for disabling single hardware tests in the PC Scanners are shown in the following table:

Command Line Switch	Command Line Switch
-10 : BIOS Data	-11 : BIOS Extension
-12 : SMBIOS Information	-13 : Compaq Asset Tag
-14 : Plug and Play Version	-30 : Video data
-31 : Monitors	-40 : Port data
-50 : Keyboard and Mouse data	-51 : Hardware Mouse detection
-60 : Disk data	-62 : Partition Table scan
-70 : Memory Data	-71 : XMS freespace detection
-72 : Swap Files	-80 : CPU Data
-81 : Enhanced CPU identification	-82 : Fast CPU speed detection
-90 : Operating System Data	-91 : Device driver files
-92 : Cluster Data	-93 : Services
-94 : Virtual Machine Data	-95 : User profiles
-100 : Storage Data	-101 : Devices
-102 : SCSI/IDE serial numbers	-110 : Network data
-111 : TCP/IP data	-112 : IPX data
-113 : Netbios Data	-114 : Network Shares
-120 : Bus Data	-121 : PCI Cards
-122 : PCMCIA Cards	-123 : MCA Cards
-124 : EISA Cards	-125 : ISA PnP Card detection
-126 : USB Data	-130 : Peripherals
-140 : DMI Information	-141 : DMI 1.x Version detection
-142 : DMI 2.x Version detection	

Using Command Line Switches to Enable and Disable Specific Hardware Tests (UNIX Scanners)

Switches for disabling single hardware tests in the UNIX Scanners are shown in the following table:

Command Line Switch	Command Line Switch
10 : BIOS detection	30 : Video detection
40 : I/O Port detection	50 : Mouse & Keyboard detection
60 : Disk detection	70 : Memory detection
80 : CPU identification	90 : Operating System detection
-95 : User profiles	100 : SCSI/ASPI detection
110 : Network detection	120 : Bus/Card detection
126 : USB Data detection	130 : Peripherals detection
150: System Configuration	

Overriding Scanner Generator Settings with Override Files

You can override the settings of:

- *File Systems*
- *Directories and Files*

File Systems

You can override the settings of the file systems during the software scanning.

In the **Scanner Generator** in the **Software Data page - Drive Selection** tab, you can specify the files systems (known to the Scanner Generator) that you want to include or exclude during scanning.

Note: This tab page is only displayed if you selected the **Classic Local Drive Scan** or **Combined Scan** option on the Software data page.

Because it is always possible, particularly on UNIX systems, that some file systems are not in the list, you can create a file where you can specify any additional names of file systems that you want to include or exclude during scanning.

You can also specify names of existing file systems in case you want to change the inclusion/exclusion of such file systems after the Scanner has been generated.

Name the file name:

- **.override.ini** for UNIX file systems.
- **override.ini** for Windows, DOS and OS/2 file systems.

The format of the file is as follows:

```
[include]
fs=<name of a file system>
[exclude]
fs=<name of a file system>
```

There can be several "fs" entries in each section.

For example, to ensure that all **afs** mount points are scanned, and that **nfs** and **swap** volumes are not, create **.override.ini** with the following contents and place it in the same directory as the Scanner prior to running:

```
[include]
fs=afs
[exclude]
fs=nfs
fs=swapfs
```

Note: The name of the file, the sections and the files systems are case-sensitive.

Important: For the feature to work correctly, the **.override.ini** or **override.ini** file must be present in the directory in which the Scanner resides.

Directories and Files

The override file can also be used to exclude specific directories or files from being scanned without regenerating the Scanner.

Note: Files can only be excluded they cannot be included.

To make use of this file, add one or more

```
dir = <name>
```

or

```
file = <name>
```

entries to the [exclude] section of the override file. Excluded directory names must be fully qualified. Excluded file names can contain wildcards.

Example

```
[exclude]
fs=autofs
dir=/temp
dir=/etc
file=*.exe
```

Note: When excluding files using **override.ini** the Scanner may still store information about the excluded files in the scan file. Adding file entries to the override file ensures that the file will not be opened for any reason, so no file identification, signatures or archive processing will happen for excluded files.

Example 1

Exclude a specific file system, two directories and all files with exe extension.

```
[exclude]
fs=autofs
dir=/temp
dir=/etc
file=*.exe
```

Example 2

This runs a scan without software on a Windows machine. This is useful when testing asset entries without having run software scan.

```
[exclude]
fs=FAT
fs=NTFS
```

Example 3 Virus Warning

Since the Scanner opens files on the computer, if real-time antivirus software is in operation, the it may detect a virus being present in a file.

Depending on the virus product being used, actions will have been defined to deal with an encountered virus. Some will try to deal with the problem and immediately disinfect the file. Others will try to move the infected file to a quarantine directory and rename its file extension. In this case, the quarantine directory may be scanned by the Scanner later during its scan.

To prevent this happening, use the **override.ini** file with ***.vir** specified for exclusion (where .vir is a typical quarantine file extension). Check the specific virus product to find the extension for this type of file.

The Windows Scanners

In This Section...

Supported Platforms for Windows-Based Scanners

Windows-based Scanners can be generated for the following platforms:

Scanner	Platform
Windows 16-bit Scanner	Windows 3.1x
Windows 32-bit Scanner	■ Windows 95 ■ Windows 98 (includes Win98 SE) ■ Windows NT 4.0 (includes Windows NT Server) ■ Windows ME ■ Windows 2000 (includes Windows 2000 Server) ■ Windows XP ■ Windows 2003 Server ■ Windows Media Server ■ Windows for Tablet PCs

Note: The best results can be obtained when running the 'native' Scanner for a given platform. On 16-bit Windows (Windows 3.x), use the Win16 Scanner. For all other Windows versions, use the Win32 Scanner.

Information Collected by the Windows-Based Scanners

See the document entitled 'Data collected by the Scanners'.

Starting the Windows-Based Scanner

To start the Windows-based Scanners:

1. Locate the Scanner using File Manager (Windows 3.x) or Windows Explorer (Windows 95, Windows 98, Windows NT, Windows ME, Windows 2000, Windows XP, Windows 2003).
2. Double-click on the Scanner icon or executable file.
3. The Windows-based Scanners can be started from a command prompt inside 32-bit Windows, in the same way as the DOS Scanner. Use the Program Manager or File Manager to start Windows-based Scanners in Windows 3.x.

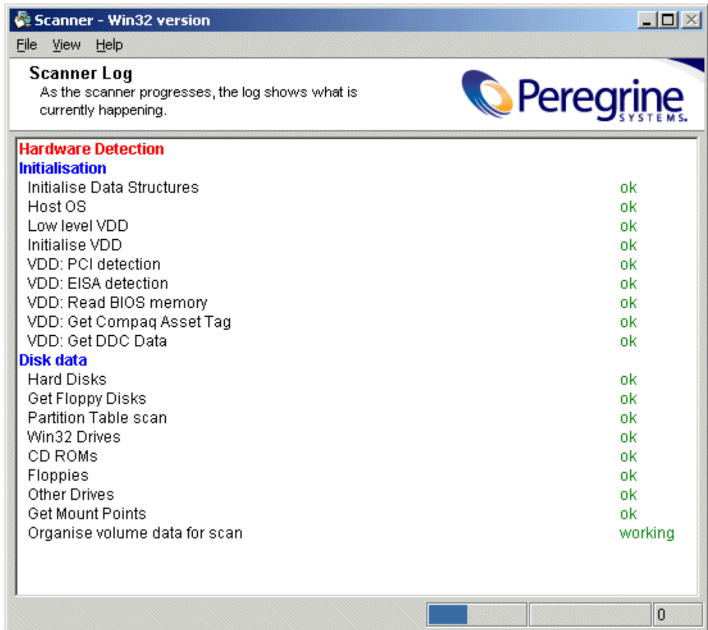
The Scanning Sequence for Windows-Based Scanners

The Windows-based Scanners display a series of screens as they run to provide real-time information about the data being collected:

- The Windows-based Scanner Log
- The Windows-based Scanner Asset Questionnaire
- The Windows-based Scanner Software page
- The Windows-based Scanner Information page

The Windows-Based Scanner Log

The first page displayed is the **Scanner Log** page which shows details of what is currently happening as the Scanner progresses. Initially, it shows each major hardware component being scanned as well as each specific test performed as each hardware item is scanned.



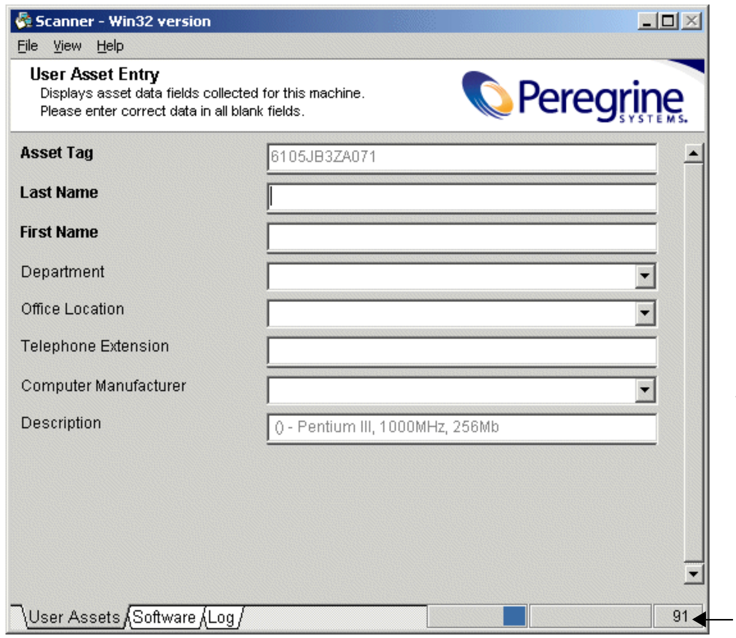
Displaying the Scanner Log During the Scan

To display the Scanner Log during the scan do one of the following:

1. Click the **Log** tab.
2. Select the **Log** option from the **View** menu.
3. Use the **Ctrl+L** keyboard shortcut.

The Windows-Based Scanner Asset Questionnaire

As soon as the hardware scanning is completed, the software scanning commences (this takes place in the background) and the **User Asset Entry page** (asset questionnaire) is presented on-screen.



Entering Asset Information for the Windows-Based Scanners

After the hardware scan is completed, software scanning (if specified) commences. This usually takes place in the background.

Note: For manual scans the Asset Tag entry field is required by default.

The Scanner presents an asset questionnaire for entry of the asset details.

The asset questionnaire consists of a list of prompts on the left side and a list of corresponding data entry fields on the right side. The special field types, which expect particular type of data to be entered, are indicated as follows:

- **Required fields** - These are denoted in **Bold** font. These fields must be completed before the scan can complete.
- **Pick List/Type Pick List** - These fields have a drop-down list of permitted answers which is available by clicking the arrow symbol at the end of the box.

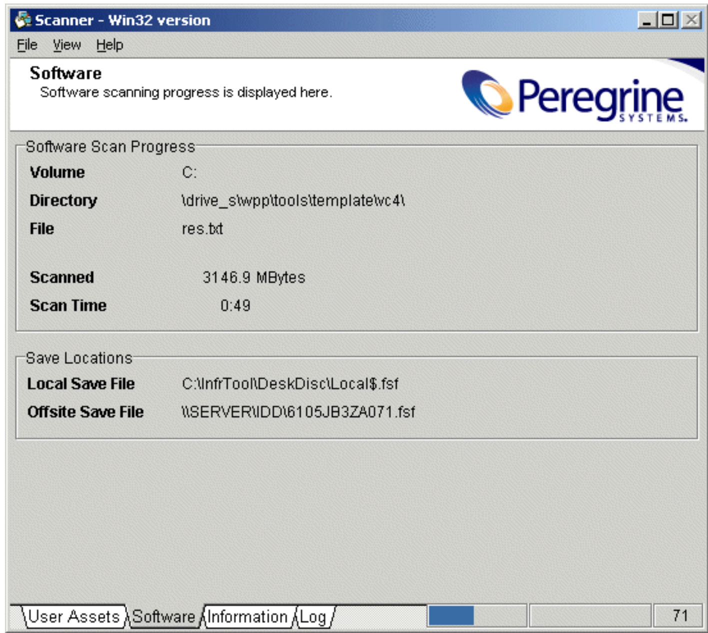
To pause the software scan at any time, select the **Pause scan** command in the **File** menu.

Note: If the scan is paused for more than 30 minutes, it automatically resumes and cannot be paused again.

The Scanner is usually active for the period specified in the **User Interaction** tab of the **Scanner Generator – Scanner Options** page. See *The Scanner Options Page* on page 204 for more information.

The Windows-Based Scanner Software Page

If the default Scanner configuration allows the user to view all pages, the **Software** page can be displayed as the software information is being scanned. This page shows details of the software being scanned.



In addition to showing the progress of the software scan, the names of the scan files(s) to be saved when the scan is complete is shown in the **Save locations** box.

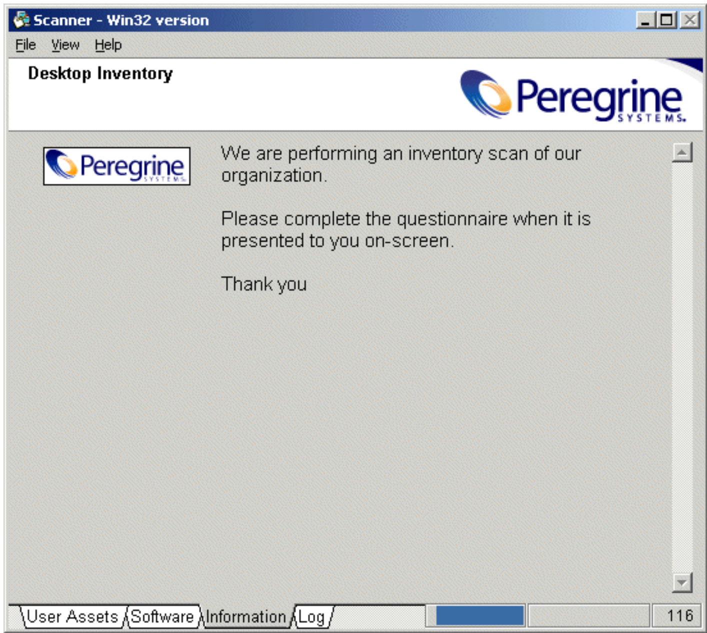
Displaying the Software Tab Page During the Scan

To display the Software tab page during the scan, do one of the following:

- Click the **Software** tab.
- Select the **Software** option from the **View** menu.
- Use the **Ctrl+S** keyboard shortcut.

The Windows-Based Scanner Information Page

This tab if only displayed if the Scanner was configured to do so in the **Scanner Generator – Scanner Options** page. It displays a user-defined bitmap and text while the Scanner is being run.



To display the Information tab page during the scan do one of the following:

- Click the **Information** tab.
- Select the **Information** option from the **View** menu.
- Use the **Ctrl+I** keyboard shortcut.

Saving, Aborting and Exiting from a Windows Scan

Saving the Scan Data

After the scan is completed, the Scanner automatically saves the scan data to one or two scans files as set up on the **Scanner Options** page of the Scanner Generator.

If the offsite scan file cannot be written to the location selected when the Scanner was configured, the user will be prompted to select another drive for the file. In this case, the scan file will be saved to the root directory of the drive selected.

The paths to where the Local and Offsite scan files are saved are shown in the **Save Locations** group in the **Software** page.

Note: If the local scan file was not saved, the Scanner sometimes may report that there is insufficient room to save an offsite scan file, even though there is enough room. This is due to the fact the Scanner makes an estimate of the resulting file size. The exact file size is not known until the scan file is saved. Save the file to a drive that has enough free space and copy it to the destination location manually.

Aborting the Scan

A Windows-based scan can only be aborted when the scan has not completed, if the **Allow Users To Abort Audit** option was enabled in the Scanner Generator when the Scanner was configured.

If this option has not been selected, the commands for exiting the scan are not available until the scan is completed.

Exiting from the Scan

To exit from the Scanner, after the time delay following completion of the asset details has expired:

- Select the **Exit** option from the **File** menu.
- Use the **Alt-X** keyboard shortcut.

These options can be used to stop the scan before the process is completed, if the Scanner has been configured to provide this facility.

You can also exit from the Scanner by:

- Selecting the **Save & Exit** option from the **File** menu.
- Using the **Alt-S** keyboard shortcut.

This allows the user to exit the scan as soon as the scan file has been saved (without having to wait for the time delay following completion of the data entry). It therefore provides a quick way of exiting the scan by revoking the time delay set for the minimum time the Scanner is active (selected as a **Timers** setting in the **Scanner Options|User Interaction** page of the Scanner Generator).

Note: Alt-S causes the Scanner to verify the validity of the asset data questionnaire. If any required fields are blank or other field restrictions are violated, an error message is displayed and the relevant field is highlighted in the asset questionnaire. Only when the asset questionnaire is complete and valid will the scan file be saved.

The No-UI Version of the Win32 Scanner

This Scanner is a command line application. By default it is called **scanN32.exe**.

This Scanner can only refill from an existing scan file or use automatic fields for asset data. There is no manual asset entry in this type of Scanner.

Starting the No-UI version of the Win32 Scanner

To start the No-UI Scanner:

1. Exit Windows, and at the DOS prompt, change to the directory where the Scanner program is located.
2. Type the name of the Scanner program, for example, **ScanN32**, to start the Scanner.

Important: As the scanner has no way to interact with the user, if an error is encountered during its operation, it will fail with the appropriate error level. The reason for failing can usually be found in the error log file.

Windows Scanner Error Level Codes

The Scanners produce error level codes which can be used to handle situations if the Scanner terminates without producing a scan file.

These error codes can, for example, be used in a batch file so that specified actions can be carried out in the event that particular error codes are returned.

These can be used to control re-scan activities when a scan has not completed successfully.

Error Level	Description
20	Scanner terminated because virtual machine was detected (Windows 32-bit only)
6	Another Scanner instance is already running.
5	Too Early – It is earlier than the scan days variable.
4	Fatal Error – Scanner encountered a fatal error.
3	Help Screen – Command line help screen has been requested.
2	User Abort – User aborted the Scanner.
1	Exception – Scanner terminated because of an exception

See *Using Error Level codes* on page 290 for further information about how to use Error Level codes.

The DOS and OS/2 Scanners

In this section...

Supported Platforms for DOS and OS/2 Scanners

DOS and OS/2 Scanners can be generated for the following platforms:

Scanner	Platform
DOS Scanner	DOS 16-bit
OS/2 Scanner	OS/2 2.1 and OS/2 Warp

Note: The best results can be obtained when running the 'native' Scanner for a given platform.

Information Collected by the DOS and OS/2 Scanners

See the document entitled 'Data collected by the Scanners'.

Starting the DOS-Based Scanner

To start the DOS-based Scanners:

1 Check that there is enough base memory to run the Scanner (approximately 525K bytes of base memory is needed).

If this is a problem, try removing TSR programs to release memory.

2 Exit Windows, and at the DOS prompt, change to the directory where the Scanner program is located.

For a walkround inventory, this will usually be executed from the **A:** drive; if you are testing the Scanners locally, it will be the directory to which you generated the Scanner in the Scanner Generator.

The DOS Scanner can also be executed from inside Windows or OS/2, although hardware results collected may differ from those collected under 'real' DOS.

3 Type the name of the Scanner program, for example, **ScanDos**, to start the Scanner.

Note: The DOS Scanner may not pick up all the hardware details that a Windows 32-bit Scanner can pick up. Use the Scanner Generator to check the configuration of the Scanner and that the hardware details and other settings meet the needs of the project. It is highly advisable to use native Scanners in preference to the DOS Scanner wherever possible as they do not have the memory constraints and collect more data.

Starting the OS/2 Scanner

To start the OS/2 Scanner:

1 Open an OS/2 window, and change to the directory containing the Scanner executable file.

2 Type the name of the Scanner program, for example, **ScanOs2**, to start the Scanner.

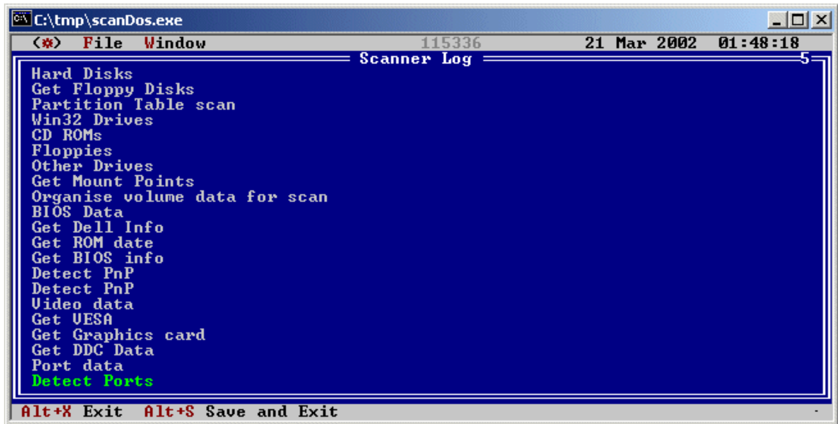
The Scanning Sequence for DOS and OS/2 Scanners

A series of screens is displayed as they run to provide real-time information about the data being collected.

- The DOS and OS/2 Scanners Log page
- The DOS and OS/2 Scanner Asset questionnaire
- The DOS and OS/2 Scanner Software page

The DOS and OS/2 Scanners Log Page

This is the first Scanner page to be displayed. It displays the status of the hardware scanning. After the hardware scan has completed, the asset questionnaire will be displayed.



Displaying the Hardware Page During the Scan

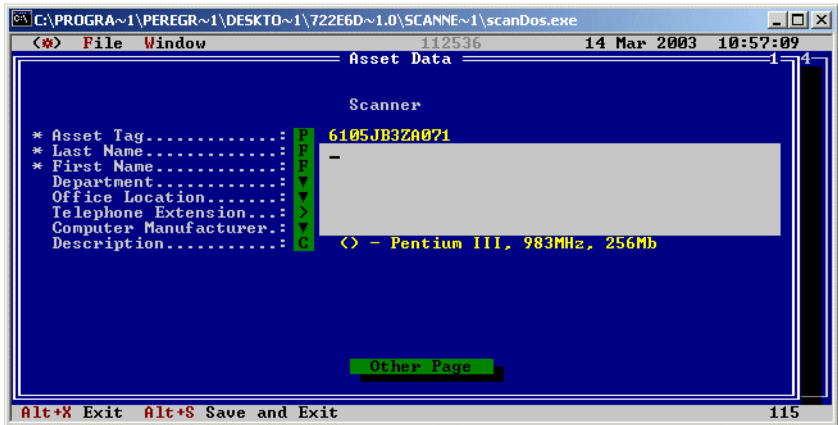
To display the Log page during the scan:

- Press **Alt-5**.

The DOS and OS/2 Scanner Asset Questionnaire

After the hardware scan is completed, software scanning commences (which usually takes place in the background). The Scanner then presents an asset questionnaire for entry of the asset details.

The first asset data screen which forms the first part of the asset questionnaire (depending on the number of data entry items defined) is displayed.



To get to the other page of the asset questionnaire:

▶ Select the **Asset Data Screen 2** (**Asset Data Screen 3**) option from the **Window** menu or press **Alt-2** (**Alt-3**) to display the next screen of the asset questionnaire.

The asset data screens provide a screen-based questionnaire, consisting of a list of user prompts on the left side and a list of corresponding data entry fields on the right side. The field type, which specifies the type of data to be entered, is indicated by the symbol to the left side of each data entry field.

The following symbols are used to distinguish the different field types on the asset data screens:

Note: Required fields are displayed with an asterisk '*' to the left of the field name.

Field	Meaning
X	File Extract field.
F	Formatted field which accepts data entered in a predefined format.
E	Environment variable field.
C	Combination field
D	DMI Extract field
P	Sequence field

Field	Meaning
>	Above (Num) field, which accepts numeric data above a specified number.
<	Below (Num) field, which accepts numeric data below a specified number.
|	Range (Num) field, which accepts numeric data input within a defined range.
▼	Pick List (or predefined drop-down list) used to select an entry.

Entering Asset Information for DOS and OS/2 Scanners

To enter the asset information for DOS and OS/2 Scanners:

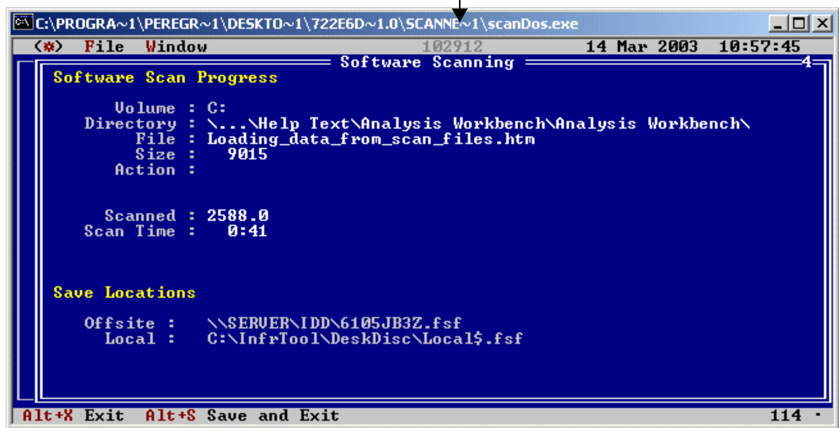
1. Enter the user and asset information as instructed on-screen. Some of the boxes have a drop-down list of permitted answers which is available by clicking the arrow symbol at the end of the box.
2. Use the Tab key to move to the next field. To move to the previous field, use Shift and Tab.
3. To display the drop-down list for a Pick List or Type/Pick List, use the down arrow key to move to the required entry and press Enter to select it.
4. If a field is a required field and the user attempts to move past the field without making or selecting an entry, a message is displayed. The inventory cannot continue until a valid entry is made for the field.

The Scanner is usually active for the period specified in the **User Interaction** tab of the **Scanner Generator – Scanner Options** page.

The DOS and OS/2 Scanner Software Page

After the asset details have been entered at run-time, the **Software** page can be displayed. This page shows details of the software being scanned.

Available memory for scanning



Displaying the Software Tab Page During the Scan

To display the Software tab page during the scan:

- Select the **Software Data Screen** option from the **Window** menu (or press **Alt-4**) to display the **Software Detected** screen.

This screen shows the progress of the scan.

Saving, Aborting and Exiting from a DOS or OS/2 Scan

Saving the Scan Data

After the scan is completed, the Scanner automatically saves the scan data to one or two scan files as defined on the **Scanner Options** page of the Scanner Generator.

If the offsite scan file cannot be written to the location selected when the Scanner was configured, the user will be prompted to select another drive for the file. In this case, the scan file will be saved to the root directory of the drive selected.

The locations to where the Local and Offsite scan files are saved are shown in the **Software** page.

Monitoring Memory Usage in a DOS Scan

In DOS, only a limited amount of memory is available for scanning and the Scanner may run out of memory during the software scan on machines with very large numbers of files.

The memory available for scanning is shown at the top of the screen. If this figure gets very low, the scan may fail.

Aborting the Scan

A DOS or OS/2 scan can only be aborted when the scan has not completed, if the **Allow Users To Abort Audit** option was enabled in the Scanner Generator when the Scanner was configured.

If this option has not been selected, the **File|Exit** (or **Alt-X**) and commands for exiting the scan are not available until the scan is completed.

Exiting the Scan

To exit from the Scanner, after the time delay following completion of the asset details has expired:

- Select the **Exit** option from the **File** menu.
- Press **Alt-X.**

These options can be used to stop the scan before the process is completed, if the Scanner has been configured to provide this facility.

You can also exit from the Scanner by

- Selecting the **Save & Exit** option from the **File** menu.
- Pressing **Alt-S.**

This allows the user to exit the scan as soon as the scan file has been saved (without having to wait for the time delay following completion of the data entry).

It therefore provides a quick way of exiting the scan by revoking the time delay set for the minimum time the Scanner is active (selected as a **Timers** setting in the **Scanner Options|User Interaction** page of the Scanner Generator).

DOS and OS/2 Scanner Error Level Codes

The Scanners produce error level codes which can be used to handle situations if the Scanner terminates without producing a scan file.

These error codes can, for example, be used in a batch file so that specified actions can be carried out in the event that particular error codes are returned.

These can be used to control re-scan activities when a scan has not completed successfully.

Error Level	Description
6	A plug-in caused problems with the Scanner.
5	Too Early – It is earlier than the scan days variable.
4	Fatal Error – Scanner encountered a fatal error.
3	Help Screen – Command line help screen has been requested.
2	User Abort – User aborted the Scanner.
1	Exception – Scanner terminated because of an exception

See *Using Error Level codes* on page 290 for further information about how to use Scanner Error Level codes.

The UNIX Scanners

In This Section...

Supported Platforms for the UNIX Scanner

UNIX Scanners can be generated for the following platforms:

Scanner	Platforms
Solaris Scanner	Solaris 2.5, 2.6, 7, 8 and 9 on SPARC
HP-UX Scanner	HP-UX 10.2 and 11.0 on HPPA
AIX Scanner	AIX 4.3, 5.0, 5.1, 5.2 on IBM R6000
Linux Scanner	Any distribution with a 2.2x, 2.4x or 2.6x kernel on i386

Information Collected by the UNIX Scanners

See the HTML document entitled *Data collected by the Scanners* which is available from the Documents folder in the Desktop Inventory Start menu item.

Starting the UNIX Scanner

Note: The methods for starting the various UNIX Scanners (HP-UX, Solaris, Linux and AIX) are identical.

To run a UNIX Scanner:

1 Copy the Scanner executable to the machine to be scanned.

2 Make sure that executable bit has been set (for example, for the Solaris Scanner run **chmod +x scansp2** to ensure this)

3 Type the name of the Scanner, for example, **scansp2**, followed by any desired Scanner command line options, to run it.

You will have to type ./ in front of **scansp2** if the current directory (.) is not in the PATH: **./scansp2**

Running the Scanner Using the Cron Daemon

The Scanner can be run on a regular basis using the cron service.

Important: The Asset data must be configured so that it doesn't require user intervention. If no asset data is used then you must use the -o: command to give the scan file a name or the Scanner assigns it **DEFAULT.fsf** or **DEFAULT.xsf**.

Note: You must have **Root** privilege to setup the configuration files.

Follow these steps to run the Scanner on a regular basis using the cron service:

1. Prepare and install the UNIX Scanner binary

- Ensure that the scan file will be saved under a unique name across stations if the Scanner is asked to write it's output on a central NFS mounted disk.
- Install the Scanner binary by copying it to a directory. For example: `/opt/di-scanner/`
- Make sure that the file is executable.
- Create a 'data' subdirectory to receive generated files (scan files).

2. Configure the cron service:

- Log in as root and run the **crontab** command to edit the cron setup.

  Add a line to the end of the crontab file. An example is as follows:

  0 1 1 * * cd /otp/di-scanner;<scanner name> -o:unix.fsf -p:/tmp

  This runs the Scanner on the first day of the month at 1am and saves the Scanner into the tmp directory and uses unix.fsf as the scan file name.

Each line consisting of 6 fields separated by spaces as follows:

- minute of the hour, 00 to 59
- hour of the day, 00 to 24 (military time)
- day of the month, 1 to 31
- month of the year, 1 to 12
- day of the week, sun, mon, tue,....
- actual command(s) separated by semicolons or &&.

Note:

- an asterisk matches all possible values,
- a single integer matches that exact value,
- a list of integers separated by commas (no spaces) is used to match any one of the values
- two integers separated by a dash (a range) is used to match any value within the range.

Note: Consult the manual pages for 'crontab' (using the **man crontab** command) to obtain further information about cron scheduling options.

3. Restart cron daemon to apply changes

The Scanning Sequence for UNIX Scanners

After the scan has been executed, the following events take place:

- Hardware scan (also contains system configuration scan)
- Asset Entry
- Software scan

Hardware Scan

Initially a copyright message is displayed, after which, hardware is detected (this too, is indicated as text mode messages).

Asset Entry

After hardware detection has completed the Scanner prompts for the asset data to be entered. You will be presented with each question in turn.

A prompt is symbolized by the **?** character.

Entering Data

There are several possible ways in which to enter data into the questionnaire depending on how the field was configured in the Scanner Generator:

- To retain a value that was previously used, just hit **Enter** as the response.
- To enter a new value, just type it and hit **Enter**.
- To pick an item from a pick list, type the number of the list entry. If you type anything other than a valid number in the list, the entry is taken literally and stored as the value.
- To enter a blank response, press the enter key. This will blank the field value. If this is not valid (the field is required), the question will be asked again.
- If a question has a value the user is not permitted to change (because the field was configured as 'editable if blank, read-only otherwise'), the value is displayed but you will not be prompted for a value.

Examples of Asset Questionnaire Entries

Examples of questionnaire entries may look as follows:

Example 1 - Overriding a Previous Value

```
+ get asset data
--------------------------------
Asset Tag; Required field
Max Width: 32
Current Value: MyMachine
? Enter new value: Frodo
--------------------------------
```

This field is the asset tag field, which has overridden the previous value of MyMachine with Frodo.

Example 2 - Required Fields That Cannot Be Edited

```
Last Name; Required field
Max Width: 30
Current Value: Mertner
--------------------------------
First Name; Required field
Max Width: 30
```

Current Value: Allan

These two fields are required fields and have been set up not to be editable if they have a value, so no prompt is displayed, only the field description, attributes and current value are displayed.

Example 3 - Overriding a Pick List Entry

Department

Max Width: 25

Current Value: Accounts

1 Accounts

2 Corporate Finance

3 Customer Support

4 Development

5 Facilities Management

6 Human Resources

? Enter new value: 4

This is a Pick List, Department, with a value of Accounts. To override it to have a value Development, type 4 which selects the 4th item - Development as the value

Example 4 - Retaining a Pick List Entry

Office Location

Max Width: 30

Current Value: Canada

1 Belgium

2 Canada

3 Denmark

4 Finland

5 France

6 Germany

? Enter new value: 2

This field is office location and has a value Canada. To keep this value, type 2 as the reply.

After the asset questionnaire has completed, the software scan will start.

Software Scan

The software scan commences after the asset data has been entered. It shows a list of directories as they are being scanned.

The Scanner by default is configured to perform a 'Targeted Directory Scan', which means that the Scanner will not scan the entire machine but only those directories pointed to by the PATH and LIBPATH environment variables (and subdirectories). This can be changed in the Scanner Generator **Software Data** page.

Saving, Aborting and Exiting from a UNIX Scan

Saving the Scan Data

After the scan is completed, the Scanner automatically saves the scan data to one or two scan files as defined on the **Scanner Options** page of the Scanner Generator.

Aborting the Scan

To exit from the UNIX scan prematurely press **Crtl C**. The results of the scan will not be saved.

Exiting from the Scan

After the UNIX Scanner has finished, it automatically returns to the command line prompt.

UNIX Scanner Error Level Codes

The Scanners produce error level codes which can be used to handle situations if the Scanner terminates without producing a scan file.

These error codes can, for example, be used in a batch file so that specified actions can be carried out in the event that particular error codes are returned.

These can be used to control re-scan activities when a scan has not completed successfully.

The following table shows a list of error level codes found in the UNIX Scanners.

Return code	Meaning
0	Normal exit
1	This code is returned if the user does not input asset data in the specified time.
20	Scanner terminated because Virtual Machine was detected (Linux only).
-1	Gets the asset data from the file specified on the command line, but the required field does not exist in the file.
-54	In the specified asset file on the command line, each line must contain something similar to hwxxxxxx=yyyyyy: If the total length of the line is less than 5, it is in the wrong format. If the line does not contains "=" to separate ID and value, it is in the wrong format. Asset data is specified more than once. The user specified two much asset data.
-56	Insufficient access rights There is not enough disk space to create the offsite fsf file. The local save path exists, but it is not a directory, it is a normal file. No write permission when creating a file.
-57	Object not found In the specified asset file on the command line, the symbolic name of the field ID (left to “=”) is incorrect. The user specified an invalid refill path on the command line. The save path specified, but does not exist. The specified asset file in the command line does not exist.
-65	A generic error at the OS level Unable to load string resources (Memory shortage).
-2010	In the specified asset file, a value is invalid for the asset field.

The Remote Scanner

In This Section...

Remote Scanner Overview

The Remote Scanner is generated from the Scanner Generator along with the other Scanners and is used to perform a software scan of a remote computer.

Important: The XSF scan file format is not supported by the Remote Scanner

The Remote Scanner provides the ability to remotely scan a machine which is accessible across a network. This means that the Scanner software does not run on the target computer, but obtains its hardware detail separately.

Providing the person performing the inventory has access to the local drives, this could be for example:

- A server, if there are network shares available.
- A machine performing a non-interruptible task.

Note: Automatic asset fields, such as File, Environment, Registry, WMI Extract and DMI Extract do not work with the Remote Scanner as it does not run on the computer being scanned.

Even if certain parameters in the Scanner Generator have been set, the Remote Scanner enforces the following behavior:

- The local scan file is never saved, but the offsite scan file is always saved.
- The ini file (**InfrTool.ini**) is not used.
- The asset number batch file (**Asset.bat** by default) is never created.
- Refilling from the local scan file is never performed.

Executing a Remote Scanner

The triggering of a Remote Scanner is best done from a command prompt. Here the Remote Scanner can be called and the save path and name of the scan file can be defined.

A sample of the syntax is as follows:

```
ScanR32.exe /o:M:\path\filename
```

Where:

- **ScanR32.exe** is the Scanner defined with just software collection.
- **/o:** is the save offsite command line option.
- **M:\path\filename** is the destination and name for the resulting scan file.

Note: There must be no space between /o: and path.

If there is a space between /o: and the path, the file will be named **default.fsf** and will be put in the default save location configured in the Scanner Generator.

If the .fsf extension is not supplied, it is assumed. If any other extension is specified, it will be disregarded and replaced with .fsf.

Important: The XSF scan file format is not supported by the Remote Scanner

Example

```
Remtlr32 /o:G:\Scan\Test
```

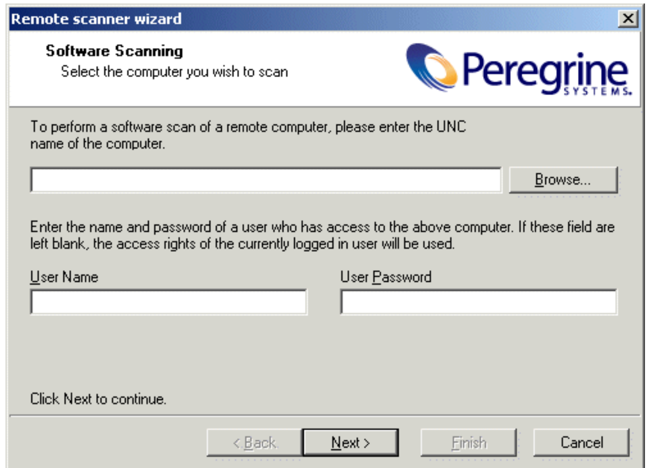
The example will run a Remote Scanner named **Remtlr32** from the command line, save it to a mapped drive letter G: and the directory **Scan**. The scan file will be named **Test.fsf.**

The user who performs the scan must have sufficient privileges to access files on the volumes that they wish to scan.

If software information about all files on the remote volume is required, make sure to use the network connection that is mapped to the root directory of the target volume.

The Remote Scanner - Software Scanning Page

On starting the Remote Scanner, the **Software Scanning** page is displayed, which asks for the name of the remote computer to be scanned.



1 Enter the UNC network name of the computer or use the **Browse…** button to select the network share from the Network Neighborhood style dialog box.

If a computer name is not entered, no software scan is performed and the Remote Scanner can only be used to enter the asset and hardware details. The Scanner Generator will skip the second page and go straight to the **Hardware Data** page when the **Next** button is clicked.

2 Enter the name and password of a user who has access to the shares on the remote computer specified. The **User Name** and **User Password** boxes are only available under Windows NT/2000/XP/2003. If these boxes are left blank, the access rights of the user currently logged into the client machine will be used.

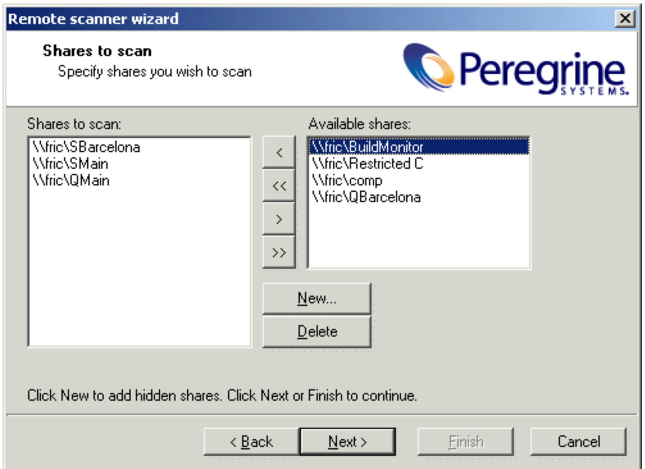
Note: If automatic re-scans are planned, do not use the user name and password for security reasons. The **/Reaudit** command line option which is used for re-scans does not allow the user and password to be specified.

3 Click the **Next** button to continue.

The Remote Scanner - Specifying the Shares to Scan

The second page is the Shares to scan page.

This page is shown when the proper UNC name of a computer is entered and allows you to enter the list of shares that need to be scanned on that computer.



To specify the shares that need to be scanned on the remote computer:

1 Drag the available shares into the **Shares to scan** list box or use the buttons in the centre of the dialog box.

- < Move a single item from the Available shares list into the Shares to scan list.
- << Move all items from the Available shares list into the Shares to scan list.
- > Remove a single item from the Shares to scan list to the Available shares list.
- >> Remove all items from the Shares to scan list to the Available shares list.

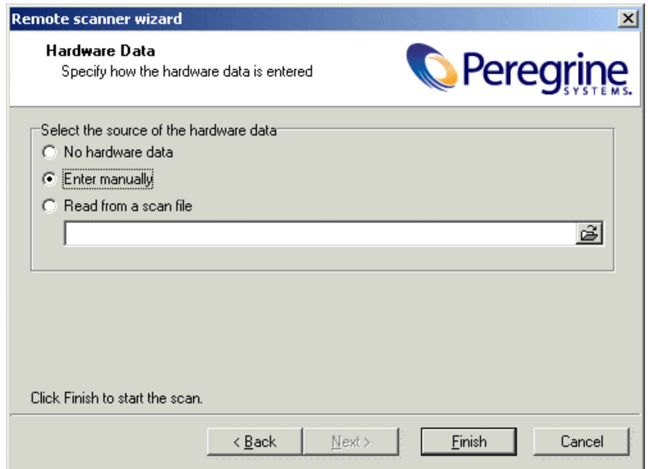
2 Some shares are hidden and therefore are not visible when browsing the network (for example, shares ending with $ are hidden in Windows NT/2000/XP/2003). To specify such shares, use the **New…** button. A prompt is displayed, which will ask you to enter the name of the specific share to scan.

3 You can use the **Delete** button to removes hidden shares from the list, if they were entered by mistake.

4 Click the **Next** button to continue.

The Remote Scanner Hardware Data Page

The next page is the **Hardware Data** page, which asks where the hardware data is to be taken from.

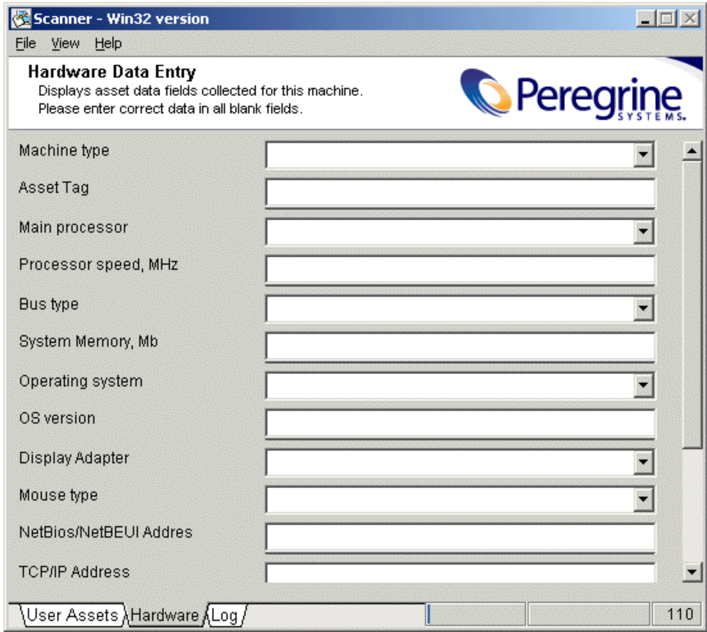


The hardware data can be read from another scan file. This is useful when performing separate hardware and software scans, for example, when scanning Novell NetWare. Otherwise, the key hardware items can be entered by hand.

Select the source of the hardware data

- **No Hardware Data** - No hardware data is included.

- **Enter manually** - Hardware data is manually entered.



- **Read from a scan file** - The hardware data is read from an existing scan file. For example, this could be a scan file captured when a machine was locally scanned. For example, a NetWare server can be scanned for hardware data using the DOS Scanner, when booted from a bootable floppy disk.

  Enter the name and path of the scan file or click the  browse button to navigate to where the file is located.

  Click the **Finish** button to start the scan.

  The scan progresses and saves the results to **Default.fsf or Default.xsf**. This default name can be overridden by using the **/o** option. For example,

  ScanR32 /o:<filename>

  will remotely scan and save data to the specified file name.

The Remote Scanner cannot be generated if the following asset fields have been configured in Scanner Generator:

- Registry Extract
- File Extract
- DMI Extract
- Environment Extract

Performing an Automatic Re-scan with the Remote Scanner

If the asset data collection was enabled and the Scanner was configured to do the refilling from an offsite scan file, the asset and the hardware data will be automatically refilled from the offsite scan file.

The **/Reaudit** option is used to facilitate a completely automatic re-scan. This command line option causes the Remote Scanner to re-scan the shares that were originally scanned and stored in the offsite scan file. If the Scanner cannot find the offsite scan file to read the list of shares from, it terminates.

An optional scan file name can be specified in this command line option. This gives the name of the scan file from which the Scanner reads the hardware data.

The full syntax is: /Reaudit[HardwareScanFileName]

The MSI Scanner

In This Section...

Overview of the MSI Scanner

The MSI Scanner is a command line utility used to scan an MSI based installer, extract all required file information and write an XML file describing the installer and its contents. This XML file can then be sent to the central office where the person maintaining the ApE database can load it into the ApE Explorer exactly as if it was the original MSI based Installer.

Important: The MSI Scanner (msiscanner.exe) is not generated by the Scanner Generator. It is supplied with the software in the following location by default: **C:\Program Files\Peregrine\Desktop Inventory\8.0.0\ApE Explorer**

Starting the MSI Scanner

To start the MSI Scanner:

▶ From the command prompt, type the following:

```
msiscanner <setup_package> <output_file>
```

Where:

- <**setup_package**> is the path and file name of the MSI-based installer.
- <**output_file**> is the path and file name of the output XML file. Note that if the specified file name does not end in .xml, the MSI Scanner will append an .xml extension to it.

Opening the MSI Scanner Output File in the MSI Importer

The output from the MSI Scanner is usable in the MSI Importer so that you can browse the MSI and teach from it based on the XML file only.

To open the MSI Scanner output file:

1. In the ApE Explorer, select the **Import MSI based Installer** option from the **Tools** menu.

   The **File Open** dialog box is displayed.

2. In the **Files of Type** drop-down box, select the MSI Scanner output file.
3. Navigate to the file to be opened.
4. Click **OK**

   For further information refer to the *Application Encyclopedia User's Guide*.

MSI Scanner Error Level Codes

The MSI Scanner produce error level codes which can be used to handle situations if the Scanner terminates without producing a scan file.

These error codes can, for example, be used in a batch file so that specified actions can be carried out in the event that particular error codes are returned.

Error Level	Description
6	Unexpected error
5	Unable to open the output file
4	Insufficient space available in the **Temp** directory.
3	Unable to open input MSI
2	Unrecognized package
1	Incorrect parameters
0	Success

Troubleshooting

In This Section...

Using Error Level codes

Windows, DOS and OS/2 Scanners produce Error Level codes that can be used to handle situations if the Scanners terminate without producing an audit file.

These can be used to control re-scan activities when a scan has not completed for some reason.

Because the Error Level is available as an environment variable when the Scanner finishes this can be incorporated in a log file.

For example, an NT Scanner with **ComputerName** and **UserName** available, a simple batch file could include:

```
echo %computername%, %errorlevel%, %username% to a flag file %
%computername%.flg
```

Where **%path%** points to a log directory.

Note: If the scanner is terminated using the Windows Task Manager, then it is reported as successful.

Files Affected by Scanning

File	Location
ASSET.BAT	C:\if selected
INFRTOOL.INI	C:\
INFRTOOL.$IN	C:\
Local$.FSF	PDI version 7.x and Windows 2000 C:\Documents and Settings\All Users\application Data\Peregrine
FP_000x.TMP Where x=0,1,2,3 etc.	C:\Documents and Settings\username\Local Settings\Temp Created while the Scanner is running and removed on successful completion. If a scan fails and is subsequently rerun, the temporary files allow the asset data to be filled into the asset fields to save retyping.
Output.FSF	Defined by Scanner ot/p: or /o:
SYSTEM.INI	[Desktop Discovery] AssetNumberBackup=TEST5 LocalDirBackup=C:\InfrTool\DeskDisc
OVERRIDE.INI	Same directory as Scanner

Scanner Generator Errors

The most usual problems encountered when the Scanner is generated result in an error message:

ERROR {value} Generating Scanner

The causes can usually be identified as follows:

- The path defined for the executable Scanner executable file does not exist.
- The Scanner file already exists and is currently being used by another application.
- The file name chosen for the Scanner executable file is invalid (that is, does not follow the MS DOS file naming conventions and may include illegal characters).
- Some virus protection software may prevent the Scanner Generator from creating and writing to Scanner executable files.

To Resolve the Problem

- Try generating the Scanner using the default settings, path and file name.
- If the previous step fails, try again selecting a file name which you have checked does not exist.

Hardware Scanning Errors

If a hardware scanning error occurs, the screen will appear to stop responding, or ‘hang’ during hardware scanning.

Note the test which is failing. This will be displayed in the Log page.

The Scanner provides several command line parameter switches for disabling specific hardware detection tests. Use these command line parameter switches to disable the specific test which has failed.

Note: Typing **/?** following the Scanner file name at the command line displays a list of the available parameter switches, for example, `ScanW32 /?` (or -? for UNIX Scanners)

To use a parameter switch to disable a specific hardware test, enter it on the command line after the Scanner file name when the Scanner is started.

For example,

```
ScanW32 –60
scanlnx -excl:60
```

Asset Data Entry Errors

The following messages may be displayed during entry of asset information using the asset questionnaire:

The Value ‘x’ Is Not a Number Between <value> and <value>

This message is displayed if an illegal value is entered for a numeric field specifying a minimum value, a maximum value or a numeric range. Check that the value entered falls within that valid range defined for the field.

Entry Required at Line <field identifier>

This message is displayed in DOS and OS/2 Scanners for fields that are required to be completed by the user and an entry has not been made. It occurs when the user attempts to bypass the field to make the next entry. The Scanner cannot continue until a legal entry has been made.

In the Windows Scanners, the same message is displayed when the asset timer expires.

Input Does Not Conform to Picture <field identifier>

This message is displayed on formatted fields, where the data input does not conform to the input picture defined for the field. Check the format for the data entered for the field.

Software Scanning Errors

The following errors may occur during the examination of files and collection of software information.

Out of Swap Space – Cannot Store More Files in Scan File

This message is displayed if there is not enough room on the hard disk drive or in EMS for storing a file that has been marked for collection in the Scanner Generator.

Very Low on Memory – Scan May Fail Any Time

This message is applicable to the DOS Scanner only. This message is displayed if the memory is too low for the Scanner to continue scanning the software files. If the scan fails, try to free more DOS memory then re-run the Scanner.

Could Not read File <file name> - File Not Saved

This message is displayed if a file marked for collection in the Scanner Generator cannot be stored. Check to see if the file is being locked (used) by another process.

Scan File Saving Errors

The following messages may be displayed when the Scanner tries to save a scan file:

Error {value} Saving Local Scan File

There may be insufficient space on the local drive that the Scanner is attempting to save the scan file to. Check the available space on the local disk drive.

Another cause of this error message appearing might be that sufficient privileges do not exist to write the file or the drive cannot be accessed.

Error {value} Saving Offsite Scan File

There may be insufficient space on the offsite drive (for example the floppy disk or network drive) when the Scanner is attempting to save the scan file. Check the available space on the offsite disk drive.

The Scanner Cannot Create the Scan File in A:\<filename>.

Please correct the error, or specify a new drive. The Scanner will then attempt to save to the root of the drive.

This message is displayed, if there is not enough room for saving an offsite scan file, either because the disk selected to save the scan file to, cannot be accessed, or there is insufficient space available.

- Check the **Use New Drive** option to specify a new drive to save to.
- Select the new drive letter from the drop-down list.

Additional Errors

Additional errors the user may encounter running the Scanner include:

- *Large Directory Found While Memory Low. Directory Split*
- *Corrupt Disk: 775 Error*
- *Not Enough Temp Space*
- *Hardware Security Partition Table Entry Problems*
- *Compression on Netware Servers*
- *Slow Scanning*
- *Virus Warning*

Large Directory Found While Memory Low. Directory Split

This message is a notification. It is displayed when the Scanner reaches a directory that contains more than 16100 files. When this happens, the directory is "split" into two or more logical ones, although this is normally hidden from the user.

Corrupt Disk: 775 Error

If Windows is not shut down properly, the cached buffers may not be written to the disk, resulting in corrupt disk structures.

Run chkdsk or similar to check for corrupt sectors.

Not Enough Temp Space

Check that the TEMP variable points to a valid directory with enough disk space available. If it is missing or points to an incorrect directory, set it up accordingly (for example: SET TEMP=C:\TEMP).

Hardware Security Partition Table Entry Problems

It is necessary to process inventory disks with identification. There may be problems with partition table detection.

Use the –62 command line switch to circumvent the partition table scan test.

Compression on Netware Servers

All signatures should be off or **override.ini** must be set to ignore all files. This ensures that files are not opened and stored files are not collected. Netware compression is not dynamic such as NTFS compression in Windows NT/2000/XP/2003. Running Scanners could have detrimental effects in Netware Servers if compression is being used. This is because to signature a file, the file must be decompressed and then opened by the Scanner. Netware will not recompress the file, thus a capacity problem could result if the compressed volume is greater than the actual disk space available.

Slow Scanning

This may be due to real-time antivirus software being run. Any file that is opened will be checked for virus infection. Although this can be tedious, it is not advisable to disable the antivirus software for the reasons discussed in the next section.

Virus Warning

Because the Scanner opens files on the computer, if there is real-time antivirus software in operation, it may detect a virus being present in a file. Depending on the virus product being used, they will have an action defined to deal with the virus. Some will try to deal with the problem and immediately disinfect the file. Others will try to move the infected file to a quarantine directory and rename its file extension.

In this case, the quarantine directory may be scanned by the Scanner later during its scan.

To prevent this happening, use the **override.ini** file with *.vir (where .vir is a typical quarantine file extension). Check the specific product to find the extension for this type of file.

Desktop Inventory and Compaq Machines

On some Compaq machines, a BIOS problem would sometimes cause the Scanner to fail or crash the machine when run.

This version of Desktop Inventory implements a workaround where the Scanner refrains from running those parts of the Compaq code that have been shown to be problematic.

In this case the Compaq Asset tag may not be detected.

To detect the Compaq Asset Tag, the Scanner first locates and calls a standard 32-bit interface to the Compaq Intelligent Manageability layer. If this call fails or is not implemented, the Scanner has the ability to fall back on 16-bit code stored in the Compaq BIOS; this is the code that is fragile in some BIOSes.

Tests show that newer Compaq BIOSes correct the problem. On machines where the BIOS has been upgraded, the code works correctly.

Because it is difficult to ensure that all BIOSes have been upgraded, the default behavior of the Scanner has been changed to only fall back on the 16-bit code on machines not running Server operating systems.

A command line switch (COMPAQ16) has been introduced, allowing this default behavior to be overridden:

Parameter Switch	Description
Scanw32 /COMPAQ16=0	When this switch is used, the Scanner will never use the 16-bit BIOS code.
Scanw32 /COMPAQ16=1	In this case, the 16-bit BIOS code will only be called on systems where the 32-bit interface is not present or does not work, and only if the machine being scanned is not running Windows NT/2000/XP/2003 Server or Advanced Server. This is the default.
Scanw32 /COMPAQ16=2	In this case, the Scanner will always fall back on the 16-bit code as necessary to retrieve the Compaq Asset Tag.

7 Analysis Workbench

CHAPTER

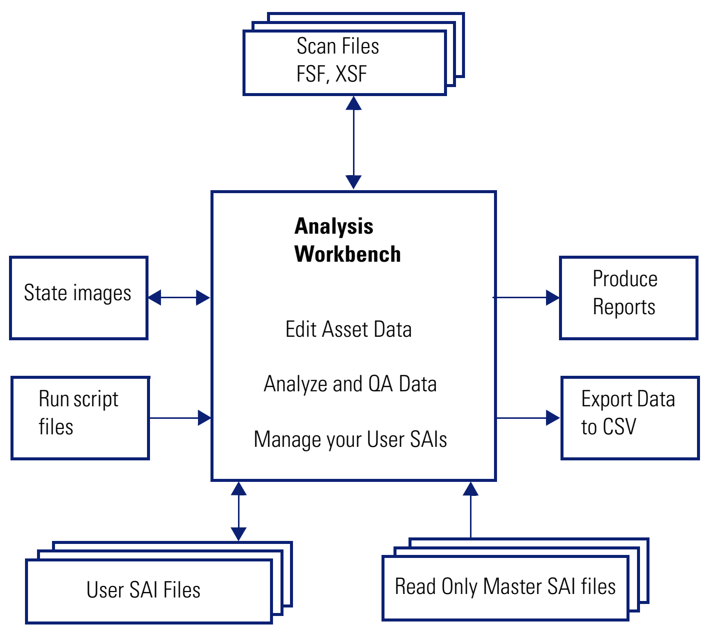
In this chapter you will find information about the following topics:

- *Reporting on Inventory Data* on page 509
- *The Report Wizard* on page 514
- *The Report Designer* on page 534
- *Exporting Inventory Data* on page 554
- *Analysis Workbench Scripting* on page 572

Introduction to Analysis Workbench

The Analysis Workbench is one of the key components in the inventory process. This is where you can consolidate results, perform analysis and produce reports and exports.

You can use Analysis Workbench for both high level management style reporting, such as how many machines can run the latest release of Windows NT, as well as detailed configuration analysis and forensic investigation.



The basic analysis of data usually consists of viewing, querying and reporting on three types of information:

- Software files that are recognized. These are usually designated as applications.

- Unidentified software and files that may be unrecognized applications.
- Hardware and asset data.

Analysis Workbench uses a database **Software Application Index** (**SAI**) of application and version descriptions which are used to identify files found during the inventory. When scan results are loaded, each one is checked against this database and this is how Desktop Inventory performs software identification. Any files which are unrecognized can be tagged for further investigation, and when identified, their details can be added to the database.

Refer to *Application Recognition and Teaching* on page 595 for further information about Software management and Application Recognition.

Analysis Workbench provides a series of different views of results, that is, by machine, directories, applications or files.

All the information required for the analysis and consolidation of data collected for a computer population, is contained in the group of scans created when each computer is inventoried.

System Requirements

The system requirements are:

- Internet Explorer 3.x or 4.x is required to run the Desktop Inventory Analysis Tools. This is because the Common Controls dll used by the Load Dialog box in the Analysis Tools is not updated by Windows, but by Internet Explorer. Desktop Inventory requires a newer version than that supplied by NT (the version supplied by NT is 2.0).
- The minimum resolution required to run Analysis Workbench is 1024x768.

Starting Analysis Workbench

To start Analysis Workbench:

▶ From the Windows Start menu select **Programs|Peregrine|Desktop Inventory 8.0|Analysis Workbench**

When Analysis Workbench is started for the first time, the **Analysis Workbench Quick Config** dialog box is displayed automatically.

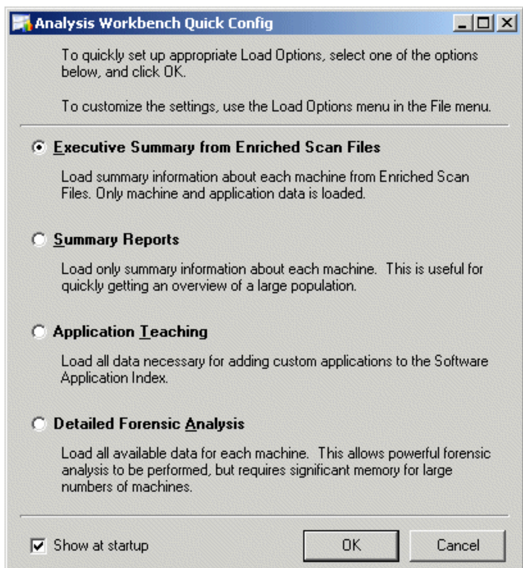
The **Analysis Workbench Quick Config** dialog box is described in the following section.

The Analysis Workbench Quick Config Dialog Box

In This Section...

Introduction to the Analysis Workbench Quick Config Dialog Box

The **Analysis Workbench Quick Config** dialog box is displayed when you start Analysis Workbench. It provides four preset analysis modes which are optimized for common analysis tasks.



If you do not want to start Analysis Workbench with any of these settings, click **Cancel**.

Note: An error message is displayed if the age limit on the Master SAI you are using has been exceeded. You can obtain the latest Master SAI (updated quarterly) by contacting Peregrine Customer Support.

Starting the Analysis Workbench Quick Config Dialog Box

There are two ways to start the **Analysis Workbench Quick Config** dialog box:

1 Automatically on starting Analysis Workbench. To disable this feature, clear the **Show at startup** check box.

2 In Analysis Workbench, by selecting **File|Quick Config…**.

The Preset Analysis Modes

The four preset analysis modes are:

- *Executive Summary from Enriched Scan Files*
- *Summary Reports*
- *Application Teaching*
- *Detailed Forensic Analysis*

Executive Summary from Enriched Scan Files

This setting enables the option to use enriched application data and disables loading of file data. This method is extremely fast.

It is assumed that you want to load xsf scan files that have already been processed by the enricher.

Load Option	Settings used for Executive Summary from Enriched Scan File preset analysis mode
Load Filter	
	No files are loaded
	No directories are excluded
Recognition	
	Uses Installed applications recognition
Asset Fields	
	No asset fields loaded
Display Filter	
	Recognized Main files are shown Uncertain files are shown as **Treat as unidentified**
	The Business view is loaded

Load Option	Settings used for Executive Summary from Enriched Scan File preset analysis mode
Memory	
	The following file data is loaded: ■ Signatures ■ Modified time ■ Type
	The following Machine data is loaded: ■ Asset and hardware data
	No directory data is loaded
Plug-ins	
	No plug-in data is loaded

Summary Reports

This setting loads only summary information about each machine. This is useful for quickly obtaining an overview of a large population.

Load Option	Settings used for Summary Reports preset analysis mode
Load Filter	
	Only executable files are loaded
	No directories are excluded
Recognition	
	SAI recognition is used
Asset Fields	
	No asset fields loaded
Display Filter	
	Recognized Main files are shown Uncertain files are shown as **Treat as unidentified**
	The Business view is loaded
Memory	

Load Option	Settings used for Summary Reports preset analysis mode
	The following file data is loaded: ■ Signatures ■ Modified time ■ Accessed time ■ Type ■ Attributes
	The following Machine data is loaded: ■ Asset and hardware data
	No directory data is loaded
Plug-ins	
	No plug-in data is loaded

Application Teaching

This setting loads all data necessary for application recognition and adding custom applications to the Software Application Index.

- Executable and command files are loaded
- No analysis asset fields are defined
- No plug-in data is loaded
- Only those directories that contain loaded files are loaded
- No SMBIOS machine data is loaded

Load Option	Settings used for Application Teaching preset analysis mode
Load Filter	
	Files with the following extension are loaded: ■ exe ■ com ■ dll ■ ocx
	Executable files are loaded
	No directories are excluded
Recognition	
	SAI recognition is used

Load Option	Settings used for Application Teaching preset analysis mode
Asset Fields	
	No Asset Fields loaded
Display Filter	
	The following Recognized files are shown: ■ Main ■ Associated ■ 3rd party files
	Uncertain files are shown as **CheckVer**
	The following Unrecognized file types are shown: ■ Unidentified ■ Unprocessed ■ Auto-identified
	The Operational View is loaded
Memory	
	The following file data is loaded: ■ Signatures ■ Modified time ■ Type ■ Attributes
	The following Machine data is loaded: ■ Asset and Hardware data
	Only those directories that contain loaded files are displayed
Plug-ins	
	The following plug-in data is shown: ■ Company Name ■ Product Name ■ Product Version

Detailed Forensic Analysis

This setting is appropriate for populations of less than 100 machines. All available data for each machine is loaded. This allows powerful forensic analysis to be performed, but requires significant memory for large numbers of machines.

- All files are loaded
- No plug-in data is loaded
- All directories are loaded
- All machine data is loaded

Load Option	Settings used for Detailed Forensic Analysis preset analysis mode
Load Filter	
	All files are loaded
	No directories are excluded
Recognition	
	SAI recognition is used
Asset Fields	
	No Asset Fields are loaded
Display Filter	
	The following Recognized files are shown: ■ Main ■ Associated ■ 3rd party files
	Uncertain files are shown as **CheckVer**
	The following Unrecognized file types are shown: ■ Unidentified ■ Unprocessed ■ Auto-identified
	The Operational View is shown
Memory	

Load Option	Settings used for Detailed Forensic Analysis preset analysis mode
	The following file data is loaded: ■ Signatures ■ Modified time ■ Accessed time ■ Type ■ Attributes
	The following Machine data is loaded: ■ Asset and Hardware data ■ SMBIOS Data
	All directories are loaded
Plug-ins	
	The following plug-in data is shown: ■ DOS 8.3 Name ■ Real Name ■ Description ■ Company Name ■ File Description ■ File Version ■ Internal Name ■ Legal Copyright ■ Original Filename ■ Product Name ■ Product Version

Exiting Analysis Workbench

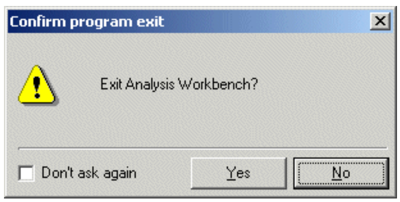
You can exit Analysis Workbench at any time. This has the following effects:

- Closes all open windows and saves their position.
- Asks you if you want to save any modifications made to asset data in the **Machines** window.
- Exits the application.

To exit Analysis Workbench:

1 Select the **Exit** command from the **File** menu.

A **Confirm program exit** dialog box is displayed.



2 Click the **Yes** button to exit, or **No** to remain in Analysis Workbench. The purpose of this confirmation message is to prevent you from accidentally exiting from Analysis Workbench and losing work.

3 To disable the confirmation message, so that it is no longer displayed when exiting Analysis Workbench, select the **Don't ask again** check box.

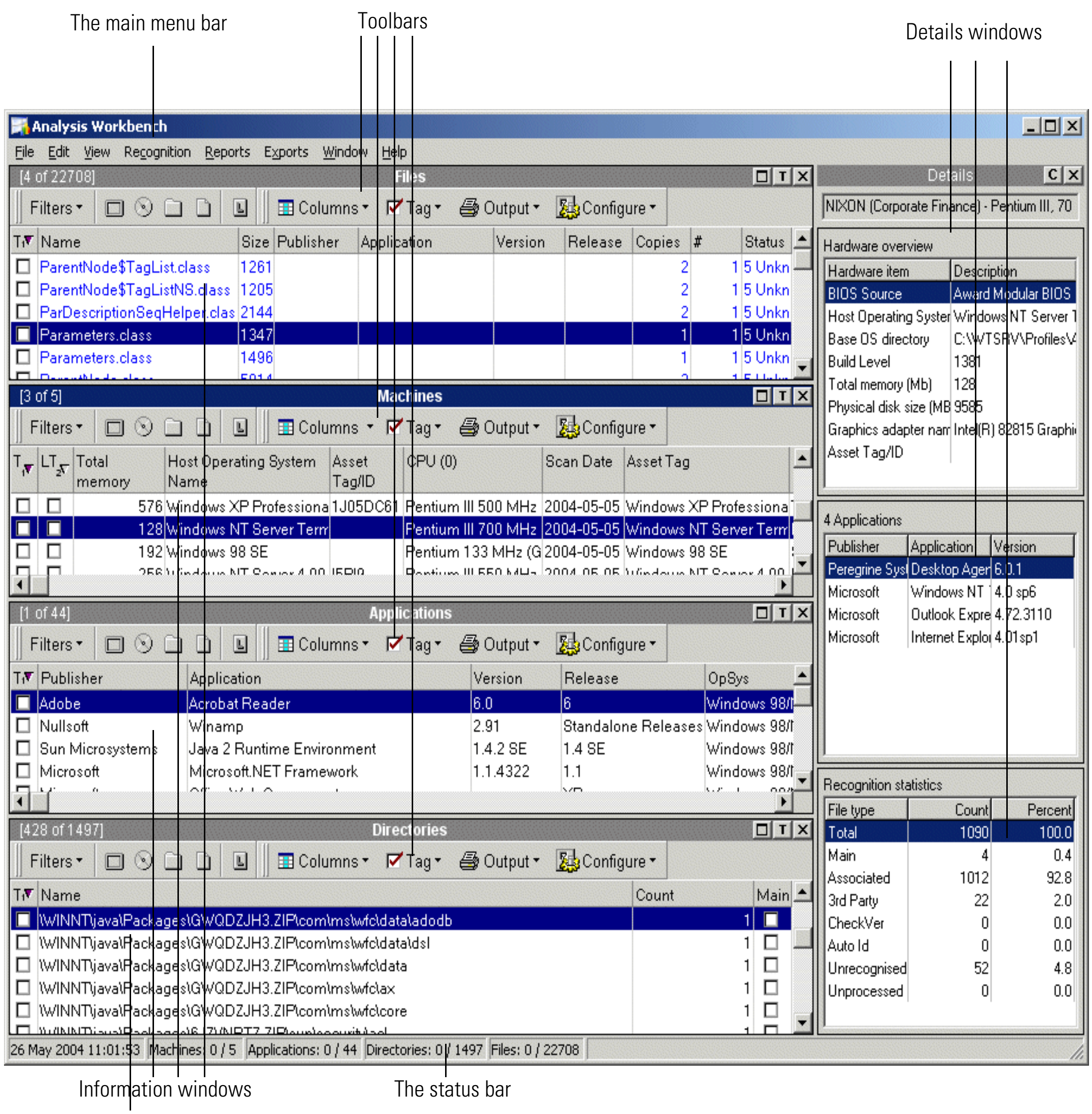
The Analysis Workbench User Interface

In This Section...

The Workspace Layout

The workspace is Analysis Workbench's main window. It is always displayed and contains all the other windows.

The Analysis Workbench workspace layout consists of the following visible components.



Saving and Loading the Workspace Layout

The current workspace layout (for example, windows displayed, linked windows, columns, fonts) can be saved, either as a new default workspace or as a named layout that can be reloaded at any time.

The file can be stored as **awdef.awl** (Analysis Workbench Layout) or as another **.awl** file, which holds layout information about the workspace.

The default location for the .awl files is:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Analysis Workbench

To save or load a workspace layout:

1. Select the **Layout** command from the **Window** menu.
2. From this menu select further commands as required:
   - **Load...**

     Loads a previously saved workspace layout.
   - **Save**

     Saves a new workspace layout.
   - **Save as...**

     Saves the workspace layout as another **.awl** file
   - **Autosave...**

     Sets autosave preferences to save the workspace layout automatically when you exit Analysis Workbench or whenever the layout changes.

The Information Windows

The Analysis Workbench workspace can contain four different types of information windows. These windows are used to display and examine the scans containing the information about the computer population.

This information is displayed in columns in the window. You can display multiple windows of each kind, showing different column selections:

- **Files window**

  Displays information for all files in the population.

- **Machines window**

  Displays asset and hardware information about the computers in the population.

- **Applications window**

  Displays information about the software applications contained in the population.

- **Directories window**

  Displays information about the directories contained in the population. This window is not shown by default when Analysis Workbench is first started but can be displayed by selecting the **Create|Directory** command in the **Window** menu.

Adding a New Window

To add a new information window to the workspace:

▶ Select the **Create|<window name>** command from the **Windows** menu.

This allows you to display multiple views of the same window.

Resizing the Windows

All windows can be resized and positioned in the workspace.

To make a window active:

▶ Click the window title bar or anywhere in the window.

To select options for displaying windows in the workspace:

▶ Use the commands in the **Windows** menu

The Window Title Bar

The title bar show the following information:

- The name of the window
- The number of the entry in the window that is currently highlighted. This is shown in the left corner of the title bar.

  For example, [**5 of 1542**] means that the fifth entry in the window is currently highlighted out of a total of 1542 entries displayed in the window.

To customize the user interface:

▶ Select commands from the **Configure** toolbar menu available in all the information windows.

See *Customizing Window Layouts* on page 316 for more information.

Moving Within the Windows

You can use the mouse or keyboard to move within an information window.

Cursor Control Using Keyboard

Control function	Keyboard navigation
Next entry	Down arrow
Previous entry	Up arrow
Up one page	Page up
Down one page	Page down
Move to start of row	Home
Move to end of row	End
Start/End of entries	Ctrl+Home/Ctrl+End
Beginning/End of row	Ctrl+Left/Right
Top/bottom of row currently displayed	Ctrl+Up/Down

The Details Window

The **Details** window is a secondary window that displays additional linked data about each of the information windows.

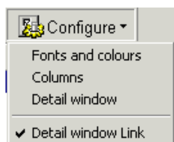
Displaying the Details Window

To display the Details window:

▶ Select the **Detail window link** command in the **Configure** toolbar menu

(available for all information windows).

A check mark will now be shown next to the **Detail window link** command to indicate that it has been selected.



The **Detail** window has two icons associated with it:

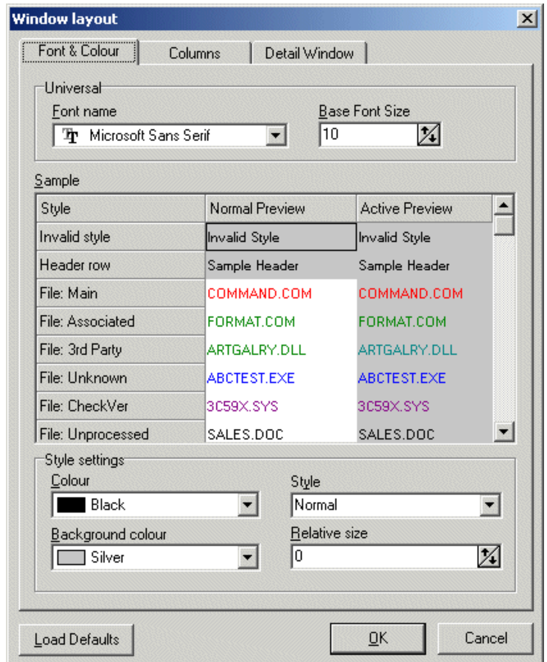
-  Displays the **Window layout** dialog box for the **Details** window.
-  Closes the window. This has the same effect as deselecting all **Detail window link** commands in the **Configure** toolbar menu.

Customizing Window Layouts

To customize the layout of the windows, either:

1. Select options from the **Configure** toolbar menu (available in every window).

   This will display the **Window layout** dialog box with the appropriate tab already selected (**Fonts and Colors**, **Columns** or **Details Window**.
2. Select the **Configuration...** command from the **Window** menu. The windows layout dialog box appears.



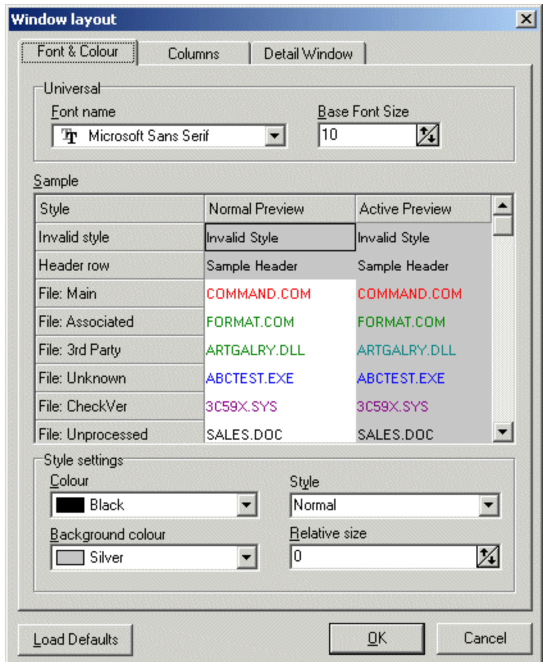
The **Window layout** dialog box has three tabs:

- Font & Color
- Columns
- Detail Window

The **Load Defaults** button in this dialog box reverts the window layout back to the default settings.

Customizing the Font and Color

The **Font & Color** tab of the **Window layout** dialog box is used to configure the font, style and color for the different types of entries displayed in the workspace.



As you specify and select parameters in this dialog box, a sample text list gives you a preview of the applied changes.

Changing the Font Name and Size for All Entries Displayed in the Workspace

To change the font name and size for all entries displayed in the windows in the workspace:

1 Select the font from the **Font name** drop-down list.

2 Specify the font size by using the arrows in the **Base Font Size** box.

Changing the Style Settings; Color, Style, Background Color and Relative Size for Specific Types of Entries

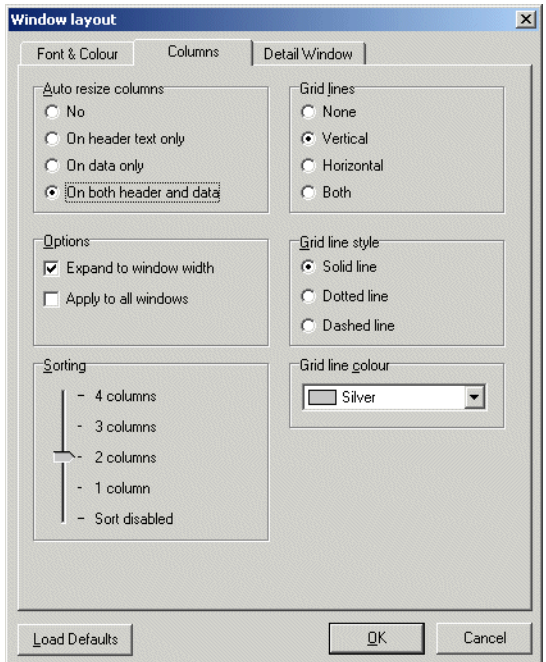
To change the style settings; color, style, background color and relative size for specific types of entries:

1. In the **Sample** list, click on the **Style** entry that you want to change the settings for.
2. Select the color for the text from the **Color** drop-down list.
3. Select the style for the text from the **Style** drop-down list.
4. Select the background color of the windows from the **Background color** drop-down list.
5. Specify the relative size of the text to the window by using the arrows in the **Relative size** box.
6. Click **OK** to make the changes to the font and color or click **Cancel** to exit from the dialog box without making any changes.

Customizing Columns

The **Columns** tab of the **Windows layout** dialog box is used to set options for the way columns are displayed in the workspace.

The columns in the windows can be automatically resized based on the content and/or header size.



Setting Automatic Resizing Options for Columns

To set automatic resizing options for the columns, select one of the following options in the Auto resize group:

1 No

Resizing is disabled. Columns must be manually resized by dragging the column boundary.

2 On header text only

Automatically changes the column width to fit the column header only.

3 On data only

Automatically changes the column width to fit the data in them.

4 On both header and data

Automatically changes the column width to fit both the column header and the data in them.

Setting Column Options

To set options for the columns, select from the following check boxes in the Options group:

1 **Expand to window width**

The columns are resized so that they fit the width of the window.

2 **Apply to all windows**

Any changes made to columns, are applied to all windows in the workspace.

Note: This option is only available if the **Window layout** dialog box is invoked from within a window (that is, from the **Configure** toolbar menu). If it is called from the **Configuration…** command in the **Window** menu, it is implicitly checked.

Setting the Number of Columns to Include in a Column Sort

To set the number of columns to include in a column sort:

1 Use the slider in the **Sorting** group to increase or decrease the number of columns that you want to include in a sort.

2 Move the slider down to **Sort disabled** if you do not want sorting to occur.

Setting Column Grid Line Parameters

To set grid line parameters for the columns, select one of the following options in the Grid lines group:

1 **None**

The grid lines for the columns are hidden.

2 **Vertical**

The vertical grid lines for the columns are displayed.

3 **Horizontal**

The horizontal grid lines for the columns are displayed.

4 **Both**

Both horizontal and vertical grid lines for the columns are displayed.

Setting Grid Line Style

To set the grid line style, select one of the following options in the Grid lone style group:

1. **Solid line**

   The grid lines are displayed as a solid line.

2. **Dotted line**

   The grid lines are displayed as a dotted line.

3. **Dashed line**

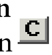
   The grid lines are displayed as a dashed line.

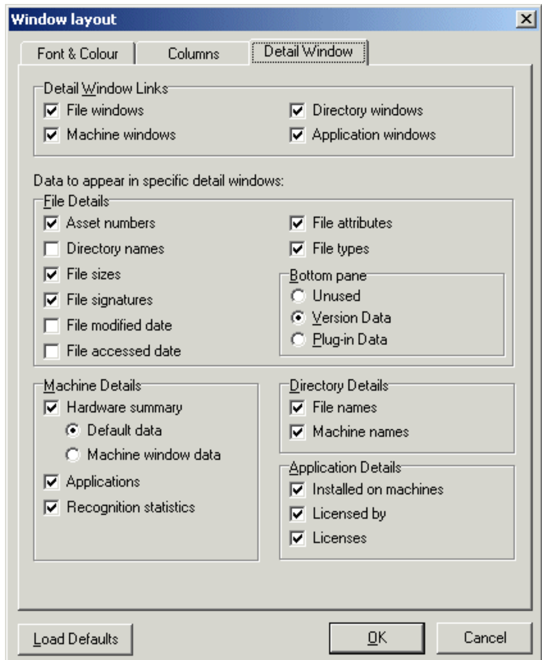
Setting Grid Line Color

To set the grid line color:

1. Select a color from the **Grid line color** drop-down list.
2. Click **OK** to make the changes to the columns or click **Cancel** to exit from the dialog box without making any changes.

Customizing the Details Window

The **Detail Window** tab in the **Window layout** dialog box is used to set options for the display of the **Files**, **Machine**, **Directory** and **Application Details** windows. The window can also be customized by clicking the icon  in the **Details** window.



Setting Links to the Details Windows

To set the windows links to the Details window:

▶ Select any number of the following from the **Detail Window Links** group box:

- File windows
- Machine windows
- Directory windows

- Application windows

Specifying Data to be Displayed in Details Windows:

To specify the data to be displayed in the various Details windows:

▶ Select from the following options:

File Details

Option	Description
Asset numbers	Shows the asset number of the machines that the file resides on.
Directory names	Shows the directory that the file resides in.
File sizes	Shows the size of each copy of a file within the population.
File signatures	Shows the signatures found for each file within the population. It shows a line for each file found in the population. There can be multiple instances of the file on the same machine. In this case there will be two lines for this machine in the **Details** window.
File modified date	Shows the date the file was last modified files if available.
File accessed date	Shows the last-accessed time stamp for files if available.
File attributes	Displays system attributes for a file. The **Attribute** column along with normal file attributes includes the **X** (executable), **I** (internal file) and **D** (device driver) information. Version information (as per Windows Explorer) is available for all files having the information **I** attribute.
File types	Shows the type of file (for example, DOS executable file, Windows executable, OS/2 DLL file).
Bottom pane	
Unused	The bottom pane of the **File Details** window will not be used for displaying any data.
Version Data	This is the information that is embedded inside most Windows executables. It describes the publisher, version and is extracted by the Scanners and stored with the files.
Plug-in Data	Shows any plug-in data that was collected for the file.

Machine Details

Option	Description
Hardware summary	Displays basic details of the hardware configuration scanned from the computer as it is inventoried. Provides details of the operating system, processor, type of screen, memory, drives, directories and files as well as the total disk space and free space.
Applications	Displays details of the applications identified on the machine, including publisher and version.
Recognition statistics	Displays the total number of files on the highlighted machine, including a breakdown of the following both as an absolute number and as a percentage of the total files: ■ Main files ■ Associated files ■ Files that need the version checked ■ Unrecognized files and unprocessed files

Directory Details

Option	Description
File names	Displays a list of file names found within the directory, along with the size of the file.
Machine names	Displays a list of machines where the directory is found within the population, with the drive location for the directory.

Application Details

Option	Description
Installed on machines	The machine(s) that the application is installed on.
Licensed by	The details of the application suite that licences the highlighted application (if applicable). For example, Word 97 is licensed by Microsoft Office 97 if installed on the same machine.
Licences	The details of any applications that the highlighted application licenses. For example, Word 97 licences Microsoft Photo Editor if installed on the same machine.

Click **OK** to make the changes to the **Details** window or click **Cancel** to exit from the dialog box without making any changes.

State Images

A state image is the term describing the current 'state' of all data collections (that is, **Files**, **Applications**, **Directories** and **Machines**). This includes the scan files that have been loaded into the Analysis Workbench.

A state image is a file representing a 'state'. It can be used to maintain an easy to load image of your computer population.

State images are transitory in nature. If asset data is edited, even when the data has been loaded from a state image, the original data source will be edited and not the state image itself.

The version of the state image changes with new releases of the software, and old state images cannot be read by newer versions of the software.

Note: The state image files are not backward compatible. You cannot use your Desktop Inventory version 7.x state images in this version of the software.

State images can be extremely useful in situations where a large amount of analysis work has been carried out. The image can be easily reloaded at a later time. This is significantly quicker than loading from the original data source.

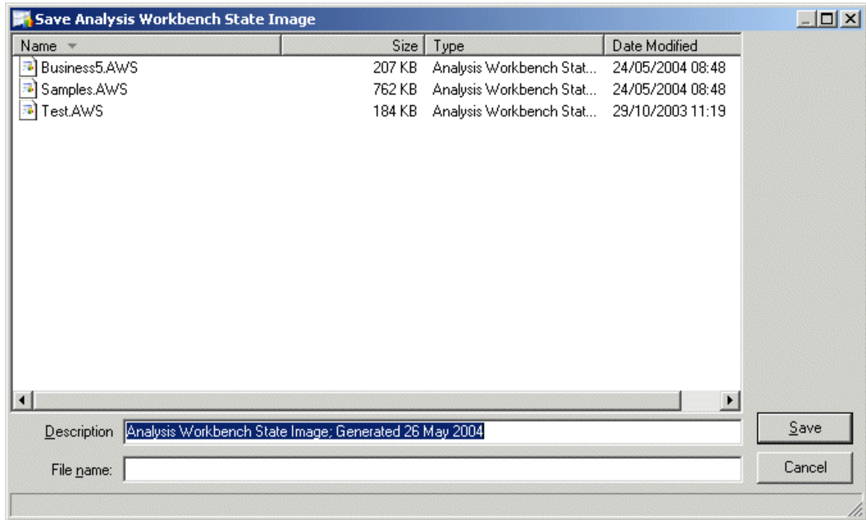
Important: Do not edit asset data contained in data that has been loaded from a state image. It needs to be connected to the original scan file.

Saving a State Image

The current state image of the Analysis Workbench can be saved to a **.aws** file. This file stores the current state of all four data collections. State images are always stored to a subdirectory called **State Images**.

To save a state image:

1. Click the **Save State...** command in the **File** menu (or use the keyboard shortcut **Ctrl+S**). The **Save Analysis Workbench State Image** dialog box is displayed.



2 The **Description** box displays the date that the state image was generated. The text in this box can be edited as required.

3 In the **File name** box specify the name of the file that the state image is to be saved to.

4 Click the **Save** button.

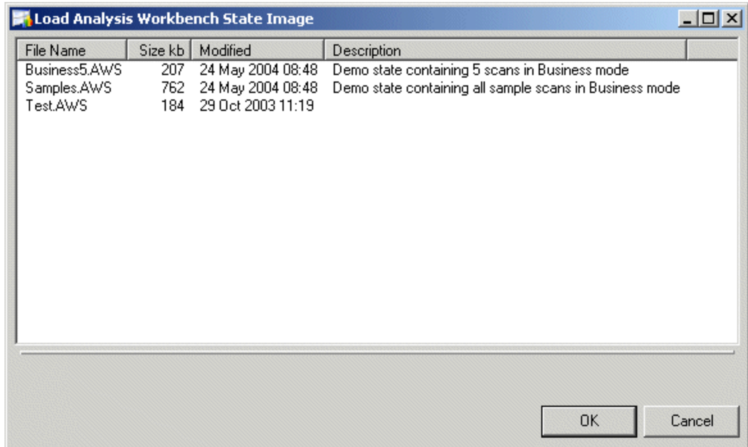
Loading a State Image

A previously saved state image can be loaded only when there is no data loaded in the Analysis Workbench. State images are always restored from a subdirectory called **State Images**.

To load a state image:

1 If data is already present in the Analysis Workbench, either:

- Restart Analysis Workbench, or select the **Unload Scans|All** command from the **File** menu. All scans loaded into the Analysis Workbench are now unloaded.
- Click the **Load State…** command in the **File** menu (or use the keyboard shortcut **Ctrl+L**). The **Load Analysis Workbench State Image** dialog box is displayed.



2. Select a state image to load (**.aws** file).
3. Click the **OK** button.

The Main Menu Bar

Most of the Analysis Workbench commands are accessible from the main menu bar. Commands are grouped by function (for example, 'File, 'Edit', 'View', 'Reports'). Menu commands can be activated with the mouse or the keyboard.

Opening a Menu

To open a menu do one of the following:

1. Click the menu name with the mouse (for example, **File**).
2. Use the shortcut keys. Shortcut keys are shown to the right of the command in the menus. For example, **Alt-F4** is a shortcut used to exit the Analysis Workbench.
3. Use the access key, indicated by an underscore on the active letter. For example, the **File** menu is accessed by pressing **Alt-F**.
4. Use the **Alt** or **F10** key to select the menu, the arrow keys to navigate and the **Enter** key to select an entry.

Most menus invoke commands, however, some menu commands display a dialog box, indicated by ... after the menu command. Other menu commands provide a submenu, containing further commands.

The Menu Items

The following sections show tables of the main menu items and the functions that can be carried out from them. Also shown, are references, indicating where you can find further information about their functions.

The File Menu

The **File** menu is used to:

- Load data files that are used by the Analysis Workbench
- Unload scans
- Load the **Quick Config** dialog box
- Set loading options
- Load and save state images
- Run script files
- Exit the Analysis Workbench

Menu Item	Function	See...
Load Scan Files…	Loads inventory data from FSF or XSF files.	page 394
Unload Scan Files	Removes the details for a loaded scan file, from the Analysis Workbench ■ Current (name of the current scan file selected) ■ Tagged (any tagged machines) ■ Untagged (any untagged machines) ■ All (all entries)	page 396
Quick Config…	Displays the **Analysis Workbench Quick Config** dialog box, which is also displayed when Analysis Workbench is started up.	page 303
Load Options…	Displays the **Analysis Workbench Load Configuration – Advanced** dialog box, which allows recognition, load filter, asset fields, display filter, memory and plug-in options to be set.	page 359
Load State…	Loads a previously saved state (**.aws** file). State images are always restored from a subdirectory called **State Images**. A state can only be loaded if no data has been loaded into the Analysis Workbench.	page 326

Menu Item	Function	See...
Save State…	Saves the current state of the Analysis Workbench to an **.aws** file. This file stores the current state of all four data collections (Machines, Directories, Applications and Files). State images are always saved to a subdirectory called **State Images**.	page 326
Run Script file…	Allows you to run a previously prepared script file (.awcs extension). These scripts facilitate the automation of actions which are manually carried out within the application (for example, loading, processing and outputting of information from Analysis Workbench).	page 572
Exit	Exits the Analysis Workbench application.	page 310

The Edit Menu

The **Edit** menu is used to:

- Set options for tagging and untagging entries in all information windows (even if they are not displayed).
- Clear any filters that have been applied to any of the information windows.
- Save and cancel any changes made to asset data in the **Machines** window.

Menu Item	Function	See...
Tag All	■ Global – applies a global tag to every item in all information windows. ■ Local – applies a local tag to every item in all information windows. ■ Both – applies both local and global tags to every item in all information windows.	page 447
Untag All	■ Global – removes every global tag in all information windows. ■ Local – removes every local tag in all information windows. ■ Both – removes every local and global tag in all information windows.	page 447
Clear all Filters	Removes all filters that have been applied, from all windows.	page 455

Menu Item	Function	See...
Save Asset Changes	Saves any changes made to asset data in the **Machines** window.	page 435
Cancel Asset Changes	Cancels any changes made to asset data in the **Machines** window.	page 435

The View Menu

The **View** menu provides commands for various statistics and charts to be displayed.

See *Viewing Charts and Statistics* on page 436 for more information.

Menu Item	Function	See...
Charts	■ **Scan File Age** Displays a bar chart showing a breakdown of the time elapsed because the data was collected (in months). ■ **Scan Method** Displays a pie chart showing a breakdown of the different Scanners used for collecting data. ■ **Recognition** Displays a pie chart showing a breakdown of the different types of file data that was recognized. ■ **Unrecognized/File Frequency** Displays a graph that can be used to determine the quality of recognition on a population. This displays unrecognized files split by the number of copies. ■ **Recognized/ File Frequency** Displays a graph that can be used to determine the quality of recognition on a population. This displays recognized files split by the number of copies.	page 436
Audit Statistics...	Displays general data statistics, for example, the number of files scanned, the number loaded, the number recognized.	page 445

The Recognition Menu

The Recognition menu provides commands for various application teaching related tasks. The Recognition menu is used to:

- Define Recognition Objectives
- View the Objectives Summary

- Display the SAI Teaching Wizard used to teach applications to a User SAI
- Display SAI Teaching Mode Holding Area
- View and Edit entries in your User SAI
- Recalculate Recognition Objectives
- Set Objective options

Menu Item	Function	See...
Objectives...	Set up and review your Recognition Objectives.	page 487
Objectives Summary...	Displays a summary pie chart of the Recognition Objectives.	page 496
SAI teaching Wizard...	Having defined a set of objectives, the SAI Teaching Wizard can make use of the objective information to choose which files to teach.	page 503
SAI Teaching Mode...	Simplifies the process of teaching new applications to the SAI. A non-modal dialog box is displayed (the **SAI Teaching Holding Area**), which can be used to hold information about the next application to be taught.	page 476
View/Edit User SAIs…	Displays a dialog box where the current content of the **User SAI** can be viewed and edited.	page 482
Recalculate Objectives...	Recalculate the values for the Recognition Objectives.	page 487
Objectives Options...	You can set a number of options defining how Recognition Objectives are managed.	page 487

The Reports Menu

The **Reports** menu provides:

- Preformatted reports
- User-defined reports
- User memos
- The Report Wizard

See *Reporting on Inventory Data* on page 509 for more information.

Menu Item	Function	See...
Machines…	Displays the last page of the Report Wizard that has been preselected with settings for two types of report: ■ All... ■ By Application...	page 509
Applications…	Displays the last page of the **Report Wizard** that has been preselected with settings for two types of report: ■ All... ■ By Machine...	page 509
Directories…	Displays the last page of the **Report Wizard** that has been preselected with settings for two types of report: ■ All... ■ By Machine...	page 509
Files…	Displays the last page of the **Report Wizard** that has been preselected with settings for two types of report: ■ All... ■ By Machine...	page 509
User Memos	■ **Unknown Files...** Generates a list of the unknown files for each computer and provides a means of collecting further information to identify and manage applications and their associated files. ■ **Identified Applications...** Generates a list of identified applications with number of copies found for each computer. It also provides a means of collecting information about the licences held for each application.	page 510
Wizard…	Displays the Report Wizard.	page 514

The Exports Menu

The Exports menu provides export facilities for exporting data in a variety of formats. See *Exporting Inventory Data* on page 554 for more information.

Menu Item	Function	See...
Machines...	Exports data from a Machines window in CSV or text format.	page 559
Applications...	Exports data from a Applications window in CSV or text format.	page 561
Directories...	Exports data from a Directories window in CSV or text format.	page 561
Files...	Exports data from a Files window in CSV or text format.	page 561
Relational...	Exports data in a format that is supported by Relational Database Management Systems (RDBMS).	page 563
Stored Files...	Exports data from the stored files contained in the scan data as a text file or Hex dump.	page 567

The Window Menu

The **Window** menu provides options for controlling the way windows are displayed in the Analysis Workbench workspace and options for the configuration of the display.

For more information see:

- *Customizing Window Layouts* on page 316.
- *Viewing Logs* on page 354.

Menu Item	Function	See...
Create	Creates additional Files, Directories, Machines or Applications windows.	page 314
Equalise	Equally sizes all open information windows.	page 337
Configuration…	Displays the **Window layout** dialog box, which provides options for the configuration of the display font and color, columns and **Detail** window.	page 316

Menu Item	Function	See...
Layout	■ **Load...** Loads a previously saved window layout from an **.awl** file. ■ **Save** Saves the current window layout to the current layout file. ■ **Save As…** Saves the current window layout to a user specified **.awl** file. **Autosave** Automatically saves the window layout: ■ **None** Disables the window autosave facility. Any window layout changes must be saved manually. ■ **When AW Exits** Automatically saves the window layout when the Analysis Workbench is shut down. ■ **When Layout Changes** The window layout is automatically saved when any changes are made to the layout.	page 313
Log Window	Displays the Analysis Workbench log.	page 354

The Help Menu

The **Help** menu provides help on all aspects of using the Analysis Workbench.

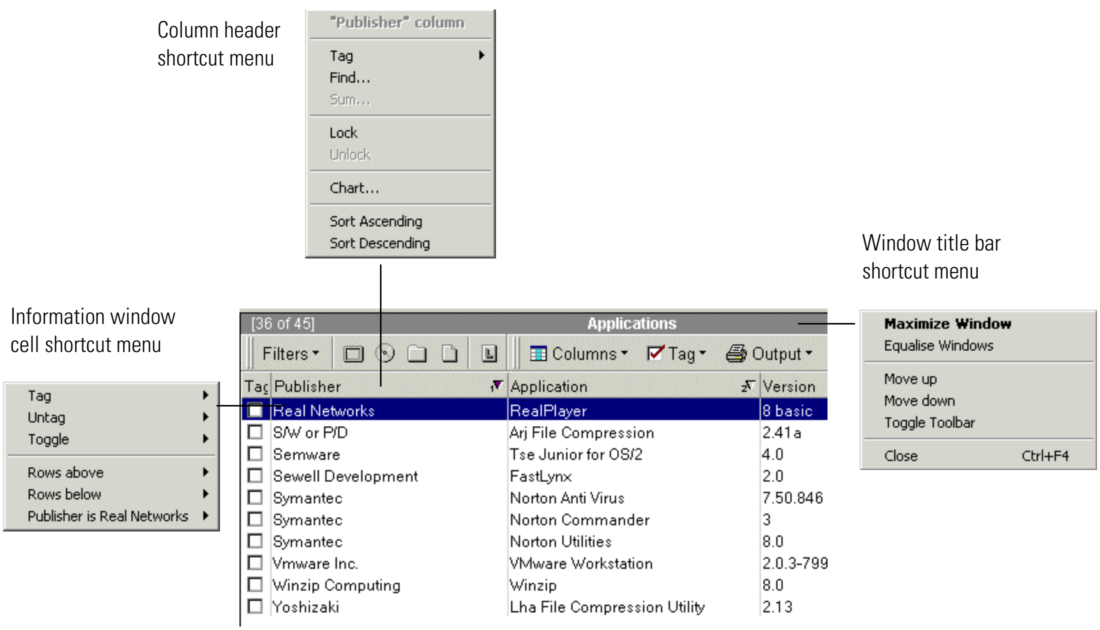
Menu Item	Function
Contents	Displays the Help file table of contents.
About	Displays information about the Analysis Workbench version, build and system memory.

Shortcut Menus

To access a selection of commands related to your current activities (a shortcut menu), position the mouse cursor in the appropriate area of the screen and click on the right mouse button. Analysis Workbench displays a list of commands and you can select the one you want.

There are three types of shortcut menu available for the information windows:

- Window title bar shortcut menu
- Column header shortcut menus
- Information window cell shortcut menus



The Window Title Bar Shortcut Menu

Right-clicking on an information window title bar displays a menu with the following options:

Shortcut menu item	Function
Maximize Window	Maximizes the window. Also activated by: ■ Clicking the **Maximize** icon in the top right corner of the window. ■ Double-clicking the title bar.
Equalise Windows	Makes all windows the same size. Also activated by selecting the **Equalize** command in the **Window** menu.
Move up	Moves the window up a position in the workspace.
Move down	Moves the window down a position in the workspace.
Toggle toolbar	Hides the toolbar if it is currently displayed in the window and vice versa. Also activated by clicking the **Toggle** icon in the top right corner of the window.
Close	Closes the window. Also activated by: ■ Clicking the **Close** icon in the top right corner of the window. ■ Using the Ctrl+F4 keyboard shortcut.

Column Header Shortcut Menus

Right-click on a column header in an information window to display shortcut menus with the following options:

Tag

Option	Function
Query...	**Note:** This option is only available for the **Machines** information window. It displays the **Complex Query** dialog box which enables multiple tagging query criteria to be specified from a section of categories,. These categories are defined by the information collected across the computer population. See *Machine Queries* on page 463 for more information.
Contains...	This option displays a dialog box which allows you to search for a specified string in the column.
Tag all	Applies a tag to all entries in the column.

Option	Function
Untag all	Removes all tags from entries in the column.
Toggle all	Toggles the tag status of all entries in the column. If an entry is tagged then, the tag is removed and vice versa.
Duplicates	Tags any duplicate entries in the column.
Uniques	Tags all entries that are unique.

Find...

Allows you to find a particular entry in the active window.

In addition, for the **Machines** information window, it allows you to find and replace entries in the active window and replace the text as required.

Empty asset fields can also be replaced, by typing in **Null** into the **Find what** box and selecting the **Match whole word only** option.

See *Locating Specific Entries in a Window* on page 345 for further information.

Edit

Note: This option is only available for the **Machines** information window.

This option is only available if the columns you want to edit have been specified in the **Configure Edit Parameters** dialog box.

To display the Configure Edit Parameters dialog box:

▶ Select the **Edit Mode…** option from the **Configure** drop-down toolbar menu in the **Machines** window.

See *Editing Asset Information* on page 432 for further information.

When enabled, the following options are made available:

- **To UPPER case** - All entries in the column are changed to upper case letters.
- **To lower case** - All entries in the column are changed to lower case letters.
- **To Mixed case** - All entries in the column are changed to start with an upper case letter.

All loaded scans will be edited and the color of the entries will change to that specified for edited scans. The default color is red.

Sum

This option is available only if all the contents of a column are numerical. It displays a message showing the sum of the numerical contents of that column.

Lock

When this option is selected, the column clicked and all columns to the left of it are 'locked' and will not scroll left or right.

Unlock

This option is used to remove a lock from a column. To set a different lock, select 'lock' on a different column.

Chart...

Note: This option is not available for the **Directories** information window.

It displays a graphical representation of the selected column statistics.

Sort Ascending

Sorts text alphabetically, numerically, or by date in ascending order (A to Z, a to z or zero to 9).

Sort Descending

Sorts text alphabetically, numerically, or by date in descending order (Z to A, z to a or 9 to zero).

The Information Window Cell Shortcut Menus

Right-click in a cell in the information windows to display a shortcut menu with the following options:

Note: Not all the options are available for all information windows. Where this is the case, it has been indicated.

Menu	Option	Function
Tag		
	All	Tags all the visible entries in the active window.

Menu	Option	Function
	Current row	Tags the currently highlighted row.
	Rows above	Tags rows above the currently highlighted row.
	Rows below	Tags rows below the currently highlighted row.
	<Variable row>	Tags any entries in the window that match the cell specification. This option changes to reflect the cell that the mouse was right-clicked in. For example, if the mouse was right-clicked in a cell in the **Main Processor** (**CPU**) column and the cell contains the following information: **Main Processor** (**CPU**) of Pentium II Then this option will read **Main Processor** (**CPU**) **is Pentium II**. All entries in the window that have a Pentium II CPU will be tagged. Pressing the **Shift** key at the same time as right-clicking on a cell inverts the option. For example, in the previous case it will read **Main Processor** (**CPU**) **is not Pentium II.**
Untag		
	All	Removes tags from any tagged entries in the active window.
	Current row	Removes the tag from the currently highlighted row.
	Rows above	Removes tags from the rows above the currently highlighted row.
	Rows below	Removes tags from the rows below the currently highlighted row.

Menu	Option	Function
	<Variable row>	Remove tags from any entries in the window that match the cell specification. This option changes to reflect the cell that the mouse was right-clicked in. For example, if the mouse was right-clicked in a cell in the **Computer Manufacturer** column and the row highlighted has a computer manufacturer of **DELL**, then any entries in the window that have a **DELL** computer make are untagged. Pressing the **Shift** key at the same time as right-clicking in a cell inverts the criteria. For example, in the previous case it will read **Computer Manufacturer is <u>not</u> DELL**.
Toggle		
	All	Toggles the tag status of all entries in the active window. If an entry is tagged, the tag is cleared and vice versa.
	Current row	Toggles the tag status of the currently highlighted row. That is, if it is tagged, the tag is removed and vice versa.
	Rows above	Toggles the tag status of the rows above the currently highlighted row. If an Entry is tagged, then the tags are removed and vice versa.
	Rows below	Toggles the tags status of the rows below the currently highlighted row. If an entry is tagged, the tag is removed and vice versa.
	<Variable row>	Toggles the tag status of any entry in the window that matches the cell specification. For example, if the mouse was right-clicked in a cell in the **PEC number** column and the row highlighted has **PEC102**, then any entries that have a PEC number of **PEC102** are toggled. Pressing the **Shift** key at the same time as right-clicking on a cell inverts the option. For example, in the previous case it will read **PEC number is <u>not</u>** 102.
Rows above		

Menu	Option	Function
	Tag	Tags the rows above the currently highlighted row.
	Untag	Removes the tags from any tagged entries above the currently highlighted row.
	Toggle	Toggles the tag status of any entries above the currently highlighted row. That is, if an entry is tagged, then the tag is removed, and vice versa.
Rows below		
	Tag	Tags the rows below the currently highlighted row.
	Untag	Removes the tags from any tagged entries below the currently highlighted row.
	Toggle	Toggles the tag status of any entries below the currently highlighted row. That is, if an entry is tagged, then the tag is removed, and vice versa.
<Variable option>		
	Tag	Tags any entry in the window that matches the cell specification.
	Untag	Removes the tag from any tagged entry in the window that matches the cell specification.
	Toggle	Toggles the tag status of any entry in the window that matches the cell specification.
View Scan File...		
		This option is available for the **Machines** window only. It opens the scan file in the Viewer application.

Columns

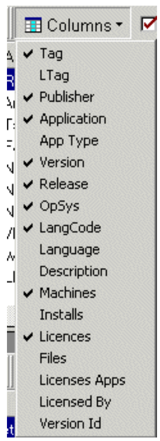
A selection of columns are available for each information window.

Overview of the Columns in an Information Window

To check which columns are available for a particular window:

▶ Click the **Columns** toolbar menu in that window.

A list of all columns available is shown. Currently selected columns (that is, displayed in the active window) are shown with a check mark next to them.



Some column names have additional information appended to them as follows:

- If a column name is shown with a number in brackets after it, this indicates that the information in this column was taken from a loaded plug-in at scan time. The number in brackets refers to the plug-in identifier.

  For example, the column name **Version (11)** indicates that the version information was extracted at scan time from a plug-in 11.

- If the column has the text 'csv' in brackets, this means that the column has been extracted from a CSV file asset field and an option has been set to included this text in brackets. For more information refer to *CSV File Extract Asset Field* on page 382.

  For example, the column name **Asset Number (csv)** indicates that the information in the **Asset Number** column was extracted from a CSV file asset field.

- If a column name is shown with **#n** after it, where n is a number, this means that more than one entry is available for this type of the data.

For example, if a computer has been scanned and has three network connections, then these are shown as three separate columns called **Network connection #1**, **Network connection #2** and **Network connection #3**.

Note: The sequence of the field entries is taken from the order they are found on a particular machine and therefore cannot be relied upon to appear in the same column for all scan files.

Sorting Entries in a Column

There are two ways in which you can sort the contents of a column:

1. Click on a column header to sort the contents of that column. The default sort order is ascending.
2. Right-click on a column header and select the **Sort Ascending** or **Sort Descending** command from the shortcut menu.

   This command sorts text alphabetically, numerically, or by date in ascending or descending order.

Locking and Unlocking Columns

To lock a column:

1. Select the column which will be the leftmost column to be locked.
2. Right-click on the column header and select the **Lock** option. The selected column and columns to the left of it are locked.

   The locked columns are indicated by a grid around the entries.

To unlock all columns:

▶ Right-click on a column header and select the **Unlock** option.

All columns are unlocked. The unlocked columns are returned to their normal display state.

Locating Specific Entries in a Window

In This Section...

Incremental Column Search

The incremental column facility is used to locate an entry in a column in any window.

To Perform an Incremental Column Search:

▶ Click on a column header in the active window and progressively type the word(s) or number(s) that make up the entry that you want to locate.

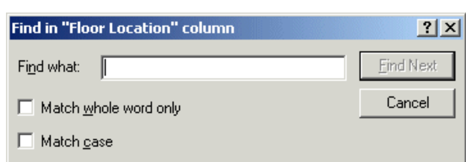
The window automatically locates the closest existing value in the column. The progress of the incremental search string is displayed on the active window titlebar in italic characters.

Find Facility

To use the find facility:

1 Right-click on the column header and select the **Find...** option.

A **Find in "<column name>" column** dialog box appears.



2 Enter the string to search on and if required, set options to match on whole word and match case.

The search direction is top to bottom of a column. To reverse the search, click on the column header to reverse the sorting and use the **Find...** option again.

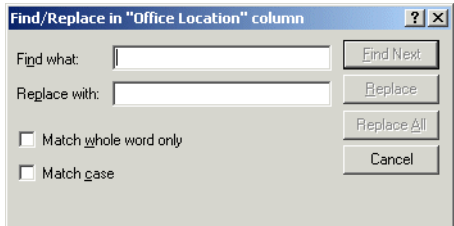
Find/Replace Facility

The **Find/Replace** facility is only available for the **Machines** window, if a column displayed is in edit mode. If a column is edit mode enabled, the contents are displayed in a different color.

To use the Find/Replace facility:

1 Right-click on the column header and select the **Find/Replace…** option.

A **Find/Replace in “<column name>” column** dialog box is displayed.



2 Enter the string to search on and if required, set options to match on whole word and match case.

3 Enter the string that is to replace the located text.

See *Editing Asset Information* on page 432 for information about editing the contents of the **Machines** window.

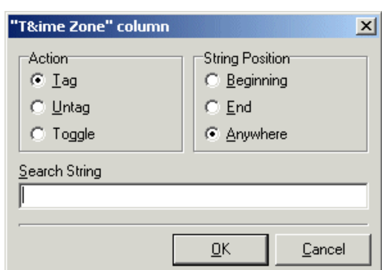
Contains Option

This is used to find and tag multiple entries using a search string. It is of particularly use when trying to find files with a specific file extension.

To use the Contains option:

1 Right-click on a column header and select the **Tag|Contains…** option.

A dialog box appears, which is used to search for a specified string at the beginning, middle or end of entries in the column.



2 In the **Search String** field enter the text that you want to locate.

3 You can also specify actions to be carried out, after the string has been located. That is:

- Tag
- Untag

- Toggle

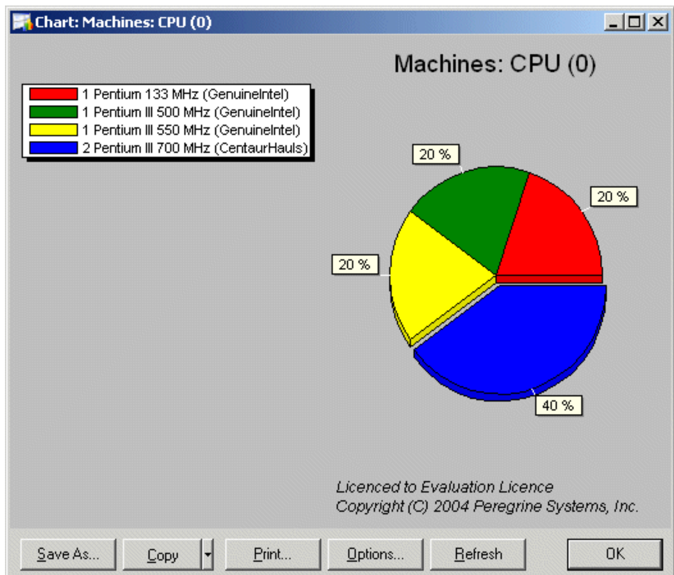
Displaying the Entry Names Contained in a Column

This is very useful for identifying the names of entries that you want to tag or untag.

To display the entry names contained a column:

1 In the window, right-click on the column header and select the **Chart…** option.

The column **Chart** dialog box appears.



2 Click the **Options...** button, and set the **Other group, %** field to 0.

3 Click **OK.**

The chart will show the different entry names contained in the selected column in a list on the left side.

This list is truncated to fit the window.

Toolbars

You will find the following information in this section:

- *Overview of Toolbars*
- *Filters Toolbar Menu*

- *The Filter Icons*
- *Columns Toolbar Menu*
- *Tag Toolbar Menu*
- *Output Toolbar Menu*
- *Configure Toolbar Menu*
- *Moving a Toolbar*
- *Resizing a Toolbar*

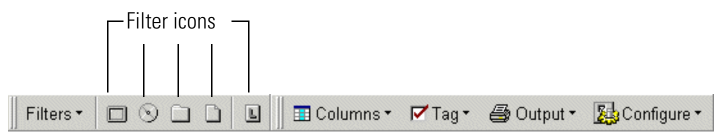
Overview of Toolbars

Toolbars allow you to access various Analysis Workbench commands without using the menu bar. They allow you to work faster and more visually.

When the mouse pointer passes over an icon, a tooltip appears indicating the command corresponding to the icon.

Each of the four information windows in the Analysis Workbench (**Files**, **Applications**, **Machines** and **Directories**) have a set of toolbar icons.

With the exception of the filter icons, each of the toolbar icons has a menu associated with it.



Filters Toolbar Menu

Provides options for applying filters to the information windows, so that a subset of relevant information is displayed.

Activating a Filter

To activate a filter:

▶ Select the particular filter from the **Filters** toolbar menu.

When a filter is active in a window, visually this is indicated by a checkmark (√) in the **Filters** toolbar menu and on the associated filter icon. The filter icons are also highlighted in yellow.

The exception to this is the Local Tags filter icon, which does not have a checkmark displayed on the icon.

Deactivating a Filter

To deactivate a filter:

▶ Click on the filter icon again or deselect the filter from the **Filters** toolbar drop-down menu.

The appropriate check marks are cleared.

For more information see *Filtering* on page 452.

The Filter Icons

Filters can also be applied by clicking the following icons:

- Machines filter
- Applications filter
- Directories filter
- Files filter
- Local filter

When these icons are selected they are shown highlighted in yellow and with a check mark on them (except the Local filter icon).

Columns Toolbar Menu

This is used to select the columns that you want displayed in the active window. When selected, a check mark is displayed next to the column item in this menu.

In addition, the **Machines** window has an option which adds or removes columns in this toolbar menu.

See *The Machines Window* on page 417 for more information about adding and removing columns.

Tag Toolbar Menu

This menu provides various options for tagging entries in the active information window. The following list shows options that are common to all windows.

- **Tag all**

  Tags all visible entries in the active window.

- **Untag all**

Clears all visible tags in the active window.

- **Toggle all**

  Toggles the tag status of all visible entries in the active window.

- **Use Global Tags**

  Uses Global tags only for tagging items in the active window.

- **Use Local Tags**

  Uses Local tags only for tagging items in the active window.

- **Use Local Tags Once**

  Uses Local tags for the next tag operation, after which Global tags are used again for tagging.

Further information about Global and local Tags can be found in the section entitled *Tagging* on page 447.

In Addition:

- The **Machines** window has a **Query...** option which allows machine queries to be performed.

  For more information refer to *Machine Queries* on page 463.

- The **Machines** window has two extra tagging commands - **Load Tags List...** and **Save Tags List....** These will save or load a tag list file (.tag file) and tag matching machines. A .tag file is a text file containing the asset numbers of the tagged machines.

  For more information refer to *Tag Lists in the Machines Window* on page 450.

- The **Files** window has an **Add to SAI...** option which is used to 'teach' the application to recognize files which it previously did not recognize or recognized incorrectly (that is, as a different version/publisher).

  This allows you to optimize the software analysis and consolidation capabilities of Analysis Workbench to recognize unidentified files and applications.

  For more information about adding entries to the SAI, refer to *Teaching Applications to the User SAI* on page 465.

Note: This option is only enabled when a user editable SAI has been loaded (by selecting **Load Options** in the **File** menu and clicking the **Recognition** tab) and the **Files** window contains at least one selected entry.

Output Toolbar Menu

The options in this toolbar menu are as follows:

- **Standard Report** (**All**) - Generates a list view report (that is, one line per group) summarizing a window.
- **Detailed Report** (**By Application**) for the Machines window and (**By machine**) for the Files, Directories and Applications windows: Generates a Detailed report (that is, one line per item).
- **Report from Window** - Displays the **Report Wizard** which allows you to produced customized reports on the contents of the window. Report templates (including the frontsheets) can be created for specific requirements using the Report Wizard.
- **Export from window** - Exports the contents of individual windows. This will display the **Export to file** dialog box which allows you to export the contents of the window based on the current column selection and filter settings.

Further Information

- For more information about exporting data from windows see *Exporting Inventory Data* on page 554.
- For more information refer to *Reporting on Inventory Data* on page 509.

Configure Toolbar Menu

This menu is used to customize the layout of a window and link the active window to the **Details** window. The following list shows options that are common to all windows.

- **Fonts and colors**

  Configures the font and color settings for the window layout.
- **Columns**

  Sets various column attributes and properties.
- **Detail window**

  Configures the window layout and information displayed in the **Details** window.
- **Detail window Link**

  Provides a link to the **Details** window, so that when an entry is clicked in the active window, further information is displayed.

  See *The Machine Details Window* on page 421 for more information.

In Addition...

The **Machines** window has an **Edit mode...** option used to configure various editing parameters for the window.

This option is used to edit the entries in the **Machines** window that have been taken from user entered asset fields. It also allows you to select which of the columns are to be edited.

See *Editing Asset Information* on page 432 for more information.

Moving a Toolbar

A **Docked** toolbar is one that is attached to one edge of the program windows. You can dock a toolbar below the window title bars or to the left of the window. When you drag a toolbar to the edge of the window, the toolbar outline snaps into place along the length of the window edge.

A **Floating** toolbar is one that is not attached to the edge of the window.

Right-clicking on the toolbar menus and icons presents a menu with the following options:

- **Floating**

  Floats the toolbar.
- **Dock to top**

  Docks the toolbar to the top of the window, under the titlebar.
- **Dock to left**

  Docks the toolbar to the left of the window.

To dock the toolbars to the appropriate window and save as default layout:

1. Double-click on the floating toolbars.
2. Select the **Layout** option from the **Windows** menu.
3. Select **Save** to keep this as the default layout whenever Analysis Workbench is started.

To manually move a toolbar:

1. Click the ‘move’ handle  on a docked toolbar, or double-click the title bar on a floating toolbar.

2 Drag the toolbar to a new location. If you drag the toolbar to the edge of the window, it becomes a docked toolbar.

Resizing a Toolbar

To resize a floating toolbar:

▶ Move the pointer over any edge until it changes to a double-headed arrow, and then drag the edge of the toolbar.

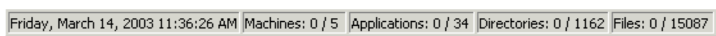
Note: You cannot resize a docked toolbar.

The Status Bar

The status bar displays information about each of the data collections. It shows a separate pane for each of the four data collections (Files, Directories, Machines, Applications). It also contains information about how many items are available and how many of them are tagged globally.

The format is:

Number of global tags/Number of items loaded into the window



This helps to provide a view of the global state of the data, irrespective of what views are open and gives an up-to-date view of how many items of each kind are available/tagged.

Tooltips

When the mouse cursor stays on top of certain areas, in particular over icons and buttons on the toolbar, a tooltip appears to indicate which tool it is.

System Information

The **About** box contains all the system information about Analysis Workbench.

To display the About dialog box:

▶ Select the **About** command from the **Help** menu.

This box contains basic information about Analysis Workbench:

- Information about the installed software (for example, software name, version number, version date).

- Information about licensing (for example, number of licences, when they were issued, whether the software has been enabled to work with Peregrine Network Discovery).
- The total system memory of the client workstation.
- Available system memory of the client workstation after the software has been installed.

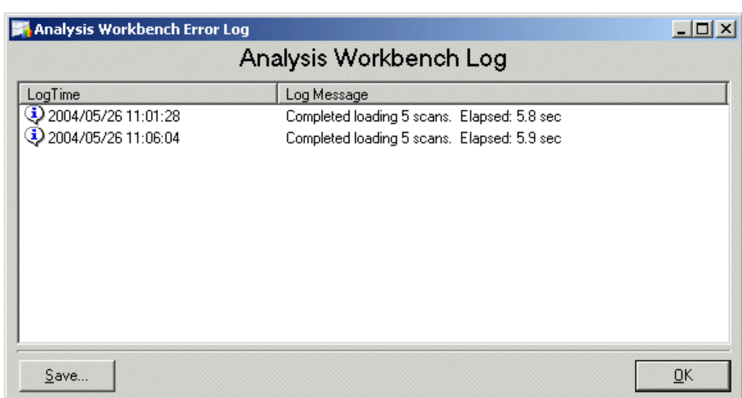
Shortcut Keys

You can quickly accomplish tasks you perform frequently by using shortcut keys.

Task	Keyboard Shortcut
Load State	Ctrl-L
Load Scan Files	Ctrl-O
Save State	Ctrl-S
Exit Analysis Workbench or close an active window	Alt-F4
Tag all entries in an information window (can only be used from within the window itself)	Shift-Ctrl-A
Untag all entries in an information (can only be used from within the window itself)	Shift-Ctrl-U

Viewing Logs

Logs can be accessed from the **Log Window** command in the **Windows** menu.



The log file records information about the current session of Analysis Workbench. It can include amongst other items; how many scan files were loaded and how long they took. It can also log activity when editing SAI entries.

Command Line Parameters

In This Section...

Overview of Command Line Parameters

By using command line parameters, you can create shortcuts on your desktop that start Analysis Workbench with specified state images, directories containing scan files or a specific scan file.

The command line parameters can be combined, so that you can for example, load a state image and a directory of scan files or specific scan files.

This can be a very useful tool for cases where you have already loaded a large amount of data into the Analysis Workbench workspace and have performed some analysis on this data. You can save the state image of the session, and at the next session you can use command line parameters to add any new scan files that have been found in your scan file repository directories.

Because Analysis Workbench does not load duplicate scan files (that is, an identical scan file), no current data will be overwritten. Scan files are considered identical when the **Asset Number** field is the same.

You can also use a command line parameter to specify that all dates in Analysis Workbench use the standard international date format instead of the one set up in Windows.

Creating a Shortcut on the Desktop

To create a shortcut on the desktop including parameters:

- Create a shortcut without parameters first:
  - Drag the Analysis Workbench icon onto the desktop with the right mouse button.
  - Select the **Create shortcuts here** option from the menu that is displayed when releasing the mouse.
  - Right-click on the shortcut and open the properties dialog box.
  - Add any command line parameters to the end of the target field separated from the executable name by a space.

State Image Command Line Parameter

This is the name of a saved state image. State images have as **aws** file extension. The state image can be an unqualified file name. The following conditions apply:

- If an unqualified file name is used the Desktop Inventory **State Images** directory is searched.
- If specified, the state image is loaded.
- If the names of multiple images are specified, only the first is loaded.
- If the file name contains spaces it must be enclosed in double quotes (").

Note: The state image files are not backward compatible. You cannot use your version 7.x state images in this version of the software.

Syntax

The syntax for state image parameters is as follows:

[State image name]

Examples

Case 1: Path to State Image Contains Spaces

"C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Analysis Workbench\State Images\State5.aws"

Case 2: Path to State Image Does Not Contain Spaces

D:\StateImages\Business5.aws

Directory Name Command Line Parameter

This is a directory name. The following conditions apply:

- If multiple directories are specified, only the first is used.
- All scan files in the specified directory are loaded.
- If the path to the parameter (directory containing scan file) contains spaces, then it must be enclosed in double quotes.
- If a state image was also specified, it is loaded first and the directory second.

Syntax

The syntax for directory command line parameter is as follows:

[Fully qualified directory name]

Examples

Case 1: Scan File Directory Does Not Contain Spaces

C:\Scanfiles

Case 2: Directory Contains Spaces

"C:\Scan files"

Scan File Names Command Line Parameter

This is one or more scan file names. The following conditions apply:

- Scan file names specified are loaded after a state image or a directory specified.
- If the path to any parameter (specific scan files) contains spaces, it must be enclosed in the double quotes.

Syntax

The syntax for scan file command line parameter is as follows:

[Fully qualified scan file names separated by spaces]

Examples

Case 1: Path to the Scan File Does Not Contain Spaces

C:\fsfs\LND1260.fsf C:\fsfs\LND1240.fsf

Case 2: Name of One Scan File Contains Spaces

"C:\Inventory fsfs\LND1250.fsf" E:\fsfs\Test.fsf

Standard International Date Command Line Parameter

When specified, all dates use the standard international date format instead of the one set up in Windows. This is useful when setting up scripts for exports.

Syntax

The syntax for standard international date command line parameter is as follows:

[/STD_DATES]or [-STD_DATES]

Note: The command line switch only turns on the standard international date format. There is no command line switch to turn it off.

Using Combined Command Line Parameters

You can combine the three command line parameters so that Analysis Workbench can be started with different data in it.

Specify the names of the scan files, or the state image you want to load. If a directory name is specified, all the scan files in that directory are loaded. The command line parameter priority is always:

1. State Image
2. Directories (only 1 is allowed)
3. Scan files (multiple scan files can be specified)

Syntax

The syntax for combined command line parameters is as follows:

[Fully qualified directory name] [State image name] [Fully qualified scan file names separated by spaces]

Examples

For example, you may want to load a saved state image and also include new scan files contained in your repository directory.

Case 1: Path to the State Image and Scan File Directory Do Not Contain Space.

C:\states\State1.aws c:\NewScanfiles

Case 2: The State Image and the Scan File Contains Spaces

"C:\states\State 1.aws c:\New Scan Files"

Setting Load Preferences

In This Section....

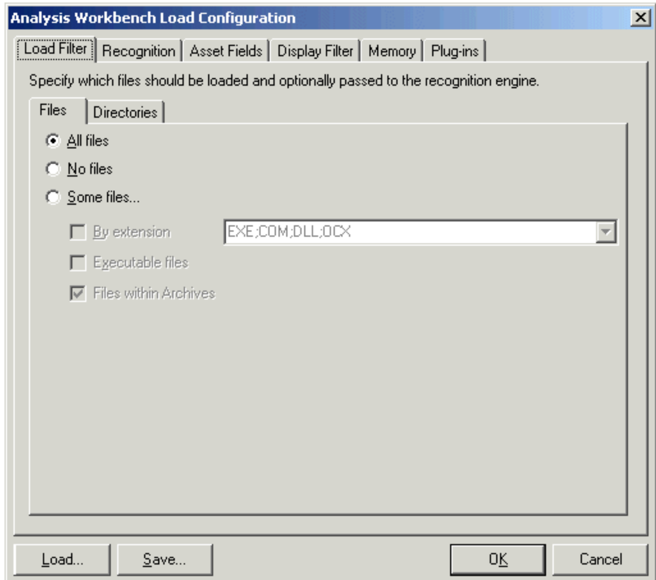
The Analysis Workbench Load Configuration Dialog Box

Important: Set Loading preferences before you load data into the Analysis Workbench.

To load the Analysis Workbench Load Configuration Dialog Box:

▶ Select the **Load Options...** command from the **File** menu.

The **Analysis Workbench Load Configuration** dialog box appears.



This dialog box has six tabs which are used to set various options:

- **Load Filter**

  Specifies which files are to be loaded from selected scan files.

- **Recognition**

  Specifies which recognition method to use and which files to pass through it.

- **Asset Fields**

  Adds additional columns of asset data.

- **Display Filter**

  To minimize the amount of data to be viewed, selections can be made after the files have been processed. In addition, selected views can be chosen.

  - Business view – licensable applications
  - Operational view – all applications with partial or full identification

- **Memory**

  These are memory saving options. Includes options for selecting:

  - File attribute information to load
  - Directories to load
  - Machine data to load

- **Plug-ins**

  Configures loading of additional information collected by plug-ins at scan time.

Important: The **Recognition**, **Memory** and **Plug-ins** settings are disabled and cannot be changed whilst data is present in Analysis Workbench. To enable these settings, either unload the data (select the **Unload scans** command from the **File** menu) or restart Analysis Workbench with an empty workspace.

It is recommended that you check the load option settings before loading in data to the Analysis Workbench. This will save you having to unload data if a setting needs to be changed.

Loading and Saving Options

Load configurations can be saved to or loaded from a **LoadOptions.ini** file (the default file name is **LoadOptions.ini**) by using the **Load...** and **Save...** buttons available in every tab page of the **Analysis Workbench Load Configuration** dialog box.

Filtering Levels

There are three levels of filtering in Analysis Workbench - and understanding this is key to understanding how to use the application. Filtering takes place before the recognition phase and this determines which information will be displayed in Analysis Workbench and the status it will be given.

Load Filter

This filter is used to decide which files to extract from the scan file for processing and/or displaying by the recognition engine.

Recognition Filter

This filter determines which of the files that are passed through the load filter are also sent to the recognition engine for processing. Sending too many files will make it slightly slower, however, passing less files through the recognition engine will possibly result in inferior recognition.

Display/Storage Filter

This filter is based on the recognition status. Recognition status can be:

- **Main**

  Main files identify the application. An application can have multiple main files, but normally there is only one. If a **Main** file is found, the application is considered present.

- **Associated**

  Associated files are part of an application but not the main file.

- **3rd party**

  Files such as some DLL files that are technically used by the application, but are also distributed freely and can be used by other applications.

- **CheckVer file**

  CheckVer files are files that are found in the Recognition library, but do not match any of the known versions of an application. This usually indicates that it is a newer version. If this is the case, it might be a good idea to obtain an updated Recognition Library from Peregrine Systems.

- **Unidentified file**

  These files cannot be identified.

- **Unprocessed file**

  These files have not been processed by the recognition engine. For example, they are passed to the load filter, but not to the recognition filter.

- **Junk files**

  These files have been identified as junk files as set up in the **Recognition** tab page **Advanced** options.

- **Auto-identified file**

  These files are known to be a device driver file and were not recognized by the application library. Files used as Device Drivers represent a large portion of the files that are not identified by the Application Library. Being able to identify these automatically can significantly reduce the effort required to achieve good recognition rates.

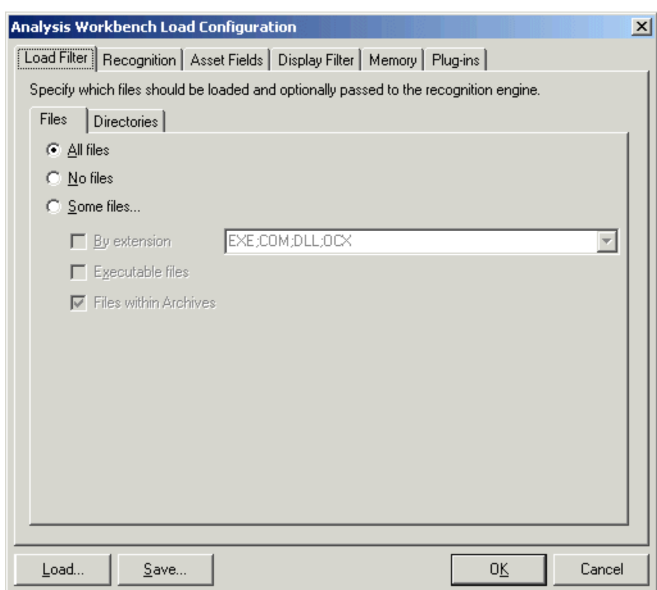
When performing analysis or recognition, it can be beneficial to allow everything to pass through the display filter (apart from files you have designated as junk). This effectively causes the Analysis Workbench to store and display information about all files, irrespective of their recognition status. In this state, the file data that is needed to teach more applications is available.

When summary reports are required, set the display filter to let through **Main** files only. This means that no information is stored (in the Analysis Workbench memory) about any other files, but the information about applications is still based on all the files passed through the load and recognition filters.

Configuring Load Filter Settings

You can use these settings to determine which types of files will be loaded and optionally be processed by the recognition engine. In addition, whole directories of files can be excluded from the recognition process.

1. In the Analysis Workbench, select the **Load Options...** command from the **File** menu.
2. Click the **Load Filter** tab in the **Analysis Workbench Load Configuration–Advanced** dialog box.



Selecting the Load Filters

To select the load filters:

1. Click the **Files** tab.
2. In the **Files** group box, select one from the following options:
   - **All files** - Loads all files.
   - **No files** - No files are loaded. For example, use this for hardware only analysis.
   - **Some files** - Enables the **Some files** options:
     - **By extension…** - This allows you to specify the extensions of any files that you want to be included. Select the extensions from the drop-down list (this list maintains a history of previously entered extensions) or type the extension directly in to the box. Multiple extension must be separated by semicolons.
     - **Executable files** - This will allow all executable files to be processed against the recognition engine. Executable files include *.exe, *.com files, DLLs and other files containing executable code.
     - **Files within Archives** - This will process any files in archive files (for example, Zip files, CAB, LZH). When this option is checked, any files matching the other criteria (extension and/or executable) are loaded, even if they are inside an archive. If the option is cleared, no files within archives are loaded.

     If this is the only option enabled, nothing is loaded - it is not possible to load only files within archives.

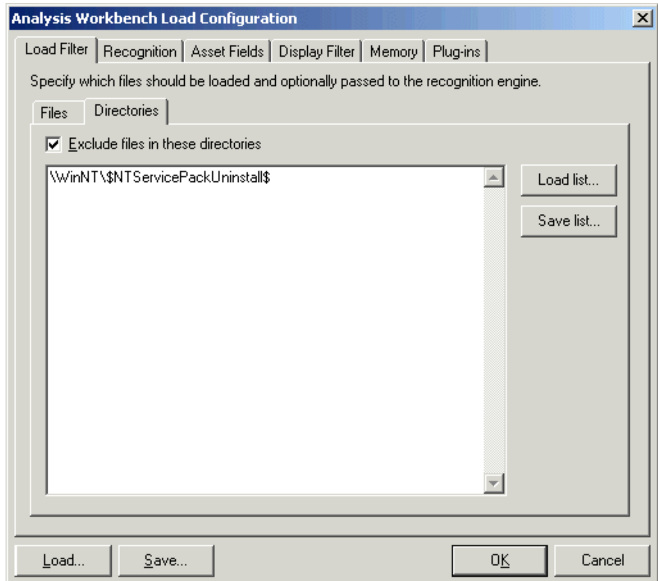
For obtaining the best recognition in as short a loading time as possible, enable the **Executable Files** option only.

Specifying the Directories to Exclude

Examples of directories that you may want to exclude are shown in the following table:

Directory	Reason
Temp/Tmp	Temporary directory holding transient files.
Recycler/Recycled	Recycle directory for C:, D: and so on. Stores files moved to the Recycle bin.
DOS	Operating system directory assuming that all these files are recognized.

1 Click the **Directories** tab.



2 In the **Directories** group box select the **Exclude files in these directories** check box.

3 Place the cursor in the list box and type in the path (do not include the drive letter) of the directories to be excluded. An example of the format is as follows:

\WinNT\$NTServicePackUninstall$

You can save the current list displayed in the list box. To do this, click the **Save list...** button and specify the file name and path of the text file to save to. The default file name is **dirlist.txt**.

You can load a previously saved text list file by clicking the **Load list...** button to display a dialog box. Enter the file name and path or navigate to the file to be loaded.

Configuring Recognition Settings

In This Section....

Recognition Overview

Analysis Workbench is able to perform application recognition on the software scanned, while the data is being loaded from a scan file.

By default the Analysis Workbench uses Master Software Application Index files (Master.SAI) for performing application recognition. The Master SAI files are read-only files that contain a database of software applications.

There are multiple Master SAI files that can be used at the same time for recognition purposes:

- Master.sai
- French.sai
- German.sai

All of these files can be found by default in the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common

You can set up the Analysis Workbench so that is uses a User.sai file instead. A User.sai file is one that you, the customer, have customized with applications you have taught using Analysis Workbench.

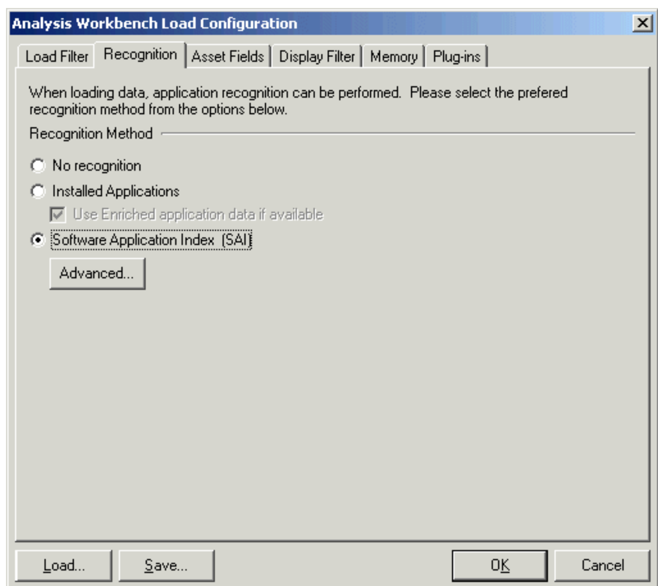
You can use multiple User SAI files for recognition purposes. Each User SAI created has a unique identifier assigned to it.

Important: Backward compatibility has been maintained in this version of Desktop Inventory. To use your Desktop Inventory version 7.x User SAI files with this version of the software, use the **SAI Update Wizard** to upgrade the format of the SAI file. See *The SAI Update Wizard* on page 641 for more information on how to do this.

Displaying the Analysis Workbench Recognition Options Tab

To display the Analysis Workbench recognition options tab:

1. Select the **Load Options...** command from the **Files** menu. The **Analysis Workbench Load Configuration** dialog box is displayed.
2. Click the **Recognition** tab.



Disabling Application Recognition

This option is used to disable any application recognition. When recognition is disabled, loading is slightly faster but no application information is available.

To disable application recognition:

- In the **Recognition Method** group, select the **No recognition** option.

Selecting the Installed Applications List As the Recognition Method

This method of recognition is based on the operating system's internal list of applications. As such, it is not recommended as the preferred recognition method, except for data from UNIX Scanners.

To select installed applications for the recognition method:

▶ In the **Recognition Method** group, select the **Installed Applications** option. A further option is activated.

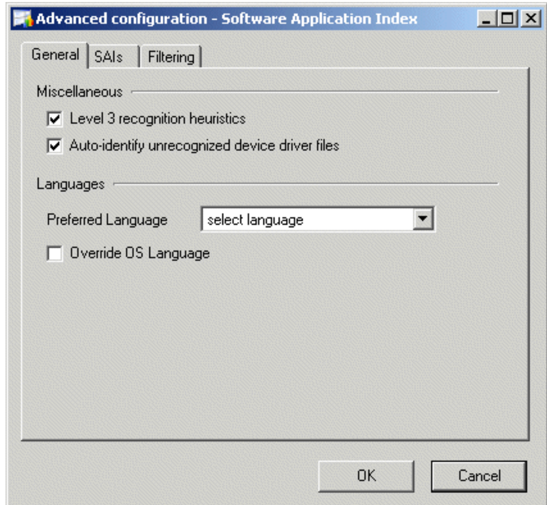
Use Enriched application data if available

When this option is checked, Analysis Workbench uses the application data from the enriched scan file instead of running 'real' recognition. If no file data is loaded this is much faster.

Selecting the SAI As the Recognition Method

1. In the **Recognition Method** group, select the **Software Application Index (SAI)** option.
2. Click the **Advanced...** button to set further options if required. The **Advanced Configuration - Software Application Index** dialog box is displayed.

Setting General Options for the SAI



Setting Level of Recognition Used

To set the level of recognition used:

1. Select the **General** tab in the **Advanced Configuration - Software Application Index** dialog.
2. In the **Miscellaneous** group, select options for the level of recognition used.
   - **Level 3 recognition heuristics**

     If this option is enabled, the recognition engine defers its final recognition decision until all the files in all the directories on the machine have been read. If disabled, machine-based recognition does not take place and recognition data is returned after each directory is loaded. A time overhead of about 10% is normal when Level 3 Recognition is enabled.
   - **Auto-identify unrecognized device driver files**

     When enabled (by default), files that cannot be identified by standard SAI recognition and have the Device Driver attribute will be marked as recognized. Files used as Device Drivers represent a large portion of the files that are not identified by the Application Library. Being able to identify these automatically can significantly reduce the effort required to achieve good recognition rates.

Setting the Preferred Language

If you are using a national SAI file, for example, **German.sai** or **French.sai** together with the **Master.sai** you will want to set this option.

Preferred language is used for cases when the recognition engine encounters more than one language version of the same file– for example, Microsoft Word in English and in French. Because these versions are equally recognized, this setting instructs the recognition server on which of the versions to select.

To set the language options:

1. Select a language from the drop-down list.

   This will only work if exactly one of the versions matches the language.

2. Check the **Override OS Language** box if you want the recognition engine to overlook the operating system locale setting and take the setting you specified in the **Preferred Language** box.

A Summary of the Process

The process can be summarized as follows:

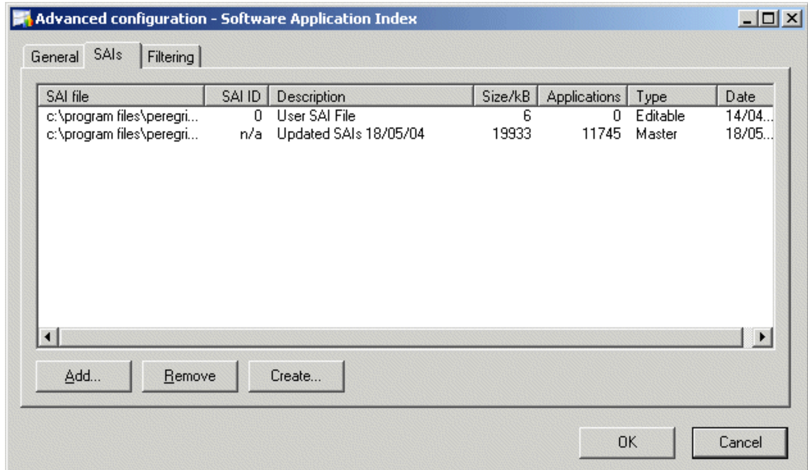
- A rating is obtained for all versions that are possible matches.
- The version(s) with the best rating are found.
- If there is only one version, then the process goes no further, otherwise, it takes the language (locale setting) of the operating system, if it is available in the scan.
- If the operating system locale setting is not available, it takes the setting you specified here in the **Preferred Language** box.

Adding, Creating or Removing SAIs

The options on the **SAIs** tab page allow you to:

- Add a new SAI file to be used for application recognition.

- Remove an existing SAI file.
- Create a new empty User.sai file.



The list box on this tab page displays the following information:

- The path to source files for the SAI – both read-only Master SAIs and editable User.sai.
- The SAI ID number for User SAI files. Master SAI files do not have an ID.
- A description of the SAI files.
- The size of each SAI file (in kilobytes).
- The number of application files in each SAI.
- The type of SAI file:
  - **Master** - Read-only SAI (Master.sai)
  - **Editable** - (User.sai)
- The creation date for a Master SAI file or for a User SAI, the date the file was last saved.

Adding a New SAI File for Application Recognition

To add a new SAI file for application recognition:

1. Select the **SAIs** tab in the **Advanced Configuration - Software Application Index** dialog.
2. Click the **Add...** button on this tab page.
3. Navigate to and select the SAI file (Master or User) you want to use for recognition.

The SAI file is added to the list box which means the file will be included in for application recognition.

Removing an Existing SAI File

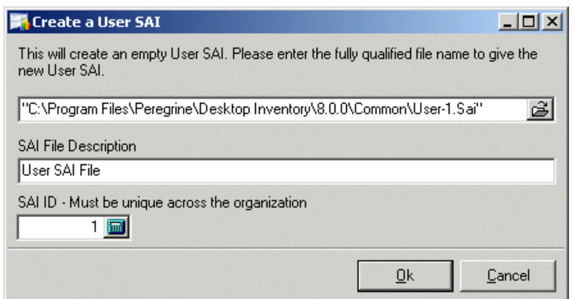
To remove an existing SAI file:

▶ Select the file in the list box and click the **Remove** button.

Creating a New Empty User SAI

To create a new empty User.SAI:

1 Click the **Create…** button. The **Create a User SAI** dialog box is displayed.

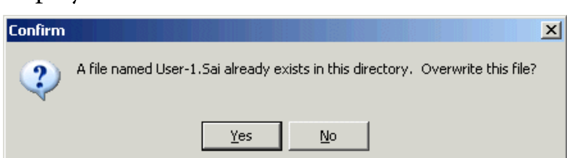


2 Enter or navigate to the directory where the SAI file is to be created.

3 Enter a description for the file.

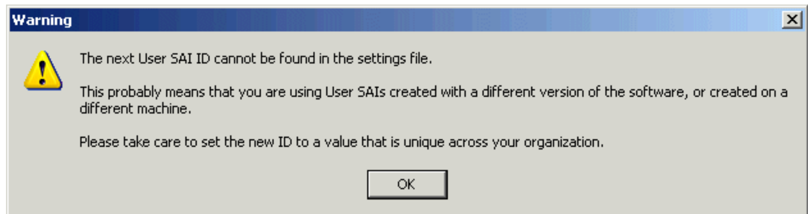
4 Click the **OK** button.

The file is automatically assigned a unique ID. However, you may already have an SAI with the same filename. If so, the following message will be displayed.



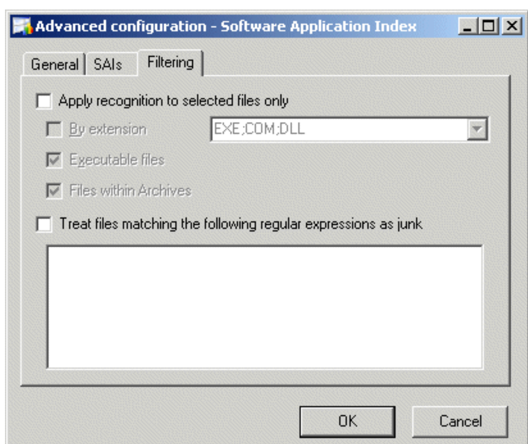
5 Click **Yes** if you want to overwrite the existing SAI file or click **No** to return to the dialog box and assign a new ID to the SAI file.

6 If you have made modifications to the cfgNextSAIID setting in the SAI.ini file, you may see the following message. This happens when the value for the ID in the ini file is missing or lower than the highest ID in the user SAIs currently loaded. This message is for information only - the Desktop Inventory components will correct this situation automatically by inserting the correct ID value into the ini file.



Setting Filtering Options for the SAI

1 Select the **Filtering** tab in the **Advanced Configuration - Software Application Index** dialog.



2 Select the options as required:

- **Apply recognition to selected files only**

  This is a recognition filter that determines which of the files are sent to the recognition engine for processing. Sending too many files can make it slightly slower.

- **By extensions**

Allows you to type in the extensions of any files that you want processed against the recognition engine. Select the extension from the drop-down list (this list maintains a history of previously entered extensions) or type the extension directly in to the box. Multiple file types must be separated by a semicolon.

- **Executable files**

  All executable files will be processed against the recognition engine. Executable files include *.exe, *.com files, DLLs and other files containing executable code.

- **Files within Archives**

  Processes any files in archive files. The following archive file types are supported:

  ARJ, ZIP v1, ZIP v2, LHA, LZH, ARC and PAK

  In addition cab files are supported using plug-in 12.

Note: For the best application recognition, select the **Executable Files** option.

Junk Files

Some files may be executable but are of no interest for licensing or other purposes. These files are often identifiable via the file name.

The **Treat Files matching the following regular expressions as junk** option is a way for the recognition engine to ignore such files, by allowing one or more file name masks to be specified as ‘junk’.

These files are not passed to the recognition engine and will be marked as junk. This is available in the **Display Filters** tab page so junk files can be discarded and not shown.

To set junk filters:

1. Select the **Treat Files matching the following regular expressions as junk** option.
2. Type the file name masks you want to treat as junk. See the next section for examples of regular expressions.

Regular Expressions

This section outlines some of the regular expressions commonly used.

Character	Meaning
.	Match any character
+	Match one or more of the previous character. For example: A+ matches one or more As
*	Match zero or more of the previous character. For example: A* matches zero or more As.
?	Make the previous character optional. For example: assets? matches a string containing either asset or assets. The ? only applies to single characters when there are no enclosing parentheses.
^	The characters after this symbol must appear at the beginning of the string. For example: ^fsf means that the string to be matched must start with the characters fsf.
$	The characters after this symbol must appear at the end of the string. For example: xsf$ means that the string to be matched must end with the characters xsf.
\	This removes the special meaning of a character. For example: \\. matches the . character, since the \ removes the special meaning of the . character.

Character	Meaning
[]	Character class. Match one of the items contained in the square brackets. For example: [123] will match either a 1, or 2, or 3. [123]+, would match a sequence of 1's, 2's and 3's or any combination of them. Note that within a character class, the ^ character does not have its usual status but means any character except those in the class. For example: A character class of [^123] will match any character that is not 1, 2 nor 3. A character class containing a - between two characters means a range of characters. For example: The character class [c-h] means all the lower case letters starting from c and ending in h. There are a number of additional special predefined character classes to represent some commonly used groups of characters. ■ [[:alnum:]] Any alphanumeric character ■ [[:alpha:]] Any alphabetic character ■ [[:blank:]] Space or horizontal tab ■ [[:ctrl:]] Control character ■ [[:digit:]] Decimal digit ■ [[:lower:]] Lower case letter ■ [[:punct:]] Punctuation character ■ [[:upper:]] Upper case letter
()	Groups a set of characters together. For example: (assets)? would make the entire word **assets** an optional part of the match.

Configuring Analysis Asset Fields

Analysis Workbench can be configured to construct any number of additional read-only named asset fields. These asset fields are constructed based on data collected at scan time. The analysis asset fields defined here can be displayed as a column in the **Machines** window, however, they cannot be edited.

To customize the columns that are displayed, select the **Edit Column** option from the **Columns** drop-down toolbar menu in the **Machines** window.

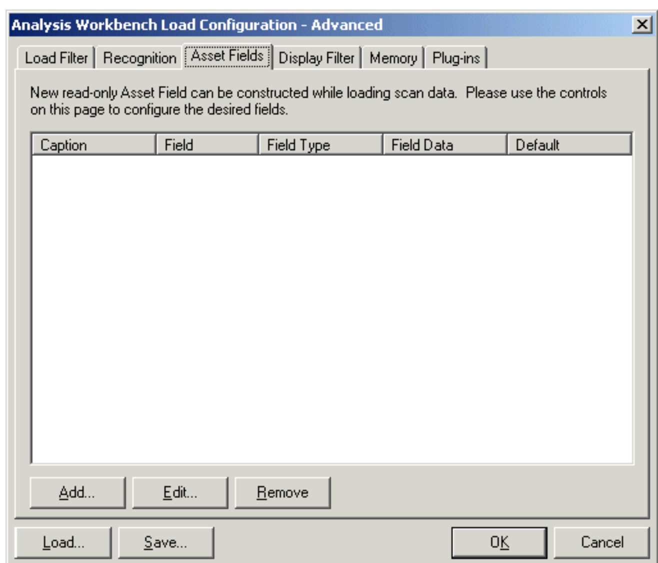
Adding an Asset Field Extract

The fields are set up in a manner similar to that found in the Scanner Generator. Five different types of fields can be constructed:

- **Text file Extract** - Takes data from a plain text file (similar to File Extract Field of Scanner).
- **Ini Field Extract** - Takes data from an ini file (no equivalent in Scanner).
- **CSV File** - Takes data from CSV files such as peripheral sheets (allows an external CSV file, containing a list of data associated with asset numbers to be parsed and loaded along side the other data).
- **Environment** - Takes data from environment strings (equivalent to same field in Scanner).
- **Sequence** - Takes data from a sequence of asset fields (equivalent to same field in Scanner).

To configure the asset field extract settings:

1 Select the **Load Options...** command from the **File** menu.



2 Click the **Asset Fields** tab. The Asset Fields tab contains a pane with five columns:

- **Caption** - The caption as specified in the Asset Data page of the Scanner Generator.
- **Field** - The number of the Analysis field (1 to 28)

- **Field Type** - The type of field to extract the information
- **Field Data** - The source of the field information
- **Default** - Any default value that has been set

3 Right-click anywhere in the pane to display a menu with the following options:
   - **Add** - Adds a new analysis asset field.
   - **Edit** - Edit the details for an existing asset field.
   - **Remove** - Removes an existing asset field from the list.

4 Select the **Add** option. A **New Analysis Asset Field** dialog box is displayed.

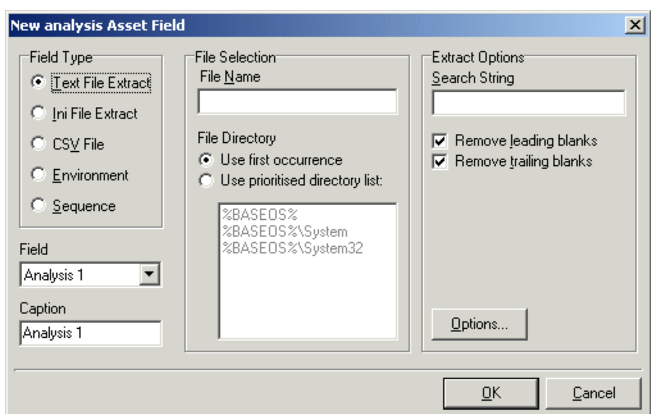
5 Select the type of field to be extracted.

6 Use the controls on this page to configure the desired fields.

Text File Extract Asset Field

This field type extracts information from a single line in a named text file.

A useful file extracts include the predefined SMS file which extracts the SMS Unique Machine ID.



Important: The file you wish to extract from must be a file that is included in the **Stored Files** section. If the file is not there it will not work. In other words, the Scanner has to be set up to store the file before you can extract from it in Analysis Workbench.

To set up a new text file extract asset field:

1 Select **Text File Extract** as the field type.

2. Assign a caption for the field if required, by typing it in the **Caption** field.
3. In the **File Name** box, specify the name of the text file that the information is to be extracted from.
4. In the **Search String** box, specify the text string that is going to be located.
5. Assign the number for the analysis field by selecting it from the **Field** drop-down list.
6. Check the **Remove leading blanks** box, to remove blank spaces (if there are any) before the search string located in the text file.
7. Check the **Remove trailing blanks** box, to remove blank spaces (if there are any) after the search string located in the text file.
8. In the **File Directory** group box specify where to look for the file. This is a prioritized search sequence list. Select one of the following options:
   - **Use first occurrence** Viewer uses the first match of the file that it encounters.
   - **Use prioritized directory list** A list box is enabled, which allows you to specify the priority of directories where the file might be located. For example:

     %BASEOS% (the base operating system directory)

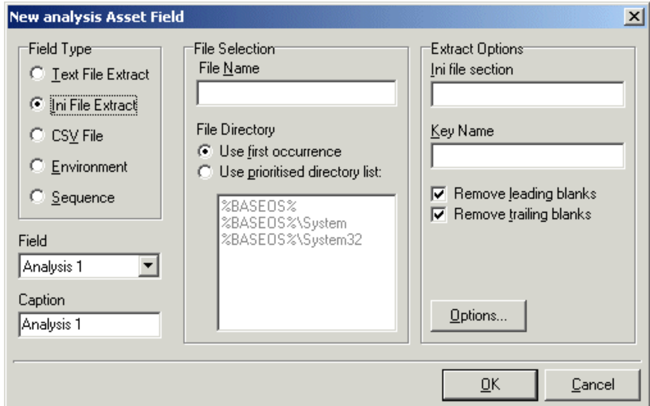
     C:\Winnt

     This location will have the highest priority, that is, if the file is located in this directory, then this file will be used.

     %BASEOS%\System (the System directory in the base operating system directory) **C:\Winnt\System**

     If the file is not located in the **%BASEOS%** directory and is encountered in the **%BASEOS%\System** location, then this location will have priority as the source for the text file, and so on.
9. Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables* on page 385 for information about how to do this.

Ini File Extract Asset Field



As with the text file extract asset field, this extracts information from a file collected by the Scanner as a stored file.

Important: The ini file you wish to extract from must be a file that is included in the Stored Files section. If the file is not there it will not work. In other words, the Scanner has to be set up to store the file before you can extract from it in Analysis Workbench.

The Format of an ini File

Initialization files (**.ini** files) contains a number of different sections. Each section contains lines of settings (**Key Names**) applicable to that section. The format of the **ini** file is as follows:

[Section Name1] - (The name of the first section)

Key Name1 = Value (The first setting)

Key Name2 = Value (The second setting)

.

.

[Section Name2] - (The name of the next section)

Key Name1 = Value (The first setting)

Key Name2 = Value (The second setting)

.

.

The advantage of using this type of asset field instead of using a text file extract asset field, is that it is possible to pinpoint exactly which Key Name you require and in which section.

To set up an ini file extract asset field:

1. Select **Ini File Extract** as the field type.
2. In the **File Name** box, specify the name of the **ini** file that the information is to be extracted from.
3. Assign the number for the analysis field by selecting it from the **Field** drop-down list.
4. Assign a caption for the field if required, by typing it in the **Caption** field.
5. In the **File Directory** group box, specify where to look for the file. This is a prioritized search sequence list. Select one of the following options:
   - **Use first occurrence** - Selecting this option, Viewer will use the first match of the file that is encountered.
   - **Use prioritized directory list** - Selecting this option enables a list box, which is used to specify the priority of directories where the file might be located. For example,

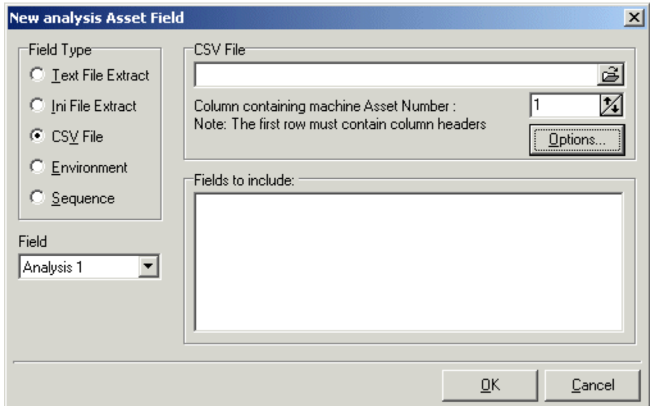
     %BASEOS% (the base operating system directory) **C:\Winnt**

     This location will have the highest priority, that is, if the file is located in this directory, then this file will be used.

     %BASEOS%\System (the **System** directory in the base operating system directory) for example, **C:\Winnt\System**

     If the file is not located in the **%BASEOS%** directory and is encountered in the **%BASEOS%\System** location, then this location will have priority as the source for the text file, and so on.
6. In the **Ini file section** box, specify the section of the **ini** file that the asset field extract is located in. This is the section identifier in the ini file (surrounded by square brackets [ ]). Do not include the brackets [].
7. In the **Key Name** box, specify the **Key Name** contained in the specified section of the **ini** file. This is the start of the string before the equals (=) sign. Do not include the = sign.
8. Check the **Remove leading blanks** box to remove blank spaces (if there are any) before the **Key Name** located in the **ini** file.
9. Check the **Remove trailing blanks** box to remove blank spaces (if there are any) after the **Key Name** located in the **ini** file.
10. Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables* on page 385 for information about how to do this.

CSV File Extract Asset Field



Allows an external Comma Separated Variable (CSV) file, containing a list of data associated with asset numbers to be parsed and loaded alongside the other data.

1 Select **CSV File** as the field type.

2 In the **CSV File** box, navigate to the CSV file that is to be loaded.

The first row of this file must contain column headers.

3 Enter the number of the column that contains the machine asset number (that is, the primary identifier field). As the number changes so does the fields selection. For example, if the primary identifier is column 2 in the CSV file, then specify this as the number '2' by either typing it directly into the field or by using the arrows.

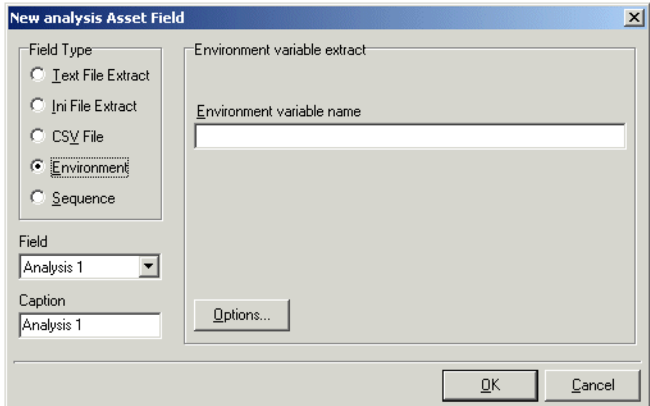
The fields contained in the CSV file are displayed in the **Fields** list box. Select the fields to be included by selecting the check boxes next to the field names.

The primary identifier column (asset number field) check box is disabled and cannot be deselected. This is because it is necessary to load this field.

4 Select the **Append** (**csv**) **to column name** option if you want the extracted asset fields to be displayed with the word '(**csv**)' after the column header name in the **Machines** window.

5 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables* on page 385 for information about how to do this.

Environment Variable Asset Field



This type of field accepts data from a specified environment variable as set in the Scanner Generator.

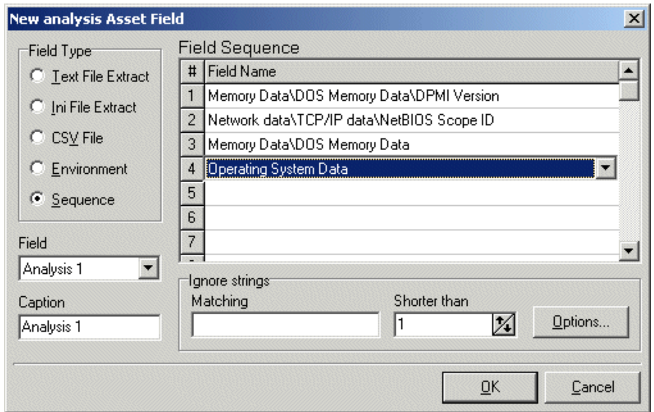
To set up an environment variable extract asset field:

1. Select **Environment** as the field type.
2. Enter the variable name in the **Environment variable name** field. An example of an environment variable is:

   ComSpec=C:\WinNT\System32\cmd.exe

   You can check for environment variable names by looking in the **Hardware|System tab** in Viewer.
3. Assign the number for the analysis field by selecting it from the **Field** drop-down list.
4. Assign a caption for the field if required, by typing it in the **Caption** field.
5. Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables* on page 385 for information about how to do this.

Sequence Asset Field



This field type extracts information from one of up to ten specified fields. The value returned as the results of the sequence field, will be the first of these fields which contains a non-blank value.

To set up a sequence asset field:

1 Select **Sequence** as the field type.

2 In the **Field sequence** box, click in the **Field Name** column and select the desired field.

3 In the **Ignore strings** group box, specify the criteria for a blank field using one or all of the following methods:

- In the **Matching** box, enter a sequence of strings (case-sensitive) separated by semicolons.

  If the content of the field matches (is equal to) any of the strings specified here, the field is considered to be blank. For example, if the text string **Not Found** is entered here, then a field that has the value 'Not Found' is considered to be blank.

  Multiple entries must be separated by semicolons (;), for example:

  'Unknown;Not Tested'.

- You can type a strings in the form: ***STRING***

  Here the asterisks (*) are ignored and any string that contains the text between the two asterisks will be ignored too.

- Specify ignore strings that are less than 'n' characters.

In the **Shorter than** box, use the arrow keys or type in a number to specify the maximum length of text strings that are to be used to define a blank field (between 1 and 255). If the string is shorter than the specified number, then the field will be considered blank.

4 Assign the number for the analysis field by selecting it from the **Field** drop-down list.

5 Assign a caption for the field if required, by typing it in the **Caption** field.

6 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables* on page 385 information about how to do this.

Specifying Extract Options for Text Files, ini Files, CSV Files and Environment Variables

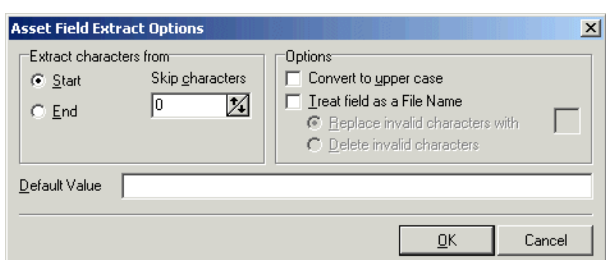
Text file, ini file and environment variable asset fields can be set up so that only part of the string is extracted instead of the entire string.

They can also be set up, for example, to use the last part rather than the first part of the string. This can be very useful for obtaining the last part of an automatic field that is too long.

In addition, a default value can be specified for situations where no matching data has been found.

To specify extract options for text, ini and environment variables:

1 Click the **Options...** button in the **New Analysis Asset Field** dialog box. The **Asset Field Extract Options** dialog box appears:



2 In the **Extract characters from** group box, specify whether you want to use the last part or the first part of the string. Select one of the following options:

- **Start** - Uses the first part of the string. Use the arrows in the **Skip characters** box to specify how many characters you want to skip from the beginning of the string.

- **End** - Uses the last part of the string. Use the arrows in the **Skip characters** box to specify how many characters you want to skip from the end of the string.

3. In the **Options** group box, select the options you want:

   - **Convert to upper case** - Select this option to convert the alphabetic characters to upper case.
   - **Treat field as File Name** - Select this option to treat the string in the asset field as a file name. Some characters are however invalid in file names, so any invalid characters can be replaced with the character specified in the **Replace invalid characters with** box.

     For example, underscore '_' is a valid file name character and can be used to replace invalid characters.

     Alternatively, invalid characters can be deleted by checking the **Delete invalid characters** box.

   If the extracted field is empty or is not found (that is, there is no matching data), then a default value for the string can be specified in the **Default Value** box.

   For example, if the text string '**Not Found'** is entered in this box, then an empty field or a field that has not been found will be displayed with this text.

Displaying the Additional Asset Fields

After the asset field extracts have been selected, the columns need to be displayed in the **Machines** window. To do this:

▶ Click the Columns toolbar button in the **Machines** window to display the Select columns to display dialog box.

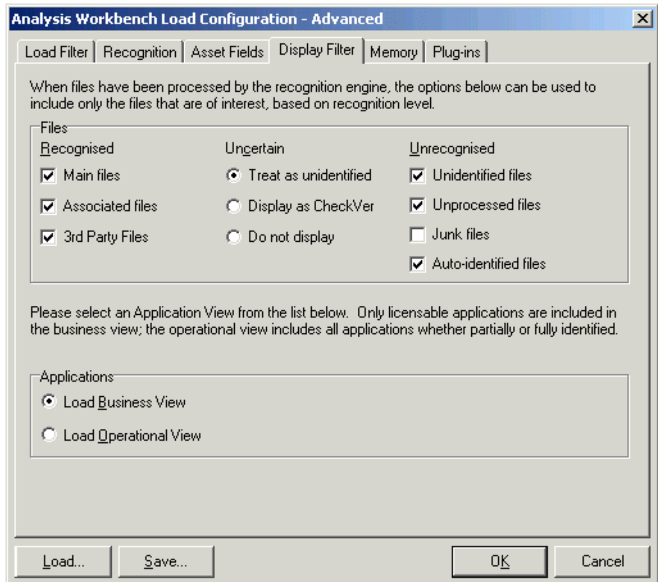
The additional extract fields are included in the Assets category.

Refer to *The Machines Window* on page 417 for more detailed information about how to include columns to display in the **Machines** window.

Although these fields are in the **Assets** category, they are not editable.

Configuring Display Filter Settings

In the Analysis Workbench, select the **Load Options...** command from the **File** menu. Click the **Display Filter** tab.



When files have been processed by the recognition engine, the following options can be used to include only the files that are of interest, based on the recognition level.

These files can be identified in two ways when displayed in the **Files** information window:

- The color of the entry
- The entry in the Status column

The following table shows the default color and the Status column entry for the five different file recognition levels.

Recognition level	Default color in Files window	Status column entry in Files window
Main file	Red	1 Main
Associated file	Green	2 Assoc
3rd Party files	Green	3 3rd Party file

Recognition level	Default color in Files window	Status column entry in Files window
CheckVer file	Purple	4 CheckVer
Unknown file	Blue	5 Unknown
Unprocessed file	Black	6 Unprocessed
Auto-identified	Olive	7 Auto-id
Junk file	Olive	8 Junk

The colors associated with these file recognition levels can be customized. See *Customizing Window Layouts* on page 316.

Selecting the Files to be Displayed

In the **Files** group box, select the types of files to be displayed from the following three categories:

Recognized

This category deals with files that have been recognized. Select from the following:

- **Main files**

  The main files for an application, for example, **Winword.exe** are displayed in red (by default) in the Analysis Workbench **Files** window.

  They are used to determine how many copies of the application are found.

- **Associated files**

  Files that are part of an application but not the **Main** file, for example, **Printer.com** are displayed in green (by default) in the Analysis Workbench **Files** window.

- **3rd Party Files**

  Files such as some DLL files that are technically used by the application, but are also distributed freely and can be used by other applications as well. Another example of a **3rd Party File** is **InstallShield**, which is packaged with an application from a different vendor. The files are also displayed in green (by default) in the Analysis Workbench **Files** window.

Uncertain

This category deals with files that have been partially recognized (that is, they have been identified but the version cannot be established with certainty). Select one of the following:

- **Treat as unidentified files**

  The files will be given an unidentified recognition level and will be treated as such.

- **Display as CheckVer**

  No description or versions are given for these files, but the word <**Check Ver**> is shown in the version column. This indicates that something is known about the file but it does not accurately conform to the version information held for it, and the version should be checked.

- **Do not display**

  The files will not be displayed in the **Files** window. In other words, they are ignored.

Unrecognized

This category deals with files that have not been recognized or have not been processed against the recognition engine. Select from the following:

- **Unidentified file**

  These files have been processed, but not recognized.

- **Unprocessed files**

  These files have not been processed by the recognition engine. These files have been selected for loading using the load filter, but have not been included in the recognition filter.

- **Junk Files**

  These files have been set up to be treated as junk by the recognition engine (that is, recognition does not occur on these files). Check this option if you want these files to be displayed. The default is to have this option unchecked - that is they are not displayed.

- **Auto-identified files**

  If this option is checked (the default), automatically identified files are loaded. If unchecked, these files are not loaded into memory.

Selecting the Application View

In the **Applications** group box, select one of the following:

- **Load Business View**

  The business view displays only applications with a Main file (that is, applications that require a licence and have been recognized). Partially installed applications are not displayed.

- **Load Operational View**

  The operational view displays all applications whether partially or fully identified. The **Application** window essentially summarizes what has been recognized – irrespective of whether the applications are recognized with a Main file (that is, licensable) or not.

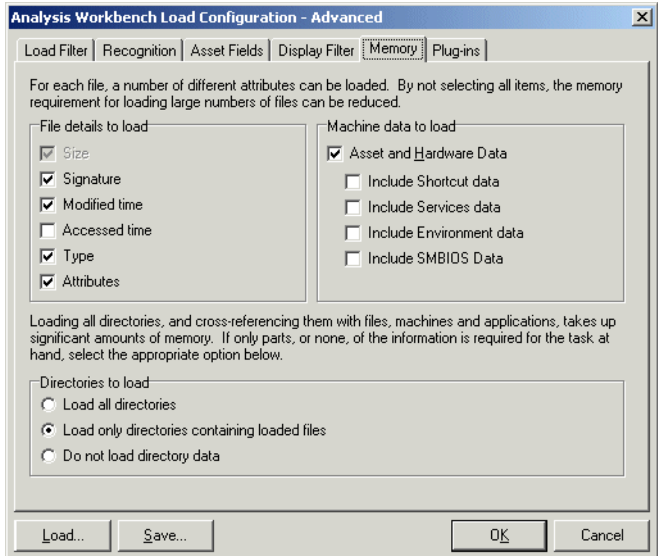
Configuring Memory Settings

Saving memory not only saves time at loading but also during sorting and selections, therefore it is worth while considering selecting memory saving options. Because of the number of files that will be loaded, removing unnecessary file detail can have significant impact on the time taken to load and the amount of memory needed. This is particularly useful when loading a large quantity of scan files.

When more than the physically available memory is needed, the Operating system uses a page file. Access to this file is of course much slower than to real memory and therefore degrades performance significantly.

In the Analysis Workbench:

1 Select the **Load Options...** command from the **File** menu.



2 Click the **Memory** tab. This option allows you to specify which attributes are loaded for a file. Specify the file details to load by selecting the following options as required:

- **Size** - The file size. This option is permanently disabled and cannot be unchecked. The Analysis Workbench always loads the file size.
- **Signature** - The signature (checksum of the first 8 kb).
- **Modified time** - The time stamp indicating when the file was last modified.
- **Accessed time** - The time stamp indicating when the file was last accessed.
- **Type** - The type of file (for example, DOS executable file, Windows executable file, OS/2 DLL file).
- **Attributes** - The system attributes for a file (for example, hidden, archive, read-only).

3 Loading all directories and cross-referencing them with files, machines and applications can take up a significant amount of memory. If only parts, or none of the information is required, then select one the appropriate options:

- Load all directories
- Load only directories containing loaded files
- Do not load directory data

4 Select the machine data to be loaded. This is a memory saving option, which allows you to load only some data for each machine. In the **Machine data to load** group box select from the following options:

Asset and Hardware Data

- Include Shortcut data
- Include Services data
- Include Environment data
- Include SMBIOS Data

5 Click the **OK** button.

Configuring Plug-In Settings

By setting plug-in options, extra data is made available in the **Files** window. Specific fields from a plug-in can be selected to limit the amount of information loaded. This information can then be displayed by selecting the column name in the **Columns** toolbar menu.

In the case of a plug-in such as plug-in ID 12, no fields are displayed because the data is already displayed in the File window.

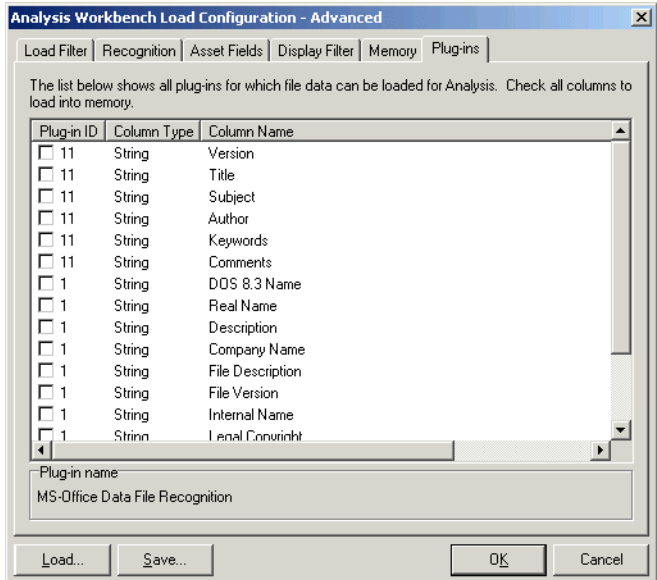
Note: The data will only be visible in the **Files** window if the original scan was carried out with the specified plug-in installed. The plug-in that the categories belong to is displayed in the **Plug-in name** group.

This option is disabled if data is already present in the Analysis Workbench. To configure plug-in settings, either unload the data from the workspace or restart Analysis Workbench with an empty workspace.

In the Analysis Workbench:

1 Select the **Load Options...** command from the **File** menu.

2 Click the **Plug-ins** tab.



3 Select an entry (a single-click in the check box) in the plug-in page to include it. Alternatively, right-click in the pane and select an option from the menu:

- **Select All** - Selects all the entries.
- **Select None** - Clears all of the entries.
- **Select All for plug-in #** - Selects all entries for a specific plug-in. This is a useful option for when more than one plug-in is installed (# is the unique plug-in ID).
- **Select None for plug-in #** - Clears all entries for a specific plug-in. This is a useful option for when more than one plug-in is installed (# is the unique plug-in ID).

When these fields are loaded, the plug-in identifier is displayed in brackets next to the column name in the **Files** window.

Information Collected by the Version Data Plug-In

The following information can be collected using the Version Data plug-in:

- DOS 8.3 Name
- Real Name
- Description
- Company Name

- File Description
- File Version
- Internal Name
- Legal Copyright
- Original File Name
- Product Name
- Product Version

Information Collected by the Office Plug-In

The following information can be collected using the Office plug-in:

- **Version** - The version of the program used to create the file.
- **Title** - The title of the document.
- **Subject** - Optional subject information collected from document summaries.
- **Author** - Optional author information collected from document summaries.
- **Keywords** - Optional keywords collected from document summaries.
- **Comments** - Optional comments collected from document summaries.

Loading Data from Scan Files

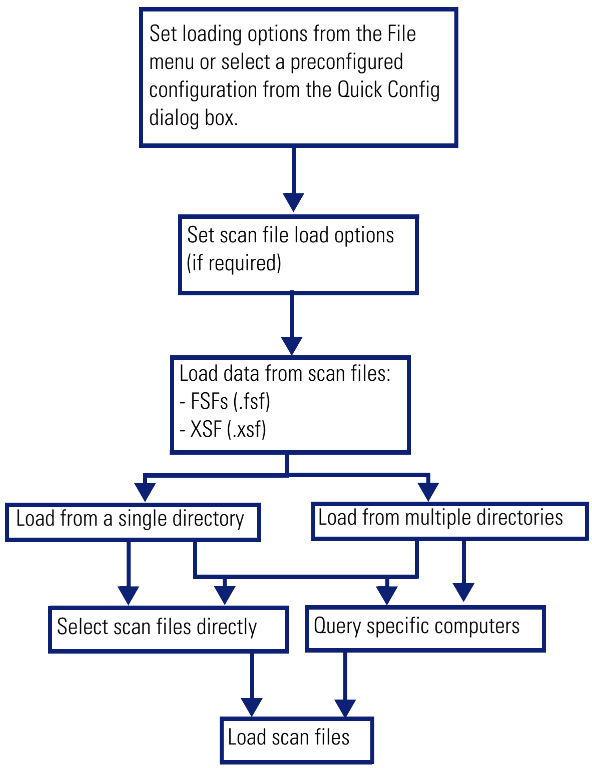
In This Section...

Process for Loading Data into Analysis Workbench

This section explains how you can load data into Analysis Workbench after you set the load options manually or you have loaded a preconfigured option from the **Quick Config** dialog box.

Analysis Workbench is an analysis tool and requires data to analyze. This data can be loaded from **Fingerprint Save File** (FSF) or **Compressed XML Files** (XSF) files.

The following diagram shows the process for reading in data:



Unloading Data from Analysis Workbench

There may be times when you need to unload scan files from the Analysis Workbench workspace. For example:

- The Recognition, Memory and Plug-ins load options are disabled and cannot be changed whilst data is present in Analysis Workbench.
- A previously saved state image can be loaded only when there is no data loaded in the Analysis Workbench.

To Unload Scans from the Analysis Workbench Workspace:

- Select the **Unload Scan Files|Current** (**name of scan**) command from the **File** menu. The data for the currently selected scan is unloaded. The name of the selected scan is displayed in brackets next to the command.
- Select the **Unload Scan Files|Tagged** command from the **File** menu. Scans that are tagged in the Machines window are unloaded. This command is not available if there are no tagged machines.
- Select the **Unload Scan Files|Untagged** command from the **File** menu. All untagged scans in the Machines window are unloaded.

  This option is not available if all machines are tagged.
- Select the **Unload Scan Files|All** command from the **File** menu. All scans loaded into the Analysis Workbench are now unloaded.

Loading Data from a Scan File

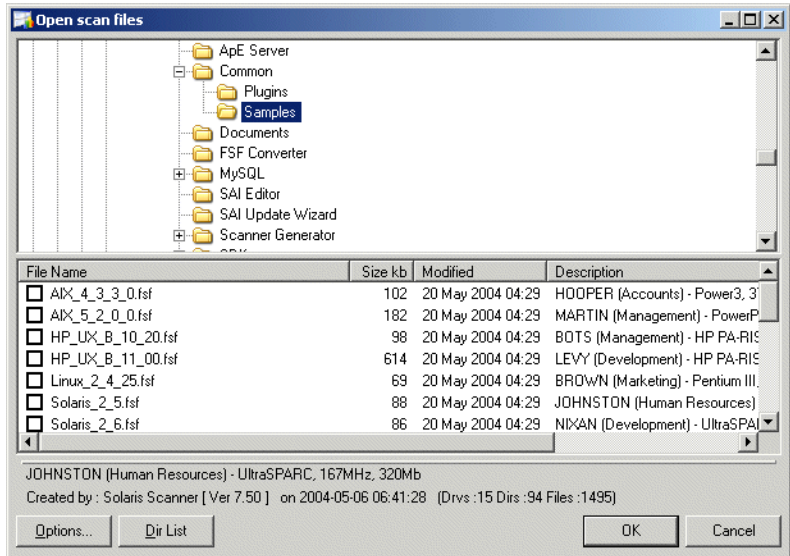
The Analysis Workbench provides various options for reading in scan files to analyze the data collected for a computer population.

Scan files read into the Analysis Workbench are usually selected from a repository directory(s) used to store all the scan files for a computer population.

To load data from a scan file perform the following steps:

1. Select the **Load scan files...** command from the **File** menu.

The **Open scan file** dialog box is displayed.



2 Click the **Options...** button to set the scan file load options. See *Setting Scan File Load Options* on page 398.

3 Load the scan files in one of the two following ways:

- From a single directory
- From multiple directories

4 Load the scan files using one of the two methods:

- Select scan files directly from the directory where they are stored. This allows you to select individual files, a group of files or all the files in the selected directories.
- Select scan files for specific computers using the hardware and asset data collected for each computer. A query facility is used for this method, so that the files matching specified criteria for the hardware and asset details recorded during the inventory, are selectively read in.

Whichever method is chosen, the Analysis Workbench reads in the software file information for each scan file, according to specified load options.

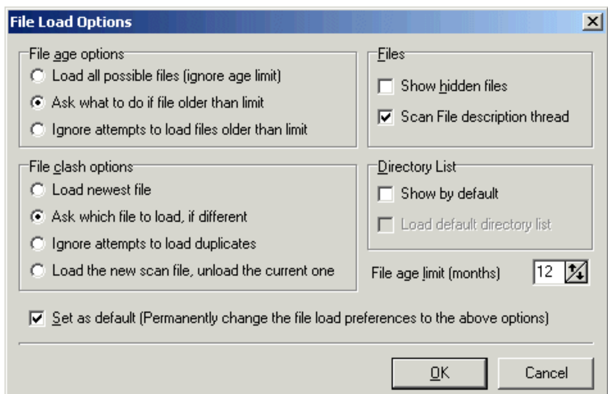
Setting Scan File Load Options

After the scan files or data to be loaded into Analysis Workbench have been selected, the software information collected for each computer inventoried is read in according to the options selected for processing information. These are referred to as the **File Load Options**.

Scan file load options are used to deal with situations that can arise when loading older scan files and specify how to handle scan files with the same name.

1 Click the **Options...** button on the **Open scan file** dialog box.

The **File Load Options** dialog box is displayed:



The following load options can be enabled or disabled:

Option	Description
File Age Options	
Load all possible files (ignore age limit)	When selected, <u>all</u> scan files (regardless of the age of the scan file itself) are loaded.
Ask what to do if file older than limit	Selecting this option make the **File age limit (months)** box available. Use the arrows to set the age limit in months. A prompt is displayed when the file to be loaded is older than the specified file age limit.
Ignore attempts to load files older than limit	Select this option to ignore any attempt to load a file that is older than the age limit specified in the **File age limit (months)** box.
File Clash Options	
Load newest file	Select this option to allow the file with the newest date to be loaded, if two files with the same name are loaded.

Option	Description
Ask which file to load, if different	Select this option to allow a prompt to be displayed asking which of the files to load, when two identical file names are encountered.
Ignore attempts to load duplicates	Select this option to exclude any duplicate files from being loaded. The first file encountered is loaded.
Load new scan file, unload the current scan file	Select this option to allow the file with the newest date to be loaded. The file with the older date will be unload.
Files	
Show hidden files	Select this option to show hidden files in the **Open scan file** dialog box.
Scan file description thread	Select this option to display the descriptions of the data files in the Load scan file dialog box.
Directory List	
Show by default	Select this option to allow scan files to be loaded from multiple directories when the **File Load scan file** command is selected from the **File** menu.
Load default directory list	This option is only enabled when the **Show by default** option is selected. Selecting this option will load the default directory list when the **Open scan file** dialog box is opened.
Other Options	
Set as default (Permanently change the file load preferences to the options above)	Select this option to enable the load options specified on this form to be used as the default settings when scan files are loaded.

Loading Old Scan Files

If the Analysis Workbench encounters a file that is older than the age limit set in the file load options (see *Setting Scan File Load Options* on page 398), an **Old file found** dialog box is displayed. The name and path of the scan file is displayed along with some basic information. From within this dialog box, you have the options to do the following:

- Ignore this file, as it is older than the limit set in the file load options.
- Load this file regardless of its age.

The **Set as default** option in this dialog box will permanently change the file load preferences to the previous options.

You can change the default settings later by clicking the **Options…** button in the **Open scan file** dialog box (**File|Load scan files…**).

Selecting Files

In the **Open scan files** dialog box, clicking on a file entry in the bottom pane of either directory view will highlight it in blue. However, this does not mean that the scan file will be automatically loaded. For this to happen, the check box next to the scan file must be clicked. You can also use the space bar to check and clear the box.

A scan file in the list can be:

- Selected (highlighted in blue) and/or
- Checked (checkmark set) or
- None or both of the above

Checked scan files will be loaded when the **OK** button is clicked.

By selecting files you can group them for operations carried out from the shortcut menu (check/uncheck selected, remove selected, sort by selected).

Multiple files can be selected by clicking on a file and using the **Shift/Ctrl** keys at the same time as clicking on other files. This allows the **Open scan file** dialog box to be more flexible.

For example, right-click on a scan file and select **Check all** from the menu, select a range of files and then select **Uncheck selected**.

If you do not check any files, the **Open scan file** dialog box will ask to load either of the following:

- All files, if no files or only a single file is selected.
- Selected files, if more than one is selected.

Note: You can use the drag/drop for loading in scan files. Drop any number of directories, scan files, or a combination of both onto the Analysis Workbench window to load the scan files and all files in the directories.

Checking Options

Checking options can be set by using the shortcut menu which is available by right-clicking anywhere in the bottom pane. This menu allows you to:

- **Check all** – Checks all entries in the list.
- **Check none** – Unchecks all entries in the list.
- **Select all** – Selects all entries in the list.
- **Select none** – Deselects all entries in the list.
- **Check selected** – Checks the selected entries in the list.
- **Uncheck selected** – Clears the checkmark from selected entries in the list.
- **Remove selected from list** – Removes any selected entries temporarily from the list. The file entries are no longer displayed in the list, but are not deleted from the disk.
- **Sort by checked** – Moves all checked entries to the end of the list.
- **Sort by selected** – Moves all selected entries to the end of the list.
- **Query...** Displays a **Complex Query** dialog box, which allows you to load scan files for specific computers. See *Selecting Scan Files for Specific Computers (Complex Queries)* on page 404 for more information.

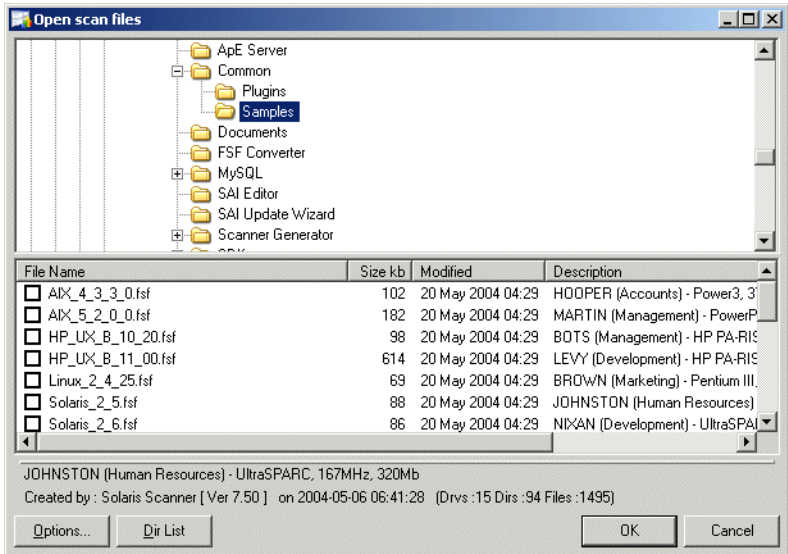
Selecting Multiple Files

Multiple files can be selected by clicking on a file and using the **Shift/Ctrl** keys at the same time as clicking on other files. This allows the **Open scan file** dialog box to be more flexible.

For example, right-click on a scan file and select **Check all** from the menu, select a range of files and then select **Uncheck selected**.

Loading Scan Files from a Single Directory

Scan files can be loaded from a single or multiple directories. By default the **Open scan file** dialog box allows you to load scan files from a single directory.



To open scan files from a single directory:

1. In the top pane in the **Open scan file** dialog box, navigate to the directory that you want to load the scan files from. Any scan files found in that directory will be displayed in the bottom pane.

   As the mouse pointer is placed over a scan file in the bottom pane, details are displayed in the status panel.

2. Check the box next to the scan file to include it for loading (you can also use the space bar to check and clear the box). Checking options can also be set by using the shortcut menu which is available by right-clicking anywhere in this pane. See *Checking Options* on page 401.

3. Set scan file load options if required by clicking the **Options...** button in the **Open scan files** dialog box.

4. Click the **OK** button to load the checked scan files. A progress indicator is shown.

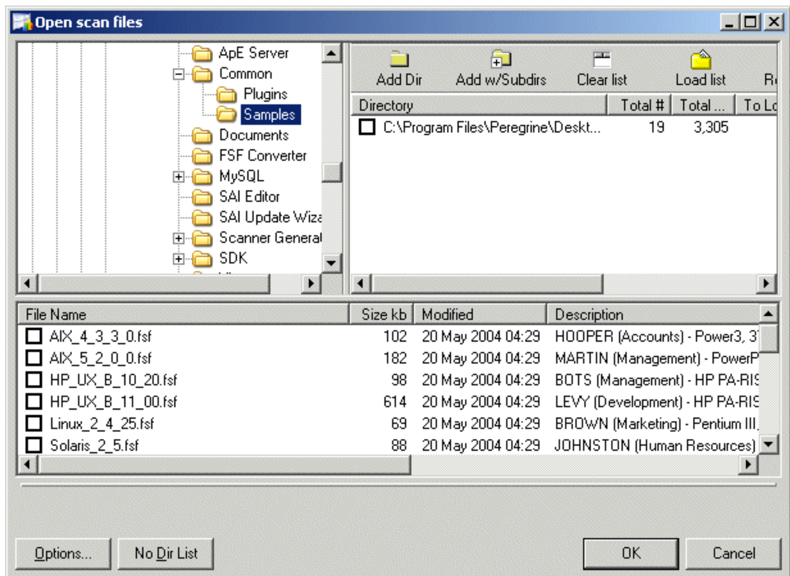
   If an error is encountered during loading, each error is logged in the Log window (Select the **Log Window** command from the **Window** menu to display the Log window) and an error message is displayed at the end of the load sequence.

Note: To load only one scan file, double-click on it.

To load scan files from multiple directories, click the **Dir List** button. See *Loading Scan Files from Multiple Directories* on page 403 for more details.

Loading Scan Files from Multiple Directories

To load scan files from multiple directories, in the **Open scan file** dialog box (single directory view), click the **Dir List** button.



An extra pane is displayed in the upper right area of the dialog box. This is the list of directories to load. For each directory, this pane displays the following:

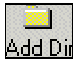
- The total number of files in the directory and their combined size.
- The total number of scan files to load and their combined size.
- The total number of scan files selected and their combined size.

The bottom pane displays all the scan files that are available in any of the included directories.

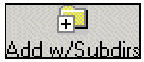
To load scan files from multiple directories:

1 In the **Open scan file** dialog box (single directory view), click the **Dir List** button.

2 Navigate to the directory you want to load the scan files from and use the buttons as follows.



Add this single directory to the list.



Include this directory/drive plus any subdirectories contained in that directory/drive.

Clear the list of directories.

Load a previously saved default directory list.

Remove this directory from the list.

Any scan files contained in the selected directory(s) will be displayed in the bottom pane. As the mouse pointer is placed over a scan file in the bottom pane, details are displayed on the status panel.

1 Check the box next to the scan file to include it for loading (you can also use the space bar to check and clear the box). Checking options can also be set by using the shortcut menu which is available by right-clicking anywhere in this pane. See *Checking Options* on page 401.

2 Set scan file load options if required by clicking the **Options...** button in the **Open scan files** dialog box.

3 Click the **OK** button to load the checked scan files. A progress indicator is shown.

   If an error is encountered during loading, each error is logged in the **Log** window (select the **Show Log** command from the **Window** menu to display the **Log** window) and an error message is displayed at the end of the load sequence.

To load scan files from a single directory, click the **No Dir List** button. See *Loading Scan Files from a Single Directory* on page 402 for more information.

Selecting Scan Files for Specific Computers (Complex Queries)

Querying provides a way of selecting and reading in only those scan files for computers matching specified search criteria.

This task is carried out using the **Complex Query** dialog box which allows multiple search criteria to be specified from a selection of categories. These categories are defined by the hardware and asset information collected across the computer population.

When the search criteria are fully specified, the query is invoked and all scan files that match the query criteria are checked/unchecked. The **Complex Query** dialog box also allows defined queries to be saved so that they can be loaded and used again.

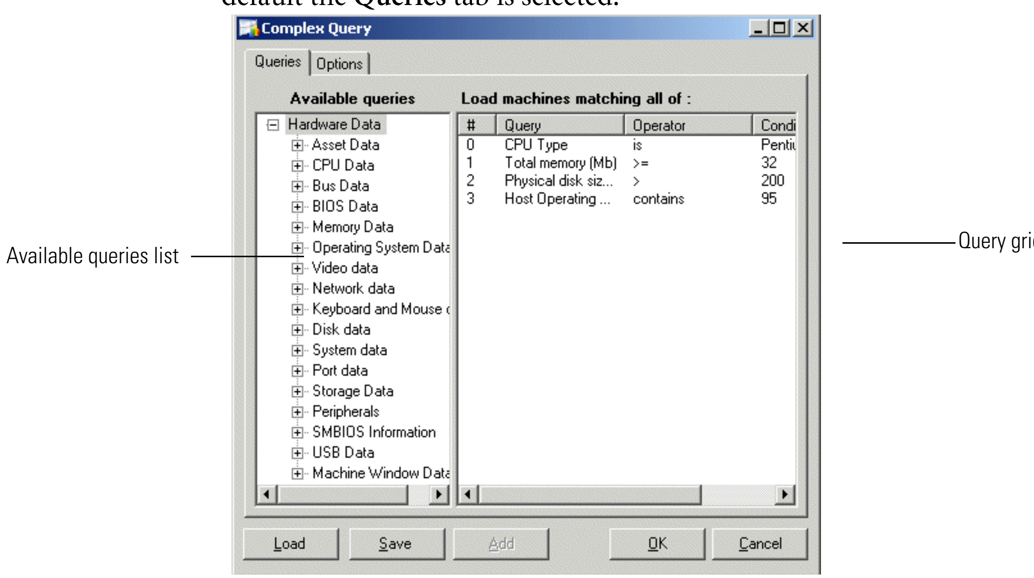
The following sections describe the pages of the **Complex Query** dialog box and their functions. An example query can be found on page 412.

Displaying the Complex Query Dialog Box

To begin creating a query, you need to display the **Complex Query dialog box** used to specify the search criteria:

To display the Complex Query dialog box:

1. Select the **Load scan files** command from the **File** menu to display the **Open scan files** dialog box.
2. Right-click anywhere in the bottom list. A shortcut menu is displayed.
3. Select the **Query...** option. The **Complex Query** dialog box is displayed. By default the **Queries** tab is selected.



This dialog box has two tabs:

- **Queries** - Displays the hardware and asset fields and allows you to build up the query.
- **Options** - Sets up the logic, actions and format of the query.

The Queries Tab

The **Queries** tab in the **Complex Query** dialog box displays a page that contains the two components:

- The available queries list
- The query grid

The Available Queries List

There are two categories of information that can be used to query data collected from a population of computers:

- The asset data entered manually using the asset questionnaire.
- The hardware configuration details collected automatically for each computer as it is inventoried.

These categories of information are listed in the **Available queries** list on the left side of the dialog box.

Available Query Categories

These categories are used to group the items into the outline used in query and column selection. The following list shows the hardware fields that are collected during a scan:

For a complete list of hardware and configuration items collected by the Scanners, refer to the document entitled *Data collected by the Scanners*.

Category	Description
Asset Data	Items collected manually or automatically through the entry fields in the Scanner, or items calculated using analysis-time asset fields.
CPU Data	Information about the processor(s) and coprocessor of the machine.
Bus Data	Information pertaining the machine's bus. This category includes the Bus architecture and a list of identified cards that are not Network cards, disk controllers or video cards.

Category	Description
BIOS Data	Data extracted from the machine's BIOS (Which is a read-only memory area, typically located at the top of the first 1MB of memory in the machine).
Memory Data	Memory information: Physical amount of memory, partitioning of memory, swap file (virtual memory) and so on.
Operating System Data	Operating System information. This includes information about the OS running at the time of the scan, name, version, and so on, as well as OS services, such as user profiles, DMI service layer, login name.
Video Data	Provides details of the Video Display Adapter, which include the adapter type (EGA, XGA, VGA and so on) and model/manufacturer. In Windows and OS/2, the current desktop resolution and number of colors are also displayed. If the video BIOS is VESA (Video Electronics Standards Association) compatible, the version of the VESA specification is also shown.
Network Data	Information about the machine's network connection. This includes a list of network cards, as well as logical information (machine name, logon name, domain name, addresses, shares and so on).
Keyboard and Mouse Data	Whether a Mouse is connected. Whether a Keyboard is connected.
Disk Data	Information related to physical disk drives, CD-ROM drives, network drives and so on, as well as information about logical partitioning of these. Also includes a list of disk controllers.
System Data	Items specific to the scan file or scan (but, with the exception of the asset number, without real relevance to the machine itself) including asset number, scan time, time since scan, path to scan file, version of scan file and so on
Port Data	Contains a list of parallel and serial ports.
Storage Data	Shows the name, vendor, revision and device host information for the storage devices (such as hard drives, CD-ROMs, tape drives) that have been detected.
Peripheral Data	Information about peripherals, currently modems, sound cards and printer information.
SMBIOS Information	Information extracted from the machine's SMBIOS, if available.

Category	Description
USB Data	This contains information about the USB (Universal Serial Bus) devices, controllers, hubs and ports. USB is an external bus which supports plug and play. It allows peripheral devices to be connected or disconnected from computers without the need to shut down or rebooting. These peripheral devices include CD-ROM drives, joysticks, speakers, cameras.
Machine Window Data	Shows information from the Analysis Workbench Machines window.

The Query Grid

The query grid is displayed on the right side of the **Queries** page. Each query item is built up on a separate row. A maximum of 250 different query items are allowed.

The query grid has four columns:

- #

  The number of the query items set up on the options page. The maximum that can be configured is 250.

- **Query**

  This column is reserved for items from the Available queries list. Double-clicking on an data field in the **Available queries** list, moves the entry to this column of the query grid. Alternatively, you can drag the data field from the **Available queries** list and drop it onto a row in the query grid.

- **Operator**

  Many hardware fields can be queried against a set range of values. This columns shows pick lists for the types of queries performed against the Asset fields and some hardware field values.

  - Begins with
  - Contains
  - Does not equal
  - Ends with
  - Equals
  - Greater than
  - Is not the same as another field
  - Is the same as another field

- Less than
- Matches

- **Condition**

  This column is reserved for a parameter value that must be matched by the query.

The Shortcut Menu

Right-clicking on an entry in the query grid, displays a shortcut menu:

- **Edit current query** - To edit an existing query entry, right-click on the cell and select this command from the shortcut menu.
- **Clear Current Line** - To delete an entry from the query grid, right-click on the entry and select this command from the shortcut menu.
- **Clear All** - Select this option to delete all entries from the query grid.

The Query Grid Buttons

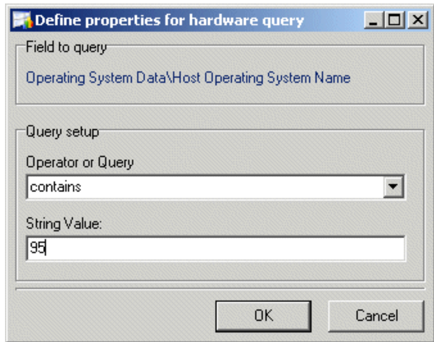
- **Load** - To use a saved query, click the **Load** button and select the saved query file (with a **.awq** extension). The query files are loaded from the **Queries** directory in the Desktop Inventory installation path. Click the **OK** button.
- **Save** - To save the query for future use, click the **Save** button. Enter a name for the query file (with a **.awq** extension) and click the **OK** button. The query files are saved in the **Queries** directory in the Desktop Inventory installation path. Saved queries can be automatically selected and used without having to define the query again.
- **Add** - Highlight the desired field and click the **Add** button to add the definition to the query grid.

Building a Query

Queries are built within the Query grid by clicking on any + sign in the tree. This expands the relevant category and lists possible data fields.

1. To select a data field in the Available queries list, do one of the following:
   - Double-click on a data field in the Available queries list.
   - Drag the data field and drop it onto the Query grid.
   - Select the data field and click the Add button.

After you have done this, a **Define properties for hardware query** dialog box is displayed.



2 In this dialog box select the operator for the query.

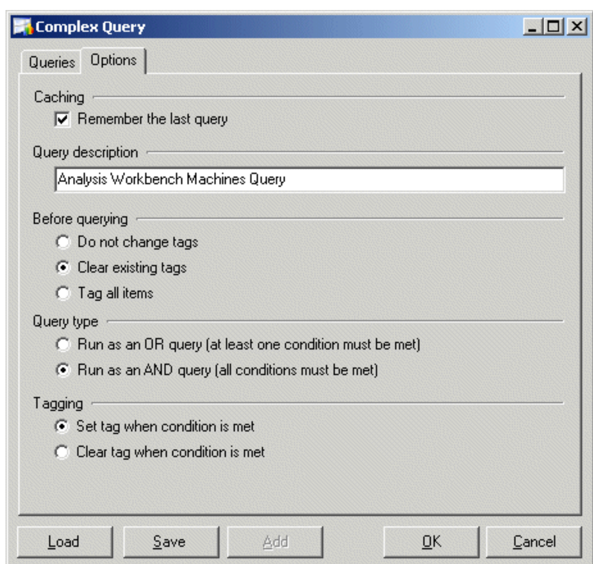
3 Depending on the type of query you set up, enter a parameter value that must be matched by the query.

4 Click OK. You are returned to the **Complex Query** dialog box.

5 If required, you can save the query by clicking the Save button.

The Options Tab

In the **Complex Query** dialog box, click the **Options** tab.



This tab is used to do the following:

- Retain the last query or clear the existing query.

- Provide a description for the query.
- Set up the actions that are to be carried before the query has been made. That is, whether to clear or set all existing tags, or to leave them untouched.
- Set up the logic that will be used to perform the query.
- Set up the actions that will be carried after the query has been made. That is, which tags will be applied and under what conditions.

Option	Description
Caching	
Remember the last query	If this option is checked, a query will be retained after it has been run. If unchecked, the grid is cleared after the query has been run.
Query description	
	Allows you to enter a text description of the queries being made. This is useful for identifying stored queries.
Before querying	
Do not change tags	No actions are performed before the query is made.
Clear existing tags	All tags are cleared before the query is made. That is, all scan files are deselected.
Tag all items	All entries in the Open scan file dialog box are tagged before the query is made. That is, all scan files are selected.
Query type	
Run as an OR query (at least one condition must be met)	When more than one query is specified, the match is made when either one of them are true.
Run as an AND query (all conditions must be met)	When more than one query is specified, the match is made when all queries are fulfilled.
Note: Only one of these logic rules can be applied to the same query. They cannot be mixed.	
Tagging	

Option	Description
Set tag when condition is met	After an entry is found that matches the parameters defined by the query, a tag is set on that entry. That is, the scan file is selected.
Clear tag when condition is met	After an entry is found that matches the parameters defined by the query, if it is tagged then this tag is cleared. That is, the scan file is deselected if it was previously selected.

Example Complex Query

In this example, the query will be set up to select scan files for all machines that have a minimum specification. This may be because you want to locate all those machines that need to have their hardware and software upgraded in to be able to run a particular piece of software.

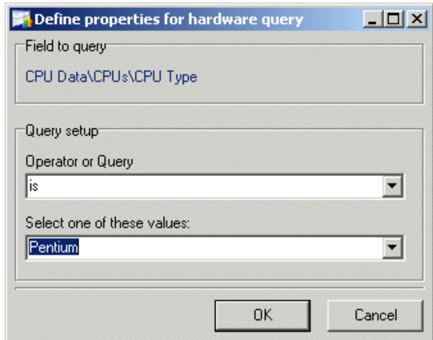
The machine that has the following minimum specification:

- Pentium processor AND
- 32 Mbytes or more of memory AND
- More than 200 Mbyte of space on its local hard disks AND
- Host operating system is Windows 95

Step 1- Setting query parameters for scan file data

The first step for specifying the criteria for the query is to select the data items that need to be matched by the information in the scan files.

1. In the **Available queries** list click on the + sign next to the **CPU Data** category. Click on the **CPUs** subcategory.
2. Select **CPU Type** by double-clicking on it with the mouse or by dragging it to the grid. The **Define properties for hardware query** dialog box is displayed.
3. Select **is** from the **Operator or Query** drop-down list and select **Pentium** from the other drop-down list



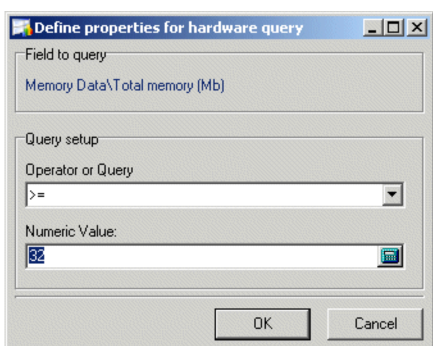
4 Click the **OK** button. You are returned to the **Complex Query** dialog box.

5 In the **Available queries** list, click on the + sign next to the **Memory Data** category.

6 Select by **Total Memory (Mb)** double-clicking on it with the mouse or by dragging it to the grid. The **Define properties for hardware query** dialog box is displayed.

7 Select >= from the **Operator or Query** drop-down list.

8 Type **32** directly into the **Numeric Value** field or click the calculator icon  and use the keypad.

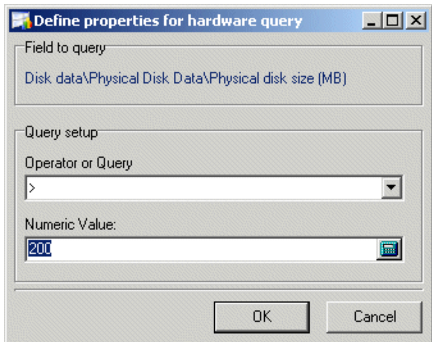


9 Click the OK button. You are returned to the **Complex Query** dialog box.

10 In the **Available queries** list, click on the + sign next to the **Disk data** category. Click on the Physical Disk Data subcategory and select **Physical disk size (MB)** by double-clicking on it with the mouse or by dragging it to the grid. The **Define properties for hardware query** dialog box is displayed.

11 Select > from the **Operator or Query** drop-down list.

12 Type **200** directly into the **Numeric Value** field or click the calculator icon  and use the keypad.



13 Click the **OK** button. You are returned to the **Complex Query** dialog box.

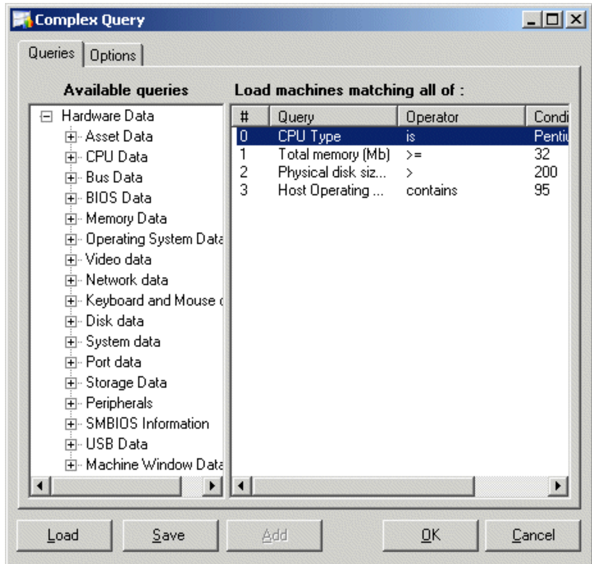
14 In the **Available queries** list, click on the + sign next to the **Operating System data** category.

15 Select **Host Operating System Name** by double-clicking on it with the mouse or by dragging it to the grid. The **Define properties for hardware query** dialog box is displayed.

16 Select the **contains** option from the **Operator or Query** drop-down list.

17 Type **95** directly into the String Value field.

18 Click the **OK** button. You are returned to the **Complex Query** dialog box. The final Query grid should look as follows:



19 To save the query for future use, click the **Save** button (in the **Queries** tab). Enter a name for the query file (with a **.sqm** extension).

Step 2 - Setting the query options

1 Click the **Options** tab.

2 Select the **Remember the last query** option. This option allows any previous queries made to be saved in the grid.

3 Enter a text description of the queries being made in the **Query description** box. For example, you could enter something similar to the following:

'Machines meeting a minimum standard'

4 In the **Query type** group, select **Run as AND query**. When more than one query is specified, the match is made when all queries are fulfilled.

5 After you have specified the query parameters, return to the **Queries** tab and click the **OK** button to tag the scan files matching the query.

Viewing Data

In This Section...

The Default Display

The basic analysis of data consists of viewing the hardware, software and asset information in the scan files collected for a computer population, Analysis Workbench provides various windows to display and view data.

- Files
- Machines
- Directories
- Applications

The default display view on starting Analysis Workbench consists of three windows: **Files**, **Applications** and **Machines**. A **Directory** view can be displayed as well, but is not part of the default screen layout.

Each window can be customized to show different columns and different levels of detail for each line. The window contents can be sorted on any column displayed, by clicking on the column headers.

In addition, each window features a **Details** window, where more details about the currently selected item can be displayed.

Any number of windows, each displaying a different set of columns and sorted in different ways can be opened at the same time.

The current workspace layout can be saved, either as the new default workspace or as a named layout that can be reloaded at any time. The **Layout** command in the **Window** menu is used to save a new or load a previously saved window layout. The default layout is stored in **awdef.ini**.

The user interface can be customized by using the options in the **Configure** drop-down toolbar menu available in all the windows. See *Customizing Window Layouts* on page 316 for more information.

The windows can be resized and positioned in the workspace to reflect your requirements. See *The Information Windows* on page 314 for more information about the Analysis Workbench windows.

Locking and Unlocking Columns

It is possible to 'lock' some of the leftmost columns of the main windows.

To do this, right-click on a column header, and select the **Lock** option. When this is done, the column clicked and all columns to the left of it will be 'locked' and will not scroll left or right. To remove a lock, select the **Unlock** option from the shortcut menu, and to set a different lock, simply select **Lock** on a different column.

This feature can be used to make sure important columns, remain visible while scrolling through detailed columns.

The Machines Window

In This Section

Information Available in the Machines Window

The **Machines** window displays the Machine ID (Asset Number) and various description fields for computers within the inventoried population.

Included in this information is asset data. Asset data is data that was collected using the asset questionnaire which collects customized asset information as each computer is scanned. The asset questionnaire is configured in the **Asset Data** page of the **Scanner Generator**.

The information includes details about users, departments, physical assets, equipment, and any other information that is useful to record.

Note: User-defined and Automatic fields now show the actual caption displayed to the user. However, if more than one scan is loaded into Viewer and they have different captions, only the caption from the last scan loaded is shown.

The **Machines** window allows further details of the hardware, software and asset data collected for a computer to be viewed, by providing a link to the **Machine Details** window. See page 421 for more information about the Machines Details window.

The asset data displayed for the machines listed in this window can be edited. See *Editing Asset Information* on page 432 for more information.

Note: Displayed analysis asset field columns cannot be edited, because these are read-only named asset fields. See *Configuring Analysis Asset Fields* on page 376 for more information about analysis asset fields.

Filtering Data in the Machines Window

Filters can be set (using the **Filters** drop-down toolbar menu or the filter icons) to provide additional information in relation to the other windows in the workspace as follows:

Filter	Shows
Machine	Any tagged machines in the **Machines** window.
Application	Any machines that contain tagged applications. It shows any machines that have the application installed. **Note:** It does not show machines that have a partial installation (in other words, machines where a licence is not needed).
Directory	Any machines that contain tagged directories.

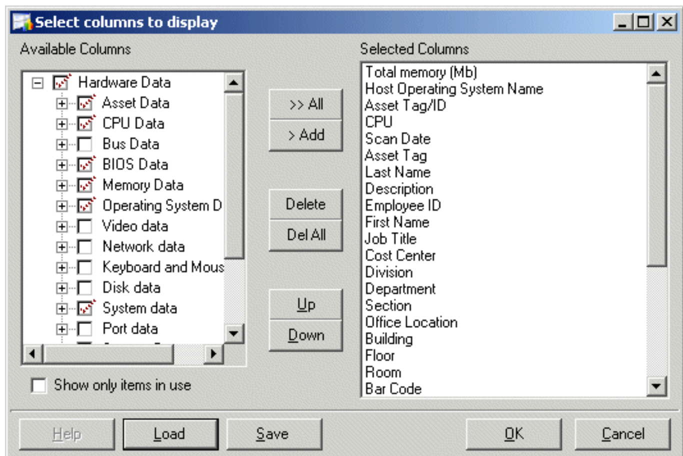
Filter	Shows
File	Any machines that contain tagged files.
Local	Any machines with Local tags.

Customizing the Columns Displayed in the Machines Window

To customize the columns displayed in the Machines window:

1 Click on the **Columns** drop-down toolbar menu.

A **Select columns to display** dialog box is displayed.



- The **Available columns** list shows all the available categories and fields. Clicking on the + sign expands the category and shows the fields that are contained in it. A check box is displayed next to each category and field. A dotted check box next to the category indicates not all the fields in that category have been selected (that is, only some fields have been selected). Clicking on a partially checked category will select all fields in the category. Clicking again will deselect all fields.
- The **Selected columns** list shows the fields that have been selected to be displayed as columns in the **Machines** window.
- The **Show only items in use** option will ensure that only hardware items that actually exist in one of the loaded scan files are shown in this tree.

2 Either drag a category from the left list to the **Selected columns** list, or select the check box next to the category and click the >**Add** button. The functions of the other buttons are as follows:

- To add all the available columns to the **Selected columns** list click the >>**Add** button.
- To remove an entry from the **Selected columns** list click the **Delete** button.
- To delete all entries in the **Selected columns** list click the **Del All** button.
- You can move the position of entries in the **Selected columns** list using the **Up** and **Down** buttons.

3 Click **OK** after you have selected the columns. You are returned to the main workspace.

Special Note When Selecting Columns

Each data item collected is shown only once in the tree, even if multiple values for a particular item are collected. Examples of this are CPU Speed (where one per CPU is collected) and Card Class (which is collected for every card for every bus supported).

When a column such as this is chosen to be shown in the **Machines** window, Analysis Workbench automatically figures out how many columns are required to show all of the collected data and appends 'Indexes' to each column name.

For example, choosing the CPU Speed column will normally create just one column named 'CPU Speed (0)' (Index start at 0).

Now, if the data loaded includes at least one machine with two CPUs, Analysis Workbench will create two columns instead, 'CPU Speed (0)' and 'CPU Speed (1)'.

The number of columns necessary to show all data for all loaded machines is not recalculated when new data is loaded or data is unloaded. To have Analysis Workbench refresh this, go into the **Column** selection dialog box and click **OK**.

To enable or disable the display of a single one of these columns. For example to see just 'CPU Speed (1), each column is available from the drop-down **Column** menu.

The Machine Details Window

The **Machine Details** window provides further information for each computer listed in the **Machines** window.

To display the Machine Details window in the Machines window do one of the following:

- Select the **Detail window link** option from the **Configure** drop-down toolbar menu.
- Select the **Configuration…** option from the **Window** menu and check the **Machine Windows** box in the **Detail Window Link** group.

The information to be displayed in the **Machine Details** window can be selected by doing one of the following:

- Clicking on the Configure icon  and checking the **Machine Windows** box in the Detail Window Link group.
- Selecting the **Detail window** option from the **Configure** drop-down toolbar menu and checking the **Machine Windows** box in the Detail Window Link group.

Depending on what information was selected in the **Window Layout** dialog box, the **Machines Details** window can show the following information:

- **Hardware overview** - The information displayed here depends on which option was selected in the Configuration window.
  - The default displays basic details of the hardware configuration scanned from the computer as it is inventoried. Provides details of the operating system, processor, type of screen, memory, drives, directories and files as well as the total disk space and free space.
  - The Machine window data displays all columns as selected in the Machines window but vertically rather than horizontally making it easier to read.
- **Applications** - Displays details of the applications identified on the machine, including the publisher, applications and version.
- **Recognition statistics** - Displays the total number of files on the highlighted machine, including a breakdown of Main files, Associated files, files that need the version checked, unrecognized files and unprocessed files, both as a figure and as a percentage of the total files.

Note: The **Machines Details – Application** information links back to the **Applications** window, showing details for that selected application entry. That is, if you click on an application in the **Machines Details** window, the corresponding application will be located (and highlighted) in the **Application** window.

The Applications Window

The **Applications** window displays a view of the applications within a population that have been recognized.

The **Applications** window allows further details of the application licence information collected for a computer to be viewed, by providing a link to the Applications Details window.

The data displayed in the **Applications** window cannot be changed or altered in any way. The **Applications** window provides the following information:

Column	Description
Publisher	The name of the software publisher (for example, Microsoft, IBM).
Application	The name of the software application.
App Type	The type of application (for example, Word processor, Spreadsheet).
Version	The version of the software.
Release	The release of the software.
OpSys	The operating system the application runs on.
LangCode	The ISO 639 Language – 3166 Country code of the application. This is the ISO standard used to define languages. The format is as follows: <639 3166> for example <EN-US> refers to English – USA.
Language	The name of the language of the application.
Description	Any additional relevant information and notes, (for example, that the application is part of the Microsoft Office97 Suite of programs).
Machines	The number of machines on which the application is found. In the **Operational View**, this includes machines on which a partial install (that is, one or more non main files) is found. In the **Business View**, this column is the same as the **Installs** column.

Column	Description
Installs	The number of installations of that particular application that have been found throughout the population (that is, on how many machines the application is installed). An application is defined as installed when at least one **Main** file has been identified on a machine.
Licences	The number of licences required for the application. This is the same as the **Installs** column unless a licence relation exists, in which case, the **Licences** column may contain a number smaller than the **Installs** number.
Files	The number of files that are contained in that application (that is, how many files have been identified as belonging to the application).
Licenses Apps	The number of other applications that the application is responsible for licensing. For example, if Internet Explorer licences NetMeeting on five machines and RealPlayer on three machines, this column would contain a value of eight.
Licensed By	The number of owning applications (licensees) taking responsibility for licensing this application. In the previous case, RealPlayer would have a count of three in this column. If RealPlayer was licensed by some other application on another machine, the count would be higher.
Version Id	This column contains the ID uniquely identifying a given version.

Filters can be set (using the **Filters** drop-down toolbar menu) to provide additional information in relation to the other windows in the workspace as follows:

Filter	Shows
Machine	Any applications that are contained on tagged machines.
Application	Any tagged applications in the **Application** window.
Directory	Any applications whose main file is contained in tagged directories.
File	Any applications that contain tagged main files.
Local	Any applications with Local tags.

You can use the locking feature to make sure important columns, such as **Tag**, **Publisher** and so on remain visible while scrolling through detailed columns. See *Locking and Unlocking Columns* on page 344.

Applications Details Window

To display the Applications Details window do one of the following:

- In the Applications window, select the Detail window link option from the Configure drop-down toolbar menu.
- Select the **Configuration…** option from the **Window** menu and check the **Application Windows** box in the Detail Window Link group.

The information that is displayed in the Applications Details window can be selected by doing one of the following:

- Clicking the configure icon  in the **Details** window.
- Selecting the **Detail window** option from the **Configure** drop-down toolbar menu. This will display a **Window Layout** dialog box.

Depending on what information was selected in the **Window Layout** dialog box, the **Applications Details** window can show the following information:

- **Installed on machines** - The machine(s) that the application is installed on.
- **Licenced by** - The details of the Application Suite that licences the highlighted application (if applicable). For example, Word 97 is licenced by Microsoft Office 97.
- **Licenses** - The details of any applications that the highlighted application licences, for example, Word 97 licences Microsoft Photo Editor.

Note: The **Applications Details – Installed on machines** information links back to the **Machines** window, showing details for that selected machine entry. That is, if you click on a machine in the **Applications Details** window, the corresponding machine will be located (and highlighted) in the **Machines** window.

The **Applications Details – Licensed by** or **Licenses** information links back to the **Applications** window and the **Machines** window, showing details for that selected application and the machine it is located on.

The Directories Window

The **Directories** window provides a view of the directory names within a population containing inventoried files. It displays a list of every unique directory of software files within the population, and enables you to assess the conformance to standards for software installed across the computer population. It does not take the drive into account, for example, e:\temp and c:\temp is one line in this window.

The Directory window is particularly helpful for identifying configuration anomalies prior to, or after installing new applications or upgrades. Any directory which resides in a different path will be shown as a separate line item.

The Directories window allows further details of the Directories (including files contained in the directory and machine name) to be viewed, by providing a link to the Directories Details window.

The Directories window provides the following information:

Column	Description
Tag	Global tag column
Ltag	Local tag column
Name	Name of the directory
Count	Number of drives and machines a specific directory occurs on within the population. The details of the Machines and drives the directory occurs on can be seen in the Directory Detail window.
Main	A check mark is shown in this column if the directory contains a Main file of an application.
Tagged Files	This column shows the number of tagged files contained in the highlighted directory. The list of tagged files is displayed in the Directories Details window.
Tagged Applications	This column shows the number of tagged applications whose main link is contained in the highlighted directory.

Filters can be set (using the **Filters** drop-down toolbar menu) to provide additional information in relation to the other windows in the workspace as follows:

Filter	Shows
Machine	Any directories that occur on tagged machines.
Application	Any directories that contain tagged applications.
Directory	Any tagged directories in the **Directories** window.
File	Any directories that contain tagged files.
Local	Any directories with Local tags.

You can use the locking feature to make sure important columns, such as **Tag**, **Name**, **Main** remain visible while scrolling through detailed columns. See *Locking and Unlocking Columns* on page 344.

The Directories Details Window

The **Directories Details** window displays further information for each directory listed in the Directories window.

To display the **Directories Details** window do one of the following:

- In the **Directories** window, select the **Detail window link** option from the **Configure** drop-down toolbar menu.
- Select the **Configuration…** option from the **Window** menu and check the **Directory Windows** box in the **Detail Window Link** group.

The information that is displayed in the **Directory Details** window can be configured by doing one of the following:

- Clicking the configure icon in the **Details** window.
- Selecting the **Detail window** option from the **Configure** drop-down toolbar menu. This will display a **Window Layout** dialog box.

Depending on what information was selected in the **Window Layout** dialog box, the Applications Details window can show the following information:

- **Files** - Displays a list of file names found within the directory, along with the size of the file.
- **Machines** - Displays a list of machines where the directory is found within the population, with the drive location for the directory.

Note: The **Directories Details – Files** information links back to the **Files** window, showing details of a particular files that resides in the highlighted directory.

The **Directories Details – Machines** information links back to the **Machines** window, showing details of the machine that the directory is on.

The Files Window

The **Files** window displays information for all the inventoried files in the population. It allows further details of the file information collected on a PC to be viewed, by providing a link to the File Details window.

The Files window displays the following:

Column	Description
Tag	Global tag column
LTag	Local tag column
Name	A full list of all the files selected for analysis within the population of scan files read into the Analysis Workbench (known as the inventory files). The files displayed in red are the Main executable files for an application. The files displayed in green are the files associated with an application. They belong to it but are not main files. The files displayed in blue are unidentified or partially identified files. The files displayed in purple are partially identified Main or Associated files. **Note:** The colors referred to are the default and can be customized. See *Customizing the Font and Color* on page 318 for more details.
Size	Size of the file.
Publisher	Name of the software publisher.
Application	Type of application (for example, Games, Disk creation Utility).
Version	File version number where a file is fully identified.

Column	Description
Release	The release of the software.
OpSys	Operating system under which the application the file belongs to operates.
LangCode	The ISO 639 Language – 3166 Country code of the application. This is the ISO standard used to define languages. The format is as follows: <639 3166> for example <EN-US> refers to English – USA.
Language	Name of the language of the application.
Copies	Shows the number of copies of each file within the population.
# Sizes	Number of sizes of a file with the same name that exist in a population of machines.
# Signatures	Shows the number of signatures found for each file within the population.
# Dates	Number of different dates for copies of the file within the population.
# Attributes	Number of different attributes for the file copies.
# Types	Number of different types found for this file name (for example, a file called **Setup.exe** can be a DOS executable file or a Windows executable).
Status	Whether the file is a: ■ Main file = 1 ■ Associated file = 2 ■ 3rd Party files = 3 ■ CheckVer file = 4 ■ Unknown file = 5 ■ Unprocessed file = 6 ■ Auto-identified = 7 ■ Junk = 8
Description	Version description as entered in the SAI. It is a separate field that can contain any user description or comment.
Signature	The file Signature column (a number produced for each file by checking the first 8192 bytes) is usually sufficient to identify a file. If there is more than one signature, an asterisk '*' is also shown in the column to indicate this.
Modified	The date the files were last modified.
Accessed	The date the files were last accessed.

Column	Description
Attribute	The **Attribute** column along with normal file attributes includes the following: ■ **r** - Read-only files. Files marked read-only are protected from modification or deletion. ■ **h** - Hidden files. Windows Explorer does not show hidden files by default unless you tell it to do so. ■ **s** - System files. ■ **v** - Volume Label. This contains no data and no more than one may exist on a disk volume (and only in the root directory). ■ **a** - If it has the archive attribute of DOS or windows. The Archive attribute is used to provide an automatic record of what files have been modified since the last backup. ■ **c** - Compressed files. These are compressed files and folders. For example, if it is a file on a compressed NTFS volume. ■ **p** - Plug-in data. Whether the file data was obtained by means of a plug-in. ■ **x** - In a UNIX system this represents a file with the executable attribute set. ■ **I** - Internal file. That is, if it has version data available for it. Version data (as per Windows Explorer) is displayed for all files having this attribute. ■ **L** - Symbolic link in UNIX. Files (and directories) may be located on several different file systems. To link files that are in different file systems a symbolic link is made. ■ **s** - This is special case for UNIX for SetUid files. In UNIX scans, certain files have special attributes that mean that they run with root privilege. Such files are potentially a security risk and the Scanner assigns them the system attribute - **s** ■ **A** - This file has been identified as an archive. ■ **C** - This file has been identified inside an archive. ■ **X** - This file has been identified as an executable file. ■ **D** - This file has been identified as a device driver. If there are more than one set of attributes, an asterisk '*' is also shown in the column to indicate this.
File Type	Shows the type of file (for example, DOS executable file, Windows executable, OS/2 DLL file). If there is more than one file type, an asterisk '*' is also shown in the column to indicate this.

Filters can be set (using the **Filters** drop-down toolbar menu) to provide additional information in relation to the other windows in the workspace as follows:

Filter	Shows
Machine	Any files that are located on tagged machines.
Application	Any files that are part of tagged applications.
Directory	Any files that reside in tagged directories.
File	Any tagged files in the **Files** window.
Local	Any files with Local tags.

You can use the locking feature to make sure important columns, such as **Tags, Name** remain visible while scrolling through detailed columns. See *Locking and Unlocking Columns* on page 344 for more details.

Adding Entries to the SAI

The **Add to SAI** option in the **Tags** drop-down menu allows you to 'teach' Desktop Inventory to recognize files which it previously did not recognize. This enables you to optimize the software analysis and consolidation capabilities of the Analysis Workbench to recognize unidentified files and applications. The same data can be used by the Viewer.

See *Teaching Applications to the User SAI* on page 465 for more information.

The File Details Window

The **File Details** window provides further information for each file listed in the window.

To display the **File Details** window do one of the following:

- In the Files window, select the **Detail window link** option from the **Configure** drop-down toolbar menu.
- Select the **Configuration…** option from the **Window** menu and check the **File Windows** box in the Detail Window Link group.

The information that is displayed in the **File Details** window can be configured by:

- Clicking the configure icon  in the **Details** window.
- Selecting the **Detail** window option from the **Configure** drop-down toolbar menu. This will display a **Window Layout** dialog box.

Depending on what information was selected in the **Window Layout** dialog box, the **Files Details** window can show the following information:

- **Asset numbers** (**Machine**) - Shows the Asset number of the Machines that the file resides on.
- **Directory names** (**Directory**) - Show the directory that the file resides in.
- **File sizes** (**Size**) - Shows the size of each copy of a file within the population.
- **File signatures** (**Signature**) - Shows the signatures for each file within the population.
- **File modified date**- Shows the date the file was last modified files if available.
- **File accessed date**- Shows the date that the file was last accessed.
- **File attributes** (**Attributes**) - Displays system attributes for a file. The Attribute column along with normal file attributes includes the **X** (executable), **I** (internal file) and **D** (device driver) information. For all files having the Information I attribute, version information (as per Windows Explorer) is displayed.
- **File type** (**Type**) - Shows the type of file (for example, DOS executable file, Windows executable, OS/2 DLL file).
- **Version data** - Version information (as per Windows Explorer Properties for a file) is available for all files having the information **I** attribute.
- **Plug-in data** - Shows any plug-in data that was collected for the file.

Note: The **File Details – Machine** information window links back to the **Machines** window by selecting the machine that a selected file exists on. It also links back to the **Directory** window by selecting the directory that the selected file resides in.

Editing Asset Information

In This Section...

Editing Asset Information - Overview

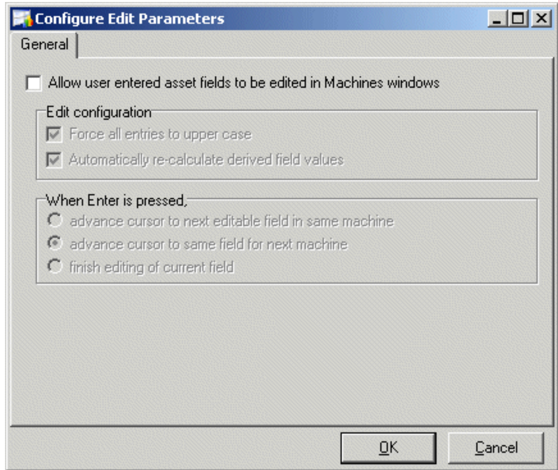
The editing of user entered asset information is a very important activity because data consistency is essential to ensure reports are produced cleanly. The editing option allows the contents of asset data fields to be amended either manually on a field by field basis or automatically using the search and replace facility.

Note: Displayed analysis asset field columns cannot be edited, because these are read-only named asset fields. See *Configuring Analysis Asset Fields* on page 376 for more information.

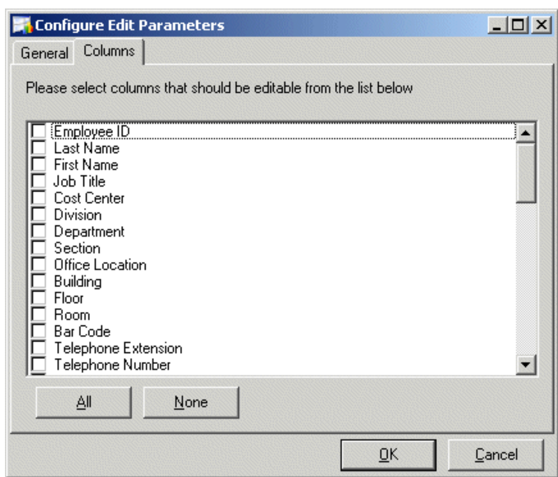
Before editing asset fields in the **Machines** information window, you will need to set up the editing parameters.This is done using the **Configure Edit Parameters** dialog box.

To display the Configure Edit Parameters dialog box

▶ Select the **Edit** option from the **Configure** drop-down toolbar menu.



By default this dialog box has one tab page available (**General**). As soon as you select the **Allow user entered asset fields to be edited in Machines windows** option another tab page is made available (**Columns**).



Configuring General Editing Parameters

Click on the **General** tab in the **Configure Edit Parameters** dialog box. This tab page allows various editing parameters to be configured. Select from the following:

- Allow user entered asset fields to be edited in Machines windows

  This option enables the user entered asset fields in the **Machines** window to be edited. It also displays make the **Columns** tab page available, which allows you to choose which of the asset field columns in the **Machines** window you want make editable.

- **Edit configuration**
  - Force all entries to upper case

    All the changes to the asset fields are made in upper case letters.

  - Automatically recalculate combination field values

    If this option is selected then any changes made to Combination fields types are applied. If the option is not selected, then the combination fields are not automatically edited.

- **When Enter is pressed**
  - Advance cursor to next editable field in the same machine

    This means that after you have edited a field and have pressed the Enter key the cursor automatically moves on to the next asset field that can be changed for the same machine.

  - Advance cursor to same field for next machine

    This means that after you have edited a field and have pressed the Enter key the cursor automatically moves on to same asset field that can be changed for the next machine.

  - Finish editing of current field

Note: This means that after you have edited a field and have pressed the Enter key the cursor does not move.

Selecting Columns to Be Edited

1 Click on the **Columns** tab in the **Configure Edit Parameters** dialog box. This tab page is only displayed if the **Allow user entered asset fields to be edited in Machines windows** option is selected in the **General** tab.

This tab page is used to specify which of the columns taken from the user entered asset fields can be edited in the **Machines** window. The font color changes in the **Machines** window to indicate which columns can be edited.

2 From the list of columns, select (check) the columns that you want to make editable.
   - Click the **All** button to select all entries in the list.
   - Click the **None** button to deselect all selected entries in the list.
   - Click the **OK** button to make the changes.

Making Changes to the Asset Data

After you have configured the editing parameters you can edit the data in the **Machines** window.

Note: The editable data is shown in a different color to the rest of the data.

If you cannot see any editable data then it probably means that those particular columns have not been selected to be displayed in the window. Select the columns from the **Columns** toolbar menu.

If you cannot see the asset data columns in **Columns** toolbar menu then you will need to include them by selecting the **Edit Columns…** option. For more information about how to do this refer to *Customizing the Columns Displayed in the Machines Window* on page 419.

To edit the data:

1. In the **Machines** window, double-click in the field you want to edit.
2. Type in the new entry for this field.
3. Press the Enter key to make the change.

Saving and Cancelling Asset Data Changes

To save any changes made to the column select the **Save Asset Changes** option from the **Edit** main menu.

To cancel any changes made and revert back to the original data (only if the data has not already been saved) select the **Cancel Asset Changes** option from the **Edit** main menu.

Viewing Charts and Statistics

In This Section...

Viewing Charts

Charts provide a graphical representation of selected data. There are a number of standard charts provided by Analysis Workbench to help visualize various data splits. The standard charts include the variation in scan age, the Scanner used and the split of recognition levels.

In addition, there are two bar charts which plot the number of recognized and unrecognized files against the frequency of their occurrences. The frequency is expressed as a percentage to allow for different numbers of machines loaded.

Charts are available from two sources:

- By selecting an option from the **View** menu.
- By right-clicking on a column header and clicking the **Chart…** option. These displays a summary count of the column contents with a graphical representation of the results. This option is only available if there is text in that particular column.

Chart Buttons

The following buttons are available in all charts:

Button	Function
Save As	The chart can be saved to three different file formats: ■ Enhanced metafile: .emf ■ Windows Metafile: .wmf ■ Windows Bitmap: .bmp
Copy	This button has a drop-down list menu. The chart can be copied to the clipboard in following formats: ■ Enhanced metafile: .emf ■ Windows Metafile: .wmf ■ Windows Bitmap: .bmp
Print	Displays a print preview of the chart and allows you to set various print settings.
Options	Displays the **Chart Options** dialog box, where various options and filters can be set for the chart.
Refresh	Refreshes the chart to show any updated information. The chart can be viewed while data is being loaded.
OK	Click this button to return to the Analysis Workbench workspace.

Chart Options

The following options are available in all charts:

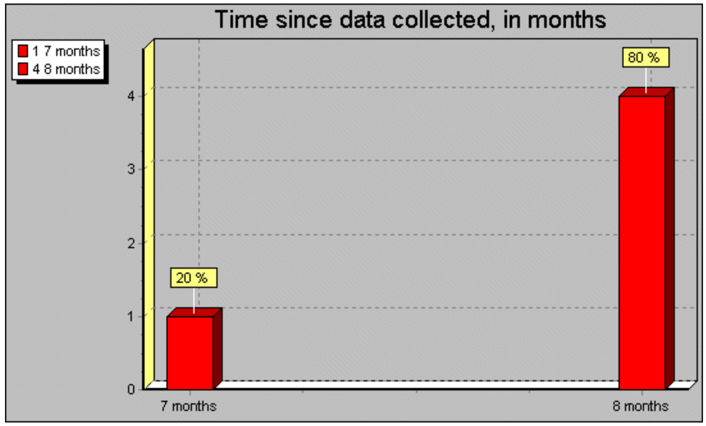
Option	Function
Options	
3D chart	Displays the chart in three dimensional graphical form.
Show Marks	Displays percentage labels for each segment in the chart.
Show Legend	Displays a key to the chart. This allows you to identify what each of the segments or bars represent.
Show User-defined Title	Allows you to enter a title of your choice for the chart. Enter the text in the **User-defined Chart Title** box.
Pie Chart	
Circular	Displays the statistics as a circular pie chart, otherwise the chart is displayed as an ellipse.

Option	Function
Use patterns	Uses a patterned fill for the segments of the pie chart.
Explode largest	The largest segment is offset from the main body of the pie chart for emphasis.
Other group,%	Combines the segments less than the defined percentage into one group called **Other**. Use the arrows to increase or decrease the **Other group** sections.
Legend Position	
Left	Positions the legend to the left of the chart
Right	Positions the legend to the right of the chart
Top	Positions the legend to the top of the chart
Bottom	Positions the legend to the bottom of the chart
Data Filter (**Filters can be applied to reduce the amount of data reported**)	
Machines	Applies a machines filter to the chart data.
Applications	Applies an applications filter to the chart data.
Files	Applies a files filter to the chart data.
Directories	Applies a directories filter to the chart data.
Local	Applies a local tag filter to the chart data.
Background Color	Allows you to select a background color from the drop-down list.
User-defined Chart Title	Allows you to configure the chart titles as required. This option is only available if the **Shown User-defined Title** option is checked.
Auto Apply	If checked, all changes are applied to the chart as soon as you make them. Otherwise, they are applied when the **OK** or **Apply** button is click.

Scan File Age Chart

This chart is displayed by selecting the **Charts|Scan file Age** option from the **View** main menu.

The **Time since data collected, in months** chart is displayed which shows the date of the loaded scan files.



The X axis shows the age of the scan files (in months). The Y axis shows the number of scan files.

The legend (shown in the left corner) allows you to identify the number of scans that belong in an age category.

This example shows:

- One scan (20%) of the scan files loaded is seven months old.
- Four scans (80%) of the scan files loaded are eight months old.

Filters can also be used in the scan file age chart to narrow down and highlight items of particular interest. These filters are set from the **Chart options** page (Click the **Options…** button).

Example

To view the age of the scan for selected machines:

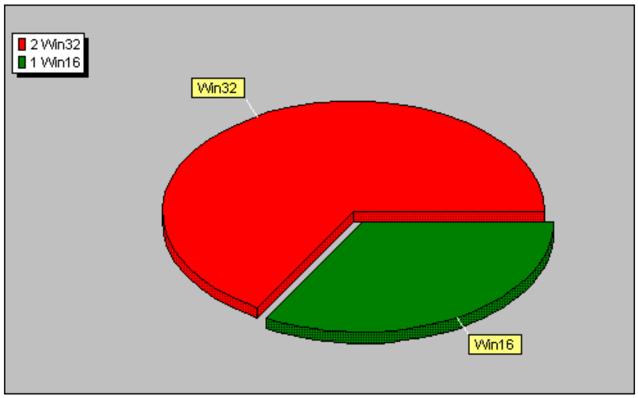
1. Tag the machines in the Machines page.
2. Apply a Machines filter to the chart data. The chart will display the age of the selected scans only.

   The legend shows the number of scans that belong in an age category and the color of the bar that represents it.

Scan Method Chart

This chart is displayed by selecting the **Charts|Scan Method** option from the **View** main menu.

This displays a chart of the Scanners used for collecting data chart. For example, Win 16, Win 32.



This example shows two segments of a pie chart. It indicates that only two types of Scanner have been used to created the scans loaded in Analysis Workbench.

The legend (shown in the left corner) allows you to identify the type of Scanner, the number of scans created using that Scanner and the color of the segment that represents it. This example shows:

- Two scans have been created using a Win32 Scanner.
- One scan has been created using a Win16 Scanner.

Filters can also be used in the Scan method chart to narrow down and highlight items of particular interest. These filters are set from the **Chart options** page (Click the **Options…** button).

Example

To view the method used for scanning a machine that contains a particular application:

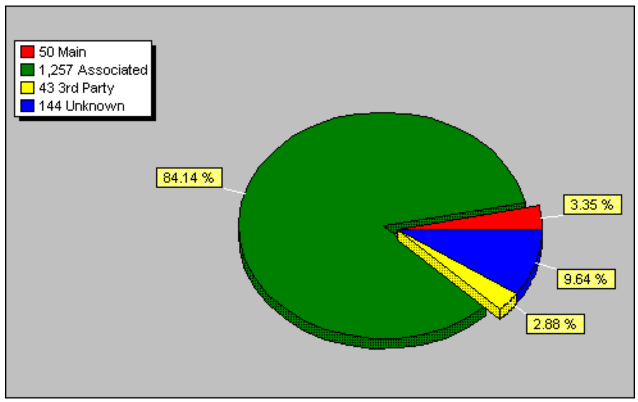
1. Tag the application in the Applications page.
2. Apply an Applications filter to the chart data. The chart will display the Scanner that was used to scan the machine containing that application.

The legend shows the type of Scanner used, the number of scans created using that Scanner and the color of the segment that represents it.

Recognition Chart

This chart is displayed by selecting the **Charts|Recognition** option from the **View** main menu.

This displays the **Recognition statistics** chart which shows Main, Associated, 3rd Party and Unknown files.



This example shows a pie chart with four segments.

The legend (shown in the left corner) allows you to identify the type of files recognized, the number of files in that category and the segments that represents them. This example shows:

- 50 files (3.35%) have been recognized as Main files.
- 1257 files (84.14%) are Associated files.
- 43 files (2.88%) are 3rd Party files.
- 144 files (9.64%) have been recognized as Unknown files.

Filters can also be used in the Recognition chart to narrow down and highlight items of particular interest. These filters are set from the **Chart options** page (Click the **Options…** button).

Example

To view the recognition statistics for all Main files recognized:

1 In the **Files** window, locate an entry that has Status of **1 Main**. This is the status setting for Main files.

2 Right-click on this entry in the Status column and select the **Tag|Status is 1 Main** option. A Global tag is applied to all files in this window that are Main files.

3 Apply a Files filter to the chart data. The chart will display the Scanner that was used to scan the machine containing that application.

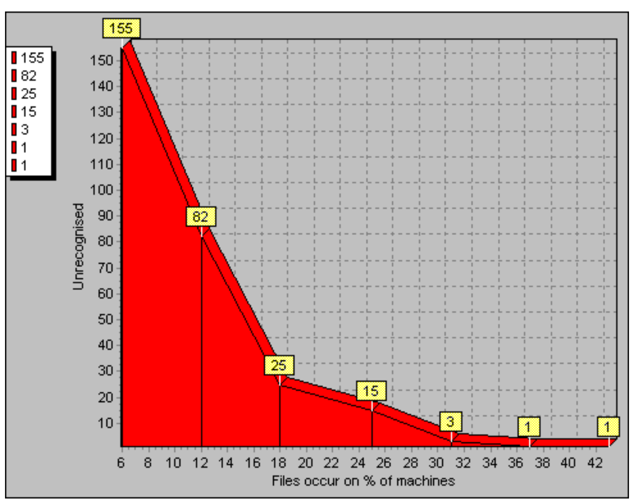
The legend (shown in the left corner) allows you to identify the type of files recognized, the number of files in that category and the color of the segments that represents them.

Unrecognized/File Frequency

This chart is displayed by selecting the **Charts|Unrecognized/File frequency** option from the **View** main menu.

This displays a graph that can be used to determine the quality of recognition on a population.

Unrecognized files are shown split by the number of copies.



The X axis shows number of files that occur on a given percentage of machines loaded.

The Y axis shows the number of unrecognized files. It is an absolute count of different, unrecognized file entries.

The legend (shown in the left corner) allows you to identify the number of unrecognized files. This example shows:

- 155 unrecognized files occur on approximately 6% of machines.
- 82 unrecognized files occur on approximately 12% of machines.
- 25 unrecognized files occur on approximately 18% of machines.
- 15 unrecognized files occur on approximately 25% of machines.
- 3 unrecognized files occur on approximately 31% of machines.
- 1 unrecognized files occur on approximately 37% of machines.
- 1 unrecognized file occurs on approximately 43% of machines.

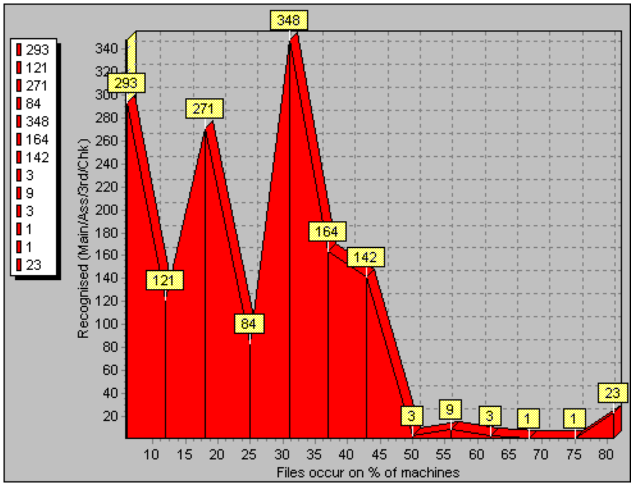
Filters can also be used in the Unrecognized/File Frequency chart to narrow down and highlight items of particular interest. These filters are set from the **Chart options** page (Click the **Options…** button).

Recognition/File Frequency

This chart is displayed by selecting the **Charts| Recognized/File frequency** option from the **View** main menu.

This displays the **Recognized/File frequency** chart which can be used to determine the quality of recognition on a population.

Recognized files are shown split by the number of copies.



The X axis shows number of files that occur on a given percentage of machines loaded.

The Y axis shows the number of recognized files. It is an absolute count of different, recognized file entries.

The legend (shown in the left corner) allows you to identify the number of recognized files. This example shows:

- 293 recognized files occur on approximately 5% of machines.
- 121 recognized files occur on approximately 12% of machines.
- 271 recognized files occur on approximately 30% of machines.
- 84 recognized files occur on approximately 25% of machines.
- 348 recognized files occur on approximately 30% of machines and so on.

Filters can also be used in the Recognized/File Frequency chart to narrow down and highlight items of particular interest. These filters are set from the **Chart options** page (Click the **Options…** button).

Viewing Charts From Individual Windows

Other charts are available by right-clicking on a column header and clicking the **Chart** option.

These charts display a summary count of the column contents with a graphical representation of the results. This option is only available if there is text in that particular column.

To display a chart for a particular column:

1. Right-click on a column header
2. Select the **Chart…** option

Example

To view the version of the Desktop Inventory software that was used to create the scans:

1. In the Machines window. Click on the **Columns** button to display the **Select columns to display** dialog box.
2. Click on the + sign next to the **Scan file** category.
3. Select **Scan file version**. The **Scan file version** column will now be displayed in the Machines window.
4. Right-click on the **Scan file Version** column header and select the **Chart…** option.

   A chart is displayed, which shows the versions of the software that was used to create the scans.

   The legend shows the number of scans created by a particular version and the color of the segment that represents the version.

Viewing Inventory Statistics

The **Audit statistics…** option in the View menu displays the **Audit Statistics** dialog box.

Audit statistics present summary information about the loading and recognition data as well as memory consumption. The statistics are:

- Files scanned
- Files loaded
- Files recognized

- Different files loaded
- Different directories loaded
- Machines loaded
- Dynamic memory in use
- Operating System memory committed

Note: If one or more scan files have been unloaded, the audit statistics are no longer available until Analysis Workbench has been closed down and restarted.

Tagging

In This Section...

Tagging - Overview

An important part of the analysis process is the ability to intelligently select subsets of the population and perform further analysis or reporting on this subset only.

Tagging is a process which allows the volume of data being viewed to be narrowed down and allows items of particular interest (files, directories, applications and machines) to be highlighted.

Analysis Workbench implements several methods for tagging and filtering, all of which are based on the tagging mechanism.

Every file, machine, application and directory can be 'tagged', that is, selected. Visually, this is indicated by a check box next to each item in the window.

The simplest mechanism is to tag one or more items manually by selecting the tag check box next to the item (or by hitting the Space bar).

Tag Types

Two different types of tags are available:

- Local tags: Impact only the window they are applied in (the local window).
- Global tags: Can have impact other windows. Only global tags can be used to teach entries to the SAI.

Filters are used in conjunction with these tags to limit the amount of data displayed in a window.

Tagging Data in the Information Windows

In This Section...

Tagging a File

Globally tagging a file has the following effect:

- It causes a file tag to be set for the file itself.
- It causes a file tag to be set for all machines on which it occurs to be tagged.
- It causes a file tag to be set for all applications that contain an instance of this file.
- It causes a file tag to be set for all directories in which an instance of this file can be found.

Tagging a Directory

Globally tagging a directory has the following effect:

- It causes a directory tag to be set for the directory itself.
- It causes a directory tag to be set for all files in any instance of the directory.
- It causes a directory tag to be set for all applications in any instance of the directory.
- It causes a directory tag to be set for all machines on which the directory occurs.

Tagging a Machine

Globally Tagging a machine has the following effect:

- It causes a machine tag to be set for the machine itself.
- It causes a machine tag to be set for all the files on the machine.
- It causes a machine tag to be set for all the applications on the machine.
- It causes a machine tag to be set for all the directories on the machine.

Tagging an Application

Tagging an application has the following effect:

- It causes an application tag to be set for the application itself.
- It causes an application tag to be set for all directories in which an instance of this application can be found.
- It causes an application tag to be set for all machines on which the application occurs.
- It causes an application tag to be set for all the files that are contained in that application.

Methods for Applying Tags

Tagging can be performed from four different within Analysis Workbench.

- *Edit Menu*
- *Information Window Toolbar*
- *Column Header*
- *Column Contents*

Edit Menu

Global and Local tag options are available in the Edit main menu.

Setting a tag from this level will impact all the tag settings, both Local and Global. In addition, any filters that have been set, can be closed. This is a good start point.

Information Window Toolbar

The information window toolbars are used for setting the tag type (Local or Global) as well as window specific options.

Column Header

Options in the column header shortcut menu can be used to tag unique (only one) or duplicate (more than one) entries. They also have a **Contains** function used to select items that match a substring search.

Column Contents

Options in the column shortcut menu tag entries above, below a particular row or matching a specific row-column combination.

Using Shift + right-click in the window area has the effect of inverting the tag selection for the current row.

For example, instead of a right-click in the Version column giving Version is 95, Shift + right-click gives Version is <u>not</u> 95.

Clearing and Setting Tags for All Items in All Windows

The **Edit** menu has options for globally tagging and untagging entries in all information windows. This can be very useful when you have large volumes of data and you want to ensure that none of the items in any of the information windows are tagged (even if the windows are not displayed).

To do this:

1. Select **Tag All|Both** from the **Edit** menu. This sets both Global and Local tags in all the information windows (even if they are not displayed).

   The status bar now indicates that all files in all windows are tagged. Information similar to the following will be shown:

   Machines 6/6 Applications 31/31 Directories 121/121 Files 1211/1211

2. Select **Untag All|Both** from the **Edit** menu. This clears all the Global and Local tags in all the windows (even if they are not displayed).

   The status bar now indicates that all files in all windows are untagged. Information similar to the following will be shown:

   Machines 0/6 Applications 0/31 Directories 0/121 Files 0/1211

   All information windows (Files/Directories/Applications/Machines) contain no tagged items.

Tag Lists in the Machines Window

In the **Machines** window, you can load and store lists of tagged machines.

A .tag file is a text file containing the asset numbers of the tagged machines. It is saved with a **.tag** extension.

This can be very useful for saving time in situations where you have carried out complicated tagging procedures and have reached a subset of machines that are of particular interest.

Rather than having to redo the complicated tagging procedures when you reload the data or you re-inventory your population, you can load a machines tag list and those particular machines will automatically be tagged.

Any machines that no longer exist will be ignored in the tag list file.

By default the location for saving and loading tag files is:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common

To save a current machine tagging list

1 In a **Machines** window tag the required machines.

2 Select the **Save Tags List...** from the **Tag** drop-down toolbar menu.

The asset numbers of the currently tagged Machines are saved in a **.tag** file.

To load a tag file:

1 Select the **Load Tags List...** from the **Tag** drop-down toolbar menu.

2 Navigate to the **.tag** file, select it and click **Open**.

3 The file will be loaded and matching machines will be tagged.

Filtering

In This Section...

Filtering - Overview

You can use filters to narrow down and highlight items of particular interest.

Each of the main windows in the Analysis Workbench can have one or more filters applied to them. Each window can have one or more filters applied to them. Filters are used for the following purposes:

- To limit the number of items that are displayed in a window.
- To view the impact of a selection in another window. This is done in conjunction with Global tags. For example, if a file has been tagged with a Global tag in the Files window, then to see which directory it is located in, you can apply a File filter to the Directory window.
- To narrow down and highlight items of particular interest in charts, reports and exports.

Setting a Filter for a Window

Select the filter to be applied to the window from the **Filters** toolbar drop-down menu, or select one of the icons on the window toolbar:

- Applies the Files filter
- Applies the Directories filter
- Applies the Application filter
- Applies the Machines filter
- Applies a Local Tags filter

When a filter is active in a window, visually this is indicated as by a check mark in the **Filters** toolbar menu and on the icon. The exception to this is the Local Tags filter icon, which is highlighted in yellow.

To deactivate a filter either click on the icon again or deselect the filter from the **Filters** toolbar drop-down menu. The appropriate check marks are cleared.

Machines Window Filter

The following filters can be applied from within the Machines window:

- **Machine Select** - Displays any tagged machines in the Machines window.
- **Application Select** - Displays any machines that contain tagged applications. It shows any machines that have the application installed.

  Note: It does not show machines that have a partial installation (in other words, machines where a licence is not needed).
- **Directory Select** - Displays any machines that contain tagged directories.
- **File Select** - Displays any machines that contain tagged files.
- **Local Select** - Displays only those entries in the Machines window that have Local tags enabled.

Applications Window Filter

The following filters can be applied from within the Applications window:

- **Machine Select** - Displays any applications that are contained on tagged machines.
- **Application Select** - Displays any tagged applications in the Applications window.
- **Directory Select** - Displays any applications that occur in tagged directories.
- **Main File Select** - Displays any applications that contain tagged main files.
- **Local Select** - Displays only those entries that have Local tags enabled in the Applications window.

Files Window Filter

The following filters can be applied from within the Files window:

- **Machine Select** - Displays any files that are contained on tagged machines.
- **Application Select** - Displays any files that are contained in tagged applications.
- **Directory Select** - Displays any files contained in tagged directories.
- **File Select** - Displays any tagged files in the Files window.
- **Local Select** - Displays only those entries that have Local tags enabled in the Files window.

Directories Window Filter

The following filters can be applied from within the Directories window:

- **Machine Select** - Displays any directories that occur on tagged machines.
- **Application Select** - Displays any directories that contain tagged applications.
- **Directory Select** - Displays any tagged directories in the active window.
- **File Select** - Displays any directories that contain tagged files.
- **Local Select** - Displays only those entries that have Local tags enabled in the active window.

Clearing Every Filter in All Windows

The **Edit** menu has a **Clear all filters** option for globally clearing the filters for all information windows. This can be very useful when you do not have all the windows displayed in the workspace, and you want to ensure that none of the items in any of the information windows are filtered (even if the windows are not displayed).

Tagging and Filtering Examples

This section is divided into two:

- The first example demonstrates the effect of Global tags, Local tags and filters.
- The second set of examples demonstrate how to perform common tasks using filtering and tagging.

The Effects of Global Tags, Local Tags and Filters

Preliminary Settings

1. Equalize all the windows (files, Directories, Machines and Applications, by selecting the **Equalize** command from the **Window** menu.
2. In each of the windows, select the LTag column from the **Columns** toolbar menu. This ensures that the local tag column is displayed in each window.
3. From the **Edit** menu select the **Untag All|Both** option. This will clears any existing tags (both global and Local) in each window.
4. Select the **Clear all filters** option from the **Edit** menu. This ensures that no filters have been applied to any of the windows.

Tag Selection

Part 1 This part of the example shows the effect of applying a filter to reduce the display information.

1. In the **Files** window, select the **Use Local Tags** from the **Tag** toolbar menu.
2. Apply a Local tag to a file which has a Status of **1 Main.**
3. Note the number of files in the top left corner of the Files window in square brackets [].
4. Apply a local filter in the **Files** window, either by clicking the  icon or by selecting the **Local select** option from the **Filters** toolbar menu.

The result is that the number of files displayed is reduced to a single entry (that is, the one file that you tagged).

Part 2 This part of the example shows that Local tags do not affect the other windows.

▶ Apply a File filter to the other windows, either by clicking the icon or by selecting the **File Select** option from the **Filters** toolbar menu in each window. All windows now become empty.

Note: In the Applications window, this option is actually **Main File Select**.

Part 3 This part of the example shows that removing a filter will restore the window to it's previous state.

▶ Remove the File filter in the **Files** window only.

The selected file reappears in the **Files** window.

Part 4 This part of the example demonstrates how a Global tag affects the other windows.

1. In the **Files** window, set the **Use Global Tags** option in the **Tags** toolbar menu.
2. Now set a Global tag on the file. The directories, Machines and Applications windows all now display entries:
   - Directories window displays the directories containing the file.
   - Machines window displays the machines containing the file.
   - Applications window displays the applications which contain the Main file.

If the Local tag is removed from the Files window, while the Local filter is still active, the file disappears. The Local filter has to be removed for the file to be redisplayed. The other windows remain unaffected.

Common Tasks Using Filtering and Tagging

- *How Do I Get a List of All Files Not Known by the Application Library?*
- *How Do I Get a List of Machines Containing Unknown Files?*
- *How Do I Get a List of All Machines That Do Not Conform to the Company Standard Desktop?*
- *How Can I See Which Machines Contain the Most Non Standard Applications?*

- *How Can I See What Files Appear in a Certain Directory?*
- *How Can I See in How Many Different Directories a File Occurs?*
- *How Can I Verify That The Data in an Asset Field is Unique Across the Population?*
- *How Can I See Which Machines Contain Microsoft Applications?*
- *How Can I See Which Machines Have Less Than 32MB of Memory?*
- *How Can I See Which of the Machines with Less Than 32MB of Memory Contain Microsoft Applications?*
- *Is There No Way of Just Navigating the Data, Without Setting Any Tags?*
- *How Can I Get a List of Files Occurring in the Same Directory as One or More Files I Have Tagged?*
- *How Do I Get a Complete List of Machines with Full or Partial Installations of a Set of Applications?*

How Do I Get a List of All Files Not Known by the Application Library?

1 Make sure that a **Files** window is visible (use **Window|Create|Files** if not).

2 Using the **Columns** drop-down menu of the **Files** window, show the **Status** column.

3 Sort on the **Status** column by left clicking on it, or by right-clicking on the column header and selecting one of the sort options available.

4 Scroll down until an entry showing **5 Unknown** is visible. Alternatively, type 5 on the keyboard to select the first entry of this type.

Note: If you cannot locate a **5 Unknown** file, it could be that your display filter options have been set up to not display unknown files. See *Configuring Display Filter Settings* on page 387 for more information about how to include Unknown files.

5 Right-click on a **5 Unknown** entry, and select the menu item **Status is 5 Unknown|Tag**.

6 Apply a **File** filter on the **Files** window.

Alternatively:

1 Using the **Columns** drop-down menu of the **Files** window, show the **Status** column.

2 Right-click on the column header of the **Status** column, and select the **Tag|Contains...** menu item.

3 Enter **5** in the **Search string** box, select **Anywhere** in the **String Position** group box and select **Tag** in the **Action** group box.

4 Click **OK**.

5 Apply a **File** filter on the **Files** window.

How Do I Get a List of Machines Containing Unknown Files?

Assuming that the tags from the previous question are still in place, apply a **File** filter to a **Machine** window.

All machines now shown contain one or more tagged files, all of which are unknown.

How Do I Get a List of All Machines That Do Not Conform to the Company Standard Desktop?

This answer assumes a scan of a standard desktop is available.

1 In the **Machines** window, tag the standard machine.

2 Apply a **Machine** filter to an **Application** window.

3 Tag all the applications shown. Now, all standard applications are tagged.

4 Remove the Machine filter from the **Applications** window.

5 Toggle all tags in the **Applications** window. Now all non-standard applications are tagged.

6 Apply an Application filter in the **Machines** window. All machines containing any non-standard applications are shown.

How Can I See Which Machines Contain the Most Non Standard Applications?

Assuming no tags have been changed from the previous question

1 Using the **Columns** drop-down menu of the **Machines** window, show the **Tagged Apps** column.

2 Sort descending on this column, either by left clicking on the **Tagged Apps** column header or by right-clicking and selecting **Sort Descending.**

The machines at the top of the list now are the ones containing the most non-standard applications.

How Can I See What Files Appear in a Certain Directory?

1. Make sure that a **Directory** window is visible (use **Window|Create|Directory** if not)
2. Tag the directory or directories of interest.
3. Apply a **Directory** filter to a **Files** window.

   Note: If you cannot see any directories, it could be that your memory options have been set up to not display directory data. See *Configuring Memory Settings* on page 390 for more information about how to include directory data.

How Can I See in How Many Different Directories a File Occurs?

When no filters are applied to the **Files** window, the **Copies** column displays the total number of occurrences of each file entry. This includes multiple copies on the same machine in different directories.

When a Directory filter or **Machine** filter is applied to a **Files** window, the **Copies** value will always be 1. If two directories are tagged, the count will be 1 for those files that occur in only one of the directories, and 2 for those files that occur in both.

The same logic applies for tagged machines when a **Machine** filter is applied to a **Files** window.

How Can I Verify That The Data in an Asset Field is Unique Across the Population?

This question is important for asset or hardware fields that contain information unique to a single computer, such as MAC addresses, Asset numbers, and so on.

1. Show the column of interest in a **Machines** window.
2. Use the **Tag** menu item of the shortcut menu of the column header, and select **Duplicates**.
3. Apply a **Machine** filter to the **Machines** window. Any items shown are not unique across the population.

How Can I See Which Machines Contain Microsoft Applications?

1. Make sure an **Applications** and a **Machine** window are visible.

2 In the **Applications** window, right-click on Microsoft in the **Publishers** column, and select the **Publisher is Microsoft|Tag** menu item.

3 Alternatively, use the **Tags|Contains** menu item from the **Publishers** column header shortcut menu and use Microsoft as the search string.

4 In the **Machines** window, apply an **Application** filter .

How Can I See Which Machines Have Less Than 32MB of Memory?

1 Make sure a **Machine** window is visible.

2 In the **Machines** window, click the **Columns** button. In the **Select columns to display** dialog box, expand the **Memory** category in the Available columns list, and check the **Total Memory (Mb)** item.

3 Sort by the Total Memory (Mb) column in ascending order.

4 Type '32' which moves focus to the first item with 32Mb or memory or more. Press the Up arrow to select the previous item in the list.

5 Right-click the highlighted item, and select Tag -> Rows Above.

6 Apply a **Machine** filter to the window. All machines visible have less than 32 Mb of memory

OR,

1 Make sure a Machine window is visible.

2 From the **Tag** menu, select **Query...**

3 From the Query form shown, expand the Memory item and double-click the Total memory (Mb) item.

4 From the drop-down list of choices, select '**is less than**'. Type '**32**' in the entry field.

5 Click **OK** to execute the query.

How Can I See Which of the Machines with Less Than 32MB of Memory Contain Microsoft Applications?

Follow the steps in the previous question to tag machines and applications and applying filters.

1 Show the **LTags** column in the **Machines** window by it from the **Columns** toolbar menu.

2 From the **Tag** toolbar menu of the **Machines** window, select **Use Local Tags Once**.

This instructs Analysis Workbench to use Local Tags for the next tag operation.

3. Again using the **Tag** toolbar menu of the **Machines** window, select **Tag All**.
4. This will give all items currently visible, a Local tag.
5. Remove all filters from the **Machines** window. All machines are now shown.
6. Using the **Tag** toolbar menu, select **Untag All**.

   This will remove all of the Global machine tags set previously – but the information needed is stored in the Local tags so this is fine.

7. Apply a **Local** filter to the **Machines** window (or available from the **Filters** drop-down menu). The same machine selection as before step 1 is now visible.
8. Tag all visible machines (Use the **Tag** menu, for example).
9. Apply a **Machine** filter to the **Applications** window.

   The applications now visible occur on machines with less than 32Mb of memory that contain at least one Microsoft application.

Is There No Way of Just Navigating the Data, Without Setting Any Tags?

1. In all windows, enable the Link to Details options in the **Configure** drop-down menu.
2. In the **Details** window now shown in the right side of the screen, click the little 'C' (Configure).
3. Make sure all four check boxes in the **Detail** window **Links** group are selected. Optionally, set the other controls to specify which details are shown for each window.
4. Click **OK**.

Now, whenever an item is clicked in one of the main windows, details for that item are displayed in the Details window. Because the Detail window Links are selected, clicking on items in the Details window moves the focused line in the main windows when items are clicked here.

For example, click on a file. A list of machines and directories where the files occur, along with various details of each occurrence of the file, is shown in the Details window. Click on one of these occurrences, and focus in all Machines windows is moved to the machine for this occurrence; the same happens for the directory in which it occurs. This logic extends to Machines, Directories and Applications as well.

How Can I Get a List of Files Occurring in the Same Directory as One or More Files I Have Tagged?

This is typically the first step of application recognition – an unknown file is tagged, and all files in the same directory should be added to the library at the same time.

1 Apply a **File** filter to a **Directories** window. Now, all directories with tagged files in them are shown.
2 Tag the directory or directories that are of interest.
3 Apply a **Directory** filter to a **File** window. This now shows all files occurring in the tagged directories.

How Do I Get a Complete List of Machines with Full or Partial Installations of a Set of Applications?

1 Clear all file tags in all windows.
2 In the **Applications** window, tag the applications in question.
3 Apply an **Application** filter to the **Files** window.
4 Tag all the visible files.
5 Apply a **File** filter to the **Machine** window.

Machine Queries

In This Section...

Machine Queries - Overview

Machine queries target and tag machines based on criteria such as asset data, hardware or configuration information.

You can perform a query to focus on any combination of hardware, and asset information collected for a computer population during an inventory.

As a result of any query, a number of machines, applications, files or directories can receive a number of tags.

Queries to identify particular machines using specified criteria are defined using a special query grid. This allows multiple query criteria to be specified from a section of categories, which are defined by the information collected across the computer population.

When the query criteria are fully specified, the query is invoked and all machines within the population that match the query criteria are tagged. The query grid also allows defined queries to be saved so that they can be loaded and used again.

How to Perform a Machine Query

Machine queries are available from the **Machines** information window.

To begin creating a query, you need to display the query grid used to specify the search criteria.

▶ In the **Machines** window select the **Query** option from the **Tag** drop-down toolbar menu.

The **Complex Query** dialog box is displayed.

This dialog box has two tabs:

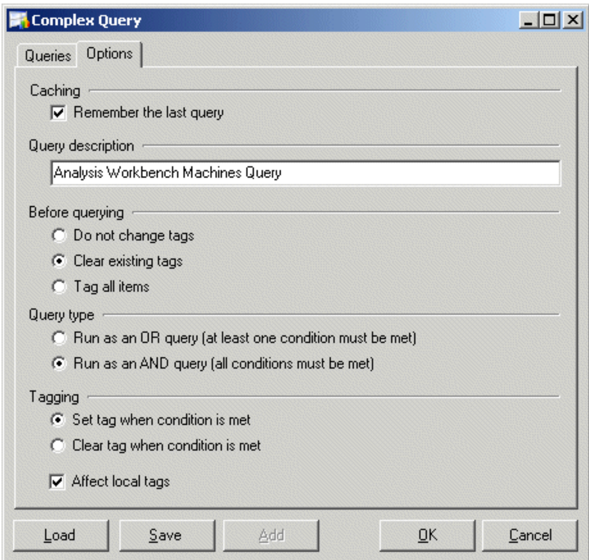
- **Queries** - Displays the hardware and asset fields and allows you to build up the query.
- **Options** - Sets up the logic, actions and format of the query.

Differences Between Scan File Queries and Machine Queries

The method of performing a machine query is almost identical to that for selecting scan files for specific machines (complex query). There is however, one difference to note:

An extra option is made available for Machine queries. This is on the **Options** tab page and is the **Tagging** group box.

- Affect local tags - Only Local tags are set or cleared.



Further Information

Machine queries are covered in detail on page 404.

Teaching Applications to the User SAI

In This Section...

Further Information

Application Teaching theory is covered in detail in the *Application Recognition and Teaching* Chapter.

User Editable SAI Files

A **User.sai** file is an editable Software Application Index (SAI) that can be updated using Analysis Workbench. You can use the Analysis Workbench to 'teach' the library how to recognize files which it previously did not recognize.

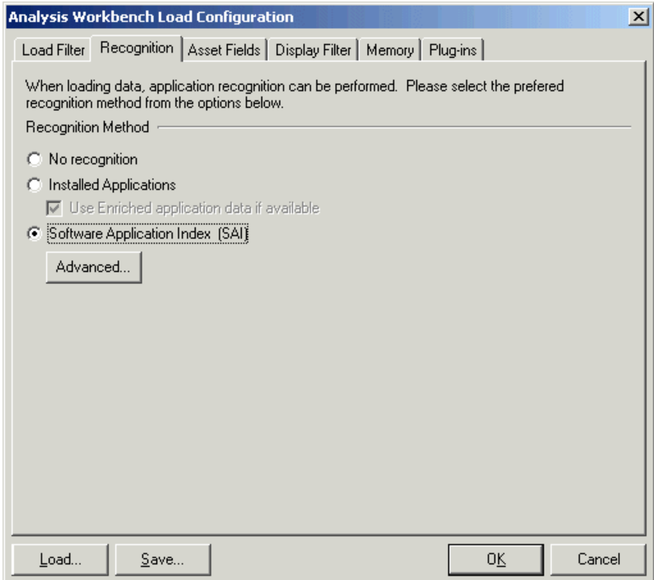
The teaching of applications to your **User.sai** is usually done with scan files that have many installed applications included in them.

Note: If the information from many machines has been loaded, it can take a significant time to re-recognize all of the affected files after new entries have been taught to the SAI. It is therefore recommended that no more than 50 scans be loaded when teaching the SAI.

Creating a New User SAI

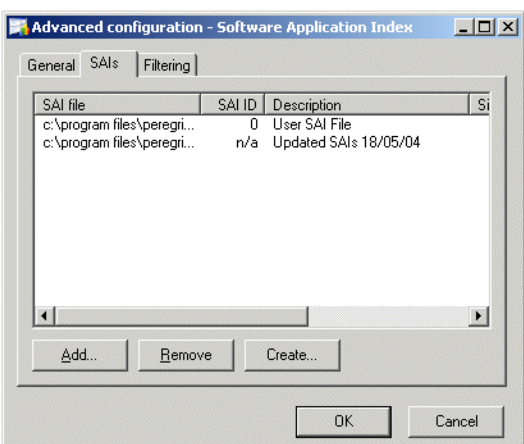
To create a new empty User SAI:

1. Start **Analysis Workbench**.
2. Do not load any data.
3. Select **Load Options...** from the **File** menu. The **Analysis Workbench Load Configuration** dialog box is displayed.
4. Click on the **Recognition** tab.

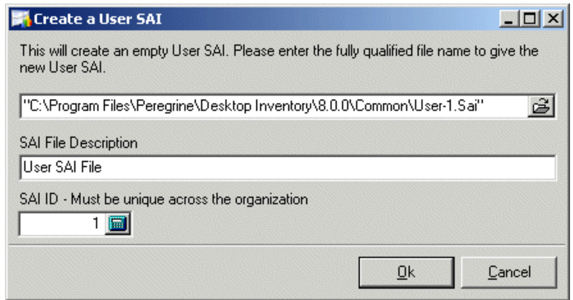


5 Select the **Software Application Index** (SAI) option and click the **Advanced...** button. The **Advanced configuration - Software Application Index** dialog box is displayed.

6 Select the **SAIs** tab.



7 Click the **Create…** button. The **Create a User SAI** dialog box is displayed.

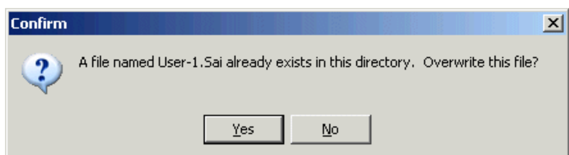


8 Enter or navigate to the directory where the SAI file is to be created.

9 Enter a description for the file.

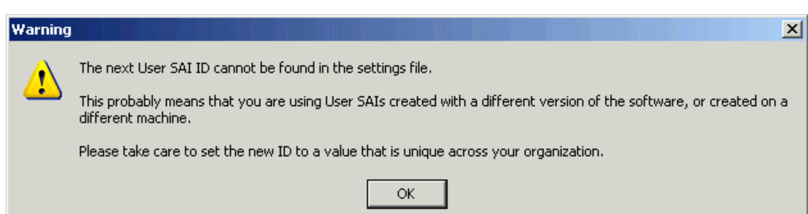
10 Click the **OK** button.

The file is automatically assigned a unique ID. However, you may already have an SAI with the same filename. If so, the following message will be displayed.



11 Click **Yes** if you want to overwrite the existing SAI file or click **No** to return to the dialog box and assign a new ID to the SAI file.

12 If you have made modifications to the cfgNextSAIID setting in the Analysis Workbench ini file, you may see the following message. This happens when the value for the ID in the ini file is missing or lower than the highest ID in the user SAIs currently loaded. This message is for information only - the Desktop Inventory components will correct this situation automatically by inserting the correct ID value into the ini file.



The New Publisher/Application/Version Setup Dialog Box

This dialog box allows you to teach entries to the User SAI file.

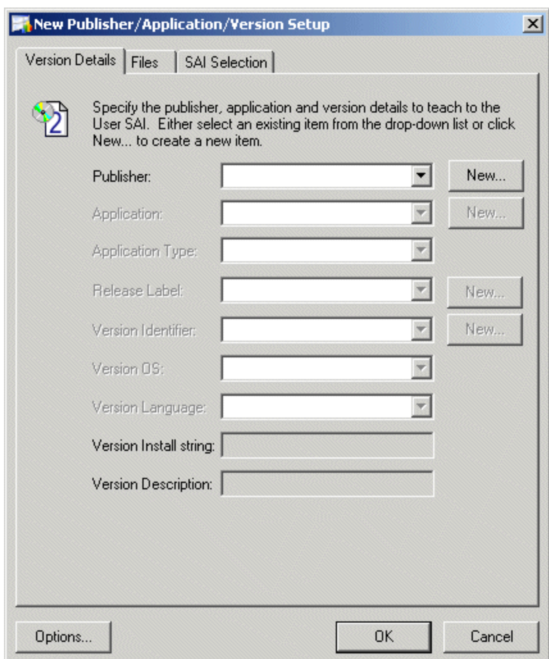
To display the New Publisher/Application/Version Setup dialog box:

1 In an Analysis Workbench **Files** window select the **Add to SAI** option from the **Tag** drop-down toolbar menu.

This option is only enabled if the following conditions have been fulfilled:

- A User editable SAI file is being used
- SAI recognition is enabled
- Files have been tagged (with Global tags).

The **New Publisher/Application/Version Setup** dialog box is displayed.



The best way to introduce all the various fields and functions in this dialog box is to go through the steps for teaching files.

Teaching an Unidentified Application

Important: While teaching files to your User SAI it is convenient to use SAI Teaching Mode. This provides you with the possibility of setting Publisher/Application/Version information and file status for the files that are about to be added to the User SAI before opening the **User SAI** window. See *Using SAI Teaching Mode* on page 476 for further information about how to use it.

Step 1: Tag Files Belonging to the Unidentified Application

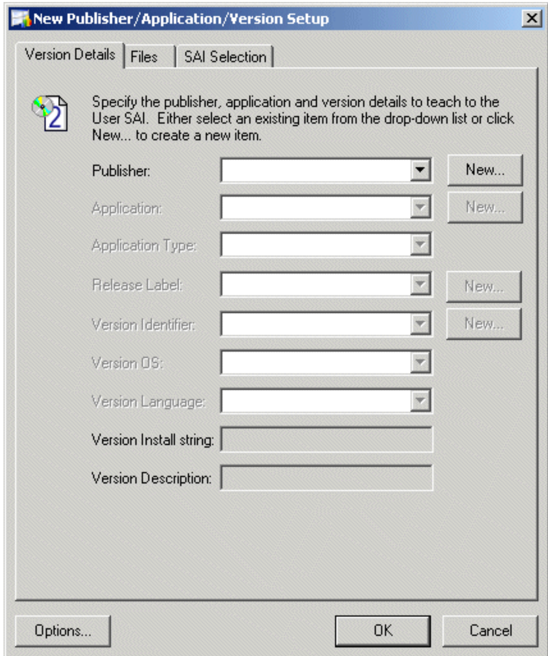
To tag belonging to the unidentified application:

1. Open Analysis Workbench and select the **Application Teaching** mode from the **Quick Config...** dialog box.
2. Load the scan file with the application in question.
3. If you already know the main directory where the unidentified application resides, tag a directory and skip the next three steps.
4. Sort files by the **Status** column, so that <**Unknowns**> and <**Checkvers**> are near the beginning of the list.
5. Looking through the list of **Unknown** files try to find files that belong to the unidentified application that needs to be taught.
6. Sometimes you can search for clues in the **Version/Plug-in Data** columns in the Details windows on the left side and in the **Directory** Window. In many cases the directory name can be very descriptive.
7. If you have now identified the directory, set a Global tag for the directory.
8. Set a directory filter in the **Files** window. You will now see only the files belonging to the application.
9. Check whether all the files in the **Files** Windows belong to the application. Set Global tags for these files.

Step 2: Specify the Application Details

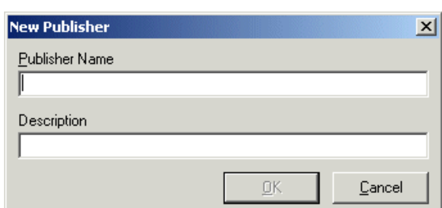
To specify the application details:

1. In the **Tag** menu of the **File** window select **Add to SAI**. The **New Publisher/Application/Version Setup** dialog box is displayed.



2 Now choose the appropriate Publisher, Application, Release, Version, Operating system and language details.

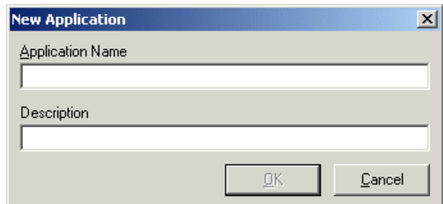
3 Select a publisher from the **Publisher** drop-down list, or specify a new one by clicking the **New...** button next to the field. This will display a **New Publisher** dialog box.



4 Fill in the **Publisher Name** (the **Description** field is optional) and click the **OK** button.

The new application publisher will now appear in the **Publisher** drop-down list.

5 After a publisher has been selected or a new one created, the **Application** field becomes enabled. Select an application from the **Application** drop-down list box or specify a new one by clicking the **New...** button next to the field. This will display the **New Application** dialog box.

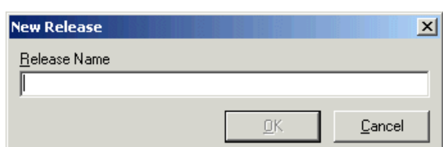


6 Fill in the **Application** name (the **Description** field is optional) and click the **OK** button.

The new application now appears in the **Application** drop-down list.

7 If you have created a new publisher or application, the **Application Type** field becomes enabled (otherwise the field automatically preselects a type for the application). From the **Application Type** drop-down list box, select a predefined type for the application.

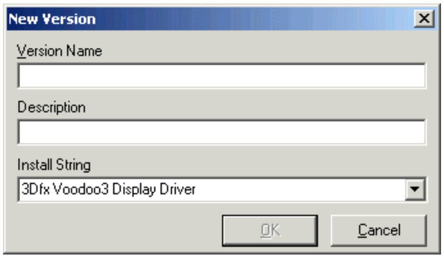
8 Select a Release from the **Release Label** drop-down list, or specify a new one by clicking the **New...** button next to the field. This will display a **New Release** dialog box.



9 Fill in the **Release Name** and click the **OK** button.

When a publisher releases updates for an existing version of one of their products, they typically don't change the name of that version. Any particular version of a product could have several updates to it. In this scenario, the umbrella version is referred to as the Release Label, and to each of the updates as a Version. It is not necessary that every version of software has a release label. In fact, most of them do not. Every version without a release label is associated to a virtual **Stand-alone Releases** label.

10 Select a software version identifier from the **Version Identifier** drop-down list box, or specify a new one by clicking the **New...** button next to the field. The **New Version** dialog box is displayed.



11 Fill in the **Version Name** field.

12 In the **Description** field, type in a brief description of the application selected for the existing **Version**. This field is optional.

13 Select the **Install String** from the drop-down list. This is the line that the version writes to the add/remove programs list when it is installed. You cannot specify new Install strings. The Install string field is taken from those in the scan data loaded into Analysis Workbench.

14 Click the **OK** button. The new version data now appears in the **Version Identifier, Version Install String** and **Version Description** fields.

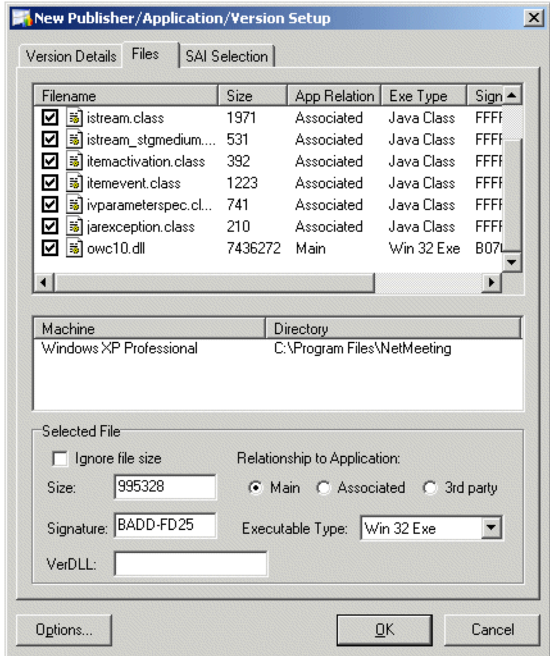
A version is defined by its name, application, language and operating system. So, for one application, it is possible to have many different versions with the same name, provided that they have different combinations of Operating System and Language.

15 Select the operating system that the application works under, from the **Version OS** drop-down list.

16 Select the language of the application, from the **Version Language** drop-down list.

Step 3: Specify Files to be Included

1 Click on the **Files** tab.



2 Select (check) the files that are to be included. When a file is selected, the bottom pane displays the Machines(s) and Directories(s) that the file is located on.

3 If you want to disregard the file size when the file is taught click **Ignore file size**. The **Size** and **Signature** fields become disabled. Otherwise:

- Specify the size of the selected file if needed. Enter the value in the **Size** field.
- Specify file Signature by typing directly into the **Signature** field.

4 Specify the type of executable file by selecting a predefined type from the **Exe Type** drop-down list box.

5 Go through the list of files and check file characteristics. Make sure that the correct files are labelled as 'Main'.

Double check files that are given status 'Main' by default; they might be carrying this status from previously taught applications.

6 You can change the status of the files (if required) by selecting the file and then selecting one of the option buttons in the **Relation to Application** group:

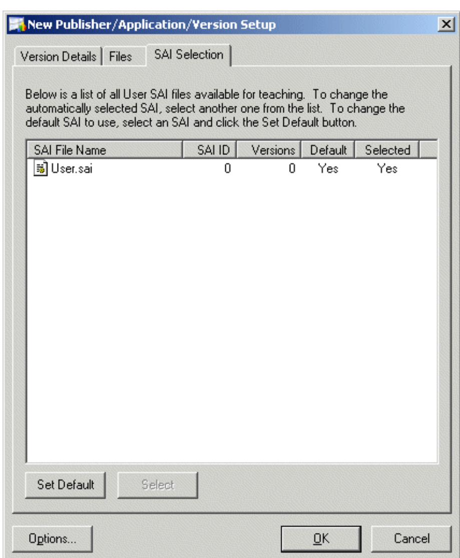
- **Main** - This is a key application file, that is, it is a file without which the application could not be running. It should always be present whenever the application is installed regardless of whether it is a minimum or complete installation.
- **Associated** - This is a non-key file that is part of the application and is written by the publisher that developed the product.
- **3rd party** - This is a file written by another Publisher (3rd Party) and is used in the current application. An example of a 3rd party files is some DLL files that are technically used by the application, but are also distributed freely and can be used by other applications.

7 The **VerDLL** field shows a concatenation of a set group of version data fields. Do not change the entry in this field unless absolutely necessary.

Note: The drop-down lists are produced from a combination of data in both **Master.sai** and **User.sai**. Before an entry is committed to the User.sai a number of options are available. These can either be set up under options and selected as default, or the default setting can be left off and you will be prompted each time to select the information. See *Step 5: Set Teaching Options* on page 475.

Step 4: Select the User SAI File and Commit the Changes

1 Click on the **SAI Selection** tab.



2 This tab page shows a list of User SAI files available for teaching applications to. A file can be either or both of the following:

- **Selected** - Any changes made to the SAI are saved to the **Selected** file only - not the **Default** file.
- **Default** - The **Default** file is automatically selected when the dialog is next opened. You can set a file to be **Default** and specify another one to be **Selected**.

3 To change the automatically selected SAI file, select another one from the list and click the **Select** button. The status in the **Selected** column is shown as **Yes**.

4 To change the default SAI to use, select the SAI file and click the **Set Default** button. The status is shown as **Yes** in the **Default** column.

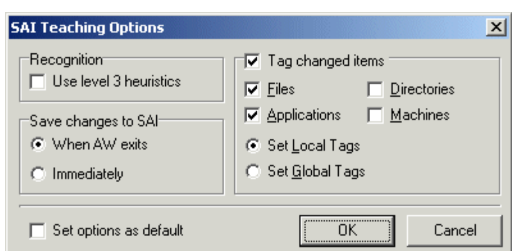
5 Confirm your choices by clicking **OK**. You are prompted to set SAI teaching options. See *Step 5: Set Teaching Options* on page 475.

When you have done this, the information in the Software Application Index file is updated. You can view the newly added application by using the **SAI Editor**. See the *SAI Editor* Chapter for more information on how to do this.

Step 5: Set Teaching Options

To set SAI teaching options:

1 Select the **Options** button in the **New Publisher/Application/Version Setup** dialog box. The **SAI Teaching Options** dialog box is displayed.



2 Set the options as follows:

- **Recognition**

Use level 3 heuristics: SAI teaching uses the same recognition method as is used during the loading process. This means that if the 'Level 3 heuristics' is enabled, teaching a single file will reprocess all files on all machines on which the file occurs. If 'Level 3 heuristics' is disabled, teaching a single file will cause all files in all directory/machine combinations where the file occurs to be re-recognized.

Note: This setting should be set to the same as when the scans were loaded. If the scans are loaded with Level 3 heuristics enabled and re-recognition after teaching is done without it, recognition results can change significantly.

- **Save changes to SAI**

  When AW exits: Any changes to the SAI are saved when you exit from the Analysis Workbench application.

  Immediately: Any changes to the SAI are saved immediately.

- **Tag changed items**

  Selecting this option enables the following further options:

  Files - Any files that are affected by the SAI teaching are tagged.

  Applications - Any applications that are affected by the SAI teaching are tagged.

  Directories - Any directories that are affected by the SAI teaching are tagged.

  Machines - Any machines that are affected by the SAI teaching are tagged.

  Set Local Tags - If this option button is selected, then Local Tags are used for the operations.

  Set Global Tags - If this option button is selected, then Global Tags are used for the operations.

- **Set options as default**

  Select this check box to retain these settings as the default.

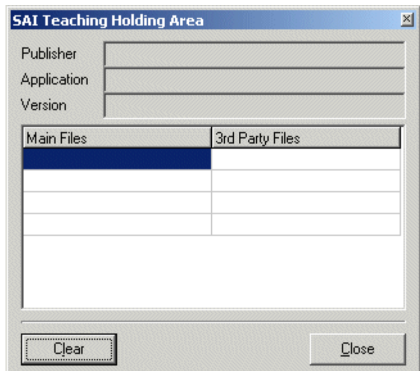
Using SAI Teaching Mode

SAI Teaching Mode provides a scratch pad for information to be fed into the **User.sai**. Entries are taken from existing values and stored temporarily. These values can then be inserted automatically when teaching entries to the SAI. This greatly simplifies the procedure outlined in the previous section *Teaching an Unidentified Application* on page 469.

To use SAI teaching mode

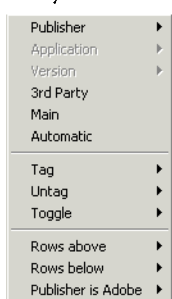
1 Tag the files to be taught to the SAI with Global Tags.

2 Select **SAI Teaching mode...** from the **Recognition** menu. A non-modal window is displayed – this is the **SAI Teaching Holding Area.**

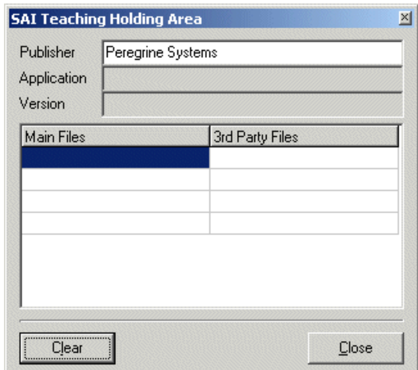


3 Now, in the main area of the **Files** window, right-click on a file that has been identified.

The shortcut menu now contains an enabled **Publisher** menu item, with likely choices listed as submenu items.

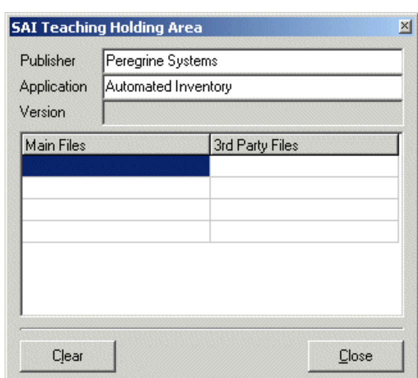


4 Select the correct publisher. The **SAI Teaching Holding Area** is updated to display the selected publisher.



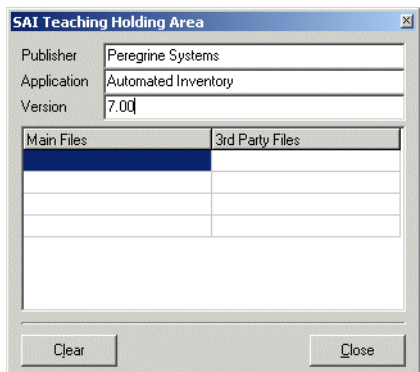
5 Again, right-click on a file; the **Application** menu item is now enabled, and can be used to select the application name.

6 Select the correct application. The **SAI Teaching Holding Area** is updated to display the selected application.



7 Finally, the **Version** menu item becomes available and can be used to select the version identifier.

8 Select the correct version. The **SAI Teaching Holding Area** is updated to display the selected version.



Note: There is no requirement to select Publisher, Application or Version if the data presented is incorrect or not applicable.

9 As each of the **Publisher/Application/Version** fields of the Holding Area are populated in this manner, the data becomes editable to facilitate major or minor changes to the data displayed.

10 In the **Files** window, locate the file(s) to be added as identifying, licensable files of the application.

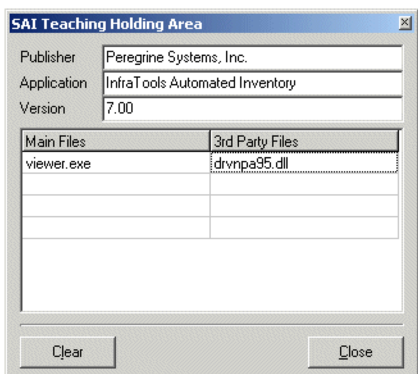
11 For each of these files, right-click and select the **Main** menu item. Each of the file names selected appear in the **Main** files column of the holding area.

12 Locate those files, if any, that are shipped with the application but are 3rd party file (such as vbrun*.dll).

Note: Vbrun200.dll and Vbrun300.dll will have 3rd party status only for non-Microsoft applications. For all Microsoft applications they will be considered associated files.

Mark these as 3rd party files using the 3rd Party Files shortcut menu item.

13 The holding area is updated accordingly.



14 Select the **Add to SAI...** option from the **Tag** menu of a **Files** window. The **New Publisher/Application/Version Setup** window is displayed.

The Publisher, Application and Version fields are now pre-filled with data from the holding area. If an item does not already exist in the SAI, it is added automatically by this process. The **File Type** for each file is automatically updated based on the file names in the Main Files and 3rd Party Files lists of the Holding Area.

Teaching a Directory with Main, Associated and 3rd Party Files

To teach a directory with Main, Associated and 3rd Party files:

1. Select the Main file and any 3rd party files and store in the Holding area.
2. Tag the multiple Associated files using tagging from a Directory window for example.
3. Open the **New Publisher/Application/Version Setup** dialog box from the **Tag** menu of a **Files** window.

   The tagged files and the files in the Holding area are displayed with the Publisher, Application and Version from the Holding Area already entered.

Populating the SAI Teaching Mode Automatically

To populate the SAI teaching mode automatically:

1. In a **Files** window, right-click on a file that has been identified.

   The shortcut menu now contains an enabled **Automatic** menu item.
2. Selecting this item is equivalent to:
   - Right-clicking, selecting **Publisher** and choosing the first menu item.
   - Right-clicking, selecting **Application** and choosing the first menu item.
   - Right-clicking, selecting **Version** and choosing the first menu item.
   - Right-clicking and selecting the **Main** file.

The SAI Editor

The SAI Editor presents a view of the SAI files (Master and User) that have been used for recognition in Analysis Workbench.

The SAI Editor allows you to:

- View and edit a collection of SAI files
- Create new User SAIs
- Move and copy item between SAIs
- Delete items in SAIs
- Create Licence relationships between applications
- Export the contents of an SAI to xml format, either as an XML Summary or in its entirety.

This tool is available either as a standalone tool or from the Analysis Workbench User Interface.

To start the SAI Editor from the Analysis Workbench User Interface:

▶ Select the **View/Edit SAIs...** option from the **Recognition** menu.

To Start the SAI Editor as a standalone tool:

▶ From the Windows Start menu select **Programs|Peregrine|Desktop Inventory 8.0|SAI Viewer**

Further Information

Further information can be found in the *SAI Editor* Chapter.

Licence Relations and Application Suites

In This Section...

Further Information

- Application recognition is covered in detail in the *Application Recognition and Teaching* Chapter.

- Further information about licence relationships and the SAI Editor can be found in the *SAI Editor* Chapter.

What are Licence Relations

Each identified file is categorized as either Main, Associated, or 3rd Party. The recognition library can contain any number of files in a particular version as belonging to either category.

When at least one Main file is identified on a machine, a licence is required for the application, unless another application on the machine assumes licence responsibility for the application.

Licence relations are part of the Application Library. When two interdependent applications are identified on a machine, one application can assume licence ownership on that particular machine. The chain of licence relations can be any number of levels deep.

Licence relations solve the problem of Suite licensing simply and effectively, and are applicable to licence relationships outside what would normally be considered a software suite.

For example, MS Office 2000 licenses MS Access, Word, Excel, PowerPoint, Outlook and is a well known software suite. In addition Outlook 2000 licenses MS Data Access Components (ADO) 2.1 sp1 - if Outlook or another licensing application is not present on the machine, a licence is required for the software, but if Outlook is installed on the machine, Outlook assumes licence ownership. Different versions of Outlook licence different versions of MS Data Access Components.

Licence relations are also useful when an application has a complex component structure. If application components can be installed on their own, they should be treated as independent applications, but the connection with the application should be reflected in licence relations for that application.

The SAI Editor allows licence relationships to be established and immediately be applied to the application data loaded. This application is available via the Analysis Workbench User Interface or as a stand-alone utility from the Start menu.

Adding Licence Relations

Licence relations allow a particular version of an application to contain licences for one or more versions of other applications.

A single version of an application can assume responsibility for any number of other application versions, and this can be extended to any number of levels of nesting.

The new relations are stored in a user editable SAI and are used the next time the data is loaded.

Each version entry has two lists that can be filled separately:

- **Owning Release** - The application that contains versions of other applications.
- **Licensed Release** - The applications that are contained in the Owning Application.

Licence relations are set up using the SAI Editor. This tool is available either as a standalone tool or from the Analysis Workbench User Interface.

To start the SAI Editor from the Analysis Workbench User Interface:

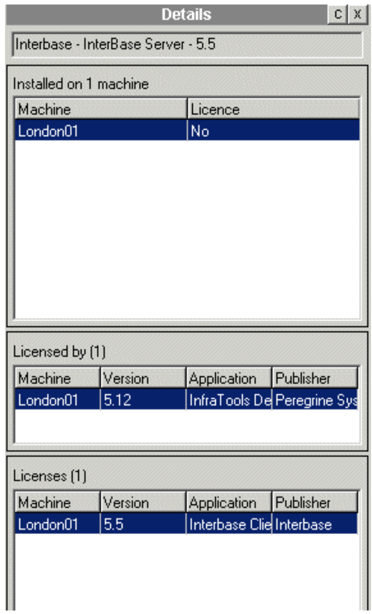
▶ Select the **View/Edit SAIs...** option from the **Recognition** menu.

To Start the SAI Editor as a standalone tool:

▶ From the Windows Start menu select **Programs|Peregrine|Desktop Inventory 8.0|SAI Viewer**

Displaying Licensed by and Licenses Entries in Analysis Workbench

In an **Applications** window, it is possible to have the **Detail** window selected with **Licensed By** and **Licenses** windows displayed. When an application is selected, the **Licenses Apps** and **Licensed by** columns display the count of files and the details window will report the machines on which the files occur.



To display the Application window Details pane:

1 In an **Applications** window, select the **Detail** window link option from the Configure drop-down toolbar menu, or

2 Select the **Configuration…** option from the **Window** menu and check the **Application Windows** box in the Detail Window Link group.

3 The information that is displayed in the Applications Details window can be selected by:

- Clicking the configure icon  in the **Details** window or
- Selecting the **Detail window** option from the **Configure** drop-down toolbar menu. This will display a **Window Layout** dialog box.

4 Select the following options:

- **Licenced by** The details of the Application Suite that licences the highlighted application (if applicable). For example, Word 97 is licenced by Microsoft Office 97.
- **Licenses** The details of any applications that the highlighted application licences, for example, Office 97 licences Microsoft Photo Editor.

The **Applications Details – Licensed by** or **Licenses** information links back to the **Applications** window and the **Machines** window, showing details for that selected application and the machine it is located on.

Using Recognition Objectives in Analysis Workbench

In This Section...

Why You Need Recognition Objectives

In an ideal world, it would be feasible to make sure that every file on every machine in the population was recognized. However, the effort involved in ensuring 100% recognition is normally so large that this is not practical or economical, and less idealistic goals have to be set.

Recognition Objectives are designed to ensure that the following can be achieved with the least amount of effort:

- No machine has a large percentage of unrecognized files on it.
- Files that occur often in the population are recognized.
- Files that occur only on a few machines may not be recognized.

Based on this principle, Recognition Objectives help you set achievable goals for the recognition process, measure how far you are from those goals, and provide assistance in achieving them.

The objectives engine allows you to define as many objectives as you need. By default, only a single objective for the entire Enterprise is defined, although this can be extended by setting up objectives that apply to subsets of the population as well.

Further Information

For further information about recognition objectives, see the *Application Recognition and Teaching* Chapter.

Setting Recognition Objectives Options

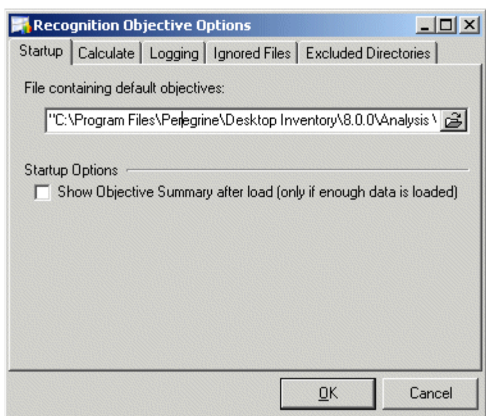
You can set a number of options defining how Recognition Objectives are managed.

To set Recognition Objectives options:

1 Click the **Objectives Options...** item in the **Recognition** menu.

A dialog box is displayed with the **Startup** tab page showing.

The Startup Tab



- **File containing default Objectives**

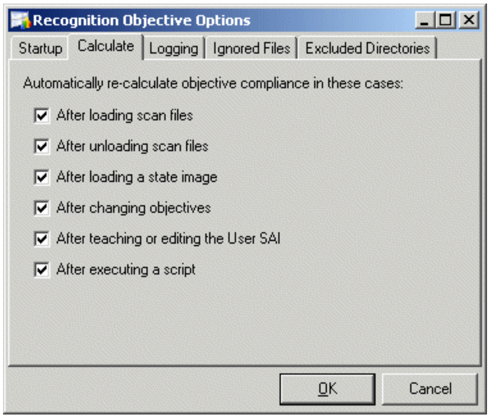
  To load a default set of objectives when Analysis Workbench starts, type in the name of the file containing the objectives here.

  By default, Analysis Workbench uses the file **objectives.xml**.

- **Startup Options**

  To automatically show the Objective Summary dialog box when new scan data has been loaded, check the option to do so.

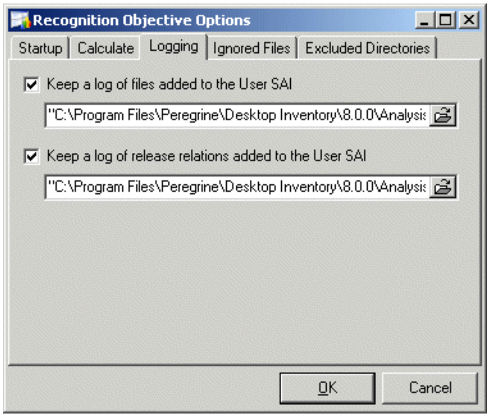
The Calculate Tab



You can set up when automatic recalculation of objective compliance should take place. When many scan files are loaded, this may take significant time to do and you may wish to disable some of the automatic calculation options on this page.

Objectives can be manually recalculated from the **Recognition Objectives** dialog box.

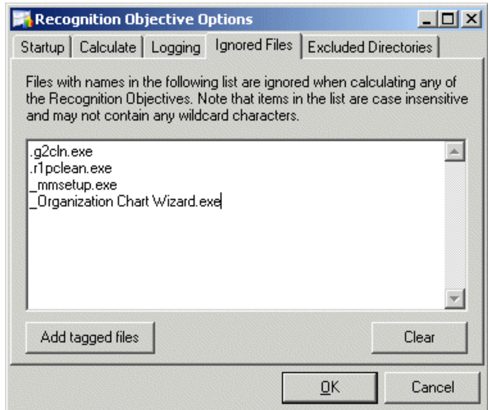
The Logging Tab



You can specify which log files to use to log teaching activity, if any.

The two log files that can be created are both CSV (Comma-separated variable) files that can be imported into other tools for further analysis.

The Ignored Files Tab



This page can contain a list of file names that are to be ignored when calculating objective compliance.

This may be useful if a set of files are known to be of no interest.

▶ Type the file names into the list pane and they will not count when the Applied objectives are evaluated.

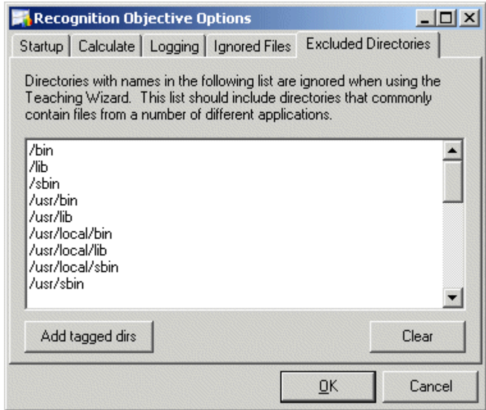
Adding Tagged Files

You can also add files that have been tagged in a **Files** window in the Analysis Workbench workspace.

Note: You will have to close this dialog box first if you forgot to tag the files.

1. In a **Files** window, tag the files you want to add to the **Ignored Files** list.
2. Click the **Add tagged files** button. The files are added to the list.
3. To clear the contents of the list, click the **Clear** button.

The Excluded Directories Tab



This page can contain a list of directories that are to be ignored when calculating objective compliance.

Directories with names in this list are ignored when using the SAI Teaching Wizard. The list will include directories that commonly contain files from multiple applications.

The SAI Teaching Wizard can only help teach applications installed in their own directories.

Example of directories you may want to include in this list are:

- C:\tmp
- C:\Windows
- C:\WINNT\system32
- /usr/bin

▶ Type the directory name and path into the list pane and files that occur only in the listed directories will not be chosen for teaching in the SAI Teaching Wizard. Files in these directories are not excluded when evaluating objectives.

Adding Tagged Directories

You can also add directories that have been tagged in a **Directories** window in the Analysis Workbench workspace.

Note: You will have to close this dialog box first if you forgot to tag the directories.

1 In a **Directories** window, tag the directories you want to add to the **Ignored Excluded Directories** list.

2 Click the **Add tagged dirs** button. The directories are added to the list.

3 To clear the contents of the list, click the **Clear** button.

Starting the Define and Review Objectives Dialog Box

To start the Recognition Objectives dialog box:

1 Select **Objectives...** from the **Recognition** menu.

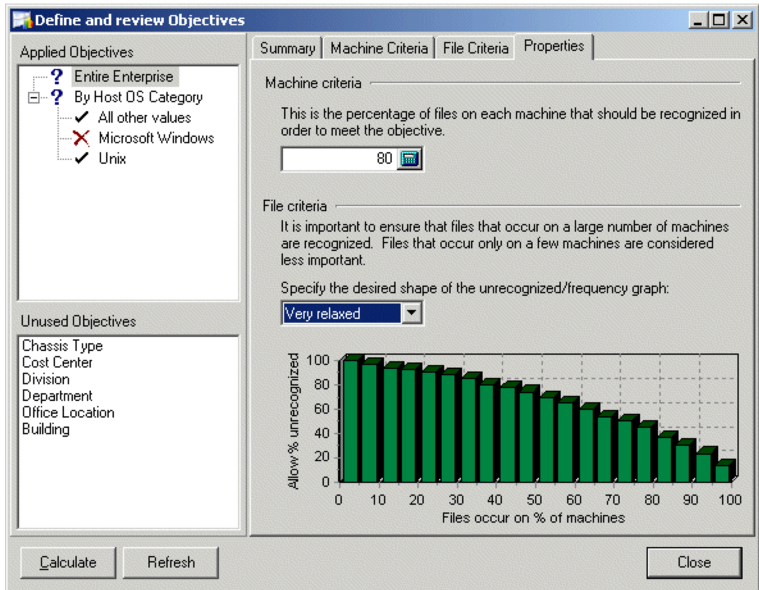
The **Define and review Objectives** dialog box is displayed with the **Summary** tab showing.

Note: This dialog box is non-modal. This means you can have it displayed while working in the Analysis Workbench workspace. Position the two dialog boxes on your screen so that you can work with both dialog boxes at the same time.

If the dialog box becomes hidden behind the main Analysis Workbench windows, it can be accessed through the Windows menu.

The Define and Review Objectives Dialog Box Properties Tab Page

▶ Click on the **Properties** tab.



The top left pane shows the **Applied Objectives.** These are used to measure progress and assist in the teaching progress. In the previous screenshot, four such objectives are defined.

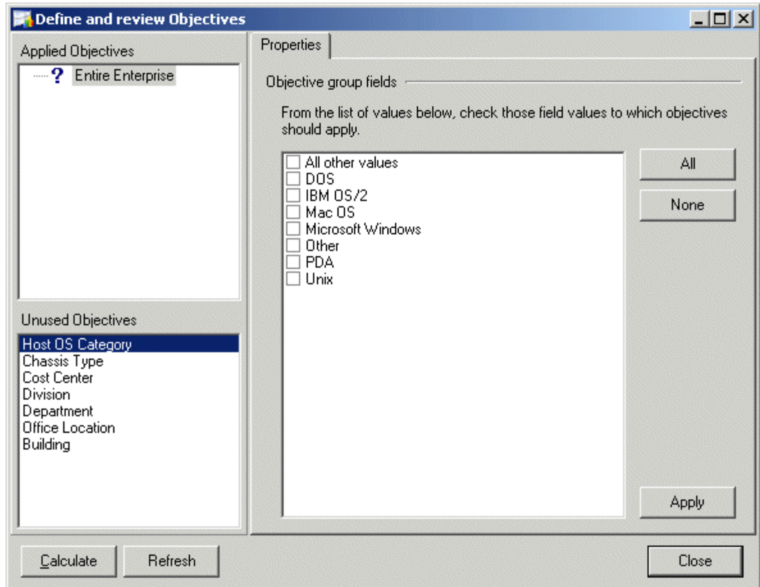
The top Applied Objective, **Entire Enterprise**, always applies to all machines loaded and is the only Objective that is defined by default. The next objective groups the loaded machines by **Host OS Category.** This allows you to specify different objectives for your Windows machines, UNIX machines and all other operating systems.

The Default Objective (**Entire Enterprise**) specifies a **Machine criteria** of 80% and the **File criteria** uses the **Standard** graph. These can be changed as required.

Further Information

For information about what the concepts of Machine and File Criteria are see *Using Recognition Objectives* on page 633.

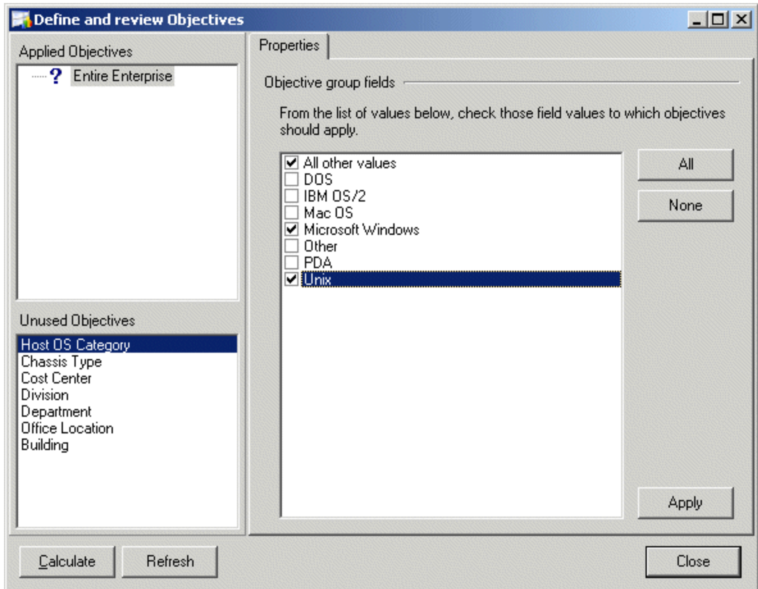
The bottom left pane shows the **Unused Objective.** These fields are available for selection. Click on an entry in this list and a list of Objective group fields for the Objective is shown on the right. The following example shows **Host OS Category**.



Adding an Applied Objective

To add an Applied objective:

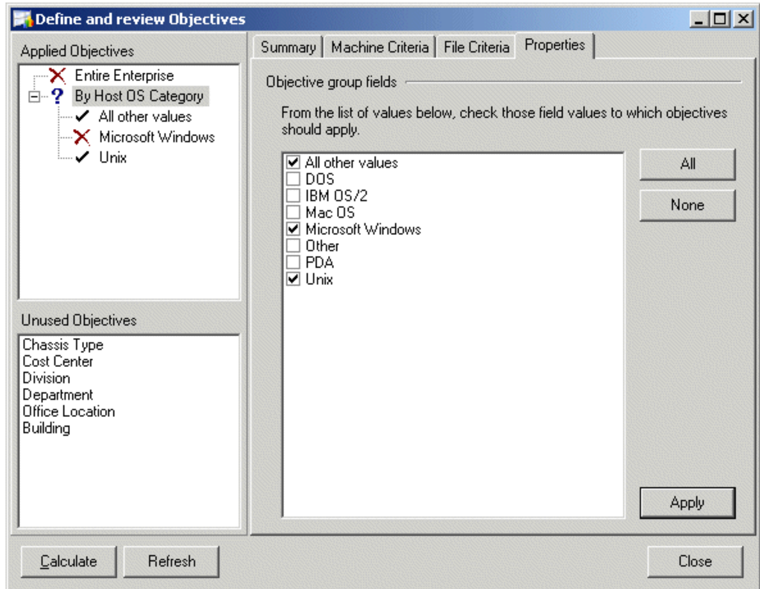
1. In the **Define and review Objectives** dialog box select the **Unused Objective** you want to add fields from. In this example the **Host OS Category** has been selected.



2 In the **Objective group fields** pane, check the box next to the fields to which the objectives will apply. In this example, the following fields will be applied:

- All other values
- Microsoft Windows
- UNIX

3 Click the **Apply** button. The entries are moved to the **Applied Objectives** pane.



Note: The **Objective group fields** for the Asset fields (For example, Cost Center, Division) are based on data available from the currently loaded scan files. If no scan files are loaded, or if no scan files define a particular field, the Objective group fields for that field will be empty perhaps except for the **Any other values** entry.

Removing an Applied Objective

To remove an Applied objective:

1. Select the Objective in the top left pane.
2. Uncheck the relevant **Objective group fields** in the right pane.
3. Click **Apply**.

The Applied Objective will be removed.

Loading and Saving Recognition Objectives

Recognition Objectives are stored in XML format.

Note: Recognition Objectives are automatically saved when the **Define and review objectives** dialog box is closed. They are saved to the location you specified in the **Startup** tab of the **Recognition Objective Options** dialog box. See page 487 for further information.

The Applied objectives have a pop-up menu associated with it that can be activated by right-clicking on the item.

- **Load Objectives...**

  Use this to replace the currently defined Objectives with a previously saved set of Objectives.

- **Save Objectives...**

  Use this to save the currently defined Objectives.

- **Save Objectives As...**

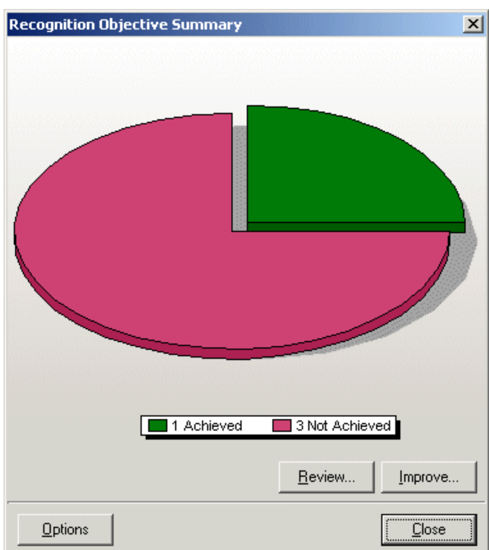
  Use this to save the currently defined Objectives to a file other than the one specified in the **Startup** tab of the **Recognition Objectives Options** dialog box.

Displaying a Summary of the Recognition Objectives

To display a summary of the Recognition Objectives:

▶ In Analysis Workbench, select **Objectives Summary...** from the **Recognition** menu.

A Summary chart is displayed.



This example shows that four Applied Objectives have been defined. One of those has been achieved, three have not been achieved.

If you see an undefined section of the chart (usually displayed in grey) it implies that the objective compliance has not been calculated.

To rectify this:

▶ Return to the **Define and Review Objectives** dialog box (select **Objectives...** from the **Recognition** menu) and click the **Calculate** button or click the **Recalculate Objectives** menu item in the **Recognition** menu.

Buttons in the Chart Page

There are three buttons in the Chart page:

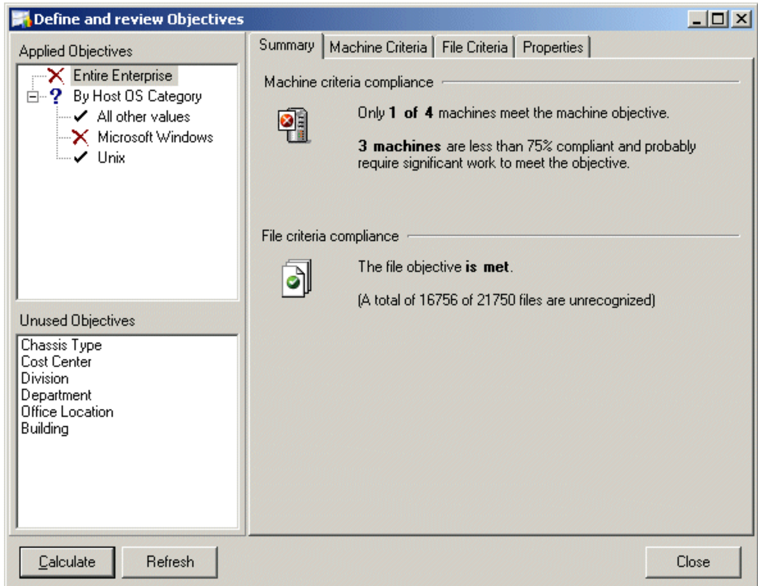
- Click the **Review...** button to get a more detailed view of the state of the objectives. See *Reviewing Recognition Objectives*, next for further details.
- Click the **Improve...** button to start the SAI Teaching Wizard that can help achieve those objectives that still need some work. See *Using Objectives to Improve Recognition - The SAI Teaching Wizard* on page 503 for further details.
- Click the **Options** button to launch the Recognition Objectives Options dialog box. See *Setting Recognition Objectives Options* on page 487 for further details.

Reviewing Recognition Objectives

To review the Recognition Objectives in detail:

1. In Analysis Workbench, select **Objectives...** from the **Recognition** menu, or click the **Review...** button when the **Objective Summary** screen is shown.
2. Click the **Summary** tab.

The following tab page is displayed.



At a glance, you can see from the tree view on the left that two of the Applied objectives have not been achieved (indicated by the ✗ icon) and two have been achieved (indicated by the ✔ icon).

The red X  on the **Machine criteria compliance** icon shows that the machine criteria was not met, and the text explains that only 1 of the 4 machines loaded meet the criteria. In order for the objective to be achieved, all of the machines must meet this criteria.

The green tick  on the files icon shows that the file criteria was met (and this is in spite of the fact that more than 11000 files are unrecognized).

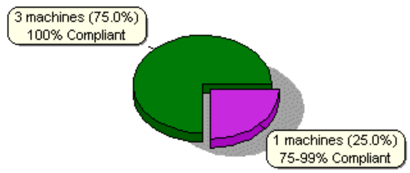
To manually recalculate objective compliance (which may be necessary if some of the automatic options are disabled and circumstances have changed):

▶ Click the **Calculate** button in the **Objective Review** dialog box.

Reviewing Machine Criteria

To get more detail about the Machine criteria:

▶ Click on the Machine Criteria tab, which shows a pie chart of the machines.



- Three of the machines are compliant (Green). That is, at least 80% of the files on these machines are recognized.
- One machine is close to compliant (Purple).

The percentages show how close the machines are to achieving the criteria. The machine (Purple) that is 75-99% compliant has a recognition rate of 75-99% of the target 80%. That is, the recognition rate is between 60% and 79%.

If you move the mouse over the pie chart, the individual slices of the chart are highlighted.

Right-click to get a pop-up menu that applies to a slice of the pie chart. From the pop-up menu, you can do the following:

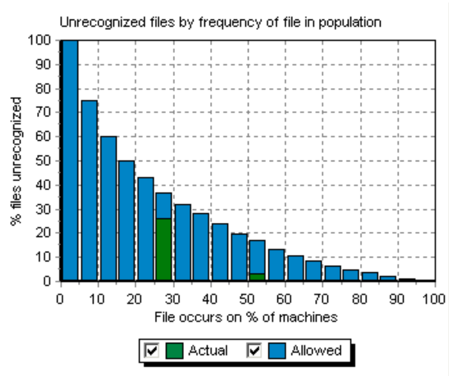
- Tag the machine(s) related to the pie slice to investigate it further in the normal Analysis Workbench windows.
- Untag those machine(s) related to the pie slice.
- Copy the Chart to the clipboard. This may be useful for including it in a report.

Reviewing File Criteria

To get more detail about the File criteria for an objective:

Click on the **File Criteria** tab.

This shows a bar chart containing both the desired (allowed) shape of the unrecognized/frequency chart as well as the actual shape of it.



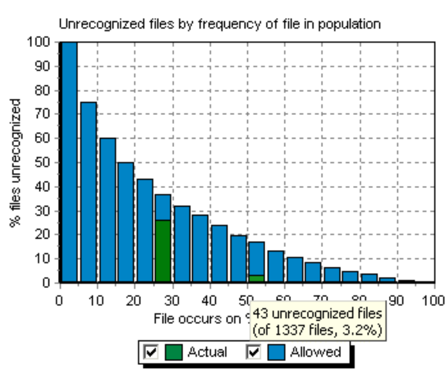
- Actual values are shown in green.
- Allowed values are shown in blue.

For this objective, the **File criteria** is met. All of the green Actual values are lower than the blue Allowed values.

Note: When only a few machines are loaded, not all of the categories are used, but the File criteria graph always shows 20 bars evenly distributed between 0 and 100%, irrespective of the number of machines loaded.

Moving the mouse over the Actual values shows a pop-up label with details of the data point in question.

For example, the bar spanning 50-55% on the Y-axis shows the following text in the pop-up:

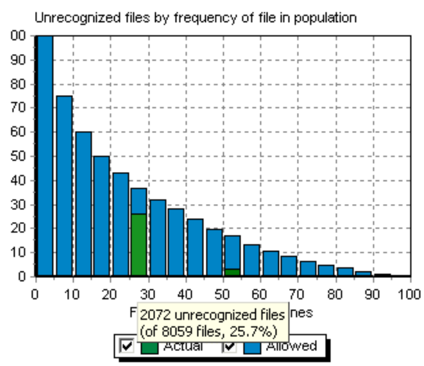


- 43 unrecognized files (of 1337 files, 3.2%)

  This means that 1337 files occur on 50-55% of the loaded machines, and that 43 of these - or 3.2% have not been recognized.

This also demonstrates how it is possible for the file criteria to be met, even though thousands of files are unrecognized. The majority of unrecognized files probably occur on just a few machines and are therfore not as important as the common ones.

To illustrate, the bar spanning 25-30% on the Y-axis shows the following text in the pop-up:



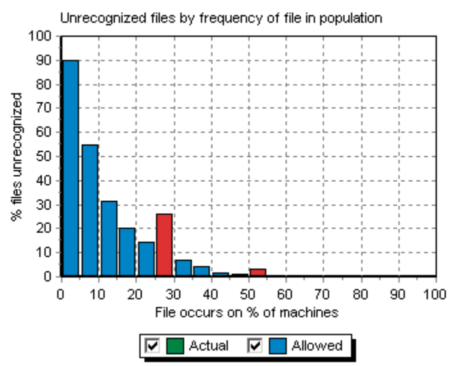
- 2072 unrecognized files (of 8059 files, 25.7%)

  This means that 8059 files occur on 25-30% of the loaded machines, and that 2072 of these - or 25.7% have not been recognized.

When teaching, you will want to start with the 43 files that occur on 50-55% of the machines rather than the thousands that occur on just a few machines.

An Example of File Criteria Not Met

Here is an example where the **File criteria** is not met.



In this example:

- The File criteria has been set to **Strict** in the **Properties** tab page and is not met by the scan files loaded.
- The **Highlight noncompliant items** option is checked, which is why all of the Actual values are red instead of green. This is to indicate that the Actual value is higher than the Allowed one.

Note: In this example, only four machines are loaded so only the 25%, 50% and 75% categories are used. The other values can simply be ignored.

This chart has a pop-up menu that is shown when right-clicking on one of the Actual bars.

From the pop-up menu, you can:

- Tag or Untag the files in question, and Tag the machines to which the objective applies.

Note: For the **Entire Enterprise** objective, this means that all machines are tagged when a set of files are tagged from this pop-up menu.

- Copy the chart to the clipboard.

Using Objectives to Improve Recognition - The SAI Teaching Wizard

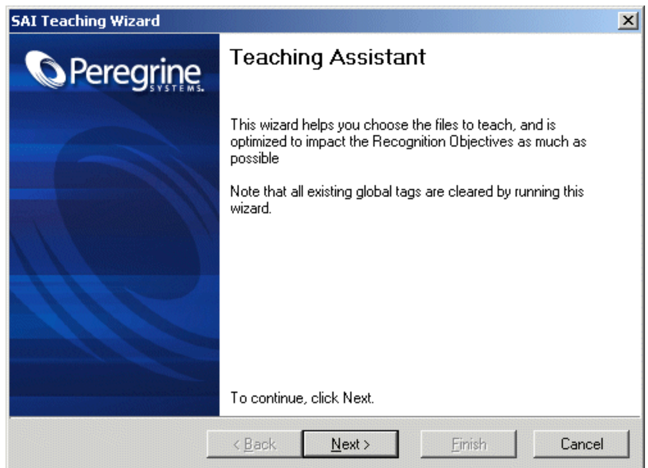
Having defined a set of objectives, the SAI Teaching Wizard can make use of the objective information to choose which files to teach.

Note: When the teaching wizard is run, all global tags are cleared.

To start the SAI Teaching Wizard:

1 Select the **SAI teaching Wizard** option from the **Recognition** menu.

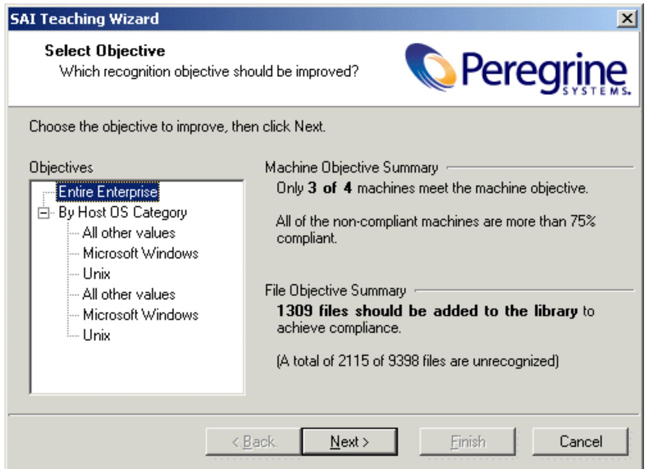
The **Teaching Assistant** is displayed.



2 Click **Next** to continue.

Choosing an Objective to Improve

The next page of the wizard allows you to choose which of the Applied objectives should be improved.

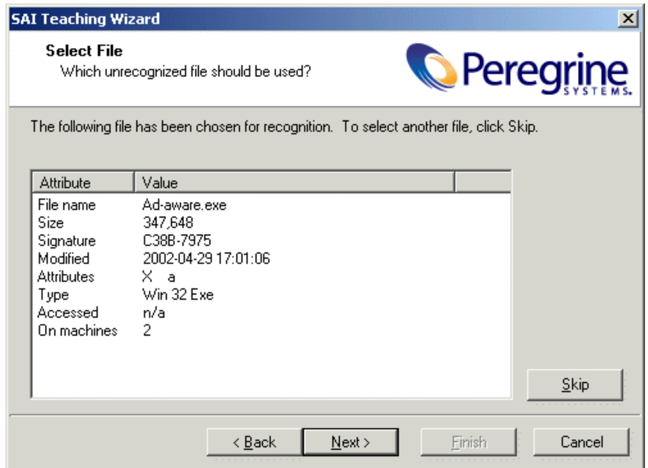


The objectives are shown in a tree view and when an objective is selected, a summary of the objective is shown on the right.

1. Select the objective.
2. Click **Next** to continue.

Selecting an Unrecognized File

On this page, the wizard constructs a list of unrecognized files that occur on machines related to the selected objective. It suggests the file that occurs on most machines.

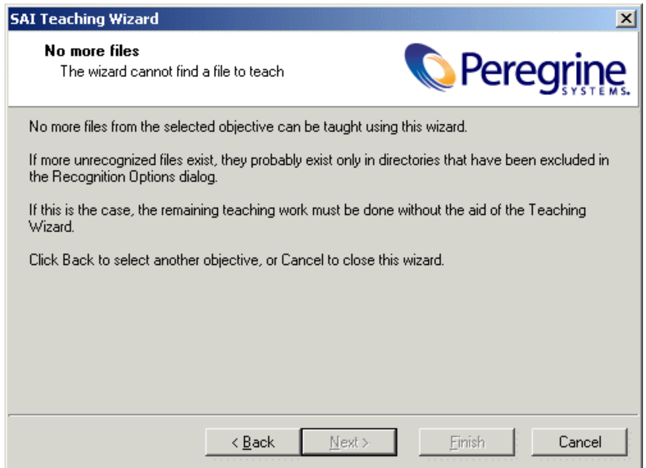


This page shows details of the selected file. The details are similar to those found in the **Files** window, as well as the number of machines on which it is found.

▶ If the selected file is not one that you wish to teach at this time, click the **Skip** button or click the **Next** button to select the file shown for teaching. The wizard will choose the next candidate for teaching until there are no more unrecognized files to teach.

The following page is displayed if there are no more files from the selected objectives that can be taught.

You may need to manually teach the remaining unrecognized files. For more information about manually teaching a file to the User SAI, see *Teaching an Unidentified Application* on page 469.



Automatic Selection of a Set of Files

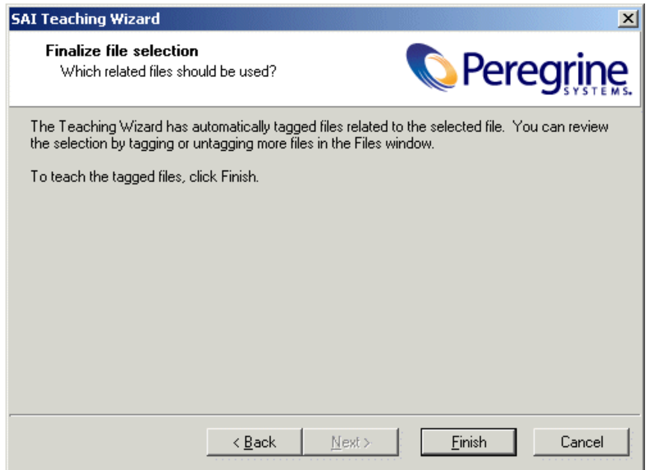
Because most files do not exist alone, but are installed along with a group of other files making up an application, it rarely makes sense to teach files individually.

For this reason, the teaching wizard automatically performs the following steps at this point:

- Tags the file selected for teaching.
- Tags all machines (in the objective) on which it occurs.
- Applies a machine and file filter to the **Directories** window.
- Tags the first directory in the **Directories** window (that is, the first directory that has not been excluded).
- Applies a machine and directory filter to the **Files** window.
- Tags all files in the **Files** window.

In other words, this set of steps tags all files that occur in the same directory as the selected file, because these are all files that are likely to belong to the same application.

The wizard shows a confirmation dialog box.

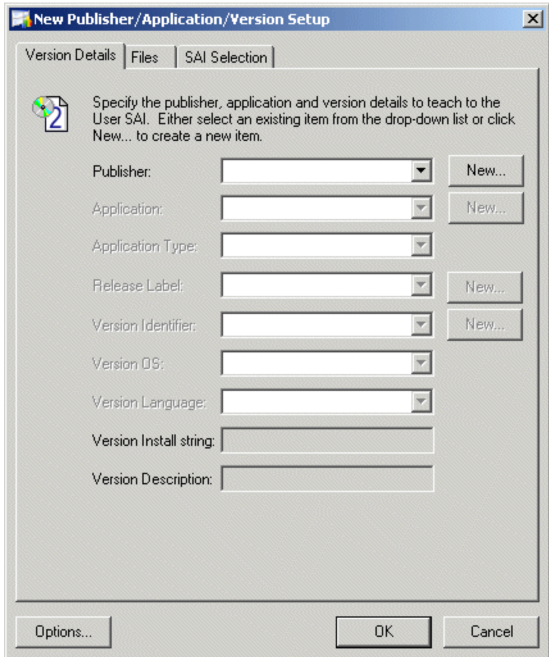


At this stage, you can switch back to the Analysis Workbench **Files**, **Machines** and **Directories** windows view to review the automatic selection.

Review each of the tagged files to ensure the selection is valid. You can untag some files, tag some more and so on, before proceeding.

▶ When you are satisfied with the selection of files, click the **Finish** button.

The **New Publisher/Application/Version Setup** dialog box is displayed. Here you can enter details about the application to which the tagged files belong. See *The SAI Editor* on page 482 for more information about how to fill in these details.



Reporting on Inventory Data

In This Section...

Reporting - an Introduction

Analysis Workbench provides a wide range of standard reporting options as well as user-defined reporting in the form of a Report Wizard.

Global reports can be generated by selecting options from the **Reports** main menu or window specific reports can be generated by selecting the options from the **Output** toolbar menu item in the information window. In both cases, either Standard or Detailed reports can be requested.

Standard Report

All standard reports are shown in a list view (that is, one line per group). Each report layout is saved to a report template file (.RTM). This allows for easy troubleshooting and custom editing and allows report layouts to be saved in the same file (for example, label positions, fields).

Having chosen a (non-custom) report type, the **Preview** and **Print** buttons become active and can be used to open a preview window or print the report, respectively. Alternatively, the **Back** button can be chosen to further customize or review the report settings.

Standard reports are created by:

- Selecting from the following in the main menu:
  - For a Machines standard report - **Reports|Machines|All...**
  - For a Files standard report - **Reports|Files|All...**
  - For a Directories standard report - **Reports|Directories|All...**
  - For a Applications standard report - **Reports|Applications|All...**
- Selecting **All...** from the information window Output 

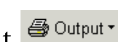
toolbar menu.

Detailed Report

Generates a detailed report (that is, one line per item). Options can be changed by clicking the **Back** button to further customize or review the report settings.

- For Machines - This type of report is by application
- For Applications - This type of report is by machine
- For Directories - This type of report is by machine
- For Files - This type of report is by machine

Detailed reports are created by:

- Selecting the following from the main menu:
  - For a Machines detailed report - **Reports|Machines|By Application...**
  - For a Files detailed report - **Reports|Files|By Machine...**
  - For a Directories detailed report - **Reports|Directories|By Machine...**
  - For a Applications detailed report - **Reports|Applications|By Machine...**
- Selecting the following from the window Output 

toolbar menu:
  - For a Machines detailed report - **Output|By Application...**
  - For a Files detailed report - **Output|By Machine...**
  - For a Directories detailed report - **Output|By Machine...**
  - For a Applications detailed report - **Output|By Machine...**

User Memos

The user memos provided by the Analysis Workbench are a special type of report which detail information about the software installed across the computer population. They also provide a means of gathering further information about the installed software which cannot be collected directly during the software inventory, or inferred from the analysis of the data.

They provide preformatted questionnaires that can be used in consultation with individual users, to assist with the management of the installed software base across the population.

The two types of user memos provided by the Analysis Workbench are:

- **The Unknown Files** memo which lists the unknown software files for each computer and provides a means of collecting further information to identify and manage applications and their associated files.
- **The Identified Applications** memo which lists the identified applications with number of copies found for each computer. It also provides a means of collecting information about the licences held for each application, and whether the application is required.

Each memo provides options for generating memos, individually for each machine or across the population, with options to focus on specific files and applications where more information is required.

To generate a user memo select one of the **User memos** options from the **Reports** main menu.

The Unknown Files memo and Identified Applications memo are predefined and therefore require no setting up.

Ways of Producing a Report

A report can be produced by selecting:

- The options in the **Reports** main menu. This menu provides options on generating the following types of reports:
  - **Machines** - A predefined report on the contents of the Machines window
  - **Applications** - Both Standard and Detailed reports
  - **Directories** - Both Standard and Detailed reports
  - **Files** - Both Standard and Detailed reports
  - **User memos** - Produces a list of Unknown files and Identified Applications for each computer. See *User Memos* on page 510.
  - **Wizard** - Displays the Report Wizard. See *The Report Wizard* on page 514.
- The **Output** toolbar menu in the information windows toolbars (Applications, Machines, Files, Directories). These menus provide options on generating the following types of reports:
  - **Standard** - Generates a standard report (that is, one line per group)
  - **Detailed** - Generates a detailed report (that is, one line per item)

- **Report from Window** - Sets up a standard report with the fields and filters as defined in that window

Using these facilities, single-page reports summarizing a window, or multi-page reports with one line per item in the window, can be printed or saved to a file.

Predefined Reporting

All the **Standard** and **Detailed** reports are predefined and therefore require no setting up. If required, options can be changed by clicking the **Back** button to reach the page that contains the options that you want to change. See *The Report Wizard* on page 514 for more details on what the options are and how to set them.

You can locate templates for these reports in the following default location:

`C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Analysis Workbench\Reports`

Note: Please note that only the last page of the wizard contains the predefined template information. When you click the **Back** button, the defaults are restored for that type of reports and you will lose the template settings.

Predefined Report Information

Window	Reported fields	Templates
Files		
Standard	Name, Publisher, Application, Version, Language, Copies, Status	StdFile.RTM
Detailed	Report by each machine: Asset Tag, Name, Size, Signature, Modified, Attribute, File Type, Status	DetFile.RTM
Machine		
Standard	Asset Tag, Last Name, Scan Date, Total Memory, Host Operating System, CPU, Asset Tag/ID	StdMachine.RTM

Window	Reported fields	Templates
Detailed	Report by each application: Primary Data Source: Publisher, Application, Version, Release, Operating System, Language Code, Machines, Installs, Licences. Secondary Data: Asset Tag, Scan Date, Description, Host Operating System, Total Memory, Asset Tag, CPU, Last Name	DetMachine.RTM
Application		
Standard	Publisher, Application, Version, Release, Operating System, Language Code, Machines, Licences, Licences Apps	StdApplication.RTM
Detailed	Report by each machine: Asset Tag, Publisher, Application, Version, Release, Operating System, Language, Licensable, Licenced by version, Version ID.	DetApplication.RTM
Directories		
Standard	Name, Count, Main	StdDirectory.RTM
Detailed	Report by each machine: Asset Tag, Name, Drive, Main (means it is not a Main Application Directory)	DetDirectory.RTM

The Report Wizard

In This Section...

The Report Wizard Introduction

The Report Wizard enables you to create customized reports on the contents of the window. Report templates (including the frontsheets) can be created for specific requirements.

Starting the Report Wizard

The Report Wizard is displayed by selecting the **Wizard...** option in the **Reports…** main menu.

The Report Wizard User Interface

The Report Wizard consists of eight pages. The pages displayed, depend on which type of report you selected in the first page.

Page	Page name	Available for...
1	Select Report Type	All report types
2	Define Report Layout	All report types

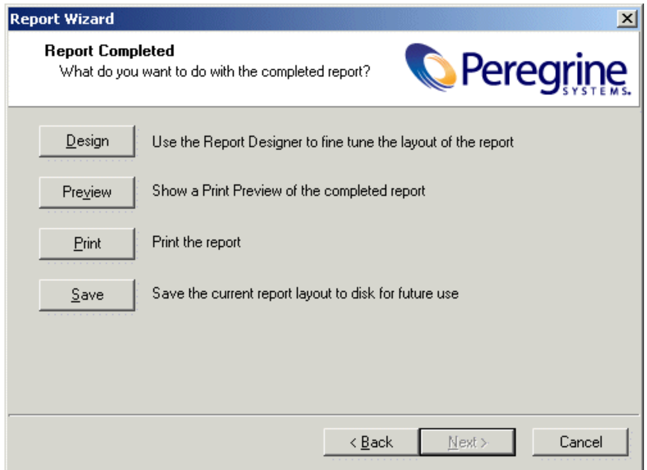
Page	Page name	Available for...
3	Define Title Page layout	All report types Only displayed if you selected **Include title page** in page 2
4	Select Primary Data Source	All report types
5	Configure Primary Data Source	All report types
6	Select Secondary Data Source	Master/Detail report Detailed machines report
7	Configure Secondary Data Source	Master/Detail report Detailed machines report
8	Report Complete	All report types

Printing Reports

The last page in the Report Wizard has a **Print** button, that allows reports to be printed. Using these facilities, single-page reports summarizing a window, or multi-page reports with one line per item in the window, can be printed or saved to a file.

To print a report or save a report to a file:

- Select the **Print** button on the last page of the report wizard or select the **Print** option from the **File** menu in the Report Designer (selected by clicking the **Design** button in the last page of the **Report Wizard**).



Changing the Default Paper Size

The default paper selection for printing reports is A4.

To change the default paper size in Report Designer:

1 Click the **Design** button in the last page of the Report Wizard. The Report Designer is displayed.

2 Open the **File** menu and select **Page Setup.** The Page Setup dialog box is displayed.

3 click the Paper size tab and set up the desired paper size.

Saving Reports to Various File Formats

Reports can also be saved to various file formats.

To save reports to various file formats:

1 Click the **Print** button in the last page of the Report Wizard. The Print dialog box is displayed.

2 Click the **Print to File** check box if you want the report to be saved to a file.

Select the format that the file is to be saved in from the drop-down list. The file formats that are supported are as follows:

- Excel File (.xls)
- RTF file (.rtf)
- PDF file (.pdf)

3 Click the **OK** button.

Different Types of Reports

Two types of report that can be generated from the Report Wizard.

- Standard report
- Master/Detail report

Standard Report

This type of report is Line Item reports (showing one line of information per line item, in a columnar fashion).

This has a primary data source only. The following standard reports can be generated:

Primary data source	Description
Machines	Report summarizing processor type and so on.
Applications	Report summarizing most common applications installed, licences required and so on.
Files	Report summarizing contents of the Files window
Directories	Report summarizing contents of the Directories window.

Example Standard Report

The following figure shows what a standard applications report may look similar to the following:

Applications Report

Publisher	Application	Version	Machines	Installs	Licences
Inprise	Database Desktop	7.0	1	1	1
Microsoft	InterBase Server	4.1.0.116	1	1	1
Microsoft	Visual Analyzer	6.0	1	1	1
Microsoft	Visual J++	6.0 pro sp3	1	1	1
Microsoft	Visual SourceSafe	6.0 ent sp2	1	1	1
Microsoft	Visual InterDev Client	6.0 ent	1	1	1
Microsoft	Visual Basic	6.0 ent sp2	1	1	1
Microsoft	Visual C++	6.0 ent sp2	1	1	1
IBM	DB/2	5.0	1	1	1
Lotus	Lotus Mail	4.52		1	0

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In this example, the primary data source is Applications the (set up on page 3 of the Report Wizard).

The following columns have been selected as the primary data source columns (set up on page 4 of the Report Wizard):

- Publisher
- Application
- Version
- Machines
- Installs
- Licences

Master/Detail Report

Master/Detail reports (showing a master items followed by a columnar listing of all detailed items relevant to the master item, repeated for all master items). An example of a Master/Detail report could be Machines/Applications, which would show a summary of each machine, followed by a summary of applications identified on that machine.

This has a primary data source and a secondary data source. The primary data source is displayed at the top of the final report and the secondary data source items are displayed underneath.

The following Master/Detail reports can be generated:

Primary data source	Secondary data source	Description
Machines	Applications	For each application, show machines on which it occurs
Machines	Files	For each file, show machines on which it occurs
Machines	Directories	For each directory, show machines on which it occurs
Applications	Machine	For each machine, show applications installed
Applications	Files	For each file, shows which application it occurs in
Files	Machines	For each machine, show files it contains
Directories	Machines	For each machine, show Directories on it
Directories	Files	For each file, show directories in which it occurs

Example Master/Detail Report

The following figure shows what a Machines/Applications - Master/Detail report may look as follows:

Applications on Machines Report

Asset Number	**Host Operating System**	**Base OS Directory**
Paris02	Windows NT 4.0 Workstation	C:\WINNT
Application	Version	OpSys
Access	97sr2a/b	Windows 95/NT4
Word	97sr2a/b	Windows 95/NT4
IRC Client	4.2b2 pro	Windows NT4
Outlook	4.2b2 pro	Windows NT4

Asset Number	**Host Operating System**	**Base OS Directory**
Paris01	Windows 95	C:\Windows
Application	Version	OpSys
VisualSourceSafe	5.0	Windows 95/NT4
Visual FoxPro	1.0 sp3	Windows 95/NT4
QuickTime	5.0s pro	Windows 95/NT4
RealPlayer	4.0.20.158	Windows 9x/NT4

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The primary data source is Machines (set up on page 3 of the Report Wizard) and the secondary data source is Applications (set up on page 6 of the Report Wizard).

In this example, the following columns have been selected as the primary data source columns (set up on page 4 of the Report Wizard):

- Asset Number
- Host Operating System
- Base OS directory

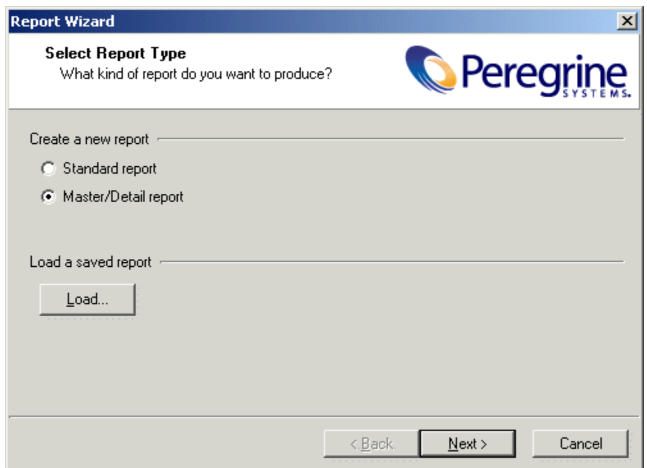
The data has been grouped by Asset Number (set up on page 4 of the Report Wizard).

The following columns have been selected as the secondary data source columns (set up on page 7 of the Report Wizard):

- Application
- Version
- OpSys

Page 1: Select Report Type

The first screen of the Report Wizard is used to choose the type of report to be generated.



Two different types of report are shown:

Standard

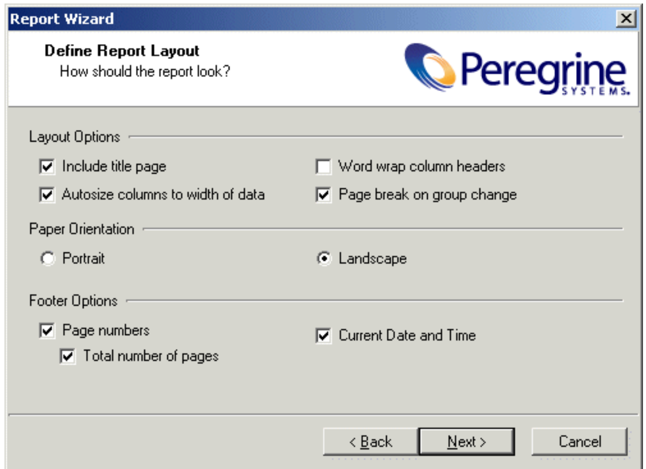
This type of report is Line Item reports (showing one line of information per line item, in a columnar fashion)

Master/Detail

Master/Detail reports (showing a master items followed by a columnar listing of all detailed items relevant to the master item, repeated for all master items). An example of a Master/Detail report could be Machines/Applications, which would show a summary of each machine, followed by a summary of applications identified on that machine.

Page 2: Define Report Layout

For all reports, various print options can be defined without resorting to the Report Designer.



The following options can be set on this page of the wizard:

Layout Options

Option	Description
Include title page	If selected, a title page describing the report, total number of pages, date and time of printing and so on will be printed.ss
Autosize columns to width of data	Adjusts the width of the columns so that all the data is visible.
Wordwrap column headers	Wordwrap enables you to see all the text in the column header.
Page break on group change	This option is only enabled if either the Master/Detail report – multiple pages per machine options are selected in the previous screen. Each group will be displayed on a separate page in the report.

Paper Orientation

Option	Description
Portrait	Prints the report so that the short edge of the paper is the top of the page.
Landscape	Prints the reports so that the long edge of the paper is the top of the page.

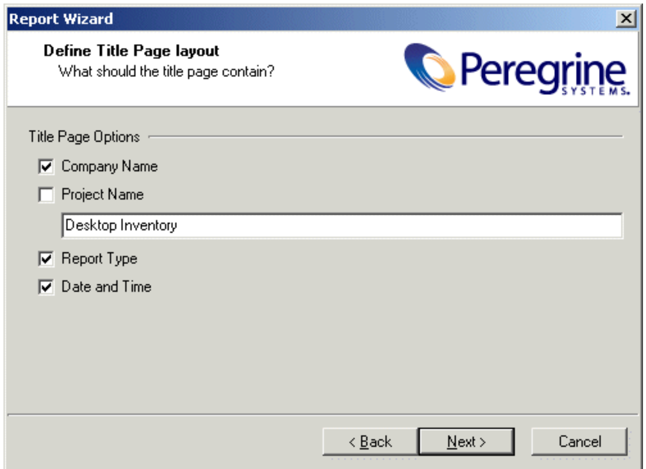
Footer Options

Option	Description
Page numbers	If selected, the footer of each report page will include a page number in the left corner.
Total number of pages	If selected (only valid with Page Numbers option), the report will include 'Page x of n' on each page. This option increases the time taken to print the report.
Current Date and Time	If selected, the footer of each page will include the date and time of printing in the right corner.

Click the **Next** button to continue to Page 3: Define Title Page Layout if you selected the **Include title page** option. If you did not select this option you will go directly to Page 4: Select Primary Data Source.

Page 3: Define Title Page Layout

This page is only displayed if you selected the **Include title page** option in Page 2.



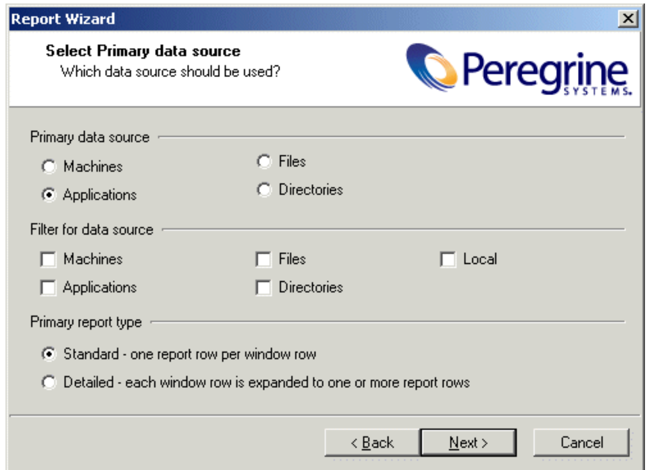
Title Page Options

Option	Description
Company Name	Displays the Company name specified in the Licence agreement, on the title page.
Project Name	Displays the name of the inventory as specified in the field on the title page.
Report Type	Displays the report type as selected in the Report Type Screen on the title page.
Date and Time	Displays the date and time that the report was generated on the title page.

Click the **Next** button to display Page 4: Select Primary Data Source.

Page 4: Select Primary Data Source

The primary data source for the report can now be chosen. The primary data source are the column headers at the top of the report.



For predefined **Standard** reports or for reports initiated from one of the standard windows, the options are preselected as appropriate; the choice is between Applications, Machines, Files and Directories.

In addition to choosing the data source, Filter options can be chosen. The filter option works the same way as in the Analysis Workbench windows; when a filter is chosen, only items with a tag matching the selected filter will be shown in the report. Using the filters can dramatically reduce the amount of data being reported.

Note: If a report with filters selected is reporting blank entries, then either check the tags to see if they are correctly set or remove the filter to see if it now produces report details.

Primary Data Source

Option	Description
Machines	Uses the contents of the Machines window as the primary data source.
Applications	Uses the contents of the Applications window as the primary data source.
Files	Uses the contents of the Files window as the primary data source.
Directories	Uses the contents of the Directories window as the primary data source.

Primary Data Source Filter

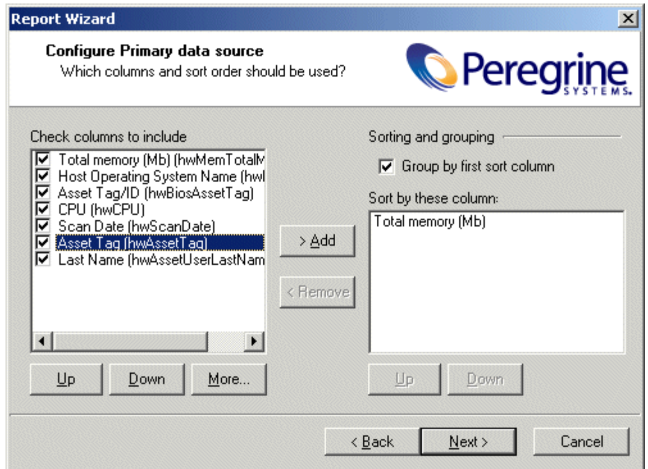
Option	Description
Machines	Applies a Machines filter to the primary data source.
Application	Applies a Applications filter to the primary data source.
Files	Applies a Files filter to the primary data source.
Directories	Applies a Directories filter to the primary data source.
Local	Applies a Local Tag filter to the primary data source.

Primary Report Types

Option	Description
Standard	Produces a Standard report - only available for Standard reports.
Detailed	Produces a Detailed report - only available for Standard reports.

Click the **Next** button to display Page 5: Configure Primary Data Source.

Page 5: Configure Primary Data Source



Columns to Include List

For Standard and Detailed reports, you can select the columns to include in the report. The columns available depend on the primary data source selected, and are displayed as a list of check boxes which you can select.

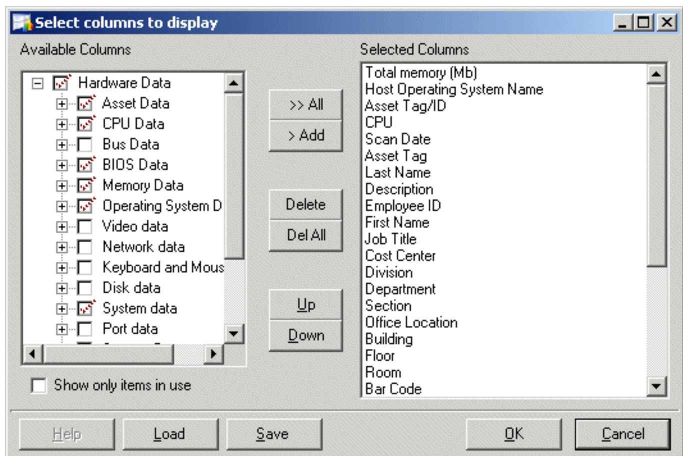
If the report was initiated from one of the information windows, the columns selected default to the ones visible in that window.

The buttons in this page are used as follows:

Button	Function
	Move the entry up a position in the list.
	Move the entry down a position in the list.
	Displays a dialog box allowing you to select more columns for a Machine. This button is only enabled if machine data is the primary source.

Button	Function
	Adds a column to the **Sort by these columns** list.
	Removes a column from the **Sort by these columns** list.

Columns displayed in any **Machines** window are selectable by clicking the **More...** button. The following dialog box appears.



- The **Available columns** list shows all the available categories and fields. Clicking on the + sign expands the category and shows the fields that are contained in it. A check box is displayed next to each category and field. A dotted check box next to the category indicates not all the fields in that category have been selected (that is, only some fields have been selected). Clicking on a partially checked category will select all fields in the category. Clicking again will deselect all fields.
- The **Selected columns** list shows the fields that have been selected to be displayed as columns in the **Machines** window.
- The **Show only items in use** option will ensure that only hardware items that actually exist in one of the loaded scan files are shown in this tree.

Select the columns that you want to display in the report by checking the box next to the column name.

Either drag a category from the left list to the **Selected columns** list, or select the check box next to the category and click the >**Add** button. The functions of the other buttons are as follows:

- To add all the available columns to the **Selected columns** list click the >>**Add** button.
- To remove an entry from the **Selected columns** list click the **Delete** button.
- To delete all entries in the **Selected columns** list click the **Del All** button.
- You can move the position of entries in the **Selected columns** list using the **Up** and **Down** buttons.

Sorting and Grouping

In page 5 of the wizard select the **Group by first sort column** box to group the report by the first column in the **Sort by** list box is. A different group header is added for the first column.

The **Sort by these columns** list is used to control on which column(s) the data is sorted when output.

This sorts the report by the columns in the **sort by** list box. For example, if the Sort by list shows the following entries:

- Asset Number
- Host Operating System
- Build Level

The report will be sorted first by Asset Number then within each Asset Number category by Host Operating System, then within each Host Operating System category by Build Level.

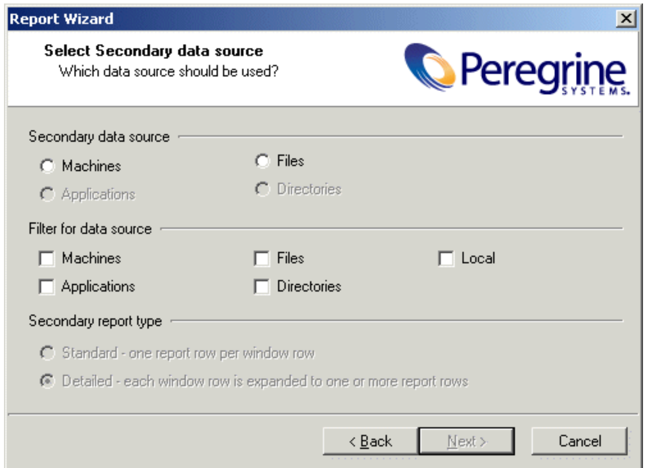
Click the **Next** button to continue to Page 6: Select Secondary Data Source.

Note: This page is only displayed if the **Master/Detail report** option was selected in the **Page 1 Select Report Type** page.

Page 6: Select Secondary Data Source

Note: This page is only displayed if the **Master/Detail report** option was selected in the **Page 1 Select Report Type** page.

The secondary data source for the report is now chosen.



Selecting the Secondary Data Source

Depending on the primary data source selected, the secondary data sources can be selected as follows. Unavailable options are disabled.

Primary data source selected	Secondary data source available	Description
Machines	Applications	For each application, show machines on which it occurs
Machines	Files	For each file, show machines on which it occurs
Machines	Directories	For each directory, show machines on which it occurs
Applications	Machine	For each machine, show applications installed
Applications	Files	For each file, shows which application it occurs in.
Directories	Machines	For each machine, show directories on it.
Directories	Files	For each file, show directories in which it occurs.
Files	Machines	For each machine, show files it contains.

Secondary Data Sources

Option	Description
Machines	Uses the contents of the Machines window as the secondary data source.
Applications	Uses the contents of the Applications window as the secondary data source.
Files	Uses the contents of the Files window as the secondary data source.
Directories	Uses the contents of the Directories window as the secondary data source.

Selecting the Filter for the Data Source

In addition to choosing the data source, filter options can be chosen.

The filter option works the same way as in the Analysis Workbench windows: when a filter is chosen, only items with a tag matching the selected filter will be shown in the report. Use the check boxes to select all, none or some of the possible filters (Applications, Machine, Files, Directories and Local).

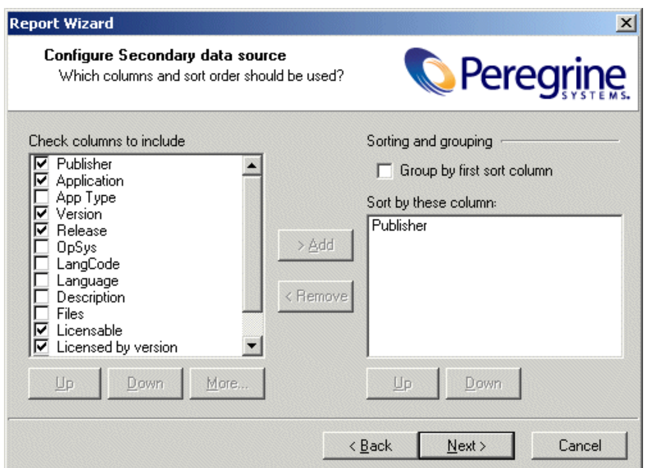
Option	Description
Machines	Applies a Machine filter to the secondary data source.
Applications	Applies a Application filter to the secondary data source.
Files	Applies a File filter to the secondary data source.
Directories	Applies a Directory filter to the secondary data source.
Local	Applies a Local Tag filter to the secondary data source.

Selecting the Secondary Report Type

Option	Description
Standard	Not available for secondary source – always detailed.
Detailed	Not available for secondary source – always detailed.

Click the **Next** button to continue to Page 7: Configure Secondary data source.

Page 7: Configure Secondary Data Source



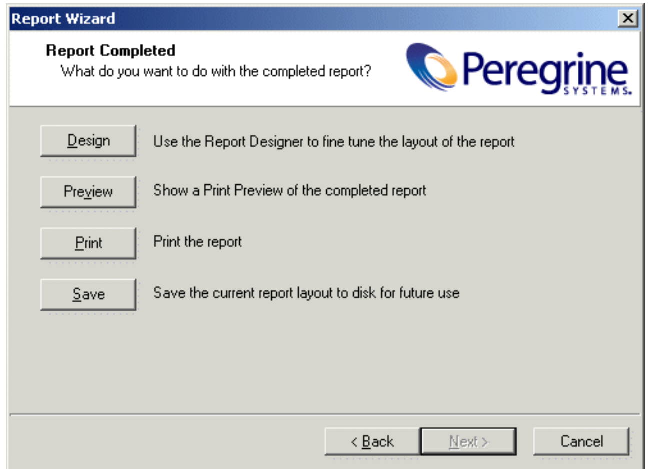
For Standard and Detailed reports, you can select the columns to include in the report. The columns available depend on the secondary data source selected, and are displayed as a list of check boxes from which you can pick options.

The layout and usage of this tab page is identical to that of *Page 5: Configure Primary Data Source* on page 527.

Click the **Next** button to continue to Page 8: Report completed.

Page 8: Report Completed

You are presented with the final screen after you have finished setting up your report.



The buttons in this page of the dialog box have the following functions:

- **Design** - The generated report can be modified using the built-in report designer. The report designed is an advanced tool that allows many types of manipulation of the report, based on the chosen data sources. See *The Report Designer* on page 534 for more information.
- **Preview** - Displays a view that shows how a report will look when it is printed. Multiple pages can be viewed at a time. Pages can be magnified or reduced in size.
- **Print** - Prints the report to the printer or to a file. See *Printing Reports* on page 515 for more information.
- **Save** - The generated report can be saved to a file.
- **Back** - Go back to previous screens to change any of the options and settings.
- **Cancel** - Aborts the report generation. You are returned to the Analysis Workbench workspace.

The Report Designer

In This Section...

Report Designer - Introduction

After data for the reports has been selected from the Report Designer, you can begin designing your document layout.

Report Generation is the term used to describe what happens when you click on the **Preview** tab in the Report Designer. You see the generated document in the print preview window. If the report does not look correct, return to the Design area to make the changes necessary to get the document to generate properly.

Starting the Report Designer

The Report Designer is invoked by clicking the Design button in the final page of the Report Wizard (this page is displayed by default when you select any other reporting options in Analysis Workbench).

Report Layouts

A layout is a combination of objects that describe how the report will look.

The layout can be used to generate many different documents, all based on the data selected. The white rectangular areas with the grey bars below are called bands. This report has a Title, Header, Detail and Footer band. When Report Builder generates a document from this layout:

- The objects in the Title band will appear at the top of the page.
- The objects in the Header band will appear below the Title band objects.
- The objects in the Details band repeat down the page until no more page space is available at which point a new page will be started.
- The objects in the Footer Band will appear at the bottom of the page.

The Detail band prints once for each row of your data selection. This is how a document is created from the layout. Different documents can be generated from the same layout by simply changing the data selection.

Report Designer User Interface

In This Section...

Rulers

The horizontal ruler allows you to determine a component's position on the page. The vertical ruler for each band allows you to determine a component's position relative to the starting print position of the band.

Bands

The grey rectangular area below the white space of the band can be dragged, allowing you to redefine the height of the band.

Status Bar

This displays messages and object positions.

Speed Menus

Speed menus are shortcut menus that appear when you position your mouse cursor over an object and press the right mouse button.

Dialog Boxes

Page Setup Dialog Box

This dialog box is accessible through the File – Page Setup menu option. It is used to specify paper size and orientation and to control column layouts.

Print Dialog Box

This dialog box is accessible through the File – Print menu option. It is used to specify settings for exporting report data.

Print to File Setup Dialog Box

This dialog box is accessible through the File – Print to File Setup menu option. It is used to specify settings for exporting report data to ASCII text. You can control what data from each band gets exported and the order of the output fields. Fixed length, tab-delimited, and comma-delimited record types are supported.

Groups Dialog Box

This dialog box is accessible through the Report – Group menu option. It is used to create, modify and re-order report groups.

Display Format Dialog Box

This dialog box is accessible through the DisplayFormat... option of the component’s right-click speed menu. It is used to set the format for the text (that is, display a date as ‘Thursday, March 18, 2002).

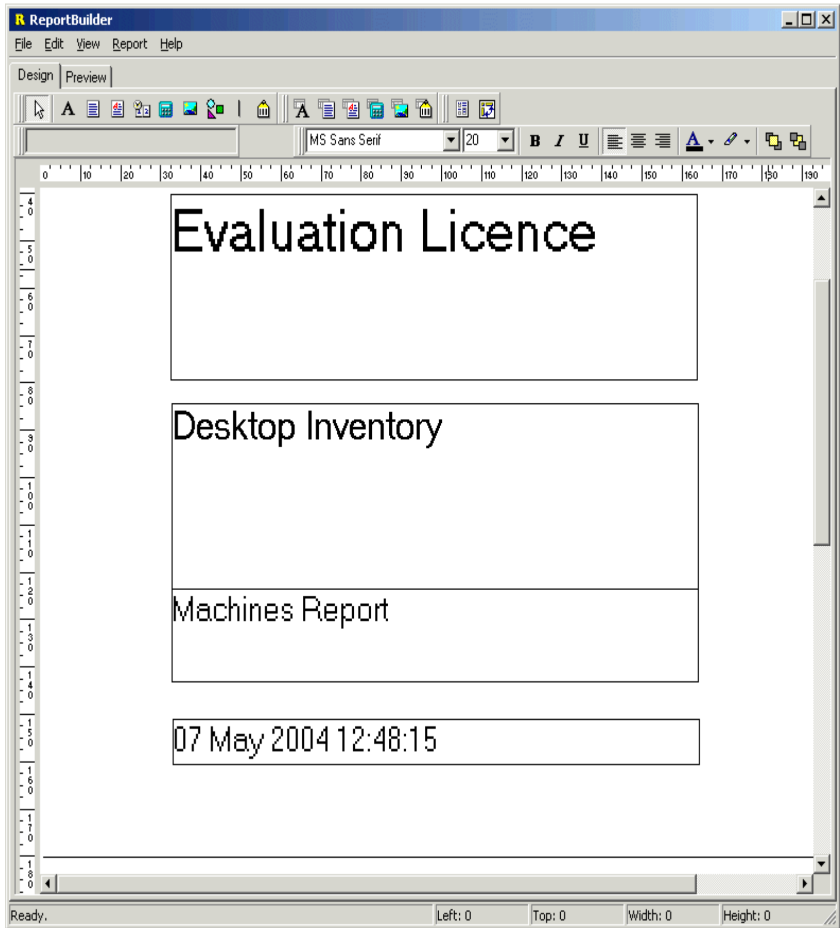
Position Dialog Box

Use this dialog box to modify a component's position.

The Report Designer Main Window

After data has been selected, you can begin designing your report layout. A layout is a combination of objects that describe how the document will look.

The Report Designer does not contain a document, it contains a layout. The layout can be used to generate many different documents, all based on the data you have selected.



This is how a document is created from the layout. A different document can be generated from the same layout by simply changing the data selection.

Bands

The white rectangular areas with the grey bars below are called bands. This report has a Title, Header, Detail, Footer and Summary (this is not shown by default) band. When a document is generated from this layout:

- The objects in the Title band appear at the top of each page.
- The objects in the Header band appears under the Title band.
- The objects in the Detail band will repeat down the page, until no more page space is available, at which point a new page will be started. The Detail band prints once for each row of your data selection.
- The objects in the Footer band appear after the Detail bands.
- The objects in the Summary band appear under the Footer band.

The bands displayed in the report workspace are selected from the **Report** menu.

Components

Each of the bands can have report components added to them. These components can be added using options in the toolbars. The toolbars are available from the **View** menu.

When creating these components, the component name is displayed in the **Edit** toolbar. To display this toolbar, select the **Toolbar|Edit** option from the **View** menu. The **Edit** toolbar is where selections and amendments are made to the component (not in the report workspace itself).

Generation

The document is generated when the **Preview** tab in the Report Designer is clicked. The generated document is displayed in the print preview window.

If the document does not look correct, return to the Design area and make the changes necessary to make the document generate correctly.

Report Designer Toolbars

In This Section...

Component Palette Toolbars

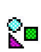
These toolbars are used to create new components. To create a component, click on a toolbar icon and then click in the white space of a band. There are three component toolbars:

- Standard
- Data
- Advanced

Use the Standard components to create text, lines, shapes, memos, richtext and to assign the data to the components. Use the Data components when you want to assign the data from a database. Use the Advanced components when you need to create more complex reports using Regions.

Each of the components have 'properties' that are available by right-clicking on the components in the report workspace. The following tables make references to some of these properties.

Standard Components

Component	Icon	Description
Select Object		Used to select an object.
Label		Used to display text. Enter the text in the caption box (in the **Edit** toolbar) to control the text value.
Memo		Used to print plain text in a report. To set the value, select the Lines property and enter the text in the Memo Editor. To resize the memo during printing, enable the Stretch property.
RichText		Used to print formatted text. To set the value, select the Edit property and enter the text in the Rich Text Editor.
System Variable		Used to display common report information such as page number, page count, print date and time, date, time. The format is controlled by the DisplayFormat property. The type of information displayed is selected in the Edit toolbar pull-down menu. Date – System Date DateTime – System Date and Time PrintDateTime – Prints the same System Date and Time on each page PageCount – Total number of pages in a group or report PageSet – Current Page number and Total Pages in group or Report (for example, 1 of 5) PageSetDesc – Textual summary of Page Number and Page Count (for example, Page 1 of 5) PageNo – Current Page Number PageNoDesc – Textual summary of current page (for example, Page 1) Time – System Time
Variable		Used to display variable report information such as phone number, extension and so on. The format is controlled by the DisplayFormat property. The type of information displayed is selected in the Edit toolbar pull-down menu.
Image		Used to display bitmaps and windows metafiles in reports. Select the Picture property of this component to place an image in your report.
Shape		Use this component to print various shapes (squares, rectangles, circles, ellipses). Select the Shape from the Edit toolbar drop-down menu.

Component	Icon	Description
Line		Used to display single and double lines (either vertical or horizontal). Various properties are available to control whether the line is single or double, the line thickness, and control whether the line is vertical or horizontal.
BarCode		Used to render many different barcode types. If the data to be encoded is in a database, use the DBBarCode component.

Data Components

Component	Icon	Description
DBText		Used for displaying values from all types of database fields. Use the DisplayFormat property to format the value.
DBMemo		Used to print plain text from a memo field of a database table. This control will automatically wordwrap the text. Enable the Stretch property to dynamically resize the component so that all of the text is printed.
DBRichText		Used to print formatted text from a memo or BLOB field of a database table. This control will automatically wordwrap the text. Enable the Stretch property and the component will dynamically resize to print all of the text.
DBCalc		Used for simple database calculations. Define the function (Count, Sum, Minimum, Maximum, Average) on the selected component. Right-click on the component and select an option in the **Calculations** property (Sum, Min, Max, Count and Average). The value can be reset when a group breaks using the **Reset Group** option in the **Calculations** property.
DBImage		Used to print bitmaps or Windows metafiles, which are stored in a database BLOB field.
DBBarCode		Used to render barcodes based on the BarCodeType and the value supplied from the Data Field pull-down menu (displayed in the **Edit** menu).

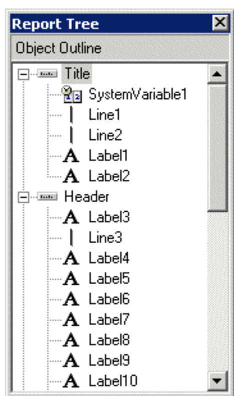
Advanced Components

Component	Icon	Description
Region		Used to logically group components together. Use the ShiftRelativeTo property to move the region in relation to another dynamically resizing component (such as Memo or RichText).
Crosstab		Create a summary of the report information. Recommend using a Summary or Title page to display the details once per report.

The Report Tree

The Report Tree is a dockable window accessible by right-clicking over the open toolbar area and selecting the **Report Tree** option or by selecting the **View|Toolbars|Report Tree** option from the main menu.

This window shows the structure of the report in an outline at the top. After a report is selected in this outline, all of the components of the report are shown in the outline at bottom of this window.



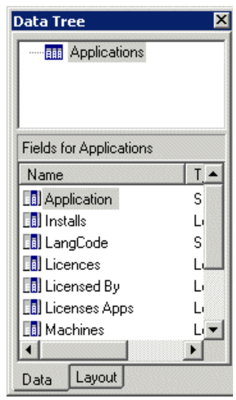
The report tree shows all of the bands and components in the report. The components for each band are listed in layered order (that is, the order established by the Bring to Front and Send to Back commands.) The bottommost component is listed first, the topmost component is listed last.

Use the Report Tree to see exactly what components are contained in the report and to select individual components.

The Data Tree

The Data Tree is a dockable window accessible by right-clicking over the open toolbar area and selecting the **Data Tree** option or by selecting the **View|Toolbars|Data Tree** option from the main menu.

This window shows all of the data pipelines accessible by the report. After a data pipeline is selected in this outline, all of the fields of the data pipeline are shown in the list at bottom of this window. Fields can be selected from this list and dragged into the report. A report component corresponding to the field will be created automatically.



The data tree shows a list of data pipelines in the top window and a list of fields for the currently selected data pipeline in the bottom window.

Note: The **Data** and **Layout** tabs at the bottom of the Data Tree. Use the **Layout** tab to customize the behavior of the Data Tree's drag-and-drop capabilities.

The **Layout** tab of the Data Tree contains many settings which can be used to customize the drag-and-drop capabilities of the Data Tree.

Control	Description
All option button	When selected both DBText components (assigned to the selected fields) and corresponding label components are created.
Fields option button	When selected only DBText components (assigned to the selected fields) are created.
Label option button	When selected only Label components (with the captions set to the field name) are created.

Control	Description
Style drop-down list	Controls whether the DBText and Label components are oriented in a columnar or stacked fashion.
Grid check boxes	Controls whether a shape is placed behind the DBText or Label component.
Font icons	Controls the font name, size, style and color through a standard font dialog box.
Preview image	Shows how the created components will look.

Standard Toolbar

To access this toolbar, select the View – Toolbars – Standard menu option from the Report Designer main menu. Used to create new reports, open existing reports, save modifications to reports, print reports to the printer or to a print preview window and for various clipboard operations.

The supported actions are:

Component	Icon	Description
Page setup		Displays the Page Setup dialog box, allowing you to set the paper size and configure the layout for the report.
Print		Displays the Print dialog box before sending the report to the printer.
Print preview		Displays the Print Preview window.
Cut		Cuts the currently selected components into the clipboard.
Copy		Copies the currently selected components into the clipboard.
Paste		Pastes the components in the clipboard into the report.

Format Toolbar

This toolbar is used to configure the font of textual components and to control component layering using the Bring to Front and Send to Back icons.

Note: Formatting is performed by selecting text first and then applying the formatting. If no text is selected, then the editor assumes that all text is to be formatted.

Component	Icon	Description
Font name		Selects the font name for textual components.
Font size		Selects the font size. You can also type in this box to set the font size exactly.
Bold	**B**	Set the font to bold.
Italic	*I*	Set the font to italic.
Underline	U	Set the font to underline.
Left Justify		Left justify the text in the component.
Centre Justify		Centre the text in the component.
Right Justify		Right justify the text in the component.
Font Color	A	Set the font color.
Highlight Color		Set the background color of the textual component.
Bring to front		Bring the component to the front. The components in the front print last, the components in the back print last. Use the Report Tree to view the exact layering of components within the band.
Send to Back		Send the components to the back. The components in the front print last, the components in the back print first. Use the Report Tree to view the exact layering of components within the band.

Edit Toolbar

The Edit toolbar allows you to set the most important properties for a given component. For example, when a Label component is selected, an edit box is displayed which allows you to set the Caption. When a DBText component is selected, a drop-down list is displayed, allowing you to set the Data Field.

Draw Toolbar

To access this toolbar, select the View – Toolbars – Draw menu option from the Report Designer main menu. This toolbar will assist in setting the colors and borders of components. The supported properties are:

Component	Icon	Description
Fill color		For shapes, lines and region components only. Sets the brush color property. To set the color of a textual component, check the Highlight color action of the Format toolbar.
Line color		For shapes, lines and region components only. Sets the pen color property.
Line thickness		For use with a line component only. Sets the weight property.
Line style		For use with a line component only. Sets the pen style property.

Align or Space Toolbar

To access this toolbar, select the View – Toolbar – Align or Space menu option from the Report Designer main menu. This toolbar will assist in positioning components relative to one another and relative to the band in which they appear. The supported actions are:

Component	Icon	Description
Align left edges		Used to align a group of components with the leftmost position of the component that was selected first.
Align middle		Used to align a group of components with the middle position of the component that was selected first.
Align right edges		Used to align a group of components with the rightmost position of the component that was selected first.
Align top edges		Used to align a group of components with the topmost position of the component that was selected first.
Align centres		Used to align a group of components based on the centre of the component that was first selected.
Align bottom edges		Used to align a group of components with the bottom most position of the component that was selected first.
Space horizontally		Used to space a set of components based on the leftmost position of the first component selected and the rightmost position of the last component selected.

Component	Icon	Description
Space vertically		Used to space a set of components based on the topmost position of the first component selected and the bottom most position of the last component selected.
Centre horizontally in band		Used to centre a component horizontally within a band.
Centre vertically in band		Used to centre a component vertically within a band.

Size Toolbar

To access this toolbar, select the View – Toolbars – Size menu option from the Report Designer main menu. This toolbar is used to set the width or height of a set of components based on the largest or smallest component in the set. It provides a means to size components in a uniform way. The supported actions are:

Component	Icon	Description
Shrink Width		Determines the minimum width of all the selected components, and then sets the width of the components to that value.
Grow Width		Determines the maximum width of the selected components, and then sets the width of the components to that value.
Shrink Height		Determines the minimum height of all the selected components, and then sets the width of the components to that value.
Grow Height		Determines the maximum height of all the selected components, and then sets the height of the components to that value.

Nudge Toolbar

To access this toolbar, select the View – Toolbars – Nudge menu option from the Report Designer main menu. This toolbar will assist in positioning components. The supported actions are:

Component	Icon	Description
Nudge up		Moves the component one screen pixel up.
Nudge down		Moves the component one screen pixel down.

Component	Icon	Description
Nudge left		Moves the component one screen pixel left.
Nudge right		Moves the component one screen pixel right.

Configuration Options for Different Field Types

Configuration options are available for the different field types:

Area	Right-click Option	Description
Text field in Title Text field in Header Text field in Footer Text field in Summary	Bring to Front	Bring the selected area to the front
	Send to Back	Send the selected area to the back
	Autosize...	Adjust the size automatically to the content of the field
	DisplayFormat...	Set the picture template for the display data
	Position...	Defines the left and top of the field along with its width and height
	ReprintOnOverFlow	When the band overflows onto an additional page, reprint the line
	ShiftWithParent	Adjusts the vertical position based on change of parent height
	Transparent	Select whether areas underneath are to be displayed
	Visible	Sets whether the field is displayed or not
	WordWrap	Wrap data within field area
Calc field in Title Calc field in Header Calc field in Detail Calc field in Footer Calc field in Summary	Bring to Front	Bring the selected area to the front
	Send to Back	Send the selected area to the back

Area	Right-click Option	Description
	AutoSize	Adjust the size automatically to the content of the field
	BlankWhenZero	
	Calculations: ■ Count ■ Sum ■ Minimum ■ Maximum ■ Average	 ■ Count the number of values reported ■ Total the values reported ■ Minimum value from the values reported ■ Maximum value from the values reported ■ Total of values/Number of values
	Displayformat...	Set the picture template for the display data
	Position...	Defines the left and top of the field along with its width and height
	ReprintOnOverFlow	When the band overflows onto an additional page, reprint the line
	ReprintOnSubsequent	This reprints the field on subsequent pages if the data will not fit on a single-page
	ShiftWithParent	Adjusts the vertical position based on change of parent height
	Transparent	Select whether areas underneath are to be displayed
	SupressRepeatedValues	Does not print repeating values
	Visible	Sets whether the field is displayed or not
	WordWrap	Wrap data within field area
Data field in Detail	Bring to Front	Bring the selected area to the front
	Send to Back	Send the selected area to the back
	AutoSize	Adjust the size automatically to the content of the field
	BlankWhenZero	If data value is zero then leave blank
	Displayformat...	Set the picture template for the display data
	Position...	Defines the left and top of the field along with its width and height

Area	Right-click Option	Description
	ReprintOnOverFlow	When the band overflows onto an additional page, reprint the line
	ReprintOnSubsequent	This reprints the field on subsequent pages if the data will not fit on a single-page
	ShiftWithParent	Adjusts the vertical position based on change of parent height
	SupressRepeatedValues	Does not print repeating values
	Transparent	Select whether areas underneath are to be displayed
	Visible	Sets whether the field is displayed or not
	WordWrap	Wrap data within field area
Bar Code Field	Bring to Front	Bring the selected area to the front
	Send to Back	Send the selected area to the back
	AutoSize	Adjust the size automatically to the content of the field
	AutoSizeFont	Shrinks or expands the font size to length of data
	Configure	Configure Code Type, Orientation, Bar Width and Wide Bar Ratio
	Position...	Defines the left and top of the field along with its width and height
	PrintHumanReadable	Print the bar code value in readable format
	ReprintOnOverFlow	When the band overflows onto an additional page, reprint the line
	ShiftWithParent	Adjusts the vertical position based on change of parent height
	Transparent	Select whether areas underneath are to be displayed
	Visible	Sets whether the field is displayed or not

Adding a New Field to a Report

By clicking on a field, either the name of the Calc field or Text content is displayed in the toolbar.

By right-clicking on a field, various display options are shown depending on the area of the report selected and the type of field.

Area	Right-click Option	Description
Title Summary	Dynamic Height	Allow the height to float
	Static Height	Fix the height of the section
	NewPage	Force a new page when selected
	Calc Order...	Determines the order in which the variable will be calculated, relative to the other variables in the same band.
	Position	Defines the left and top of the field along with its width and height
	Visible	Sets whether field is displayed or not
Header Footer	Dynamic Height	Allow the height to float
	Static Height	Fix the height of the section
	PrintOnFirstPage	Select whether to print Header on Title page
	PrintOnLastPage	Select whether to print Footer on Summary page
	Calc Order...	Determines the order in which the variable will be calculated, relative to the other variables in the same band.
	Position	Defines the left and top of the field along with its width and height
	Visible	Sets whether the field is displayed or not
Detail	Dynamic Height	Allow the height to float
	Static Height	Fix the height of the section
	Calc Order...	Determines the order in which the variable will be calculated, relative to the other variables in the same band.
	Position	Defines the left and top of the field along with its width and height
	Visible	Sets whether field is displayed or not

To Add a New Field to a Report

1. From the toolbar, select the field type to be added (Standard or Data Components).
2. Place the cursor where the field is to be placed and click. This will display a data field box.
3. Use the mouse to resize the field box as required.
4. If the field is a Data field, click over the entry box on the task bar to give a drop-down list of available fields.
5. If the field is a Calc field, the default content is shown as ‘Sum(?)’. To define which field to calculate: From the entry box on the task bar, select a field from the drop-down list. This field will now replace the ‘?’ in the sum function.
6. To define which calculator function to use, right-click on the Calc field box and select the Calculations... option. Select the calculation type from the Calc Type drop-down list (Count, Sum, Maximum, Minimum or Average).

Tips and Hints

Here are some tips to help you get the most out of the Report Designer:

- Maximize the Report Designer window and use the speed menus as much as possible.
- To select multiple items for editing or adjustments – hold down the shift key and click each item to be grouped.
- To set the display formats, make the component active and then use the speed menus to access the Format dialog box. The Format dialog box determines the data type for the of the DataFields assigned to the component and displays several formats appropriate for that data type (for example, a field of type date would provide a list of commonly used date formats).
- To resize the bands:
  - using the mouse, position the mouse over the grey rectangular area below the white space of the band, press the left mouse button and drag, or
  - place the cursor over the grey area under the section to be increased and right-click. Select Position... from the drop-down list and select height.
- Components can be dragged from one band to another.

- You can cut, copy and paste one or more report components at a time either in the same report or between different reports.
- In a Master/Detail report, selecting a field entry may not give the required field because only the fields in a particular band will be available for selection. Create the required field in the section that supports the field name required and then move it to the desired band of the report.

Exporting Inventory Data

In This Section...

Introduction to Exporting

Various combinations of hardware, software and asset data can be exported. The facilities used to define the level of detail for exported data provide a means of refining the selection of data exported.

When a suitable data file containing the exported data has been created, it can be imported to populate a variety of third party systems including spreadsheets, databases, asset management and help desk systems, which support the configurable data formats automatically created by the Analysis Workbench.

Data can be exported directly from the Analysis Workbench either in standard ASCII text form and CSV format (Comma Separated Variable).

Selecting the Type of Export

In This Section...

Exporting Data Directly From the Analysis Workbench

To export data directly from the Analysis Workbench:

▶ From the **Exports** drop-down menu select one of the following options:

- **Machines...** - Generates a machines export.
- **Applications...** - Generates an applications export.
- **Directories...** - Generates a directories export.
- **Files...** - Generates a files export.
- **Relational...** - Relational exports combine hardware, application and file exports in a manner that allows the data to be imported into an external database application with little effort. If the relational export option is chosen, then this provides the opportunity to combine columns from a particular window with link columns from other windows.
- **Stored Files Export...** - This type of export allows one or more named files to be extracted from all scan files and stored in a number of different ways.

Exporting the Contents of Individual Windows

To export the contents of individual windows:

▶ Select the **Export from window** option from the **Output** button drop-down menu.

This will display the **Export to file** dialog box which allows you to export the contents of the window based on the current column selection and filter settings.

Layout of the Export

An item group is what is represented as a line in one of the main windows. It is known as a group because one of these line items may represent several occurrences of similar or identical items.

For Applications, Directories and Files exports the results can be presented in one of two formats:

- One line per item group

  This presents the results in a format that is same as the active Window.
- One line per item

  One line in the export shows details for each item. Each occurrence is shown. That is, every line in the window is exported and shown as a row in the results.

Export Layout - Example

The **Details** window can be helpful in demonstrating the concept of item and item groups.

1 Ensure that the **Details window link** is enabled for a **Files** window (selected from the **Configure** toolbar menu in a **Files** window).

2 Configure the Details window so that it displays the **Asset Number** and **Directory** columns. To do this use the **Detail** window command in the **Configure** toolbar menu.

3 Now click on an entry in a Files window.

Files with the same name are grouped together, if they are recognized as belonging to the same application/version, are of the same recognition type (for example, Main/Associated) and have the same plug-in data and so on.

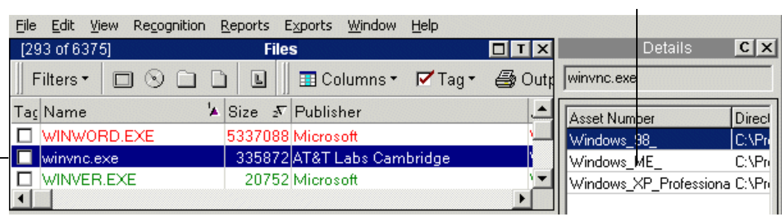
If two files with the same name are both unrecognized, they are only grouped together if they have the same size. If they are recognized (and otherwise grouped), the size is ignored and can be different.

If the exact file has been located in multiple places (either on the same machine or on different machines), each occurrence will be displayed in the **Asset Number** column as a separate row and the location will be displayed in the **Directories** column, hence it is part of a 'group'.

If the file has only been located on one machine, then only one row will be displayed in the Asset Number column (in this case select another file to use for the example).

The file winvnc.exe occurs in three places. In this case on three different machines.

The file winvnc.exe has been selected in the File window

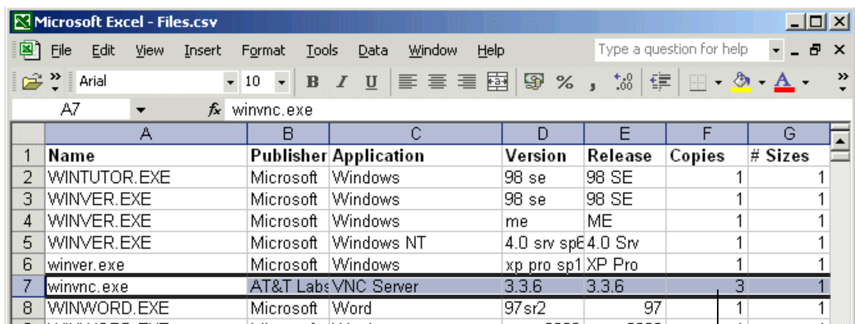


In the export results, one line in the export will represent the information for this group of entries. For instance, the number in the **Copies** column of an export represents the number of occurrences of the file. This number is equal to the number of rows that are displayed in the Asset Number column for a particular file.

One Line Per Item Group

One line per item group This presents a detailed view which has the same contents as the active Window.

One line in the export shows details for a group of items.



This row represents the data for the winvnc.exe file group. The number in the Copies column is '3' which corresponds to the number of occurrences of this file displayed in the Details window.

This row represents the data for the winvnc.exe file group. The Number in the Copies column is '3', which corresponds to the number of occurrences of this file displayed in the Details window.

One Line Per Item

One line in the export shows details for each item. Each occurrence is shown. That is, every line in the Window is exported and shown as a row in the results.

Setting Default Options for Exports

The default settings allow you to specify the directory the export results will be saved to, the format of the export file (CSV or TXT) and actions to be taken if an export file of the same name already exists in that location.

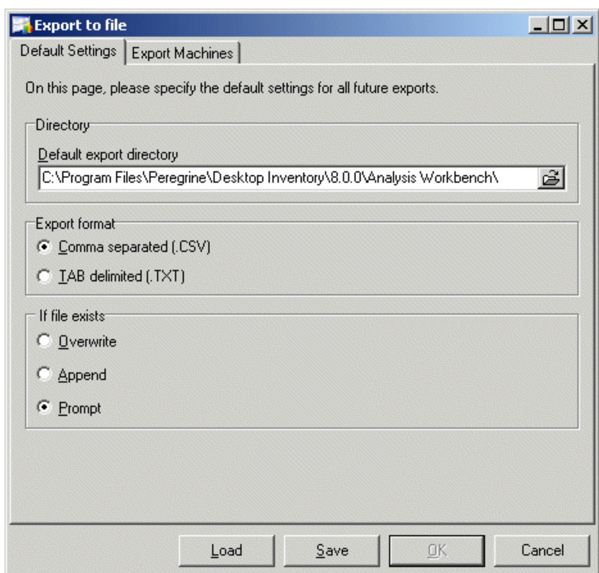
To select default options for exports

1 Select the export option from the **Exports** main menu (depending on the type of export that you want to make), or

2 Select the **Export from window** option in the **Output** button drop-down menu in the window (Machines, Applications, Directories, Files exports only).

The **Export to file** dialog box is displayed.

3 Click the **Default Settings** tab in the **Export to file** dialog box.



4 In the **Default export directory** field, specify the name and path of the directory (or use standard Windows navigation methods) to where the export file will be saved by default.

5 In the **Export format** group, select one of the following default export format options:

- Comma separated (.CSV)
- TAB delimited (.TXT)

Note: This option is not available for Stored Files exports.

6 Choose an option to specify how the data will be exported if the specified target data file already exists. The following options are provided:

- **Overwrite** Overwrites the existing file with the new data.
- **Append** Appends the new data to the existing data.
- **Prompt** A prompt is displayed if the target data field already exists. Prompts to create a new data file.

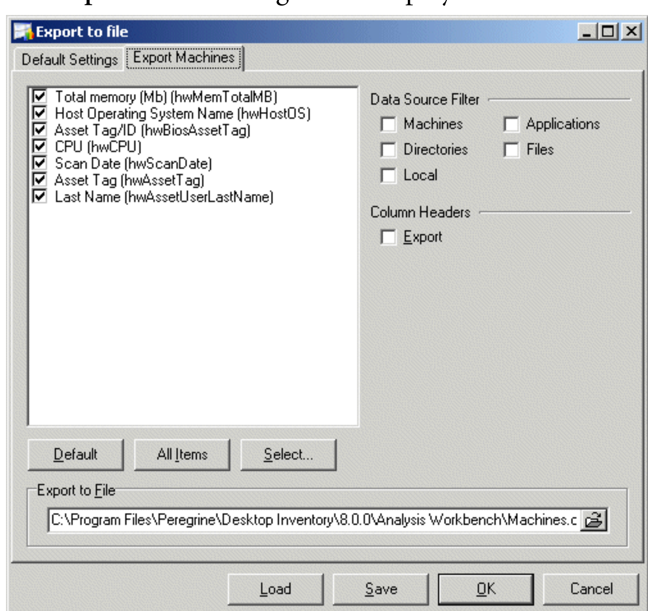
7 Click **OK** to set the default options or **Cancel** to exit without making any changes.

Exporting Machine Data

There are two ways in which you can export the contents of the Machines window.

- Select the **Machines** option from the **Exports** main menu.
- Select the **Export from window** option in the **Output** button drop-down menu in the **Machines** window. This allows you to export the contents of the Machines window based on the current column selection and filter settings.

The **Export to file** dialog box is displayed.

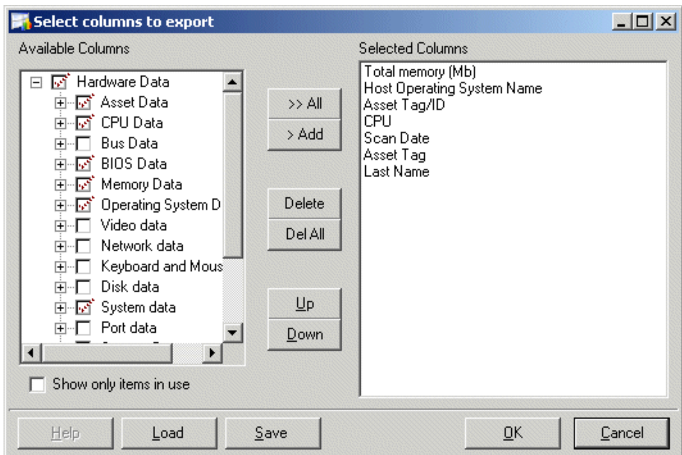


Configuring the Machine Export

1 Click the **Export Machines** tab in the **Export to file** dialog box.

2 Select the columns to export by checking the boxes as required in the list box.

- To select all items in the Column list, click the **All items** button.
- To select the default column selection. Click the **Default** button.
- To add more columns to the list, click the **Select…** button. This displays the **Select columns to display** dialog box.



The left list shows all column categories. Click on the + sign to expand the relevant category and list all possible columns. If the check box next to the category is displayed as a dotted line, then this means that the not all fields in that category have been selected.

The **Show only items in use** option will ensure that only hardware items that actually exist in one of the loaded scan files are shown in this tree.

Either drag a category from the left list to the **Currently selected columns** list, or select the check box next to the category and click the >**Add** button. The functions of the other buttons are as follows:

- To add all the available columns to the **Currently selected columns** list click the >>**Add** button.
- To remove an entry from the **Currently selected columns** list click the **Delete** button.
- To delete all entries in the **Currently selected columns** list click the **Del All** button.
- You can move the position of entries in the **Currently selected columns** list using the **Up** and **Down** buttons.

- Click **OK** after you have selected the columns. You are returned to the **Export to file** dialog box.

3. Select the **Export** option in the **Column Headers** group if you want the column heading (title) to be included in the export.
4. Specify the filters that you want to apply to the data, by selecting the check boxes as follows in the **Data Source Filter** group:
   - **Machines** - Applies a Machines filter to the data source.
   - **Directories** - Applies a Directories filter to the data source.
   - **Local** - Applies a Local tag filter to the data source.
   - **Application** - Applies a Application filter to the data source.
   - **Files** - Applies a Files filter to the data source.
5. In the **Export to File** box, specify the name of the file that the export is going to be saved to. The path displayed here is the one that you defined in the **Default Settings** tab.

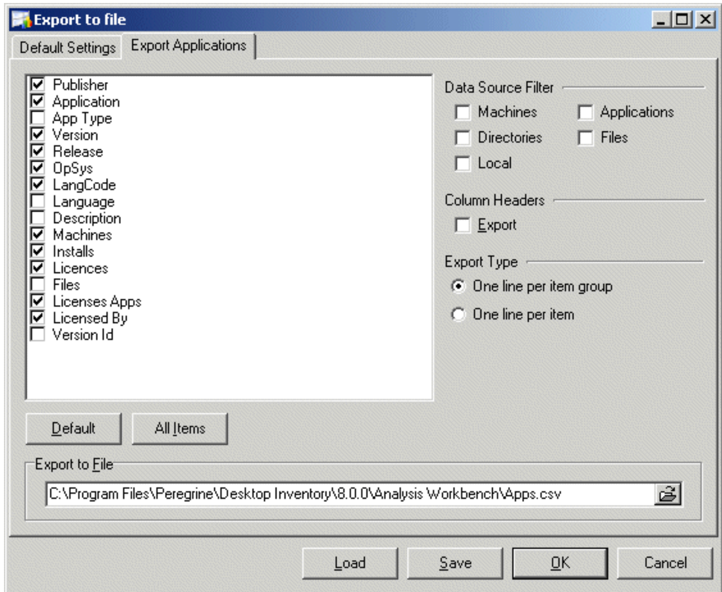
   Note: To modify the location used to store the data exported from the scan files, use the **Default Settings** tab.
6. Click **OK** to export or **Cancel** to exit without making the export.
7. If an earlier export file created with the same name and in the same path is open in another application (such as Excel) a file sharing violation error message is displayed. Close the file and attempt the export again.

Exporting Application, Directory or File Data

There are two ways in which you can export the contents of these windows.

- Select the **Applications…**, **Directories…** or **Files…** option from the **Exports** main menu.
- Select the **Export from** window option in the **Output** button drop-down menu in the window itself. This allows you to export the contents of the window based on the current column selection and filter settings.

The **Export to file** dialog box is displayed for the Applications… or Directories… or Files… option.



Configuring the Export

1 Click the Export Applications/Directories/Files tab in the Export to file dialog box.

2 Select the columns to export by checking the boxes as required in the list box.

- To select all items in the **Column** list, click the **All items** button.
- To select the default column selection, click the **Default** button.

3 Select the **Export** option in the **Column Headers** group if you want the column heading (title) to be included in the export.

4 Specify the filters that you want to apply to the data, by selecting the check boxes as follows in the **Data Source Filter** group:

- **Machines** - Applies a Machines filter to the data source.
- **Directories** - Applies a Directories filter to the data source.
- **Local** - Applies a Local tag filter to the data source.
- **Application** - Applies a Application filter to the data source.
- **Files** - Applies a Files filter to the data source.

5 Select the type of export:

- One line per item group

- One line per item

6 In the **Export to File** box, specify the name of the file that the export is going to be saved to. The path displayed here is the one that you defined in the **Default Settings** tab.

   Note: To modify the location used to store the data exported from the scan files, use the **Default Settings** tab.

7 Click **OK** to export or **Cancel** to exit without making the export.

   If an earlier export file created with the same name and in the same path is open in another application (such as Excel) a file sharing violation error message is displayed. Close the file and attempt the export again.

Exporting Relational Data

The Relational Export facility enables data to be exported in a format that is supported by Relational Database Management Systems (RDMS).

Data exported from the Analysis Workbench using these facilities is divided into three main areas:

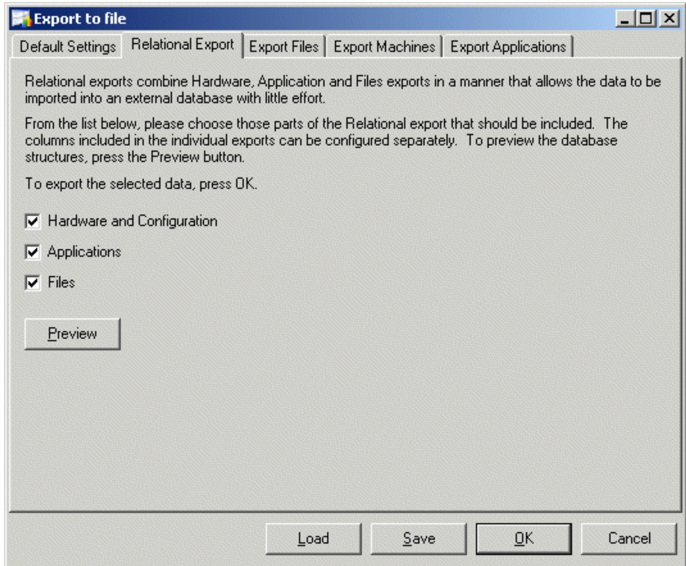
- Software information, including file data and information.
- Machine/scan file information, including asset and hardware data and information about each scan file.
- Linking information to relate each software file to specific scan files.

The exported data is organized into tables, which include specific items of data that are repeated for each scan file read into Analysis Workbench. The relational export facility includes options to export data to three different tables which are related or linked by common fields known as key fields. The three tables are:

- Hardware and Configuration Table
- Applications Data Table
- Files Data Table

Performing the Relational Export

▶ Select the **Relational...** option from the **Exports** menu to display the relational **Export to file** dialog box.



There are four steps to performing a relational export:

- *Step 1 Configure the Default Settings*
- *Step 2 Include the Data Tables to Be Exported*
- *Step 3 Select the Information to Be Included in the Data Tables*
- *Step 4 Preview the Relational Export Setup*

Step 1 Configure the Default Settings

The procedure for setting the default options is identical to that of the other types of exports. See *Setting Default Options for Exports* on page 558 for more information about how to do this.

Step 2 Include the Data Tables to Be Exported

To Include the data tables to be exported:

1. In the **Relational Export** tab page, select the data tables to be exported.
    - **Hardware and Configuration table**

      The information for this table is configured on the **Export Machines** tab page.
    - **Applications table**

      The information for this table is configured on the **Export Applications** tab page.

- **Files table**

  The information for this table is configured on the **Export Files** tab page.

Step 3 Select the Information to Be Included in the Data Tables

The **Export Applications/Export Files/Export Machines** tab pages in the **Export to file** dialog box provide options that are used to select the contents of the data tables to be exported.

Important: For each data table you choose to export, a file name (with a .csv extension and including the full path) must be entered.

To select the information to be included in the data tables:

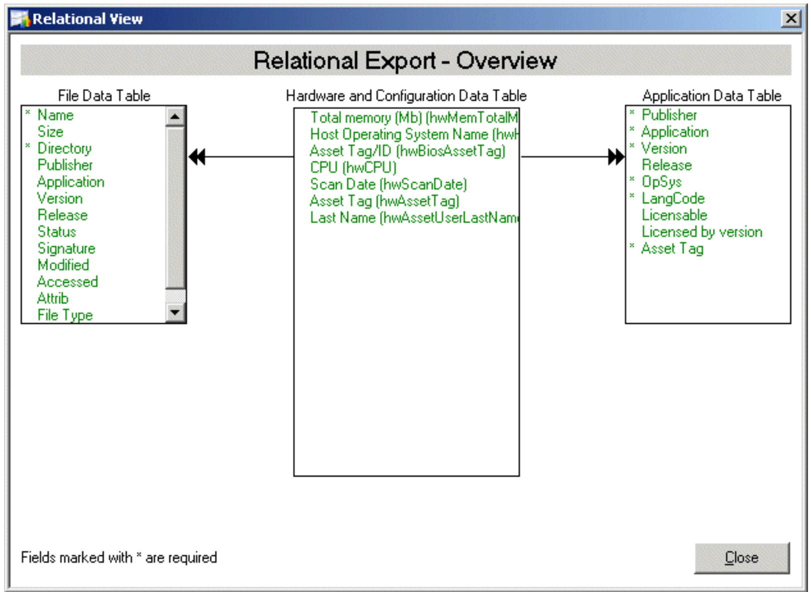
1. Click the appropriate tab:
   - Export Files
   - Export Machine
   - Export Application
2. Select the pages to export using the check boxes.
3. Enter the page and set the column preferences
4. Choose to include or exclude column headers with the exported data. If the **Column Headers** option is selected, column header fields are included in the exported data file to identify the data items exported.
5. Choose **OK** to export data to the selected data tables.

Note: Applications and Files under Relational Exports do not have choice of Export type – only one line per item.

Step 4 Preview the Relational Export Setup

The data tables and the columns exported for each one can be previewed by clicking the **Preview** button in the **Relational Export** tab page.

The following window is displayed:



This window shows the tables of relational data which are related by key fields. Key fields are shown with an asterisk (*) next to them.

Data tables that have not been selected for the export are disabled.

Each table includes at least one key field. The key fields are used to relate data so that when data is exported, the information you want to view from the tables can be combined using a relational database system.

Other items of data are indicated as optional fields, which means that these items of data are only exported if you choose to export them.

- The contents of the File, Application and Hardware and Configuration tables are specified on the other tab pages as follows:
  - The contents of the File Data table are specified on the **Export Files** tab page.
  - The contents of the Application Data table are specified on the **Export Applications** tab page.
  - The contents of the Hardware and Configuration table are specified on the **Export Machines** tab page.

Click the **Close** button to return to the **Export to file** dialog box.

The Export Results

The results of a relational export are saved to a file name (.csv). To specify the file names for applications, machines and files, select the specific tab in the **Export to File** dialog box and specify the file name.

Exporting Stored File Data

Stored files are embedded in the scan file during scanning. Typically these are system configuration files, for example, Autoexec.bat, Config.sys.

This type of export allows one or more named files to be extracted from all scan files and stored in a number of different ways.

The naming conventions for the extracted files allow for multiple instances of the files.

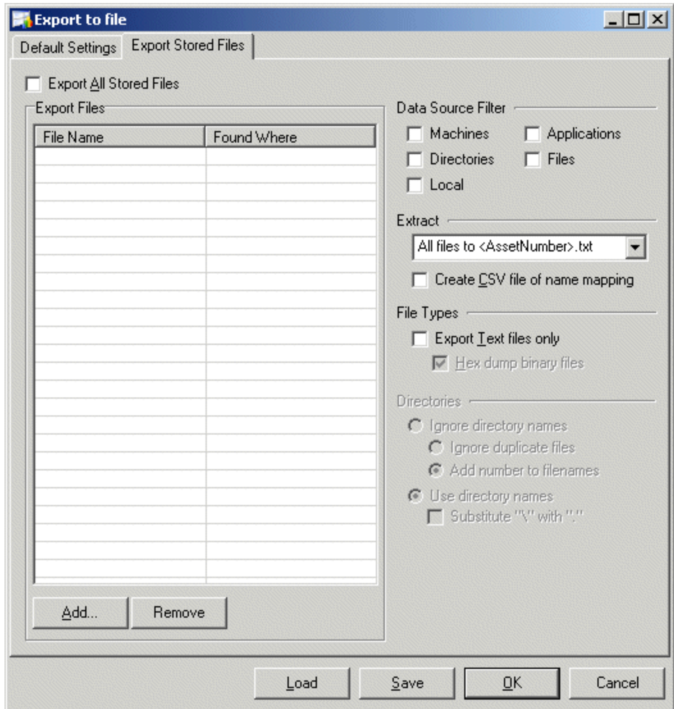
Note: If only one stored file is required from one scan file, then it is more efficient to save the stored file from Viewer.

There are six steps to performing a stored file data export:

- *Step 1: Configure the Stored File Export*
- *Step 2: Select Data Filters*
- *Step 3: Specify the Stored Files to Export*
- *Step 4: Specify the Name of the Extract Export*
- *Step 5: Specify the Types of Files to Extract*
- *Step 6: Specify the Options for the Extract Format Directories*

Step 1: Configure the Stored File Export

1. Select the **Stored Files...** command from the **Exports** menu.
2. Click the **Export Stored Files** tab in the **Export to file** dialog box.



This page is used to set up various options for the stored files export.

Step 2: Select Data Filters

Select the data source filters that you want to apply to the data. In the **Data Source Filter** group, select one of the following:

- **Machines** - Applies a Machines filter to the data source.
- **Directories** - Applies a Directories filter to the data source.
- **Local** - Applies a Local tag filter to the data source.
- **Application** - Applies a Application filter to the data source.
- **Files** - Applies a Files filter to the data source.

See *Filtering* on page 452 for more information about using filters.

Step 3: Specify the Stored Files to Export

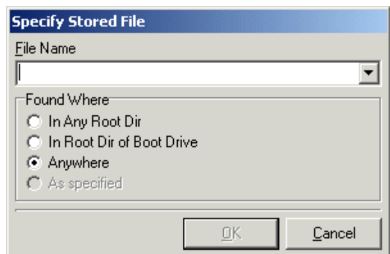
Specify whether you want to export all stored files or specific stored files.

1 To export all stored files select the **Export All Stored Files** check box (located on the left side of the dialog box above the list box).

When this check box is selected, the **Add** and **Remove** buttons are disabled in the **Export Files** group.

2 To specify stored files for export, use the grid in the **Export Files** group to configure which files are to be exported. This grid contains two columns: **File Name** (the name of the file to be exported) and **Found Where** (the location of the file).

3 Click the **Add...** button to add a stored file to the list. The **Specify Stored File** dialog box is displayed.



4 Specify the file name in the **File Name** box. Select the file name from the drop-down list (this list maintains a history of previously entered file names) or type the file name directly in to the box.

5 Specify where this file can be located. The options are:

- **In Any Root Dir** - The file is located in a root directory, for example in the E:\DOS directory.
- **In Root Dir of Boot Drive** - The file is located in a root directory on the boot drive, for example in the C:\Windows directory.
- **Anywhere** - The file can be located anywhere in the directory structure.
- **As specified** - This option is only enabled if the path to the file is entered in the **File Name** field. The path must start with a backslash (\).

6 Click **OK**.

Step 4: Specify the Name of the Extract Export

▶ To specify the format the extract export file name, select an option from the **Extract** drop-down list:

All files to <AssetNumber>.txt - The export is made to a text file that has the name of the AssetNumber. For example, if the AssetNumber is 23567 then the export file will be called 23567.txt. The files are saved to the location specified in the **Default Settings** tab.

- **To directory named as file** - The export is made to a directory that has the name of the stored file and has subdirectories for the drive that the file was located in.

  For example

  A stored file **System.ini** was extracted from a scan file called **FSF014.fsf.** The location of the file was **b:\Win95**.

  The location for the results has been specified in the **Default Setting** tab as **H:\Stored Files**
  The export result will therefore be located in the following directory structure.

  H:\Stored Files\ Autoexec.bat\b\Win95\FSF014.txt

- **To directory <AssetNumber>** - The export is made to a directory that has the name of the scan file and has subdirectories for the drive that the file was located in. This location will contain the stored files.

  For example
  A stored file **Boot.ini** was extracted from a scan file called **FSF02.fsf.** The location of the file was **c:\I386**.

  The location for the results has been specified in the **Default Setting** tab as **H:\Stored Files**
  The export result will be located in the following directory structure.

  H:\stored Files\ FSF02\C\I386\Boot.ini

  There is a separate option to create a CSV file of name mapping. This creates a CSV file (ExportFilenames.csv) with path information for extracted files.

  The **ExportFilenames.csv** file produces a CSV list with the following fields.

Field	Purpose
Exported to File	Path of the export file created
Asset number	Asset number of the source scan file
Original File Name	Name and path of stored file

Step 5: Specify the Types of Files to Extract

To specify the type of files to export, select the following options as required:

- **Export text files only** - This extracts ASCII text files only. This option is available for all extract formats.

- **Hex dump binary files** - This extracts any binary files in hexadecimal. This option is available for the **To directory named as file** or **To directory <AssetNumber>** extract formats.

Step 6: Specify the Options for the Extract Format Directories

You can specify the options for the directories that are to be used in the location of the results.

▶ Select the options in the **Directories** group.

This group is only enabled if the **To directory named as file** or **To directory <AssetNumber>** have been selected as the extract format:

- **Ignore directory names** - The drive letter and subdirectories will not be included. The following two additional options are made available.
- **Ignore duplicate files** - If duplicate files are encountered, then the latest file will be extracted.
- **Add number to filenames** - When directories of the asset names are created, multiple instances of the file are numbered starting at 000. For example,

  FP0214.000.txt
  FP0214.001.txt
  FP0214.002.txt
- **Use directory names** - The directory name will be used in the extract file name. The following additional option is made available.

  Substitute '\' with '.' The directory path is indicated in the file name by '.' For example, the result:

  H:\stored Files\ FSF02\E\I386\Boot.ini

  Will be represented as a file called

  E.I386.Boot.ini

  Located in the **FSF02** directory. That is, the results can be found in:

  H:\stored Files\E.I386.Boot.ini

Loading and Saving Exports

You can save your export layout to a **.awrcl** file in the **Analysis Workbench/Column Layout** directory by clicking the **Save** button in the export wizard.

You can load a previously saved export configuration by clicking the **Load** button in the export wizard and selecting an export file (with an **.awrcl** extension) from the load dialog box. Exports are saved to the **Analysis Workbench/Column Layout** directory.

Note: Older .rcl files will not work in Desktop Inventory Version 7.0.0 or later.

Analysis Workbench Scripting

In This Section...

Analysis Workbench Scripting - Overview

The Analysis Workbench provides command script options that facilitate the automation of various settings which are manually set within the application (for example, loading, processing and outputting of information from Analysis Workbench).

The scripts are standard ASCII text files, similar in layout to Windows **ini** files, except that they do not use equals '=' in the key lines in each section within the script. The scripts make use of the various configuration lists (load options, stored queries and so on) which can be stored as part of Analysis Workbench.

By using scripts which can call these stored configuration lists, different options and sequences can be predefined and run as required for regular exporting activities. Sample files have been provided with the Analysis Workbench. The scripts have an AWCS extension to the file name.

There are four script sections (if they exist) and are processed in the following order:

- Startup section
- Variables section
- Process section
- End section

Any number of other sections can be added to the script. Other sections are not processed unless they are called for specifically by the script.

Note: These sections do not have to be in this order in the script file and do not have to exist.

Sample Script

A sample script is supplied with Desktop Inventory in the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Analysis Workbench\Scripts

Executing the Script

Scripts are executed by one of three methods:

- Including the script name on the command line in Analysis Workbench (for example Analysis Workbench.exe script.awcs.
- Opening Analysis Workbench and then dragging the script file name to the Analysis Workbench workspace.
- Using the **Run script file…** option **File** menu.

Having these three options allows:

- The script to run on a scheduled basis if using a Windows utility such as AT.
- Different scripts to be run when the Analysis Workbench is opened under user control.

Warning: Do not do the following

Do not use any commands in the `[Variables]` section. This section is used for declaring variables only.

Do not call any of the standard sections with the `RUN_PROCESS` command. (Startup, Variables, Process, End).

Do not name any variables with the same name as a reserved word (either a command name or a string used internally by the scripting engine). See *Available Commands* on page 577 for a full list of command names and reserved words.

Do not call a section that is a list of files or directories.

Writing Scripts

- Create scripts in a text editor or in a Word processor without formatting.
- Do not use any equal '=' characters in the command line.
- Save the script file with the extension AWCS.

All commands must have spaces between the command and its parameters. If there are multiple parameters, then these are separated by just a comma (for example, SAVE_STATE filename, description).

Group Commands into Sections

- Sections have a section header written between square brackets, for example, [sectionname].
- Section names must not begin or end with space characters and must not be preceded by a space before the name.

- There are four reserved section names, `STARTUP`, `VARIABLES`, `PROCESS` and `END`.
- Sections can be stored in any order, but the four reserved sections, if they exist, are processed in the order `STARTUP`- `VARIABLES` - `PROCESS` – `END`.

Add Comments to Scripts

Comments can be added to the scripts to improve readability, either by using a section headed `[Comments]` to describe the overall function of the script or by using a semicolon (‘ ;’) at the start of the line to indicate a comment line, to describe specific activity.

The Script Sections

Five script sections if they exist are processed in the order:

- *Comments Section*
- *Startup Section*
- *Variables Section*
- *Process Section*
- *End Section*

They do not have to be in this order in the script file and do not have to exist.

You do not need to call any of these sections. The script engine calls these sections automatically. The script engine does not call any other section that has been created unless it has been specified in a `RUN_PROCESS` command.

Any other sections in the script can be created and the lines do not have to be commented out if the section is not called by the script.

Comments Section

This section is usually placed at the beginning of the script file. The comments section does not have to exist and is normally used for comments such as the author, date written. It is recommended that a comments section is used. It may be useful to include the name of the author, the purpose of the script, and the date it was written. A version number should also be included so that it can be incremented every time changes are made to the script.

Any other comments made in other sections of the script are made using a semicolon (‘;’) at the start of the line.

The description in the Run script form is taken from the first valid line in the Comments section.

Startup Section

This section is used to set up initial load conditions for the script. Variables are not available in this section or any sections called by this section.

Commands that do not require variables can be used in this section. Typically, this section would be used to make sure that the Analysis Workbench was in the ‘condition’ expected before the main `[Process]` section was called by the script engine.

An Example of Typical [Startup] Code

```
[Startup]
BREAK_ON_ERROR ON
LOG_CLEAR
LOG_SCRIPT ON
DISPLAY_PROGRESS ON
UNLOAD ALL
SET_BUSINESS
```

Variables Section

This section is available to any section of the script apart from the `[Startup]` section and any sections called from the `[Startup]` section.

Variables are also available in a command script if declared in a subscript called by that script. They are ‘Global’ variables. Do not try to use a variable before it is declared.

This can occur if variables are declared in a sub script but are used in a different script. (It is recommended that you declare all variables in a main script file).

An Example of Typical [Variable] Section Code:

```
[Variables]
TestInt1         : integer
GatewayDirectory : string
StateImage       : string
```

Note: No assignments can be made to the variables in this section. This section is only for instructing the script engine to make these variables available to the script. The restrictions on variables are as follows:

Strings are limited to 64 characters in length.

Integer variables are valid from zero to over 2,000,000,000.

Process Section

This section is used for the main script loop or program. Any variables declared, are available in this section or any processes called from this section. All commands are available in this section.

Any sections created in the script have the same functionality as this section, except that they must be called in the script.

The different sections of the script should be named logically, so that the script makes sense when read as a text file.

A typical `[Process]` section does not have to be very long, because normally other sections would be called from the script in this section.

An Example of Typical [Process] Section Code:

```
[Process]
RUN_PROCESS SetupVariables
IF EXIST $StateImage THEN RUN_PROCESS LoadState
RUN_PROCESS LoadScanFiles
; load the machine export setup file - this sets up the files and columns to export
EXPORT_LOAD Gateway
; do the export
EXPORT_RUN
```

End Section

This section is used to tidy up after the script has finished, unload scan files from the program, save the script log file and so on. Variables are still available in this section.

When the main command script has finished, all variables are wiped from the memory, so if any results need to be saved, this should be done before the main script finishes.

Available Commands

The commands must be written exactly as shown. However, they are not case-sensitive.

If more than one parameter is needed, they are separated by commas. Parameters must be separated by at least one space from the command they are attached to.

Full List of Available Commands

'>=', '<=', '>', '<', '=',('if' conditions)

:= (assigning values to variables)

BREAK
BREAK_ON_ERROR
DISPLAY_PROGRESS
EXIST
EXPORT_LOAD
EXPORT_SETDIR
EXPORT_RUN
FOR
GET_ENV_VARIABLE
GET_INI_VARIABLE
IF
LOAD_CONFIG
LOAD_DIRECTORY
LOAD_DIRECTORY_LIST
LOAD_DUP_OPTION
LOAD_EXCLUDE_DIR
LOAD_OLD_OPTION
LOAD_SCAN
LOAD_SCAN_LIST
LOAD_STATE
LOAD_TAGS
LOG_CLEAR
LOG_DISPLAY
LOG_SAVE
LOG_SCRIPT
LOG_WRITE
NOT
PAUSE
QUERY_CLEAR
QUERY_LOAD
QUERY_RUN
QUERY_SET_OPTION

RUN_PROCESS
RUN_SCRIPT
SAVE_STATE
SAVE_TAGS
SET_BUSINESS
SET_OPERATIONAL
SINGLE_STEP
STD_DATES
TAG_ALL
TAG_CONTAINS
TERMINATE_PROGRAM
UNLOAD
WAIT

Reserved Words to Avoid Using

INTEGER
REAL
STRING
SKIP
SLEEP
COMMENT
UNRECOGNIZED COMMAND
INVALID COMMAND
COMMAND ERROR
VARIABLE ERROR
EXPRESSION ERROR
EXPRESSION TOO COMPLICATED
STARTUP
VARIABLES
PROCESS
END
OR
XOR
AND
ELSE

The words can be used in multiple word expressions, but not in the same order as the reserved expression.

For example, COMMAND can be used as long as it is not preceded by UNRECOGNIZED or INVALID and not followed by ERROR.

Variable Commands

To set the variables use := (colon + equals sign)

Example

TestInt1 := 5
GatewayDirectory := c:\gateway\
StateImage := $GatewayDirectory + GatewayState.AWS

Note: The dollar sign in front of the string variable indicates that one variable can use another variable. In this case the `StateImage` variable will have the value c:\gateway\GatewayState.AWS

You can space the assignment operator where you want as long as there is at least one space between each part of the statement.

(VariableName),(at least one space),(:=),(at least one space), (variable value)

A variable can be assigned as a mixture of strings and variables. Integer variables can be used in the assignment statement and these will be translated to strings.

Example

FOR TestInt1 := 1000 to 1999 do
 LoadFile := $GatewayDirectory + TEST + $TestInt1 + .FSF

GET_INI_VARIABLE $VariableName,INIFileName,SectionName,KeyName,DefaultValue

This command can be used to set a variable that has been declared, to a value retrieved from an INI file.

The five parameters needed for `GET_INI_VARIABLE` are:

- Variable name with or without a '$' in front of it.
- INI file to get variable from.
- Section name to get variable from.
- Key name to get variable from.
- A default value to use if key is not found - defaults to empty string if not specified.

Example

GET_INI_VARIABLE $GatewayDir, Gateway.INI, AWScript, GatewayDirectory, c:\Gateway\

GET_ENV_VARIABLE $VariableName,EnvironmentVariable,DefaultValue

This command can be used to set a variable that has been declared, to a value retrieved from an environment variable.

The three parameters needed for `GET_ENV_VARIABLE` are:

- Variable name with '$' in front of it.
- Environment variable to read from.
- A default value to use if variable is not found - defaults to empty string if not specified.

Commands for Calling Other Processes

- *RUN_PROCESS Section Name*
- *RUN_SCRIPT ScriptFileName*

RUN_PROCESS Section Name

Calls another section of the command script. It takes a section name as a parameter. Do not call any of the standard sections `Startup`, `Variables`, `Process` and `End`.

Example

RUN_PROCESS ClearAW

RUN_SCRIPT ScriptFileName

Run another Analysis Workbench command script. It takes a script file name as a parameter.

Example

```
RUN_SCRIPT TestScript.AWCS
```

Commands for Loading Data into Analysis Workbench

- *LOAD_STATE Filename*
- *LOAD_SCAN SCANName*

- *LOAD_SCAN_LIST SectionName*
- *LOAD_DIRECTORY DirectoryName*
- *LOAD_DIRECTORY_LIST SectionName*

LOAD_STATE Filename

Loads an Analysis workbench state image file into Analysis Workbench.

Example

LOAD_STATE TestState.AWS

LOAD_SCAN SCANName

Loads one scan file into Analysis Workbench. It has a single scan file name as a parameter.

Example

LOAD_SCAN c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Samples\London\LND1000.FSF

LOAD_SC AN$FSFDirectory + LND1000.FSF

LOAD_SCAN_LIST SectionName

Has a single section name as a parameter to load a list of scan file names from. This procedure calls the `LOAD_SCAN` procedure for each file in the list.

Example

LOAD_SCAN_LIST FileList

LOAD_DIRECTORY DirectoryName

Loads a single directory specified, as a parameter to this command. Optionally, specify the `/SUB` parameter to load all scan files in the specified directory and all subdirectories of that directory.

Example

LOAD_DIRECTORY c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Samples\London

; Load all files from the London samples directory in Analysis Workbench.

LOAD_DIRECTORY c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Samples /SUB

; Load all files from all the sample directories in Analysis Workbench.

LOAD_DIRECTORY c:\/SUB

; Load all scan files on drive C into Analysis Workbench.

LOAD_DIRECTORY_LIST SectionName

Loads a list of directories from a section of the script file. This procedure calls the `LOAD_DIRECTORY` procedure for each directory in the list. (The `/SUB` parameter can also be used in the directory list.)

Example

LOAD_DIRECTORY_LIST TestDirList

Commands for Unloading Data from the Analysis Workbench

- *UNLOAD*

UNLOAD

Unloads scan file data from Analysis Workbench. Uses a parameter `ALL`, `TAGGED`, or `UNTAGGED`. Assumes `ALL` if no parameter is specified.

Example

UNLOAD UNTAGGED

; Unloads from Analysis Workbench all scan files that are not tagged.

Commands for Setting the Load Options

- *SET_BUSINESS*
- *SET_OPERATIONAL*
- *LOAD_DUP_OPTION*
- *LOAD_OLD_OPTION*
- *LOAD_CONFIG FileName*
- *LOAD_EXCLUDE_DIR DirList.txt*

SET_BUSINESS

Sets business mode if no scan files have been loaded.

SET_OPERATIONAL

Sets operational mode if no scan files have been loaded.

LOAD_DUP_OPTION

Instructs Analysis Workbench how to treat duplicate scan files. This overrides and changes the current setting of Analysis Workbench. The settings are available in the File Load Options dialog box called from the scan file load form Options button.

Valid combinations are:

- `LOAD_DUP_OPTION NEWEST` (load the newest of the duplicate files)
- `LOAD_DUP_OPTION ASK` (Ask what to do if duplicate files detected)
- `LOAD_DUP_OPTION LOAD` (load the duplicate file, remove the previously loaded one)
- `LOAD_DUP_OPTION IGNORE` (Leave the file already loaded, ignore the attempt to load another file with the same name)

LOAD_OLD_OPTION

Instructs Analysis Workbench how to treat old scan files. This overrides and changes the current setting of Analysis Workbench.

Valid combinations are:

- `LOAD_OLD_OPTION LOAD` (Load old files even if they are older than the limit).
- `LOAD_OLD_OPTION Ask` (Ask what to do if old scan files are detected).
- `LOAD_OLD_OPTION IGNORE` (Ignore files older than the limit).

LOAD_CONFIG FileName

Require a load configuration file as a parameter, to load an INI file saved by the Analysis Workbench Load Configuration dialog box. This sets up recognition, display filter, asset fields, duplicate and old scan file options and so on.

Example

LOAD_CONFIG ScriptLoadOptions.ini

LOAD_EXCLUDE_DIR DirList.txt

Allows a list of directories to ignore to be specified, when loading scan files. The list can be set and saved using the **Load Filter** tab of the Analysis Workbench Load Configuration dialog box.

Example

```
LOAD_EXCLUDE_DIR c:\Program Files\AI\ExcludeDirecto-
ries.txt
```

Commands for Running Tag Queries

- *QUERY_CLEAR*
- *QUERY_LOAD Filename*
- *QUERY_RUN*
- *QUERY_SET_OPTION TAG Switch*
- *QUERY_SET_OPTION PREQUERY*

QUERY_CLEAR

Clear the current Analysis Workbench query from memory, this is not necessary if you are loading a query from a file.

QUERY_LOAD Filename

Load a tag query into Analysis Workbench. Takes a query file as a parameter.

Example

QUERY_LOAD NT4WS

QUERY_RUN

Run the tag query currently loaded into Analysis Workbench. Ensure that you load the correct query file before running the query. Typically you would call the `QUERY_RUN` procedure immediately after a `QUERY_LOAD`.

QUERY_SET_OPTION TAG Switch

Overrides the tagging option set by the loaded query in Analysis Workbench.

Uses the parameters `SET`, `CLEAR`, `TOGGLE`.

Valid combinations are:

- QUERY_SET_OPTION TAG SET
- QUERY_SET_OPTION TAG CLEAR
- QUERY_SET_OPTION TAG TOGGLE

QUERY_SET_OPTION PREQUERY

Overrides the pre-query option set by the loaded query in Analysis Workbench.

Uses the parameters `NONE`, `CLEARALL`, `SETALL`.

Valid combinations are:

- QUERY_SET_OPTION PREQUERY NONE
- QUERY_SET_OPTION PREQUERY CLEARALL
- QUERY_SET_OPTION PREQUERY SETALL

Commands for Tagging

- *LOAD_TAGS*
- *SAVE_TAGS*
- *TAG_ALL*
- *TAG_CONTAINS*

LOAD_TAGS

Loads a list of tagged machines from a .tag text file. This file contains the asset numbers of the tagged machines. It takes one argument, the fully qualified name of the tags file to load.

Example

LOAD_TAGS c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Samples\London\Machines18Mar2003.tag

SAVE_TAGS

Saves the asset numbers of the machines tagged in a Machines window to a .tag text file. It takes one argument, the fully qualified name of the tags file to save.

Example

SAVE_TAGS c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\Samples\London\Machines11Dec2002.tag

TAG_ALL

Used to tag or untag all items of a particular type.

The syntax of the command is

TAG_ALL (Tag|Untag) (Local|Global) (File|Dir|App|Mach)

TAG_CONTAINS

Tags files, directories and applications from a script. The syntax is:

TAG_CONTAINS (Tag|Untag)(File|Dir|App) ColumnName Value

Where (x|y) means x or y.

Example

This will tag all of the unrecognized (Checkver and Unknown) files:

TAG_CONTAINS Tag File Status Check TAG_CONTAINS Tag File Status Unknown

Example

This will tag all MS apps except Outlook

TAG_CONTAINS Tag App Publisher Microsoft
TAG_CONTAINS Untag App Application Outlook

Commands for Exporting Data from Analysis Workbench

- *EXPORT_LOAD ExportLayoutFileName*
- *EXPORT_RUN*
- *EXPORT_SETDIR*

EXPORT_LOAD ExportLayoutFileName

Loads a saved export layout file. This can be configured using any of the exports available from the main Analysis Workbench menu. Simply set up the export as required for exporting the data and save it to the file name used in your script.

Example

EXPORT_LOAD TestScript.awrcl

EXPORT_RUN

Runs the currently loaded export layout file. This will export the data to the files specified in the AWRCL file.

EXPORT_SETDIR

Allows you to change the directory that the files are exported.

Example

EXPORT_SETDIR C:\Gateway

Note: Older .rcl files will not work in Desktop Inventory Version 7.0.0 or later.

Commands for Script Debugging

- *BREAK_ON_ERROR ON | OFF | TOGGLE*
- *SINGLE_STEP ON | OFF | TOGGLE*
- *DISPLAY_PROGRESS ON | OFF | TOGGLE*

Pressing the **Pause|Break** key will stop the script at the next command and display a dialog box – it will not interrupt a running command apart from the `WAIT` command.

It only needs to be pressed once, however, it may appear that nothing is happening if a whole directory of scan files is being loaded.

BREAK_ON_ERRORON | OFF | TOGGLE

Setting `BREAK_ON_ERROR ON` will stop the script if any errors occur.

SINGLE_STEP ON | OFF | TOGGLE

Puts up a dialog box for every command when switched on, allowing the script to quit, skip the current command or turn off the single stepping.

DISPLAY_PROGRESS ON | OFF | TOGGLE

Shows a window with currently processing script line added to a list

Commands for Script Logging

- *LOG_CLEAR*
- *LOG_SCRIPT ON | OFF | TOGGLE*
- *LOG_WRITE StringToWrite*
- *LOG_DISPLAY*
- *LOG_SAVE SaveToFile*

LOG_CLEAR

Clears the Analysis Workbench error log. (this is not recommended unless you are saving the error log to a file each time a script is run).

LOG_SCRIPT ON | OFF | TOGGLE

Writes command lines to the log as they are processed

LOG_WRITE StringToWrite

Writes the specified string to the log file and log window if turned on.

LOG_DISPLAY

Displays the Analysis Workbench main log window to show errors and messages as the commands in the script are processed.

LOG_SAVE SaveToFile

Saves the log to a file specified as a parameter.

Example

LOG_SAVE $ScriptFile
LOG_SAVE c:\ScriptFile.txt

Miscellaneous Commands

- *IF Expression THEN Command*
- *EXIST Filename*
- *IF EXIST FileName THEN Command*
- *SAVE_STATE FileName, Description*
- *TERMINATE_PROGRAM*
- *PAUSE Message*
- *STD_DATES ON | OFF | TOGGLE*

IF Expression THEN Command

This statement performs the command only if the preceding expression is true.

Example

IF $LOOP = 10 THEN TERMINATE_PROGRAM

EXIST Filename

Used in conjunction with the `IF...THEN` command.

IF EXIST FileName THEN Command

Allows a command to be repeated a number of times. The command can be a normal one line command or a whole process section.

The syntax is FOR (variable) := Start TO end DO (command)

Start and end can be numbers or variables, end must be greater than start.

```
FOR TestInt1 := 1 to 10 DO LOG_WRITE HELLO WORLD
FOR $loop := $start TO $end DO RUN_PROCESS HelloWorld
```

SAVE_STATE FileName, Description

Saves the current Analysis Workbench data to a state image file. Takes two parameters – `Filename` and `Description`. The state image description is optional and a default description will be used if one is not specified.

Note: The state image files are now compressed and decompressed on the fly. Backward compatibility has been retained so that you can use your old state image files in this version of the software, however, they will now be compressed as soon as you save them.

Example

```
SAVE_STATE TestState.AWS, Test state image saved by command script
```

TERMINATE_PROGRAM

Shuts down the Analysis Workbench program.

Note: Will not prompt for shutdown

PAUSE Message

Will display a dialog box prompting for action - optionally you can include a message that will be displayed in the dialog box

Example

```
PAUSE load has finished
```

WAIT n

Wait n seconds

Example

WAIT 100

Will wait 100 seconds - only checks for times greater than 1 hour – Do not use large numbers for the wait time. This will lock the program until the time limit is reached or the **Pause**|**Break** key is pressed.

STD_DATES ON | OFF | TOGGLE

Displays and outputs all date fields in a standard format to aid in exporting data to other applications.

Example

STD_DATES ON

Sample Command Script

A sample script is supplied with Desktop Inventory in the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Analysis Workbench\Scripts

Note: Section names must not begin or end with space characters. Sections can be in any order.

```
[Comments]
*** SAMPLE SCRIPT ***
This section is ignored – There is no need to comment out lines.

[Startup]
; This section contains information which will be used to configure
; Analysis Workbench on starting the script and does not have to exist
LOG_CLEAR
DISPLAY_PROGRESS ON
RUN_PROCESS ClearAW

[Process]
LOAD_DIRECTORY_LIST TestDirList
RUN_PROCESS Business5
RUN_PROCESS BusinessAll
RUN_PROCESS Operational5
RUN_PROCESS OperationalAll
QUERY_LOAD q:\EXE.W32\AW\queries\nt4ws
```

```
QUERY_RUN

[ClearAW]
UNLOAD ALL

[Business5]
RUN_PROCESS ClearAW
SET_BUSINESS
LOAD_SCAN_LIST 5FSFListLondon
SAVE_STATE q:\EXE.W32\AW\State Images\Business5.AWS,Demo state containing 5
scans from the London office in Business mode

[BusinessAll]
RUN_PROCESS ClearAW
SET_BUSINESS
LOAD_DIRECTORY q:\EXE.W32\AW\Samples/s
SAVE_STATE q:\EXE.W32\AW\State Images\BusinessAll.AWS,Demo state containing all
scans from the London and Frankfurt offices in Business mode

[Operational5]
RUN_PROCESS ClearAW
SET_OPERATIONAL
LOAD_SCAN_LIST 5FSFListLondon
SAVE_STATE q:\EXE.W32\AW\State Images\Operational5.AWS,Demo state containing 5
scans from the London office in Operational mode
[OperationalAll]
RUN_PROCESS ClearAW
SET_OPERATIONAL
LOAD_DIRECTORY q:\EXE.W32\AW\Samples/s
SAVE_STATE q:\EXE.W32\AW\State Images\OperationalAll.AWS,Demo state containing
all scans from the London and Frankfurt offices in Operational mode
[5FSFListLondon]
q:\EXE.W32\AW\samples\London\LND1000.fsf
q:\EXE.W32\AW\samples\London\LND1002.fsf
q:\EXE.W32\AW\samples\London\LND1006.fsf
q:\EXE.W32\AW\samples\London\LND1028.fsf
q:\EXE.W32\AW\samples\London\LND1038.fsf
[TestDirList]
; This section contains a test list of directories to load
; note c:\/sub will attempt to load ALL Scan Files on drive C
```

```
; d:\scan files will load only scan files in that directory - subdirectories would be ignored

c:\/sub
d:\scan files
e:\/sub
f:/sub

[End]
; This section contains commands to be run before script finishes and does not have to
exist
;LOG_SAVE c:\AWScriptLogFile.txt
;TERMINATE_PROGRAM
```

8 CHAPTER Application Recognition and Teaching

In this chapter you will find information about the following topics:

Introduction to Application Recognition

In This Section...

What is Application Recognition?

Application recognition is the process of determining what software is installed on a machine. The process takes place after scanning, when a scan file is loaded into the Viewer or Analysis Workbench components, or when it is processed by the XML Enricher.

The recognition process is driven by a Recognition Engine built into the components previously listed, and is based on the Application Library supplied with the product. The Application Library stores the information required by the Recognition Engine to determine which applications are installed on a machine and is updated on a regular basis.

What to Expect from Application Recognition

There are several ways in which applications installed on a machine can be recognized. Each method has its benefits, and until the purpose of performing application recognition has been established it is difficult to see why one method might be preferred over another.

The best forms of Application Recognition have the following characteristics:

1. Identifies all applications on a machine

   This is of course the primary goal of any recognition mechanism. An accurate list of applications allows you to enforce the corporate standards, determine software license compliance, assist internal support, and so on.

2 Identifies software licences required

Identifying the list of applications is not enough for accurate software licensing. For example, if a machine has both Microsoft Word and Microsoft Office on it, a straightforward count of installed applications would require two licenses for the machine, where clearly only a license for Office would be required.

3 Presents the data in normalized form

For reporting and analysis purposes, it is important that the data is normalized. For example, it is useful to have a 'publisher' field that allows you to quickly choose all applications from a particular publisher without having to isolate this data yourself.

When the data is not normalized, it is much more difficult to analyze and report. Just imagine Microsoft Word 2000 represented as a single entry such as 'Word 2000 - Microsoft', and WinZip 8.0 represented as 'WinZip v8'.

4 Identifies the relationships between files and applications

When this relationship is identified, support and troubleshooting becomes much easier. If an identified application should be upgraded or removed, it is immediately obvious which files will be affected by the change when this kind of information is available.

Similarly, if a user has a problem with an application, a comparison between two scans of his machine can often identify changed or deleted files that are necessary for the application to run.

5 Identifies a list of unidentified files

With this information, it is possible to estimate the accuracy of the information, and to determine where library teaching may be required: for a population of machines, unidentified files that occur on a large number of machines should be added to the library as they are likely to be part of a commonly installed application.

6 Allows custom applications to be added to the library

No library-based mechanism can cover 100% of all applications. Some companies use lots of bespoke software, or customized versions of generally available software. The algorithm must allow the user to customize the library used to easily cover such applications.

7 Allows improved accuracy without revisiting the machine

The most intrusive and time consuming step in any inventory process is that of scanning the machine. It is desirable to keep the number of scans to a minimum, both to minimize the impact on the user and to avoid consuming network bandwidth unnecessarily.

Consequently, the application recognition should be applied to the scan file and it must be possible to improve application identification without revisiting the machine.

An Overview of Different Recognition Mechanisms

The recognition methodology applied by Desktop Inventory has all of the benefits previously mentioned. The following table shows a summary of the most common methods and their benefits and drawbacks.

Benefit	Peregrine	Installed Apps	Version data	Other library
1 - Applications	Yes	Some	Some	Some
2 - Licences	Yes	No	No	No
3 - Normalized	Yes	No	No	Some
4 - Files/Apps	Yes	No	Yes	Some
5 - Unidentified files	Yes	No	No	Some
6 - Teaching	Yes	No	No	Yes
7 - Server teaching	Yes	No	No	Some

Peregrine's SAI Based Recognition

SAI recognition is Peregrine's preferred method and offers the full range of benefits associated with application recognition.

The full details of SAI-based recognition are discussed throughout this chapter.

Installed Applications Recognition

Installed Applications recognition relies on the operating system to supply a list of applications installed on a particular machine. This mechanism is not particularly reliable (for example, it is often possible to edit the list and install applications without adding them to the list) and the data retrieved is often not very accurate. However, it is very fast and requires no library maintenance.

If you do not want the added overhead of a library-based recognition mechanism, the Peregrine tools support this mechanism.

Version Data Recognition

Version Data recognition also requires no library and works by extracting all 'version data' from executable files during the scan, and presenting this information as a list of applications.

Unfortunately, the version data is added by the software publishers and is notoriously unreliable. For example, some companies forget to update it with a new release, do not include the information at all, or use a different version numbering scheme in these files than they do in the product.

The addition of the VerDLL field to the SAI allows you use version information in addition to the normal SAI data to provide more accurate version recognition. Particularly in cases where executables are of an unpredictable size.

Other Library Based Mechanisms

A number of other library-based application recognition technologies exist. However, due to the overhead of meticulously adding all files for an application to the library (something Peregrine does for you), most of these libraries include information only about the 'Main' file of a version. This results in poorer recognition (for example, differentiating between two similar versions of an application) and loses some of the benefits discussed previously.

Most of the libraries are also included with the Scanners, which means that all machines have to be re-scanned when the library has been updated.

The Results of SAI Based Application Recognition

During application recognition, each file on a machine is flagged as belonging to a particular application (or as unidentified). From this identification, a list of applications (and licenses required) for each machine is calculated. For each application recognized, the software identifies:

- The publisher name
- The application name
- The type of the application
- The release

- The version
- The operating system
- The language
- The licence relationship to other installed software

Note: Licence relations are known as release relations in the Application Encyclopedia.

For Microsoft Word 2000 Service Pack 2 for Windows (English version), the resulting data would be:

Publisher	Microsoft
Application	Word
Application Type	Office App
Release	2000
Version	2000 SP2
Operating System	Windows 9x/NT
Language	English
Licence relationships	Licenced by Microsoft Office 2000 SP2

As you can see, the data is available in an easy-to-use normalized form, which makes it easy to group applications by publisher, language, OS, etc.

The rest of this chapter goes into much detail about how this data is found, represented, manipulated and augmented.

The Release and Version Fields

The Release and Version fields need a word of explanation. Most application versions will be identified with a Version (such as 4.3) and a Release that is ‘Stand-alone’.

The Release identification is of value in cases where several versions of the same application are licensed as a single application, in which case all those versions are grouped as belonging to a single Release. For example, all versions of Word 2000 are grouped under the Release label ‘2000’, with the Version identifying the exact version installed.

When your primary concern is support, the Version value is most useful as it indicates exactly which version of the software is installed.

When the primary concern is license management, the Version is of less interest - irrespective of the service packs installed, the Release allows you to identify how many licenses of Word 2000 are required.

The Application Library

The Application Library is delivered with the product in the form of a set of SAI (Software Application Index) files. All of the components capable of performing Application Recognition start by reading the information stored in the SAI files and applies this information to scan files during the recognition process.

The Application Library can also be stored in a database, called ApE - Application Encyclopedia. The ApE database contains the same information as a set of SAI files, and can be manipulated with the ApE Explorer component. When the ApE database has been updated with new application information, a new set of SAI files containing the information can be exported for use with Viewer, Analysis Workbench and XML Enricher.

For more information about ApE Explorer, refer to the *Application Encyclopedia User's Guide*. A more detailed explanation of the libraries can be found later in this chapter.

An Overview of How Application Recognition Works

Based on the configuration and file data collected by the Scanner, the Recognition Engine determines which applications are installed on a particular machine, and which licenses are required.

To do this, each file is associated with an application and establishes the file's relationship to the application.

The relationship can be either Main, Associated or 3rd party. When a Main file is identified, the corresponding application is said to be installed and to require a license. Associated files may belong to an application, but do not necessarily require a license, and 3rd party files ship with the application in question but are produced by a third party.

Based on the list of recognized Main files, a list of applications on the machine is produced.

As a final step, the license relations between the installed applications are identified, to give a complete list of software licenses that are required for the machine. This step allows license requirements for complex software such as software suites to be reported accurately.

In the following, the application recognition process is described in more detail.

Application Recognition at the File Level

Recognition takes place when data is being loaded from a scan file, for example when loading into Viewer. Each file entry in the scan file is passed to the Recognition Engine for processing. The Recognition Engine then tries to find matches for the file, comparing file details (collected during the scan) with the entries for this file name in the Application Library. File name, file type, file size and file signature are taken into account.

Note: The process of looking up a file by its name is very efficient. The time required for performing application recognition increases very slowly as the size of the library grows.

If no match for a file name is found, the file is flagged as Unrecognized.

If one or more matches are found, the file's data is stored in memory along with all of the possible ways in which it can be recognized. The recognition engine stores list of all possible matches together with internally calculated ratings for each match. The ratings determine how `reliable' each match is for a file. This process continues until all files in the same directory have been processed in the same way.

When a complete directory has been read, it is possible to build a list of all possible versions and again assigns ratings to each possible version based on the `match strength'. If it is now possible to establish a good match for every file in the directory, recognition data is returned to the calling process.

If the process results in a situation where two or more application versions have the same rating, the Recognition Engine looks at the Install String entries for the candidates for recognition. If one of the applications has an Install String that is present on the machine, this application is chosen over the other applications.

The Install Strings are extracted from the Add/Remove Programs list when the machine is scanned. Most applications add an entry to this list, and this is the entry that can be used as a 'tie-breaker' in the Recognition Engine.

Level 3 Recognition Heuristics

If Level 3 Recognition Heuristics is enabled, the Recognition Engine will defer final recognition for directories where it is not possible to establish that all files belong to the same application. When such directories are found, the Recognition Engine waits until all files have been processed and then applies the version selection logic outlined in the previous section to the files that were difficult to recognize.

If Level 3 Recognition is disabled, machine-based recognition will not take place and recognition data will be returned after each directory. A time overhead of about 10% is normal when Level 3 Recognition is enabled.

Although disabling `Level 3 Recognition Heuristics' will speed up the process of loading scan files slightly, it worth noticing that the recognition results will be less accurate. In complex cases, some applications may be identified incorrectly or not at all when this setting is disabled.

Examples of such applications could be Windows NT and Windows 2000 with a service pack applied, where many files do not change between the versions, or Microsoft Office 97 Professional and Standard Editions where the majority of files are shared between the two applications and the files are spread over a large number of directories.

Application Recognition in Analysis Workbench

Analysis Workbench allows more control over the recognition process than Viewer and XML Enricher, and allows you to add more applications to the SAI files used for recognition.

Because Analysis Workbench can be used as a teaching tool, an additional level of recognition is available: ‘checkver’. Checkver is short for “check the version” and is the recognition engine’s best guess at recognition for a file it would normally flag as unidentified. Checkver files normally indicate that a machine has a new version of an application that is already in the library, but that the new version has not yet been added to the library.

The 5 different recognition levels for files are indicated by different default color in the Analysis Workbench, as shown in the following table. The colors can be customized, see *Customizing the Font and Color* on page 318 for more information.

Recognition Level	Type	Default Color in Files Window
Recognized	Main	Red
Recognized	Associated	Green
Recognized	3rd Party	Teal
Partially Recognized	Checkver	Purple
Unrecognized	Unknown	Blue
Unrecognized	Unprocessed	Black
Unrecognized	Auto-identified	Olive
Junk	Junk	Olive

Information about licences and licence relations can be found in an Applications window and the associated Details window. For more information about Analysis Workbench, and how it is used in application teaching refer to *Licence Relations and Application Suites* on page 482.

Application Recognition in XML Enricher

The XML Enricher reads scan files and outputs ‘enriched’ XML scan files containing all of the original data as well as data identified in the application recognition step.

Each file is stored as a <file> element. When a file is identified as belonging to an application, two attributes are added to the element: versionid and flag.

For example,

```
<file name="winword.exe" size="12345" versionid="1111" type="M"/>
```

would represent a file named winword.exe identified as belonging to the application with a version ID of 12345. The type of the file is "M", which means Main file. The possible values for the type field are:

Type	"type" tag in enriched XML file
Main	M
Associated	Y
3rd Party	3
Unknown	N

The versionid attribute refers to the unique ID associated with every version in the library. In an enriched XML scan file, the <**applicationdata**> section contains a list of applications identified on the machine along with the version IDs.

For example,

```
<applicationdata>
  <application version="6.0 sp1"
      release="6.0"
      name="Internet Explorer"
      desc="Microsoft Internet Explorer"
      publisher="Microsoft"
      language="English"
      os="Windows 98/NT/2K/ME/XP"
      type="Web Browsers"
      maindir="C:\Program Files\Internet Explorer"
      lastUsed="2004-05-05 00:00:00"
      versionid="12790"
      releaseid="131"
  />
  <application version="6.0 sp1"
       release="6.0" name="Outlook Express"
      publisher="Microsoft"
      language="English"
      os="Windows 98/NT/2K/ME/XP"
      type="Communications"
```

```
        maindir="C:\Program Files\Outlook Express"
        lastUsed="2004-05-05 00:00:00"
        versionid="12792"
        releaseid="372"
        licencedby="12790"
        licencedbyrelease="131"
    />
/applicationdata>
```

The example above could be found for a machine with just two applications on it: Microsoft Internet Explorer and Microsoft Outlook Express. The "licencedby" attribute indicates that Microsoft Outlook Express is licensed by Microsoft Internet Explorer. In other words, while both are licensable applications, this machine requires 1 licence for Microsoft Internet Explorer - with this licence, no separate Outlook Express licence is required.

Further Information

You can find further information about the XML enricher in the *XML Enricher* Chapter.

The Software Application Index Application Library

In This Section...

Types of Software Application Index Files

The storage mechanism that provides recognition information is implemented by using a file format called the Software Application Index (SAI). The SAI enables the identification of files and applications installed across a computer population.

Three kinds of SAI file are available:

- Master SAIs

- User SAIs
- Read-only SAIs

Master SAIs

These are produced from the Peregrine Master Application Encyclopedia and form the backbone of the library. A Master SAI knows everything Peregrine knows about applications and about the history of the library, allowing you to apply a new Master SAI to your own database even if you have changed/added/deleted from a User SAI. A Master SAI is self-contained. It contains all versions, applications, publishers, operating systems and application types referenced by the library. You cannot produce or copy a Master SAI file for editing or making modifications.

Over 8000 applications are currently supported by the Master SAIs.

Different Language Libraries Available

The Master Library is distributed to you as a set of **Master SAI** files:

- **Master.sai**

  The **Master.sai** contains English versions of software, language independent application versions and language neutral versions.
- **French.sai**
- **German.sai**
- **Unix.sai**

The **French.sai** and **German.sai** files are also produced from the Master Library and support recognition of French and German applications, respectively.

Frequency of Recognition Library Releases

Recognition libraries for all languages are released once every quarter through the Peregrine Customer Support Web site. Library updates are available without additional charge for all customers under maintenance.

The SAI file is also used as the transfer medium for your ApE database. The update can be applied through the ApE Explorer's Import SAI function. For further information, refer to the document entitled *Application Encyclopedia User's Guide*.

What to Do If Software is Unrecognized

Occasionally the software might not precisely identify the software application installed. In this case it may report it as 'Unrecognized' if it is completely unknown or 'Check Version' if at least some information about the application files is available in the library (Analysis Workbench only).

In these cases, the application should be taught to the **User.sai** or added to the Master Database.

If you encounter an unknown version and report it before the next quarterly release, it can typically be included in the next scheduled release of the library. If it needs to be included right away, you can call Peregrine Customer Support for assistance in using the Analysis Workbench to teach the software immediately.

What to Do When You Get a New Master SAI File

When you receive a new Master SAI file, you can use the SAI Update Wizard so that any User SAIs remain consistent with the new SAI. For example, the User SAI may contain an application version that has been renamed or deleted. In this and other cases of conflict or incompatibility, the SAI Update Wizard resolves the issues by using a simple, step-by-step process.

- See *The SAI Update Wizard* on page 641 for more information about how to use the SAI Update wizard.
- See *Using Recognition Objectives* on page 633 for more information about recognition and the xml enrichment process.

Viewing Contents of a Master SAI File

The Master SAI is stored in an optimized proprietary binary form and can be displayed directly in the SAI Editor.

This application is available via the Analysis Workbench User Interface or as a stand-alone utility from the Start menu. For further information refer to the *SAI Editor* Chapter.

You can also view its contents using the Application Encyclopedia Explorer. For further information, refer to the document entitled *Application Encyclopedia User's Guide*.

How Peregrine Decides What Applications to Put in the Master SAI

Peregrine's goal is to include all currently supported mainstream software available on the market in the Master SAI file. Peregrine does not include applications developed by customers nor does Peregrine include beta versions of any application.

Priority is given to industry leading software publishers, but Peregrine does address other mainstream publishers as well. In some cases Peregrine receives the software directly from publishers. In other cases Peregrine borrows the software from customers who are interested in having it added to the library.

User SAIs

User SAIs are custom libraries created using the Analysis Workbench or SAI Editor. The User SAI is a Software Application Index created by you by 'teaching' applications to the library. The User SAI may contain new or changed information from what is contained in the Master SAI. For example, a locally produced application or the version name of an application that is already known by the Master SAI. The User SAI can be imported into the ApE database using the ApE Explorer.

Read-only SAIs

Read-only SAIs are exports from your own Application Encyclopedia (ApE) database. They are similar to the Master SAIs in that they are self-contained and cannot be edited. Unlike the Master SAIs, Read-only SAIs do not contain history information.

Using Read-only SAI files for recognition is equivalent to using one or more Master SAI files.

Keeping SAI files Updated

The **Master.sai**, as supplied by Peregrine Systems, Inc., provides a comprehensive database of applications. However, if there are new, in-house or bespoke applications, which are not being recognized, there is the ability to add new file entries to a separate **User.sai** file.

Using Analysis Workbench

Analysis Workbench provides a range of features enabling the Software Applications Index to be updated and maintained, which includes facilities to:

- Add new applications to the Software Applications Index to 'teach' the software how to recognize applications which are not identified with the default libraries.
- Enter grouping information to enable different versions of a main application to be identified.
- Update the list to keep pace with new software releases from the numerous software publishers.

Using SAI Editor

The SAI Editor is available as a standalone tool from the Start menu or from Analysis Workbench, where it can be used to review and edit work on SAIs during a teaching session.

The Editor allows you to:

- View and edit a collection of SAI files
- Create new User SAIs
- Move and copy item between SAIs
- Delete items in SAIs
- Export the contents of an SAI to XML format, either as a summary or the entire contents.
- Display licence relationships.
- Add and edit existing licence relationships.

Planning an Application Recognition and Teaching Project

In This Section...

Overview of an Application Recognition and Teaching Project

Application teaching is the process of converting unknown files into recognized applications.

An application can consist of one or more files that have Publisher, Application and Version details added to them. Information about the file can exist either in the Master SAI provided by Peregrine or it can be added to the User SAI.

Questions to Ask Yourself

There are two key questions you must ask yourself when starting software recognition projects:

- What is an acceptable level of recognition?
- How long will it take to achieve the required recognition?

Determining an Acceptable Level of Recognition

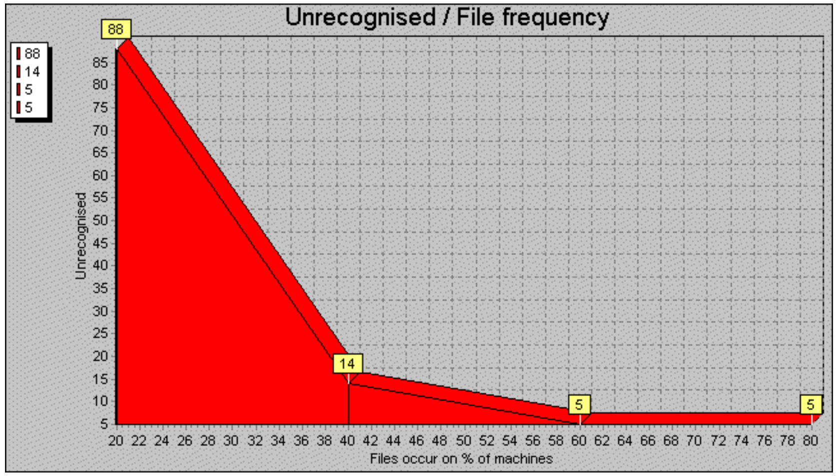
The **Unrecognized/File frequency** chart available from the Analysis Workbench can be used to help you determine an acceptable level of recognition.

Displaying the Unrecognized/File Frequency Chart

To display the Unrecognized/File frequency chart:

▶ In Analysis Workbench, after you have loaded your data in, select the **Charts|Unrecognized/File frequency** option from the **View** main menu.

The **Unrecognized/File frequency** chart (shown in the next screenshot) is a simplistic representation of the distribution of the number of files with a particular name compared with the number of times this file occurs across a sample of computers.



Interpreting the Chart

What is shown in the example chart is that the bulk of the files requiring recognition will exist on several machines within a sample, whereas, the largest number of files to be recognized may only occur once or twice across the whole sample of computers.

If the computers that these files occur on can be identified; then you can check them to see if they fit into the business critical category of machines needing attention.

This graph plot holds true for most situations where the number of copies and number of files vary with a particular sample of machines and the amount of recognition work carried on these same machines.

Using the graph, you can realistically assess the file recognition level required to achieve the goals for a particular project.

Important: With these restrictions, 100% recognition is usually unrealistic.

Defining the Cut-Off

By looking at the typical profile of unknown files versus the number of times they occur, it can be seen that typically there are a large number of files that only occur once or twice across the sample of scan files.

This file count drops rapidly as files that occur multiple times are encountered. Therefore it is sensible to define a cut-off level in the file count to keep the number of files manageable. The cut-off may start at the 10% off of level and progressively be reduced to 5% off or lower depending on the number of known files that need to be handled and the target recognition level.

The exception to this is when there are business critical or special applications that only occur once or twice across the scan file sample. In this case these applications are targeted and added to the SAI.

Important: In many instances a cut-off of 95% of installed files is seen as a realistic target.

Estimating How Long the Recognition Project Will Take

Estimating the time required for software recognition is based largely on experience. Factors that can play a big part are:

- Familiarity with Analysis Workbench and/or ApE Explorer.
- The number of scan files available.
- The quality of the scan file data - does it include valid header information in the files?
- The cut-off point required.
- The availability of local contacts - accessibility and responsiveness.
- Availability of personnel to visit machines or to investigate particular software.
- The file types to be included in the recognition. It is usual to restrict the types to COM, EXE and DLL files when teaching from scan files.

As a rule-of-thumb, over the project period an average of 100 files per day can be taught to your User.sai file. This equates to 10-12 files per hour or roughly one every 5 minutes.

In the early stages of the project, you will need time to become familiar with the data set and to select a subset of scan files for teaching.

The most productive stage is when you have lots of files that can be quickly analyzed and taught. In particular, if it is possible to cluster a number of files together, it may be possible to achieve a better result than 100 files a day.

However as the project progresses, the amount of useful data available from Analysis Workbench can diminish. It becomes necessary to spend time contacting people who have specialist knowledge of the products or physically visit the machines and check the applications manually.

This can have a significant impact on recognition productivity.

Example Recognition Information from a Small Project

The following are recognition statistics from a software recognition project.

The project used 900 scan files that contained 19680 file names with 448991 occurrences. The percentage of unrecognized files and occurrences is shown in the following table:

	Start	Finish
Recognized file names	45%	54%
Unrecognized file names	55%	46%
Recognized occurrences	82%	95%
Unrecognized occurrences	18%	5%

Around 1820 files were taught over the duration of the project. The result was a 9% increase in recognition and 13% changes in occurrences.

Specifying the Scope of Teaching from Scan Files

It is important that you make all parties involved in the project aware of the scope of the teaching process before the project commences so that expectations are correctly set and met.

This is due to the difference in methods between using scan files for information and using installations of applications.

With application installations it is possible to perform typical installations and see where all files are being deployed.

In the case of using the information available from scan files, the information relating to an application may be incomplete or different from other databases. This may be because:

- Available scan files may have incomplete installations.
- Licence relationships may be incomplete again due to incomplete installations.

Getting the Best Results

As discussed, scan files of users' machines are not an ideal source of data for teaching, although it often is the only source of data.

For applications where it is imperative that they be recognized as accurately as possible, it is recommended to follow these steps where possible:

1. Use an "empty" machine with just the operating system installed. The best way is to install the machine once and generate an image of it that can be restored to this state for every application.
2. Scan the machine and store the result as the "reference" scan
3. Install the application to be recognized
4. Scan the machine again, storing the result as the "application" scan
5. Use both scan files in an import in ApE Explorer.

When used in this fashion, the ApE Explorer can "subtract" the reference scan from the application scan. This allows a very accurate degree of teaching as all files affected by the installation can be automatically added to the library.

However, this method is more time consuming than when using scan files of users' machines and requires a dedicated machine for the teaching work as well as access to the installation media for the applications.

The Peregrine Application Librarians use this methodology for almost all applications that are added to the Master Library.

Selecting Scan Files for the Project

Although a large number of scan files may be available, the only time that they all need to be loaded is when you need to produce progress statistics.

For teaching purposes, the smaller the subset of scan files loaded the better. This is because the recognition algorithm has fewer files and directories to scan, hence giving faster recognition results.

You need to chose scan files for the project:

- Particular location or department

  Certain departments such a s Finance or Personnel may be the only users of a certain type of application, for example, Invoicing etc.

- Machines types - server or laptop

  These may contain special software such as communications software etc. or in the case of servers they may contain server components of an application.

- Specific scan files by name

  These may contain specific applications such as a bank payment transfer that only occur on a particular machine. Alternatively the scan file may be an example of a much larger set of scan files that contain particular files.

Using Analysis Workbench to Pick Scan Files to Load

Choosing a few scan files from a list of several thousand can be time consuming. The following steps show two different methods of different complexity that can be used to single out the scans that would be best for a teaching session.

Simple method - Use an Analysis Workbench Load Query

1. Use the query option when loading scan files and generate a query that includes the desired assets.
2. The selected Query will check all entries, which in a large list of scan files can be time consuming. If you need to load the same list of assets repeatedly, the more complicated method may be more appropriate.

Complex method - Load all scan files to locate the best ones to use

1. Load your scan files into Analysis Workbench
2. In the **Files** window, tag all **CheckVer** and **Unknown** files.
3. Select the **Files...** option from the **Export** menu. The **Export to Files** dialog box is displayed.
4. In the **Export to Files** dialog box, click on the **Export Files** tab.
5. Select the **One line per item** option.

6 Make sure you have selected the **Asset Number** and **Name** options in the list.

7 Click the **OK** button.

8 Import the exported data into a database program such as Microsoft Access 2000.

9 Run a query that groups on the first instance of a file name. This provides a list of scan files that contain files of interest. The following is a sample SQL query:

```
SELECT DISTINCTROW Files.Name, First(Files.[Asset Number]) AS [FirstOfAsset
Number], Count(Files.[Asset Number]) AS [CountOfAssetNumber], Files.Directory,
Files.Publisher, Files.Application, Files.Version, Files.Size
FROM Files
Group BY Files.Name, Files.Directory, Files.Publisher, Files.Application, Files.Version,
Files.Size
HAVING (((Files.Name) In (SELECT [Name] FROM [Files] As Tmp GROUP BY [Name]
HAVING Count(*)>1)))
ORDER BY Files.Name, Count(Files.[Asset Number]);
```

10 Take the output from this query and edit it into a script file under a section heading. Ensure that the full path is loaded. This can be defined with a variable for the path. Then use the Analysis Workbench LOAD_SCANFILE_LIST script to select the section.

11 Run the script and this will load the defined scan files without having to wait for the user interface.

Further Information

- See *Analysis Workbench Scripting* on page 572 for more information about the 'scan file list' script.
- See *Loading Data from Scan Files* on page 394 for more information about querying when loading scan files.
- See *State Images* on page 326 for more information about state images.

Grouping Files

Having selected the scan files to work with for a particular session, the next thing you need to consider is the grouping of files based on specific criteria of interest.

This method is preferable to just examining files individually as it may lead to multiple files being selected for teaching at one time. The following sections discuss the benefits of particular selections.

Group Files by Date Without Selecting by Type

This method allows files (recognized and unrecognized) to be grouped together. This can help pick up stray files that may have been stored in directories away from the main application directory.

Date and Time Stamp in Windows NT

The date and time stamp in Windows NT is interpreted. This means that if a file was originally installed under GMT with a time stamp of 4:50, if the time is changed to BST and the directory is run, then the files's time stamp becomes 5:50.

Vice versa, if an application was installed under BST and then the clocks were put back, the time stamp would change to 3:50.

This also means that using the date to cluster files when the machine is running NT could give different results if machines have been scanned with installations either side of a time change.

Note: This effect does not occur in Windows 3.x or UNIX.

Group Files by Name

Products such as HP printer drivers often start with the same letters (that is, HP). Also files starting DC or DD may in fact be deleted files in the RECYCLE directories.

Group Files by Header Information

There are a number of files which are in Zip or Cabinet files. It may be necessary to create a special Scanner which stores Zip files as directories and similarly using plug-in 12 for Cabinet files.

Examine Directory Names

This can include Publisher, Application and even Version in some cases. Look for more than one directory with subdirectories off it. Look particularly under **\Program Files** as often this is the default base directory for an application.

Look at Entries in Installed Applications

In Analysis workbench you can select a machine and right-click on it to display the scan file in Viewer. By looking in the Hardware and Configuration Data|Operating System|Installed Applications folder the applications that have been registered in the System Registry will be displayed.

This information is also available in Analysis Workbench in the Machine Window under **Windows Installed Apps**. The column entries are not necessarily in alphabetical order.

Use Applications Window in Operational View

The **Operational View** displays all applications with partial or full identification.

In this view Checkvers are displayed for an item. This reflects the fact that the file(s) is Checkver. Use this to recheck files and directory information. Often the grouping yields some information about a version.

To set Operational view:

1. In Analysis Workbench select the **Load Options...** command from the **File** menu.

   The **Analysis Workbench Load Configuration–Advanced** dialog box appears.
2. Click on the **Display Filter** tab
3. Select the **Load Operational View** option.

Activities During Recognition Project

Teaching Recognition

After files have been selected, then the teaching of files can be performed. This is the process of converting **Checkver** and **Unknown** files into recognized files in the **Main** or **Associated** categories.

See *Teaching Applications to the User SAI* on page 465 for information about how to do this.

Logging Your Progress

There are several ways in which you can log your process:

- Checking the number of files that have been added to the **User.Sai**.

  This has to be done manually from the beginning each time, because files added later to an existing application are absorbed into the existing application.

- Checking the number of applications in the **User.sai**.

  This is useful but does not reflect the number of files contained in each application.

- Loading a set of scan files against the User.sai.

  This is the most reliable way of tracking progress.

  This is one of the few times that all the scan files need to be loaded. To keep the memory requirement down, only load EXE and COM files, ignore Directories and Hardware data. This cuts down the amount of data to store in memory. This is a valid file selection as it is unusual to teach DLLs etc. when just using scan files.

  If the number of scan files gets too much for the available memory, then it will be necessary to split the load sets into more manageable chunks. Produce an export of all files using Name, Copy Count and Status. These exports can be appended to produce one file. Then import the file into a database and do the necessary query on the data having first produced a query to eliminate duplicate file names.

  Although the bulk of Main files are exe files, some applications are only identified by specific DLL files or some other executable. In this case, all executable files will need to be loaded with the consequent impact on memory.

Finishing the Teaching Project

The project objective is to produce a clean User SAI that has recognized files to the defined cut-off level. The quality of the data will only be assessed as the information is being used. Issues that may compromise the data quality can occur for a number of reasons. Remember that when teaching from scan file based information only, the data available may be incomplete. The following section shows some examples of possible errors that may occur.

Recognition Errors

Here are some common recognition error scenarios:

- Header information is at a variance with the actual product. This can happen with OEM or 3rd party support products. The product version is often different to the file version (in this case use the product version).
- Versions have not been applied correctly. Scan files may not include version information if the Scanner has been set up not to collect internal file identification data. Another reason might be that the application version reported in internal file data does not match the marketing version of the product. For example, Windows NT5 is packaged as windows 2000. Microsoft Publisher 2000 has an internal version umber of 6.0.
- Orphan files may be assigned incorrectly. These may be files that are not part of the main directory list for an application. They often reside in the **\Windows** or **\Winnt** directories.
- User recognition of application is incorrect. An application may be given a working name that is different to its official title.
- A different version is installed compared with the current licence. Newer versions may have to be purchased for licence purposes but copies of the older version are deployed for compatibility reasons.

Input errors

Here are some common input error scenarios:

- Vendor or application name is not consistent. This needs to be edited to ensure consistency for reports and exports.
- Product name does not match invoices or packaging. This would not be identified purely from the scan file content.
- The wrong version has been applied to a particular file. This could be caused by multiple versions being installed in the same directory.
- A space has been left in front of the text entry. This can happen if the entry is taken from teaching mode straight from the header.

Situations Where the Recognition Information Does Not Match the Client's Software Invoice Details

If a client already has a database of software purchases, there can be a number of situations where the information taught to the SAI does not match software invoice details.

- The information in the SAI is incorrect. This may be due to wrong descriptions obtained from file headers or the effect of misallocation of files in a mixed directory.
- The information in the SAI is out of date. Often for marketing reasons a product is rebranded. Edit the SAI to reflect the change. For example, Dr Solomon's Antivirus becomes Total Virus Defence.
- The application is a device driver that needs hardware to be present. Therefore, the hardware effectively is the licence and so there may not be a **Main** file.
- If after a Service Pack, Service release or Hotfix is applied only some associated files of the original application, but not the main file are changed, then the application itself will be reported as it was before the update. In this case there might not be a Main file associated with a particular Service Pack, Service release or Hotfix.

Dealing with Specific Groups of Software

The following items should not be regarded as a definitive list of recognition methods, but rather they show the types of decisions that need to be taken when interpreting the available data. It is up to the individual to define a scheme that meets the needs of a particular situation.

Install/Uninstall Programs

Unless they can be tied to specific applications, use a generic setting of:

- Publisher = Various
- Application = Installation Program
- Version = Generic

Compressed Files

Often these come as part of the application, but they can sometimes be located in directories away from the application.

- For a zip file, use the archive option in the Scanner to capture the directory list of compressed files and then compare with the other files on the machine.
- For a Microsoft Cabinet file, use plug-in 12 to read the content and match with other files.

Run-Time Files from Applications

Products such as Macromedia Director, Flash etc. can produce run-time executables. It is not always possible to identify the content of the file, as the header will usually relate only to the generating application.

- Publisher = Name of Publisher of the generating application
- Application = Name of the generating application
- Version = Version of the generating application (if known) otherwise use date of run-time file.

Files in Recycle Bins

Files in Recycle Bins will have file names such as DC1, DC9, DD1 etc. To remove them from the Unknown count, either:

- In Analysis Workbench set load options to exclude recycle directories so that the contents do not appear in file counts.
- Teach the files in the directories with a generic description. For example
  - Publisher - Various
  - Application = Recycle Bin
  - Version = Generic

It is important to check that the file name is not being used by a valid application. This means that any file not in a recycle directory still needs to be taught separately. This also means that it is dangerous to set a wide range of file sizes as it might encompass valid files.

The best approach would be to load with the Recycle Bin directories included, to produce a list of files in these directories. Then reload the data with the load options set to exclude the recycle directories from normal teaching.

Zero Length Files

Files of zero length do occur as a result of uninstallation of applications. Because these will never be executable files, then there is no recognition to be done. Therefore, just produce a report of zero length files for record purposes. Typically in a batch of 3000 files, there may be 10 to 20 such files.

NT Hotfix and OS/2 FixPak

These are the intermediary fixes that are available between service releases. For OS/2, these can be:

- RSU - Remote Software Updates
- CSF - Corrective Service Facility

Identify

- Publisher = name of publisher issuing the fix
- Application = name of application + HOTFIX if NT or CS if Corrective Service for OS/2
- Version = Date of file unless version details supplied

Applications Which Are Available on Different Platforms

Some applications have the same name irrespective of which platform they appear on. Two approaches can be used, either:

- Consolidate all the files from all the different platforms into one application. This could lead to a range of file sizes for a particular file name.
- Teach each platform separately and add the platform detail (for example, ALPHA) to the application description.

Creating a List of Files Not Requiring Detailed Recognition

This may be a list of files not requiring detailed analysis for some reason. It may be that you wish to highlight internal use of applications such as games or that an application is internal and does not need detail version information.

- Publisher = Dummy or some other generic name
- Application = Dummy or some other generic name
- Version = Dummy or some other generic name to save having to use separate dates.

Warning: This activity should only be used as a last resort, otherwise everything will be added to this list without proper analysis. You may be tempted to do this in the mistaken belief that if you move files from unrecognized to some form of recognition, then the recognition job is done. The problem will become apparent when you start to produce reports.

Why Applications May Be Taught Without a Main File

There are some situations where an application can be taught without a Main file:

- The application is a device driver that needs hardware to be present. Therefore the hardware effectively is the licence.
- The application is a Service Pack, Service Release or Hotfix and the main file of the application is identified as belonging to the original version. Because the licence remains with the original version anyway, there may be no need to re-identify the main file to also be part of the Service Pack, Service Release or Hotfix.

Publishers Using Date and Time Stamp to Indicate Version

Note: Some publishers stamp their file dates and times with an indication of the version. This facility is not universal and requires an awareness of how the version numbering is performed. Some example are given in the following table:

Vendor	Product	Format
Walldata	Rumba	
Symantec	Norton Utilities	
Adobe	Type Manager	
Corel	WordPerfect	

Vendor	Product	Format
Microsoft	Windows for Workgroups	Version 3.11 date stamp 3:11:00 or 6:22:00 **Note:** On later versions which are greater than .60, the time starts again from 00 so that a version 7.72 has a date stamp 7:12
Network Associates	Dr Soloman's Antivirus	**Note:** On version which are greater than .60, the time starts again from 00 so that a version 7.72 has a date stamp 7.12

Using States

Rather than loading large numbers of scan files each time for a session, using States can considerably reduce time to access data providing that States and SAIs are kept synchronized. If the User SAI is updated, then a new state needs to be stored before exiting Analysis Workbench.

For further information refer to *State Images* on page 326.

The Software Lifecycle

The various stages in the software lifecycle are:

- *Evaluation*
- *Purchase*
- *Delivery*
- *Deployment*
- *Upgrade*
- *Removal*

Evaluation

Check that the software is suitable and compatible. Take the opportunity to scan the evaluation software for future use. It is necessary to have a clean machine. That is, one where all the files have been recognized. If this is not possible, then take a machine and teach all the unknown files to a dummy recognition SAI. This means that any further files will be part of the new application. Use the Compare option in Viewer to compare the before and after.

For further information refer to *Comparing Scans* on page 760.

Purchase

Purchase orders will record the quantity and details of software and should include the type of licence. These need to be available for licence reconciliation purposes.

Delivery

The delivery note and invoice should confirm the licence details.

Deployment

When a licence is deployed it is recorded and confirmed by running a scan on the machine as part of the installation process.

Upgrade

Normally, the licence will stay the same. But it is important to scan the new installation to record the new version details.

Removal

When software is removed from a machine, then again a scan should be run to confirm that the software has been removed and the licence can be reallocated.

Components of Applications

Some examples of groups of applications are given in this section:

- Microsoft Office 95 has Word 6 etc.
- Office 2000 is packaged as Office 2000 but has an internal version numbers of 9.x.
- Microsoft publisher 2000 has internal version of 6.0

Components of the Different Editions

Microsoft Office

Small Business	Standard	Professional	Premium	Developer
Word	Word	Word	Word	Word
Excel	Excel	Excel	Excel	Excel
Outlook	Outlook	Outlook	Outlook	Outlook
	Powerpoint	Powerpoint	Powerpoint	Powerpoint
Publisher		Publisher	Publisher	Publisher
Small Business Tools		Small Business Tools	Small Business Tools	Small Business Tools
		Access	Access	Access
		Office Components	Office Components	Office Components
			Front Page	Front Page
			PhotoDraw	PhotoDraw
				Access Runtime
				Visual SourceSafe 6.0
				Packaging Wizard
				VBA 6.0 Tools

Small Business	Standard	Professional	Premium	Developer
				Make COM add-in
				Productivity Tools

Lotus SmartSuite Millennium Standard

Wordprocessor	WordPro including IBM ViaVoice
Spreadsheet	1-2-3
Database	Approach
Presentation Graphics	Freelance
PIM	Organizer
Document to HTML generator	FastSite
Screen/Voice Recorder	ScreenCam
Toolbar/Filing Cabinet	SmartCenter

Wordperfect Office 2000

	Standard Edition	Voice Powered Edition	Enterprise Edition
Word Processor	WordPerfect	WordPerfect	WordPerfect
Spreadsheet	Quattro Pro	Quattro Pro	Quattro Pro
Presentation Graphics	Corel Presentations	Corel Presentations	Corel Presentations
PIM	Corel Central	Corel Central	Corel Central
Doc to HTML	Trellix	Trellix	Trellix
Speech Recognition		dragon Naturally Speaking	
Database			Paradox

OS/2 Configurations

OS/2 Warp Connect	OS/2 Warp 4
OS/2 Warp 3.0 **IBM Lan Requester 4.06** **IBM Peer 1.0** **HPTS LAPS 2.60.5** **TCP/IP 3.0**	OS/2 Warp 4 IBM Lan Requester 4.06 IBM Peer 4.0 HPTS LAPS 5.10 TCP/IP Stack 5.10 TCP/IP 4.0
OS/2 Warp Server	OS/2 Warp Server SMP
OS/2 Warp 3.01 **IBM Lan Requester 5.00** **IBM Lan Server 5.00** **HPTS LAPS 5.00.0** **TCP/IP 3.10**	OS/2 Warp 3.02 IBM Lan Requester 5.03 IBM Lan Server 5.03 HPTS LAPS 5.10.0 TCP/IP Stack 5.10 TCP/IP 3.5

How to Handle Special Groups of Files

- WinZip Self Extractor

  Use the Scanner with ZIP extension
- Cabinet Extract

  Use the Scanner with plug-in 12 or run EXTRACT /D or WEXTRA32 on the machine.

Abbreviations

- ZAK - Zero administration Kit from Microsoft
- ZEN - Novell
- TVD - Total Virus Defence - Network Associates
- SMS - Systems Management Server - Microsoft

Tracking Your Progress

When using a large number of scan files for recognition, the bulk of the time is spent with a subset of the total scan files available. Usually, the total number of scan files only need to be loaded to produce figures relating to the split of Recognized and Unrecognized files.

The easiest way to track your progress is to:

1. Load the scan files into Analysis Workbench
2. Locate the **Status** column in a **Files** window.
3. Right-click on the column header and select the **Chart...** option.

   This produces a chart showing the necessary split of the status of files - that is, Main, Associated, 3rd Party, checkVer, Unknown, Unprocessed and Auto-identified.

You can also:

1. Select the **Copies** column.
2. Left click on the column header.

   This ranks the files in copy order.
3. Use a **Global** tag to tag all.
4. Untag selections to deselect unwanted types and/or chop count cut-off.

   If a tag selection is made of Unknown and Checkver above a certain number of copies, then a file filter can be applied to the machines window to select the scan files where these occur.
5. To prioritize the work, just select the scan files with the most tagged files. This is done by ensuring that the **Tagged Field** column (from the scan file section) is displayed.
6. Sort on the number of tagged files and select a small group of scan files from this selection.
7. These can be added to an OR query when loading scan files. Or for a faster response without the user interface, use scripts to load a list of scan files.

Warning: If using Plug-in 1 to display file header information in column form, make sure the same fields are selected to maintain consistency in file count.

Further Information

- For further information about exporting refer to *Exporting Inventory Data* on page 554.
- For further information about tagging and filtering data refer to *Tagging* on page 447 and *Filtering* on page 452.
- For further information about scripts refer to *Analysis Workbench Scripting* on page 572.

Using Recognition Objectives

In This Section...

Introduction to Recognition Objectives

In an ideal world, it would be feasible to make sure that every file on every machine in the population was recognized. However, the effort involved in ensuring 100% recognition is normally so large that this is not practical or economical, and less idealistic goals have to be set.

Recognition Objective Goals

Recognition Objectives are designed to ensure that the following can be achieved with the least amount of effort:

a No machine has a large percentage of unrecognized files on it.

b Files that occur often in the population are recognized.

c Files that occur only on a few machines may not be recognized.

Based on this principle, **Recognition Objectives** help you set achievable goals for the recognition process, measure how far you are from those goals, and provide assistance in achieving them.

The objectives engine allows you to define as many objectives as you need. By default, only a single objective for the entire Enterprise is defined, although this can be extended by setting up objectives that apply to subsets of the population as well.

Further Information

You can find further information about using Recognition Objectives in the *Analysis Workbench* Chapter.

What is a Recognition Objective?

An objective relates to a set of machines, and has two criteria associated with it:

- *Machines Criteria*
- *Files Criteria*

Based on these criteria and the scan files loaded, you can determine whether the objective is met or not.

Machines Criteria

The **Machines** criteria defines the following goal as a simple percentage that is applied to each machine (that is, Scan file) in the objective.

No machine has a large percentage of unrecognized files on it.

In the default case it has a value of 80%. When the objective is evaluated, machines with at least 80% recognized files are considered to meet the objective. For the objective to be met, *all* machines must meet the criteria.

Files Criteria

The **Files** criteria defines the following goals and is more complicated, as it is evaluated based on the frequency of the files that occur on the machines related to an objective.

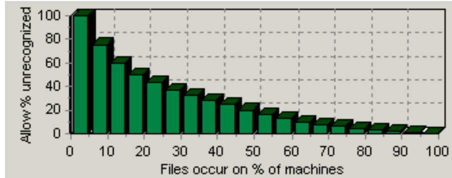
- Files that occur often in the population are recognized.
- Files that occur only on a few machines may not be recognized.

For this criteria you can choose one of several predefined shapes of the 'unrecognized/frequency' graph.

Ranging from easy to achieve to hard to achieve, the predefined shapes available are:

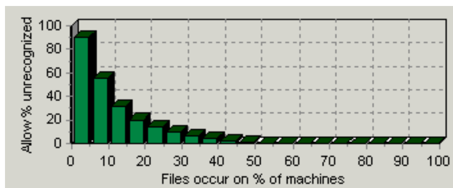
- All
- Very Relaxed
- Relaxed
- Standard
- Strict
- Very Strict
- None

The shape of the **Standard** graph is shown in the following screenshot:



This graph shows that the **Allow % unrecognized** bars are at 100% at the left of the chart where **Files occur on % of machines** is low, but drop to 0% when **Files occur on % of machines** is 100%.

To demonstrate the difference, the **Strict** graph looks similar to the following:



This shows that the **Allow % unrecognized** bars is at 90% at the left of the chart, but drops to 0% where **Files occur on % of machines** is 50%.

This means that when this criteria is applied, all files that occur on more than half the machines must all be recognized for the objective to be met.

When evaluating the **Files** criteria, each file is categorized by the number of machines on which it occurs. The number of unrecognized files in each category is then divided by the total number of files in the category. If too many unrecognized files occur on many machines, the objective is not met.

An Example

To understand how this works, assume that 10 machines have been loaded.

Of the files loaded:

- 9 files are found to occur on 4 of the machines (the rest of the files will be ignored for this example).
- 2 of those 9 files are not recognized.

In other words, 2 of 9 (22%) of the files that occur on 4 of 10 (40%) of the machines are unrecognized.

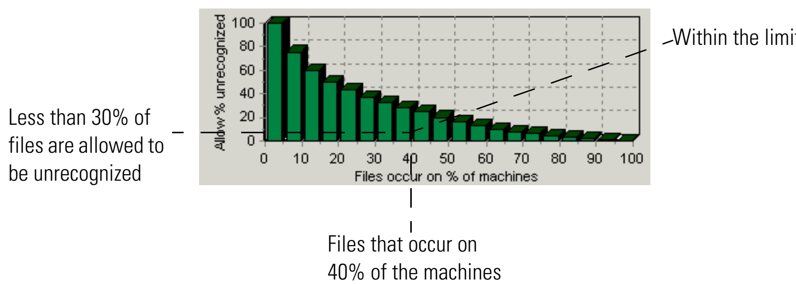
If the Standard Criteria Is Applied:

From the **Standard** file criteria chart, you can see **For Files that occur on 40% of the machines** (4 of 10) less than 30% of them have been allowed to be unrecognized.

That is:

- Files occur on % of machines value = 40
- Allow % unrecognized value = less than 30

Because the unrecognized value is 22%, this falls within the limit and the Objective has been met.



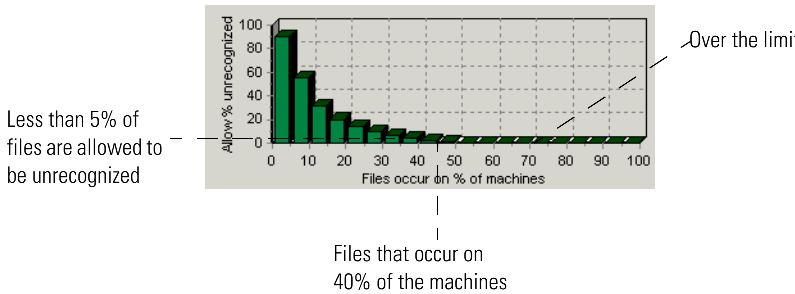
If the Strict Criteria Is Applied:

If the **Strict** criteria had been applied, the Recognition Objective would not have been achieved. Because the category being looking at is **Files that occur on 40% of the machines**, the **Strict** criteria allows only less than 5% of them to be unrecognized.

That is:

- Files occur on % of machines value = 40
- Allow % unrecognized value = less than 5

Because the unrecognized value is 22% the allowed limit has been breached and the Objective has not been met.



Note: For purposes of calculating recognition objectives, **Unrecognized** files are files with a recognition status of **Unknown** or **CheckVer**.

How to Use Recognition Objectives

There are three steps to using Recognition Objectives.

- *Step 1: Define an Initial Set of Objectives*
- *Step 2: Load Scan Files*
- *Step 3: Use the SAI Teaching Wizard*

Step 1: Define an Initial Set of Objectives

Start by defining objectives that are achievable with the resources you have available. This means that your initial set of objectives may not match the ideal, but at least can be met with a reasonable amount of effort.

After the first set of objectives have been met, you will be in a much better position to decide:

- Whether more work needs to be done.
- Where it is worth applying the most effort.
- How realistic it is to do.

Step 2: Load Scan Files

After the entire organization has been scanned, it is a good idea to load all of the scan files into Analysis Workbench to get an overview of the situation. Use this initial load to determine:

- How many unrecognized files there are in total.
- How many of these are common to a large percentage of the population.

After the objectives have been defined, it is not practical to have the scan files for the entire organization in memory if the population is larger than a few hundred machines. If too many scan files are loaded, calculating the objectives may take significant time.

Focus on a subset of machines no larger than at most a few hundred, and use the **SAI Teaching Wizard** to help achieve the objective associated with this group of machines.

However, Recognition Objectives make most sense if at least 20 scan files are loaded. If fewer than 20 machines are loaded, the **File criteria** results may unexpectedly change quite a lot if another few machines are loaded.

Step 3: Use the SAI Teaching Wizard

The **SAI Teaching Wizard** is an assistant that helps automate the selection of files to teach. It performs this selection based on the Recognition Objectives defined, and always chooses those unrecognized file(s) that will have the greatest impact on the objective.

The Wizard is primarily an aid to teaching applications that occur on multiple machines and consist of a set of files. If you get to the stage where all of the unrecognized files appear on just a single machine, the Wizard is not suitable and the teaching will probably have to be done manually.

At this stage, the unrecognized files are likely to consist of unusual applications, device drivers, orphaned files, etc. The teaching of these types of files can be very time consuming.

Application Recognition in the XML Enricher

Application recognition is core to the enrichment process that takes place inside the XML Enricher service. When enrichment takes place, a scan file is opened and run through the application library in the form of one or more SAI files.

The enricher then proceeds to write the scan file in compressed XML File format (.xsf) to its "processed" directory, adding information about recognized applications to the file data and adding a separate application data section to the XML file.

After the enriched file is complete, it can be read by the Windows Analysis Tools (Viewer and Analysis Workbench) or it can be processed by a Connect-It script.

The Application Library used by the Enricher takes the form of one or more SAI files. The normal configuration consists of the following:

- **Master.sai** - Primary master file, maintained by Peregrine Systems, Inc. containing English and language neutral applications.
- **French.sai** - Master for French language applications
- **German.sai** - Master for German language applications
- **User.sai** - User-defined SAI file with customer applications

To update the application library, there are two possible scenarios. In the first, you download a new set of master SAI files from the Peregrine support site and make these available to the enricher. In the second, you add applications to a **User.sai** file using Analysis Workbench.

Updating the Application Library Used by the Enricher

When you want to update the application library, do the following:

1 Copy all desired SAI files into the Common directory on the machine running the Enricher. For a default installation, this is the following directory:

c:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common

2 Stop the enricher service by typing the following on the command line:

net stop enricher

3 Restart the enricher by typing the following on the command line:

```
net start enricher
```

The enricher automatically finds and loads all SAI files located in the Common directory when restarted.

Further Information

You can find further information about the XML enricher in *XMl Enricher* Chapter.

The SAI Update Wizard

In This Section...

Introduction to the SAI Update Wizard

The Software Application Index Update Wizard is an upgrading utility.

The SAI Update Wizard needs to be used when installing a new version of Desktop Inventory, in order to upgrade the format of the SAI file to the format used by the new version.

It reads **Existing Master SAI**(s) and a **Customized User SAI** and tries to match the information in these two files with **New Master SAI**(s).

Note: There can be multiple Existing SAI files; one Master and national SAI files (French and German) and UNIX SAI files.

The following occurs when a User SAI file is updated:

- Any entries encountered, that cannot be resolved (for example, a new Version in the Customized User SAI referencing an application entry that does not exist in the New Master SAI(s)) are flagged.
- Flagged entries are then matched against the Existing Master SAI(s), and those entries that are found, are 'adopted' into the Customized User SAI so the information obtained from recognition is the same.
- If an entry is not found in the Existing Master SAI(s) either (that is, the upgrade is not really valid), the entry without a match is flagged for deletion from the Customized User SAI.
- Existing Version Relations are upgraded to Release Relations.

Starting the SAI Update Wizard

To start the SAI Update Wizard:

- From the Windows **Start** menu select **Programs|Desktop Inventory 8.0.0|SAI Update Wizard.**

Exiting the SAI Update Wizard

To exit the SAI Update Wizard:

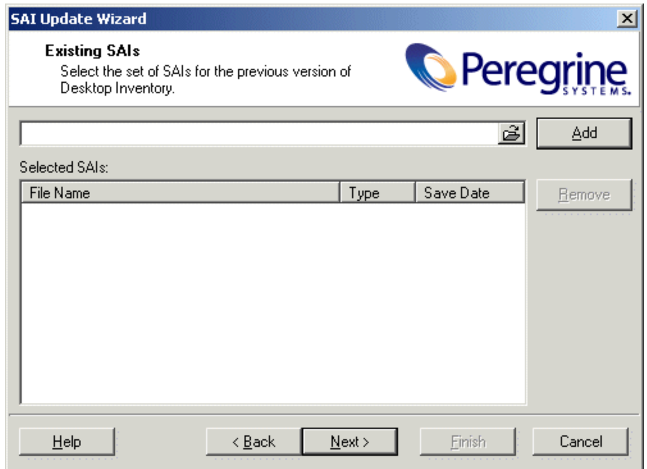
- Click the Windows Close icon or Click the **Cancel** button.

Page 1 - Welcome

On starting the SAI Update Wizard, the following page is displayed.

Click the **Next** button to continue.

Page 2 - Existing SAIs



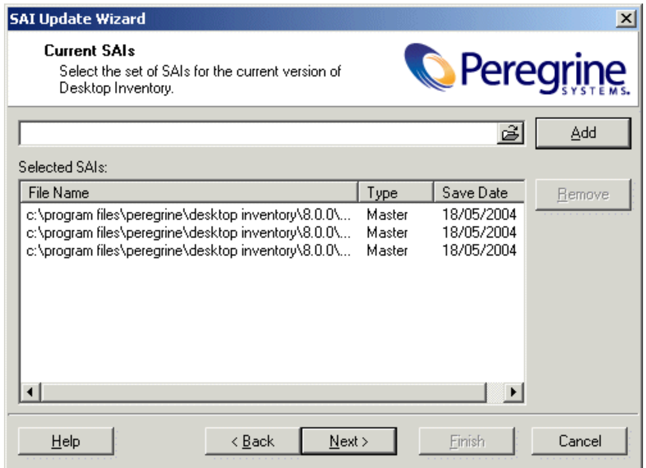
1 Select your existing (old) **Master SAI** files and the (old) **User SAI** file. Navigate to the files and add them individually by clicking the **Add** button.

The SAI files you have selected will be shown in the bottom pane.

2 Click the **Next** button to continue.

Note: You need to load all the Master files that you had loaded when you created the User SAI file. An error message is displayed if the incorrect files are selected.

Page 3 - New SAIs

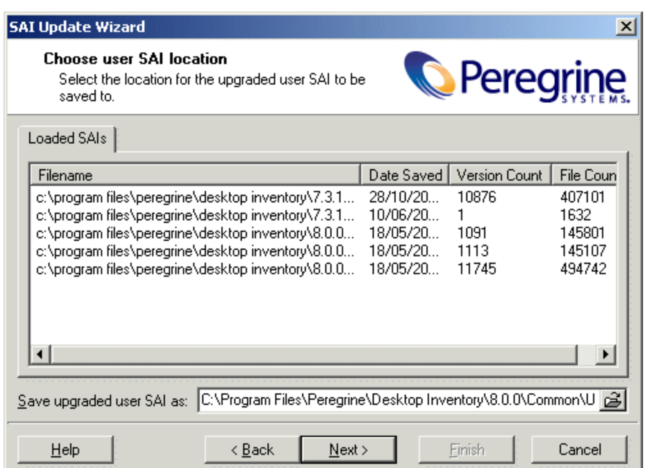


1 Select the new **Master** SAI file(s). Navigate to the files and add them individually by clicking the **Add** button.

Any SAI files you have selected are shown in the bottom pane.

2 Click the **Next** button to continue.

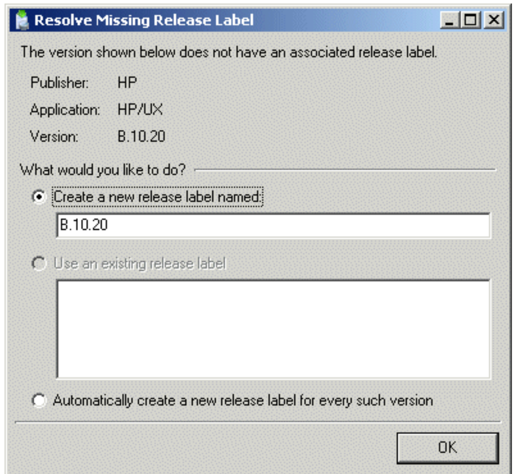
Page 4 - Choose User SAI Location



1 Enter a location to save the new upgraded User SAI file to.

2 Click the **Next** button to continue.

You may see the **Resolve Missing Release Label** dialog if the SAI file contains a version with no associated release label.



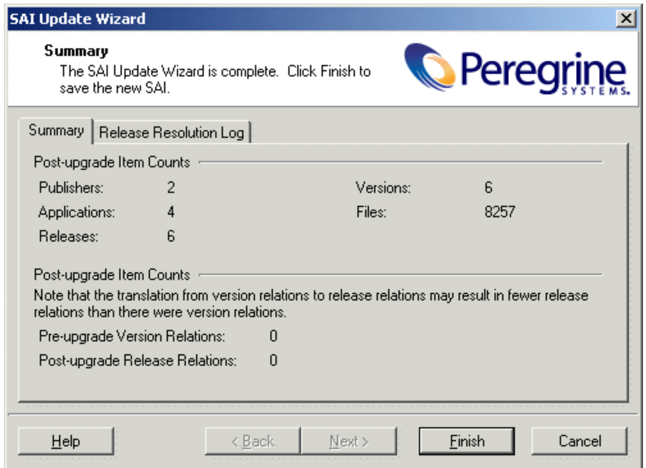
3 Create a new release label name for the specific application version.

4 You can use an existing release label if the application already had release labels. These are shown in the **Use an existing release label** pane if they exist.

5 **Automatically create a new release label for every such version** - Checking this option has the same effect as selecting the first option every time this dialog appears.

6 Click the **Next** button to continue.

Page 5 - Summary



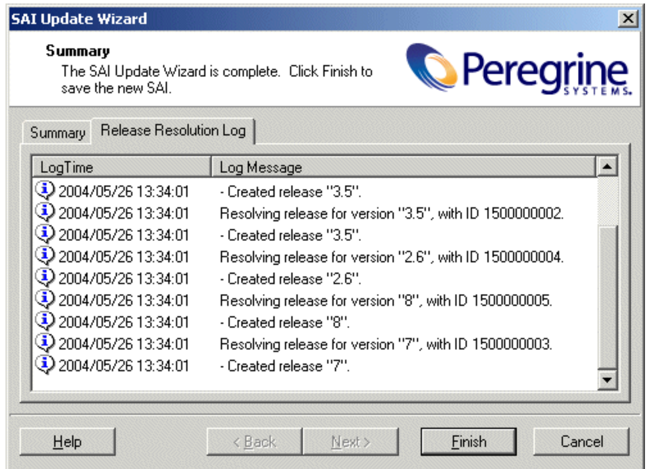
Summary Tab Page

This screen shows a summary of the following for the newly updated User SAI:

- Number of publishers
- Number of Application
- Number of Releases
- Number of Versions
- Number of Files
- How many pre-upgrade Version Relations were translated to Release Relations in the new file.

Release Resolution Log

This screen shows the results of any action that were carried in the **Resolve Missing Release Label** dialog if missing release labels were encountered.



Click the **Finish** button. The SAI update procedure is completed.

Additional Information

As a customer of Desktop Inventory you are well aware of the value a complete inventory of your computer population has to your business. One common use of the collected data is to manage your computer assets, including licences for software used in the organization.

The application utilizes a unique heuristic algorithm to identify all software installed on each machine in the population. Rather than using notoriously unreliable sources of information such as the Windows registry or the version information sometimes embedded inside executables, the recognition algorithm uses a custom built library of applications and uses an adaptive algorithm to determine whether a given application is present, based on data such as file names, executable types, sizes, signatures etc.

For this reason, it is imperative that the library is as complete and as up-to-date as possible, for which reason Application Librarians are working constantly on updating and expanding the library.

What Does it Mean to You?

After having done a complete inventory of your business, it is possible that some application may not be completely recognized by the library. If this is indeed the case, Peregrine will help by adding the applications to the library - free of charge.

In order for the Application Librarians to perform this service for you, they need to have the original installation media available, which will be used to install and scan the software so it can be added to the library. Simply send Peregrine the software to be added to the library, and it will be installed, scanned, added to the library, and the CD-ROMs will be sent back to you. The whole process will typically take about 4 weeks, and the updated library will automatically be made available for download from the Peregrine Support Web site.

Do note, that additions to the library will be done on a first-come, first-served basis, and that the process may take longer. Please make sure you contact one of the Library Managers to discuss your requirements prior to sending the software.

When sending software, it is important that full details of it are included (Publisher Name, Application Name, Application Type, Operating Systems supported, and Language of version(s) included.

To contact the Library Managers, use the details shown:

Library Manager

International Library Manager
Irina Miryanova
e-mail: irina.miryanova@peregrine.com
Tel. +44 (0)208 334 1252

Upon receipt of the software, a confirmation letter will be sent to you and the software will be returned to you within 4 weeks of Peregrine receiving it.

CHAPTER 9 SAI Editor

In this section you will find information on the following topics:

Overview of the SAI Editor

This tool allows you to:

- View a collection of SAI files
- Edit User SAIs
- Create new User SAIs
- Move and copy items between SAIs
- Delete items in SAIs
- Export the contents of a User SAI to XML format, either as an XML Summary or in its entirety.

Starting the SAI Editor

The SAI Editor can be started in two ways:

- From the Analysis Workbench **Recognition|View/Edit SAIs...** menu.
- As a standalone utility from the Windows Start menu.

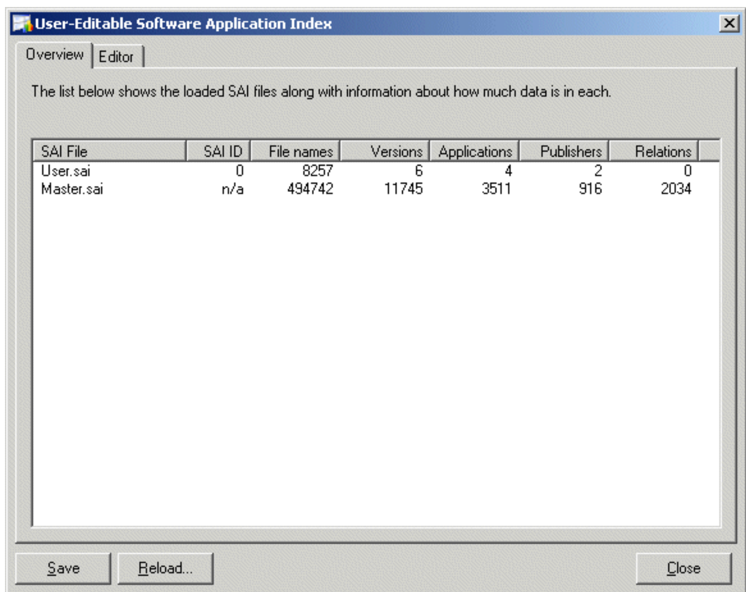
The SAI Editor User Interface

In This Section...

Overview Tab Page

The **Overview** tab page is only shown if you started the SAI Editor from within the Analysis Workbench application.

This tab page shows the SAIs loaded and details of the data items contained in them.



The following details are shown for each of the SAI files loaded:

- SAI File - the name of the SAI file.
- SAI ID - the unique ID for the SAI file. This is relevant to the User SAI files only. Master SAIs do not have an ID.
- File Names - the number of file names contained in the SAI.
- Versions - the number of software versions in the SAI.
- Applications - the number of applications in the SAI.

- Publishers - the number of publishers in the SAI.
- Relations - the number of licence relations in the SAI.

Right Click Menus

Right-clicking on an entry in this tab page will bring up the **Export summary to XML** option.

By default the XML summary is saved to the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\user.xml

See *Example of a Summary XML Export* on page 710 for further information about the XML summary.

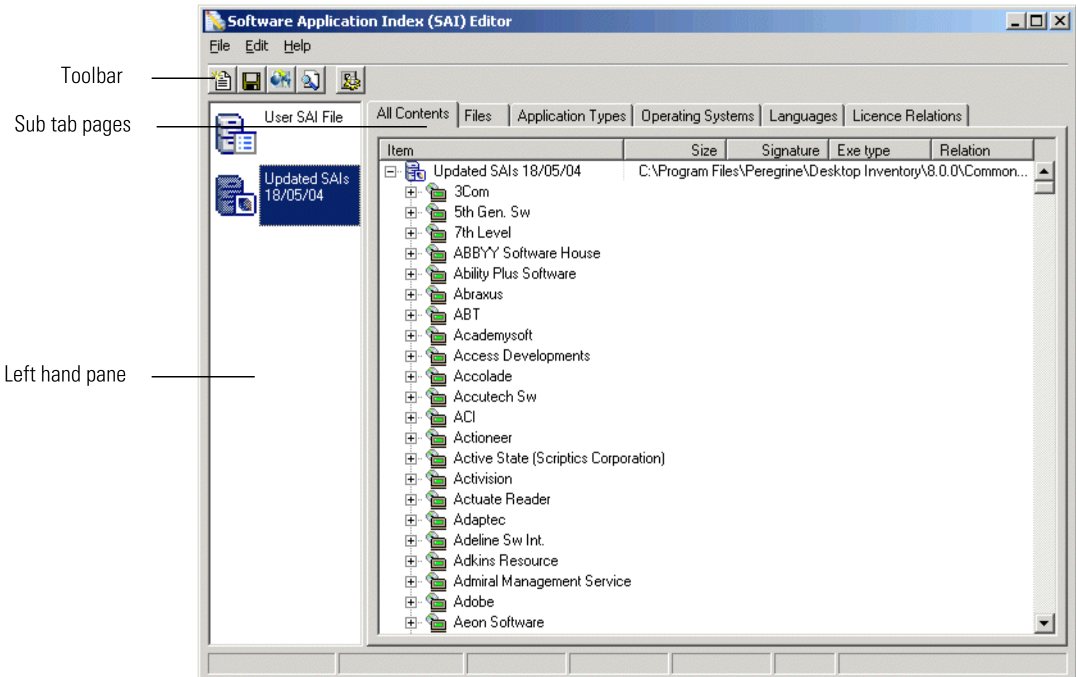
Buttons in the Overview Tab Page

There are three buttons on this page:

- **Save** - Save any modifications made to the User SAIs
- **Reload...** - Discards any unsaved changes to the User SAIs. Reloads the existing one from disk and re-organizes all affected file entries.
- **Close** - This closes the application and cause re-recognition to occur.

Editor Tab Page

The **Editor** tab page is where you can see in detail the contents of the SAI files. In addition you can perform many tasks here.



The Left Hand Pane

The left hand of this tab page shows an icon list of the SAI files that can be viewed. The following icons are used to represent User and Master SAI files.

Icon	Description
	This icon represents a User SAI file
	This icon represents a Master SAI file

Click on the icon to view the contents of that particular SAI file.

Right Click Options for the Left Hand Pane

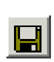
The following menu items are available when you right click on an SAI file entry in the left hand pane.

Right click menu item	Description	Further Information
New User SAI...	Allows you to create a new empty User SAI file	page 665
Export SAI to XML	Will display the SAI XML Export dialog which allows you to export the contents of the selected User SAI file to XML format.	page 709
Unload SAI	Unloads the selected SAI from the SAI Editor interface	N/A
Edit Description	This option is only available for User SAI files. It allows you to change the label associated with this file.	N/A

The Editor Tab Page Toolbar

The following toolbar icons allow you to access various SAI Editor commands.

When the mouse pointer passes over an icon, a tooltip appears indicating the command corresponding to the icon.

Icon	Description	Further Information
	Create a new empty User SAI	page 665
	Save changes made to User SAI files	N/A
	Export the contents of a User SAI in XML format	page 709

Icon	Description	Further Information
	Search for entries in a SAI file	page 708
	Set SAI Editor options	page 662

Sub Tab Pages in the Editor Tab Page

The Editor tab page consists of the following six sub tab pages:

Sub Tab Page	Further Information
All Contents	page 667
Files	page 692
Application Types	page 696
Operating Systems	page 700
Languages	page 704
Licence Relations	page 686 and page 706

The Application Types, Operating Systems and Languages tab pages are static pages and are pre-populated by Peregrine Systems. However you can add new items to the Application Types and Operating Systems tab pages for your User SAI.

Icons Used in the Editor Tab Page

The SAI Editor displays a hierarchical structure of software publishers, application names, release labels, application versions and files contained in the SAI files. The following icons are used to represent these:

Icon	Description
All Contents tabs page	
	Software Publisher This is the name of the company or corporation that released the software application. For example, Peregrine Systems, Inc. is a software publisher.

Icon	Description
	Application Name This is the name of the software program. For example, Desktop Inventory is an application name.
	Release Label When a publisher releases updates for an existing version of one of their products, they typically don't change the name of that version. Any particular version of a product could have several updates to it. In this scenario, the SAI Editor refers to the umbrella version as the Release Label, and to each of the updates as an application Version. It is not necessary that every version of software has a release label. In fact, most of them do not. Every version without a release label is associated to a virtual **Standalone Releases** label.
	Application Version See description above
	File Each file is categorized as Main, Associated or 3rd Party.
Files tab page	
	File Each file is categorized as Main, Associated or 3rd Party.
	Main File This is a key application file, that is, it is a file without which the application could not be running. It should always be present whenever the application is installed regardless of whether it is a minimum or complete installation.
	Associated File This is a non-key file that is part of the application and is written by the publisher that developed the product.
	3rd Party File This is a file written by another Publisher (3rd Party) and is used in the current application. An example of a 3rd party files is some DLL files that are technically used by the application, but are also distributed freely and can be used by other applications.
Application Types tab page	
	This icon represents the different applications software categories (for example, word processor and spreadsheet).
Operating Systems tab page	

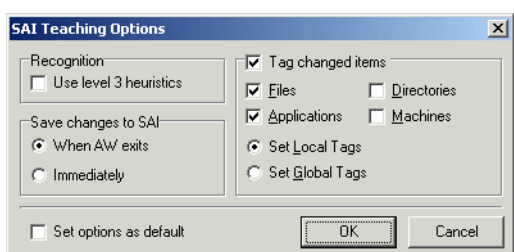
Icon	Description
	This icon represents Operating Systems.
Languages tab page	
	This icon represents languages.
Licence Relations tab page	
	Indicates that this application also licences another application.
	Indicates that this application is licensed by another application.
	Indicates that this application both licences and is licensed by another application.

Buttons in the Editor Tab Page

Note: These buttons are only available if you use the SAI Editor embedded in Analysis Workbench.

There are three buttons on this page:

- **Save** Save any modifications made to the User SAI
- **Reload...** Discards any unsaved changes to the User SAI. Reloads the existing one from disk and re-organizes all affected file entries.
- **Close** Closes the SAI Editor. If you have made any changes, the **SAI Teaching Options** dialog will be displayed.



Set the options as follows:

- **Recognition**

Use level 3 heuristics: SAI teaching uses the same recognition method as is used during the loading process. This means that if the 'Level 3 heuristics' is enabled, teaching a single file will reprocess all files on all machines on which the file occurs. If 'Level 3 heuristics' is disabled, teaching a single file will cause all files in all directory/machine combinations where the file occurs to be re-recognized.

Note: This setting should be set to the same as when the scans were loaded. If the scans are loaded with Level 3 heuristics enabled and re-recognition after teaching is done without it, recognition results can change significantly.

- **Save changes to SAI**
  - **When AW exits:** Any changes to the SAI are saved when you exit from the Analysis Workbench application.
  - **Immediately:** Any changes to the SAI are saved immediately.
- **Tag changed items**

  Selecting this option enables the following further options:
  - **Files** - Any files that are affected by the SAI teaching are tagged.
  - **Applications** - Any applications that are affected by the SAI teaching are tagged.
  - **Directories** - Any directories that are affected by the SAI teaching are tagged.
  - **Machines** - Any machines that are affected by the SAI teaching are tagged.
  - **Set Local Tags** - If this option button is selected, then Local Tags are used for the operations.
  - **Set Global Tags** - If this option button is selected, then Global Tags are used for the operations.
- **Set options as default**

  Select this check box to retain these settings as the default.

Incremental Column Search

The incremental column facility is used to locate an entry in the first column in a tab page.

To Perform an Incremental Column Search:

- Click on the column header in the active window and progressively type the word(s) or number(s) that make up the entry that you want to locate.

  The window automatically locates the closest existing value in the column.

Sorting Entries in a Column

Click on the column header to sort the contents of that column. The default sort order is ascending.

This command sorts text alphabetically, numerically, or by date in ascending or descending order.

Moving Columns to a New Position

Columns in the **Editor** tab page can be moved to any position on the page. To do this, just drag the column header to the location you want.

Setting Properties for the SAI Editor

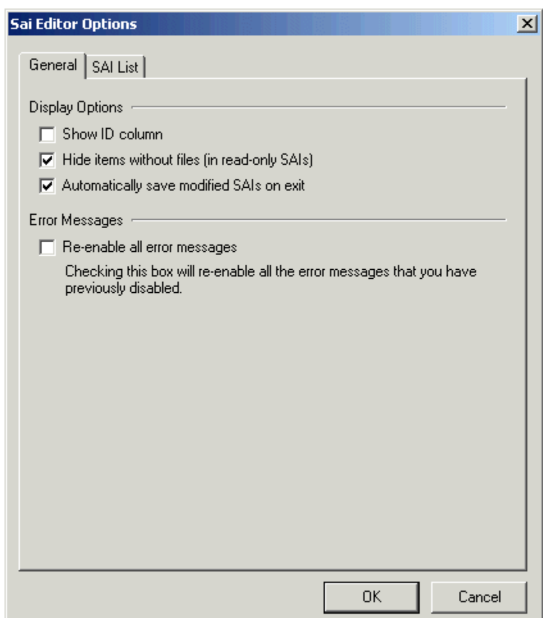
In This Section...

Opening the SAI Editor Options Dialog

To open the SAI Editor Options dialog:

1 In the **Editor** tab page click the SAI Editor Options  icon on the toolbar

The **SAI Editor Options** dialog is displayed.



There are two tab pages is in this dialog:

- *The General Tab Page*
- *The SAI List Tab Page*

The General Tab Page

The General tab allows you to set the following options:

- **Show ID Column**

  Checking this option will display an ID column in all the tab pages. IDs are assigned to each entry in the User SAI. When you copy or create an entry - a new ID is assigned to that entry.

- **Hide items without files (in read-only SAIs)**

  This option provides you with a cleaner view. It hides any entries that are empty - that is, do not have files in them. This option is for the Master SAI only.

- **Automatically save modified SAIs on exit**

  All modifications made to the User SAIs will be automatically saved when exiting the application.

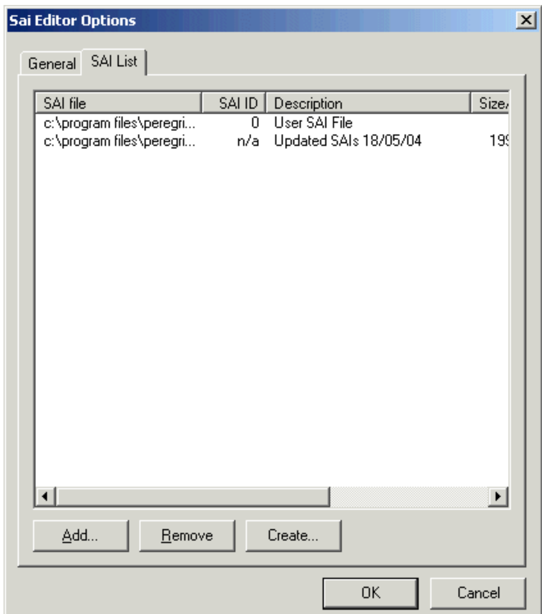
- **Re-enable all error messages**

  Checking this option will re-enable all error messages that you have previously disabled.

The SAI List Tab Page

The options on the **SAI List** tab page allow you to:

- Add a new SAI file to be viewed or edited.
- Remove an existing SAI file.
- Create a new empty User SAI file.



The list box on this tab page displays the following information:

- The path to source files for the SAI – both read-only Master SAIs and User SAI files
- The SAI ID number for User SAI files. Master SAI files do not have an ID.
- A description of the SAI files.
- The size of each SAI file (in kilobytes).
- The number of application files in each SAI.
- The type of SAI file:
  - **Master** - Read-only SAI (Master.sai)
  - **Editable** - (User.sai)

- The creation date for a Master SAI file or for a User SAI, the date the file was last saved.

Adding a New SAI File for Application Recognition

To add a new SAI file for application recognition:

1. Select the **SAI List** tab in the **SAI Editor Options** dialog.
2. Click the **Add...** button on this tab page.
3. Navigate to and select the SAI file (Master or User) you want to load.

   The SAI file is added to the list box which means the file will be included in the SAI Editor interface ready for you to view or edit.

Removing an Existing SAI File

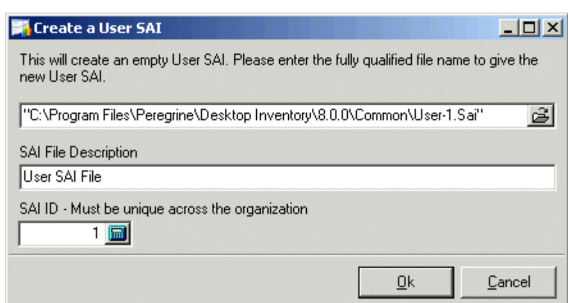
To remove an existing SAI file:

1. Select the **SAI List** tab in the **SAI Editor Options** dialog.
2. Select the applicable file in the list box and click the **Remove** button.

Creating a New Empty User SAI

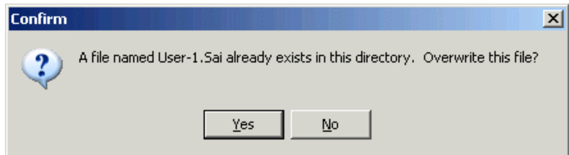
To create a new empty User.SAI:

1. Select the **SAI List** tab in the **SAI Editor Options** dialog.
2. Click the **Create…** button. The **Create a User SAI** dialog box is displayed.



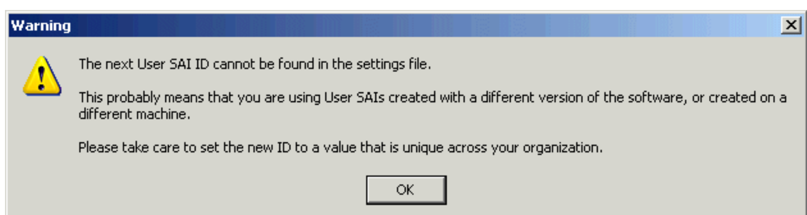
3. Enter or navigate to the directory where the SAI file is to be created.
4. Enter a description for the file.
5. Click the **OK** button.

The file is automatically assigned a unique ID. However, you may already have an SAI with the same filename. If so, the following message will be displayed.



6 Click **Yes** if you want to overwrite the existing SAI file or click **No** to return to the dialog box and assign a new ID to the SAI file.

7 If you have made modifications to the cfgNextSAIID setting in the Analysis Workbench ini file, you may see the following message. This happens when the value for the ID in the ini file is missing or lower than the highest ID in the user SAIs currently loaded. This message is for information only - the Desktop Inventory components will correct this situation automatically by inserting the correct ID value into the ini file.



The All Contents Tab Page

In This Section...

- *Deleting an Existing File* on page 683
- *Editing the Properties for an Existing File* on page 684
- *Copying a File to Another User SAI* on page 684
- *Moving a File to Another Version Within the Same SAI* on page 685

Note: You can only edit User SAI files.

Viewing Information in the All Contents Tab Page

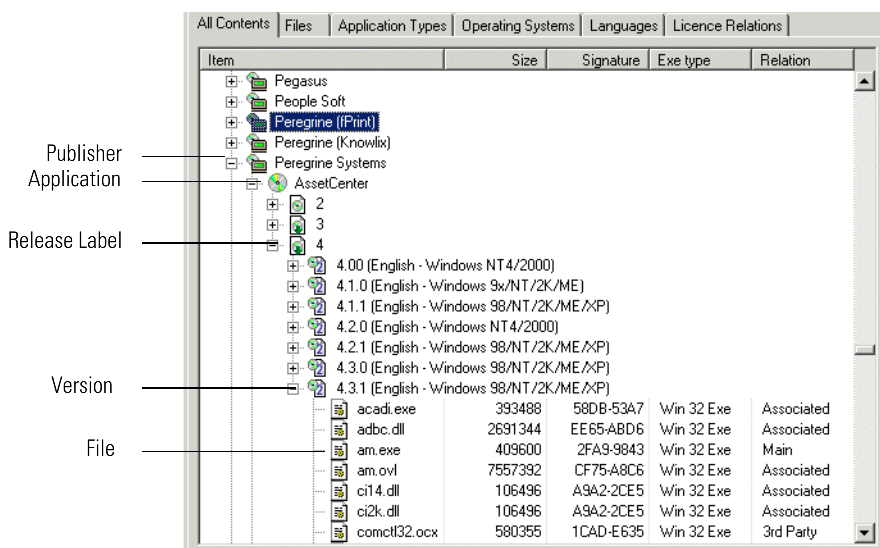
1 Click on the + sign next to a **Publisher** to expand the tree.

All the **Applications** by that software publisher are shown.

2 Expand an **Application** to display the **Release Labels** for it.

3 Expand a **Release Label** to display the **Versions** of that particular software application release that are in the database.

4 Click on a **Version** of the software to display the **Files** for that version.



The following information is shown in the columns:

- **Size** - The size of the file
- **Signature** - The signature is a checksum of the first 8 Kilobyte of a file.

- **Exe Type** - The type of executable the file is. For example, Win32 exe, DOS exe.
- **Relation** - Whether the file is a Main, Associated or 3rd Party file. See *Viewing Information in the Files Tab Page* on page 692 for definitions of these terms.
- **ID** - The unique identifier for that particular entry. This column is only shown if you selected the **Show ID Column** option in the **SAI Editor Options** dialog. See page *Setting Properties for the SAI Editor* on page 662 for further information.

Right Click Menus

Different right click menus are available for different nodes of the Publisher tree.

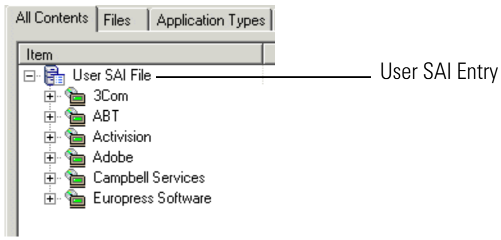
Node	Menus available
Root - the User SAI	■ New Item...
Publisher	■ Delete ■ New Item... ■ Properties
Application	■ Delete ■ New Item... ■ Properties
Release Label	■ Explore Licence Relations ■ Delete ■ New Item... ■ Properties
Version	■ Delete ■ New Item... ■ Properties
File	■ Delete ■ Properties

Adding a New Publisher

This procedure is used to add a new software publisher to a User SAI.

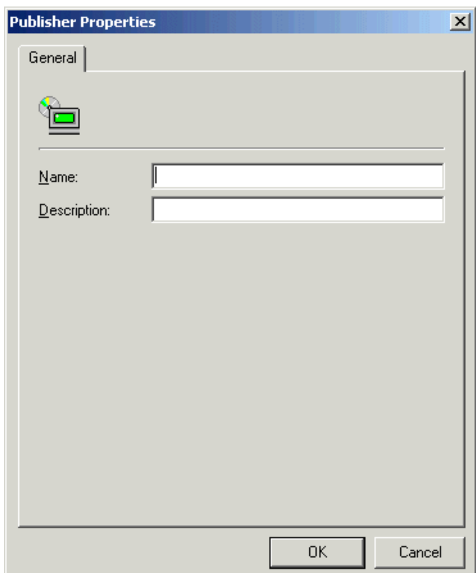
To add a new software publisher to a User SAI:

1 Right-click on the root User SAI entry in the tree. It is the first entry (the root) of the tree.



2 Select the **New Item...** option.

The **Publisher Properties** box is displayed:



Enter the **Name** and **Description** for the new software publisher.

Warning: Ensure that the Publisher Name is spelled correctly. Before adding a publisher name to the file, check whether the entry for the publisher already exists in the SAI file.

Deleting an Existing Publisher

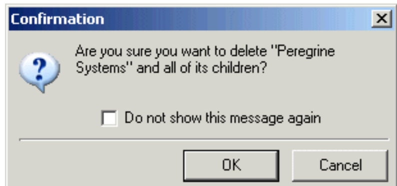
This procedure is used to delete an existing software publisher from a User SAI.

To delete an existing publisher:

1 In the tree, right-click on the software publisher to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the software publisher and all its associated sub-items.

Editing the Properties for an Existing Publisher

This procedure is used to edit the properties for a software publisher.

1 In the tree, right-click on the software publisher to be edited.

2 Select the **Properties** option.

The **Publisher Properties** box appears.

3 Edit the details as required.

4 Click the **OK** button to complete the edit.

Once the publisher details have been edited, the amended details are displayed in the tree.

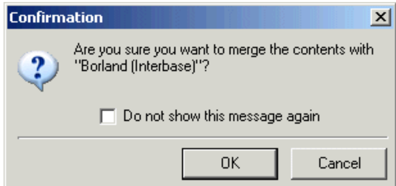
Merging the Contents of Publishers

You can merge the contents of a software publisher with another publisher within the same SAI so that they contained under the same entry. You would do this, for example, if a software publisher has been acquired by another company.

To merge the contents of publishers:

1 Drag and drop the publisher onto another publisher entry in the tree.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the merge.

Copying Publisher Contents to Another User SAI

You can a software publisher to a different User SAI.

To copy a publisher to another SAI:

- Drag and drop the publisher into the appropriate User SAI entry in the left hand pane of the Editor.

  The publisher entry is copied to the other SAI.

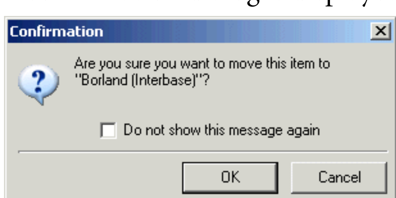
Moving the Contents of a Publisher to Another Publisher Within the Same SAI

You can move the contents of a publisher to another publisher within the same SAI.

To move the contents of a publisher to another publisher within the same SAI:

1 Select the applications under the publisher and drag them to the publisher you want them moved to.

A confirmation dialog is displayed.



2 Click the OK button to accept the move.

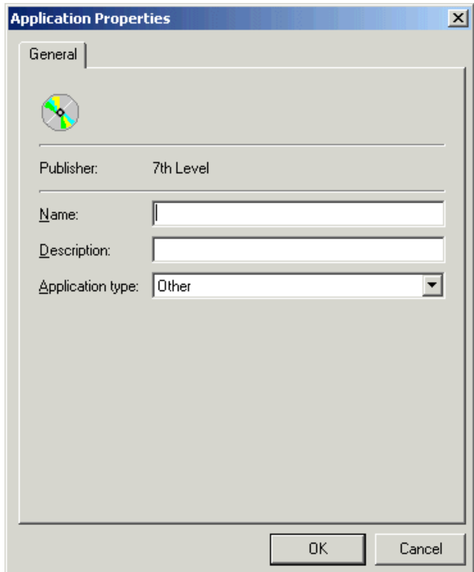
Adding a New Application

This procedure is used to add a new software application to a User SAI.

To add a new software application to a User SAI:

1. Right-click on the appropriate software publisher entry in the tree.
2. Select the **New Item...** option.

   The **Application Properties** box is displayed:



3. Enter the **Name** and **Description** for the new software publisher.
4. From the **Application Type** pull-down list select the software category that the application falls under (for example, word processor and spreadsheet).

Warning: Ensure that the **Application Name** is spelled correctly. Before adding an application name to the file, check whether the entry for the application already exists in the SAI file.

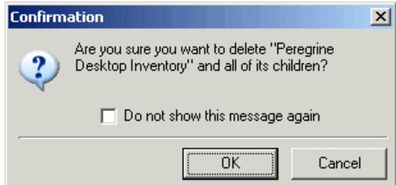
Deleting an Existing Application

This procedure is used to delete an existing software application from a User SAI.

To delete an existing application:

1. In the tree, right-click on the software application to be deleted.
2. Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the software application and all its associated sub-items.

Editing the Properties for an Existing Application

This procedure is used to edit the properties for a software application.

To edit the properties for an existing application:

1 In the tree, right-click on the software application to be edited.

2 Select the **Properties** option.

The **Application Properties** box appears.

3 Edit the details as required.

4 Click the **OK** button to complete the edit.

Once the application details have been edited, the amended details are displayed in the tree.

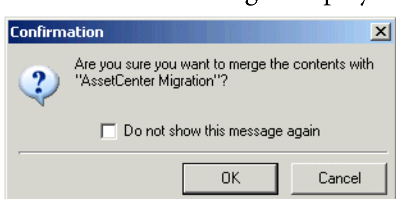
Merging Applications Within the Same SAI

You can merge the contents of an application with another application within the same SAI so that they contained under the same entry.

To merge the contents of applications:

1 Drag and drop the application onto another application entry in the tree.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the merge.

Copying an Application to Another User SAI

You can copy a software application to a different User SAI.

To copy a software application to another SAI:

▶ Drag and drop the application into the appropriate User SAI entry in the left hand pane of the Editor.

The application and the publisher entries are copied to the other SAI. If the publisher for this application already exists in new User SAI it will be copied into it automatically.

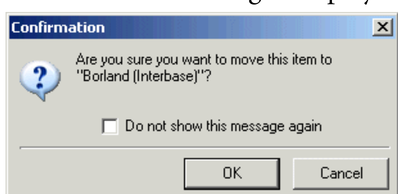
Moving an Application to Another Publisher Within the Same SAI

You can move an application to another application publisher within the same SAI.

To move an application to another publisher within the same SAI:

1 Select the application and drag it to the publisher you want it moved to.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the move.

Adding a New Release Label

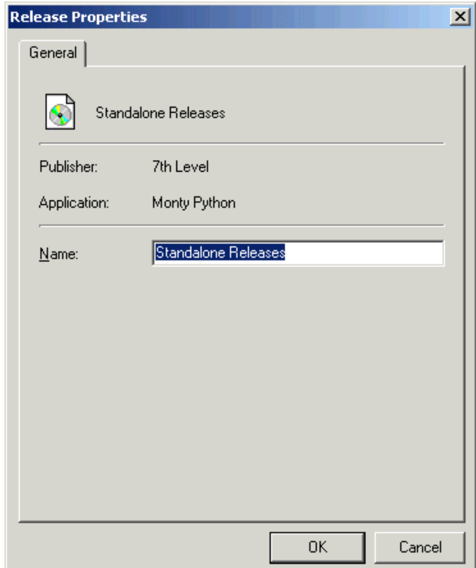
This procedure is used to add a new software release to a User SAI.

To add a new software release to a User SAI:

1 Right-click on the appropriate software application entry in the tree.

2 Select the **New Item...** option.

The **Release Properties** box is displayed:



3 Enter the **Name** for the new software release.

Warning: Ensure that the **Release Name** is spelled correctly. Before adding a release to the file, check whether the entry for the release already exists in the SAI file.

Deleting an Existing Release Label

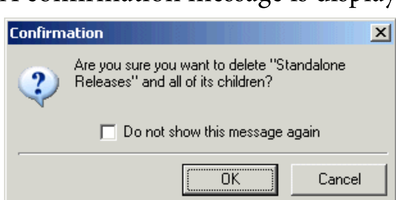
This procedure is used to delete an existing software release from a User SAI.

To delete an existing release:

1 In the tree, right-click on the software release to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the software release and all its associated sub-items.

Editing the Properties for an Existing Release Label

This procedure is used to edit the properties for a software application.

To edit the properties for an existing release:

1 In the tree, right-click on the software release to be edited.

2 Select the **Properties** option.

The **Release Properties** box appears.

3 Edit the details as required.

4 Click the **OK** button to complete the edit.

Once the release details have been edited, the amended details are displayed in the tree.

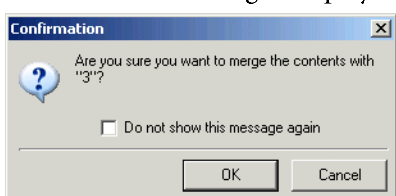
Merging Release Labels

You can merge the contents of a release with another release within the same SAI so that they contained under the same entry.

To merge the contents of releases:

1 Drag and drop the release onto another release entry in the tree.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the merge.

Copying a Release Label to Another User SAI

You can copy a software release to a different User SAI.

To copy a software release to another SAI:

▶ Drag and drop the release into the appropriate User SAI entry in the left hand pane of the Editor.

The release, application name and publisher are copied to the other SAI. If the publisher and application for this release already exists in new User SAI it will be copied into it automatically.

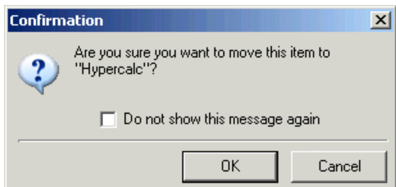
Moving a Release Label to Another Application Within the Same SAI

You can move a software release to another application within the same SAI.

To move a software release to another application within the same SAI:

1. Select the release and drag it to the application you want it moved to.

   A confirmation dialog is displayed.

2. Click the **OK** button to accept the move.

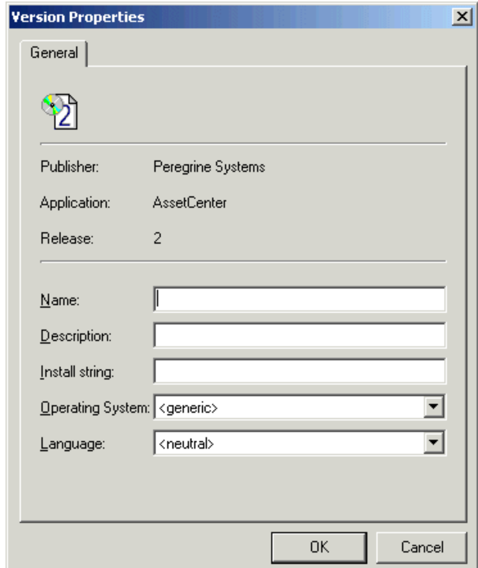
Adding a New Version

This procedure is used to add a new software version to a User SAI.

To add a new software version to a User SAI:

1. Right-click on the appropriate software release entry in the tree.
2. Select the **New Item...** option.

The **Version Properties** box is displayed:



3 Enter the following details for the new software version.

- **Name**

  Name of the new version (must be entered)

- **Description**

  This is a user defined field that can contain any text.

- **Install String**

  This is the line that the version writes to the add/remove programs list when it is installed.

- **Operating System**

  The Base Operating System of the application version (for example, Windows NT). Select the Base OS from the drop-down list.

- **Language**

  Select the language of the application version from the drop-down list.

4 Click **OK** to add the new software version to the SAI file.

Warning: Before adding a software version to the file, check whether the entry already exists in the SAI file.

Deleting an Existing Version

This procedure is used to delete an existing software version from a User SAI.

To delete an existing version:

1 In the tree, right-click on the software version to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.

3 Click **Yes** to delete the software version and all its associated sub-items.

Editing the Properties for an Existing Version

This procedure is used to edit the properties for a software version.

To edit the properties for an existing version:

1 In the tree, right-click on the software version to be edited.

2 Select the **Properties** option.

The **Version Properties** box appears.

3 Edit the details as required.

4 Click the **OK** button to complete the edit.

Once the version details have been edited, the amended details are displayed in the tree.

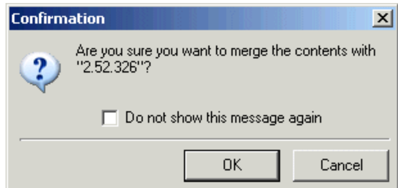
Merging Versions

You can merge the contents of a version with another version within the same SAI so that they are contained under the same entry.

To merge the contents of versions:

1 Drag and drop the version onto another version entry in the tree.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the merge.

Copying a Version to Another User SAI

You can copy a software version to a different User SAI.

To copy a software version to another SAI:

- Drag and drop the version into the appropriate User SAI entry in the left hand pane of the Editor.

  The version, release, application name and publisher are copied to the other SAI. If the publisher, application and release for this version already exists in new User SAI it will be copied into it automatically.

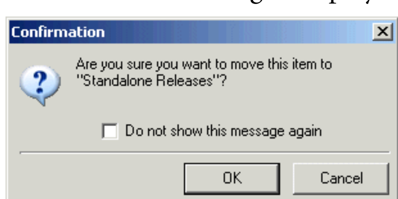
Moving a Version to Another Release Label Within the Same SAI

You can move a software version to another release within the same SAI.

To move a software version to another release within the same SAI:

1 Select the version entry and drag it to the release you want it moved to.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the move.

Adding a File

There are two methods of adding a new file to a User SAI.

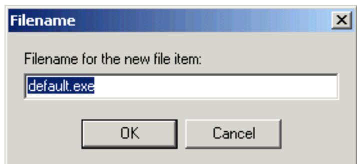
Method 1

To add a new file to a User SAI using the Editor:

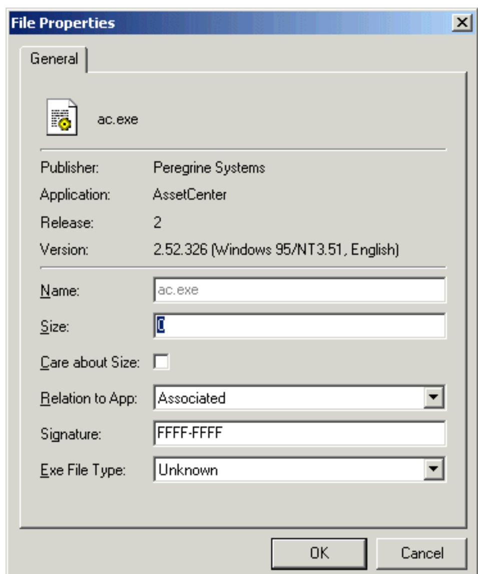
1 Right-click on the appropriate software version entry in the tree.

2 Select the **New Item...** option.

The **Filename** box is displayed:



3 Enter the name of the file and click the **OK** button. The **File Properties** dialog is displayed.



4 Enter the following details for the file:

- **Size**

  The size of the file

- **Care about Size**

  When this option is enabled, the size of the file is used as a recognition criteria. When disabled, file size will not be used in recognition and **N/A** will be displayed in the size column.

- **Relation to App:**

Whether the file is a Main, Associated or 3rd Party file. See *Viewing Information in the Files Tab Page* on page 692 for definitions of these terms.

- **Signature**

  The signature is a checksum of the first 8 Kilobyte of a file.

- **Exe File Type**

  The type of executable file (for example, Win 32 exe or Archive).

5 Click **OK** to add the new file to the SAI

Warning: Ensure that the file name is spelled correctly. Before adding the file, check whether it already exists for this version.

Method 2

Using Windows Explorer you can automatically add the file to the software version.

To add a new file to a User SAI using Windows Explorer:

1 In Windows Explorer, navigate to the file you want to add.

2 Drag the file onto the version in the SAI Editor. The file will be added to the version automatically with the properties details filled in. These properties can be amended as necessary - see *Editing the Properties for Files in the Files Tab Page* on page 694 for information on how to do this.

Deleting an Existing File

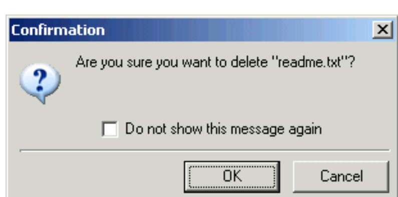
This procedure is used to delete an existing file from a User SAI.

To delete an existing file:

1 In the tree, right-click on the file to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the file.

Editing the Properties for an Existing File

This procedure is used to edit the properties for a file.

To edit the properties for an existing file:

1. In the tree, right-click on the file to be edited.
2. Select the **Properties** option.

   The **File Properties** box appears.
3. Edit the details as required:
   - **Name**

     Name of the new file (must be entered)
   - **Size**

     The size of the file
   - **Care about Size**

     When this option is enabled, the size of the file is used as a recognition criteria. When disabled, file size will not be used in recognition and **N/A** will be displayed in the size column.
   - **Relation to App:**

     Whether the file is a Main, Associated or 3rd Party file. See *Viewing Information in the Files Tab Page* on page 692 for definitions of these terms.
   - **Signature**

     The signature is a checksum of the first 8 Kilobyte of a file.
   - **Exe File Type**

     The type of executable file (for example, Win 32 exe or Archive).
4. Click the **OK** button to complete the edit.

   Once the file details have been edited, the amended details are displayed in the trees

Copying a File to Another User SAI

You can copy a file to a different User SAI.

To copy a file to another SAI:

▶ Drag and drop the file into the appropriate User SAI entry in the left hand pane of the Editor.

The file is copied to the other SAI. If the publisher, application, release and version for this file already exists in new User SAI it will be copied into it automatically.

Note: You can select multiple files by pressing the shift key and clicking on the files.

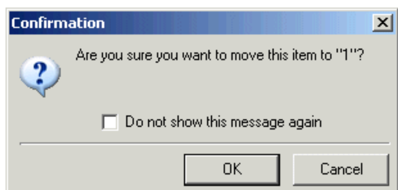
Moving a File to Another Version Within the Same SAI

You can move a file to another version within the same SAI.

To move a file to another version within the same SAI:

1 Select the file entry and drag it to the version you want it moved to.

A confirmation dialog is displayed.



2 Click the **OK** button to accept the move.

Licence Relationships

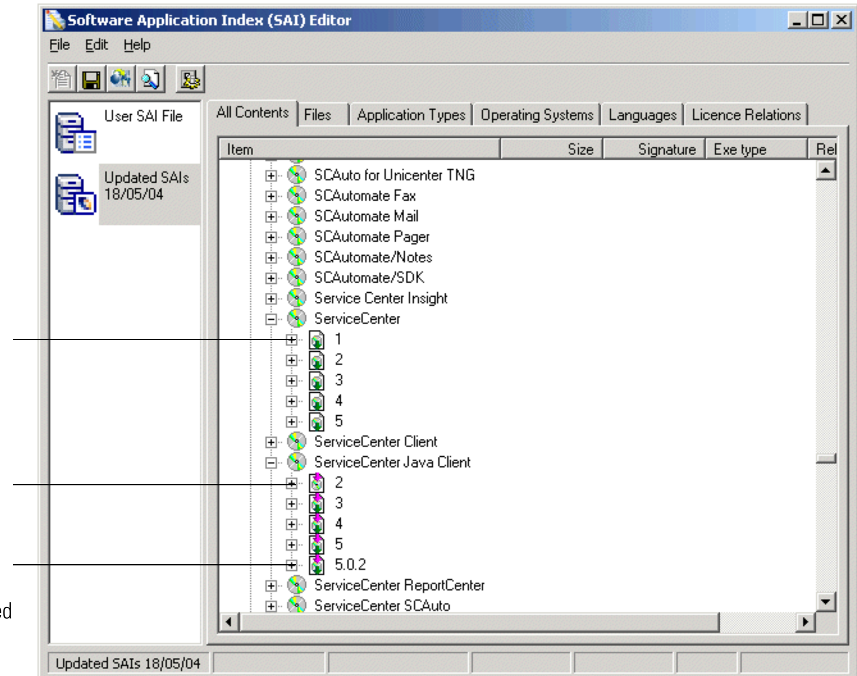
In This Section...

Licence Relationship Definition

Licence relations solve the problem of Suite licensing simply and effectively, and is applicable to licence relationships outside of what would normally be considered a software suite.

For example, MS Office 2000 licenses MS Access, Word, Excel, PowerPoint and Outlook and is a well-known software suite. In addition Outlook licenses MS Data Access Components (ADO) 2.1 sp1 - if Outlook or another licensing application is not present on the machine, a licence is required for the software, but if Outlook is installed on the machine, Outlook assumes licence ownership.

Licence relationships for a application release are represented by icons in the **SAI Editor All Contents** tab page.

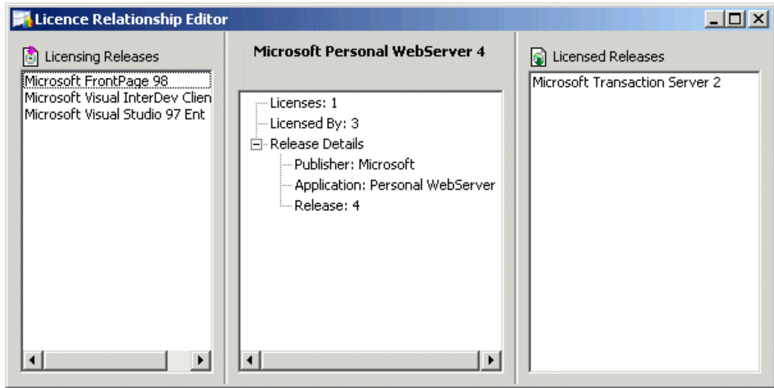


Viewing Licence Relationships

The **Licence Relationship Editor** is a non modal dialog. This means you can have it displayed while working in the **SAI Editor**. Position the two dialogs on your screen so that you can work with both dialogs at the same time.

To explore licence relationships:

1 Right click on a release label and select **Explore Licence Relations**. The **Licence Relationship Editor** is displayed.



There are three panes in this dialog.

- Licensing Releases

  The applications listed in this pane are those that license the selected application.

- <Selected Application>

  This is the application that was selected in the **SAI Editor All Contents** tab page.

- Licensed Releases

  The applications listed in this pane are those that are licensed by the selected application.

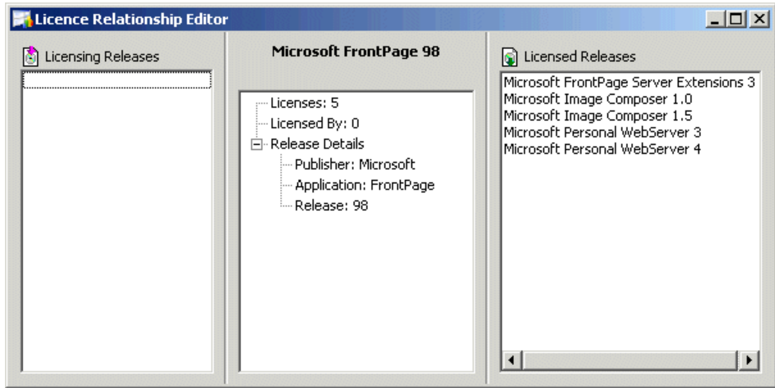
In the example above Microsoft Personnel WebServer 4 was selected in the **SAI Editor All Contents** tab page. So the center pane contains details for this particular application release.

- The left hand pane shows any applications that licence Microsoft Personnel WebServer 4.
- The right hand pane shows any applications that Microsoft Personnel WebServer 4 licences.

2 Double click on an entry in the left hand pane. For this example Microsoft Frontpage 98 has been used. The focus in the center pane now becomes Microsoft Frontpage 98.

- The left hand pane does not contain any data because this application is not licensed by any other application.

- The right hand pane now shows the applications that Microsoft Frontpage Licences (including the original Microsoft Personnel WebServer 4).



3 To return focus to the original application (Microsoft Personnel WebServer 4) just double click on the Microsoft Personnel WebServer 4 entry in the right hand pane. The center pane focus is now returned to this application.

By double clicking through various entries in the **Licence Relationship Editor** you can explore how these applications relate to each other regarding licensing.

Note: You can also right click on an entry and select the **Explore Relations** option instead of double-clicking.

Right clicking on an entry and selecting the **GoTo** option will show the **Licence Relations** page in the **SAI Editor** with the application selected.

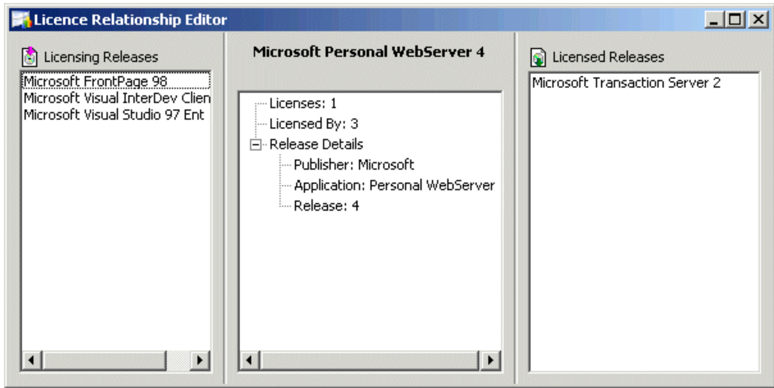
Setting up a New Licence Relationship

This procedure shows you how to set up a new licence relationship.

To set up a new licence relationship between two or more applications:

1. Position the **Licence Relationship Editor** and the **SAI Editor** on your screen so that you can work with both dialogs at the same time.
2. Right click on the release label of the application you want to set up the relationship for and select the **Explore Licence Relations** option.

The **Licence Relationship Editor** is displayed with the center pane showing details for the selected application.



3 Return the focus to the main **SAI Editor All Contents** tab page and navigate to the release label for the application that you want to add.

4 Drag and drop the release entry from the SAI Editor explorer tree view to the left or right pane either of these panes as follows:

- Left hand pane - This will be a licensing release. The application will license the application in the center pane.
- Right hand pane - This will be a licensed release. The application will be licensed by the application in the center pane.

5 If you make a mistake, you can remove the entry by right- -clicking on it and selecting the **Delete** option.

6 Continue these steps as required.

Creating a Licence Relationship using the Master SAI

You can use entries in a Master SAI file to create a new licence relationship. Once created it will automatically be copied to a specified User SAI file.

Note: The Master SAI will not be edited in any way.

The procedure for doing this is similar to that shown in *Setting up a New Licence Relationship* on page 689.

1 Position the **Licence Relationship Editor** and the **SAI Editor** on your screen so that you can work with both dialogs at the same time.

2 In the Master SAI file, right click on the release label of the application you want to set up the relationship for and select the **Explore Licence Relations** option.

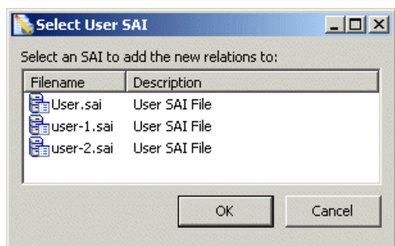
The **Licence Relationship Editor** is displayed with the center pane showing details for the selected application.

3 Return the focus to the main **SAI Editor All Contents** tab page and navigate to the release label in the Master SAI for the application that you want to add.

4 Drag and drop the release entry from the SAI Editor explorer tree view to the left or right pane either of these panes as follows:

- Left hand pane - This will be a licensing release. The application will license the application in the center pane.
- Right hand pane - This will be a licensed release. The application will be licensed by the application in the center pane.

The following dialog is displayed:



5 Select the User SAI you want to create the licence relationship in and click the **OK** button.

6 Continue these steps as required.

The Files Tab Page

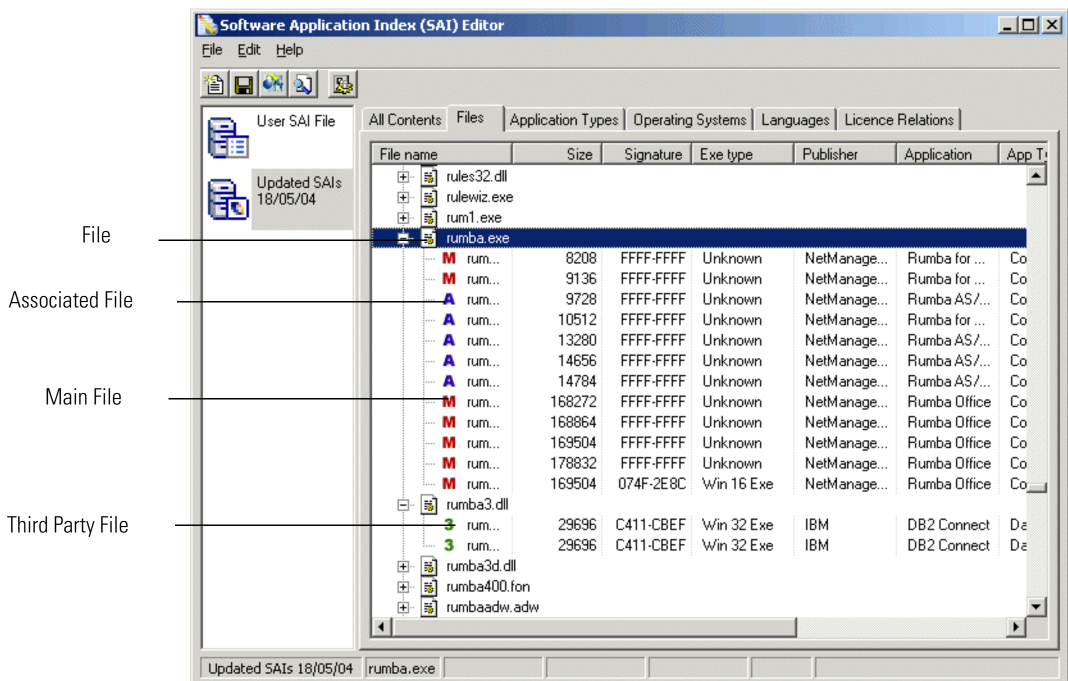
In This Section...

Note: You can only edit User SAI files.

Viewing Information in the Files Tab Page

1 Click on the + sign next to a **File** to expand the tree.

All the instances of that file in the SAI are shown.



The following information is shown in the columns:

- The relation of the file to the application. This is indicated by the following icons:
  - Main File

This is a key application file, that is, it is a file without which the application could not be running. It should always be present whenever the application is installed regardless of whether it is a minimum or complete installation.

- Associated File

  This is a non-key file that is part of the application and is written by the publisher that developed the product.

- Third Party File

  This is a file written by another Publisher (3rd Party) and is used in the current application. An example of a 3rd party files is some DLL files that are technically used by the application, but are also distributed freely and can be used by other applications.

- **Filename** - The name of the file.
- **Size** - The size of the file.
- **Signature** - The signature is a checksum of the first 8 Kilobyte of a file.
- **Exe Type** - The type of executable file (for example, DOS com or DOS exe).
- **ID** - The unique identifier for the file entry. This column is only shown if the **Show ID Column** option was enabled in the **SAI Editor Options** dialog. See *Setting Properties for the SAI Editor* on page 662 for more information.
- **Publisher** - The publisher of this file.
- **Application** - The application this file belongs to.
- **App Type** - The type of the application (for example, Word Processor, Spreadsheet).
- **Release** - The software release this file belongs to.
- **Languages** - The language of the file.
- **OS** - The operating system that the file works for.

Editing the Properties for Files in the Files Tab Page

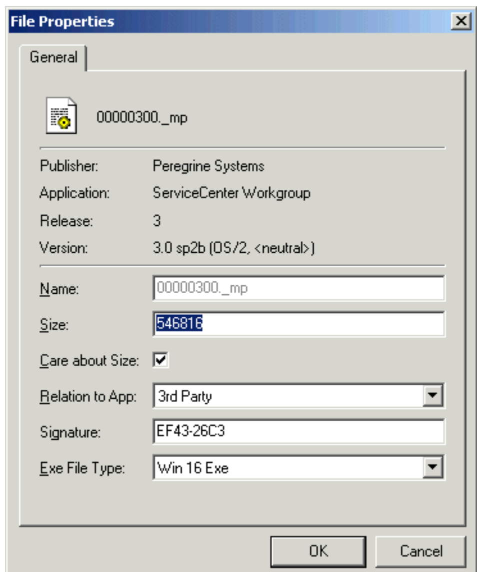
Only one option is available for the **Files** tab page. This is the Properties option.

To edit the properties for a file:

1 Expand the tree to select the instance of the file.

2 Right click on the file to be edited and select the **Properties** option.

The **File Properties** box appears.



3 Edit the details as required.

- **Name**

  Name of the new file (must be entered)

- **Size**

  The size of the file

- **Care about Size**

  When this option is enabled, the size of the file is used as a recognition criteria. When disabled, file size will not be used in recognition and N/A will be displayed in the size column.

- **Relation to App:**

Whether the file is a Main, Associated or 3rd Party file. See *Viewing Information in the Files Tab Page* on page 692 for definitions of these terms.

- **Signature**

  The signature is a checksum of the first 8 Kilobyte of a file.

- **Exe File Type**

  The type of executable file (for example, DOS com or DOS exe).

4 Click the **OK** button to complete the edit.

Once the details have been edited, the amended details are displayed in the tree.

The Application Types Tab Page

In This Section...

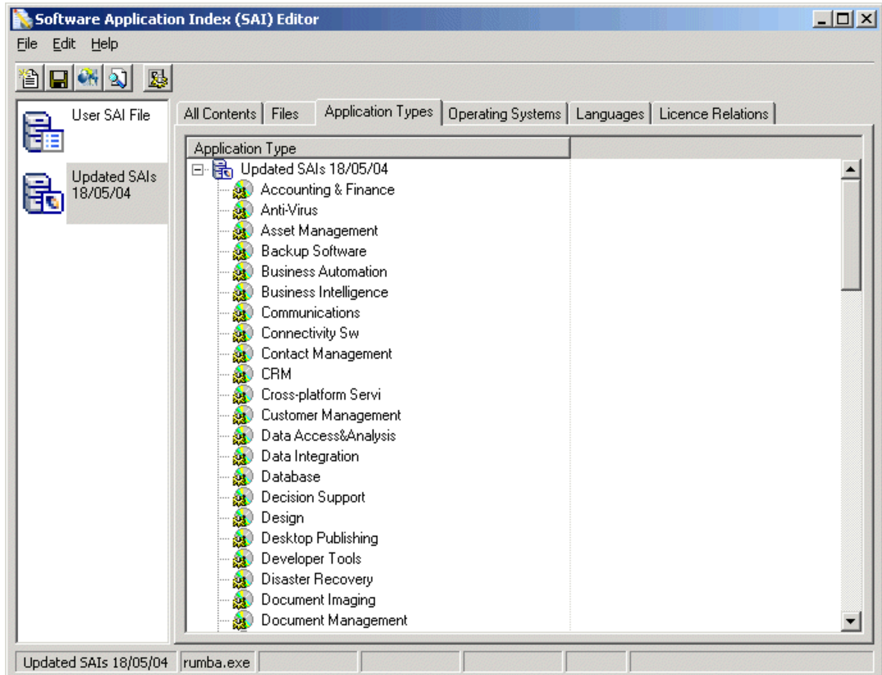
Note: You can only edit User SAI files.

Viewing Data in the Application Type Tab Page

The **Application Type** tab page shows a view of the different types of software application categories you allocate to entries in the SAI files. Examples of these categories are:

- Database
- Developer Tools
- Word Processing
- Web Servers

These entries are pre-populated by Peregrine Systems. However, you can add new items to this tab page for your User SAI.



The following information is shown for each entry in this tab page

- Application Type - The category of software
- ID - The unique identifier for this application type entry. This column is only shown if the **Show ID Column** option was enabled in the **SAI Editor Options** dialog. See *Setting Properties for the SAI Editor* on page 662 for more information.

Adding a New Application Type

This procedure is used to add a new application type to a User SAI.

To add a new application type to a User SAI:

1 Right-click on the root User SAI entry in the tree. It is the first entry (the root) of the tree.

2 Select the **New Item...** option.

The **Application Type Properties** box is displayed:

3 Enter the name of the new application type (must be entered)

4 Click **OK** to add the new application type to the SAI file.

Warning: Before adding an application type to the file, check whether the entry already exists.

Deleting an Existing Application Type

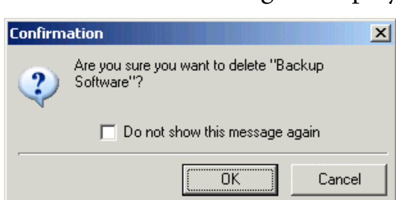
This procedure is used to delete an existing application type from a User SAI.

To delete an existing application type:

1 In the tree, right-click on the application type to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the application type.

Editing the Properties for an Existing Application Type

This procedure is used to edit the properties for an application type.

To edit the properties for an existing application type:

1. In the tree, right-click on the application type to be edited.
2. Select the **Properties** option.

   The **Application Type Properties** box appears.
3. Edit the details as required.
4. Click the **OK** button to complete the edit.

   Once the details have been edited they are displayed in the tree.

The Operating Systems Tab Page

In This Section...

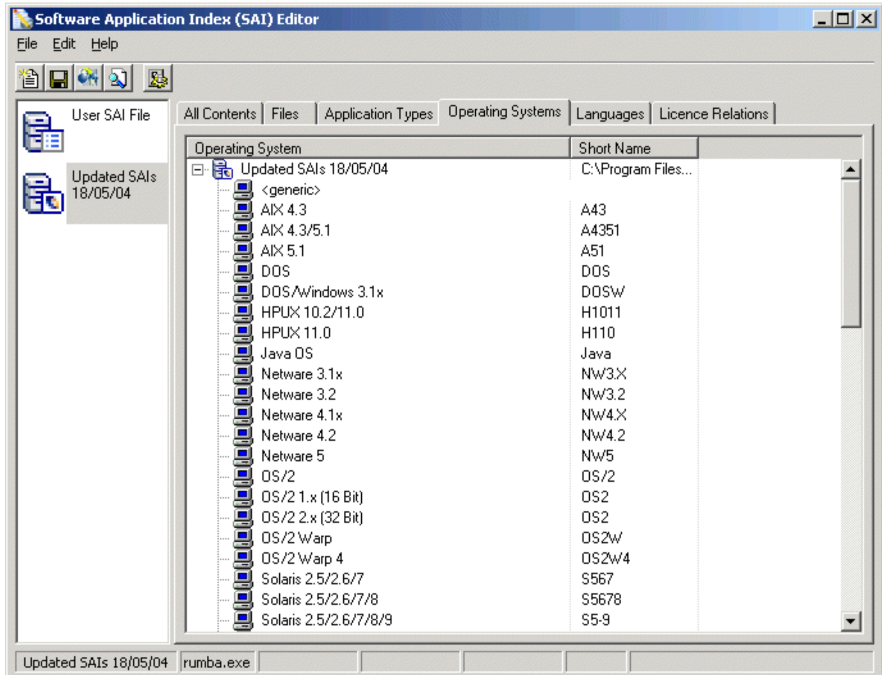
Note: You can only edit User SAI files.

Viewing Data in the Operating System Tab Page

The **Operating Systems** tab page shows a view of the different operating systems you can allocate to entries in the SAI files. Examples of these categories are:

- Windows 2000
- Solaris 9
- Linux 2.4

These entries are pre-populated by Peregrine Systems. However, you can add new items to this tab page for your User SAI.



The following information is shown for each entry in this tab page

- **Operating System** - The name of the Operating System.
- **Short Name** - The abbreviated name for the Operating System. For example, Windows 98 is represented as Win98.
- **ID** - The unique identifier for this operating system type entry. This column is only shown if the **Show ID Column** option was enabled in the **SAI Editor Options** dialog. See *Setting Properties for the SAI Editor* on page 662 for more information.

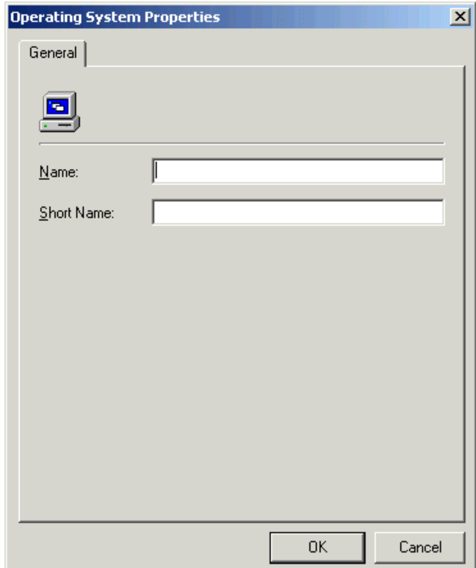
Adding a New Operating System

This procedure is used to add a new operating system to a User SAI.

To add a new operating system to a User SAI:

1. Right-click on the root User SAI entry in the tree. It is the first entry (the root) of the tree.
2. Select the **New Item...** option.

The **Operating System Properties** box is displayed:



3 Enter the following details for the new operating system.

- **Name**

  Name of the new operating system (must be entered)

- **Shortname**

  The abbreviated name for the Operating System. For example, Windows 98 is represented as Win98.

4 Click **OK** to add the new operating system to the SAI file.

Warning: Before adding an operating system to the file, check whether the entry already exists.

Deleting an Existing Operating System

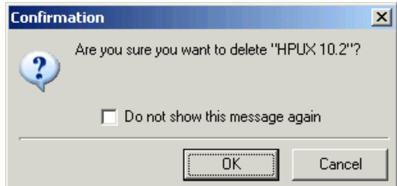
This procedure is used to delete an existing operating system from a User SAI.

To delete an existing operating system:

1 In the tree, right-click on the operating system to be deleted.

2 Select the **Delete** option or hit the Delete key on your keyboard.

A confirmation message is displayed.



3 Click **Yes** to delete the operating system.

Editing the Properties for an Existing Operating System

This procedure is used to edit the properties for an operating system.

To edit the properties for an existing operating system:

1 In the tree, right-click on the operating system to be edited.

2 Select the **Properties** option.

The **Operating System Properties** box appears.

3 Edit the details as required.

- **Name**

  Name of the new operating system (must be entered)

- **Shortname**

  The abbreviated name for the Operating System. For example, Windows 98 is represented as Win98.

4 Click the **OK** button to complete the edit.

Once the operating system details have been edited, the amended details are displayed in the tree.

The Languages Tab Page

In This Section...

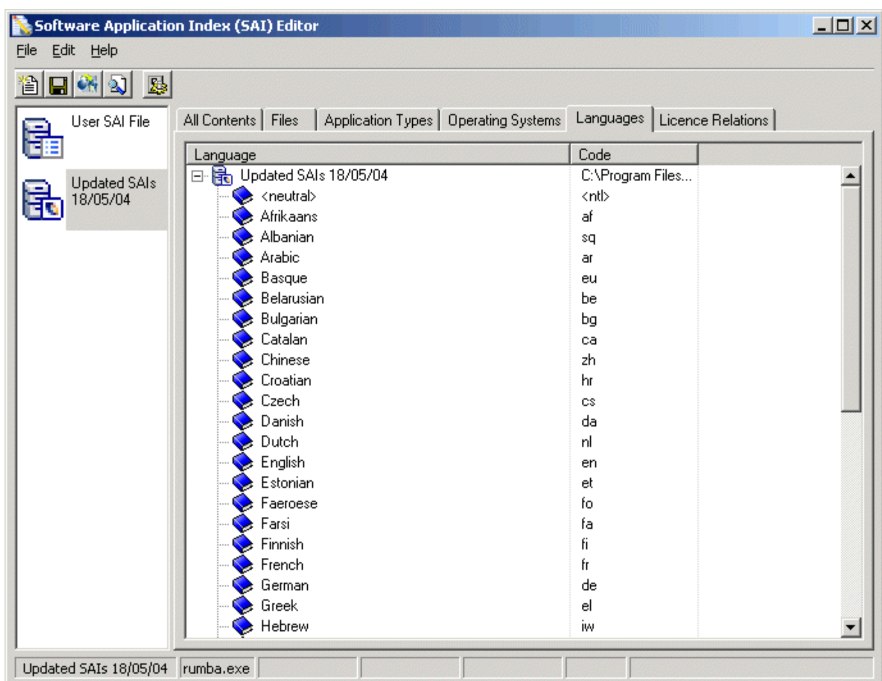
Note: You can only edit User SAI files.

Viewing Data in the Languages Tab Page

The **Languages** tab page shows a view of the different languages you can allocate to entries in the SAI files. Examples of these categories are:

- Dutch
- English
- French

These entries are pre-populated by Peregrine Systems. You cannot add new items to this tab page.



The following information is shown for each entry in this tab page

- Language - The name of the language.
- Code - The ISO standard code for the language.
- ID - The unique identifier for this language type entry. This column is only shown if the **Show ID Column** option was enabled in the **SAI Editor Options** dialog. See *Setting Properties for the SAI Editor* on page 662 for more information.

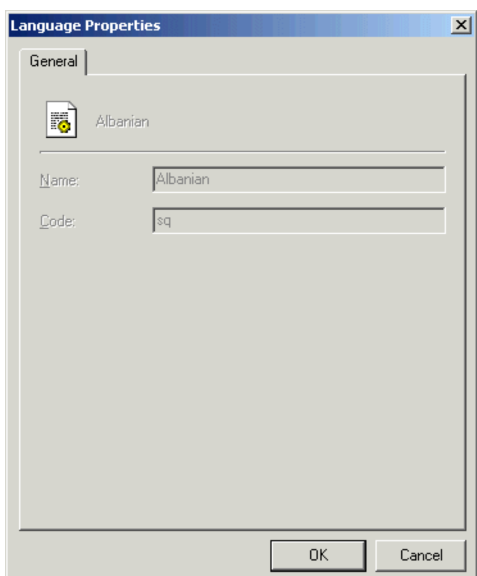
Viewing Properties for a Language

This procedure is used to view the properties for a language.

To view the properties for a language:

1. In the tree, right-click on the language.
2. Select the **Properties** option.

The **Language Properties** box is displayed.



The Licence Relations Tab Page

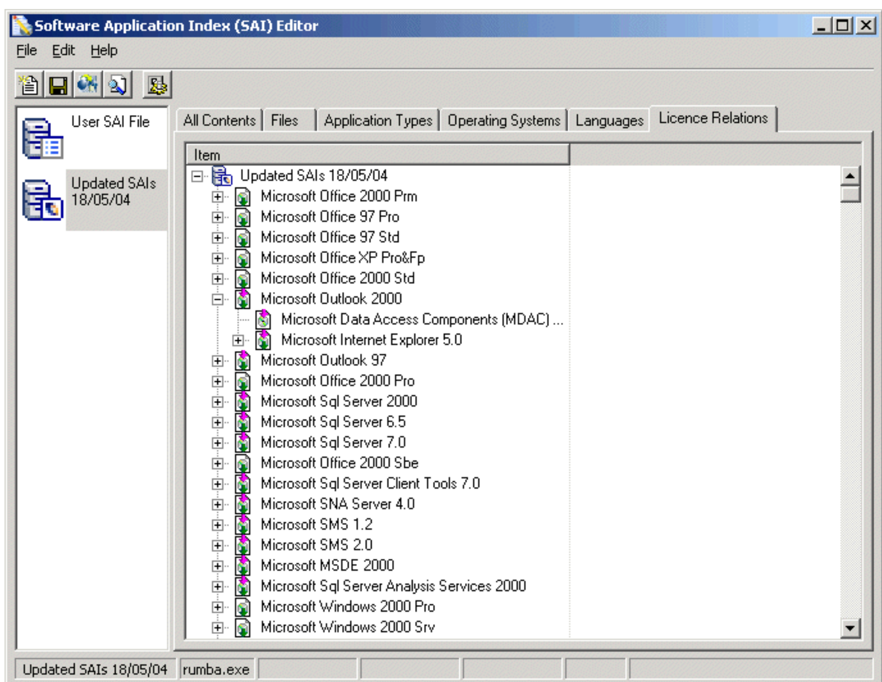
In This Section...

Note: You can only edit User SAI files.

Viewing Data in the Licence Relations Tab Page

This tab page provides a view of the licence relationships that exist in the SAI.

Click on the + sign next to a **Licence Relation** to expand the tree. All applications contained in the suite are shown along with their licence relationship to the suite.



Icons represent the relationship of the various applications to the application suite as follows:

-  Indicates that this application also licences another application.

- Indicates that this application is licensed by another application.
- Indicates that this application both licences and is licensed by another application.

The following information is shown about each application in the licence relationship.

- Item - the name of the application
- ID - The unique identifier for this entry. This column is only shown if the **Show ID Column** option was enabled in the **SAI Editor Options** dialog. See *Setting Properties for the SAI Editor* on page 662 for more information.

Viewing Details for a Licence Relation

To view more details for a licence relationship:

1. Right click on an application in the **Licence Relation** tab page and select the **GoTo** option.

   The application release will be automatically selected and displayed in the **All Contents** tab page.

2. Select the **Explore licence relations** options by right clicking on the entry in the **All Contents** tab page.

   This will display the licence relationship editor. Here you can view the relationship in greater detail or you can make changes to the relationship as required.

   See *Licence Relationships* on page 686 for further information about setting up and editing a licence relationship.

Editing the Properties for an Existing Licence Relation

This procedure is used to edit the properties for a release.

To edit the properties for an existing release:

1. In the tree, right-click on the release to be edited.
2. Select the **Properties** option.

   The **Release Properties** box appears.

3. Edit the details as required.

   - **Name**

Name of the release (must be entered)

4 Click the **OK** button to complete the edit.

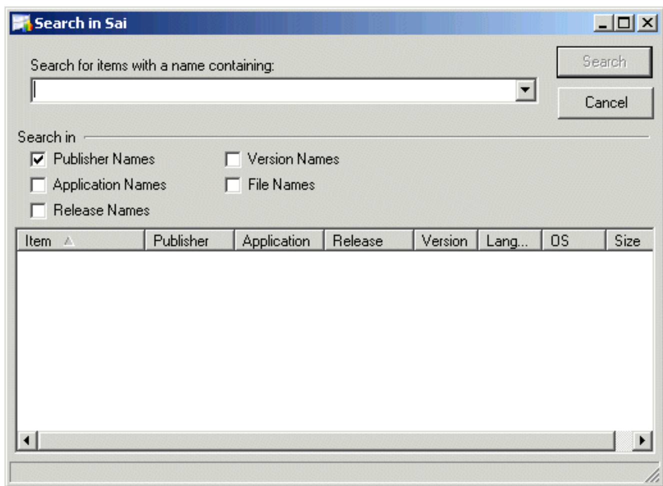
Once the details have been edited they are displayed in the tree.

Searching for Items in the SAI

You can search for any item contained in the SAI using the **Search in SAI** dialog.

To search for a file in an SAI:

1 Click the  icon in the toolbar. The following dialog is displayed:



2 In the **Search for items with a name containing** field, type all or part of the item you want to find. A history of search items is maintained and can be accessed from the drop down list.

3 You can narrow your search by specifying the areas in which the search will be carried out. The default settings is that all criteria are selected - the entire SAI is searched.

In the **Search in** group check the box next to those areas you want to include in your search.

4 Click the **Search** button. The results are shown in the bottom pane and are presented in a tree view

5 Double click on an entry to go directly to that item in the **All Contents** window.

Exporting the Contents of a User SAI to XML Format

In This Section...

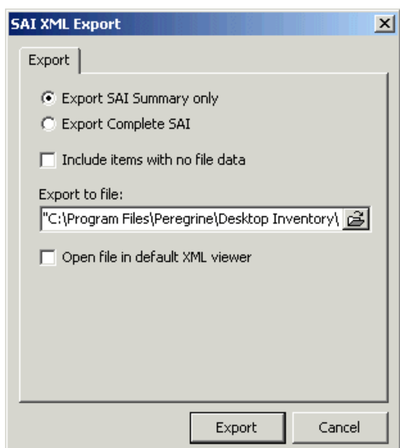
Note: Only User SAI files can be exported.

Exporting the Contents of a User SAI File

1 In the left hand pane of the SAI Editor, select the User SAI file you want to export.

2 Click the **Export SAI**  icon on the toolbar.

The **SAI XML Export** dialog is displayed.



3 Select either a Summary export or a Complete export. Samples of both types of export have been shown in the following sections.

4 **Include items with no file data**

If you select this option the export will also include items in the User SAI that are empty - that is, they do not have any files in them.

5 By default the XML export is saved to the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common\user.xml

You can change the name and path to which the file is saved by typing it in the **Export to File** field or navigating to the location.

6 **Open file in default XML Viewer**

If you have an XML Viewer already installed on your machine and it has been associated to XML file types then you can check this box to automatically open the file with that application once the export has been completed.

7 Click the export button to complete the procedure.

Example of a Summary XML Export

The Summary export shows details of the application only.


```
<?xml version="1.0" encoding="UTF-8" ?>
<sai description="User SAI File" type="Editable" id="0" version="281" revision="0"
timeStamp="2004-05-20 10:28:55" exportType="Data for items without files is
included">
<publisher name="3Com">
<application name="3+open/lan Manager" applicationType="Utilities">
<release name="Standalone Releases">
<version name="x.x" operatingSystem="<generic>" language="English" />
</release>
</application>
</publisher>
</sai>
```


Example of a Complete XML Export

This type of export is a complete dump of the User SAI contents. All items are displayed showing their IDs. The **Application Types**, **Operating Systems** and **Languages** contained in the SAI are also shown with IDs.


```
<sai description="User SAI File" type="Editable" id="0" version="281" revision="0"
timeStamp="2004-05-20
<application id="2334" name="3+open/lan Manager" apptypeId="8">
<release id="4330" name="Standalone Releases">
<version id="6799" name="x.x" osId="0" languageId="2304">
<file name="3comemm.com" type="Associated" size="4289" />
</version>
</release>
</application>
</publisher>
</sai>
```

Teaching a New Application to the User SAI

Each of the steps in the following procedure have been documented in this chapter. The following overview table shows each of the steps and where you can find information about carrying out that step.

Step	Further Information
Add a new Publisher if it doesn't already exist in the SAI	page 669
Add a new Application	page 672
Add the new Release	page 675
Add a new version	page 678
Add files to the version - either from scratch or by dragging them from Windows Explorer	page 681
Set the main file for the application	page 684
Set up any licence relationships for the application	page 689

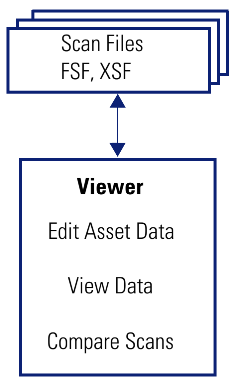
10 CHAPTER Viewer

In this chapter you will find information about the following topics:

Introduction to Viewer

This tool allows you to view the detailed information contained within a scan file (.fsf or .xsf). This provides a convenient way of displaying software, hardware and asset information collected for an individual computer. The Viewer is aimed at technical support and help desk staff who need detailed configuration analysis and diagnostics.

You can also view other information, such as the characteristics of software files stored during the inventory, applications and the environment variables.



In summary, the Viewer displays:

- Detailed and summarized hardware configuration information.
- User entered asset information.
- Details of all software scanned.
- Contents of key files collected during the inventory, such as system configuration files (**Config.sys** and **Autoexec.bat** etc.).
- Environment variables.
- Details of all logical drives scanned.
- Details of any applications recognized.
- A list of Windows installed applications.

Note: Viewer supports scans created with version 7.x and 8.x of the software. However, you can use the FSF converter to convert pre version 7.x scan files. See *the FSF Converter* Chapter for further information.

Starting Viewer

To start Viewer on your windows workstation:

▶ From the Windows **Start** menu select **Programs|Desktop Inventory 8.0.0|Viewer**.

Warning: You will need Internet Explorer version 3.0 or later run the Viewer. This is because the common controls dll used by the load dialog box in Viewer is updated by Internet Explorer (the version supplied by NT is 2.0) and not by Windows.

Exiting Viewer

To exit Viewer on your Windows workstation use one of the following methods:

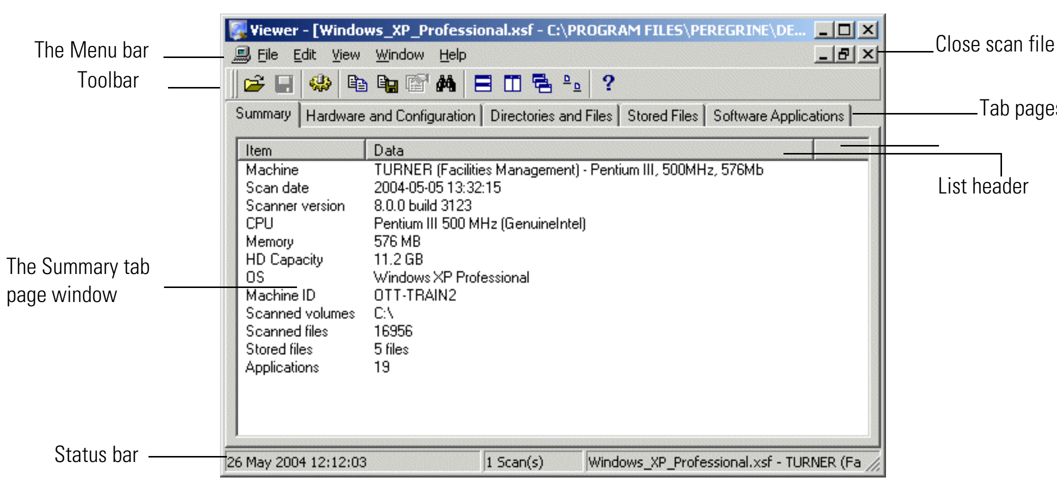
- Select the **Exit** command from the **File** menu.
- Use the close icon  in the top right of the workspace.

Viewer User Interface

In This Section...

The Viewer Workspace

The following figure shows how the Viewer workspace looks when a scan file is loaded and the **Summary** tab page is visible.



The Menu Bar

Viewer command are accessible from the menu bar. Commands are grouped by function ('File', 'Edit', 'View', 'Window', 'Help'). Each function has its own entry (command) in the menus. Menu commands may be activated with the mouse or the keyboard.

Figure 9-1: Windows Viewer menu bar

To open a menu:

- Use the mouse. Click the menu name (for example, **File**) and then click the command you want (for example, **Open Scan File...**).
- Use the shortcut keys. Shortcut keys are shown to the right of the command in the menus. For example, **Ctrl+O** is a shortcut used to open a scan file.
- Use the access key. Access keys are indicated by an underscore on the active letter. For example, the **Open Scan File...** command in the **File** menu is accessed by pressing **Alt-F** and then **O**.

Most menus invoke commands, however, some menu commands display a dialog box. This is indicated by **...** after the menu command.

Shortcut Menus

You can access a shortcut menu related to your current activity by positioning the mouse cursor on the appropriate area of the workspace and clicking on the right mouse button.

Toolbars

Toolbars allow you to access various commands without using the menu.

▶ Click on the toolbar icon to activate the function associated with it.

Buttons in the toolbar offer the following functionality:

Icon	Name	Function
	Open Scan File	Loads inventory data from an FSF or XSF file.
	Save	Saves any changes made to user entered asset data in the Hardware and Configuration tab page.

Icon	Name	Function
	Options	Displays the **Viewer Options** dialog box.
	Copy	Copies the information in the currently selected tab to the clipboard.
	Copy to File	Copies the information in the currently selected tab to a file.
	Compare	Compares two scans.
	Find File	Finds a file within a scan.
	Tile Horizontally	Tiles windows horizontally.
	Tile Vertically	Tiles windows vertically.
	Cascade	Cascades windows.
	Arrange Icons	Aligns all icons of minimized windows.
	Help	Displays the help text for Viewer.

When the mouse pointer passes over an icon, a tooltip appears indicating the command corresponding to the icon.

Moving a Toolbar

The toolbar can be dragged and positioned to be aligned to the top of the window, the left of the window or into a floating state.

To move a toolbar:

1 Click the 'move' handle on a docked toolbar (one that is attached to one edge of the program window) and drag it to a new location.

When you drag a toolbar to the edge of a window, the toolbar outline snaps into place along the length of the window edge.

2 You can dock a floating toolbar by double-clicking on the title bar.

Resizing a Toolbar

To resize a floating toolbar:

▶ Move the pointer over any edge until it changes to a double-headed arrow, and then drag the edge of the toolbar.

You cannot resize a docked toolbar.

Tab Pages

Tab pages in Viewer allow you to examine the data from a loaded scan file. You can select the following tab pages:

- Summary
- Hardware and Configuration
- Directories and Files
- Stored Files
- Software Applications (only displayed if Application Recognition was set as an option). See *Configuring Recognition Settings* on page 722 for further information.

Status Bar

A status bar at the bottom of the Viewer workspace displays information about the current loaded scan file.

Windows Viewer Status Bar

The Windows Viewer status bar has three panels:

- The first panel displays the current system date and time.
- The second panel displays the number of scans currently loaded.
- The third panel displays the name of the currently loaded scan file along with a brief description.

Shortcut Keys

You can quickly accomplish tasks you perform frequently by using shortcut keys.

Task	Keyboard Shortcut
Open Scan File	Ctrl-O
Save	Ctrl-S
Close	Ctrl-F4
Options	Ctrl-T
Exit Viewer	Alt-X

Task	Keyboard Shortcut
Copy	Ctrl+C
Compare	Ctrl+M
Find File	Ctrl+F
Show Advanced Hardware View	Ctrl+V

Sorting Lists

Click on a column list header to sort and reverse sort the order of the information, alphabetically or numerically in ascending order (A to Z, a to z or zero to 9) or descending order (Z to A, z to a or 9 to zero).

Double-clicking on the splitter icon between columns will expand the column width to the maximum cell width.

Copying the Contents of a Tab Page

You can save or copy the contents of the all tab pages.

To copy the contents of a tab page to the clipboard:

1 Select the **Copy** command from the **Edit** menu, or click the icon in the Viewer

2 Paste the contents to an editor of your choice.

To save the contents of a tab page to a file:

1 Select the **Copy to file…** command from the **Edit** menu (text files only), or click the icon in the Viewer.

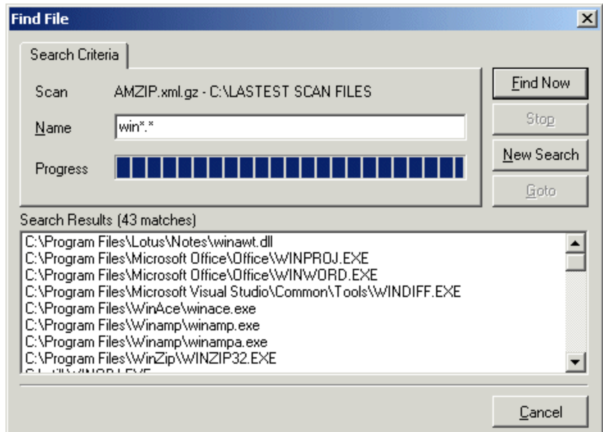
2 Use standard Windows navigation methods to select or enter a file and the location where the file is to be saved.

Searching for Files

You can locate a file from any point within Viewer. This can facilitate the location of files for a machine across multiple drives.

To locate a file from any point:

1. Select the **Find File** command in the **Edit** menu or click the icon. The **Find File** dialog box appears.



2. In the **Name** box type the name of the file you want to find. You can use DOS wildcard characters, (using * and ?) as well as normal alphanumeric characters.
3. Click the **Find Now** button.

   If files matching the file name or mask are located, they are displayed in the **Search Results** list box.

   If the search is lengthy, you can abort the search (with partial results being displayed) by clicking the **Stop** button.
4. Highlight a file entry in the **Search Results** list.
5. Click the **Goto** button or double-click on a file entry.

   The **Directories and Files** tab of Viewer is displayed in the background showing the located file.
6. To clear the entries and carry out a new search, click the **New Search** button.

Configuring Recognition Settings

In This Section...

Recognition Overview

Viewer is able to perform application recognition on the software scanned, while the data is being loaded from a scan file.

When recognition is enabled, a **Software Applications** tab is also made available in the Viewer workspace. This tab shows a summary of identified applications on the machine in question. When recognition is disabled, loading is slightly faster but no application information is available.

By default Viewer uses Master Software Application Index files (Master.SAI) for performing application recognition. The Master SAI files are read-only files that contain a database of software applications.

There are multiple Master SAI files that can be used at the same time for recognition purposes:

- Master.sai
- French.sai
- German.sai

All of these files can be found by default in the following location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common

You can set up the Viewer so that is uses a User.sai file instead. A User.sai file is one that you, the customer, have customized with applications you have taught using Analysis Workbench.

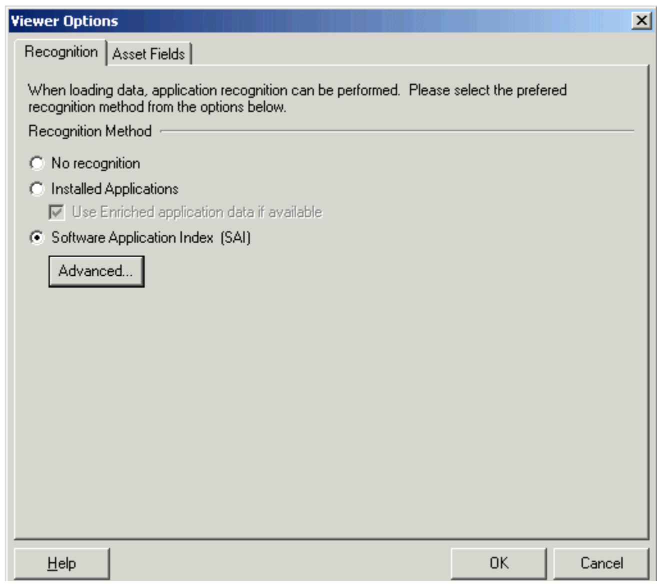
You can use multiple User SAI files for recognition purposes. Each User SAI created has a unique identifier assigned to it.

Backward compatibility has been maintained in this version of Desktop Inventory. To use your Desktop Inventory version 7.x User SAI files with this version of the software, use the **SAI Update Wizard** to upgrade the format of the SAI file.

See the *SAI Update Wizard* section in the *Application Recognition and Teaching* Chapter for more information on how to do this.

To display the Viewer recognition options tab:

1. Select the **Options...** command from the **Files** menu or click the icon. The **Viewer Options** dialog box appears.
2. Click the **Recognition** tab.



Disabling Application Recognition

This option is used to disable any application recognition. When recognition is disabled, loading is slightly faster but no application information is available.

To disable application recognition:

- In the **Recognition Method** group box, select the **No recognition** option.

Selecting the Installed Applications List as the Recognition Method

This method of recognition is based on the operating system's internal list of applications. As such, it is not recommended as the preferred recognition method, except for data from UNIX Scanners.

To select installed applications for the recognition method:

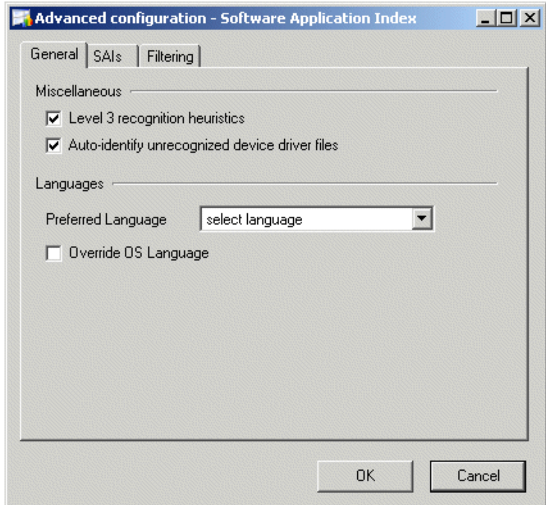
- In the **Recognition Method** group box, select the **Installed Applications** (**not recommended**) option. A further option is activated.
  - **Use Enriched application data if available**

    When this option is checked, Viewer uses the application data from the enriched scan file instead of running 'real' recognition. If no file data is loaded this is much faster.

Selecting the SAI as the Recognition Method

1. In the **Recognition Method** group box, select the **Software Application Index** (**SAI**) option.
2. Click the **Advanced...** button to set further options if required. The **Advanced Configuration - Software Application Index** dialog box is displayed.

Setting General Options for the SAI



Setting Level of Recognition Used

To set the level of recognition used:

1. Select the **General** tab in the **Advanced Configuration - Software Application Index** dialog.
2. In the **Miscellaneous** group, select options for the level of recognition used.
   - **Level 3 recognition heuristics**

     If this option is enabled, the recognition engine defers its final recognition decision until all the files in all the directories on the machine have been read. If disabled, machine-based recognition does not take place and recognition data is returned after each directory is loaded. A time overhead of about 10% is normal when Level 3 Recognition is enabled.
   - **Auto-identify unrecognized device driver files**

     When enabled (by default), files that cannot be identified by standard SAI recognition and have the Device Driver attribute will be marked as recognized. Files used as Device Drivers represent a large portion of the files that are not identified by the Application Library. Being able to identify these automatically can significantly reduce the effort required to achieve good recognition rates.

Setting the Preferred Language

If you are using a national SAI file, for example, **German.sai** or **French.sai** together with the **Master.sai** you will want to set this option.

Preferred language is used for cases when the recognition engine encounters two or more versions within a directory that are identically matched. It will give preference to the one in the selected language.

To set the language options:

1. Select a language from the drop-down list.

   This will only work if exactly one of the versions matches the language.

2. Check the **Override OS Language** box if you want the recognition engine to overlook the operating system locale setting and take the setting you specified in the **Preferred Language** box.

A Summary of the Process

The process can be summarized as follows:

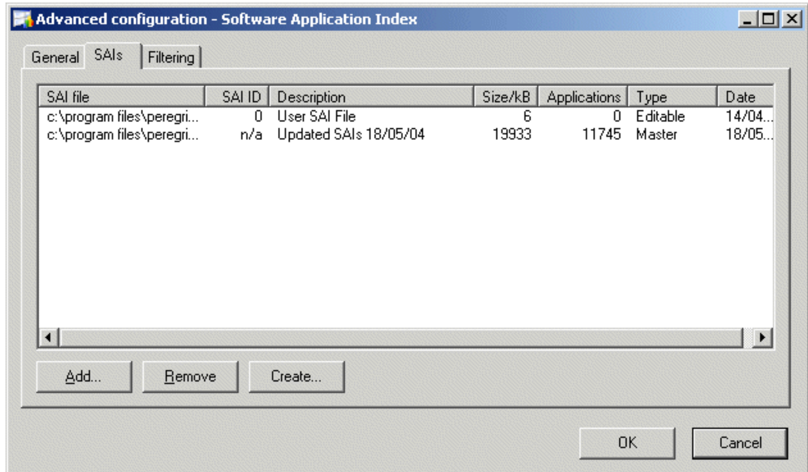
- A rating is obtained for all versions that are possible matches.
- The version(s) with the best rating are found.
- If there is only one version, then the process goes no further. Otherwise, the version whose language matches the OS locale is selected. If no version matches this language, then the version matching the setting in the **Preferred Language** box is selected.
- If the operating system locale setting is not available, it takes the setting you specified here in the **Preferred Language** box.

Adding, Creating or Removing SAIs

The options on the **SAIs** tab page allow you to:

- Add a new SAI file to be used for application recognition.

- Remove an existing SAI file.
- Create a new empty User.sai file.



The list box on this tab page displays the following information:

- The path to source files for the SAI – both read-only Master SAIs and editable User.sai.
- The SAI ID number for User SAI files. Master SAI files do not have an ID.
- A description of the SAI files.
- The size of each SAI file (in kilobytes).
- The number of application files in each SAI.
- The type of SAI file:
  - **Master** - Read-only SAI (Master.sai)
  - **Editable** - (User.sai)
- The creation date for a Master SAI file or for a User SAI, the date the file was last saved.

Adding a New SAI File for Application Recognition

To add a new SAI file for application recognition:

1. Select the **SAIs** tab in the **Advanced Configuration - Software Application Index** dialog.
2. Click the **Add...** button on this tab page.
3. Navigate to and select the SAI file (Master or User) you want to use for recognition.

The SAI file is added to the list box which means the file will be included in for application recognition.

Removing an Existing SAI File

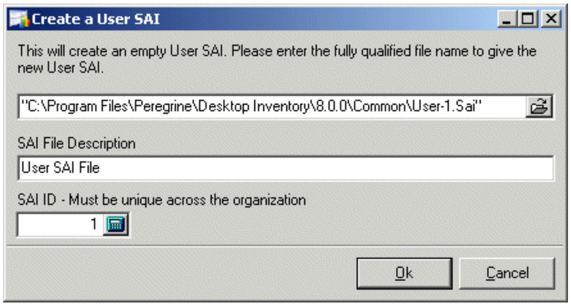
To remove an existing SAI file:

- Select the file in the list box and click the **Remove** button.

Creating a New Empty User SAI

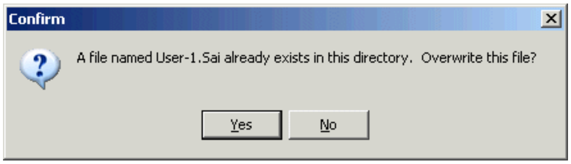
To create a new empty User.SAI:

1. Click the **Create…** button. The **Create a User SAI** dialog box is displayed.



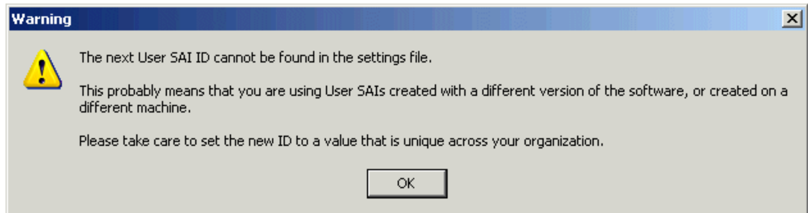
2. Enter or navigate to the directory where the SAI file is to be created.
3. Enter a description for the file.
4. Click the **OK** button.

   The file is automatically assigned a unique ID. However, you may already have an SAI with the same filename. If so, the following message will be displayed.



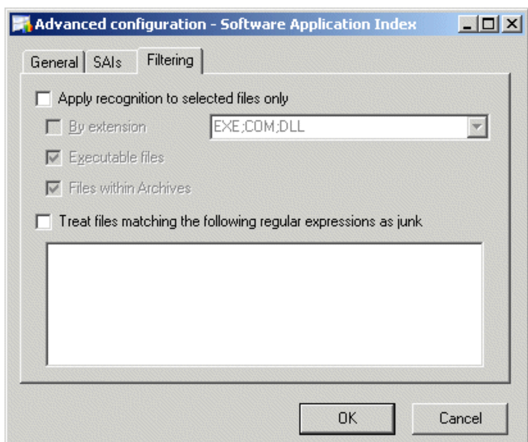
5. Click **Yes** if you want to overwrite the existing SAI file or click **No** to return to the dialog box and assign a new ID to the SAI file.

6 If you have made modifications to the cfgNextSAIID setting in the SAI.ini file, you may see the following message. This happens when the value for the ID in the ini file is missing or lower than the highest ID in the user SAIs currently loaded. This message is for information only - the Desktop Inventory components will correct this situation automatically by inserting the correct ID value into the ini file.



Setting Filtering options for the SAI

1 Select the **Filtering** tab in the **Advanced Configuration - Software Application Index** dialog.



2 Select the options as required:

- Apply recognition to selected files only

  This is a recognition filter that determines which of the files are sent to the recognition engine for processing. Sending too many files can make it slightly slower.

  - **By extensions**

Allows you to type in the extensions of any files that you want processed against the recognition engine. Select the extension from the drop-down list (this list maintains a history of previously entered extensions) or type the extension directly in to the box. Multiple file types must be separated by a semicolon.

- **Executable files**

  All executable files will be processed against the recognition engine. Executable files include *.exe, *.com files, DLLs and other files containing executable code.

- **Files within Archives**

  Processes any files in archive files. The following archive file types are supported:

  ARJ, ZIP v1, ZIP v2, LHA, LZH, ARC and PAK

  In addition cab files are supported using plug-in 12.

Note: For the best application recognition, select the **Executable Files** option.

Junk Files

Some files may be executable but are of no interest for licensing or other purposes. These files are often identifiable via the file name for example, TMP[0-9]*\.\$\$\$.

The **Treat Files matching the following regular expressions as junk** option is a way for the recognition engine to ignore such files, by allowing one or more file name masks to be specified as 'junk'.

These files are not passed to the recognition engine and will be marked as junk. This is available in the **Display Filters** tab page so junk files can be discarded and not shown.

To set junk filters:

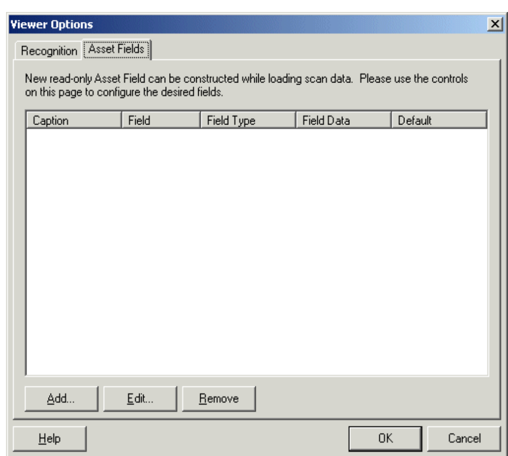
1. Select the **Treat Files matching the following regular expressions as junk** option.
2. Type the file name masks you want to treat as junk.

Configuring Asset Field Settings

In This Section...

Asset Field Settings Overview

The Viewer can be configured to construct any number of additional read-only named asset fields. These asset fields are constructed based on data collected at scan time. The analysis asset fields defined here are automatically displayed as entries in the **Asset Data** folder in the **Hardware and Configuration** tab page, however, they cannot be edited.



To configure the asset field extract settings:

1 Select **Options...** from the **File** menu or click the icon. The **Viewer Options** dialog box is displayed.

2 Click the **Asset Fields** tab. The Asset Fields tab contains a pane with five columns:

- **Caption** - The caption as specified in the Asset Data page of the Scanner Generator.
- **Field** - The number of the Analysis field (1 to 28).
- **Field Type** - The type of field to extract the information.
- **Field Data** - The source of the field information.
- **Default** - Any default value that has been set.

3 Right-click anywhere in the pane to display a menu with the following options:

- **Add** - Adds a new analysis asset field.
- **Edit** - Edits an existing asset field.
- **Remove** - Removes an existing asset field from the list.

Adding an Asset Extract Field

The fields are set up in a manner similar to that found in the Scanner Generator. Five different types of fields can be constructed:

- **Text file Extract**

  Takes data from a plain text file (similar to File Extract Field of Scanner).

- **Ini Field Extract**

  Takes data from an **ini** file (no equivalent in Scanner).

- **CSV File**

  Takes data from CSV files such as peripheral sheets (allows an external CSV file, containing a list of data associated with asset numbers to be parsed and loaded along side the other data).

- **Environment Field**

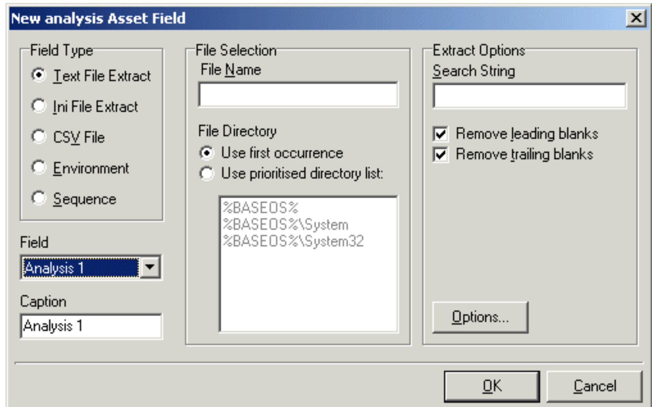
  Takes data from environment strings (equivalent to same field in Scanner).

- **Sequence Field**

  Takes data from a sequence of asset fields (equivalent to same field in Scanner).

To add a new asset field extract:

1 Select the **Add** option. A **New Analysis Asset Field** dialog box appears.



2 In the **Field Type** group, select the type of field to be extracted.

3 Use the controls on this page to configure the desired fields.

Each of the types of extract fields are now discussed individually.

Text File Extract Asset Field

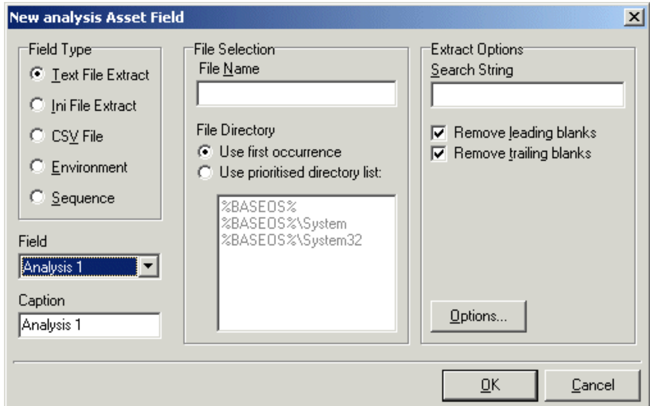
This field type extracts information from a single line in a named text file.

A useful file extracts include the predefined SMS file which extracts the SMS Unique Machine ID.

Important: The file you wish to extract from must be a file that is included in the **Stored Files** section. If the file is not there it will not work. In other words, the Scanner has to be set up to store the file before you can extract from it in Viewer.

To set up a new text file extract asset field:

1 Select **Text File Extract** as the field type.



2. In the **File Name** box, specify the name of the text file that the information is to be extracted from.
3. In the **Search String** box, specify the text string that is going to be located.
4. Assign the number for the analysis field by selecting it from the **Field** drop-down list.
5. Assign a caption for the field if required, by typing it in the **Caption** field.
6. Check the **Remove leading blanks** box, to remove blank spaces (if there are any) before the search string located in the text file.
7. Check the **Remove trailing blanks** box, to remove blank spaces (if there are any) after the search string located in the text file.
8. In the **File Directory** group box specify where to look for the file. This is a prioritized search sequence list. Select one of the following options:
   - **Use first occurrence** Viewer uses the first match of the file that it encounters.
   - **Use prioritized directory list** A list box is enabled, which allows you to specify the priority of directories where the file might be located. For example:

     %BASEOS% (the base operating system directory)

     C:\Winnt

     This location will have the highest priority, that is, if the file is located in this directory, then this file will be used.

     %BASEOS%\System (the System directory in the base operating system directory) **C:\Winnt\System**

If the file is not located in the **%BASEOS%** directory and is encountered in the **%BASEOS%\System** location, then this location will have priority as the source for the text file, and so on.

9 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, INI Files, CSV Files and Environment Variables* on page 740 for information about how to do this.

Ini File Extract Asset Field

Initialization files (**.ini** files) contain a number of different sections. Each section contains lines of settings (**Key Names**) applicable to that section. The format of the **ini** file is as follows:

[Section Name1] - (The name of the first section)

Key Name1 = Value (The first setting)

Key Name2 = Value (The second setting)

.

[Section Name2] - (The name of the next section)

Key Name1 = Value (The first setting)

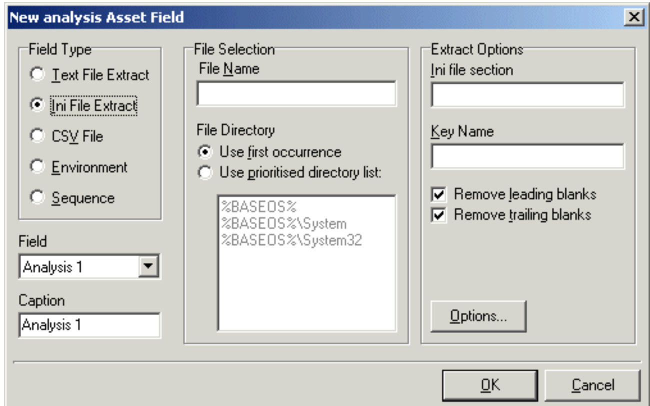
Key Name2 = Value (The second setting)

The advantage of using this type of asset field instead of using a text file extract asset field, is that it is possible to pinpoint precisely the **Key Name** you require and in the section in which it resides.

Important: The ini file you wish to extract from must be a file that is included in the **Stored Files** section. If the file is not there it will not work. In other words, the Scanner has to be set up to store the file before you can extract from it in Viewer.

To set up an ini file extract asset field:

1 Select **Ini File Extract** as the field type.



2 In the **File Name** box, specify the name of the **ini** file that the information is to be extracted from.

3 Assign the number for the analysis field by selecting it from the **Field** drop-down list.

4 Assign a caption for the field if required, by typing it in the **Caption** field.

5 In the **File Directory** group box, specify where to look for the file. This is a prioritized search sequence list. Select one of the following options:

- **Use first occurrence** Selecting this option, Viewer will use the first match of the file that is encountered.
- **Use prioritized directory list** Selecting this option enables a list box, which is used to specify the priority of directories where the file might be located. For example:

  %BASEOS% (the base operating system directory) **C:\Winnt**

  This location will have the highest priority, that is, if the file is located in this directory, then this file will be used.

  %BASEOS%\System (the **System** directory in the base operating system directory) for example, **C:\Winnt\System**

  If the file is not located in the **%BASEOS%** directory and is encountered in the **%BASEOS%\System** location, then this location will have priority as the source for the text file, and so on.

6 In the **Ini file section** box, specify the section of the **ini** file that the asset field extract is located in. This is the section identifier in the ini file (surrounded by square brackets [ ]). Do not include the brackets [ ].

7 In the **Key Name** box, specify the **Key Name** contained in the specified section of the **ini** file. This is the start of the string before the equals (=) sign. Do not include the = sign.

8 Check the **Remove leading blanks** box to remove blank spaces (if there are any) before the **Key Name** located in the **ini** file.

9 Check the **Remove trailing blanks** box to remove blank spaces (if there are any) after the **Key Name** located in the **ini** file.

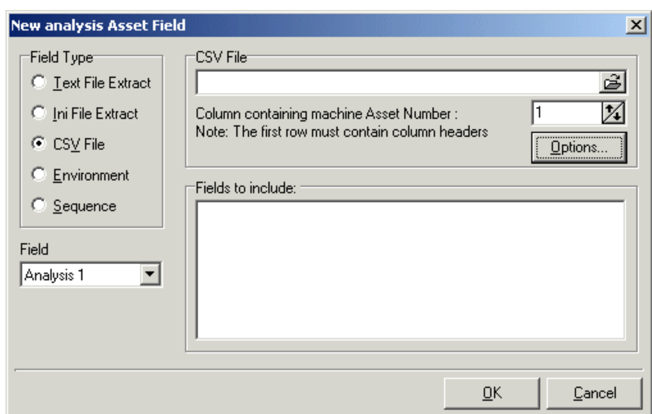
10 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, INI Files, CSV Files and Environment Variables* on page 740 for information about how to do this.

CSV File Asset Field

This type of field allows an external Comma Separated Variable (CSV) file, containing a list of data associated with asset numbers to be parsed and loaded along side the other data.

To set up a CSV file extract asset field:

1 Select **CSV File** as the field type.



2 In the **CSV File** box, navigate to the CSV file.

The first row of this file must contain column headers.

3 Enter the number of the column that contains the machine asset number (that is, the primary identifier field). As the number changes so does the fields selection. For example, if the primary identifier is column 2 in the CSV file, then specify this as the number '2' by either typing it directly into the field or by using the arrows.

The fields contained in the CSV file are displayed in the **Fields** list box. Select the fields to be included by selecting the check boxes next to the field names.

The primary identifier column (asset number field) check box is disabled and cannot be selected. This is because it is necessary to load this field.

4 Select the **Append** (csv) **to column name** option if you want the extracted asset fields to be displayed with the word '(csv)' after the column header name in the **Asset Data** folder in the **Hardware and Configuration** tab page.

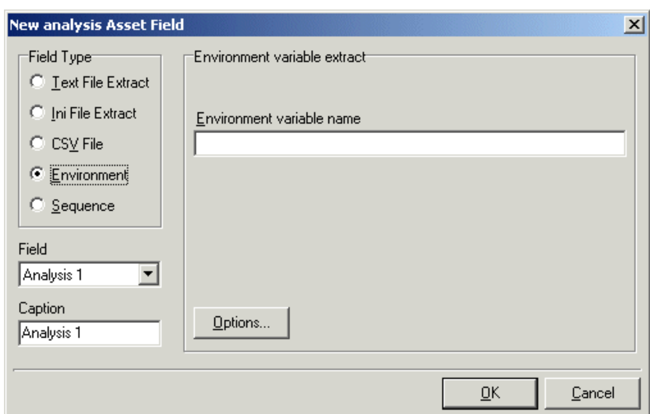
5 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, INI Files, CSV Files and Environment Variables* on page 740 for information about how to do this.

Environment Variable Asset Field

This type of field accepts data from a specified environment variable as set in the Scanner Generator. This can be checked by looking in the **Operating System data|Environment** folder in the **Hardware and Configuration** tab page.

To set up an environment variable extract asset field:

1 Select **Environment** as the field type.



2 Enter the variable name in the **Environment variable name** field. An example of an environment variable is:

ComSpec

Where ComSpec could be C:\WinNT\System32\cmd.exe

3 Assign the number for the analysis field by selecting it from the **Field** drop-down list.

4 Assign a caption for the field if required, by typing it in the **Caption** field.

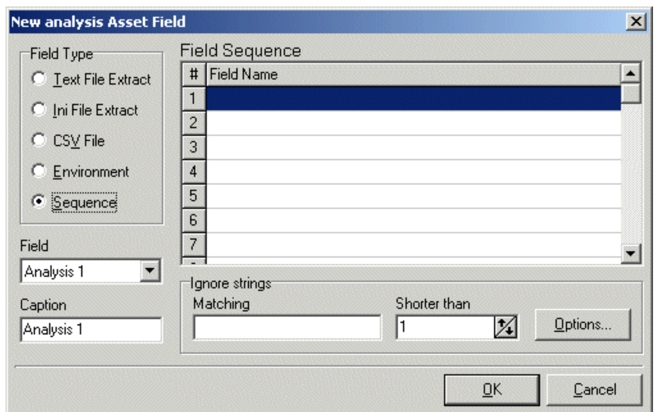
5 Specify any extract options as required by clicking the **Options…** button. See *Specifying Extract Options for Text Files, INI Files, CSV Files and Environment Variables* on page 740 for information about how to do this.

Sequence Asset Field

This field type extracts information from one of up to ten specified fields. The value returned as the results of the sequence field, will be the first of these fields which contains a non-blank value.

To set up a sequence asset field:

1 Select **Sequence** as the field type.



2 In the **Field sequence** box, click in the **Field Name** column, and from the drop-down list, select the desired field.

3 In the **Ignore strings** group box, specify the criteria for a blank field using one or all of the following methods:

- In the **Matching** box, enter a sequence of strings (case-sensitive) separated by semicolons.

  If the content of the field matches (is equal to) any of the strings specified here, the field is considered to be blank. For example, if the text string **Not Found** is entered here, then a field that has the value 'Not Found' is considered to be blank.

  Multiple entries must be separated by semicolons (;), for example:

  'Unknown;Not Tested'.

- You can type a string in the form: ***STRING***

Here the asterisks (*) are ignored and any string that contains the text between the two asterisks will be ignored too.

- Specify ignore strings that are less than 'n' characters.

  In the **Shorter than** box, use the arrow keys or type in a number to specify the maximum length of text strings that are to be used to define a blank field (between 1 and 255). If the string is shorter than the specified number, then the field will be considered blank.

4 Assign the number for the analysis field by selecting it from the **Field** drop-down list.

5 Assign a caption for the field if required, by typing it in the **Caption** field.

6 Specify any extract options as required by clicking the **Options…** button. See Specifying extract options in the next section for information about how to do this.

Specifying Extract Options for Text Files, INI Files, CSV Files and Environment Variables

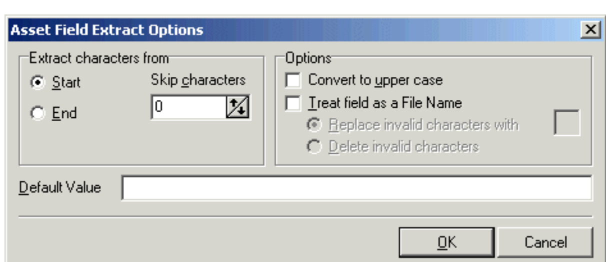
Text file, ini file and environment variable asset fields can be set up so that only part of the string is extracted instead of the entire string.

They can also be set up, for example, to use the last part rather than the first part of the string. This can be very useful for obtaining the last part of an automatic field that is too long.

In addition, a default value can be specified for situations where no matching data has been found.

To specify extract options for text, ini and environment variables:

1 Click the **Options...** button in the **New Analysis Asset Field** dialog box. The **Asset Field Extract Options** dialog box appears.



2 In the **Extract characters from** group box, specify whether you want to use the last part or the first part of the string. Select one of the following options:

- **Start**

  Uses the first part of the string. Use the arrows in the **Skip characters** box to specify how many characters you want to skip from the beginning of the string.

- **End**

  Uses the last part of the string. Use the arrows in the **Skip characters** box to specify how many characters you want to skip from the end of the string.

3 In the **Options** group box, select the options you want:

- **Convert to upper case**

  Select this option to convert the alphabetic characters to upper case.

- **Treat field as File Name**

  Select this option to treat the string in the asset field as a file name. Some characters are however invalid in file names, so any invalid characters can be replaced with the character specified in the **Replace invalid characters with** box.

  For example, underscore '_' is a valid file name character and can be used to replace invalid characters.

  Alternatively, invalid characters can be deleted by checking the **Delete invalid characters** box.

If the extracted field is empty or is not found (that is, there is no matching data), then a default value for the string can be specified in the **Default Value** box.

For example, if the text string **'Not Found'** is entered in this box, then an empty field or a field that has not been found will be displayed with this text.

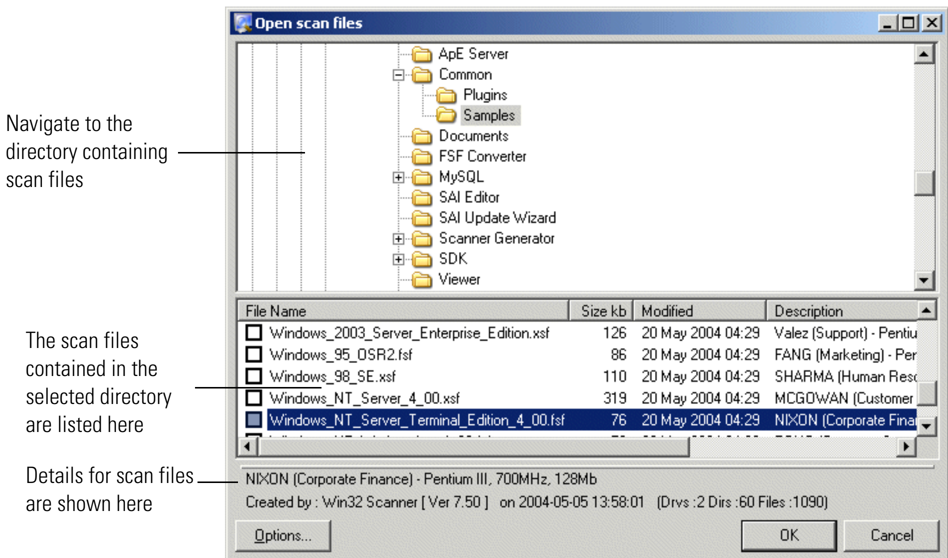
Loading Data from a Scan File

Each scan file is loaded into a new window. This allows you to view multiple files at the same time.

To load scan files in the Viewer:

1 Select the **Open Scan File** command from the **File** menu, or click the button in the toolbar.

The **Open Scan file** dialog box appears.



This dialog box is split into two viewing areas (panes):

- The top pane is an explorer type directory tree that allows you to navigate to the directory containing the scan files.
- The bottom pane displays all scan files that are available in the selected directory.

2 In the top pane, navigate to the directory that you want to load the scan files from. Any scan files found in that directory are displayed in the bottom pane.

Details are displayed in the status panel when you place the mouse pointer over the scan file.

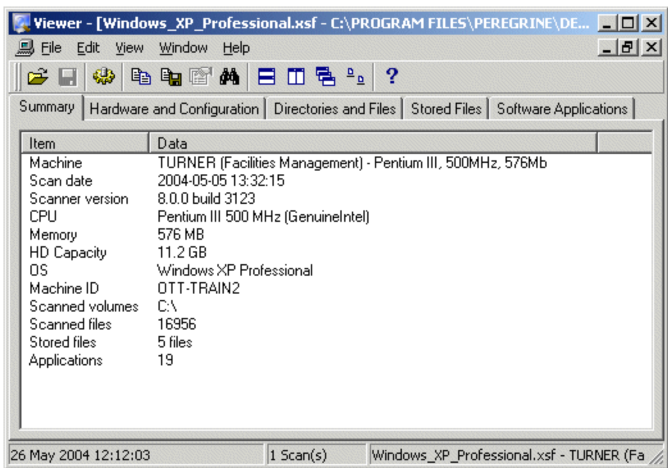
3 Check the box next to the scan file to include it for loading (you can also use the space bar to check and clear the box). Checking options can also be set by using the shortcut menu which is available by right-clicking anywhere in this pane.

4 Click the **OK** button to load the scan files.

Note: You can also use drag-and-drop to load scan files. Drop any number of scan files onto the Viewer window to load them directly.

Viewing Summary Data

The **Summary** tab displays a small summary of key hardware, software, user and asset information derived from the other tab pages in Viewer.



Navigation in the Viewer

To go directly to the tab page from which the summary information was derived:

- Right-click and select the option from the menu or double-click on an item.

The following table shows the items on the **Summary** page, a short description and the tab page displayed when you double-click or right-click on the item:

Item	Description	Page Displayed
Machine	Description field	Hardware and Configuration
Scan date	Date the scan file was produced	Hardware and Configuration
Scanner version	Scanner used to create the scan file	Hardware and Configuration
CPU	CPU description	Hardware and Configuration
Memory	Memory size	Hardware and Configuration
HD Capacity	Disk size	Hardware and Configuration
OS	Operating system	Hardware and Configuration
MachineID	Network name of the scanned machine	Hardware and Configuration
Scanned volumes	Drive letters scanned	Hardware and Configuration
Scanned files	Number of scanned files	Directories and Files
Stored files	Number of stored files	Stored Files
Applications	Number of applications	Software Applications

Viewing Hardware and Configuration Data

In This Section...

Hardware and Configuration Data Page Overview

The **Hardware and Configuration** tab displays:

- User and asset information collected using the asset questionnaire during the inventory.
- High level hardware information scanned during the inventory.

Further Information

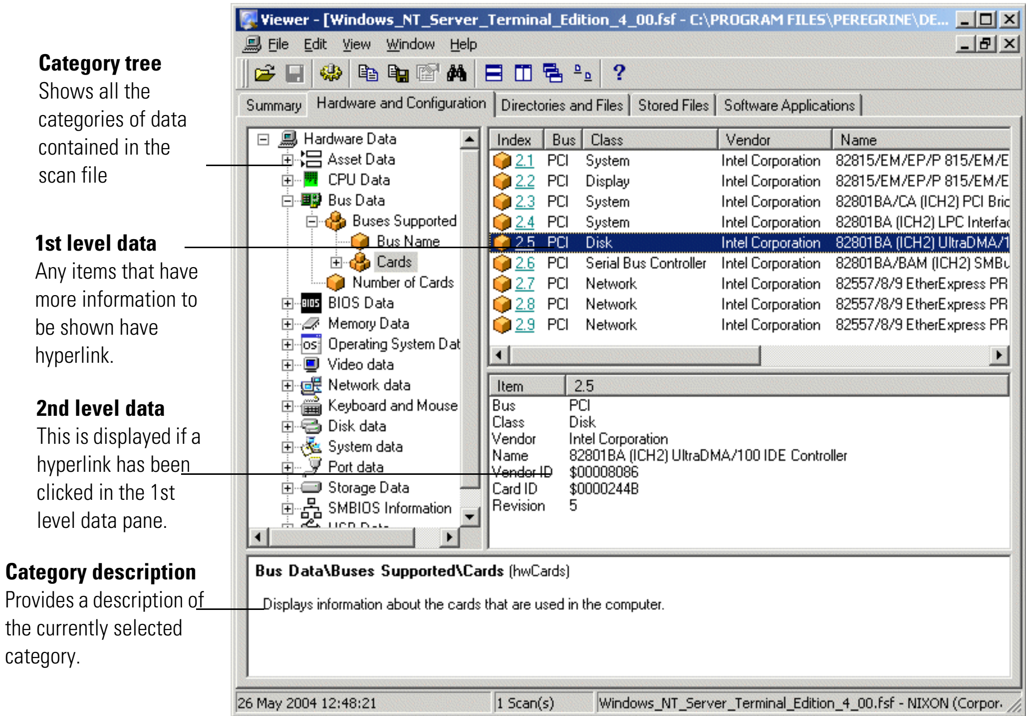
- For a detailed list of all the hardware items scanned see the document entitled Hardware and configuration data.
- For information about how drive letters are assigned and used by Desktop Inventory refer to *How Drive Letters and Volumes Are Assigned* in the *Scanner Generator* Chapter.
- For information about the SMBIOS details, refer to the 'System Management BIOS (SM BIOS) Version 2.3.2 Reference Specification', which can be found on the DMTF Web site at http://www.dmtf.org.

The Hardware and Configuration Tab Page Layout

The Hardware and Configuration tab page consists of four panes. By default when you first start Viewer, only the first three are shown (**Simple** mode):

- Category tree
- Category description
- 1st level data
- 2nd level data

The following screen shot shows the Hardware and Configuration tab page in **Advanced** mode.



Advanced and Simple Display Mode

By default, when you first start the Windows Viewer, the **Hardware and Configuration** data page is displayed in **Simple** mode.

You can display this information in a Advanced mode (hyperlinks shown and all four panes are displayed):

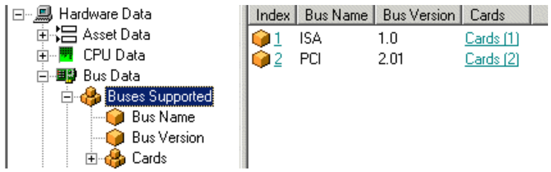
To switch between Advanced and Simple mode in the Hardware and Configuration data page:

- Select or deselect the **Advanced Hardware View** option in the **View** menu.

Category Tree

The left side of this tab page shows a tree. This tree contains folders for each of the Asset and Hardware data items. You can click on a folder to expand it and reveal further items in the category.

The icon indicates that multiple instances of that particular item may exist. In the following example, the multiple folder icon indicates that multiple Buses are supported (these being ISA and PCI).



Category Description

This pane provides a description about the data category you have selected from the tree.

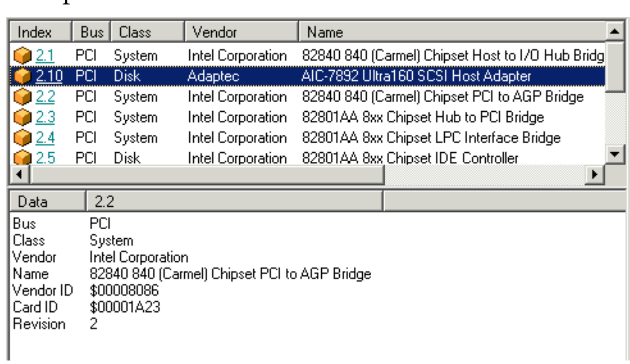
A detailed list of all the hardware items scanned and descriptions for all of these can be found in the document entitled 'Hardware and configuration data'.

1st Level Data

When you have selected a category in the tree, information is shown for it in this pane. In the previous example, the **Buses supported** were shown.

2nd Level Data

You will note that some entries in the 1st level pane may have hyperlinks. When clicked, further information for that instance of the item is show in the 2nd level data pane. In the following example, the Cards (2) hyperlink was clicked and further information about the PCI card was displayed in 2nd level pane.



Viewing Asset Data

Asset data is displayed in the first folder under Hardware data. It shows data that was collected using the asset questionnaire which collects customized asset information as each computer is scanned.

The asset questionnaire is configured in the **Asset Data** page of the **Scanner Generator**.

The information includes details about users, departments, physical assets, equipment, and any other information that is useful to record.

Note: User-defined and Automatic fields now show the actual caption displayed to the user. However, if more than one scan is loaded into Viewer and they have different captions, only the caption from the last scan loaded is shown.

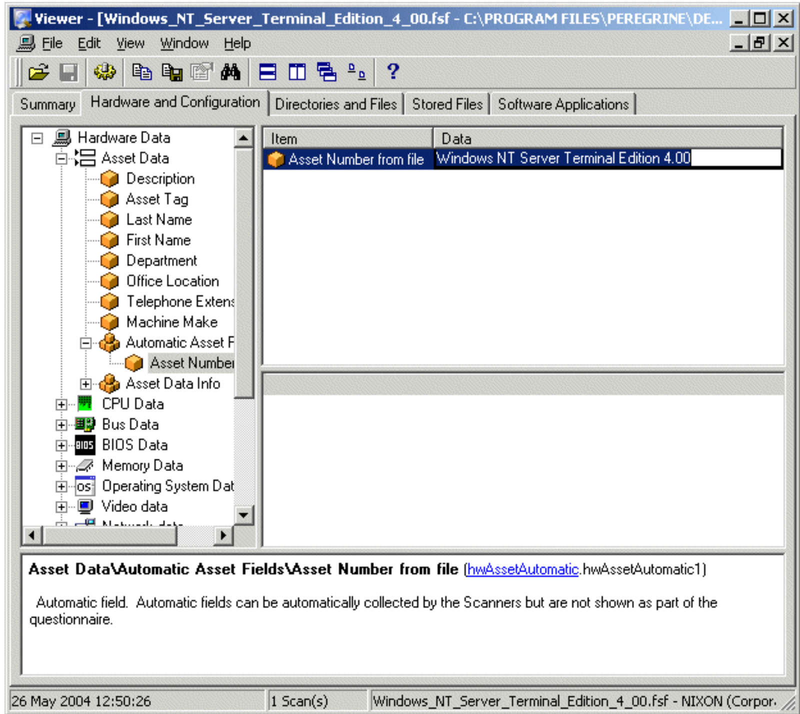
Editing Asset Information

When viewing user and asset information collected using the asset questionnaire during the inventory, you may occasionally find inconsistencies in the data. To ensure integrity, this data can be edited and saved.

Note: Check that the scan file is not read-only, otherwise you will not be able to edit it.

1. In the **Hardware and Configuration** page, click on the **Asset Data** folder.
2. In the **Data** column, select the asset entry you want to edit.
3. Either:
   - Press **F2**, or

- Click on the **Data** entry and then click on it again (not a double-click). The field now becomes editable.



4 Edit the asset entry as required.

If an edited field is part of a combination field, then the contents of the combination field are recalculated at the same time.

Analysis Asset fields that are displayed here cannot be edited, because these are read-only named asset fields.

Saving Asset Information Changes

You can save any changes made to the asset data.

To save asset information changes:

▶ Select the **Save...** command from the **File** menu or by click the icon.

Note: If you do not save the newly changed data, you will be prompted to do so when you exit Viewer.

Viewing Directories and Files Data

In This Section...

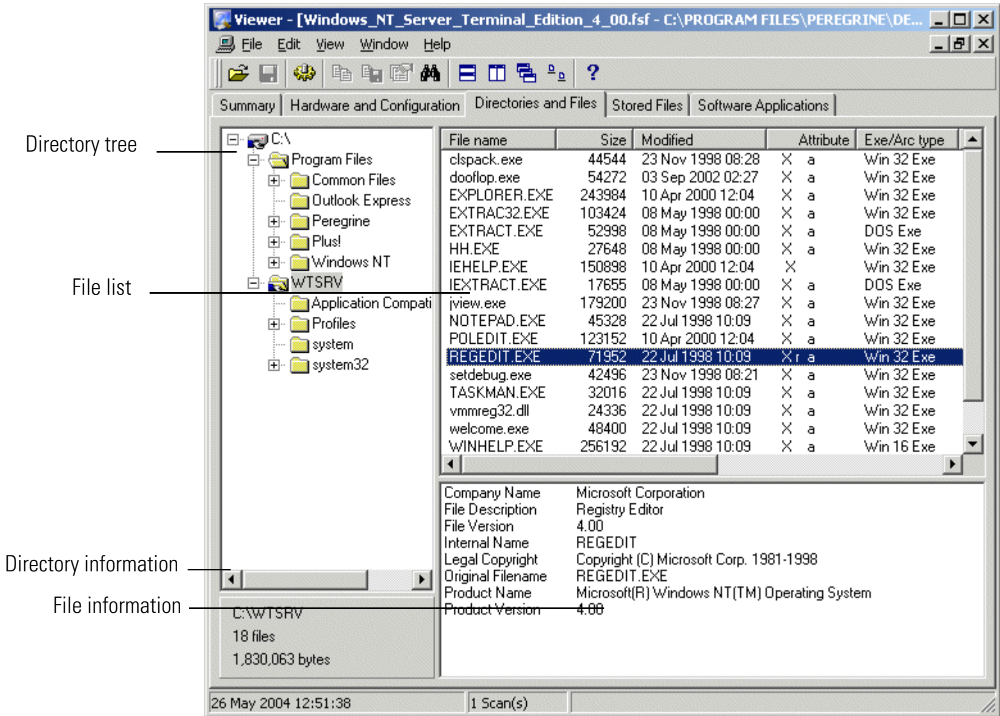
Directories and Files Page Overview

This page is displayed by clicking the **Directories and Files** tab after you have loaded the inventory data into Viewer.

Further Information

For information about how drive letters are assigned and used by Desktop Inventory, what the volume list means etc. refer to *How Drive Letters and Volumes are Assigned* in the *Scanner Generator* Chapter.

The **Directories and Files** tab page is split into four viewing areas (panes):



- Directory tree
- File list
- Directory information
- File information

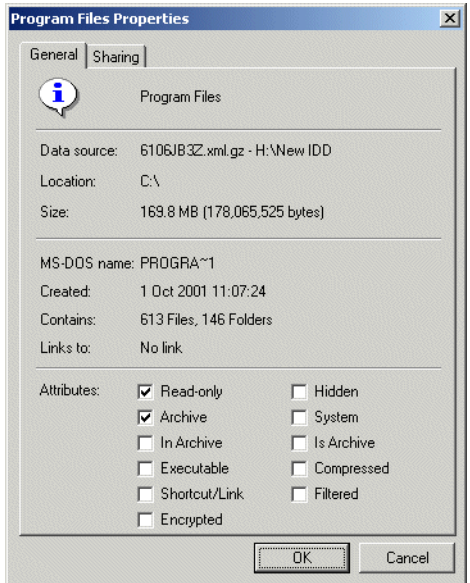
The Directory Tree

The directory tree is located on the left of the page. It shows the structure of the current drives displayed as a directory tree.

To obtain information about the drive or directory:

▶ Right-click on the directory and select the **Properties** option. The **Program Files Properties** dialog box appears.

If the drive is a shared drive, then a **Sharing** tab is also made available.



Icons Used in the Viewer to Denote Directory Status

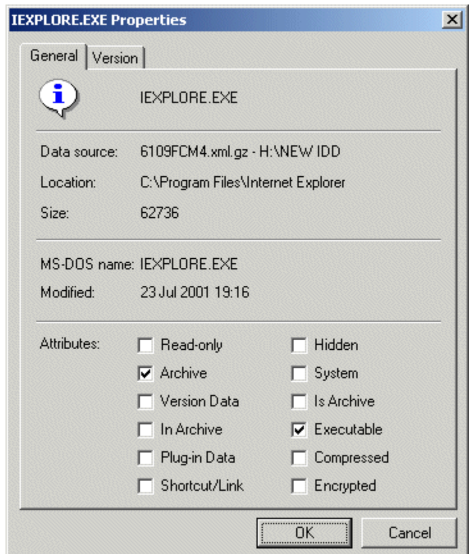
Different icons are used to denote directory status as follows:

Icon	Directory status
	Indicates a drive
	Indicates a shared drive
	Indicates a normal directory
	Indicates a shared directory.
	Indicates filtered or ignored directories (as specified in the Scanner Generator). Data in the filtered directories is not stored in the scan file. This icon also represents mount points in Windows 2000 or UNIX scans. Mount points are automatically filtered.
	In UNIX scans, files (and directories) may be located on several different file systems. To link files that are in different file systems a symbolic link is made. This icon is displayed for directories that are symbolic links. You can follow the link by right-clicking on the directory and selecting the **Follow Link to <link>** option.

The File List

The file list is located in the top right of the page. It shows a list of files in the selected directory.

You can obtain information about a file can by right-clicking on the file and selecting the **Properties** option. You can also do this by double-clicking on the file.



Archive Files

The contents of archive files are displayed, but no signatures are shown. However, if a checksum is shown, this refers to the archive checksum.

UNIX Scans

For files in UNIX scans, you can obtain link information about the file by right-clicking on the file and selecting the **Follow link** option.

This option is only available for files with the **L** attribute (indicates a symbolic link file). You can also do this by double-clicking on the file. The link information is displayed in the file information pane.

Incremental Column Search

To use incremental column search to locate an entry in a column directly:

- Click on any row and type the word(s) or number(s) that you want to find.

The name is displayed on the status bar.

Parameters Displayed for Each File

The parameters displayed for each file are:

- **File Name** - The name of the scanned file.
- **Size** - The size of the scanned file.
- **Modified** - The last modified date and time that is stored for the file in the file system.
- **Attribute** - The Attribute column along with normal file attributes includes the following information:

Attribute	Meaning
r	Read-only files Files that are marked read-only are protected from modification or deletion.
h	Hidden files Windows Explorer does not show hidden files by default unless you tell it to do so.
s	System files
v	Volume Label This contains no data and no more than one may exist on a disk volume (and only in the root directory).
a	If it has the archive attribute of DOS or windows The Archive attribute is used to provide an automatic record of what files have been modified since the last backup.
c	Compressed files These are compressed files and folders. For example, if it is a file on a compressed NTFS volume.
p	Plug-in data Whether the file data was obtained by means of a plug-in.
x	In a UNIX system this represents a file with the executable attribute set.
I	Internal file That is, if it has version data available for it. Version data (as per Windows Explorer) is displayed for all files having this attribute.

Attribute	Meaning
L	Symbolic link in UNIX Files (and directories) may be located on several different file systems. To link files that are in different file systems a symbolic link is made. Symbolic links to files are not scanned but are stored with this attribute and are displayed in the directory tree of the **Directories and Files** page with a shortcut icon.
s	This is special case for UNIX for SetUid files. In UNIX scans, certain files have special attributes that mean that they run with root privilege. Such files are potentially a security risk and the Scanner assigns them the system attribute - **s**
A	This file has been identified as an archive.
C	This file has been identified inside an archive.
X	This file has been identified as an executable file.
D	This file has been identified as a device driver

- **Exe/Arc**

  The Exe/Arc Type column for executable files, indicates the file type. For archive files it indicates the compression type.

- **Plug-in data**

  Indicates which files have plug-in data. Data file recognition plug-ins may store some information for the files that they recognize. This normally includes the name and the version of the program that was used to create the file and other relevant information. The Plug-in data column, displays 'Yes' for those files that have plug-in information. For these files, the plug-in information is displayed in the file information pane.

- **Signature**

  The signature is a number that is calculated from the first 8 Kbytes of a file. It is usually sufficient to uniquely identify a file.

Directory Information

The directory information pane beneath the directory tree displays information about the selected directory. It shows the number of files in the directory and the total size of the files.

File Information

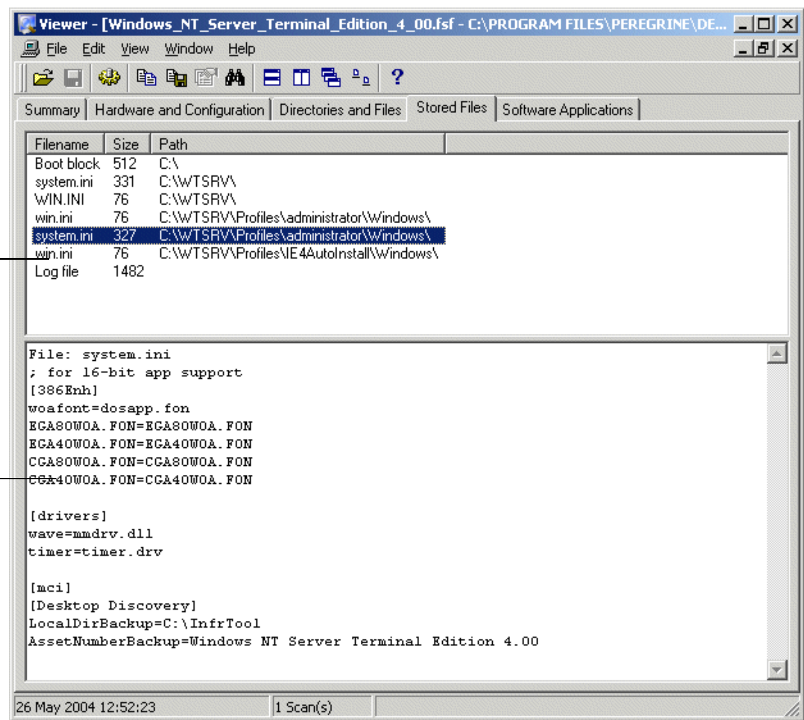
Beneath the file list is the file information pane, which displays additional information for the executable files, where internal version information is included in the file header.

Viewing Stored Files Data

In This Section...

Stored Files Page Overview

This page is displayed by clicking the **Stored Files** tab after you have loaded the inventory data into the Viewer.



Stored file list

Contents of the stored file

This page displays the contents of key files collected during the inventory, that is, files stored in the scan file during scan time. Typically these are system configuration files, for example, **Autoexec.bat, Win.ini**.

The Stored File tab page is split into two viewing areas:

- **Stored file list** - The top pane displays a list of stored files. You can sort (in ascending and descending order) the contents of a column by clicking on a column header.
- **Stored file contents** - The bottom pane displays the contents of a selected stored file. Text files are displayed as text, other files are displayed in a combined HEX- and ACSII-views.

Toggling the Display Mode

By default, the Viewer tries to determine the type of the file and select the appropriate mode of display. However, some text files that have unusually long lines (longer that 255 characters) are displayed in hex view as binary files.

Using the **Toggle Display mode** option it is possible to change the view from hex to text (and vice versa).

To use the Toggle Display mode option in the Windows Viewer:

1. In the **stored file list** (top pane), click on the file that you want to view.
2. In the bottom pane, select the **Toggle Display Mode** command from the right-click menu. The display mode switches between hex and text display.

Saving or Copying the Contents of a Stored File

The contents of a stored file can be saved to a file for future reference or for restoring the original files if they have been lost.

To save the contents of a stored file in the Viewer:

1. Right-click on the file name, or in the **stored file contents** (bottom pane) right-click anywhere in the pane.
2. Select the **Save To...** command (text and hex files) from the shortcut menu. Use the standard Windows navigation methods to select or enter a file and the location where the file is to be saved.

To copy the contents of a stored file to the clipboard:

1. Right-click on the file name, or in the **stored file contents** (bottom pane) right-click anywhere in the pane.
2. Select the **Copy to Clipboard...** command or click the icon and paste the content of the file to an editor of your choice.

Locating the Directory of a Stored File

To locate the directory of a displayed file (this will be displayed on the Software page):

- Right-click anywhere in the top pane and select the **Go to Directory** command from the shortcut menu, or double-click on the file.

  The software page is displayed, with the file highlighted.

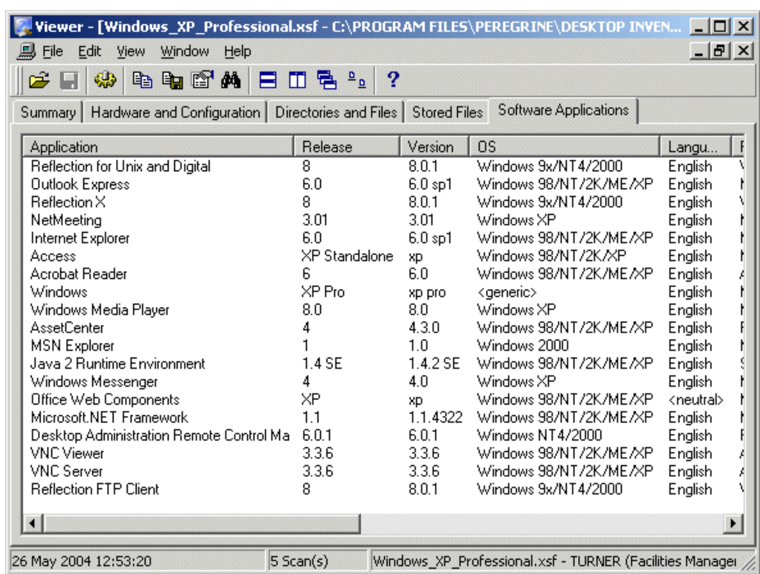
Note: This will only work if the directory/file is available.

Note: The stored file will only appear in the directory if the Scanner has been configured to store the file type.

Viewing Software Application Data

The **Software Applications** tab displays applications that have been recognized by the Software Applications Index. It is not displayed when the application list is empty even if a recognition method was specified.

See *Configuring Recognition Settings* on page 722 for information about how to set up the recognition method.



It displays application name, release, version, operating system, language, publisher information and the path to the file recognized as the **Main** file. Main files for an application (for example, Winword.exe) identify the application.

Double-clicking on an application in the list or right-clicking on an entry and selecting the **Goto** command will display the **Directories and Files** tab with the application highlighted. The **Directories and Files** tab shows the file/directory identifying the application.

The following additional commands are also available by right-clicking on an application entry.

- **Copy** Copies the contents of the Applications tab page to a text format and places it on the clipboard. You can paste the contents to an editor of your choice.

Comparing Scans

In This Section...

Why You Might Want to Compare Scans

The scan compare feature in Viewer can be an ideal tool for support personnel. It provides you with a direct comparison between two scans. It can be used to:

- Track which files have been accidentally deleted.
- Compare fingerprints from recently upgraded computers against their original configuration.
- Check for adherence to a standard desktop.

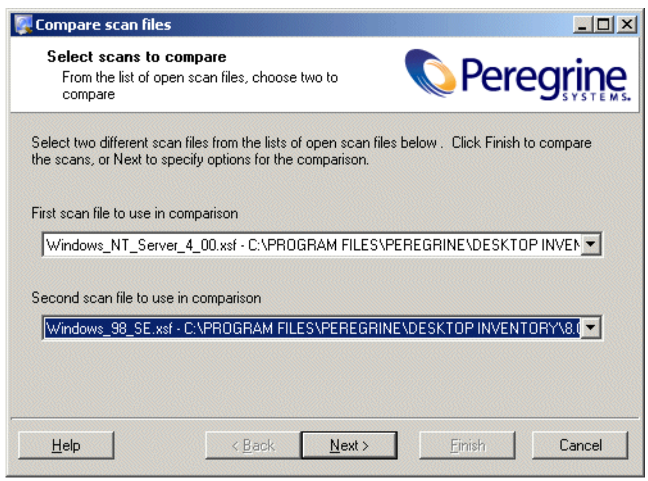
- Check which files have been added, changed or removed after a software installation had taken place.
- Change management.

Setting up the Comparison of Two Scan Files

The compare function is only available if more than one scan has been loaded into Viewer. You can perform multiple comparisons at any one time.

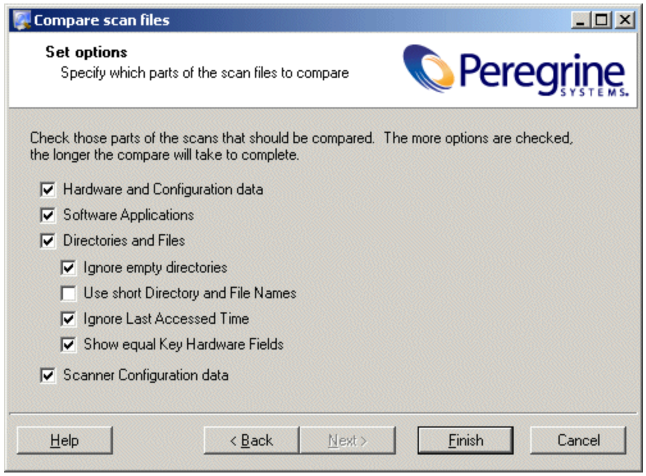
To set up the comparison of two scan files:

1 Select the **Compare...** option from the **Edit** menu or click the Compare icon . The first page of the **Compare scan files** wizard appears.



2 Select the two different scans to be compared from the corresponding drop-down lists.

3 Click **Finish** to compare the two scans with default options or customize the options by clicking the **Next>** button. The **Set options** page of the wizard is displayed.



4 Customize the options as required:

- **Hardware and Configuration data**

  Compares the information contained in the **Hardware and Configuration** page for both scans.

- **Software Applications**

  Compares the information contained in the **Software Applications** page for both scans.

- **Directories and Files**

  Compares the information contained in the **Directories and Files** page for both scans. Further options are made available:

- **Ignore empty directories** - Any empty directories encountered will not be included in the comparison.

- **Use Short Dir/File Names** - The file names and directories will be displayed in the 8.3 format used by DOS.

- **Ignore Last Accessed Time** - The last accessed time stamp is ignored when carrying out the compare.

- **Show equal Key Hardware Fields** - Some of the fields have key fields associated with them. If any data for the fields in the list has changed, it will be displayed along with the key field for it. The key fields are displayed in grey to indicate they do not represent a change.

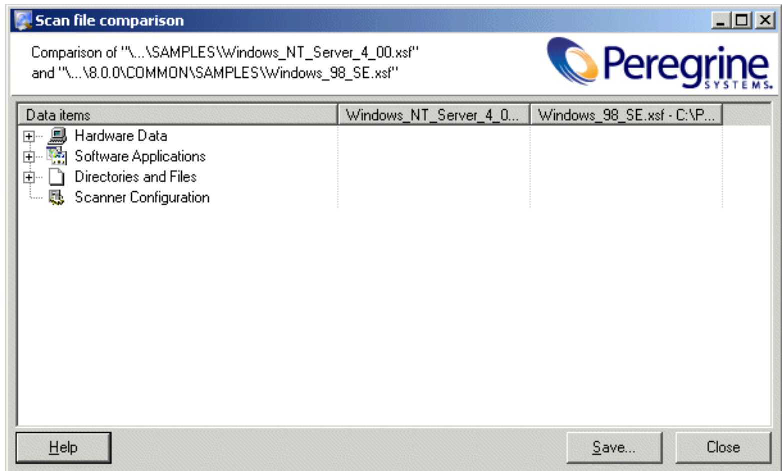
  For an example of how key fields are used see *Key Fields* on page 765.

5 Scanner Configuration data

Compares the Scanner Configuration (as set up in Scanner Generator) for both scans.

6 Click the **Finish** button.

The two data sets are compared and a **Scan file comparison** window appears showing the results of the compare operation.



Viewing the Comparison Results

The Scan file comparison window has three columns.

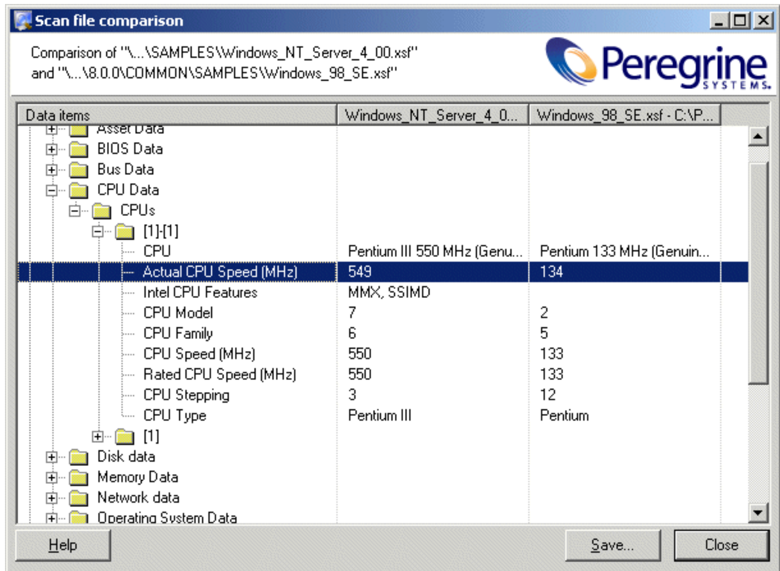
- The first column shows the compared data items.

  The results of the comparison depend on the criteria you defined in the wizard. The following information can be shown in the first column:

  - Hardware Data
  - Software Applications
  - Directories and Files
  - Scanner Configuration

To expand a category, click the + sign next to the icon.

- The next two columns show the results for the compared scan files. An example is shown in the following screenshot:

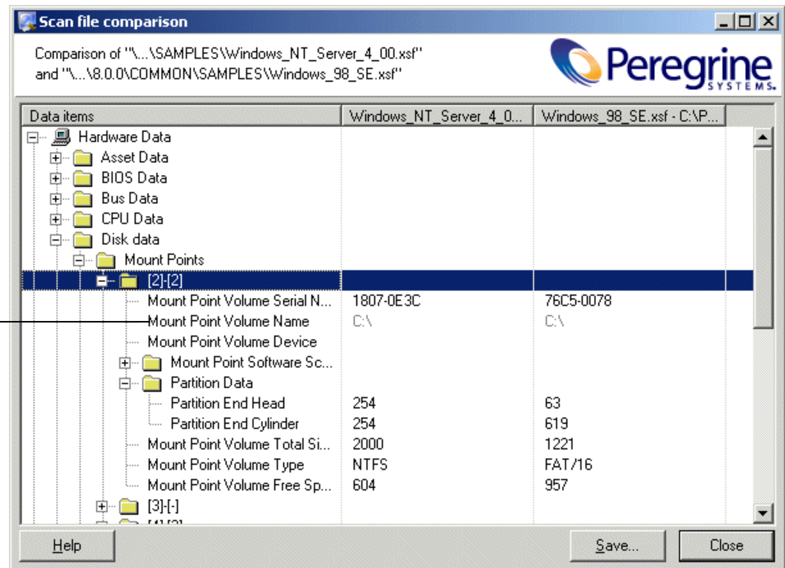


In this example, the **Actual CPU speed** for the first scan file is 549 and 134 for the second scan file.

Key Fields

If you enabled the **Show equal Key Hardware Fields** option in the **Set options** page of the compare wizard, some of the lists of fields will be displayed with key fields associated with them. These key fields are shown in grey. If the data for the fields in the list has changed, it is displayed along with the key field. An example is shown in the following screenshot:

Key field indicates the changes occurred on this drive



The **Mount Point Volume Name** field is a key field (shown in grey) and this is shown even though it hasn't changed itself. This indicates that the information changed relates to this particular drive; without the key field it would not be possible to see on which drive the change had taken place, merely that it had changed on *some* drive.

The Go To Option

A **Go to** option is available for all categories except for Scanner Configuration data.

1 Right-click on a field and select the **Go to** option.

The appropriate tab page in the Viewer main workspace will be displayed with the entry highlighted. This will be done for both of the scan files.

2 Select the **Tile** option from the **Window** menu to see both scan files with the appropriate entries highlighted.

Saving the Comparison Results

To save the results to a Comma Separated Variable (.csv) file:

1 Clicking the **Save** button, or right-click anywhere in the results window and selecting the **Save to .CSV file** option.

2 In the **Save Comparison** dialog box, specify a file name and path where you want the results to be saved.

3 Click the **Save** button.

11 Frequently Asked Questions

CHAPTER

In this chapter you will find answers to some frequently asked questions. The FAQs are grouped into the following areas:

Installation and Licensing

How to Obtain a License for Desktop Inventory 8.0?

Desktop Inventory ships with a 5-user evaluation license. To upgrade this to the number of licenses actually purchased, contact Customer Support.

The license will be sent to you as an e-mail containing an attached file. This file is a compressed (Zip) registry file containing the actual license. To activate the license, double-click on the registry (.reg) file.

How Do I enable Aware mode with Peregrine Network Discovery?

See the *Setting up Network Discovery to work with Desktop Inventory* Chapter in the document entitled *Using Network Discovery with Desktop Inventory and Desktop Administration*.

This document will provide you with all the steps you require to make Desktop Inventory and Network Discovery aware of each other.

What Permissions are Needed to Install Desktop Inventory?

The Client components of Desktop Inventory can be installed by users with at least User privilege.

To install the Server components (ApE Server and XML Enricher), Local Administrator rights are required.

Scanner Generator

Are Tests Performed by the Scanner Carried Out on All Platforms?

Different combinations of Scanners and operating systems collect different information. In general, it is advisable to run the native Scanner for a given operating system to collect as much information as possible. For example, even though the DOS Scanner runs in Windows XP, the Win32 Scanner should normally be used to scan this operating system.

For a complete list of what can be collected by each Scanner, refer to the *Data Collected by the Scanners* document installed with Desktop Inventory.

Can Scheduling Be Built into a Login Script Based Inventory?

Simple scheduling is built into Desktop Inventory using two command line switches. These switches allow you to run the Scanner every day, and the Scanner will make sure it only runs either a set number of days after the last recorded scan of a workstation or on a specific day of the week. An extract from the Scanners Online Help file (Command line option and switches section) detailing operation of the switches is reproduced below:

-scandays:<NumberOfDays>

Instructs the Scanner to perform the scan only if the previous scan was seven or more days ago. For example, -scandays=7 if the Scanner is launched from a login script every day, it will only perform the scan every week.

-scandaysofweek:<DayOfWeek>

Where DayOfWeek can be one of the following:

0-Sunday
1-Monday
2-Tuesday
3-Wednesday
4-Thursday
5-friday
6-Saturday

For example, -scandayofweek:5 will cause the scan to be performed on Fridays only.

The -scandays and -scandayofweek switches can be combined. For example,

```
-scandays:14 -scandayofweek:3
```

will cause the scan to be performed every other Wednesday.

The full list of command line options accepted by the Scanners can be obtained by running the Scanners with the -? command line option.

Be aware that the Scandays function checks against the scan date of the scan file being refilled from so if offsite refilling is used then the offsite scan file will be used for the check rather than the local one.

Does Desktop Inventory Have Support for the Double Byte File Names Created by Machines Using Japanese Versions of Windows?

Double byte character set support is enabled in Desktop Inventory in both the scanning and analysis modules.

This support is disabled by default. When run on a Japanese version of Windows (as identified by a default code page of 932), the Win32 Scanner as well as the analysis modules switch into DBCS-enabled mode and correctly process and display Japanese characters.

Does the Scanner Detect Peripheral Devices?

Windows configured monitors, printers, modems, USB devices, SCSI devices (tapes and so on) are detected and reported from the PC perspective (in most cases without needing to contact the devices themselves), custom configuration using registry extract asset fields may allow other devices for the PC to be pinpointed.

How Can Scanner Execution Be Monitored?

Dependant upon the method by which it is closed, the Scanner will terminate with a specific exit code (error level), constructing a script which monitors these exit codes would allow logging of any errors encountered by the Scanner. The exit codes currently generated are detailed below:

```
ERRORLEVEL 6 = Plug in Error caused premature termination
```

ERRORLEVEL 5 = Scan not required yet as defined by -scandays or -scandayofweek switch

ERRORLEVEL 4 = Fatal Exception within Scanner

ERRORLEVEL 3 = Scanner executed with /? Switch (help)

ERRORLEVEL 2 = User Terminated Scanner (via end task)

ERRORLEVEL 1 = Unexpected other Exception caused termination

For an example of the implementation of exit codes within a script, please see the file **ntaudit.cmd** in the Appendix of this User's Guide.

How Can the Computer Name Be Used to Name a Scan File?

To use the computer name as the scan file name, you should configure the asset number field in the Scanner to be populated by the hardware field **Local Machine ID**.

Alternatively for 32-bit Windows workstation environments a registry extract field looking for the value of:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ComputerName\ComputerName\Computername

would also work. For Windows NT/2000/XP environments, an environment field looking for the value of the variable COMPUTERNAME also works.

Note that the computer name may not be a unique identifier. To see an example of how to use a Sequence Field to generate a better unique identifier for each machine, have a look at the default configuration of the Asset Tag field in Scanner Generator.

How Does Asset Refilling Work?

When the Scanner executes, it attempts to obtain the asset number of the workstation it is launched from, the first place it looks is in the **infrtool.ini** file, if this is not available it then checks the **system.ini** file.

If the asset number is found, the Scanner will check the designated refill location for a scan file with this name and will refill any relevant asset fields from this location. If no asset number is found then only refilling from a **local$.fsf** or **local$.xsf** file is possible.

If both an FSF and an XSF is available for refilling, the Scanner will choose the file with the latest modified time stamp for refilling. However, if the time difference is less than a day, the fsf will be used.

How Does the Scanner Name the Scan File?

The Scanner will always name the local copy of a scan file **local$.fsf** or **local$.xsf.** This naming makes it easy for the Scanner to locate it for asset refilling in the future.

For the offsite scan file, a unique name should be used as it is likely that many of the collected scan files are to be returned to a common location. The Scanner will look for an asset number to be supplied to it to save the file under a unique name, the logic that the Scanner uses to obtain this number is as follows:

- If the Scanner was configured to take it from an asset field (this is default configuration), it takes it from there.
- If the Scanner was configured to take it from the command line, it takes it from the /O parameter.
- If the asset number is still blank, it is taken from the INI files (first infrtool.ini and if empty, system.ini).
- If it is still empty, **default.fsf** or **default.xsf** is used.

What is Delta Scanning?

Instead of sending a full scan file to a server after every scan, the Scanners can calculate the difference (the 'delta') between the last full scan and the current one and transfer just this in Delta Scan File format (DSF).

Delta Scan files cannot be viewed in the analysis tools (Analysis Workbench and Viewer).

What Methods Can Be Used to Deploy a Scanner to Workstations?

The Scanner is a freestanding executable that does not require supporting files and therefore can be distributed utilizing a variety of methods. Deployments utilizing Network Discovery, login scripts and software distribution are the most popular, e-mail based distribution (Scanner as an attachment) is also viable. Floppy disk based scanning can be used for non-networked workstations.

As an example, sample login scripts for Scanner deployments within a Windows 32-bit environment are available within the Scanners Online Help (Network inventories section).

Generally speaking, it is best to take advantage of a software distribution tool when it is available, scheduling and targeting functionality is normally built into these tools that will make deployment far more controllable than when using a login script.

Which Files Are Saved on a Workstation by a Desktop Inventory Scanner and Where are They?

The Scanners save several files to a workstation by default, although all of these can be disabled if required (using the Scanner Generator). These files will normally either contain a backup of the data saved by Desktop Inventory or a copy of the unique identifier applied to a workstation (asset number).

The existence of multiple asset number backup files is particularly useful when PCs are being re-scanned and a manually input value was used initially (the more copies of the number that exist on a PC, the less likely the user will have deleted them all).

Local components normally saved after a scan and their purposes are as follows:

- **Asset.bat**

  This file is written to c:\, it will contain a single active line "@SET ASSETNO=" which is completed by the Scanner with the value of the asset number given to the scanned workstation. This is the last file saved by the Scanner before it terminates. There are also several REM statements in the file. The file name and variable named used can be configured using the Scanner Generator module, the file can optionally be set as hidden and read-only for protection against deletion by users.

- **Local$.fsf or local$.xsf**

  Known as the local scan file, this is an exact copy of the **assetno.fsf** or **assetno.xsf** file (the **assetno** will be substituted by the real asset number) normally saved offsite during a scan, it can be used if the original file becomes lost or corrupted, it can also be used for refilling on a subsequent scan when the offsite (server based) scan file cannot be found.

- **Infrtool.ini**

This file is always stored to C:\. The file contains the location of the **local$.fsf** or **local$.xsf** file on the workstation and a copy of the asset number.

- **Infrtool.~in**

  Backup of Infrtool.ini, written to the same location of Infrtool.ini on a workstation. The asset number is also written to a section of system.ini, this file is located in the Windows directory on a workstation scanned with Desktop Inventory and will always be extended rather than replaced by the Scanner, an example of the information written is as follows:

  [Desktop Discovery]

  AssetNumberBackup=A123456

Which Platforms Do the Desktop Inventory Scanners Support?

Currently (Desktop Inventory 8.0) Scanners are available for:

- Dos 16-bit
- Windows 3.1x
- Windows 95
- Windows 98 (includes Windows 98 SE)
- Windows NT 4.0 (includes Windows NT Server)
- Windows ME
- Windows 2000 (includes Windows 2000 Server)
- Windows XP
- Windows 2003 Server
- Windows Media Server
- Windows for Tablet PCs
- OS/2 2.1 and OS/2 Warp
- Solaris 2.5, 2.6, 7, 8 and 9 on SPARC
- HP-UX 10.2 and 11.0 on HPPA
- AIX 4.3, 5.0, 5.1, 5.2 on IBM R6000
- Linux - Any distribution with a 2.2x, 2.4x or 2.6x kernel on i386

Software-only scans of equipment running other operating platforms (NetWare, Dec VAX or other UNIX file servers) may be achieved by running a remote scan from an attached Win32 workstation.

Which Types of Cards Can Be Detected by the Scanner?

Card identification is performed by Desktop Inventory on a variety of BUS types, these are PCI, EISA, MCA, PCMCIA and under a plug/play environment details on PnP ISA cards are also collected.

All of these architectures were constructed in a way that external detection is able to be both safe and accurate.

Desktop Inventory is not able to detect basic (that is, non plug & play) ISA Cards, as these cards were not designed with management in mind and do not have a standard mechanism for querying them. Configured ISA cards are detected in Windows.

Detection of plug & play cards requires a plug & play operating system.

Detection of any cards within a Windows NT 4.0 environment requires the Scanner to be executed with local administrator level access to the system.

What Remote Locations Can Be Saved to? Can a Novell Drive be Used to Save a Scan File?

The Scanner can save to any remote location (whether it is mapped by a drive letter or not) that is accessible for writing by the user currently logged in.

When setting up the Scanner to save to a share on a Novell system, make sure users have enough rights to create, read and modify files on this share.

How can the Scanner Be Saved to a Remote Location?

In **Scanner Generator**, the save location is defined on the **Saving** tab of the Scanner Options page.

Two different save paths can be specified: one used by PC-based Scanners and one for UNIX Scanners.

The remote path can take the following four types of values.

- Normal drive designation
- UNC path
- FTP server
- HTTP server

The PC save path must start with either a drive designation or a UNC location. For example, D:\Scans would save the scan files to the Scans directory on the D: drive, whereas \\MYSERVER\PDI\Scans would cause the Scanner to save to the Scans directory on the PDI share of the server named MYSERVER.

The Win32 and Unix Scanners can save to any FTP server. When an FTP location is specified with the **–p** Scanner command line option (Win32 and Unix scanners only), the User Name and Password can be encoded into the URL as follows:

```
ftp://user:password@host:port/dir
```

The Win32 and Unix Scanners can save to an HTTP server if one has been configured to allow writing to a particular directory.

The User Name and Password cannot be specified for an HTTP location. If the **–p** Scanner command line option is used with an HTTP location, ensure that the location is not password protected. If the User Name and Password is required with HTTP saving, specify it using the setting in the **Saving** tab page. The **–p** switch should not be used in this case.

Scanners

What to Do If the Scan Fails During the Hardware Phase

Note the test which is failing. This will be displayed in the log window. Use command line options to deselect the specific test which has failed. For example, if the DMI 1.x version is causing problems, then use the **-141** switch to circumvent the test.

What to Do If the Scan Fails During the Software Detection Phase

If it fails on a specific test, create an **override.ini** file with the problem file name and store **override.ini** in the same directory as the Scanner. This will not open the file but will record it in the directory listing.

If it reports an error number, contact Peregrine Customer Support to discuss the possible reasons.

What Happens If the Scan is Aborted?

If the Scanner crashes, any temporary files created by the Scanner will be left behind. If the Scanner is stopped under user control, then these files will be deleted before the Scanner exits.

What Happens If There Is Not Enough Room to Save the Offsite Scan?

The Scanner prompts for another drive on which to save the data. In this case, it will save the scan file to the root directory of the selected drive.

Note: When a UNIX Scanner encounters this issue, no offsite scan file is saved. Instead, an error message is displayed on-screen.

What Is the Function of the InfrTool.~in and infrtools.ini~ Files?

The InfrTool.~in (non UNIX) and infrtools.ini~ (UNIX) files are a backup of the **infrtool.ini** file. They are not used by the software and can be deleted.

How Does Desktop Inventory Populate the Software Product Names Under the Applications Tab in the Viewer?

This is done using a process called Application Recognition, which happens while the scan file is loaded. During Application Recognition, each file is matched against the built-in Recognition Library (stored as one or more SAI files).

For more information about Application Recognition, refer to *Application Recognition and Teaching* on page 595.

What are User and Automatic Fields Used for?

The asset fields named User1, User2 and so on, are normal asset fields that can be used to store any information you would want.

The fields that are named Automatic1, Automatic2 and so on, can only be configured as "Calculated" fields and are not shown to the user during scanning. They are typically used to collect asset data that requires no user input, for example as intermediate field values for sequence or combination fields.

Which Devices Does Desktop Inventory Detect? Will it Detect a Digital Camera If One Is connected?

On operating systems where USB detection is supported, the Scanner will detect devices attached to the USB ports, including Digital Cameras.

How Does the Win32 Scanner -scandays Feature Read the Date of the Last Scan to Know If it Should Run Another Scan?

It locates the last scan file using the same logic as when asset data is refilled, and compares the current date against the "scan date" value stored in this scan file.

What Is the Difference Between a Local$ fsf and the Offsite fsf?

The local scan file is always named Local$.fsf, whereas the offsite scan file is named using the machine's unique identifier or Asset Tag.

The location of the Local scan file is fixed and cannot be changed, which allows the Scanner to have a reliable source for refilling asset data.

The offsite scan file is normally saved to a location on the network (user-defined), where it can be used for further processing through the XML Enricher and be used to populate the inventory tables of tools such as AssetCenter or ServiceCenter.

Can Desktop Inventory Scan Windows 95, 98, NT, 2000 and XP PCs That Have Been Locked Down by System Policies?

This depends on how "locked down" these machines are. The Scanner must be able to write temporary files and must be able to read and write the file InfrTool.ini located in C:\.

Because PCs can be locked in a number of ways, it is not possible to give a definite answer to this question, although the answer normally will be "Yes".

How Can the Asset Tag Field Be Changed the Second Time the Desktop is Scanned?

Maintaining a unique identifier for a PC is imperative to get consistent results when the data is analyzed and used for Asset and Service management purposes. For this reason, the Asset Tag is considered a key field that should not be changed except in extreme circumstances.

To completely remove the Asset Tag from a machine, you must delete the [AssetNumberBackup] section of **system.ini** and the **local scan file** (the location of which can be read from the infrtool.ini file). Finally, you must delete the **infrtool.ini** file itself.

Should a Scan File Be Saved in FSF or XSF Format?

This depends on your needs; the file size of the two formats is roughly the same.

Scan files in FSF format are faster to load (in Analysis Workbench and XML Enricher) and cannot easily be viewed or edited by users.

Scan files in compressed XML format (.xsf) can be viewed and edited using standard XML-based tools, which may sometimes be desirable, but take 20-30% more time to load at analysis time.

Why Is the SMBIOS Information About a Laptop Missing?

If SMBIOS information is not collected by the Scanner, there are 2 likely explanations:

a The machine in question does not support SMBIOS.

b The SMBIOS information is not accessible to the Scanner. In Windows NT/200x/XP, this can happen if the SMBIOS information is stored outside the standard 1MB memory range and the Scanner is run without Administrator rights.

   To check if this is the case, refer to the hardware field called **SMBIOS Structure Table Address**. If the value of this field is larger than 100000 (hex), the Scanner may not be able to retrieve the SMBIOS information.

What Is the Best Way to Deploy a Scanner?

Deploying Scanners using Desktop Inventory with Network Discovery is the best method for maintaining an up-to-date IT asset inventory and Scanners.

Further information about this can be found in the *Deployment* Chapter.

Another way to deploy Scanners is by using a login script. Using a software distribution tool may be a better option if your organization is large, or you want more control over when the Scanner is deployed.

Why a DOS and OS/2 Scanner Cannot Save a XSF Scan File?

To write an XML-based scan file, the Scanner must include the code necessary to read and write XML files, and have complete information about all data the Scanner collects. For size reasons, this code and information has not been included in the DOS and OS/2 Scanners.

As an example of this, the “Locale Name” is detected as an integer number by the Scanners, and this is how it is stored in an FSF file. When storing an XML file, the actual name (such as “French” or “Spanish (Paraguay)”) has to be stored as well, which means that a very large lookup table must be available to the Scanner.

Where to Find Information About Command Line Options

Refer to *The Scanners* on page 235 of this manual or refer to the Online Help for the Scanners. Alternatively, run any Scanner with a /? switch, for example:

Scanw32 /? <enter>

Is There a Way to Disable Certain Hardware Test Without Changing the Scanner?

Yes. Although all hardware tests are included only after stringent quality testing, it would be naïve to imagine that a misconfigured or unexpected configuration will never be found. The Scanner allows each hardware test to be disabled using a command line switch as and when required.

For a full list of switches for the Scanners, refer to *The Scanners* on page 235 in this User's Guide or refer to the Online Help for the Scanners (Command line options and switches section). Alternatively they can be obtained at run-time simply by executing any Scanner with a /? switch (that is, Scanw32 /? <enter>)

How Does the Scanner Know How to Identify an Executable as an Application?

The Scanner does not know how to do this - it simply collects information about the files on the machine. When the scan file is analyzed (when loaded into Analysis Workbench or processed by the XML Enricher, for example), the Recognition Engine determines which files belong to which application.

For more information about Application Recognition, refer to *Application Recognition and Teaching* on page 595.

Analysis Workbench

Can a New Recognition Library Be Used With an Old Version of the Software?

As technology is always improving, it is necessary for the recognition libraries to evolve in conjunction with the application recognition technology within product releases

The latest library can be only be safely assumed to be fully compatible with the current release. However, when attempting to use a new recognition library with an old version of the software, the software will warn if the SAI version is not supported.

Is It Possible to Automate Functions Such as Reading Scan Files and Exporting With the Analysis Workbench?

It is possible to automate many of the more common functions of Analysis Workbench by using built-in scripting functionality (for example, loading scan files). For a full list of all the built-in scripting commands available, refer to *Analysis Workbench Scripting* on page 572.

What are Filters?

The purpose of the Filters is to reduce the amount of data being displayed at any one time. When a filter is applied to a window, the window will only display items that are related to tagged items of the filtered type.

For example, if an Application is tagged (global tag) and an Applications filter has been applied to a Machines window, this window will show only the machines that contain the tagged application rather than all machines.

The count of displayed records after any filter has been applied is displayed in the header bar of each window on the left in square brackets.

For more information about filters see *Filtering* on page 452.

How to View Information Provided by Plug-Ins

Additional fields of data collected by Scanner plug-ins can be displayed as columns in the **Files** window. Before loading scan files make sure that the relevant fields are enabled within the plug-ins section of the load options.

In order to view the plug-in information, plug-in options must be enabled when you configure the Scanner in Scanner Generator.

For further information see *The Plug-ins Tab* on page 154 and *Configuring Plug-In Settings* on page 392.

What Do the Different Color Codes and Status Values in the Files Window Mean?

The color code and status values in the Files window refer to the recognition of a file. The following table explains the different color codes and when they are applied (note that these are the default colors and may be different on your system).

File Type	Description	Color	Status
Main Files	Files which are key to the presence of an application (for example, excel.exe)	Red	1 Main
Associated Files	Support files for applications (for example, calc.exe or user32.dll)	Green	2 Associated
3rd Party Files	Files which are packaged with an application but originate from a different vendor (for example, mfc42.dll)	Green	3 3rd Party
Checkver Files	File name is recognized but the file size does not match (not enabled by default)	Purple	4 Checkver
Unknown Files	Files not recognized with the current recognition library	Blue	5 Unknown

File Type	Description	Color	Status
Unprocessed Files	Files which have not processed by the recognition engine (for example, documents)	Black	6 Unprocessed
Auto-identified	These files are known to be a device driver file and were not recognized by the application library.	Olive	7 Auto-id
Junk	These files have been set up to be treated as junk by the recognition engine (that is, recognition does not occur on these files).	Olive	8 Junk

Business and Operational View, What are They?

In the Business view, an application is listed only if a main file for that application has been found on a workstation. Under Operational view all applications with any identified file (using the associated files) are listed.

The display for the Applications window can be changed between Business and Operational view from the Load Options menu (Display Filter tab). The view must be chosen before scan files have been loaded.

What Is the Difference Between Global and Local Tags?

When an item receives a Global tag (Tag column), other windows can be filtered to show items relating to the tagged item. An example would be tagging a machine and then applying a Machines filter to the Applications window to only show applications on that machine.

Local tags (Ltag column) can only work with a filter in the same window as the tag was applied. This type of tag uses the Local filter and can be used to provide an extra level of filtering when necessary.

The Local Tag functionality is designed for advanced users of the Analysis Workbench, and the Ltag column is not visible by default.

How to Globally Edit Manually Entered Asset Information

To select columns to be edited:

1. In the Machines Window, select **Configure | Edit Mode**
2. Click the **General** tab and select the option to activate column editing.

   This activates the **Columns** tab. From this tab the fields to be edited can be selected.

   The font color in the Machines window will then change to show which columns are enabled for editing (cells with purple text are editable).

   After a column has been enabled, a number of editing functions are available, these can be from a menu activated by a right-click on the column header.

How to Turn Off the Directory Listing of Each Drive When Loading Data into Analysis Workbench

1. Select **Load Options...** from the **File** menu
2. Click on the **Memory** tab
3. Select the **Do not load directory data** option.

A File Sharing Error Message Is Displayed When Exporting Machine Data

If an earlier export file created with the same name and in the same path is open in another application (such as Excel) a file sharing violation error message is displayed. Close the file and attempt the export again.

Analysis Workbench Complains That It Cannot Find the User SAI

1. Change the path to the User SAI.
2. Select **Load Options...** from the **File** menu.
3. Click on the **Recognition** tab.
4. Select the **Software Application Index** (**SAI**) Recognition method.
5. Click the **Advanced...** button.
6. In the list box locate the User SAI file that you want to use for recognition. If the SAI file is not listed, click the **Add…** button and navigate to where the file is located.

7 To create a new empty **User SAI**, right-click in the **SAI setup** list box and select the **Create empty User SAI** option (or click the **Create…** button).

8 In the **Create a User SAI** dialog box, enter or navigate to the directory where the SAI file is to be created.

9 To add it to the recognition list, click the **Add…** button and select the file.

A Master SAI Age Limit Warning Is Displayed When Trying to Load Data into Analysis Workbench

An error message is displayed if the age limit on the Master SAI you are using has been exceeded. You can obtain the latest Master SAI (updated quarterly) by contacting Peregrine Customer Support.

Can the Recognition Libraries Be Customized to Identify "Unknown" Files and Applications?

The Software recognition library technology is designed to facilitate customizing by clients. Desktop Inventory modules provide extremely rapid and accurate tuition methods.

Tuition of files and applications to the single user SAI (Software Application Index) is performed by using the Analysis Workbench and a user.sai file. Changes as a result of tuition are updated dynamically in on-screen reporting.

For multi user environments, the ApE server receives tuition of new database entries from the ApE Explorer.

Why Is Analysis Workbench Taking a Long Time to Load the Scan Files?

The answer to this probably is "because it is loading a lot of data". In most cases, it is possible to reduce load times by reducing the amount of data that is loaded, for example by loading fewer files or unchecking options on the Display and Memory tabs.

For the fastest load speed, choose the Executive Summary Mode in the Quick Config dialog box and load scan files that have been enriched using the XML Enricher.

Viewer

How to Stop Users of Viewer From Editing Scan Files

Use network permissions to give users read-only access to the scan files. Editing facilities will then not be available to them. No error messages will be displayed as a result of this restriction.

What Is the Compare Facility Used For?

The compare facility is designed to allow support personnel to pinpoint changes in a machine between scans for asset/hardware, application or file information. The compare facility in the viewer is detailed enough to detect a change in a single .dll file on a workstation.

Why Does the Viewer Seems Slow If Many Scan Files are Loaded into It?

Viewer is a tool that is meant to be used for viewing a few scan files– up to 5 – at the same time. All data in the scan file is uncompressed and stored in memory when loaded, which leads to memory usage of typically 10MB per loaded scan file.

To analyze large volumes of data, use Analysis Workbench, which is much better suited for this purpose.

What Is the Difference Between "OS Installed Applications" and "Software Applications"?

"OS Installed Applications" contains the list of applications that are installed on the system according to the operating system. In Windows, this corresponds to the contents of the "Add/Remove Programs list". This can be a useful indicator of what software is on a PC, but is not suitable for software licence management, for example.

"Software Applications" is a list of a applications identified by Desktop Inventory's Application Recognition and is a reliable source of data for software licence management.

Application Recognition and Teaching

How Often are Recognition Libraries Released?

Recognition libraries for all languages are released once each quarter from the secure customer support site. Library updates are available without additional charge for all customers under maintenance.

For Which Languages are Recognition Libraries Available?

There are currently three languages of libraries available for Desktop Inventory, in all cases the master (English) library should be used. This can be supplemented currently by French and German language libraries.

Can a New Recognition Library Be Used with an Old Version of the Software?

As technology is always improving, it is necessary for the recognition libraries to evolve in conjunction with the application recognition technology within product releases.

The latest library can be only be safely assumed to be fully compatible with the current release. However, when attempting to use a new recognition library with an old version of the software, the software will warn you if the SAI version is not supported.

SAI Updates are Available Regularly, What About Updates to the Server Based APE Database?

Quarterly updates to the SAI and ApE databases are distributed. For both of these kinds of updates, an SAI file is used as the transfer medium.

For users of ApE, the updated file is used to identify and apply the changes since the last update, including additions, changes and deletions. The update file is automatically applied through the ApE Explorer's Import SAI function.

Can Peregrine Add One of Our Applications to the Master.SAI?

If the application is a "mainstream" application, this is possible. Contact support@peregrine.com for details.

If the application is the result of in-house development or is very specialized in nature, Peregrine will not add it to the standard application library.

Does Peregrine Have a UNIX Master SAI?

Yes, Desktop Discovery comes with a UNIX Master SAI. The file is called **unix.sai** and can be found in the following default location:

C:\Program Files\Peregrine\Desktop Inventory\8.0.0\Common

We currently have support for Solaris, AIX and HP-UX.

What Is the Purpose of the XML Enricher?

The XML Enricher "enriches" scan files with information about applications, and stores the in compressed XML File (.xsf) format.

The enriched scan files can be used for rapid application reporting by Analysis Workbench. To do this, enable Executive Summary Mode before loading the enriched scan files.

Because the enriched scan files are stored in XML format, their contents can easily be transferred to an Asset or Service Management tool using Connect-It.

APPENDIX A Example Network Inventory Scripts

The scripts shown in this appendix are examples only. They are relevant to Windows 95/98/Me and Windows NT/2000/XP.

Note: You will need to write your own scripts that are customized for use with your network.
The scripts assume that the name of the server used is Jupiter.

Audit.bat

```
Audit.bat
@echo off
:DETECT
    REM DETECT CLIENT OS HERE
        \\JUPITER\audit$\scanners\IDDkind.exe
        if errorlevel=5 goto ntaudit
        if errorlevel=4 goto 95audit
        if errorlevel=3 goto osnot
        if errorlevel=2 goto osnot
        if errorlevel=1 goto osnot
        goto OSnot
:NTAUDIT
    rem echo. executing NT audit
        \\JUPITER\AUDIT$\SCANNERS\NTAUDIT.CMD
        goto end
:95audit
    rem echo. executing Win95 audit
        START \\JUPITER\audit$\scanners\95AUDIT.PIF
        goto end
:osnot
```

```
        rem echo. operating system not supported
        goto end
:end
```

NTaudit.cmd

```
@ECHO OFF
color 17
CLS
SETLOCAL
REM Sample login script for network inventory using Desktop Inventory v8.0
REM Script for use in Windows NT/2000/XP

:IDDDRV
REM Set IDDDRV variable to make script revisions easier
SET IDDDRV=\\JUPITER\AUDIT$

:DAYS
REM Set DAYS variable for scanner repeat frequency
SET DAYS=14

:FLGCHK
REM Set the asset number as an environment variable before checking for flag files
SET ASSETNO=%COMPUTERNAME%

:FALCHK
REM Check dummy Fail file for asset number %ASSETNO% on%IDDDRV%
IF NOT EXIST %IDDDRV%\EXCLUDED\%ASSETNO%.FAL GOTO INICHECK
ECHO Fail flag exists - terminate
GOTO END

:INICHECK
REM Check for C:\InfrTool.ini and
REM recreate from computer name if it is not present
IF EXIST C:\INFRTOOL.INI GOTO SCANRUN
ECHO.[Desktop Discovery]>>c:\INFRTOOL.INI
ECHO.Assetnumber=%Computername%>>c:\INFRTOOL.INI

:SCANRUN
REM Now launching the scanner
CLS
ECHO.
ECHO. ***************************************************************
ECHO. * This Windows NT PC may now be scanned with -         *
ECHO. * Desktop Inventory V8.0 (Win32 Scanner)     *
ECHO. * Please be patient, if required the scan will only take  *
ECHO. *  a few minutes, and will then repeat after %days% days  *
ECHO. ***************************************************************
ECHO.
ECHO. +++  Thank you for your co-operation %USERNAME%  +++
```

```
ECHO.
%IDDDRV%\Scanners\ScanW32.Exe -SCANDAYS:%DAYS%
GOTO ERRCHECK

:ERRCHECK
REM Check the scanner return code (available in the errorlevel)
IF ERRORLEVEL 6 GOTO PLUGERR
IF ERRORLEVEL 5 GOTO TOOEARLY
IF ERRORLEVEL 4 GOTO FATAL
IF ERRORLEVEL 2 GOTO USERBAD
IF ERRORLEVEL 1 GOTO EXCEPT
GOTO SCANCHK

:PLUGERR
REM The scanner returned with an internal plug-in error
CLS
ECHO.
ECHO. **************************************************************
ECHO. *      !!!  SCANNER TERMINATED BY PLUG-IN  !!!         *
ECHO. *          =============================              *
ECHO. *                                     *
ECHO. *     PLEASE CONTACT IT SUPPORT AS SOON AS POSSIBLE     *
ECHO. *                                     *
ECHO. **************************************************************

REM Add failure to audit log and to the failure file for this asset
ECHO.%USERNAME%,%ASSETNO%,PLUGIN FAILURE>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.PLUGIN FAILURE>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:TOOEARLY
REM The scanner does not yet need to be run as %DAYS% have not elapsed since the last scan
CLS
ECHO.
ECHO. **************************************************************
ECHO. *              SCAN NOT REQUIRED                *
ECHO. *              =================               *
ECHO. *                                     *
ECHO. * Result has not yet reached threshold of %days% days    *
ECHO. *                                     *
ECHO. **************************************************************
GOTO END

:FATAL
REM The scanner has terminated with a fatal error.
REM Add this information to the log and failure file
ECHO.%USERNAME%,%ASSETNO%,FATAL ERROR IN SCANNER>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.FATAL ERROR IN SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:USERBAD
```

```
REM The user terminated the scan without saving a scan file
ECHO.%USERNAME%,%ASSETNO%,USER TERMINATED SCANNER>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.USER TERMINATED SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:EXCEPT
REM The scanner has terminated with an exception.
REM Add this information to the log and failure file
ECHO.%USERNAME%,%ASSETNO%,EXCEPTION IN SCANNER >>%IDDDRV%\LOG\AUDIT.LOG
ECHO.EXCEPTION IN SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:SCANCHK
REM If no errorlevel is reported (errorlevel 0), check the result
ECHO. Checking results...
IF NOT EXIST %IDDDRV%\FSFS\%ASSETNO%.FSF GOTO SCANFAIL
GOTO SCANPASS

:SCANPASS
REM The scan was successful; the offsite scan file exists. Add this to the log.
ECHO.%USERNAME%,%ASSETNO%,Audit Successful>> %IDDDRV%\LOG\AUDIT.LOG
GOTO END

:SCANFAIL
REM The scan was not successful: no offsite scan file exists. Add this to the log.
ECHO.%USERNAME%,%ASSETNO%,UNEXPECTED FAILURE>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.UNEXPECTED FAILURE>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:END
REM Reset environment variables if necessary (ASSETNO and IDDDRV)
REM Change the ASSET.BAT file to be Hidden and Read/Only.
ATTRIB C:\ASSET.BAT +H +R
ENDLOCAL
```

95audit.bat

```
@ECHO OFF
REM Sample login script for network inventory using Desktop Inventory v8.0
REM Script for use in Windows 95/98/Me

:IDDDRV
REM Set IDDDRV variable to make script revisions easier
SET IDDDRV=\\JUPITER\AUDIT$

:DAYS
REM Set DAYS variable for scanner repeat frequency
SET DAYS=14

:FLGCHK
REM Set the asset number as an environment variable before checking for flag files
REM Get the asset number from ASSET.BAT. If that does not exist, just run the scanner.
IF NOT EXIST C:\ASSET.BAT GOTO SCANRUN
CALL C:\ASSET.BAT

:FALCHK
REM Check dummy Fail file for asset number %ASSETNO% on%IDDDRV%
IF NOT EXIST %IDDDRV%\EXCLUDED\%ASSETNO%.FAL GOTO INICHECK
ECHO Fail flag exists - terminate
GOTO END

:INICHECK
REM Check for C:\InfrTool.ini and
REM recreate from computer name if it is not present
IF EXIST C:\INFRTOOL.INI GOTO SCANRUN
ECHO.[Desktop Discovery]>>c:\INFRTOOL.INI
ECHO.Assetnumber=%ASSETNO%>>c:\INFRTOOL.INI

:SCANRUN
REM Now launching the scanner
CLS
ECHO.
ECHO. ***********************************************************
ECHO. * This Windows 9x PC may now be scanned with -          *
ECHO. * Desktop Inventory V8.0 (Win32 Scanner)      *
ECHO. * Please be patient, if required the scan will only take  *
ECHO. *  a few minutes, and will then repeat after %days% days  *
ECHO. ***********************************************************
ECHO.
ECHO. +++  Thank you for your co-operation +++
ECHO.
%WINDIR%\Command\Start /W %IDDDRV%\Scanners\ScanW32.Exe -SCANDAYS:%DAYS%

REM Call Asset.Bat to make sure the asset tag is in the ASSETNO environment variable
CALL C:\ASSET.BAT
```

```
GOTO ERRCHECK

:ERRCHECK
REM Check the scanner return code (available in the errorlevel)
IF ERRORLEVEL 6 GOTO PLUGERR
IF ERRORLEVEL 5 GOTO TOOEARLY
IF ERRORLEVEL 4 GOTO FATAL
IF ERRORLEVEL 2 GOTO USERBAD
IF ERRORLEVEL 1 GOTO EXCEPT
GOTO SCANCHK


:PLUGERR
REM The scanner returned with an internal plug-in error
CLS
ECHO.
ECHO. **********************************************************
ECHO. *      !!!  SCANNER TERMINATED BY PLUG-IN  !!!          *
ECHO. *         ============================             *
ECHO. *                                                        *
ECHO. *     PLEASE CONTACT IT SUPPORT AS SOON AS POSSIBLE     *
ECHO. *                                                        *
ECHO. **********************************************************

REM Add failure to audit log and to the failure file for this asset
ECHO.WIN9X,%ASSETNO%,PLUGIN FAILURE>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.PLUGIN FAILURE>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:TOOEARLY
REM The scanner does not yet need to be run as %DAYS% have not elapsed since the last scan
CLS
ECHO.
ECHO. **********************************************************
ECHO. *               SCAN NOT REQUIRED                  *
ECHO. *               =================                 *
ECHO. *                                                        *
ECHO. * Result has not yet reached threshold of %days% days     *
ECHO. *                                                        *
ECHO. **********************************************************
GOTO END

:FATAL
REM The scanner has terminated with a fatal error.
REM Add this information to the log and failure file
ECHO.WIN9X,%ASSETNO%,FATAL ERROR IN SCANNER>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.FATAL ERROR IN SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:USERBAD
REM The user terminated the scan without saving a scan file
```

```
ECHO.WIN9X,%ASSETNO%,USER TERMINATED SCANNER>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.USER TERMINATED SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:EXCEPT
REM The scanner has terminated with an exception.
REM Add this information to the log and failure file
ECHO.WIN9X,%ASSETNO%,EXCEPTION IN SCANNER >>%IDDDRV%\LOG\AUDIT.LOG
ECHO.EXCEPTION IN SCANNER>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:SCANCHK
REM If no errorlevel is reported (errorlevel 0), check the result
ECHO. Checking results...
IF NOT EXIST %IDDDRV%\FSFS\%ASSETNO%.FSF GOTO SCANFAIL
GOTO SCANPASS

:SCANPASS
REM The scan was successful; the offsite scan file exists. Add this to the log.
ECHO.WIN9X,%ASSETNO%,Audit Successful>> %IDDDRV%\LOG\AUDIT.LOG
GOTO END

:SCANFAIL
REM The scan was not successful: no offsite scan file exists. Add this to the log.
ECHO.WIN9X,%ASSETNO%,UNEXPECTED FAILURE>> %IDDDRV%\LOG\AUDIT.LOG
ECHO.UNEXPECTED FAILURE>>%IDDDRV%\EXCLUDED\%ASSETNO%.FAL
GOTO END

:END
REM Reset environment variables if necessary (ASSETNO and IDDDRV)
SET ASSETNO=
SET IDDDRV=
SET DAYS=
REM Change the ASSET.BAT file to be Hidden and Read/Only.
ATTRIB C:\ASSET.BAT +H +R
```

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