HP Client Automation

Configuration Analyzer

for the Windows® operating system

Software Version: 7.80

Installation and Configuration Guide

invent

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Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
    - The number before the period identifies the major release number.
    - The first number after the period identifies the minor release number.
    - The second number after the period represents the minor-minor release number.
- Document Release Date, which changes each time the document is updated.
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You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Table 1 lists new features added for this release.

Table 1   New features added for this release

Chapter	**Version**	**Changes**
All	7.20	HP Configuration Management was renamed to HP Client Automation for the 7.20 release. Note that not all components and products were rebranded.
All	7.50	Rebranded Configuration Analyzer Start Menu and Images for HPCA.

Support

You can visit the HP Software support web site at:

www.hp.com/go/hpsoftwaresupport

This Web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online software support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support site to:

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Contents

1 Introduction

At the end of this chapter, you will:

- Understand the HP Client Automation Configuration Analyzer (Configuration Analyzer) and its uses.

The HP Client Automation (HPCA) Configuration Analyzer allows you to view, store, and compare patches and application data. Application or patch data is imported into the Configuration Analyzer in the form of state files. State files represent the current state of an application, either before or after an installation or when any modifications to that application are made. These state files are contained within a database you configure using either Microsoft SQL Server or Oracle.

The Configuration Analyzer Administrator console provides you with the tools you need to begin your analyses.

Overview

The Configuration Analyzer administrator console simplifies your view of application management. Backed by the Application Knowledge Base database, imported state files keep a detailed history of all of the resources needed by an application to run successfully. Powerful features of the console identify conflicts between two or more applications. With this historical and complete set of information at your fingertips, you can easily determine the impact on your environment of:

- Deploying a new application.
- Upgrading an existing application.
- Adding or modifying modules, registry keys, and data files.

The Configuration Analyzer performs integration and management analysis functions. Administrators can profile applications, initiate application comparisons or views, analyze applications, populate the Application Knowledge Base, and establish and manage Application Knowledge Base Permissions.

The Configuration Analyzer is the focal point for viewing and analyzing application and machine state data in your environment. Some of the features are:

- Import of Knowledge Sources, including:
  — Machine Scan and Application Installation state files.
  — Application Execution Profile, Trace, Impact, Intersection, and Union state files.
  — Other HPCA product sources.
- Application Knowledge Base Management and Permissions:

- — Provides a facility for describing various workstation configurations. This allows the administrator to group applications to reflect different departmental requirements.

- — To minimize database security administration, all users have access to Configuration Analyzer functions unless otherwise restricted by the Application Knowledge Base administrator. The administrator may use the Permissions facility of the Configuration Analyzer to establish Application Knowledge Base permissions that limit access to Workspace Projects and States. Access rights are granted based on a Workspace name for the combination of database Role and User ID.

- Viewing of Application and Machine State Details:

  - — View any state file type

  - — Machine configuration components

  - — Application execution processing

  - — Application installation processing

  - — Application component and resource profile state details containing all pertinent information about module files, data files, registry, and security settings

- Viewing of Application and Machine Analysis:

  - — Obtain a comparative analysis for module files, data files, and registry settings.

  - — View a color-coded conflicts display.

  - — View the components and resources shared by two or more applications or desktop configurations.

  - — View all potential and real conflicts between two or more applications or desktop configurations.

  - — View the non-shared components between two or more applications or desktop configurations.

  - — View desktop configurations that reference one or more specific resources and may be affected by the installation of a new application or a new version of an existing application.

  - — Search the database using built-in search functions with integrated Save and Print of generated reports.

Generating State Files

In order to analyze data with the Configuration Analyzer, you must have data in the form of a state file. State files are generated by different HPCA Products, including the Packager for Windows Installer and Usage Manager. Refer to the product specific guides for more information about how to create state files with that product.

Additionally, state files can be created using the State Generator, which is shipped along with the Configuration Analyzer. Use this component to create state files of your own applications without the use of any other HPCA products. The process of creating state files with the State Generator is explained in Chapter 5, Generating State Files.

Starting the Configuration Analyzer

To log on to the Configuration Analyzer

1   Go to **Start→Programs→HP Client Automation Configuration Analyzer → HPCA Configuration Analyzer**.
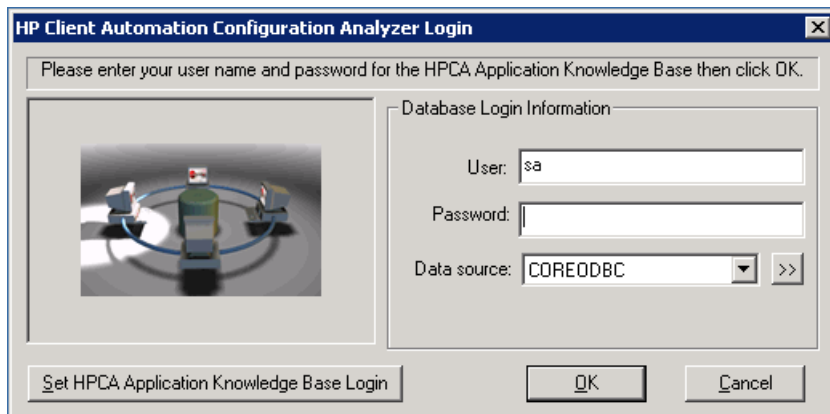
2   In the **User** text box, type your user name.

3   In the **Password** text box, type your password.

4   In the **Data Source** drop-down list, select the appropriate Data Source Name you created.

5   Click **OK**. The Configuration Analyzer opens.

Setting the App Login ID

The first time you log in to the Configuration Analyzer, you will be presented with a text box alerting you that no application login exists, as seen in the figure below.

Figure 1   No application login set text box
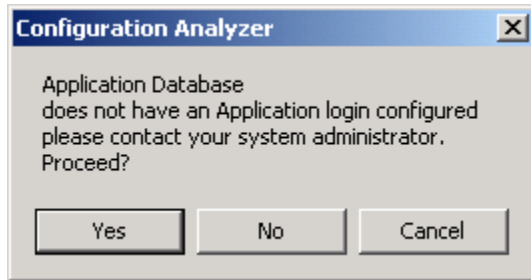
The Application Knowledge Base administrator must supply a login ID and password that all users of the database will use when connecting to the database. This ID must have full access rights to the database objects including table and stored procedures.

To set this ID, use the **File\Permissions** menu and click **Set Application Login**.

The ID used is typically the sa ID for SQL Server or CM for Oracle. Clicking **Yes** updates the Application Knowledge Base table AppLogin, which defines an administrator ID and password that have full database owner authority. This does not have to be the sa ID.

The AppLogin ID is used for all access to the database, both by the Configuration Analyzer apps and the KB Server. A single AKBADMIN ID is all that is needed for definition in the database AppLogin table. Individual users can be given IDs that have limited authority since the privileged database work is done under the account defined in the AppLogin table.

2 Installing the Configuration Analyzer

At the end of this chapter, you will:

- Understand the Configuration Analyzer system requirements.
- Be able to install and configure the Configuration Analyzer.
- Be able to set up your Application Knowledge Base.

System Requirements

Configuration Analyzer

- 128 MB RAM minimum, 256 MB or above preferred.

Application Knowledge Base

- Oracle 9i, 10g, 11g
- Microsoft SQL Server 2000, 2005, 2008

Platform Support

For detailed information about supported platforms, see the release note document that accompanies this release.

Installing the Configuration Analyzer

The installation and configuration of the Configuration Analyzer is comprised of three mandatory steps as well as one optional step. They are:

1 Install the Configuration Analyzer database schema.

2 Create an ODBC DSN connection to your database.

3 Install the Configuration Analyzer.

4 Install the State Generator (optional).

Task 1   Installing the Configuration Analyzer Database Schema

The Application Knowledge Base requires specific tables as part of its database schema. You can add these tables to an existing database, or define a new database (recommended).

To install the database schema

1 On the installation media, open the `Configuration Analyzer Database Schema` folder.

2 Double-click **Package.msi**. The Welcome dialog box opens.

3   Click **Next**. The End-User License Agreement window opens.

4   Read and accept the HP Software License Terms and click **Next**.

The Install Location dialog box opens.

By default, the database schema is installed to the `Program Files\Hewlett-Packard\CM` directory. If this directory already exists, this step is skipped.

5   Click **Next**. The Serial Number dialog box opens.

6   Enter your serial number, and click **Next**. The Ready to Install dialog box opens.

7   Click **Install**.

8   When the installation is finished, click **Finish**.

The Configuration Analyzer Database Schema setup is complete.

Task 2   Create an ODBC DSN Connection

An ODBC DSN connection to your Application Knowledge Base database is required. Create this connection on the computer where you will install the Configuration Analyzer. If you need assistance creating an ODBC DSN connection, see your database or system administrator.

To create an ODBC DSN connection for the Configuration Analyzer

- In the Windows Control Panel, use the Administrative Tools option to create the connection. If you require assistance creating an ODBC DSN connection, see your system or database administrator. Make sure you test the connection when you are finished.

- The ODBC Data Source will be displayed in the ODBC Data Source Administrator list of System DSNs.

Make sure you create the correct connection type depending on the type of database you are using (SQL Server or Oracle).

> If you are creating an ODBC DSN connection for Oracle, the Oracle client must be installed on the computer you are using to make the connection.

Task 3   Installing the Configuration Analyzer

To install the Configuration Analyzer

1   On the HPCA media, in the `infra\extended_infrastructure` `\configuration_analyzer` folder, double-click **ConfigurationAnalyzer.msi**. The Configuration Analyzer Welcome dialog box opens.

2   Click **Next**. The HP End-User license agreement window opens.

3   Read and accept the HP Software License Terms and click **Next**. The Install Location dialog box opens.

    The Configuration Analyzer must be installed to the `Program Files\Hewlett-Packard\CM` directory. If this directory already exists, this step will be skipped.

4   Click **Next**. The Ready to Install dialog box opens.

5   Click **Next** to begin the installation.

6   When the installation is complete, click **Finish.**

The Configuration Analyzer has been successfully installed.

Task 4   Installing the State Generator (optional)

The State Generator allows you to create state files without the use of another state file-generating HPCA product. Install the State Generator on the computer you will be using to generate state files.

To install the State Generator

1   On your HPCA media, navigate to the `Configuration Analyzer State Generator` folder.

2   Double-click **Package.msi**. The Welcome dialog box opens.

3   Click **Next**. The End-User License Agreement window opens.

4   Read and accept the HP Software License Terms and click **Next**. The Install Location dialog box opens.

    By default the State Generator is installed to `C:\Program Files\Hewlett-Packard\CM`.

    If you want to install it to a different location, enter it here, or click **Browse** to navigate to it.

5   Click **Next**. The Serial Number dialog box opens.

6   Enter your serial number, and click **Next**. The Ready to Install dialog box opens.

7   Click **Install** to begin the installation.

8   When the installation is finished, click **Finish**.

The State Generator is installed and ready to use. See Chapter 5, Generating State Files for information about how to use this tool.

Applying Service Packs

After the installation is complete, apply any service packs included with the Configuration Analyzer media.

To applying service packs for SQL Server

1   From SQL Enterprise Manager/ManagementStudio, open the SQL Query Analyzer and make sure the correct database is selected.

2   From within the Query Analyzer, open the HPCA media to:
    `infrastructure\extended_infrastructure\configuration_analyzer\`
    `database\Maint\SQLDatabaseMaintHistory\SQL Server`

3   Run any applicable service pack scripts, making sure the scripts execute properly.

To applying service packs for Oracle

•   Use the Oracle DBA Studio application (for Oracle version 8i and below) or the SQL Plus Worksheet application (for Oracle version 9i and above) and access any applicable service pack scripts within the `infrastructure\extended_infrastructure\configuration_analyzer\` `database\Maint\SQLDatabaseMaintHistory\Oracle` directory on the HPCA media.

Defining an Application Knowledge Base

The Application Knowledge Base is the database that contains your state file information. Define this database using either Oracle or Microsoft SQL Server. The following instructions will help you define your Application Knowledge Base database.

Microsoft SQL Server

New Application Knowledge Base databases are created using the SQL data definition language files referenced below. All required SQL is predefined in these files.

Use the following steps to create the Application Knowledge Base for a Microsoft SQL Server database.

First, create the Application Knowledge Base.

To create the Application Knowledge Base

1   Open the SQL Server Enterprise Manager/Management Studio.

2   Right-click the `Database` folder for the selected server and select **New Database**. Complete the entries as follows:

— **General Tab**

–   **Name**
AKB (or a name of your choice excluding blanks and underscores)

— **Data Files Tab**

–   **File Name**
AKB_Data (or name of your choice excluding spaces). Set the initial size to 100 MB.

–   Select **Automatically grow file** by 20%

> For improved performance, it is recommended the Application Knowledge Base be created on a drive other than the drive used to create state files.

— **Transaction Log Tab**

–   **File Name**
AKB_Log (or a name of your choice excluding blanks). Set the log size to 250 MB.

3   Click **OK** to create the database and log files. The Application Knowledge Base is now added to the `Databases` folder of your server, in the Server Manager.

4   When you are finished creating the database, create the database table schema.

1   In the SQL Server Enterprise Manager/Management Studio, select the **Tools** menu, and then select **SQL Server Query Analyzer**.

2   Make sure the drop-down box displays the database you just created.

3   From within the Query Analyzer, navigate to `\Program Files\Hewlett-Packard\CM\Configuration Analyzer\Database\SQL Sever\`.

4   Execute each SQL script in the directory in order (the scripts are named accordingly) beginning with Step 2:

   — Step2_Define_ConfigurationAnalyzer_Tables.sql

   — Step3_Define_Common_Tables.sql

   — Step4_Define_StoredProcedures.sql

   — Step5_Define_Common_Functions.sql

   — Step6a_Insert_Common_DefaultData.sql

   — Step6b_Insert_ConfigurationAnalyzer_DefaultData.sql

   > These database scripts are compatible with the following versions of SQL Server: 2000,2005 and 2008

5   Use Query Execute or press **F5** to run each script.

   At the end of the query execution you will see a series of messages displaying sysdepends dependency and several row insertions. This indicates a successful installation of the database definitions.

6   Close the SQL Query Analyzer.

Oracle

Configuring your database schema for Oracle requires the execution of five SQL script files that are provided with your Usage Manager media in the `Oracle` directory. Copy these files to a location accessible by your Oracle administrator. Make sure to use the files located in the appropriate Oracle version directory.

> ▶ For additional information, please see `ReadMe.txt` within the HPCA Media, `infrastructure\extended_infrastructure \configuration_analyzer\database Folder`.

To configure your Application Knowledge Base database schema for Oracle

1 Define a system environment variable `Oracle_Home` on your administrator computer (Create `Oracle_Home=C:\Oracle\Oradata`). This allows the five `.sql` scripts you will run in the next few steps to locate your Oracle directory.

2 Use the Oracle DBA Studio application and login as **System / Manager**.

3 Execute the SQL scripts that were included with your Configuration Analyzer media in order, making sure to include the correct path to the script locations.

> ▶ Make sure to select the correct group of SQL files depending on the version of Oracle you are using.

— There are 3 folders: Oracle_9i, Oracle_10g, Oracle_11g, each respectively compatible with that particular version of Oracle. Choose the version which suits your environment.

If you are using Oracle Developer, ensure that *the Autocommit feature is enabled* prior to executing the scripts.
To enable Autocommit in Oracle SQL Developer:

– From Oracle SQL Developer, go to the **Tools → Preferences → Database → Worksheet Parameters** page.

> ▶ Certain SQL PLUS commands may be ignored when executing the schemas using SQL Developer; you can ignore these warning messages.

- Step1_Define_TableSpaces.sql

- Step2_Define_Roles.sql

- Step3_Define_Common_Tables.sql

- Step4_Define_ConfigurationAnalyzer_Tables.sql

- Step5a_Insert_ConfigurationAnalyzer_DefaultData.sql

- Step5b_Insert_Common_DefaultData.sql

- Step6_CreateRadiaDBA_Role.sql

For example, if your SQL scripts are located in the directory `ConfigurationAnalyzer\database\Oracle\Schema`, you would execute the first script by typing:

```
SQL>
@"C:\ConfigurationAnalyzer\database\Oracle\Schema\Step1_
Define_TableSpaces.sql";
```

followed by **Enter**.

4 Make sure each script executes properly.

The schema is successfully imported.

> The `.sql` scripts preceded with Step99 and Step99a are used only for removing the Application Usage Manager database. They are not required here.

3 Configuration Analyzer Settings

At the end of this chapter, you will:

- Understand the different Configuration Analyzer settings.

The Configuration Analyzer simplifies your view of the complicated environment of application management. In combination with the Application Knowledge Base, the Configuration Analyzer can:

- provide you with complete information about an application

- allow you to compare multiple applications to determine where conflicts exist

- and generate reports based on this information.

Workspaces and Projects within the Configuration Analyzer provide you with the means for organizing this information in a way that best suits your organization.

Configuration Analyzer Administrator Console

The administrator console has two windows. The top window displays the available projects and workspaces containing imported state files, and the bottom window displays specific state files information and comparisons. Before you begin creating projects and workspaces, review the options and settings available in the administrator console.

Setting Options

To set Display and Comparison options, use the **Tools, Options** menu selection.

Display Tab Options

Figure 2   Configuration Analyzer Display tab
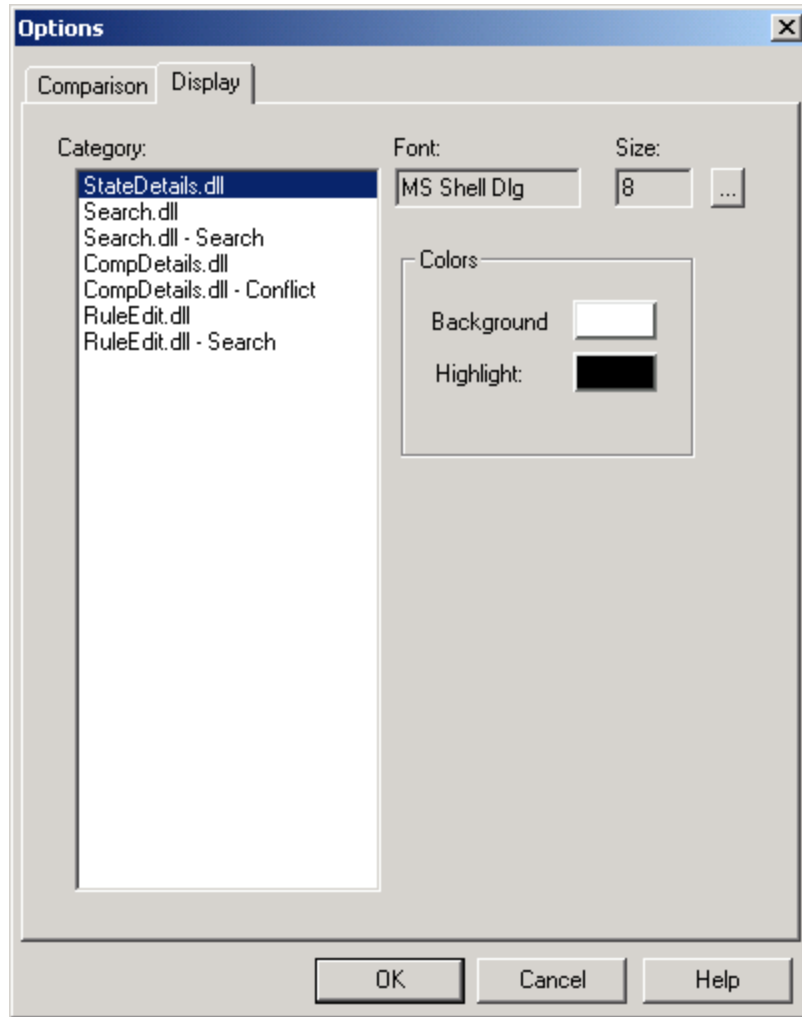
1   Select the **Category** entry for which you want to set **Font** or **Color** options.

2   Double-click a color box to switch the **Background** or **Highlight** color for the selected category.

3   Click **OK** to save your format color selections.

The selected colors will be used to display the contents of the **Comparison Details and Comparison Detail - Conflicts** lists.

Comparison Tab Options

Figure 3   Configuration Analyzer Comparison tab
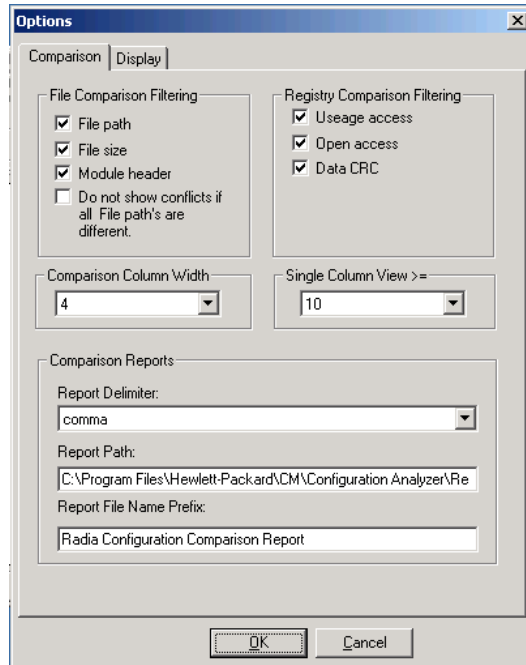
File Comparison Filtering

- **File path**
  Select whether the **Comparison** tab should include the file path in its comparison logic when determining whether files are identical. Selecting this box includes the file path in the comparison. If the only difference between two files is their respective paths, then they appear in the comparison summary as green check marks. However, double-clicking to display the comparison details will show them as being different.

- **File size**
  Select whether the **Comparison** tab should include the file size in its comparison logic when determining whether files are identical. Selecting this box includes the file size in the comparison.

- **Module header**
  Select whether the **Comparison** tab should include the module header information in its comparison logic when determining whether files are identical. Selecting this check box includes the header information in the comparison. *This option is required for module comparisons.*

Registry Comparison Filtering

- **Usage access**
  Select whether the **Comparison** tab should include the registry usage access requests in its comparison logic when determining whether keys are identical. Selecting this box includes the usage access in the comparison.

  > Usage access is only relevant for execution profiles and traces and should generally be turned off.

- **Open access**
  Select whether the **Comparison** tab should include the registry open access requests in its comparison logic when determining whether keys are identical. Selecting this box includes the open access in the comparison.

  > Open access is only relevant for execution profiles and traces and should generally be turned off.

- **Data CRC**
  Select whether the **Comparison** tab should include the registry data value in its comparison logic when determining whether keys are identical. Selecting this box includes the data value in the comparison.

  > Data values should always be turned on.

Column Data

- **Comparison Column Width**
  Comparison report column width.

- **Single Column View**

Comparison Reports

- **Report Delimiter**
  Select either comma or tab from the drop-down list to delimit the data within your report.

- **Report Path**
  Type the default path to which Comparison Reports are saved.

- **Reports File Name Prefix**
  Type the file name prefix to be pre-pended to the current date/time for the Comparison Report.

Managing Application Knowledge Base Permissions

Use the Configuration Analyzer to manage permissions that grant access to the Application Knowledge Base database. Application Knowledge Base permissions enable the administrator to control which users have access to objects within the database and the extent of that access. Access rights are set based on a database Role and User ID.

All rights are granted based on a Workspace name for the combination of database Role and User ID. This allows the administrator to govern access to Workspace, Projects, and States.

Default Application Knowledge Base Access Rights and Structures

To minimize database security administration, all users have full access to Configuration Analyzer functions unless otherwise restricted by the Application Knowledge Base administrator. To do this he selects the **Enable Security** check box in the File\Permissions dialog box.

If security is enabled, the following access rights occur for SQL Server Application Knowledge Base implementations at installation.

- By default, the User ID that creates a Workspace has complete control of the Workspace and may add, update, or delete any object related to the new Workspace.

- The special designation, **<all>**, may be set as the Role, User ID, or Workspace name when setting access rights. User ID, or Workspace access right supersedes an access right set for a specific Role, User ID, or Workspace.

- In an Oracle server environment, only users having the Role of DBA or the User ID of HPCA may modify Configuration Analyzer Permissions.

- In a SQL Server environment, only users having the Role of DB_OWNER or the User ID of sa may modify Configuration Analyzer Permissions.

Creating Application Knowledge Base User IDs

Users that are not Application Knowledge Base administrators can be assigned to a single database role using the database server's methodology of adding a new user and assigning a role. These users require no special permissions to database objects.

▶ All database users must have only one role assigned to them. For example, the user can have the DB_OWNER or KB_Integrator role, but not both.

Choosing the Role, User ID, Workspace, and Workspace Owner

Specific rights are assigned to users through the Permissions dialog box, which is accessed through the Configuration Analyzer **File** menu.

In the Permissions dialog box, you must choose a Role, User ID, Workspace, and Workspace Owner to grant rights to. Once a Role has been chosen, all users that have that Role assigned are now available in the Users list, as is a list of all Workspaces in the Application Knowledge Base. Once a Workspace has been chosen, the owner of the Workspace is shown and may be modified.

Enabling All Roles, Users, Workspaces, and Workspace Owner Access

To simplify security administration, you may set the User, Workspace, and Workspace owner name to <all> and Role for specific databases Role. The <all> setting allows the administrator to set access rights to all Users, all Workspaces, and all Owners for specific access rights. The <all> setting supercedes specific settings.

To set View Objects access rights to everyone

To set View Objects access rights to everyone, access the Permissions dialog box from the Configuration Analyzer File menu, and do the following:

1   Set the Role to <DB_OWNER>.

2   Set the User ID to <all>.

3   Set the Workspace to <all>.

4   By default, the Owner of the <all> Workspace is shown. Set the Owner to <none> to indicate that no user owns all of the Workspaces.

5   Select the View Objects access right and save its settings.

Enabling Workspace Creation for a User

Any user who is authorized to create a Workspace must be granted Workspace Create authority. This user who creates the Workspace is the Workspace Owner. The <new> pseudo Workspace entry governs whether the selected user may create a new Workspace in the Application Knowledge Base. To enable Workspace creation for the user, select the WORKSPACE CREATE entry for the <new> Workspace and save the setting.

Otherwise, to disable Workspace creation capability, remove the selection for the entry and save the changes.

Access Rights of the Workspace Owner

The Workspace Owner has complete control over the contents of a Workspace and the Workspace itself. By default, the Workspace Owner is the user who created the Workspace. Workspace ownership access rights may be reassigned by the database administrator to a different user, no user, or all users.

Assigning Specific Access Rights to Users

To assign access rights, select and highlight the appropriate rights by clicking on them. If any changes are made, they are saved by clicking **Save** and confirming the save operation. To cancel your selections close the dialog box and click **No** when the save confirmation dialog box is presented.

When viewing Workspace access rights for a user, the rights that have been granted are selected.

The following access rights may be set by the administrator:

- WORKSPACE CREATE
  Grants authority to create a Workspace.

- WORKSPACE RENAME
  Grants authority to rename a Workspace.

- WORKSPACE DELETE
  Grants authority to delete a Workspace.

- ADD OBJECTS
  Grants authority to Import state files and to add existing Projects and state files to a Workspace.

- RENAME OBJECTS
  Grants authority to rename Projects and state files in a Workspace.

- DELETE OBJECTS
  Grants authority to delete Projects and state files from a Workspace.

- VIEW OBJECTS
  Grants authority to view State details and to generate comparisons of Workspace objects.

Access Rights for Shared Objects

If an object, such as a state file, is shared between two or more Workspaces, the user requires access rights to all Workspaces containing the object. Otherwise, the user is not authorized to perform the requested operation.

Sample Implementation Guidelines

If groups of users with diverse needs are going to access the Application Knowledge Base, you should create a unique database role for each group of users and manage their database rights using these roles.

Any roles should follow a naming standard, such as: *AKB_rolename*. For example, the following roles may be appropriate for your organization:

- DB_OWNER/AKB_ADMIN
  Requires full access to all Workspaces and their objects.

- AKB_Integrator
  Requires all access to a personalized Workspace used in validating installation packages and View Objects access to production "Gold" level Workspaces maintained by the Quality Assurance Team.

- AKB_HelpDesk
  Requires View Objects access to production "Gold" application package information to view State Details and perform comparison reporting against traces or machine scans gathered from end users. Requires all access to a personalized or Help Desk level Workspace used in diagnosing end-user application problems.

- AKB_QualityAssurance
  Requires all access to production "Gold" Workspace and View Objects access to all other Workspaces.

- AKB_Developer
  Requires View Objects access to production "Gold" application package information to view State Details and perform comparison reporting against their internally developed applications before they are passed to

the Integration Lab or Quality Assurance. Requires all access to a personalized or Developer level Workspace used for application analysis.

4 Populating the Application Knowledge Base

At the end of this chapter, you will:

- Be able to populate the Application Knowledge Base.
- Be able to view state information.

The Workspace is the main organizational structure in the Configuration Analyzer that provides a user's view into the Application Knowledge Base.

Creating a Workspace

The first step in populating the organizational Knowledge Base with your application information is to create a workspace.

To create a workspace

1   Click the New Workspace button [icon]. The New Workspace dialog box opens.

2   Type a name for your workspace, such as **Integration Corp**. If you created projects prior to this point, you can add any available projects to this workspace when it is created.

3   Click **OK**. A new workspace appears.
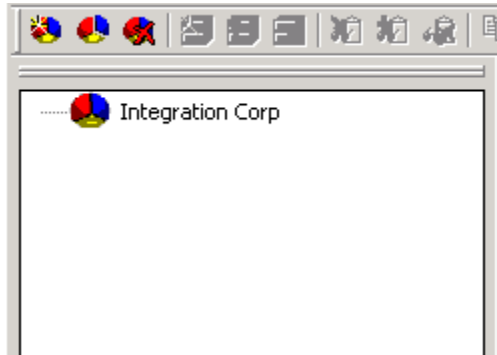
Creating a Project

Before you can import states into your workspace, you need to create a project to contain your states. A project is a group of individual applications or machine states.

To create a project

1   In the Configuration Analyzer, right-click a workspace and select **New Project**.

The New Project dialog box opens.

2   In the Enter the name of the new project text box, type a project name
    such as **Sample Apps**.

3   If any states have been imported, select the states that you would like to
    include in this project.

4   Click **OK**. Expand the branch of your workspace to see the new project.

Importing a State

Now you can import your state files into your Application Knowledge Base.

▶   Importing state files uses bulk loading. For Oracle databases, the
    administrator's computer must have the SQL loader installed.

To import a state

1   In the Configuration Analyzer, right-click a project and select **Import**
    from the shortcut menu. The Import window opens.

2   Select the states you would like to import into the Application Knowledge
    Base.

    ▶   In order for state files to sort properly in the import window,
        regional settings must be in the format MM/DD/YYYY.

3   Each state file may contain multiple substates, for example: Before State,
    After State, and a Delta State. Select the substate option by selecting
    either check box in the bottom left corner of the Import dialog box.

    — Include only substates with resources

    — Create substate project folder
      creates a separate project folder for each substate.

4   Click **OK**.

    Your states are imported into the project in the Application Knowledge
    Base. Expand the project to see the states.

Notice that Install States are imported into Projects with two individual state files, **Removed Resources** and **Installed Resources**. The Removed Resources State contains information about resources that existed on the machine before the application was installed, but were changed or removed. The Installed Resources State details the resources that were added to the machine during installation and the resources that were changed during the installation.

Viewing State Information

Now that you have this information in the Application Knowledge Base, what can you do with it? One of the many tasks you can perform with the Configuration Analyzer is simply viewing all of the information contained in a state. This detailed information is now available to any licensed user with whom you share the Application Knowledge Base.

To view the information in a state

1   In the Configuration Analyzer, right-click the install state that you want to view and select **State Details**. The State Detail window opens.

    All of the information in the state is categorized. You can view:

    — **General Info** about the state.

    — **Machine Details** for the computer on which the state file was created.

    — Specific information on **Module Files**.

    — Specific information on **Data Files**.

    — Specific information on Registry Settings.

    — **Event Calls** and **API Calls** are sections reserved for analyzing AppInsight Trace States.

2   Click **Module Files**, **Data Files**, or **Registry** (in the menu on the left side of the figure above). Then, double-click a file to display specific resource details.

3   Click **OK** when you are finished viewing the information.

Analyzing State Files

When you are integrating an application, it is important to be able to find conflicts between applications. The Configuration Analyzer provides the tools to quickly and easily analyze applications for conflicts.

To compare state files
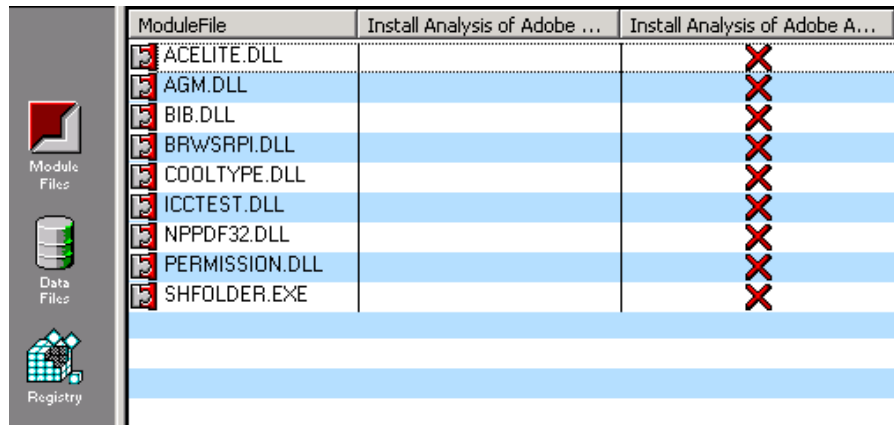
1   In the Configuration Analyzer, select the states that you want to compare. To do this, hold the **Ctrl** key on your keyboard and click each of the states that you want to include in the analysis.

> You can add more states to the analysis later.
>
> Optionally, you can right-click a Project or Workspace and select **New Analysis** from the shortcut menu to compare all states found below.

2   Right-click one of the selected states and select **New Analysis**. The Analysis View screen opens.
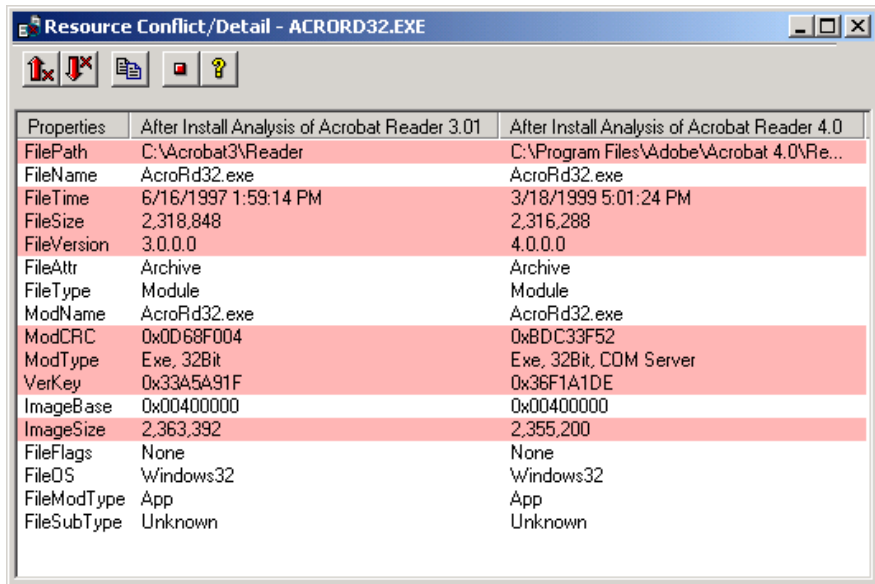
A complete comparison of the resources opens, categorized by the type of resource.

A check mark ✔ identifies resources with no conflicts.

An 'X' signifies a difference between the files that could cause problems.

3   Double-click a resource with an 'X' ✘ to see the details of the conflict.

The Resource Conflict/Detail window opens and the differences are highlighted in red.

If you want to find out what other states in the Application Knowledge Base use a particular resource, right-click on the resource and select **Who Uses?** A list of all the other states that use that resource opens.

4 Click the close button to close the **Resource Conflict/Detail** window.

Adding and Removing States from the Analysis

To add a state to the analysis

- Right-click the state file you would like to add to the comparison and select **Add to Analysis** from the shortcut menu.

  The state file is added to the analysis.

To remove a state from the analysis

- Right-click the state file you would like to add to the comparison and select **Remove from Analysis** from the shortcut menu.

The state file is removed from the analysis.

Saving and Loading an Analysis

- Save an analysis for future viewing using the **Save Analysis** button.
- Load any saved analysis by right-clicking any of the states or project names in the tree-view window.
- Select the analysis you would like to load from the **Load Analysis** list box and click **OK**.
- The analysis is loaded and displayed in the analysis window.

Generating a Report

You may want to generate a report of all the resources in an application or the conflicts between applications.

To generate a report

- To generate a report, click **Generate report** .

COMPARISON DETAIL REPORT

Summary

Report Type: All Resources - Conflicts Only
Resource Type: Module File
Comparison States: 1: Install Analysis of Adobe Acrobat - Removed Resources
2: Install Analysis of Adobe Acrobat- Installed Resources

ACELITE.DLL ❌

State	Path	Version	CRC	Size	Time	Attributes
Install Analysis of Adobe Acrobat- Installed Resources	C:\WINNT\system32\Adobe\SVG Viewer	1.2.0.1	0x3FFD2741	397,312	4/16/2001 4:39:02 PM	Archive
Install Analysis of Adobe Acrobat- Installed Resources	C:\Program Files\Adobe\Acrobat 5.0\Reader	1.2.0.1	0x3FFD2741	397,312	4/16/2001 4:39:02 PM	Archive, NotContentIndexed

AGM.DLL ❌

State	Path	Version	CRC	Size	Time	Attributes
Install Analysis of Adobe Acrobat- Installed Resources	C:\WINNT\system32\Adobe\SVG Viewer	4.4.26.1	0xBC92A652	1,138,688	9/5/2001 2:10:34 PM	Archive
Install Analysis of Adobe Acrobat- Installed Resources	C:\Program Files\Adobe\Acrobat 5.0\Reader	4.4.26.1	0xBC92A652	1,138,688	9/5/2001 2:10:34 PM	Archive, NotContentIndexed

BIB.DLL ❌

State	Path	Version	CRC	Size	Time	Attributes
Install Analysis of Adobe Acrobat- Installed Resources	C:\Program Files\Adobe\Acrobat 5.0\Reader	1.0.20.1	0x5D825C65	147,456	4/16/2001 4:39:02 PM	Archive, NotContentIndexed
Install Analysis of Adobe Acrobat- Installed Resources	C:\WINNT\system32\Adobe\SVG Viewer	1.0.20.1	0x5D825C65	147,456	4/16/2001 4:39:02 PM	Archive

BRWSRPI.DLL ❌

State	Path	Version	CRC	Size	Time	Attributes
Install Analysis of Adobe Acrobat- Installed Resources	C:\Documents and Settings\Administrator\ Local Settings\Temp_ISTMP3.DIR_ISTMP0.DIR	5.0.5.0	0xC3F1E920	53,248	8/8/2001 9:22:42 PM	NotContentIndexed
Install Analysis of Adobe Acrobat- Installed Resources	C:\Documents and Settings\Administrator\ Local Settings\Temp_ISTMP2.DIR_ISTMP0.DIR	5.0.5.0	0xC3F1E920	53,248	8/8/2001 9:22:42 PM	NotContentIndexed
Install Analysis of Adobe Acrobat- Installed Resources	C:\Documents and Settings\Administrator\ Local Settings\Temp_ISTMP1.DIR_ISTMP0.DIR	5.0.5.0	0xC3F1E920	53,248	8/8/2001 9:22:42 PM	NotContentIndexed

Your report is created and saved in the `Program Files\Hewlett-Packard\CM\Configuration Analyzer\Reports` directory.

5 Generating State Files

At the end of this chapter, you will:

- Understand how to create state files using the State Generator.

Generating State Files with the State Generator

Use the State Generator to create state files of applications you may want to analyze. This is useful when you would like to analyze any changes that may take place during an installation or after any other modifications have been made to an application.

State files represent the current state of an application. Therefore, there are different types of state files.

- A **Before State File** represents the state of a machine before the application has been installed.

- An **After State File** represents the installed state of an application.

- A **Delta State File** represents any changed state of an application.

Creating a Before State File

Use the State Generator to create a state file of the machine before installing the application. This state file represents a comprehensive knowledge base of the resources that an application uses on a workstation.

To create a before installation state file

1 Start the State Generator.

2 Select **Create an Install Analysis State**.

3 Click **Next**. The Select the Installation Analysis Action dialog box opens.

4 Select **Start a New Analysis**.

5 Click **Next**. The Select the Install State Creation Technique dialog box opens.

6 Select **Analyze an Installation Program**.

7 Click **Next**. The Select the paths, files, and registry entries to scan window opens.

8 Select the files and registry information to include in your scan. For the purpose of this exercise, select the Local Disk (C:) drive only. Clear the check boxes for all other selected drives.

> Do not *over-filter* the initial scan. You may not realize that an application places files in various directories, and if you filter that directory out in the beginning stages, the changes will not be reflected in the final package. Additional detailed filtering can be done in the Library Wizard.
>
> Refer to the *Extensions for Windows Installer Guide* for more information.

> Press the **F10** key on your keyboard if you want to expand a dialog box to full-size. To return to the Wizard, press **F10** again, or close the dialog box.

9 Click **Next**. The Install Analysis Description dialog box opens.

10 In the **Description** text box, type a description for the state you are creating.

11 Click **Next**. The Installation Analysis dialog box opens and performs the initial scan of the machine.

12 When the scan is finished, click **Next**. The State Data Collection Results dialog box opens. This dialog box shows the results of the scan.

13 Click **Next**. The Before Image machine scan is complete dialog box opens.

14 Click **Finish**.

Now that the before scan is done, install your application. For this example, we are using Adobe Acrobat Reader, available at www.adobe.com.

Creating an After and Delta State

After you have created the before analysis and installed the application, you need to complete the analysis to obtain a full and accurate view of the resources required by the application. To do this, you will create after and delta installation state files.

To create After and Delta State Files

1 Start the State Generator.

2 Select **Create an Install Analysis State** and click **Next**. The Select the Installation Analysis Action dialog box opens.

3 Select **Complete an Analysis**.

4   Click **Next**. The Select the Installation Analysis State to Complete dialog box opens.

5   Select the Installation Analysis State to complete and click **Next**.

The Select the Install Scan Options dialog box opens.

— **Add imported DLLs referenced by included module files**
Gathers information on the DLLs that are referred to by components in the application.

— **Add shortcuts that reference included files**
Gathers shortcuts that point to included files in the scan that may not have been discovered.

— **Add COM and Shell registry keys related to included files**
Gathers registry information that refers to files included in the scan that may not have been discovered.

These options will gather significantly more information about an application and should be used only when proper filtering guidelines are in place. Typically, you will not need to use these options when performing an installation analysis of an installation program. For the purpose of this exercise, do not select any of the check boxes.

6   Click **Next**. The Install Analysis Description dialog box opens.

7   Use the **Description** text box to change the description of your final state, if desired.

8   Click **Next**. The scan of the machine runs and compares the before and after scans to create a Delta state containing the differences between the two.

9   When the scan is finished, click **Next**.

The State Data Collection Results dialog box opens.

This dialog box shows the resources captured in the state file.

≠   (not equal) signifies that this file has been changed between the before and after snapshot.

=   (equal) signifies that the file has been scanned, but there is no change between the snapshots. (This designator will not appear if you are only performing a Before and After analysis).

+   (plus) signifies that the file has been added and did not exist prior to application installation.

–   (minus) signifies that the file has been removed and no longer exists on the system.

10 Click **Next**. The Installation Analysis is complete dialog box opens.

11 Click **Finish**.

Now use the Configuration Analyzer to import, view, and analyze your data.

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