

# OPTIMIZE

**MERCURY BUSINESS AVAILABILITY CENTER™**

Discovery Manager Administration

**MERCURY™**  
BUSINESS TECHNOLOGY OPTIMIZATION



# **Mercury Business Availability Center**

Discovery Manager Administration

Version 6.2

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Mercury Business Availability Center, Version 6.2  
Discovery Manager Administration

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# Welcome to Discovery Manager Administration

This guide describes how to work with Discovery Manager.

## How This Guide Is Organized

The guide contains the following chapters:

**Part I Introduction**

Contains an explanation of what the discovery process is and describes the Mercury Business Availability Center discovery process architecture.

**Part II Discovery Probe Installation**

Describes how to install the Discovery Probe.

**Part III Packages**

Describes how to create and deploy packages.

**Part IV Working with the Discovery System**

Describes how to run the discovery process by activating and editing discovery patterns.

**Part V Appendixes**

Describes how to add the attribute **optional="true"** to a variable tag in a discovery pattern and provides a list of discovery patterns.

## Who Should Read This Guide

This guide is intended for the following users of Mercury Business Availability Center:

- Mercury Business Availability Center administrators
- Mercury Business Availability Center platform administrators
- Mercury Business Availability Center application administrators
- Mercury Business Availability Center data collector administrators

Readers of this guide should be knowledgeable about enterprise system administration, have familiarity with ITIL concepts, and be knowledgeable about Mercury Business Availability Center in general and Mercury Application Mapping technology specifically.

## Getting More Information

For information on using and updating the Mercury Business Availability Center Documentation Library, reference information on additional documentation resources, typographical conventions used in the Documentation Library, and quick reference information on deploying, administering, and using Mercury Business Availability Center, refer to *Getting Started with Mercury Business Availability Center*.

# Part I

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## Introduction



# 1

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## Introduction to the Discovery Manager

This chapter introduces the Discovery Manager. The Discovery Manager enables you to manage the discovery process.

<b>This chapter describes:</b>	<b>On page:</b>
About the Discovery Process	3
Discovery Process Architecture	4
About the Discovery Manager	6
Before You Begin	6

### About the Discovery Process

Mercury Business Availability Center's discovery system enables you to automatically discover and map logical application assets in Layers 2 through 7 of the Open System Interconnection (OSI) Model. It is an ongoing, automatic process that continuously detects changes that occur in your IT infrastructure and updates the CMDB accordingly. It does not require any agent installation on the discovered device and uses a spiral discovery model that has over 100 out-of-the-box discovery patterns.

The discovery process is a gradual uncovering of the elements in your system. Discovery is first done at the most basic level, and then at more in-depth ones. Every time a discovery pattern is activated, it discovers more CIs, which in turn are used as triggers for other discovery patterns. This process continues until your entire IT infrastructure is discovered and mapped.

The discovery process does the following:

- Sweeps the application domain
- Identifies application element details
- Determines which ports are being used
- Checks the operating system
- Communicates with Industry standard or Application APIs

## Discovery Process Architecture

The architecture of the Mercury Business Availability Center discovery process consists of the following components:

- “Discovery Pattern” on page 4
- “Discovery Module” on page 5
- “Discovery Probe” on page 5
- “Mercury Business Availability Center Servers” on page 5
- “Discovery Protocol” on page 5

### Discovery Pattern

The discovery process is run by activating discovery patterns. A discovery pattern is an XML template that contains definitions of one or more discovery tasks. It defines which data is discovered, through which protocol, when to pass the data on to the CMDB, and the executing schedule. A discovery pattern contains a description of the configuration items (CIs) and relationships that are created with each specific pattern. The CI and relationship definitions are taken from the CI Type Model, which contains the definitions of all the configuration item types (CITs) and relationships defined in the system.

## Discovery Module

A discovery module contains one or more discovery patterns that together, allow a discovery of a specific technology/application. For example, discovery of the network includes patterns that discover: IPs, servers, switches, routers, and so forth.

## Discovery Probe

The Discovery Probe is the main discovery component responsible for receiving discovery tasks from the Mercury Business Availability Center server, dispatching them to the IT components and sending the results back to the CMDB through the server. You define a range of network addresses to a specific installed Discovery Probe. The connection between the Discovery Probe ID to the physically installed Discovery Probe is made in the **appilog-remote.properties** file, which is located in: \<Discovery Probe installation location>/root/lib/collectors.

## Mercury Business Availability Center Servers

The Mercury Business Availability Center Core Server hosts the servlets that deliver discovery requests to the Discovery Probe. The Processing Server receives the discovery results and stores the collected data in the CMDB.

If you install Mercury Business Availability Center using a single machine, that server functions as both a Processing and Core Server.

## Discovery Protocol

Discovery of the different IT infrastructure components is performed by using various protocols such as SNMP, WMI, JMX, Telnet, and so forth.

## About the Discovery Manager

The Discovery Manager contains discovery modules. Each module contains one or more discovery patterns required for discovering a specific group of CIs. You run the discovery process by activating discovery patterns in the Discovery Manager. You can choose to activate all the patterns in the module or only some of them.

The Discovery Manager also enables you to edit the discovery patterns. Only administrators with an advanced knowledge of how the discovery process works, should edit the discovery patterns.

## Before You Begin

Before you run the discovery process, you must first do the following:

- Obtain a license. For more information, contact your Mercury representative.
- Install the Discovery Probe. For information on how to install the Discovery Probe, see “Installing the Discovery Probe” on page 9.

For more information on the discovery process, see the *Discovery Process Tutorial*.

# Part II

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## Discovery Probe Installation



# 2

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## Installing the Discovery Probe

This chapter describes the hardware and software requirements and the procedures that are needed for the installation of the Discovery Probe on a Windows platform.

<b>This chapter describes:</b>	<b>On page:</b>
About Installing the Discovery Probe	10
Discovery Probe Hardware and Software Requirements	10
Discovery Probe Installation Procedure	10

## About Installing the Discovery Probe

Before you run the discovery process, you first need to install the Discovery Probe. Read about the hardware and software requirements for installing the Discovery Probe below and the Discovery Probe installation procedure in “Discovery Probe Installation Procedure” on page 10.

## Discovery Probe Hardware and Software Requirements

The following table describes the hardware and software requirements for installing the Discovery Probe.

Supported Environments	Memory	Free Hard Disk Space
<ul style="list-style-type: none"> <li>➤ Microsoft Windows 2000</li> <li>➤ Microsoft 2003 Server</li> <li>➤ Microsoft Windows XP</li> </ul>	Minimum: 256 MB RAM Recommended: 1024 MB RAM	Minimum: 2 GB Recommended: 4 GB

## Discovery Probe Installation Procedure

To install the Discovery Probe, follow the instructions of the Discovery Probe wizard.

**To install the Discovery Probe:**

- 1** In the **Admin** menu, select **Platform**, and then click **Downloads** to open the Downloads page.
- 2** Click the **Auto Discovery Probe** link. A dialog is displayed asking if you want to open the Setup file or save it to your computer.
  - If you choose to open the file, it will not be saved to your computer, and the setup program will start immediately. In this case, depending on your browser security settings, you might receive a security warning dialog box. Confirm that you want to proceed.

- If you choose to save the file to your computer, double-click it to begin installation.

The Discovery Probe wizard opens the Introduction page.

- 3** Click **Next** to open the Choose Installation Folder page.
- 4** Click **Choose** to display a standard Browse dialog box. Browse to and select the installation folder.

---

**Note:** If you change your mind after selecting a directory in the Browse dialog box, click **Restore Default Folder** to restore the default installation directory.

---

- 5** Click **Next** to display the Discovery Probe Configuration page.
- 6** In the Discovery Probe Configuration page, do the following:
  - In the **Core Server IP** box, enter the IP or the DNS name of the Core Server.
  - In the **Probe IP** box, enter the IP address of the machine on which the Discovery Probe is installed.
  - In the **Probe Identifier** box, enter the name of the Discovery Probe to be used for the discovery process. The Discovery Probe identifier defined here appears as the default Discovery Probe in the Discovery Probes Manager tab in the Discovery Manager. For details, see “Adding a Discovery Probe” on page 46.
  - (For MMS environments only where a single server hosts multiple environments) In the **BAC Customer ID** box, enter the Customer ID for the environment to which the Discovery Probe reports.
- 7** Click **Next** to open the Server Communication Protocol page.
- 8** Select **Probe Server HTTPS** to secure the Discovery Probe/Server link.
- 9** Click **Next** to open the Memory Size page.
- 10** In the Memory Size page, define the minimum and maximum memory to be allocated to the Discovery Probe. The values are measured in megabytes.

- In the **Discovery Probe Min Heap** box, enter a value that defines the minimum amount of memory to be allocated to the Discovery Probe.
- In the **Discovery Probe Max Heap** box, enter a value that defines the maximum amount of memory to be allocated to the Discovery Probe.

---

**Note:** It is recommended not to change the defaults.

---

- 11** Click **Next** to open the Pre-Installation Summary page and review the selections you have made.
- 12** Click **Install** to complete the installation of the Discovery Probe. When the installation is complete the Install Complete page is displayed.
- 13** Click **Done**. The following shortcut is added to the Windows **Start** menu:  
**Programs > Business Availability Center > Administration > Discovery Probe**

# Part III

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## Packages



# 3

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## Creating Customized Packages

This chapter explains how to create customized packages to suit your IT management needs. Packages contain definitions, resources, and tools needed for working with the Mercury Business Availability Center environment.

You would create a customized package, for example, if you had defined a new configuration item type, and wanted to test the CIT in a test environment, then move it to a production environment. Once the package passes QA, you copy the package to the production directory without the need to create all the resources again.

<b>This chapter describes:</b>	<b>On page:</b>
Customized Package Creation Overview	16
Creating a Package	18
Dependencies Among Packages	20
XML File Naming Conventions	23
Uninstalling and Updating a Customized Package	24

## Customized Package Creation Overview

A package is a zip file containing resources that are structured in organized, predefined subdirectories. The subdirectory structure is defined by the `packaging.xml` file, located in **<Mercury Business Availability Center root directory>\mam\_lib\server**.

You can expand, update, or remove existing packages as well as create your own packages based on the resources and tools you customize and develop.

The following packages make up the basic installation:

- AutoDiscovery.zip
- Basic\_Classes.zip
- BasicForMam.zip
- Credential\_Less\_Discovery.zip
- Database\_Basic.zip
- Host\_Resources\_Basic.zip
- Host\_Resources\_By\_SNMP.zip
- IBM\_HTTP\_Server.zip
- J2EE.zip
- Network.zip
- Rules.zip
- snapshot.zip
- SQL\_Server.zip
- TCP\_discovery.zip
- views.zip
- WebServer.zip

This section includes the following topics:

- “Default Package Installation and Location” on page 17
- “Package Deployment” on page 17
- “Package Resources” on page 17
- “Deploying Packages” on page 18

## Default Package Installation and Location

Default packages are automatically installed in the appropriate directories following installation and launching of Mercury Business Availability Center.

Default packages are placed in the **<Mercury Business Availability Center root directory>\mam\_lib\server\packages** directory. All packages must be located in this directory. After installing the package file, to prevent any unintentional changes being made to the files, it is recommended that you set the files to open as read-only.

## Package Deployment

Once you have installed the package, the package resources are imported into the corresponding Mercury Business Availability Center managers or tools. For example, all resources defined in the CIT directory are placed in the CI Type Manager with the same hierarchical structure.

To verify deployment validity, access the **<Mercury Business Availability Center root directory>\log\packaging.log** file.

## Package Resources

Each package consists of a zip file containing XML files. Each XML file represents a description of a resource in that directory.

Packages can contain any of the following resources:

- **class.** CIT descriptions, such as **host**, **file**, **switch**, and so forth.
- **configuration.**
- **configuration\_links.**

- **datamodel.** CIT instances.
- **patterns.** The required discovery patterns for the package's CITs and relationships.
- **reports.** Report descriptions relating to the package.
- **tql.** TQLs that are part of the package.
- **typedef.** The enumeration definitions that relate to attributes of enumeration type, such as severity levels, admin states, and so forth.

For details, see Chapter 3, “Enumerations and Lists.”

- **validlinks.** All possible valid connections (relationships) between the CITs that are defined in the CIT folder.
- **view.** View Manager definitions that are part of the package.

For details on the View Manager, see *View Manager Administration*.

## Deploying Packages

For details on deploying packages, see Chapter 4, “Deploying Packages.”

## Creating a Package

You can create a customized package to meet the needs of your organization's home-grown applications.

To maintain consistency with the deployment mechanism, the same top-level structure and names must match the definitions described in the `packaging.xml` file. You can change the lower levels as required, that is, you can add resources and folders.

**To create a package:****1** Prerequisites:

- Read the explanation about package dependency. For details, see “Dependencies Among Packages” on page 20.

---

**Note:** Any dependencies must be specified in the `descriptor.xml` file of the package.

---

- Read the explanation about XML naming conventions. For details, see “XML File Naming Conventions” on page 23.

**2** Create the necessary folder or folders as per the example in the `packaging.xml` file, located in the <Mercury Business Availability Center root directory>\mam\_lib\server directory.

```

        <!-- example
            <manager name="some name" class="implementation
class" type="instance type"/>
            Valid values for instance type:
                "instance" - The default constructor will be invoked
                "singleton" - a method getInstance() will be invoked
        -->

```

**3** Place the relevant resources in the corresponding folders. For example, If you create a correlation rule, place it in the Correlation folder.

For a list of resources you can place in the package, see “Package Resources” on page 17.

**4** Zip the directories you have created, including the `descriptor.xml` file.

**5** Place the zip file you have created in <Mercury Business Availability Center root directory>\mam\_lib\packages.

## Dependencies Among Packages

Certain packages are dependent for their functioning on the installation of other packages. This means that certain packages have to be deployed before deploying others. These dependencies are specified in the `descriptor.xml` file included in each package. Mercury Application Mapping specifies the interdependencies in the `descriptor.xml` file.

For example, the `SQL_Server` package is based on resources that are contained in the `Database_Basic` package. To view this dependency, open **SQL\_Server.zip** and open **descriptor.xml** in a text editor:

```
<descriptor>
<dependency>Database_Basic.zip</dependency>
</descriptor>
```

The following table contains a list of the default packages in the package directory and their dependencies.

Package	Dependent On...
AutoDiscovery	None
Basic_Classes	None
BLE	<ul style="list-style-type: none"> <li>➤ SLP</li> <li>➤ Basic_Classes</li> <li>➤ Database_Basic</li> <li>➤ EUM</li> <li>➤ Business</li> </ul>
Business	Basic_Classes
BusinessService	None
Credential_Less_Discovery	<ul style="list-style-type: none"> <li>➤ Basic_Classes</li> <li>➤ AutoDiscovery</li> </ul>
Database_Basic	➤ Host_Resources_Basic
DB2	Database_Basic
Default_View	views

Package	Dependent On...
diagnostics	<ul style="list-style-type: none"> <li>➤ Network</li> <li>➤ Business</li> <li>➤ BLE</li> <li>➤ views</li> <li>➤ SLP</li> </ul>
EMS	<ul style="list-style-type: none"> <li>➤ Network</li> <li>➤ Business</li> <li>➤ BLE</li> <li>➤ views</li> </ul>
EUM	<ul style="list-style-type: none"> <li>➤ Business</li> <li>➤ views</li> </ul>
EUM_61	<ul style="list-style-type: none"> <li>➤ Business</li> <li>➤ BLE</li> <li>➤ EUM</li> <li>➤ views</li> </ul>
Host_Resources_Basic	Network
Host_Resources_By_NTCMD	Host_Resources_Basic
Host_Resources_By_SNMP	Host_Resource_Basic
Host_Resource_By_TTY	Host_Resources_Basic
Host_Resource_By_WMI	Host_Resource_Basic
IBM_HTTP_Server	<ul style="list-style-type: none"> <li>➤ WebServer</li> <li>➤ J2EE</li> </ul>
ITU	<ul style="list-style-type: none"> <li>➤ EUM</li> <li>➤ sitescope</li> <li>➤ views</li> </ul>
J2EE	Database_Basic
Layer2	Network
Mainframe	Host_Resources_Basic

Package	Dependent On...
NetLinks	<ul style="list-style-type: none"> <li>► Basic_Classes</li> <li>► Network</li> </ul>
Network	<ul style="list-style-type: none"> <li>► Basic_Classes</li> <li>► AutoDiscovery</li> </ul>
Oracle	Database_Basic
OracleApps	<ul style="list-style-type: none"> <li>► Database_Basic</li> <li>► J2EE</li> <li>► Oracle</li> </ul>
SAP	<ul style="list-style-type: none"> <li>► J2EE</li> <li>► WebServer</li> </ul>
SAP_discovery	► SAP
SAP_monitoring	<ul style="list-style-type: none"> <li>► EUM</li> <li>► sitescope</li> <li>► BLE</li> <li>► SAP</li> </ul>
ServiceCatalog	view
Siebel	Database_Basic, WebServer
Siebel_discovery	Siebel
sitescope	Business
SLP	None
snapshot	None
SQL_Server	Database_Basic
Sybase	Database_Basic
TCP_discovery	Network
UDX	EMS
views	None
watchdog	<ul style="list-style-type: none"> <li>► sitescope</li> <li>► views</li> </ul>

Package	Dependent On...
WebServer	Network
Websphere_MQ	Network

## XML File Naming Conventions

This section describes the naming conventions for XML file names for the resources whose manager is a folder according to `packaging.xml`. The resources are:

- TQL
- Correlation Rules
- Enrichment Rules
- View Manager

Use the following naming conventions when naming the XML files:

- The names of the resources described in the XML file must be identical to the names of the XML files. For example, a correlation rule called **MyCorrelation** must be described in a file called **MyCorrelation.xml**.
- The XML file name is case sensitive. For example, if the name of the resource is called **timeRules**, then the name of the XML file must be **timeRules.xml** (and not **timerules.xml** or **TimeRules.xml**).

## Uninstalling and Updating a Customized Package

This section describes how to uninstall and update a package and specifies what considerations to take into account before performing these actions.

Before updating or deleting a resource, take the following considerations into account:

- If you delete a package or any of the resources inside the package, those resources are deleted from the database.
- Before deleting a CIT that has inheriting CITs, delete its inheriting CITs and then delete the CIT.
- Before redeploying a package that has not undergone any changes, change the timestamp in the package file to a date later than the original date in the package.
- When creating a package, take into account that some CITs may be connected by inheritance. To maintain the inheritance between them, place the CITs in the directory from which they inherited their attributes.

This section contains the following topics:

- “Uninstalling Customized Packages” on page 24
- “Updating Customized Packages” on page 25

### Uninstalling Customized Packages

You can uninstall customized packages.

**To uninstall customized packages:**

- 1** Move the package’s zip file from the <**Mercury Business Availability Center root directory**>\mam\_lib\packages directory to a different directory.
- 2** Undeploy the package’s zip file using the JMX console. For details, see Chapter 4, “Deploying Packages.”

---

**Caution:** Uninstalling a package removes all the resources from the database.

---

## **Updating Customized Packages**

You can update customized packages.

**To update customized packages:**

- 1** Open the package's zip file.
- 2** Make the required changes.
- 3** Repeat steps 4 and 5 in "Creating a Package" on page 18.



# 4

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## Deploying Packages

This chapter explains how to deploy, display, and remove packages.

This chapter describes:	On page:
Deploying Packages Overview	27
Deploying, Displaying, and Removing Deployed Packages	27
Troubleshooting Issues	30

### Deploying Packages Overview

You use the JMX console for deploying and removing packages. For example, you can remove a package or change a resource in a package. You can then redeploy that package only, without the need to restart the Mercury Business Availability Center server. You can also display currently deployed packages.

### Deploying, Displaying, and Removing Deployed Packages

This section explains how to deploy, display, and remove deployed packages using the JMX console.

This section contains the following topics:

- “Deploying a Package Using the JMX Console” on page 28
- “Example of a Package Deployed Using the JMX Console” on page 29

- “Displaying Packages Currently Deployed” on page 29
- “Removing a Package Using the JMX Console” on page 30

## Deploying a Package Using the JMX Console

This section explains how to deploy a package using the JMX console.

**To deploy a package using the JMX console:**

- 1** Launch your Web browser and enter the following address:  
**http://<server\_name>:8080/jmx-console**, where <server\_name> is the name of the machine on which the Processing Server is installed.
- 2** Under **MAM**, click **service=Package manager** to open the JMX MBEAN View page.
- 3** Locate **deployPackages** and enter the following information:
  - In the **customerId** box, enter **1**.
  - In the **dir** box, enter the name of the folder which contains the package's zip file.

---

**Note:** To deploy the package from the default package directory, leave this box empty. The default package directory is located in <Mercury Business Availability Center root directory>\mam\_lib\packages.

---

- In the **packagesNames** box, enter the name of the package.

The rules for entering a package name are as follows:

- The package name can contain a wildcard character (\*).
  - The package name is case sensitive. For example, if the name of the package is PackageName, then you must enter PackageName, and not packagename or PACKAGENAME.
  - The package name must have a **.zip** extension.
- 4** Click **Invoke** to deploy the packages.

## Example of a Package Deployed Using the JMX Console

This section describes how to export TQL resources to a package.

**To export TQL resources to a package:**

- 1** Launch your Web browser and access **http://<server\_name>:8080/jmx-console**, where <server\_name> is the name of the machine on which the Data Processing Server is installed.
- 2** Under Topaz, click **service=CMDB Tql Services** to open the JMX MBean View page.
- 3** Enter the following to the right of the exportTql box:
  - In the customerId box, enter **1**.
  - In the Tql Name box, enter the name of the TQL whose definition you want to export to the package, for example, **db2**.
- 4** Click **Invoke** to open the JMX MBean Operation Result page.
- 5** Right-click and select **View Source** to view the source code for the TQL resource.
- 6** Copy the source code and paste it into an XML file.
- 7** Add the XML file to the zip file of the desired package. For naming conventions, see “XML File Naming Conventions” on page 23.

## Displaying Packages Currently Deployed

This section describes how to display packages that are currently deployed.

**To display packages that are currently deployed:**

- 1** Launch your Web browser and navigate to:  
**http://<server\_name>:8080/jmx-console**, where <server\_name> is the name of the machine on which the Data Processing Server is installed.
- 2** Under **MAM**, click **service=Package manager** to open the JMX MBean View page.
- 3** To the right of the displaydeployedPackages box, enter **1** in the customerId box.
- 4** Click **Invoke** to display the packages that are currently deployed.

## Removing a Package Using the JMX Console

This section describes how to remove a package using the JMX console.

To remove a package using the JMX console:

- 1 Launch your Web browser and navigate to:  
**http://<server\_name>:8080/jmx-console**, where <server\_name> is the name of the machine on which the Data Processing Server is installed.
- 2 Under **MAM**, click **service=Package manager** to open the JMX MBEAN View page.
- 3 Enter the following to the right of the **undeployPackages** box:
  - In the **customerId** box, enter 1.
  - In the **packagesNames** box, enter the name of the package you want to remove.

The rules for entering a package name are as follows:

- Wildcard characters (\*) are not supported
- The package name is case sensitive.

- 4 Click **Invoke** to remove the package.

## Troubleshooting Issues

This section describes some of the troubleshooting issues that may arise when using the JMX console to deploy, display, or remove deployed packages.

This sections contains the following troubleshooting topics:

- “Verifying Dependency Among Packages” on page 31
- “Undeploying Packages” on page 31
- “Verifying Packaging Operations” on page 31

## Verifying Dependency Among Packages

Certain packages are dependent for their functioning on the installation of other packages. These dependencies are specified in the **descriptor.xml** file included in each package. The success of package deployment or removal of a package may depend on the installation of other packages.

For example:

- If package A is dependent on package B, you cannot remove package B.
- If you want to deploy package A, which is dependent on package B, but package B does not exist, you cannot deploy package A.

---

**Note:** For a list of the packages and their dependencies, see “Dependencies Among Packages” on page 20.

---

## Undeploying Packages

- You cannot undeploy a package that contains a CIT if an instance of that CIT appears in the CMDB.
- You cannot undeploy a package if one of its resources remains deployed.

## Verifying Packaging Operations

It is recommended to check the **packaging.log** file after each operation to verify its success. If the operation was not successful, the log file contains detailed information on why the operation failed.

The **packaging.log** file is located in <Mercury Business Availability Center root directory>\log.



# **Part IV**

---

## **Working with the Discovery System**



# 5

---

## Running the Discovery Process

This chapter describes how to run the discovery process by activating and editing discovery patterns.

<b>This chapter describes:</b>	<b>On page:</b>
Understanding the Discovery Manager	36
Understanding the Module Manager Tab	37
Managing Modules	39
Adding a Discovery Probe	46
Configuring the Connection Data for a Protocol	50
Using Advanced Options in the Details View Pane	53
Discovery Process Configuration Files	68
Understanding the Discovery TQL Manager	71
Defining Discovery TQL Queries	72
Understanding the Pattern Editor	77
Editing a Pattern	78
Scheduling a Discovery Pattern to Run on a Periodic Basis	83
Defining Advanced Settings	88
Discovery Pattern Validation	89
Activating a Discovery Pattern	90
Deactivating a Discovery Pattern	90
Understanding the Discovery Manager Map View Tab	91

This chapter describes:	On page:
Understanding the Schedule View Tab	99
Protocol Definitions	101

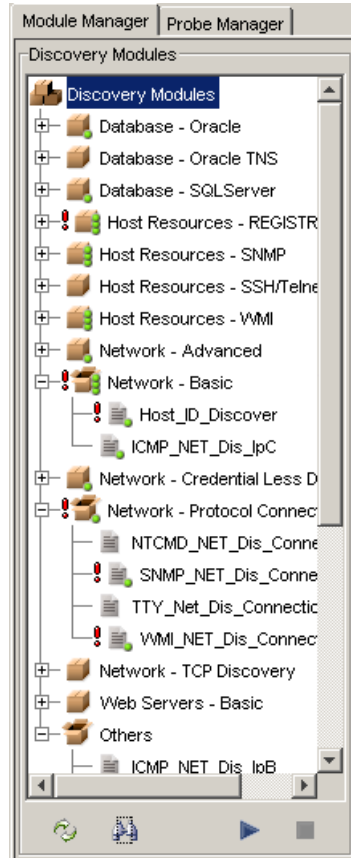
## Understanding the Discovery Manager

The Discovery Manager is displayed by selecting **Admin > CMDB** and then clicking the **Discovery Manager** tab. The Discovery Manager contains the following tabs:

- **Module Manager.** Contains:
  - **Details View tab** – Enables you to activate discovery patterns. The Module Manager contains a list of discovery modules. Each discovery module includes a group of discovery patterns. Select the required discovery patterns from the various modules to discover a specific group of CIs. For details, see “Understanding the Module Manager Tab” on page 37.
  - **Map View tab** – Displays a visual representation of the real-time progress of the discovery process. For details, see “Understanding the Discovery Manager Map View Tab” on page 91.
- **Probe Manager.** Enables you to:
  - Define a new discovery probe and the range of the IP addresses to be discovered. For details, see “Adding a Discovery Probe” on page 46.
  - Define the connection data for each protocol. For details, see “Configuring the Connection Data for a Protocol” on page 50.

## Understanding the Module Manager Tab

The Module Manager tab contains a list of discovery modules. Each module includes the discovery patterns necessary to discover a specific group of CIs.



From the Discovery Modules pane, you can select the module(s) you want to use for the discovery process. The discovery patterns contained in the modules you select are used in the discovery process. Each icon represents a module.



When you select a module, the Details View tab in the Module Manager is divided as follows:

Field	Description
Discovery Module Summary	<p>Contains the following fields:</p> <ul style="list-style-type: none"> <li>➤ <b>Discovery Module Name</b> – the name of the selected module</li> <li>➤ <b>Description</b> – a description of the selected module</li> </ul>
Statistics	<p>Contains the following fields:</p> <ul style="list-style-type: none"> <li>➤ <b>CIT</b> – the name of the CIT discovered by the module</li> <li>➤ <b>Created</b> – the number of CIT instances created by the module</li> <li>➤ <b>Updated</b> – the number of CIT instances updated by the module</li> <li>➤ <b>Deleted</b> – the number of CIT instances deleted by the module</li> </ul> <p><b>Note:</b> The last row of the Statistics table, the <b>Total</b> row, contains the total number of CIs in each column.</p>

---

**Note:** For details on the Map View tab, see “Understanding the Discovery Manager Map View Tab” on page 91.

---

## Managing Modules

This section contains the following topics:

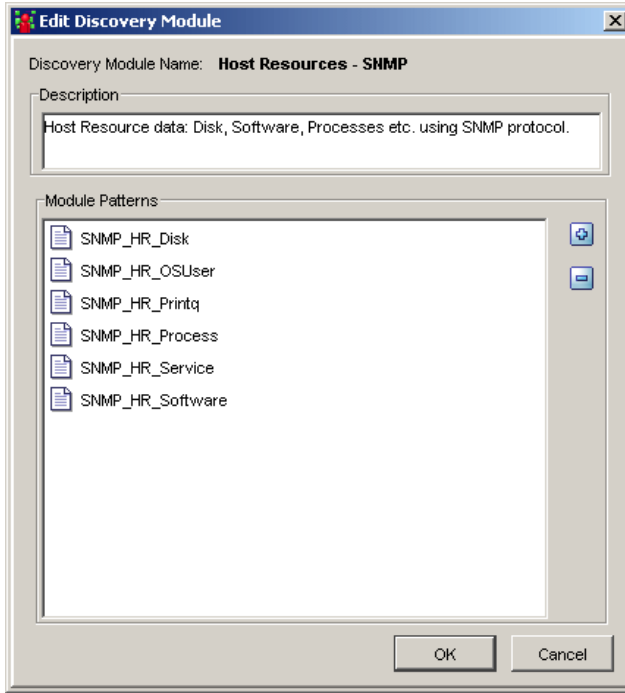
- Editing a Discovery Module – for details, see page 39
- Activating a Discovery Module – for details, see page 41
- Deactivating a Discovery Module – for details, see page 41
- Creating a Discovery Module – for details, see page 42
- Deleting a Discovery Module – for details, see page 42
- Searching For a Discovery Pattern – for details, see page 43
- Updating the Statistics Table for the Selected Discovery Module – for details, see page 44
- Resetting the Statistics Table for the Selected Discovery Module – for details, see page 44
- Sorting and Customizing Tables – for details, see page 44
- Maximizing and Restoring the Statistics Table – for details, see page 46

### Editing a Discovery Module

You can edit each module to include the discovery patterns you want it to contain.

**To edit a discovery module:**

- 1 In the Discovery Modules pane, right-click the module you want to edit and select **Edit Module** to open the Edit Discovery Module dialog box.



The Edit Discovery Module dialog box has the following fields:

**Description.** A description of the selected module.

**Module Patterns.** A list of the discovery patterns in the selected module.



- 2 Click the **Add Discovery Pattern to Module** button to open the Choose Discovery Patterns dialog box.
- 3 Select the pattern(s) you want to add to the module. You can make multiple selections.
- 4 Click **OK**. The discovery patterns are added to the **Module Patterns** area in the Edit Discovery Module dialog box.
- 5 Click **OK** in the Edit Discovery Module dialog box to save the changes you have made.

## Activating a Discovery Module

When you activate a discovery module, you activate all the patterns contained in the module.

### To activate a discovery module:



In the Discovery Modules pane, right-click the module you want to activate and select **Activate**, or select the required module and click the **Activate** button in the bottom right corner of the Discovery Modules pane.



A module that is activated, as seen here, is marked with green dots.




---

**Note:** If only some of the module's patterns are activated, the module is marked with a single green dot. If all patterns of the module are activated, the module is marked with three green dots.

---

When the discovery module is activated, it discovers CITs and relationships of the types that are described in each pattern, and places them in the CMDB.

## Deactivating a Discovery Module

This section explains how to deactivate a module that is activated.

### To deactivate a discovery module:



In the Discovery Modules pane, right-click the module you want to deactivate and select **Deactivate**, or select the required module and click the **Deactivate** button in the bottom right corner of the Discovery Modules pane.

## Creating a Discovery Module

This section describes how to create a discovery module.

### To create a discovery module:

- 1 In the Discovery Modules pane, right-click **Discovery Modules** at the top of the hierarchy.
- 2 Select **Create new module**. The Choose new name for discovery module dialog box opens.
- 3 Enter a new name for the module.
- 4 Click **OK** to create the new module. The new discovery module appears in the Discovery Module pane.
- 5 To add discovery patterns to the module, right-click the module and select **Edit Module**. The Edit Discovery Module opens. For details, see “Editing a Discovery Module” on page 39. After you add one or more discovery patterns to the module, the module then appears in the Discovery Module pane.

## Deleting a Discovery Module

This section describes how to delete a discovery module.

---

**Note:** Only administrators with an expert knowledge of the discovery process should be allowed to delete discovery modules.

---

### To delete a discovery module:

In the Discovery Modules pane, right-click the module you want to delete and select **Delete**.

## Searching For a Discovery Pattern

Discovery Manager's searching capabilities enable you to find a specific discovery pattern in the Discovery Modules pane. These capabilities provide different search criteria through which you can search for discovery patterns. You can do a search according to their pattern name, input type, or output type.

**To search for a discovery pattern in the Discovery Modules pane:**



**1** At the bottom of the Discovery Module pane, click the **Find Pattern** button to open the Find patterns dialog box.

**2** To search for a pattern by name, do the following:

- Select **Name**.
- In the **Discovery Pattern Name** box, enter the name of the pattern you want to find. Mercury Application Mapping searches for patterns whose names contain the entered text.

**3** To search for patterns by CIs that triggered the discovery pattern (input CIs), do the following:

- Select **Input type**.
- In the **CI Type** area, click the **CI Type** button to open the Choose Configuration Item Type dialog box.
- Select the required CIT and click **OK**.



**4** To search for patterns by CIs that are discovered as a result of the activated discovery pattern (output CIs), do the following:

- Select **Output type**.
- In the **CI Type** area, click the **CI Type** button to open the Choose Configuration Item Type dialog box.
- Select the required CIT and click **OK**.



**5** In the **Direction** section, specify whether you want to do a forward or backward search.

- 6 To run the search do one of the following:
  - Click **Find Next**. If Mercury Application Mapping finds a match, it highlights the next pattern that meets the search criteria you defined.
  - Click **Find All**. If Mercury Application Mapping finds a match, it highlights all the patterns that meet the search criteria you defined.

## Updating the Statistics Table for the Selected Discovery Module

The discovery process results in the **Statistics** table are not automatically updated.

To update the Statistics table:



In the **Module Manager** tab, click the **Refresh Statistics** button to the left of the Statistics table.

## Resetting the Statistics Table for the Selected Discovery Module

You can delete all the statistics from the **Statistics** table and restart the counting from zero.

To reset the Statistics table:



In the **Module Manager** tab, click the **Reset Statistics** button to the left of the Statistics table.

## Sorting and Customizing Tables

This section describes how to sort the content in the columns and set which columns you want to display and in what order.

This section includes the following topics:

- Sorting the Statistics Table – for details, see page 45
- Hiding a Column in the Statistics Table – for details, see page 45
- Displaying Hidden Columns in the Statistics Table – for details, see page 45
- Customizing the Statistic Table – for details, see page 45

### Sorting the Statistics Table

You can sort the contents of the Statistics table to be displayed in either ascending or descending order.

**To sort the contents of a Protocol Entry column:**

- 1 Click a column header.
- 2 To change the sort order, click the column header again.

Once a column has been sorted its header displays a pink triangle pointed upwards for ascending order or downwards for descending order.

### Hiding a Column in the Statistics Table

You can hide a column in the Statistics table.

**To hide a column in the Statistics table:**

On the selected tab, right-click the header of the column you want to hide and select **Hide Column**.

### Displaying Hidden Columns in the Statistics Table

You can display hidden columns in the Statistics table.

**To display hidden columns:**

Right-click one of the column headers and select **Show All Columns**.

### Customizing the Statistic Table

You can customize the Statistics table.

**To customize the Statistics table:**

- 1 Right-click one of the column headers and select **Customize** to open the Columns dialog box.
- 2 To remove column(s) from the tab, select the required column(s) in the **Visible Columns** area and click the **Remove Column** button. The selected column(s) moves to the **Hidden Columns** area. (To return a column to the **Visible Columns** area, select it and click the **Add Column** button.)
- 3 To change the display order of the columns, use the up and down arrows.
- 4 Click **OK** to apply your customization to the table.



## Maximizing and Restoring the Statistics Table

This section describes how to maximize and restore the Statistics table to its previous size.

**To maximize and restore the Statistics table to its previous size:**

- 1 Click the up arrow at the top left-hand corner of the Statistics table to maximize the table.
- 2 Click the down arrow at the top left-hand corner of the Statistics table to restore the table to its previous size.

## Adding a Discovery Probe

This section explains how to add a Discovery Probe and define its discovery range using the Probe Manager tab.

This section contains the following topics:

- Adding a Discovery Probe and Configuring the Discovery Range – for details, see page 46
- Deleting a Discovery Probe – for details, see page 48
- Editing the Probe Description – for details, see page 48
- Deleting an IP Range – for details, see page 48
- Editing an Existing IP Range – for details, see page 49
- Rules for Defining an IP Address Range – for details, see page 49

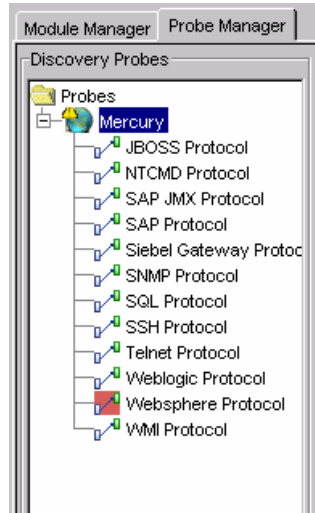
### Adding a Discovery Probe and Configuring the Discovery Range

This section describes how to add a Discovery Probe and the range of the IP addresses to be discovered.

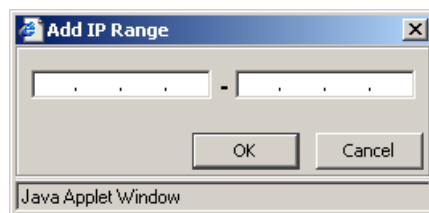
**To add a new Discovery Probe and configure the discovery range:**

- 1 Select **Admin > CMDB** and click the **Discovery Manager** tab.
- 2 Click the **Probe Manager** tab.

- 3 In the Discovery Probes pane, the Probe Identifier that is defined on the Discovery Probe Configuration page of the Discovery Probe wizard appears as the default Discovery Probe. (For details, see “Discovery Probe Installation Procedure” on page 10.)



- 4 In the Discovery Probes pane, right-click the **Probes** folder or any empty space and select **Add probe** to open the Add New Probe dialog box.
- 5 In the **Name** box, type the new probe name.
- 6 In the **Description** box, type the probe description. This step is optional.
- 7 Click **OK** to add the new probe to the **Discovery Probes** list.
- 8 In the Ranges pane, click the **Add IP range** button to open the Add IP Range dialog box.



- 9 Enter an IP address range (for details, see “Rules for Defining an IP Address Range” on page 49).

- 10** Click **OK**. The range of net addresses you defined appears in the Ranges pane.
- 11** To enter another IP address range, click the **Add IP range** button again and repeat steps 9 and 10.
- 12** Click **Apply** to save the changes you have made.

### Deleting a Discovery Probe

This section describes how to delete a Discovery Probe.

**To delete a Discovery Probe:**

- 1** From the **Discovery Probes** box, right-click the probe you want to delete and click **Remove probe**. A message appears asking you if you want to remove the Discovery Probe.
- 2** Click **Yes** to delete the probe.

### Editing the Probe Description

This section describes how to edit the description of an existing probe.

**To edit a probe's description:**

- 1** From the Discovery Probes pane, select the Discovery Probe whose description you want to edit.
- 2** In the **Description** box in the Probe Details pane, make the required changes.

### Deleting an IP Range

This section describes how to delete an IP range.

**To delete an IP range:**

In the **Ranges** box, select the IP range you want to delete and click the **Remove IP range** button.



## Editing an Existing IP Range

This section describes how to edit an existing IP range:

**To edit an existing IP range:**



- 1** In the **Ranges** box, select the IP range you want to edit.
- 2** Click the **Edit IP range** button to open the Edit IP Range dialog box.
- 3** Make the required changes (for details, see “Adding a Discovery Probe and Configuring the Discovery Range” on page 46).
- 4** Click **OK** to save the changes you have made.

## Rules for Defining an IP Address Range

The rules for defining an IP address range are as follows:

- The IP address range must have the following format:

`start_ip_address – end_ip_address`

For example: 10.0.64.0 - 10.0.64.57

- The range can include a wildcard character (\*) so that Mercury Business Availability Center can match the range to more than one IP address. Mercury Business Availability Center scans the system to find the IP addresses matching the range pattern you defined.
- An asterisk (\*) represents any number in the range of 0-255.
- You can use a wildcard character (\*) in the lower bound IP address of the IP range pattern only.

For example:

Valid	Not Valid
10.0.64.* - 10.0.64.10	10.0.64.10 - 10.0.64.*

- If you do use an asterisk (\*), you do not need to enter a second IP address. For example, you can enter the range pattern 10.0.48.\* to cover the range from 10.0.48.0 to 10.0.48.255.

- You can use more than one asterisk (\*) in an IP address as long as they are used consecutively. The asterisk(s) cannot be situated between two numbers in the IP address, nor can it substitute the first digit in the number.

For example:

Valid	Not Valid
10.0.64.*	*0..60.10
10.0.*.*	10.*.64.*
10.*.*.*	10.*.*.1
	10.*.7.1

- If you use an asterisk (\*) in the lower bound IP address and also enter an upper bound IP address, the upper bound IP address is ignored. For example, if you enter the pattern 10.0.\*.\* - 10.0.20.30, the upper bound IP address is ignored. Since the asterisks (\*) in the lower bound IP address cover a range wider than 20 and 30, 20 and 30 in the upper bound IP address are rendered irrelevant.

## Configuring the Connection Data for a Protocol

You can add the connection data for each protocol included in the discovery process. The connection data can refer to a specific net address and/or to the entire net addresses range. When referring to the entire range, the net address value is DEFAULT. The default definitions relate to all IPs included in the defined range.

For a description of the connection data that needs to be defined for each protocol, see “Protocol Definitions” on page 101.

This section contains the following topics:



- Defining the Connection Data For the Protocol – for details, see page 51
- Deleting the Connection Details for an Existing Protocol – for details, see page 52

- Editing the Connection Details for an Existing Protocol – for details, see page 52
- Sorting and Customizing the Protocol Entry Columns – for details, see page 53

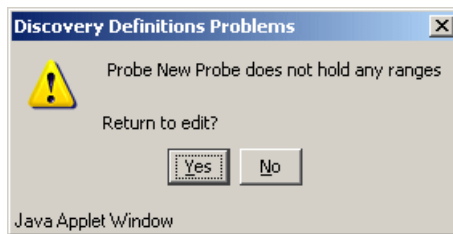
## Defining the Connection Data For the Protocol

This section describes how to define the connection data for each protocol included in the discovery process.

**To define the connection data for the required protocol:**

- 1** Select **Admin > CMDB** and click the **Discovery Manager** tab.
- 2** Click the **Probe Manager** tab.
-  **3** In the Discovery Probes pane, click the **Expand** button of the probe to which you want to add an instance of a protocol. A list of protocols is displayed.
- 4** Select the protocol whose connection data you want to define.
-  **5** Click the **Add new connection details for selected protocol type** button to the right of the **Protocol Entries** area to add definitions to the protocol you have selected. The Add Protocol Parameter dialog box displays the list of attributes you need to define for the protocol.
- 6** Define the protocol parameters as required and then click **OK**. For information on protocol definitions, see “Protocol Definitions” on page 101. The parameter values you defined appear in the **Protocol entries** section.
- 7** Click **Apply** to save the changes you have made.

If your Discovery Probe definitions are incorrect or incomplete, you get a message specifying what the problem is, as seen in the following example:



**8** Click:

- **Yes** to open the tab in which the issue has to be resolved.
- **No** to save the changes and close the Discovery Manager.

---

**Note:** If the Discovery Probe appears red, it indicates that not all the required protocols for the discovery pattern have been added as described in “Defining the Connection Data For the Protocol” on page 51.


---

- 9** Click the **Apply** button at the bottom of the screen to save the changes.

### **Deleting the Connection Details for an Existing Protocol**

You can delete the connection details for an existing protocol.


**To delete the connection details for an existing protocol:**

-  **1** In the **Probe Manager** tab, select the entry that you want to delete in the **Protocol entries** section, and click the **Remove selected connection details for selected protocol type** button.
- 2** Click the **Apply** button at the bottom of the screen to save the changes.

### **Editing the Connection Details for an Existing Protocol**

You can edit the connection details for an existing protocol.

**To edit the connection details for an existing protocol:**

- 1** In the **Probe Manager** tab, select the entry that you want to edit in the **Protocol entries** area.
-  **2** Click the **Edit selected connection details for selected protocol type** button.
- 3** Edit the details as required in the Edit Protocol Parameter dialog box that opens. For details, see “Protocol Definitions” on page 101.
- 4** Click the **Apply** button at the bottom of the screen to save the changes.

## Sorting and Customizing the Protocol Entry Columns

For information on how to sort and customize the Protocol Entry table, see “Sorting and Customizing Tables” on page 44.

## Using Advanced Options in the Details View Pane



You can view and edit the discovery patterns included in the modules.

---

**Note:** Only administrators with an expert knowledge of the discovery process should be allowed to delete discovery modules.

---

The following table describes the icons in the Discovery Modules pane.

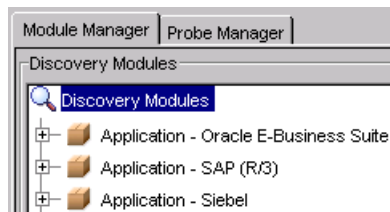
Icon	What it represents
	A module
	A pattern

- When you select a pattern in the Discovery Modules pane, the Details View tab is divided as follows:

Field	Description
<b>Discovery Pattern Name</b>	The name of the selected discovery pattern and the package in which it is found.
<b>Description</b>	A description of the selected pattern.

Field	Description
<b>Trigger TQLs</b>	<p>Define one or more TQL queries to be used as triggers to activate the selected discovery pattern.</p> <p>It contains the following fields:</p> <ul style="list-style-type: none"> <li>► <b>TQL Name</b> – The name of the trigger TQL query that activates the discovery pattern. For details on TQL queries, see “Mercury Business Availability Center Topology Query System” in <i>View Manager Administration</i>.</li> <li>► <b>Probe Limit</b> – The probes you want to use for the discovery process.</li> </ul> <p>For details, see “Defining a Trigger TQL Query” on page 56.</p>
<b>Triggered CIs</b>	<p>Display the CIs used by the discovery pattern for its discovery. For more information, see “Manually Activating a Discovery Pattern Using Specific CIs” on page 59.</p>
<b>Statistics</b>	<p>Display statistics on discovery results for the selected pattern.</p> <ul style="list-style-type: none"> <li>► <b>CIT</b> – the name of the CIT discovered by the discovery pattern</li> <li>► <b>Created</b> – the number of CIT instances created by the discovery pattern</li> <li>► <b>Updated</b> – the number of CIT instances updated by the discovery pattern</li> <li>► <b>Deleted</b> –the number of CIT instances deleted by the discovery pattern</li> </ul> <p><b>Note:</b> The last row of the Statistics table, the <b>Total</b> row, contains the total number of CIs in each column.</p>

- When you select the Discovery Modules root in the Discovery Modules pane (as in the picture below):



Then the Details View pane is divided as follows:

Field	Description
<b>Configuration files</b>	Contains configuration files with default parameter values that are used for the discovery process. For details, see “Discovery Process Configuration Files” on page 68.
<b>Statistics</b>	<p>Displays statistics on discovery results for all the discovery modules.</p> <p>It contains the following fields:</p> <ul style="list-style-type: none"> <li>➤ <b>CIT</b> – the name of the discovered CIT</li> <li>➤ <b>Created</b> – the number of CIT instances created</li> <li>➤ <b>Updated</b> – the number of CIT instances that were updated</li> <li>➤ <b>Deleted</b> – the number of CIT instances deleted</li> </ul> <p><b>Note:</b> The last row of the Statistics table, the <b>Total</b> row, contains the total number of CIs in each column.</p>

This section contains the following topics:

- Selecting a Pattern – for details, see page 56
- Defining a Trigger TQL Query – for details, see page 56
- Selecting the Probe(s) to Be Used in the Discovery Process – for details, see page 58
- Manually Activating a Discovery Pattern Using Specific CIs – for details, see page 59
- Filtering the Triggered CIs Table – for details, see page 62
- Updating the Triggered CIs Table – for details, see page 63
- Redispatching a Triggered CI to Manually Activate the Discovery Pattern Again – for details, see page 63
- Removing the Error Status of a Triggered CI – for details, see page 64
- Showing Error Details – for details, see page 64

- Sorting and Customizing the Triggered CI Table – for details, see page 65
- Maximizing and Restoring the Triggered CI Table – for details, see page 65
- Updating the Statistics Table for the Selected Discovery Pattern – for details, see page 65
- Resetting the Statistics Table for the Selected Discovery Pattern – for details, see page 65
- Sorting and Customizing the Statistic Table – for details, see page 65
- Maximizing and Restoring the Statistic Table – for details, see page 66
- Showing CI Instances – for details, see page 66
- Creating a Discovery Pattern – for details, see page 66
- Deleting a Discovery Pattern from a Module – for details, see page 67
- About Problem Indicators – for details, see page 67

## Selecting a Pattern

This section describes how to select a pattern in a module.

**To select a pattern in a module:**



In the Discovery Modules pane, click the **Expand** button to the left of the required module to display the patterns contained in that module.

## Defining a Trigger TQL Query

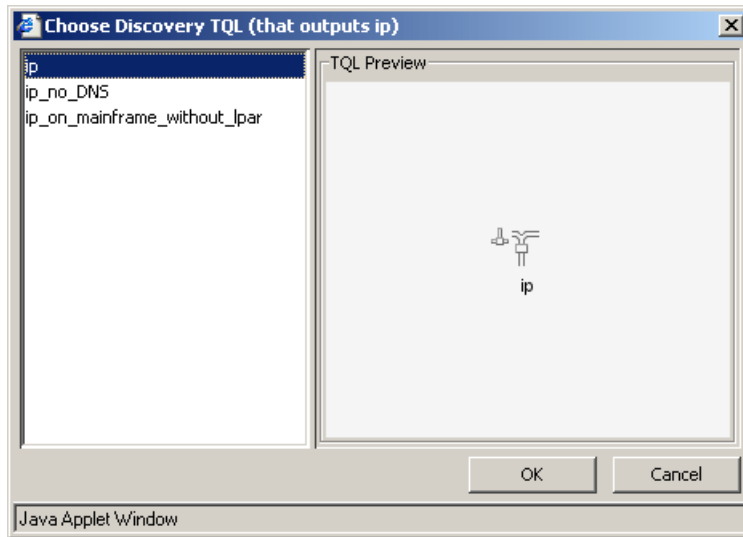
You can define one or more TQL queries to be used as triggers to activate the selected discovery pattern.

**To define a trigger TQL query:**

- 1 Select the required discovery pattern.



- 2 In the Trigger TQLs pane, click the **Add TQL** button to open the Choose Discovery TQL dialog box.



The dialog box contains a list of discovery TQLs that match the discovery pattern's input CITs.

- 3 Select the TQL you want to serve as the trigger that invokes the discovery pattern's task, and click **OK**. The TQL query you selected appears in the Trigger TQLs pane.

---

**Note:** If necessary, you can create new discovery TQLs from which to choose. For details, see “Defining Discovery TQL Queries” on page 72.

---



- 4 To remove a TQL query from the list, select the TQL you want to remove and click the **Delete TQL** button.

---

**Note:** If a TQL query is removed for an active discovery pattern, the Discovery Manager no longer receives new CIs coming from that TQL query. Existing triggered CIs that originally came from the TQL query, are not removed.

---

- 5 To add another TQL query, click the **New TQL** button again and repeat step 3.

### Selecting the Probe(s) to Be Used in the Discovery Process

This section describes how to define the probe(s) to be used in the discovery process.

**To select the probe(s) to be used in the discovery process:**



- 1 From the Trigger TQLs pane, click the button to the right of the **Probe Limit** field to open the Edit probe limitation for TQL output dialog box.

This screen displays a list of the Discovery Probes defined in the Probe Manager tab. For details, see “Adding a Discovery Probe and Configuring the Discovery Range” on page 46.

- 2 To activate all the probes, select the **All Discovery Probes** check box and click **OK**.

- 3 To activate a specific probe, do the following:

- Clear the **All Discovery Probes** check box.



- Select the required probes using the **Add** and **Remove** buttons to move them between the **Non selected probes** and **Selected probes** lists. You can also move multiple probes by making multiple selections.

- 4 Click **OK** to save the changes you have made.

## Manually Activating a Discovery Pattern Using Specific CIs

Each discovery pattern contains the CIs that the pattern uses for the discovery process. After you have activated a discovery pattern, the CIs that are currently being used by the discovery pattern are displayed in the Triggered CIs pane.

When you can define one or more TQL queries to be used as triggers to activate the selected discovery pattern (for details, see “Defining a Trigger TQL Query” on page 56), the trigger TQL automatically triggers CIs that invoke the discovery pattern. You can choose to manually activate the discovery pattern so that it runs using only CIs that appear in the Triggered CIs pane instead of all the CIs triggered by the TQL. (For information on TQL queries, see “Mercury Business Availability Center Topology Query System” in *View Manager Administration*.)

The Triggered CIs pane has the following fields:

- **CI** – The triggered CI’s label.
- **Status** – The current status of the triggered CI.

Its status can be one of the following:

- **Waiting for Probe** – The triggered CI is ready to be dispatched and is waiting for the Discovery Probe to retrieve it.
- **Active** – The triggered CI is active and is running on the Discovery Probe.
- **Discovery Errors** – Due to an error, the Mercury Business Availability Center server has failed to dispatch the discovery task.

Following are the discovery error statuses:

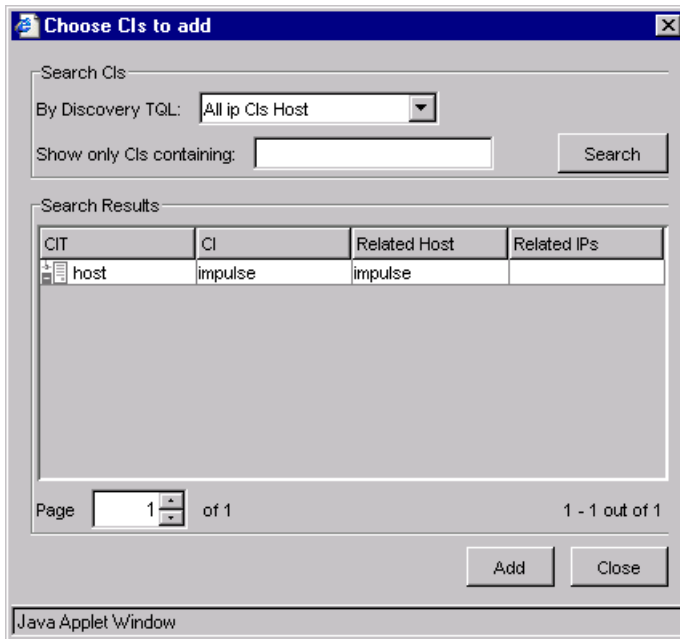
- **Server Processing Failure** - The server failed to add the CI to the list of triggered CIs.
- **Active (Having error)** - An error occurred while running the discovery process (the discovery process continues running).
- **Probe Fatal Error** - An error occurred while running the discovery process and the discovery pattern is no longer using this specific triggered CI for the discovery process.
- **Active (being removed)** – The triggered CI is being removed from the Triggered CIs list.

- **Probe** – The discovery probe to which the triggered CI belongs.
- **Page** – The list of CIs are divided into pages. The number in the **Page** box indicates which page is currently being displayed.
  - To view other pages, use the up and down arrows, or type the page number, and click **Enter**.
  - To determine the number of CIs that appear on a page, right-click either the up or down button and select the required number. The default is 25.

**To manually activate the discovery pattern using specific CIs:**



- 1 In the Triggered CIs pane, click the **Add CI** button to open the Choose CIs to add dialog box.



---

**Note:** The **Add CI** button is only enabled if the pattern is active. To activate the pattern, see “Activating a Discovery Pattern” on page 90.

---

The Choose CIs to add dialog box is divided as follows:

Field	Description
<b>Search CIs</b>	<p>Contains two filters with which you can limit the number of CIs that appear in the Search Results pane.</p> <ul style="list-style-type: none"> <li>➤ <b>By Discovery TQL</b></li> <li>➤ <b>Show only CIs containing</b></li> </ul> <p>For details on how to use the filters, see step 3.</p>
<b>Search Results</b>	<p>Displays the list of triggered CIs from which you can choose. It has the following fields:</p> <ul style="list-style-type: none"> <li>➤ <b>CIT</b> – the CI type of the selected triggered CI</li> <li>➤ <b>CI</b> – the label of the triggered CI</li> <li>➤ <b>Related Host</b> – the label for the host related to the triggered CI</li> <li>➤ <b>Related IPs</b> – the IPs of the related host</li> </ul>

- 2 The list of CIs are divided into pages. The number in the **Page** box indicates which page is currently being displayed.
  - To view other pages, use the up and down arrows, or type the page number, and press **Enter**.
  - To determine the number of CIs that appear on a page, right-click either the up or down button and select the required number. The default is 25.
- 3 To limit the number of triggered CIs that are displayed in the **Search Results** list, use the following filters:
  - (Required) In the **By Discovery TQL** box, choose one of the following:
    - **All CIs of the CI Type**. Display all CI instances of the CI type used by the discovery pattern.
    - **TQL**. Display only CI instances that are triggered by this TQL.
  - In the **Show only CIs containing** box, enter the text defining what you want to appear in the list. Only the triggered CIs that contain the text in the **Show only CIs containing** box are displayed. This step is optional.
- 4 Click **Search** to display only the CIs that match the filter criteria.

- 5 Select the required CI or CIs. You can make multiple selections.
- 6 Click **Add**. The discovery pattern runs using only the CIs that appear in the Triggered CIs pane.
- 7 To remove a triggered CI from the list of triggered CIs on which the discovery pattern runs, select the source CI you want to remove from the Triggered CIs pane and click the **Remove CI** button. The discovery pattern no longer runs using the Triggered CI you deleted from the Triggered CIs pane.



## Filtering the Triggered CIs Table

You can limit the number of CIs that appear in the Triggered CIs pane.

**To limit the number of CIs that appear in the Triggered CIs pane:**



- 1 Click the **Filter CIs** button.
- 2 Use one of the following filters:

Filter	Description
<b>By Status</b>	<p>Display a list of triggered CIs according to status. Following are the options:</p> <ul style="list-style-type: none"> <li>➤ <b>All</b>. Display all the triggered CIs.</li> <li>➤ <b>Waiting for Probe</b>. The triggered CI is ready to be dispatched and is waiting for the Discovery Probe to retrieve it.</li> <li>➤ <b>Active</b>. The triggered CI is active and is running on the Discovery Probe.</li> <li>➤ <b>Active (being removed)</b>. The triggered CI is being removed from the <b>Triggered CIs</b> list.</li> <li>➤ <b>Discovery Errors</b>. Due to an error, the Mercury Business Availability Center server has failed to dispatch the discovery task.</li> </ul>
<b>By Probe</b>	<p>Display only the CIs triggered by a selected probe. For details, see “Selecting the Probe(s) to Be Used in the Discovery Process”.</p>

Filter	Description
<b>By Dispatch Type</b>	<p>Display a list of CIs according to one of the following options:</p> <ul style="list-style-type: none"> <li>➤ <b>All.</b> CIs that were used both to manually activate the discovery pattern as well as the CIs from the Discovery TQL(s) that were used to activate the discovery pattern.</li> <li>➤ <b>Manually added.</b> Only the CIs that were used to manually activate the discovery pattern. For details, see “Manually Activating a Discovery Pattern Using Specific CIs”.</li> <li>➤ <b>By Discovery TQL.</b> All the CIs from the Discovery TQL(s) used to activate the discovery pattern. For details, see “Defining a Trigger TQL Query”.</li> </ul>
<b>By Selected TQL</b>	<p>Display a list of only the triggered CIs that match the output of the selected TQL.</p> <p><b>Note:</b> If none of the selected CIs in the Triggered CIs pane match the output of the selected TQL, the Triggered CIs pane is empty.</p> <p>For details, see “Defining a Trigger TQL Query”.</p>

## Updating the Triggered CIs Table

After you have activated a discovery pattern, the CIs that are currently being used by the discovery pattern are displayed in the **Triggered CIs** pane. The discovery results are not updated automatically.

**To update the list of triggered CIs currently being used by the discovery pattern:**



Click the **Refresh** button on the left side of the Triggered CIs pane.

## Redispatching a Triggered CI to Manually Activate the Discovery Pattern Again

You can choose to manually activate a discovery pattern again by redispatching one or more selected triggered CIs. The discovery pattern runs using only the redispatched CIs.


### To redispach a triggered CI:

- 1 Select one or more required CIs in the Triggered CIs table.
- 2 Right-click and select **Redispach**. The discovery pattern runs again using the triggered CIs you selected.

### Removing the Error Status of a Triggered CI

You can remove the error status of one or more triggered CIs in the Triggered CIs pane.

#### To remove the error status of one or more triggered CIs:

- 1 In the Triggered CI pane, select the triggered CI (s) whose error status you want to remove. You can use multiple selections.
- 2  Right-click or click the **Handle errors** button and select **Acknowledge error**. The status of the selected CI(s) changes to **Active**.

---


**Note:** To acknowledge the errors of all the CIs in the Triggered CIs pane, select all the CIs, right-click and select **Acknowledge error** or click the **Handle errors** button and select **Acknowledge all CIs**. The status of the selected CIs changes to **Active**.

---

### Showing Error Details

Mercury Business Availability Center allows you to view the details of the errors that appear for the triggered CIs.

#### To view the details of the triggered CI:

- 1 In the Triggered CI pane, select the required trigger CI.
- 2  Click the **Handle errors** button.
- 3 Select **Show Error Details** to open the Error dialog box.

---

**Note:** You can also double-click the required trigger CI to open the Error dialog box.

---

### **Sorting and Customizing the Triggered CI Table**

For information on how to sort and customize the Triggered CI table, see “Sorting and Customizing Tables” on page 44.

### **Maximizing and Restoring the Triggered CI Table**

For information of how to maximize and then restore the Triggered CI table to its previous size, see “Maximizing and Restoring the Statistics Table” on page 46.

### **Updating the Statistics Table for the Selected Discovery Pattern**

The discovery pattern results in the **Statistics** table are not automatically updated.

**To update the Statistics table:**



Click the **Refresh Statistics** button to the left of the **Statistics** table.

### **Resetting the Statistics Table for the Selected Discovery Pattern**

You can delete all the statistics from the **Statistics** table and restart the counting from zero.

**To reset the Statistics table:**



Click the **Reset Statistics** button to the left of the **Statistics** table.

### **Sorting and Customizing the Statistic Table**

For information on how to sort and customize the Statistics table, see “Sorting and Customizing Tables” on page 44.

## Maximizing and Restoring the Statistic Table

For information of how to maximize and then restore the Statistics table to its previous size, see “Maximizing and Restoring the Statistics Table” on page 46.

## Showing CI Instances

You can display all of the CI instances created by the discovery pattern in a table.

**To display all of the CI instances created by the discovery pattern in a table:**



- 1 Click the **View Instances** button to the left of the **Statistics** table to open the CIs discovered by pattern window.

The list of nodes are divided into pages. The number at the bottom of the screen indicates which page is currently being displayed. For example, 2/4 means that it is the second out of four pages.

- 2 To view other pages, use the left and right arrows.
- 3 To determine the number of node instances that appear on a page, do the following:



- Click the **Set bulk size** button to open the Set bulk size dialog box.
- Use the up and down arrows or type the number of node instances you want to appear on a page and click **OK**.



- 4 To update the table, click the **Refresh** button.
- 5 Click **OK** to save the settings you have defined.

## Creating a Discovery Pattern

You can create a discovery pattern. The new discovery pattern you create is based on an existing pattern.

**To create a discovery pattern:**

- 1 In the Discovery Modules pane, right-click the pattern on which you want to base your new pattern and select **Save as** to open the Choose new name for discovery pattern dialog box.
- 2 Enter a new name for the pattern.

- 3 Click **OK** to create the new pattern. The new pattern appears in the Discovery Module pane.
- 4 To edit the pattern, right-click it and select **Edit Pattern**. For details on how to edit the pattern, see “Editing a Pattern” on page 78.

### Deleting a Discovery Pattern from a Module

This section describes how to delete a discovery pattern from a module.

#### To remove a discovery pattern from a module:

In the Discovery Modules pane, right-click the module you want to delete and select **Delete pattern**.

### About Problem Indicators



Problem Indicators appear to the left of a module in the Modules pane if one or more of its discovery patterns are experiencing a problem that could affect the discovery process, such as a protocol connection failure.



The **Refresh All** button at bottom of the Discovery Modules pane updates all the data within the Discovery Manager dialog box, such as the list of Discovery Probes, discovery patterns and protocol information.

If the problem for which the Problem Indicators appears is due to a problem that is resolved by clicking the **Refresh All** button, the Problem Indicator disappears.



If clicking the **Refresh All** button does not solve the problem, click the **Show Problem Details** icon in the Triggered CIs pane to view either a solution to the problem or show details regarding the specific problem.

## Discovery Process Configuration Files

Mercury Business Availability Center configuration files define default parameter values that are used for the discovery process. For example, the **portNumberToPortName.xml** file contains known port numbers, names and types that are used for TCP discovery. You can view and edit existing configuration files as well as create new ones. You can also define which text editor you want to use to edit the configuration files.

This section contains the following topics:

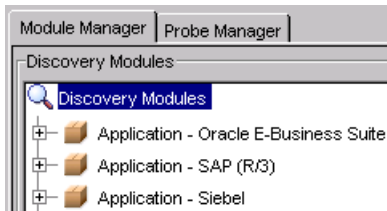
- Viewing and Editing Configuration Files – for details, see page 68
- Creating Configuration Files – for details, see page 69
- Deleting Configuration Files – for details, see page 70

### Viewing and Editing Configuration Files

This section describes how to view and edit a configuration file.

**To view and edit a configuration file:**

- 1** Click the **Module Manager** tab.
- 2** In the Discovery Modules pane, select the Discovery Modules root.



The Configuration Files pane is displayed.



- 3** Double-click the required configuration file or select it and click the **Edit Configuration File** button to open the Script Editor.
- 4** Make the required changes.

**5** To find specific text in the Script Editor, do the following:



- In the top-left corner of the Script Editor, click the **find in text** button to open the Find dialog box.
- In the **Text to Find** section, type the text you want to find.
- In the **Direction** section, specify whether you want to do a forward or backward search.
- In the **Options** section, select **Case Sensitive** if you want the matches to be case sensitive.
- Click **Find**. If Mercury Business Availability Center finds a match, it selects the matching text.

**6** To find a line in the Script Editor, do the following:



- In the top-left corner of the Script Editor, click **go to line** to open the Go to Line dialog box.
- Type the required line number and then click **OK**. The insertion point appears to the left of the desired line.

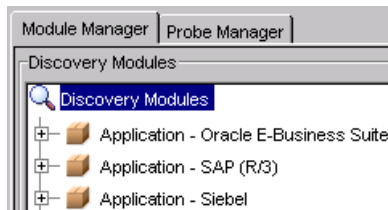
**7** Click **OK** to save the changes you have made.

## Creating Configuration Files

This section describes how to create a configuration file.

**To create a configuration file:**

- 1** Click the **Module Manager** tab.
- 2** In the Discovery Modules pane, select the Discovery Modules root.



The Configuration Files pane is displayed.



- 3** Click the **Create Configuration File** button to open the Choose new name for configuration file dialog box.
- 4** Type a name for the new configuration file and click **OK**. The new configuration file appears in the Configuration Files list with the extension **.xml**.
- 5** Double-click the configuration file to open it.
- 6** Type the required text.
- 7** Click **OK** to save your changes.

## Deleting Configuration Files

This section describes how to delete a configuration file.

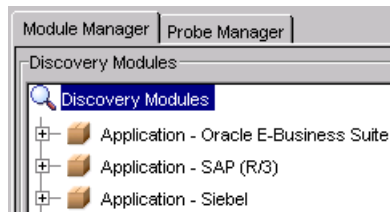
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**Note:** Only administrators with an expert knowledge of the discovery process should be allowed to delete discovery modules.

---

**To delete a configuration file:**

- 1** Click the **Module Manager** tab.
- 2** In the Discovery Modules pane, select the Discovery Modules root.



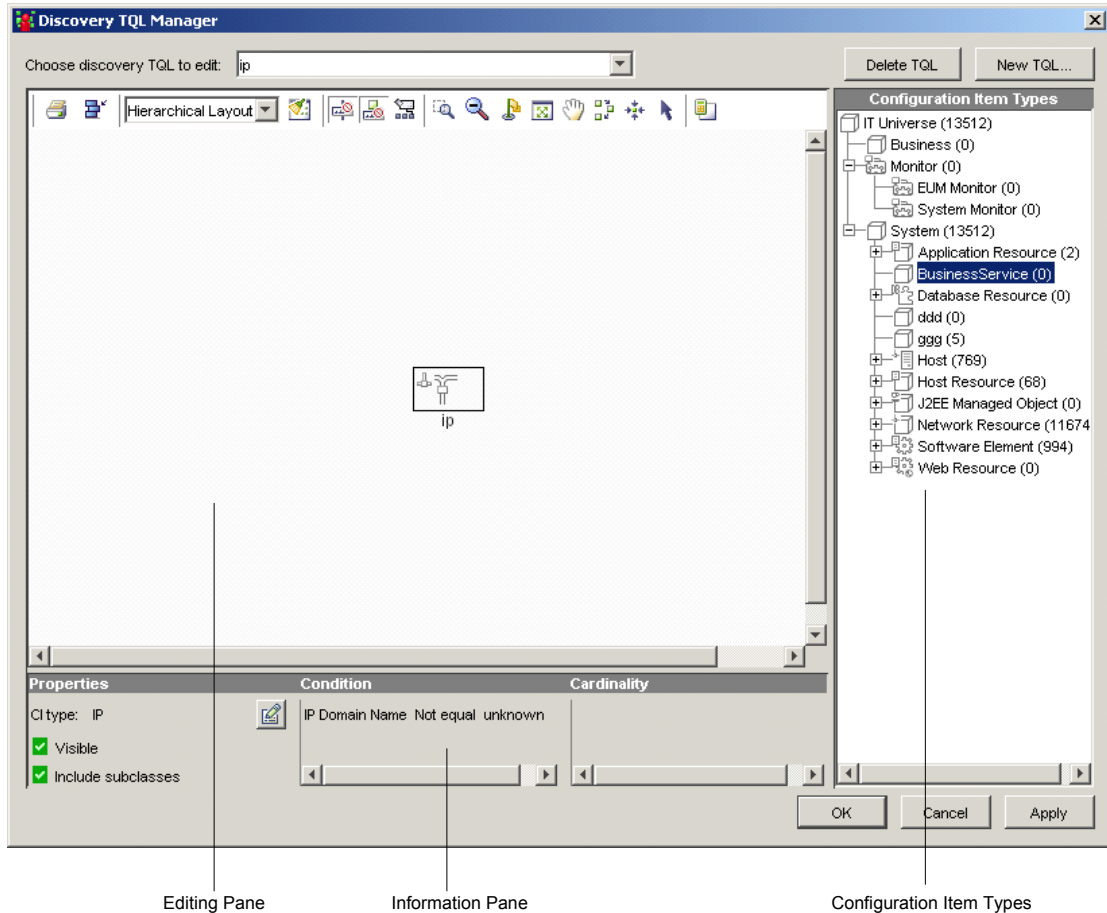
The Configuration Files pane is displayed.



- 3** Select the configuration file you want to delete and click the **Delete Configuration File** button.

## Understanding the Discovery TQL Manager

The Discovery TQL Manager allows you to define discovery TQL queries. These queries extract the information from the CMDB that is relevant to you. Once a discovery TQL query has been created, it persists in the system memory and generates updated results automatically.



The Discovery TQL Manager is divided as follows:

- **Editing Pane.** Displays the currently selected TQL query, which consists of nodes and the relationships between them. For more information about the toolbar buttons, see “Toolbar Options” in *Working with the CMDB*.

- **Configuration Item Types.** Represents the Configuration Item Type model and contains icons for each CIT, as defined by the administrator (for details, see “Assigning an Icon to a CIT” in *CI Type Manager Administration*). By clicking and dragging CITs to the topology map and then defining the relationship between them, you can define a query and save it to the database. For example, you can drag the NT and IP CIT nodes to the topology map and then define the connection between them by adding relationships. For more information, see “Adding Nodes and Relationships to Discovery TQL Queries” on page 74.
- **Information pane.** Displays the attribute conditions you defined for the selected node/relationship. For details, see “Setting TQL Node and Relationship Definitions” on page 75.

## Defining Discovery TQL Queries

You use the Discovery TQL Manager to define a new discovery TQL query. You select the nodes and relationships that are to be part of the query, and then define specific attribute conditions for each node, including the attributes of the relationships that define the connections between nodes. You can also edit or delete an existing discovery TQL.

This section has the following topics:

- “TQL Workflow” on page 73
- “Creating a Discovery TQL Query” on page 73
- “Adding Nodes and Relationships to Discovery TQL Queries” on page 74
- “Setting TQL Node and Relationship Definitions” on page 75
- “Creating a Dependency Graph” on page 76
- “Deleting a Node or Relationship” on page 76
- “Editing an Existing Discovery TQL” on page 76
- “Deleting a TQL” on page 77

## TQL Workflow

You create discovery TQL queries according to the following workflow:

- Create a new discovery TQL query. For details, see “Creating a Discovery TQL Query” on page 73.
- Add nodes and relationships to the query. For details, see “Adding Nodes and Relationships to Discovery TQL Queries” on page 74.
- Define node and relationship attribute conditions. For details, see “Setting TQL Node and Relationship Definitions” on page 75.
- Create a graph that represents additional TQL query data related to a specific CI. This step is optional. For details, see “Creating a Dependency Graph” on page 76.

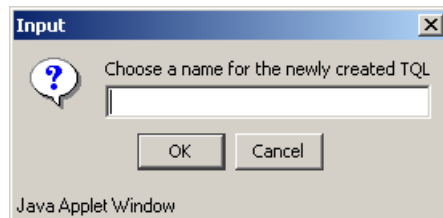
## Creating a Discovery TQL Query

This section explains how to create a discovery TQL query.

To create a discovery TQL query:



- 1 In the Trigger TQLs pane, click the **Open Discovery TQL Manager** button to open the Discovery TQL Manager.
- 2 Click the **New TQL** button to open the Input dialog box.



- 3 Type a unique name for the new TQL query and click **OK**. The new TQL name appears in the **Choose discovery TQL to edit** list.

## Adding Nodes and Relationships to Discovery TQL Queries

Once you have created the discovery TQL query, the next step is to add the nodes and relationships that define the query. The nodes represent the CITs, as defined in the CI Type Model, and the relationships represent the connections between them. Relationships are defined one at a time for each pair of nodes in the query.

For a list of the existing relationships and their definitions, see “Relationship Definitions” in *CI Type Manager Administration*.

### To add TQL nodes and relationships to a query:

- 1** From the **Choose discovery TQL to edit** list, select the TQL query to which you want to add TQL nodes and relationships.
- 2** From the tree displayed in the Configuration Item Types pane, click and drag one or more TQL nodes on to the topology map. These are the TQL nodes that are included in the query.
- 3** Select two TQL nodes by holding down **Ctrl** and clicking the TQL nodes.
- 4** Right-click and select **Add Relationship** to open the Add Relationship dialog box. The Add Relationship dialog box contains the following fields:

**Node Label.** The CI Type of the selected nodes.

**Direction.** The direction of the relationship that indicates which node is dependent on the other.

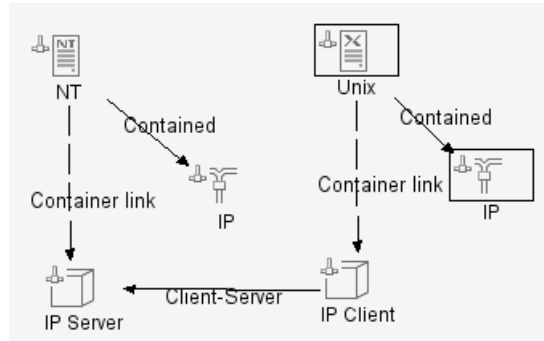
**Relationship Type.** A valid relationship that defines the connection between the two selected nodes.

**Advanced.** Select another valid relationship type to define the connection between the two selected nodes.

- 5** Select the required direction of the relationship.
- 6** If required, click **Advanced** to select a different relationship.

- 7 Click **OK**. The selected nodes are linked by the relationship you have selected.

The direction of the relationship indicates which node is dependent on the other. The following example displays two hosts, an IP server, and an IP client that are linked to one another via a client/server connection.



### Setting TQL Node and Relationship Definitions

After you have added the TQL nodes and relationships required for your query, you can define their specific attribute conditions.

- For details on how to define Discovery TQL nodes and relationships, see “Defining TQL Nodes and Relationships” in *View Manager Administration*.
- For details on how to define attribute for nodes and relationships, see “Defining Attribute Conditions for Nodes and Relationships” on page 67 in *View Manager Administration*.
- For details on how to define relationship cardinality, see “Defining Relationship Cardinality” in *View Manager Administration*.
- For details on how to filter query results, see “Filtering Query Results in the Attribute Condition Tab” in *View Manager Administration*.

## Creating a Dependency Graph

You can create a graph that represents additional TQL query data related to a specific CI. The discovery pattern searches for the results from TQL query as well as the dependency graph definitions.

- For details on how to define a dependency graph, see “Defining a Dependency Graph” in *View Manager Administration*.
- For details on how to delete a dependency graph, see “Deleting a Dependency Definition” in *View Manager Administration*.
- For details on how to edit a dependency graph, see “Editing a Dependency Definition” in *View Manager Administration*.

## Deleting a Node or Relationship

This section describes how to delete a node or relationship.

**To delete a node or relationship:**



- 1** In the Trigger TQLs pane, click the **Open Discovery TQL Manager** button to open the Discovery TQL Manager dialog box.
- 2** In the editing pane, right-click the TQL node or relationship you want to delete and select **Delete**.

## Editing an Existing Discovery TQL

This section describes how to edit an existing TQL.

**To edit an existing TQL:**



- 1** In the Trigger TQLs pane, click the **Open Discovery TQL Manager** button to open the Discovery TQL Manager dialog box.
- 2** From the **Choose Discovery TQL to edit** list, choose the TQL you want to edit.
- 3** Make the required changes.
- 4** Click **OK** to save the changes you have made.

## Deleting a TQL

This section describes how to delete a TQL.

### To delete an existing TQL:



- 1** In the Trigger TQLs pane, click the **Open Discovery TQL Manager** button to open the Discovery TQL Manager dialog box.
- 2** From the **Choose Discovery TQL to edit** list, choose the TQL you want to delete.
- 3** Click the **Delete TQL** button.

## Understanding the Pattern Editor

The Pattern Editor dialog box contains the following tabs and features:

- **Design View tab** – enables you to define the following:
  - The CITs that are discovered during the discovery process.
  - The protocols that are required to perform the discovery process. For details, see “Protocol Definitions” on page 101.
- **Pattern Parameters tab** – enables you to design and edit a discovery pattern. For details, see “Configuring a Discovery Pattern” on page 79.
- **Source View Tab** – displays the discovery pattern in XML format, which can be edited. For details, see “Editing the Discovery Pattern” on page 82.
- **Advanced Settings** – allows you to define advanced settings for your discovery pattern. For details, see “Defining Advanced Settings” on page 88.
- **Pattern Validation Indicator** – indicates whether the discovery pattern is valid or not. For details, see “Discovery Pattern Validation” on page 89.

## Editing a Pattern

You can edit a pattern in the Module Manager tab by accessing the Pattern Editor. The Pattern Editor allows you to either edit the pattern in XML format in the Source View tab or in the Pattern Parameters tab.

This section contains the following topics:

- Defining the Discovery Pattern – for details, see page 78
- Configuring a Discovery Pattern – for details, see page 79
- Editing the Discovery Pattern – for details, see page 82

### Defining the Discovery Pattern

You define a discovery pattern by specifying the CITs the pattern will discover and the protocols needed to perform the discovery.

**To define a discovery pattern:**

- 1** Right-click the pattern you want to edit in the **Module Manager** tab and click **Edit Pattern**, or click the **Edit** button in the top-right corner of the Discovery Pattern Summary pane to open the Pattern Editor.
- 2** Click the **Design View** tab.
- 3** In the **Discovery Pattern Version** box, enter the version of the discovery pattern you are using. This step is optional.
- 4** In the **Description** box, type a description of the discovery pattern.
- 5** In the **Trigger CIT** box, select the CIT you want to use as the trigger that activates the selected discovery pattern.
- 6** To define which CITs the pattern discovers, do the following:
  - In the **Discovered CITs** box, click the **Add discovered CIT** button to display the CITs in the CI Type Model pane.
  - Select the CIT or CITs you want the pattern to discover.
  - Click **OK** to save the changes you have made.
  - To delete an existing CIT from the **Discovered CITs** box, select the CIT you want to delete and click the **Remove discovered CIT** button.



- 7** To define which protocols the pattern requires for the discovery task, do the following:



- In the **Required Discovery Protocols** box, click the **Add required protocol** button to open the Add Required Protocol dialog box.
- From the **Choose Protocol Type** list, select the required protocol.
- Click **OK** to save the changes you have made.



- To delete an existing protocol from the **Required Discovery Protocols** box, select the protocol you want to delete and click the **Remove required protocol** button.

- 8** In the **Discovery Scheduler** section, you can schedule a discovery pattern to run on a periodic basis. Select the **Invoke on New Triggered CIs immediately** check box to run the discovery pattern as soon as the triggered CI reaches the Discovery Probe.

For details on how to schedule a discovery pattern to run on a periodic basis, see “Scheduling a Discovery Pattern to Run on a Periodic Basis” on page 83.

## Configuring a Discovery Pattern

This section describes how to configure parameters for a discovery pattern.

**To configure a discovery pattern:**

- 1** Right-click the pattern you want to configure in the **Module Manager** tab and click **Edit Pattern**, or click the **Edit** button in the top-right corner of the Discovery Pattern Summary pane.
- 2** Click the **Pattern Parameters** tab.
- 3** In the **Discovery Pattern Parameters** section, define the following parameter values:
  - **Parameter name.** The name of the parameter.
  - **Value.** The value you want to assign to the attribute.
  - **Description.** Description of the parameter (optional).

---

**Note:** Each row represents the definitions for one parameter.

---



- To define another pattern parameter, click the **Add Parameter** button. Another row of parameter attribute definitions appears. Configure the parameters according to the list above.



- To delete a pattern parameter, select the parameter you want to delete and click the **Remove Parameter** button.

- 4** In the **Triggered CI Data** section, define the information that is needed to perform a discovery task on a specific CI. That information is passed to the CI queried in the discovery task.

To configure the triggered CI, do the following:

- Define the triggered CI's attributes according to the following table:

Attribute	Description
Attribute name	The name of the attribute.
Value	<p>The attribute value. Variables are written using the following syntax:</p> <pre><code>\${VARIABLE_NAME.attributeName}</code></pre> <p>where <b>&lt;VARIABLE_NAME&gt;</b> can either be one of three predefined variables:</p> <ul style="list-style-type: none"> <li>➤ <b>Source</b> – Refers to the CI that functions as the task's trigger.</li> <li>➤ <b>Host</b> – Host in which the triggered CI is contained.</li> <li>➤ <b>Parameters</b> – This variable refers to the parameter defined in the <b>Parameter</b> section as described above.</li> </ul> <p>or a variable that you have created (see “Pattern Parameters tab – enables you to design and edit a discovery pattern. For details, see “Configuring a Discovery Pattern” on page 79.” on page 77).</p> <p>For example:</p> <pre><code>\${SOURCE.network_netaddr}</code></pre> <p>indicates that the triggered CI is a network.</p>
Encrypted	Select this check box if the field is defined as a Password type in the CMDB.



- To define another attribute, click the **Add Triggered CI Data** button, and modify the attribute according to the table above.






- To delete an existing attribute, select the attribute you want to delete and click the **Remove Triggered CI Data** button.

## Editing the Discovery Pattern

The **Source View** tab displays the discovery pattern in XML format, which can be edited.

**To edit the discovery pattern in the Source View tab:**

- 1** Right-click the pattern you want to edit in the **Module Manager** tab and click **Edit Pattern**, or double-click the pattern to open the Pattern Editor.
- 2** Click the **Source View** tab.
- 3** Make the required changes.
-  **4** To find specific text in the Script Editor, click the **find in text** button. For details, see “Viewing and Editing Configuration Files” on page 68.
-  **5** To find a line in the Script Editor, click the **find in text** button. For details, see “Viewing and Editing Configuration Files” on page 68.
- 6** Click **Save** to save the changes you have made.
- 7** The **Discovery Scripts** pane at the bottom contains a list of Jython scripts used by the discovery patterns. Jython is a Java implementation of the Python language, allowing python code to access Java classes. The Jython scripts that appear in bold are the scripts that the currently selected pattern is using. To edit the Jython scripts, do the following:
  - Select the Jython script you want to edit.
  -  ➤ Click the **Edit Script** button to open the Script Editor window.
  - To find specific text, find a specific line, see “Viewing and Editing Configuration Files” on page 68.
  - Edit the script as required.
  - Click **OK** to save the changes you have made.

## Scheduling a Discovery Pattern to Run on a Periodic Basis

This section explains how to set the schedule for activating a discovery pattern. It has the following topics:

- Setting the Date for Starting and Stopping a Discovery Pattern – for details, see page 83
- Running a Discovery Pattern on a Periodic Basis – for details, see page 84
- Running a Discovery Pattern at Set Time Intervals – for details, see page 85
- Running a Discovery Pattern on a Daily Basis – for details, see page 85
- Running a Discovery Pattern on a Weekly Basis – for details, see page 86
- Running a Discovery Pattern on a Monthly Basis – for details, see page 86

### Setting the Date for Starting and Stopping a Discovery Pattern

This section describes how to set the date for starting and stopping a discovery pattern.

**To set the date for starting and stopping a discovery pattern:**

- 1** In the **Module Manager** tab, right-click the pattern or patterns you want to run on a periodic basis and click **Edit Pattern**, or click the **Edit** button in the top-right corner of the Discovery Pattern Summary pane to open the Pattern Editor.

---

**Note:** You can set the date for more than one pattern at a time by holding the CTRL key down to make multiple time selections.

---

- 2** Click the **Design View** tab.
- 3** In the **Discovery Scheduler** section, click **Edit Scheduler** to open the Schedule dialog box.
- 4** To set the date for activating the discovery pattern, click the down button in the **Start on** box to display a calendar.
- 5** Use the diagonal arrow buttons to choose the month and year, and then click the required day.

- 6 Click anywhere outside the calendar to close it.
- 7 To delete the date you entered in the **Start on** box, click **Reset**.

### Running a Discovery Pattern on a Periodic Basis

This section describes how to run a discovery pattern on a periodic basis.

**To run a discovery pattern on a periodic basis:**

- 1 Right-click the pattern you want to run on a periodic basis in the **Module Manager** tab and click **Edit Pattern**, or click the **Edit** button in the top-right corner of the Discovery Pattern Summary pane to open the Pattern Editor.
- 2 Click the **Design View** tab.
- 3 In the **Discovery Scheduler** section, click **Edit Scheduler** to open the Schedule dialog box.
- 4 Select one of the following options:
  - **Interval.** Activates the discovery pattern at a predefined time interval. For details, see “Running a Discovery Pattern at Set Time Intervals” on page 85.
  - **Daily.** Activates the discovery pattern on a daily basis. For details, see “Running a Discovery Pattern on a Daily Basis” on page 85.
  - **Weekly.** Activates the discovery pattern on a weekly basis. For details, see “Running a Discovery Pattern on a Weekly Basis” on page 86.
  - **Monthly.** Activates the discovery pattern on a monthly basis. For details, see “Running a Discovery Pattern on a Monthly Basis” on page 86.
- 5 Click **OK** to save the settings you have defined. The discovery schedule you have defined appears in the **Discovery Scheduler** section.

## Running a Discovery Pattern at Set Time Intervals

This section describes how to run a discovery pattern at a predefined time interval.

### To run a discovery pattern at a predefined time interval:

- 1** Select **Interval** in the Discovery Scheduler dialog box (see step 4 in “Running a Discovery Pattern on a Periodic Basis” on page 84), and then select the date on which you want to activate the pattern. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 2** In the **Repeat Every** boxes, do the following:
  - Type or select a value for the interval between successive runs.
  - Choose the required unit of time measurement (**seconds**, **minutes**, **hours**).
- 3** Choose the time and date for the task to end (for details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83).
- 4** Click **OK** to save the settings you have defined.

## Running a Discovery Pattern on a Daily Basis

This section describes how to run a discovery pattern on a daily basis.

### To run a discovery pattern on a daily basis:

- 1** Select **Daily** in the Discovery Scheduler dialog box (see step 4 in “Running a Discovery Pattern on a Periodic Basis” on page 84), and then select the date on which you want to activate the pattern. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 2** From the **Every day at hour** list, select the required time or times.

---

**Note:** You can hold the CTRL key down to make multiple time selections.

---

- 3 In the **Discovery Time Limitations** section, choose the date and time you want the task to stop running. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 4 Click **OK** to save the settings you have defined.

### Running a Discovery Pattern on a Weekly Basis

This section describes how to run a discovery pattern on a weekly basis.

**To run a discovery pattern on a weekly basis:**

- 1 Select **Weekly** in the Discovery Scheduler dialog box (see step 4 in “Running a Discovery Pattern on a Periodic Basis” on page 84), and then select the date on which you want to activate the pattern. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 2 From the **Start hour** list, select the hour or hours at which you want the task to run.

---

**Note:** You can hold the CTRL key down to make multiple time selections.

---

- 3 In the **Days of week** section, select the day or days of the week on which you want the task to run.
- 4 In the **Discovery Time Limitations** section, choose the date and time you want the task to stop running. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 5 Click **OK** to save the settings you have defined.

### Running a Discovery Pattern on a Monthly Basis

This section describes how to run a discovery pattern on a monthly basis.

**To run a discovery pattern on a monthly basis:**

- 1 Select **Monthly** in the Discovery Scheduler dialog box (see step 4 in “Running a Discovery Pattern on a Periodic Basis” on page 84), and then select the date on which you want to activate the pattern. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.

- 2 From the **Start hour** list, select the hour or hours at which you want the task to run.

---

**Note:** You can hold the CTRL key down to make multiple time selections.

---



- 3 In the **Days of month** box, click the **Add the required day of the month** button to specify the day or days of the month on which you want the pattern to run. The Add Required Day dialog box opens.
- 4 From the **Choose a day** list, select required day in the month and click **OK**. The day you selected appears in the **Days of the month** box. You can repeat this step to select as many days as you want.



- 5 To delete a day from the **Days of month** box, select the required day and click the **Delete the required day of the month** button.
- 6 In the **Discovery Time Limitations** section, choose the date and time you want the task to stop running. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
- 7 Click **OK** to save the settings you have defined.
- 8 To choose when you want the discovery pattern to stop, do one of the following:
  - If you do not want to specify an ending date, select **No time limitations**.
  - To set the the pattern to stop after it has been activated a specific number of times, select **End after** and then enter or choose the required number from the **recurrences** list (maximum is 1000).
  - To choose the date and time for when you want the discovery task to stop, select **End by**, and do the following:
    - Click the down button to display a calendar.
    - In the **Date** and **Time** tabs, use the diagonal arrow buttons to choose the date and time.
    - Click anywhere outside the calendar to close it.

## Defining Advanced Settings

You can define advanced settings for your discovery pattern.

**To define advanced settings for the discovery pattern:**

- 1** In the Discovery Modules pane, right-click the required pattern and select **Edit Pattern** to open the Pattern Editor.
- 2** Click the **Design View** tab.
- 3** Click **Advanced Settings** to open the Advanced Settings dialog box.
- 4** In the Task Management section, do the following:
  - Select **Merge** if you want a task to include several Triggered CIs rather than only one triggered CI per task. The default is selected.
  - Select **Enforce Dispatch** if you want to invoke a task for CIs whose Discovery Probe is not included in the discovery scope you define in the Probe Manager tab (see “Adding a Discovery Probe” on page 46). The default is not selected.
  - If a CI that acted as a trigger for a discovery pattern was deleted from the database, select **Deletable** if you want the discovery task it activated to be deleted as well. The default is not selected.
- 5** By default, the Discovery Manager chooses the Discovery Probe for the triggered CI automatically according to the CI's related host. After obtaining the CI's related host, the system chooses one of the host's IPs and chooses the Discovery Probe according to the probe's network scope definitions (see “Adding a Discovery Probe” on page 46).

This might fail in the following situations:

- A triggered CI does not have a related host (such as the **network CIT**).
- A triggered CI's host has multiple IPs, each belonging to different Discovery Probe.

To resolve these issues, you can specify which Discovery Probe to use with the discovery pattern by doing the following:

- In the Probe Selection section, select **Override default probe selection**.
- In the Probe box, enter the Discovery Probe you want to use for the discovery task.

## 6 In the Result Grouping section:

- Select **Group Results** if you want to group discovery results in the Discovery Probe before being sent to the Mercury Business Availability Center server.
  - In the Grouping Interval (Seconds) box, type the value that indicates how long discovery results are stored in the Discovery Probe before being transferred to the Mercury Business Availability Center server.
  - In the Group Max CIs box, specify the number of CIs that should accumulate in the Discovery Probe before being transferred to the Mercury Business Availability Center server.

---

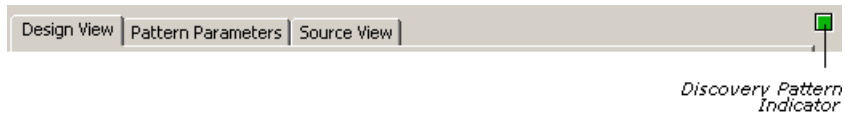
**Note:** If you entered a value in both fields, Mercury Business Availability Center applies whichever occurs first.

---

- If you do not select Group Results, all discovery results are immediately sent to the Mercury Business Availability Center server.
- Click **OK** to save the changes you have made.

## Discovery Pattern Validation

The Discovery Pattern Indicator indicates whether the selected discovery pattern is valid or not. It can be either green or red.






- Green indicates that the pattern is valid.
- Red indicates that the pattern is not valid. To display a description of the problem, move the pointer over the **Discovery Pattern** Indicator.

## Activating a Discovery Pattern

You can choose to activate either all the discovery patterns in a discovery module or some of them.

**To activate discovery patterns in a module:**

- 1 Select **Admin > CMDB** and select the **Discovery Manager** tab.
  -  2 In the Discovery Modules area, click the **Expand** button of the module whose discovery pattern you want to activate.
  -  3 Right-click the module you want to activate and click the **Activate** button, or select the required module and click the **Activate** button in the bottom-right corner of the Discovery Modules pane.
-  A pattern that is activated, as seen here, is marked with a green dot.



---

**Note:** If only some of the module's patterns are activated, the module is marked with a single, green dot. If all patterns of the module are activated, the module is marked with three green dots.



---



## Deactivating a Discovery Pattern

This section describes how to deactivate a discovery pattern that is being used in the discovery process.

**To deactivate a discovery pattern that is being used in the discovery process:**

- 1 Select **Admin > CMDB** and click the **Discovery Manager** tab.
-  2 Click the **Expand** button of the module whose discovery pattern you want to deactivate.
-  3 In the **Discovery Modules** area, right-click the pattern you want to deactivate and click the **Deactivate** button, or select the required pattern and click the **Deactivate** button in the bottom-right corner of the Discovery Modules pane.

## Understanding the Discovery Manager Map View Tab

The Mercury Business Availability Center discovery process is run by activating discovery patterns.

Each pattern contains a description of the CITs and relationships that are created with each discovery pattern. The definitions of the CITs and relationships are taken from the CI Type Manager (for details, see *CI Type Manager Administration*) which contains the definitions of all CITs and relationships. When the discovery module is activated, it discovers CITs and relationships of the types that are described in each pattern, and places them in the CMDB.

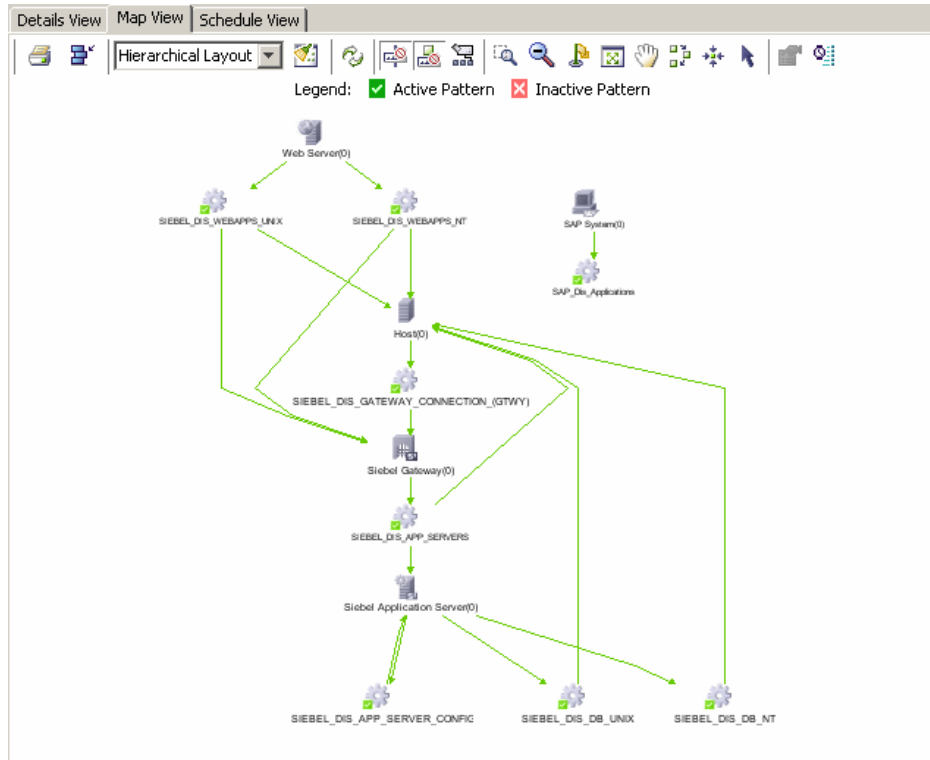
The discovered CIs act as triggers that activate another discovery pattern. Every time a discovery pattern is activated, it discovers more CIs, which in turn are used as triggers for other discovery patterns.

The Map View tab displays a visual representation of the real-time progress of the discovery process. It displays which CIs triggered which discovery pattern (trigger or input CIs), as well as which CIs that were discovered as a result of the activated discovery pattern (triggered or output CIs).

The Map View tab also displays other information, such as how many instances of a specific CI are contained in the CMDB and how many instances were created by a specific discovery pattern.

### To display the Map View:

Click the **Module Manager** tab and then click the **Map View** tab.



Map View displays the real-time progress of a discovery pattern. Selecting a discovery pattern either in the Discovery Modules pane or the Map View, simultaneously selects that pattern in both places.

This section includes the following topics:

- Using the Map View Tab Toolbar – for details, see page 93
- Displaying Data in the Discovery Map View – for details, see page 93
- Understanding Items in the Discovery Map View – for details, see page 96
- Understanding Statistics in the Map View – for details, see page 96
- Understanding Map View Tooltips – for details, see page 98

- Using the Toolbar Options – for details, see page 98
- Printing the Contents of the Map View Tab – for details, see page 98
- Understanding Layout Options – for details, see page 98

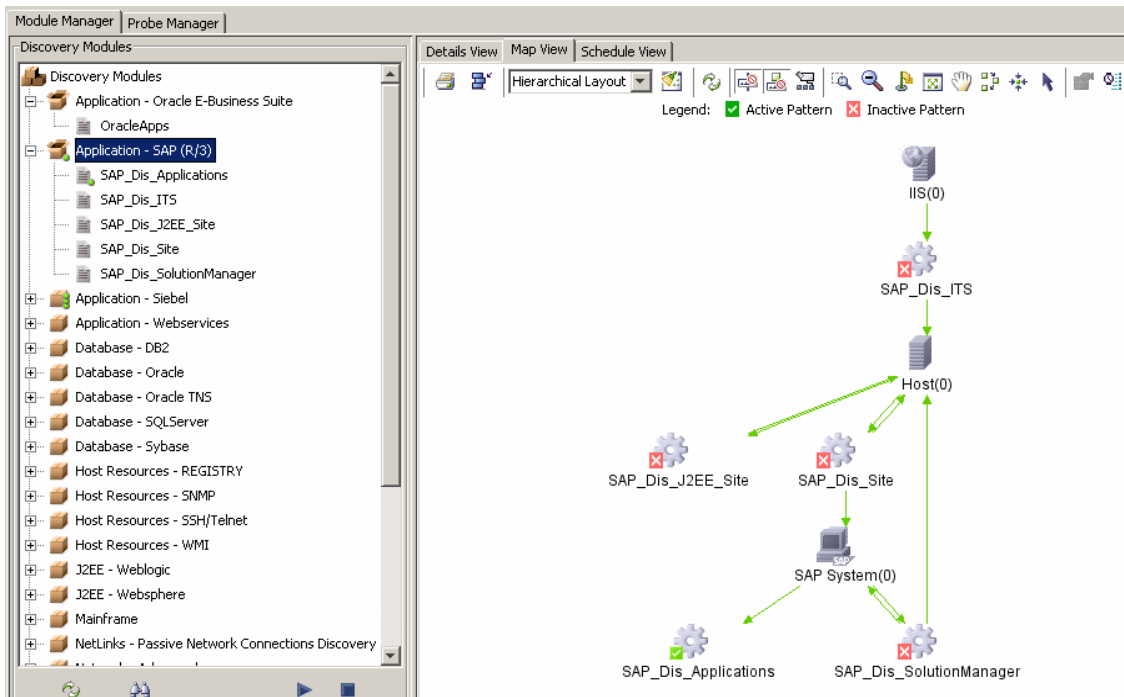
## Using the Map View Tab Toolbar

For a description of the toolbar options in the Map View tab, see “Toolbar Options” in *Working with the CMDB*.

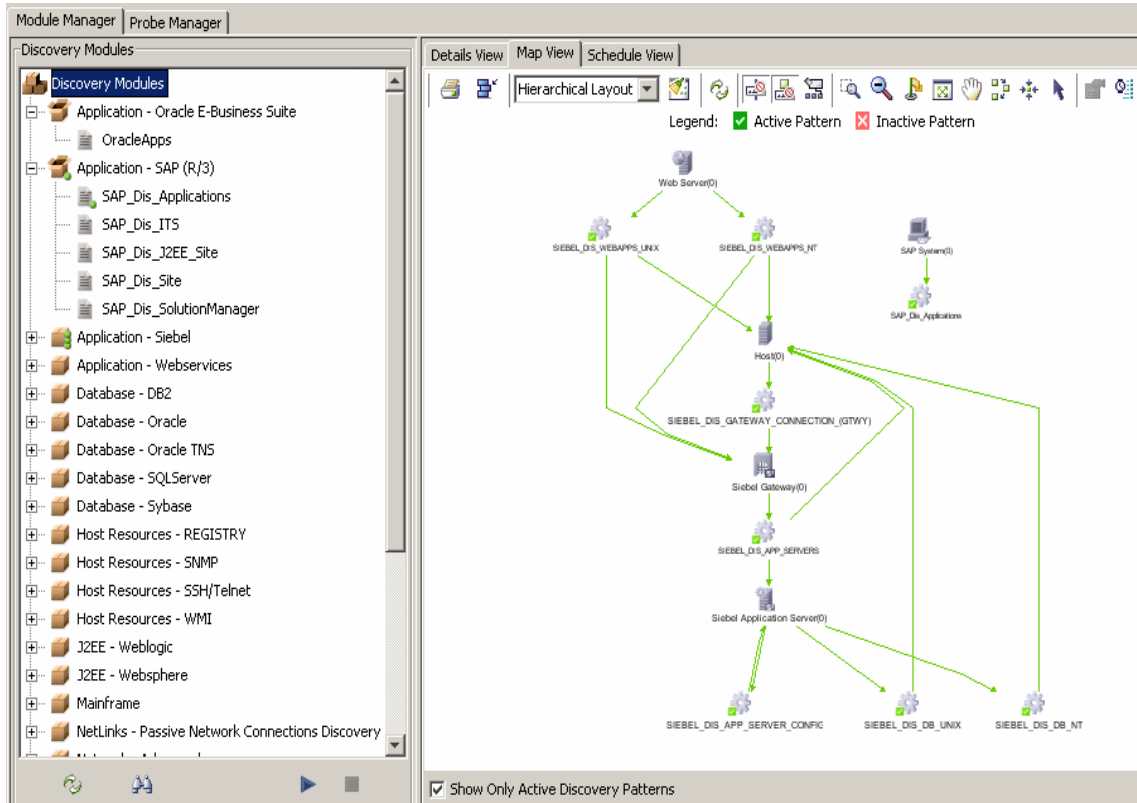
## Displaying Data in the Discovery Map View

The Discovery Map View displays data according to the selection in the Discovery Modules pane.

- When you select a module in the Discovery Modules pane, the map view displays the module's active and inactive patterns, as displayed by the following illustration:

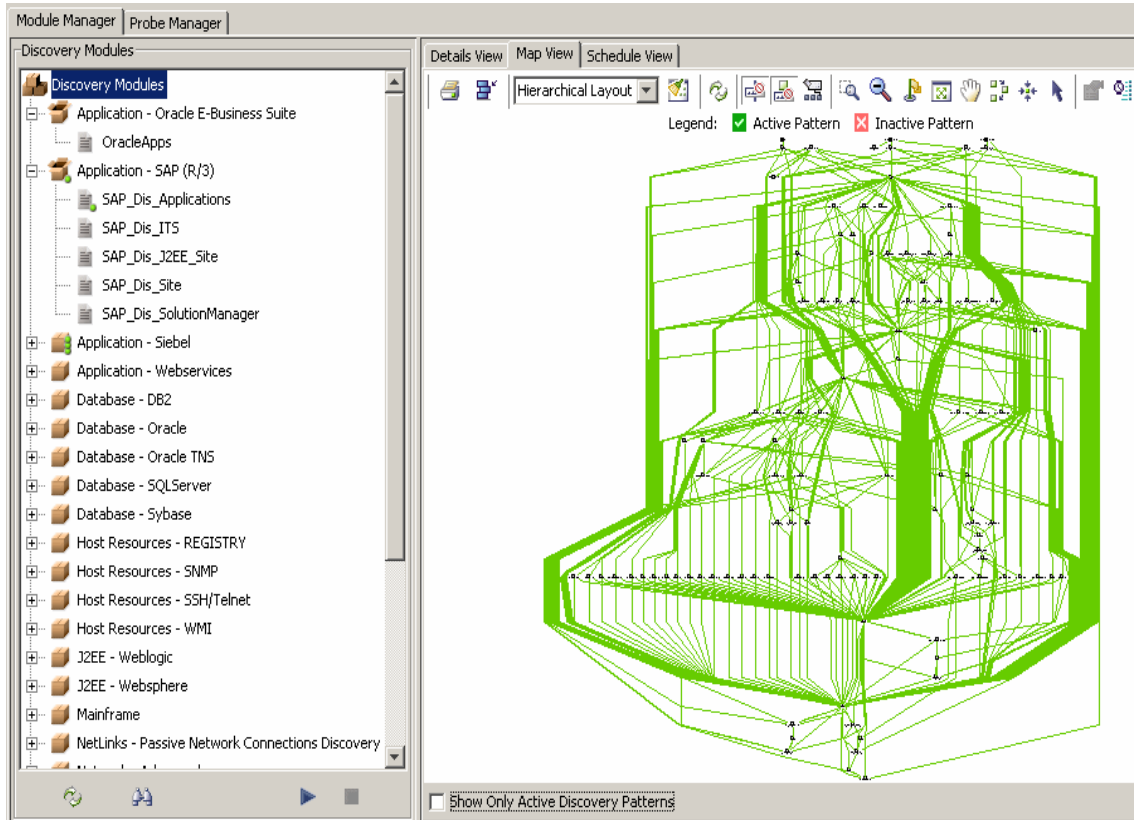


- ▶ When you select the Discovery Modules root at the top of the Modules pane, and select the **Show only active discovery patterns** check box at the bottom, the map view displays only the active discovery patterns from the modules and the input/output CITs, as seen in the illustration below:





**Note:** If there are no active patterns, the Map View tab is empty.

- When you select the Discovery Modules root at the top of the Modules pane, and clear the **Show only active discovery patterns** check box at the bottom, the map view displays all discovery patterns from the modules and their interdependencies, as seen in the illustration below:



## Understanding Items in the Discovery Map View

The following table describes the items in the Map View and what they represent:

Item	Description
	An inactive pattern.
	An active pattern.

---

**Note:** You can edit a discovery pattern by double-clicking it to open the Pattern Editor. For details, see “Understanding the Pattern Editor” on page 77.

---

## Understanding Statistics in the Map View

The Map View tab displays the following statistics on discovery results for the selected pattern:

- The number of instances of a specific CI in the CMDB.

---

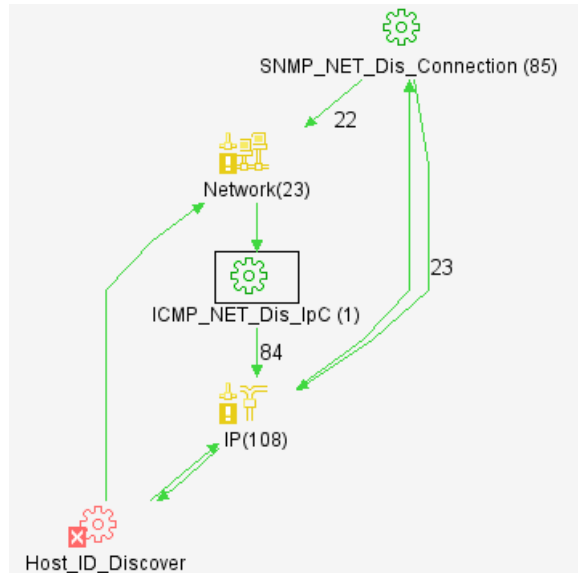
**Note:** You can also find the same statistical number in the Created column in the Statistics table in the Details View pane. For details, see “Using Advanced Options in the Details View Pane” on page 53.

---

- The number of CI instances that were created by a specific pattern.
- The number of triggered CIs currently being used by a discovery pattern to run the discovery pattern.

**Note:** You can also find the same statistical number at the bottom right-hand corner of the Triggered CI pane. For example 25 out of 90 means that 90 triggered CIs are being used for the discovery pattern.

The following example displays the following statistics:



- The discovery pattern **SNMP\_NET\_Dis\_Connection** created 23 instances of **IP** CIs.
- The discovery pattern **SNMP\_NET\_Dis\_Connection** created 22 instances of **Network** CIs.
- There are 23 instances of **Network** CIs in the CMDB.
- There are 108 instances of **IP** CIs in the CMDB.
- The discovery pattern **ICMP\_NET\_Dis\_IpC** is using one triggered CI to run the discovery pattern.
- The discovery pattern **SNMP\_NET\_Dis\_Connection** is using 85 triggered CIs to run the discovery pattern.

---

**Note:** To update the statistics in the Map View, click the **Refresh** button (for details, see “Using the Map View Tab Toolbar” on page 93).

---

## **Understanding Map View Tooltips**

When the pointer is moved over either a CI or discovery pattern, a tooltip displays the description.

## **Using the Toolbar Options**

For a description of each toolbar option in the Map View tab, see “Toolbar Options” in *Working with the CMDB*.

## **Printing the Contents of the Map View Tab**

You can print the contents of the Map View tab. The result is similar to a screen capture. Therefore, it is recommended to arrange the contents of the map view according to your requirements before printing. For details, see “Printing the Topology Map” in *Working with the CMDB*.

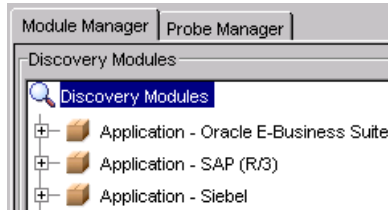
## **Understanding Layout Options**

For a description of how you can display the contents of the topology map in the Map View tab using different layout options, see “Understanding Layout Options” in *Working with the CMDB*.

## Understanding the Schedule View Tab

The Schedule View tab displays all discovery pattern scheduling information in one table.

- When you select the Discovery Modules root in the Discovery Modules pane (see the picture below), the Schedule View tab displays scheduling information for only the active patterns.



- When you select a module or a pattern in a module, the Schedule View tab displays scheduling information for the patterns in the selected module.

**To view the Schedule View tab:**

- 1 Click the **Module Manager** tab.
- 2 Click the **Schedule View** tab to view the **Schedule View** table.

Details View   Map View   Schedule View			
Pattern name	Schedule info	Trigger Tqls	Invoke Immediately
SAP_Dis_J2EE_Site	Every 1 Days	sap_jmx_ports	✓
SAP_Dis_SolutionManager	Every 1 Days	sapsystem_connected	✓
SAP_Dis_Site	Every 1 Days	sap_ports	✓
SAP_Dis_Applications	Every 1 Days	sapsystem_connected	✓
SAP_Dis_ITS	Every 1 Days	sap_its_process	✓

The **Schedule View** table is divided as follows:

Field	Description
<b>Pattern Name</b>	The name of the discovery pattern.
<b>Schedule info</b>	The scheduling information of the discovery pattern as defined in Discovery Scheduler. For details, see “Setting the Date for Starting and Stopping a Discovery Pattern” on page 83.
<b>Trigger Tqls</b>	The name of the TQL that activated the discovery pattern.
<b>Invoke Immediately</b>	<p>The options for this field are as follows:</p> <ul style="list-style-type: none"> <li>➤ If this column contains a check, the discovery pattern runs as soon as the triggered CI reaches the Discovery Probe. In this case, the <b>Invoke on new triggered CIs immediately</b> check box is selected in the Design View tab of the Pattern Editor. For details, see “Defining the Discovery Pattern” on page 78.</li> <li>➤ If this column does not contain a check, the pattern runs according to the patterns schedule as defined in the Pattern Editor. For details, see “Defining the Discovery Pattern” on page 78.</li> </ul>

## Protocol Definitions

This section contains the definitions that are needed for Mercury Business Availability Center protocols.

Protocol	Parameter	Description
snmpprotocol	Community	The password used for authentication
	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the SNMP agent
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number on which the SNMP agent listens
	Retry	The number of times the Discovery Probe tries to connect to the SNMP agent. If the number is exceeded, the Discovery Probe stops attempting to make the connection.

Protocol	Parameter	Description
sqlpprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the database
	Database Name	The database name
	Database SID (Oracle, DB2)	The database SID
	Database Type	The database type, such as Oracle and Microsoft SQL Server
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number on which the database listens
	User Name	The user name
	User Password	The user password
wmiprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the WMI agent
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	User Name	The user name
	User Password	The user password
	WMI Domain	The Microsoft domain name

Protocol	Parameter	Description
weblogicprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the WebLogic application server
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password
jbossprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the JBoss application server
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password
telnetprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the remote machine
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password

Protocol	Parameter	Description
ftpprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the FTP server
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password
sshprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the remote machine
	Key Path	Location of the authentication key.
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password

Protocol	Parameter	Description
siebelgtwyprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the Siebel gateway
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	Siebel Site Name	The name of the Siebel site
	srvrmgrpath	The directory in which the <b>srvr.exe</b> file is located
	User Name	The user name
	User Password	The user password
sapprotocol	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the SAP server.
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	Sap Client	An independent unit within the R/3 system, which is identified by three-digit number.
	Sap Router String	A string that contains the host and port of the SAP router
	Sap System Number	An unique identifier of SAP system
	User Name	The user name
	User Password	The user password

Protocol	Parameter	Description
oracleprotocol	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	User Name	The user name
	User Password	The user password
ibmhttpserverprotocol	Admin Console Port	The port on which the admin console is listening
	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the IBM HTTP server
	Install Root Dir	Directory in which the IBM HTTP server is located
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	User Name	The user name
	User Password	The user password

Protocol	Parameter	Description
websphere	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the WebSphere server
	Network Address	The discovered IP net address or the net address range
	Note	A textual message
	Port Number	The port number
	Trust Store	The location of SSL trust store file
	Trust Store Password	The SSL trust store password
	User Name	The user name
	User Password	The user password
ntadminprotocol (pstools/xcmd)	The following protocols enable you to run commands on remote Windows workstations. In each command, a new connection should be established.	
	Connection Timeout	Timeout in milliseconds after which the Discovery Probe stops trying to connect to the remote machine
	Network Address	The discovered IP net address or the net address range
	User Name	The user name
	User Password	The user password



# Part V

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## Appendixes



# A

## Optional Variables in Discovery Patterns

To ensure that a discovery pattern does not fail if a specific variable is missing, add the attribute **optional="true"** to a variable tag in a discovery pattern.

If the **optional="true"** attribute is added, every reference to the missing variable is replaced by either:

- An empty string " " as a value
- A default value if it is provided for the attribute

Use the following syntax to define the default value. The default value appears in bold:

```
<destinationData name="retry">${SNMP.snmp_retry:5}
```

In the following example, the **optional="true"** attribute was added to the variable tag and \$SNMP was not found. The retry value is replaced by **5** since the value that is put after the : (colon) becomes the default value if the attribute does not exist.

```
<variables>
  <variable name="SNMP" getObjectBy="condition" optional="true">
    <condition>
      <object id="-1" class="snmp" subsystem="6" container_name="host_applicationlist">
        <attribute name="snmp_port" type="java.lang.Integer" list="false"
operator="EQ">161</attribute>
        <attribute name="root_container" type="host" list="false" operator="EQ">
          <object id="${HOST.root_id}" class="host" subsystem="6" />
        </attribute>
      </object>
    </condition>
  </variable>
</variables>
```

---

**Note:** Discovery patterns that do not use optional variables fail if the specified variables are not found.

---

# B

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## Discovery Patterns

This chapter contains details on the following discovery patterns.

This chapter describes:	On page:
Application Discovery	114
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Performance Monitor	180
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XSL Parser	190

## Application Discovery

Pattern		
_XCMD_Invoke_InstallAgent.xml	Package	Network
	Parse Method	Java
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"once
	Notes	invokes an application, not in use
IHS_Dis_Admin_Connection	Package	J2EE
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	httpcontext,
	Monitored CIs/Relationships	
	TQL	host_ihs_telnet
	Schedule	
	Notes	

Pattern		
IHS_NET_Dis_Connection	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	ibmhttpserver
	Monitored CIs/Relationships	
	TQL	host
	Schedule	
	Notes	
jboss_components.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	jmsdestination, jmsserver, ejbcomponent, webapplication, servlet, connectionpool, j2eecluster
	Monitored CIs/Relationships	
	TQL	jboss
	Schedule	1800
	Notes	

Pattern		
jboss_connection.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	jboss
	Monitored CIs/Relationships	
	TQL	host
	Schedule	Once
	Notes	
JMX_APP_DIS_WEBSPHERE.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	j2eeserver, jmsprovider, jdbcprovider, jdbcdatasource, j2eeapplication, ejbmodule, webapplication, servlet, ejbstateless, ejbstateful, ejbentity ejbmessagedriven,
	Monitored CIs/Relationships	
	TQL	websphere
	Schedule	1800
	Notes	

Pattern		
JMX_APP_DIS_WEBSPPHERE_ connection.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	websphere
	Monitored CIs/Relationships	
	TQL	host
	Schedule	Once
	Notes	
JMX_APP_Dis_WL.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	j2eeserver, jmsprovider, jdbcprovider, jdbcdatasource, j2eeapplication, ejbmodule, webapplication, servlet, ejbstateless, ejbstateful, ejbentity ejbmessagedriven,
	Monitored CIs/Relationships	
	TQL	weblogic
	Schedule	86400
	Notes	

Pattern		
JMX_APP_Dis_WL_Connection.xml	Package	J2EE
	Parse Method	Jython
	Protocol	Java
	Discovered CIs/Relationships	weblogic
	Monitored CIs/Relationships	
	TQL	host
	Schedule	86400
	Notes	
JMX_J2EE_Weblogic.xml	Package	J2EE-JSR77
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	j2eeserver, jmsprovider, jdbcprovider, jdbcdatasource, j2eeapplication, ejbmodule, webapplication, servlet, ejbstateless, ejbstateful, ejbentity ejbmessagedriven,
	Monitored CIs/Relationships	
	TQL	weblogic
	Schedule	86400
	Notes	

Pattern		
JMX_J2EE_Weblogic_Connection.xml	Package	J2EE-JSR77
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	weblogic
	Monitored CIs/Relationships	
	TQL	host
	Schedule	86400
	Notes	
JMX_J2EE_Weblogic61.xml	Package	J2EE-JSR77
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	j2eeserver, jmsprovider, jdbcprovider, jdbcdatasource, j2eeapplication, ejbmodule, webapplication, servlet, ejbstateless, ejbstateful, ejbentity ejbmessagedriven,
	Monitored CIs/Relationships	
	TQL	weblogic
	Schedule	86400
	Notes	

Pattern		
JMX_J2EE_Weblogic61_Connection.xml	Package	J2EE-JSR77
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	weblogic
	Monitored CIs/Relationships	
	TQL	host
	Schedule	86400
	Notes	
NTCMD_MQ_Topology.xml	Package	Websphere_MQ
	Parse Method	Jython
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	mqueuemanager, mqcluster, mqrepository, mqxmitq, mqueuelocal, mqueueremote, mqaliasq, mqueue, mqalias, mqchsdr, mqchsvr, mqchannel, mqchannelof, mqchrqstr, mqchclntconn, mqchclusrcvr, mqchclusdr, webspheremq
	Monitored CIs/Relationships	
	TQL	ntcmd
	Schedule	86400
	Notes	it uses mq utils

Pattern		
SAP_Dis_Site.xml	Package	SAP
	Parse Method	Jython
	Protocol	BAPI
	Discovered CIs/Relationships	sapserver, sapsite, sapservice, sapsupportpackage, sapcomponent,
	Monitored CIs/Relationships	
	TQL	host
	Schedule	
	Notes	discovers all entries in the CCMS
SIEBEL_DIS_APP_SERVERS.xml	Package	Siebel
	Parse Method	Jython
	Protocol	Siebel protocol
	Discovered CIs/Relationships	siebelappserver, siebelcompgrp, siebelcomponent, siebelgateway,
	Monitored CIs/Relationships	
	TQL	siebel_gtwy_connected
	Schedule	
	Notes	SIEBEL Discovery through srvmgr application provider by Siebel

Pattern		
SIEBEL_DIS_DB_NT.xml	Package	Siebel
	Parse Method	Jython
	Protocol	WMI
	Discovered CIs/Relationships	database, dbconnector, siebelappserver,
	Monitored CIs/Relationships	
	TQL	siebel_appserver_nt
	Schedule	
	Notes	
SIEBEL_DIS_DB_UNIX.xml	Package	Siebel
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	database, siebelappserver
	Monitored CIs/Relationships	
	TQL	siebel_appserver_unix
	Schedule	
	Notes	

Pattern		
SIEBEL_DIS_DB_UNIX_SSH.xml	Package	Siebel
	Parse Method	Jython
	Protocol	SSH
	Discovered CIs/Relationships	database, siebelappserver
	Monitored CIs/Relationships	
	TQL	siebel_appserver_unix_ssh
	Schedule	
	Notes	
SIEBEL_DIS_GATEWAY_CONNECTION_(GTWY).xml	Package	Siebel
	Parse Method	Jython
	Protocol	Siebel protocol
	Discovered CIs/Relationships	siebelgateway, siebelsite,
	Monitored CIs/Relationships	
	TQL	siebel_gtwy
	Schedule	
	Notes	SIEBEL Discovery through srvmgr application provider by Siebel

Pattern		
SIEBEL_DIS_GATEWAY_CONNECTION_(GTWY_HOST).xml	Package	Siebel
	Parse Method	Jython
	Protocol	Siebel protocol
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	siebel_gtwy_host
	Schedule	
	Notes	SIEBEL Discovery through srvmgr application provider by Siebel
SIEBEL_DIS_WEBAPPS_NT.xml	Package	Siebel
	Parse Method	Jython
	Protocol	NTCMD
	Discovered CIs/Relationships	siebelwse, siebelgateway, siebelsite, siebelwebapp, webserver
	Monitored CIs/Relationships	
	TQL	siebel_webserver_nt
	Schedule	
	Notes	

Pattern		
SIEBEL_DIS_WEBAPPS_UNIX.xml	Package	Siebel
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	siebelwse, siebelgateway, siebelsite, siebelwebapp, webserver
	Monitored CIs/Relationships	
	TQL	siebel_webserver_unix
	Schedule	
	Notes	
SIEBEL_DIS_WEBAPPS_UNIX_SSH.xml	Package	Siebel
	Parse Method	Jython
	Protocol	SSH
	Discovered CIs/Relationships	siebelwse, siebelgateway, siebelsite, siebelwebapp, webserver
	Monitored CIs/Relationships	
	TQL	siebel_webserver_unix
	Schedule	
	Notes	

Pattern		
SNMP_NET_Mon_CitrixServer.xml	Package	Citrix
	Parse Method	Jython
	Protocol	SNMP
	Discovered CIs/Relationships	citrixserver, citrixfarm
	Monitored CIs/Relationships	
	TQL	citrix_port_on_snmp_host
	Schedule	Once
	Notes	
SNMP_NET_Mon_CitrixSession.xml	Package	Citrix
	Parse Method	Jython
	Protocol	SNMP
	Discovered CIs/Relationships	citrixsession, citrixclient
	Monitored CIs/Relationships	
	TQL	host_with_citrixserver
	Schedule	Once
	Notes	

Pattern		
TCP_PORT_EXPECTED.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	application
	Monitored CIs/Relationships	
	TQL	http_ports
	Schedule	86400
	Notes	should create specific webserver, eg. IIS, Tomcat, Apache etc.

Pattern		
TELNET_MQ_Topology.xml	Package	Websphere_MQ
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	mqueueuemanager, mqcluster, mqrepository, mqxmitq, mqueueuelocal, mqueueeremote, mqaliasq, mqueueue, mqalias, mqchsd, mqchsvr, mqchannel, mqchannelof, mqchrqstr, mqchclntconn, mqchclusrcvr, mqchclusdr, webspheremq
	Monitored CIs/Relationships	
	TQL	telnet
	Schedule	86400
	Notes	it uses mq utils
WMI_APP_Lis_IIS_Down.xml	Package	IIS_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	iis
	TQL	iis_server
	Schedule	Once
	Notes	destination oriented DCOM listener, pulling

Pattern		
WMI_APP_Lis_IIS_Up.xml	Package	IIS_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	iis
	TQL	iis_server
	Schedule	Once
	Notes	destination oriented DCOM listener, pulling
WMI_APP_Mon_IIS.xml	Package	IIS_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	iis
	TQL	wmi
	Schedule	30
	Notes	

Pattern		
WMI_Exchange_Dis_Server.xml	<b>Package</b>	Exchange_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	exchangeserver
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once
	<b>Notes</b>	
WMI_Exchange_Dis_Server_Resources.xml	<b>Package</b>	Exchange_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	exchangesite, exchangeroutinggroup, exchangeconnector, exchangelink, exchangequeue
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	600
	<b>Notes</b>	

Pattern		
WMI_Exchange_Lis_ServerState_Changes.xml	Package	Exchange_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	exchangeserver
	TQL	"NO PQL
	Schedule	"Once
	Notes	

## BMC Patrol Integration

Pattern		
PATROL_HR_Lis.xml	Package	Host_Resources_By_Patrol
	Parse Method	Dynamic
	Protocol	TCP
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	patrol_agent
	Schedule	Once (Listener)
	Notes	it listens to patrol events

## Database

Pattern		
SQL_APP_Dis_Db2.xml	Package	DB2
	Parse Method	Dynamic
	Protocol	JDBC
	Discovered CIs/Relationships	db2user
	Monitored CIs/Relationships	
	TQL	db2
	Schedule	1800
	Notes	

Pattern		
SQL_APP_Dis_Oracle.xml	Package	Oracle
	Parse Method	Dynamic
	Protocol	JDBC
	Discovered CIs/Relationships	dbtablespace, dbuser, owner, program
	Monitored CIs/Relationships	
	TQL	oracle_database
	Schedule	1800
	Notes	
SQL_APP_Dis_Sqldatabase.xml	Package	SQL_Server
	Parse Method	Dynamic
	Protocol	JDBC
	Discovered CIs/Relationships	sqlfile, disk
	Monitored CIs/Relationships	
	TQL	sql_server_sqldatabase
	Schedule	86400
	Notes	

Pattern		
SQL_APP_Dis_SqlServer.xml	<b>Package</b>	SQL_Server
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	JDBC
	<b>Discovered CIs/Relationships</b>	sqlatabase, sqlbackup, sqlalert, sqljob, sqljobstep, sqlperformancemonitor, sqlprocesses, program, dbclient
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	sql_server
	<b>Schedule</b>	1800
	<b>Notes</b>	
SQL_APP_Dis_Sybase.xml	<b>Package</b>	Sybase
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	JDBC
	<b>Discovered CIs/Relationships</b>	sybasedb
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	sybase
	<b>Schedule</b>	1800
	<b>Notes</b>	

Pattern		
SQL_NET_Dis_Connection.xml	Package	Database_Basic
	Parse Method	Java
	Protocol	JDBC
	Discovered CIs/Relationships	oracle, db2, sybase, sqlserver
	Monitored CIs/Relationships	
	TQL	db_ports
	Schedule	604800
	Notes	

**FTP**

Pattern		
FTP_NET_Dis_Connection.xml	Package	FTP
	Parse Method	Java
	Protocol	FTP
	Discovered CIs/Relationships	ftp
	Monitored CIs/Relationships	
	TQL	ftp_ports
	Schedule	Once
	Notes	
FTP_NET_Dis_Files.xml	Package	FTP
	Parse Method	Dynamic
	Protocol	FTP
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	file
	TQL	"NO PQL
	Schedule	"300
	Notes	

Pattern		
FTP_NET_Mon.xml	Package	FTP
	Parse Method	Dynamic
	Protocol	FTP
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	file
	TQL	host_ftp_username
	Schedule	1800
	Notes	

**Host Resource**

<b>Pattern</b>		
BB_HR_Lis_Agents_Heartbeat_Dynamic.xml	<b>Package</b>	Host_Resources_By_Big_Br other
	<b>Parse Method</b>	Java
	<b>Protocol</b>	TCP
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	bbagent
	<b>TQL</b>	new_probe
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	read a buffer that was sent via TCP from BB agent
BB_HR_Lis_CPU_Dynamic.xml	<b>Package</b>	Host_Resources_By_Big_Br other
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	TCP
	<b>Discovered CIs/Relationships</b>	bbagent, cpu, memory, program
	<b>Monitored CIs/Relationships</b>	cpu, memory, program
	<b>TQL</b>	new_probe
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	read a buffer that was sent via TCP from BB agent

Pattern		
BB_HR_Lis_Disks_Dynamic.xml	Package	Host_Resources_By_Big_Br other
	Parse Method	Dynamic
	Protocol	TCP
	Discovered CIs/Relationships	bbagent, disk
	Monitored CIs/Relationships	disk
	TQL	new_probe
	Schedule	Once (Listener)
	Notes	read a buffer that was sent via TCP from BB agent
BB_HR_Lis_NTEventLog.xml	Package	Host_Resources_By_Big_Br other
	Parse Method	Dynamic
	Protocol	TCP
	Discovered CIs/Relationships	bbagent, nt, eventlog
	Monitored CIs/Relationships	eventlog
	TQL	new_probe
	Schedule	Once (Listener)
	Notes	read a buffer that was sent via TCP from BB agent

Pattern		
BB_HR_Lis_Processes_Dynamic.xml	<b>Package</b>	Host_Resources_By_Big_Br other
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	TCP
	<b>Discovered CIs/Relationships</b>	bbagent, program
	<b>Monitored CIs/Relationships</b>	program
	<b>TQL</b>	new_probe
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	read a buffer that was sent via TCP from BB agent
BB_HR_Lis_Services_Dynamic.xml	<b>Package</b>	Host_Resources_By_Big_Br other
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	TCP
	<b>Discovered CIs/Relationships</b>	bbagent, service
	<b>Monitored CIs/Relationships</b>	bbagent, service
	<b>TQL</b>	new_probe
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	read a buffer that was sent via TCP from BB agent

Pattern		
NTCMD_HR_Dis_Nt_Dynamic.xml	Package	Host_Resources_By_NTCD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	nt
	Monitored CIs/Relationships	
	TQL	ntcmd_data
	Schedule	Once
	Notes	psinfo.exe
NTCMD_HR_Dis_Service_Dynamic.xml	Package	Host_Resources_By_NTCD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	service
	Monitored CIs/Relationships	service
	TQL	ntcmd_data
	Schedule	Once
	Notes	psservice.exe

Pattern		
NTCMD_HR_Dis_ServiceSpecific.xml	<b>Package</b>	Host_Resources_By_NTCMD
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	XCMD (NetBIOS)
	<b>Discovered CIs/Relationships</b>	service
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	new_service
	<b>Schedule</b>	Once
	<b>Notes</b>	psservice.exe
NTCMD_HR_Dis_Software_Dynamic.xml	<b>Package</b>	Host_Resources_By_NTCMD
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	XCMD (NetBIOS)
	<b>Discovered CIs/Relationships</b>	softwares
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	ntcmd_data
	<b>Schedule</b>	Once
	<b>Notes</b>	psinfo.exe -s

Pattern		
NTCMD_HR_Mon_Disks_Dynamic.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	disk
	Monitored CIs/Relationships	disk
	TQL	ntcmd_data
	Schedule	300
	Notes	psinfo.exe -d
NTCMD_HR_Mon_Process_Dynamic.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	program
	Monitored CIs/Relationships	program
	TQL	ntcmd_data
	Schedule	300
	Notes	pslist.exe

Pattern		
NTCMD_HR_Mon_Service_Dynamic.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	service
	Monitored CIs/Relationships	service
	TQL	ntcmd_data
	Schedule	300
	Notes	psservice.exe
SNMP_HR_Mon_Disks_Dynamic.xml	Package	Host_Resources_By_SNMP
	Parse Method	Dynamic
	Protocol	SNMP
	Discovered CIs/Relationships	disk
	Monitored CIs/Relationships	disk
	TQL	snmp_agent_of_a_server
	Schedule	60 seconds
	Notes	start oid: 1.3.6.1.2.1.25.2.3.1.3

Pattern		
SNMP_HR_Mon_Printq_Dynamic.xml	Package	Host_Resources_By_SNMP
	Parse Method	Dynamic
	Protocol	SNMP
	Discovered CIs/Relationships	printqs
	Monitored CIs/Relationships	printqs
	TQL	snmp_agent_of_a_server
	Schedule	60 seconds
	Notes	start oid: 1.3.6.1.4.1.77.1.2.29.1.2
SNMP_HR_Mon_Process_Dynamic.xml	Package	Host_Resources_By_SNMP
	Parse Method	Dynamic
	Protocol	SNMP
	Discovered CIs/Relationships	program
	Monitored CIs/Relationships	program
	TQL	snmp_agent_of_a_server
	Schedule	60 seconds
	Notes	start oid: 1.3.6.1.2.1.25.4.2.1.1

Pattern		
SNMP_HR_Mon_Service_Dynamic.xml	<b>Package</b>	Host_Resources_By_SNMP
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	SNMP
	<b>Discovered CIs/Relationships</b>	service
	<b>Monitored CIs/Relationships</b>	service
	<b>TQL</b>	snmp_agent_of_a_server
	<b>Schedule</b>	60 seconds
	<b>Notes</b>	start oid: 1.3.6.1.4.1.77.1.2.3.1.1
SNMP_HR_Mon_Software_Dynamic.xml	<b>Package</b>	Host_Resources_By_SNMP
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	SNMP
	<b>Discovered CIs/Relationships</b>	software
	<b>Monitored CIs/Relationships</b>	software
	<b>TQL</b>	snmp_agent_of_a_server
	<b>Schedule</b>	60 seconds
	<b>Notes</b>	start oid: 1.3.6.1.2.1.25.6.3.1.2

Pattern		
SNMP_NET_Dis_Users.xml	Package	Host_Resources_By_SNMP
	Parse Method	Dynamic
	Protocol	SNMP
	Discovered CIs/Relationships	osuser
	Monitored CIs/Relationships	
	TQL	snmp_agent_port_161
	Schedule	Once
	Notes	start oid: 1.3.6.1.4.1.77.1.2.25.1.1
TELNET_HR_Dis_Disks.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	disk
	Monitored CIs/Relationships	disk
	TQL	telnet
	Schedule	300
	Notes	df -k

Pattern		
TELNET_HR_Dis_HpDaemons.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	daemon
	Monitored CIs/Relationships	
	TQL	telnet_of_hp_device
	Schedule	Once
	Notes	ps -ef   grep '?'
TELNET_HR_Dis_HpSoftware.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	software
	Monitored CIs/Relationships	
	TQL	telnet_of_hp_device
	Schedule	Once
	Notes	swlist

Pattern		
TELNET_HR_Dis_Processes.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	program
	Monitored CIs/Relationships	program
	TQL	telnet
	Schedule	300
	Notes	ps -ef
TELNET_HR_Dis_SunDaemons.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	daemon
	Monitored CIs/Relationships	
	TQL	telnet_of_sun_device
	Schedule	Once
	Notes	ps -ef

Pattern		
TELNET_HR_Dis_SunSoftware.xml	Package	Host_Resources_By_Telnet
	Parse Method	Dynamic
	Protocol	Telnet
	Discovered CIs/Relationships	software
	Monitored CIs/Relationships	
	TQL	telnet_of_sun_device_no_s nmp
	Schedule	Once
	Notes	pkginfo
WMI_HR_Dis_CPU_Dynamic.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	cpu
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	

Pattern		
WMI_HR_Dis_Disk_Dynamic.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	disk
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	
WMI_HR_Dis_Memory_Dynamic.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	memory
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	

Pattern		
WMI_HR_Dis_Process_Dynamic.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	program
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once
	<b>Notes</b>	
WMI_HR_Dis_Service_Dynamic.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	service
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once
	<b>Notes</b>	

Pattern		
WMI_HR_Lis_CPUBusy.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	cpu
	TQL	wmi
	Schedule	Once (Listener)
	Notes	destination oriented DCOM listener, pulling
WMI_HR_Lis_CPUNormal.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	cpu
	TQL	wmi
	Schedule	Once (Listener)
	Notes	destination oriented DCOM listener, pulling

Pattern		
WMI_HR_Lis_MemoryLow.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	memory
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	destination oriented DCOM listener, pulling
WMI_HR_Lis_MemoryNormal.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	memory
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	destination oriented DCOM listener, pulling

Pattern		
WMI_HR_Lis_NTEventLog.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	eventlog
	TQL	wmi
	Schedule	Once (Listener)
	Notes	destination oriented DCOM listener, pulling
WMI_HR_Lis_Process_Started.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	program
	TQL	wmi
	Schedule	Once (Listener)
	Notes	destination oriented DCOM listener, pulling

Pattern		
WMI_HR_Lis_Process_Stopped.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	program
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	destination oriented DCOM listener, pulling
WMI_HR_Lis_Service_Started.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	service
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once (Listener)
	<b>Notes</b>	destination oriented DCOM listener, pulling

Pattern		
WMI_HR_Lis_Service_Stopped.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered Objects/Relationships	
	Monitored CIs/Relationships	service
	TQL	wmi
	Schedule	Once (Listener)
	Notes	destination oriented DCOM listener, pulling
WMI_HR_Mon_Disks_Dynamic.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	disk
	TQL	wmi
	Schedule	600
	Notes	

Pattern		
WMI_HR_Mon_Processes_Dynamic.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	program
	<b>TQL</b>	wmi
	<b>Schedule</b>	600
	<b>Notes</b>	
WMI_HR_Mon_Services_Dynamic.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	service
	<b>TQL</b>	wmi
	<b>Schedule</b>	30
	<b>Notes</b>	

Internal

Pattern		
SynchronizeByIp.xml	Package	Network
	Parse Method	Jython
	Protocol	
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	complete_host
	Schedule	once
	Notes	synchronizes hosts in the system

## Invoke Operation

Pattern		
_NTCMD_HR_Invoke_StartService.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	service
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a service, 'psservice.exe start'
_NTCMD_HR_Invoke_StopProgram.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a program, 'pskill.exe'

Pattern		
_NTCMD_HR_Invoke_StopService.xml	Package	Host_Resources_By_NTCMD
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	service
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a service, 'psservice.exe stop'
WMI_Invoke_Create_Process.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a specific CI

Pattern		
WMI_Invoke_Start_Service.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a specific CI
WMI_Invoke_Stop_Service.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a specific CI

Pattern		
WMI_Invoke_Terminate_Process.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	dispatched on a specific CI
WMI_REG_Invoke_Get_Key.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	skeleton for retriving data from registry

Pattern		
WMI_REG_Invoke_Get_Values.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once
	<b>Notes</b>	skeleton for retriving data from registry
WMI_REG_Invoke_GetBBValues.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	bbagent
	<b>Monitored CIs/Relationships</b>	
	<b>TQL</b>	wmi
	<b>Schedule</b>	Once
	<b>Notes</b>	discover Big Brother agent + configuration

Pattern		
WMI_REG_Invoke_GetInstalledSoftware.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	software
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	like "Control Panel" -> "Add Remove Program"
WMI_REG_Invoke_Set_Value.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	wmi
	Schedule	Once
	Notes	skeleton for setting data to registry

Pattern		
WMI_REG_Invoke_SetBBValues.xml	Package	Host_Resources_By_WMI
	Parse Method	N/A
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"Once
	Notes	configure Big Brother agent

## Layer 2

Pattern		
SNMP_Dis_L2_Bridge.xml	Package	Layer2
	Parse Method	Jython
	Protocol	SNMP
	Discovered CIs/Relationships	concentrator, port
	Monitored CIs/Relationships	
	TQL	bridge_no_vlan
	Schedule	86400
	Notes	layer 2 picture is completed w/ Server Logic rules which create layertwo & backbone relationships
SNMP_Dis_L2_Vlan.xml	Package	Layer2
	Parse Method	Jython
	Protocol	SNMP
	Discovered CIs/Relationships	concentrator, port
	Monitored CIs/Relationships	
	TQL	catalyst_vlan
	Schedule	86400
	Notes	layer 2 picture is completed w/ Server Logic rules which create layertwo & backbone relationships

**LDAP**

Pattern		
ldapPingTest.xml	Package	LDAP
	Parse Method	Jython
	Protocol	LDAP
	Discovered CIs/Relationships	activedirectory
	Monitored CIs/Relationships	
	TQL	host
	Schedule	
	Notes	

**Network**

Pattern		
CMD_NET_Mon_DnsServer.xml	Package	Network
	Parse Method	Dynamic
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	dnserver_ports
	Schedule	1800
	Notes	uses nslookup to resolve dnsnames, not in use

Pattern		
DNS_NET_Dis_DnsName.xml	Package	Network
	Parse Method	Java
	Protocol	
	Discovered CIs/Relationships	host_dnsname
	Monitored CIs/Relationships	
	TQL	known_ip_no_DNS
	Schedule	once
	Notes	uses java InetAddress class
Host_ID_Discover_Python.xml	Package	Network
	Parse Method	Jython
	Protocol	
	Discovered CIs/Relationships	host, ip
	Monitored CIs/Relationships	
	TQL	new_ip_not_unknown
	Schedule	86400
	Notes	tries all 4 major protocols: snmp, telnet, xcmd & wmi

Pattern		
ICMP_NET_Dis_IpB.xml	Package	Network
	Parse Method	Java
	Protocol	ICMP
	Discovered CIs/Relationships	ip
	Monitored CIs/Relationships	
	TQL	network_B_not_unknown
	Schedule	60
	Notes	uses IcmpPingUtilDll.dll
ICMP_NET_Dis_IpC.xml	Package	Network
	Parse Method	Java
	Protocol	ICMP
	Discovered CIs/Relationships	ip
	Monitored CIs/Relationships	
	TQL	network_C_not_unknown
	Schedule	86400
	Notes	uses IcmpPingUtilDll.dll

Pattern		
ICMP_NET_Mon_Ip.xml	Package	Network
	Parse Method	Java
	Protocol	ICMP
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	ip
	TQL	new_ip_not_unknown
	Schedule	600
	Notes	uses IcmpPingUtilDll.dll
MS_NET_Dis_Domain.xml	Package	Network
	Parse Method	Java
	Protocol	WIN API
	Discovered CIs/Relationships	msdomain, nt
	Monitored CIs/Relationships	
	TQL	new_local
	Schedule	3600
	Notes	uses win api via dll to fetch list of MS domain/workgroup

Pattern		
NTCMD_NET_Dis_Connection.xml	Package	Network
	Parse Method	Java
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	host, ip, interface, ntcmd, network
	Monitored CIs/Relationships	
	TQL	host
	Schedule	Once
	Notes	
NTCMD_NET_Dis_TCP.xml	Package	Network
	Parse Method	Java
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	ipport, clientserver (relationship)
	Monitored CIs/Relationships	
	TQL	ntcmd
	Schedule	once
	Notes	

Pattern		
NTCMD_NET_Mon_ClientServer.xml	Package	Network
	Parse Method	
	Protocol	XCMD (NetBIOS)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	ipport, clientserver (relationship)
	TQL	ntcmd_data
	Schedule	300
	Notes	
SNMP_NET_Dis_Arp.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	host, ip, interface, network
	Monitored CIs/Relationships	
	TQL	snmp_agent_port_161
	Schedule	86400
	Notes	

Pattern		
SNMP_NET_Dis_Bridge.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	bridge, port, layertwo, backbone
	Monitored CIs/Relationships	
	TQL	bridge_of_non_enterasys_switch
	Schedule	Once
	Notes	
SNMP_NET_Dis_Connection.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	host, ip, interface, snmp, network
	Monitored CIs/Relationships	
	TQL	new_ip_not_unknown
	Schedule	86400
	Notes	update the correct host class (nt, unix, router etc.) according to OID

Pattern		
SNMP_NET_Dis_HostBase.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	host, ip, interface, network, rout, bridge
	Monitored CIs/Relationships	
	TQL	snmp_agent_port_161
	Schedule	86400
	Notes	
SNMP_NET_Dis_Router_Arp.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	host, ip, interface, network
	Monitored CIs/Relationships	
	TQL	snmp_agent_of_a_router
	Schedule	86400
	Notes	

Pattern		
SNMP_NET_Dis_TCP.xml	Package	Network
	Parse Method	Java
	Protocol	SNMP
	Discovered CIs/Relationships	ipserver, ipclient, tcp, clientserver
	Monitored CIs/Relationships	
	TQL	snmp_agent_of_a_server
	Schedule	86400
	Notes	
SSH_Net_Dis_Connection_jython.xml	Package	Network
	Parse Method	Jython
	Protocol	SSH
	Discovered CIs/Relationships	host, ip, interface, telnet, network
	Monitored CIs/Relationships	
	TQL	ip_possibly_ssh
	Schedule	Once
	Notes	

Pattern		
TCP_NET_Dis_Port.xml	Package	Network
	Parse Method	Java
	Protocol	TCP
	Discovered CIs/Relationships	ipserver, use
	Monitored CIs/Relationships	
	TQL	host
	Schedule	86400
	Notes	try to open Java socket
TCP_NET_Mon_Port.xml	Package	Network
	Parse Method	Java
	Protocol	TCP
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	ipserver, use
	TQL	port_of_a_host_in_domain
	Schedule	3600
	Notes	try to open Java socket

Pattern		
TELNET_NET_Dis_Connection.xml	Package	Network
	Parse Method	Java
	Protocol	Telnet
	Discovered CIs/Relationships	host, ip, interface, telnet, network
	Monitored CIs/Relationships	
	TQL	telnet_port
	Schedule	Once
	Notes	
Telnet_Net_Dis_Connection_jython.xml	Package	Network
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	host, ip, interface, telnet, network
	Monitored CIs/Relationships	
	TQL	ip_possibly_telnet
	Schedule	Once
	Notes	

Pattern		
WMI_NET_Dis_Connection.xml	Package	Network
	Parse Method	Java
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	host, ip, interface, wmi, network
	Monitored CIs/Relationships	
	TQL	host
	Schedule	Once
	Notes	

## Performance Monitor

Pattern		
JMS_PM_DESTINATION.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	jmsdestination
	TQL	"NO PQL
	Schedule	"20
	Notes	
JMX_PM_CONNECTIONPOOL.xml	Package	J2EE
	Parse Method	Jython
	Protocol	JMX
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	connectionpool
	TQL	"NO PQL
	Schedule	"20
	Notes	

Pattern		
WMI_PM_Mon_CPU.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	cpu
	TQL	"NO PQL
	Schedule	"20
	Notes	dispatched on a specific CI
WMI_PM_Mon_Disk.xml	Package	Host_Resources_By_WMI
	Parse Method	Dynamic
	Protocol	WMI (DCOM)
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	disk
	TQL	"NO PQL
	Schedule	"20
	Notes	dispatched on a specific CI

Pattern		
WMI_PM_Mon_IIS.xml	<b>Package</b>	IIS_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	iis
	<b>TQL</b>	"NO PQL
	<b>Schedule</b>	"20
	<b>Notes</b>	dispatched on a specific CI
WMI_PM_Mon_Memory.xml	<b>Package</b>	Host_Resources_By_WMI
	<b>Parse Method</b>	Dynamic
	<b>Protocol</b>	WMI (DCOM)
	<b>Discovered CIs/Relationships</b>	
	<b>Monitored CIs/Relationships</b>	memory
	<b>TQL</b>	"NO PQL
	<b>Schedule</b>	"20
	<b>Notes</b>	dispatched on a specific CI

## Process Discovery

Pattern		
P2P	Package	P2P
	Parse Method	Jython
	Protocol	TCP
	Discovered CIs/Relationships	application (p2p agent)
	Monitored CIs/Relationships	
	TQL	new_ip_not_unknown
	Schedule	Once
	Notes	
P2P_LIS_TCP_CONNECTIONS.xml	Package	P2P
	Parse Method	Java
	Protocol	P2P Agent
	Discovered CIs/Relationships	staticprocess, ptp (relationship)
	Monitored CIs/Relationships	
	TQL	new_probe
	Schedule	Once (Listener)
	Notes	P2P Agent is a proprietary agent which sends/receives data over tcp

Pattern		
P2P_PM_STATIC_LINK.xml	Package	P2P
	Parse Method	Java
	Protocol	P2P Agent
	Discovered CIs/Relationships	staticprocess, ptp (relationship)
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"10
	Notes	
P2P_PM_STATIC_PROCESS.xml	Package	P2P
	Parse Method	Java
	Protocol	P2P Agent
	Discovered CIs/Relationships	staticprocess, ptp (relationship)
	Monitored CIs/Relationships	
	TQL	"NO PQL
	Schedule	"10
	Notes	

**SNMP TRAP**

Pattern		
TRAP_NET_Lis_Generic.xml	Package	Network
	Parse Method	Dynamic
	Protocol	
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	new_probe
	Schedule	Once (Listener)
	Notes	listens for snmp trap
TRAP_NET_Lis_Interface.xml	Package	Network
	Parse Method	Dynamic
	Protocol	
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	new_probe
	Schedule	Once (Listener)
	Notes	listens for snmp trape

**TCP**

Pattern		
NTCMD_NET_Dis_TCP_Jython.xml	Package	TCP_Discovery
	Parse Method	Jython
	Protocol	NTCMD
	Discovered CIs/Relationships	clientserver & tcp relationships for ipserver/ipclient
	Monitored CIs/Relationships	
	TQL	ip_of_ntcmd
	Schedule	
TELNET_NET_Dis_TCP_Jython.xml	Package	TCP_Discovery
	Parse Method	Jython
	Protocol	Telnet
	Discovered CIs/Relationships	clientserver & tcp relationships for ipserver/ipclient
	Monitored CIs/Relationships	
	TQL	ip_of_telnet
	Schedule	

Pattern		
SSH_NET_Dis_TCP_Jython.xml	Package	TCP_Discovery
	Parse Method	Jython
	Protocol	SSH
	Discovered CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	Monitored CIs/Relationships	
	TQL	ip_of_ssh
	Schedule	

**NTCMD\_NET\_Dis\_TCP\_Jython.xml**

Pattern		
TCP_Discovery	Parse Method	Jython
	Protocols	NTCMD
	Discovered CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	Monitored CIs/Relationships	
	TQL	ip_of_ntcmd
	Schedule	
	Notes	

**TELNET\_NET\_Dis\_TCP\_Jython.xml**

Pattern		
TCP_Discovery	Parse Method	Jython
	Protocols	Telnet
	Discovered CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	Monitored CIs/Relationships	
	TQL	ip_of_telnet
	Schedule	
	Notes	

**SSH\_NET\_Dis\_TCP\_Jython.xml**

Pattern		
NTCMD_NET_Dis_TCP_Jython.xml	Parse Method	TCP_Discovery
	Protocols	Jython
	Discovered CIs/Relationships	NTCMD
	Monitored CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	TQL	
	Schedule	ip_of_ntcmd
	Notes	
TELNET_NET_Dis_TCP_Jython.xml	Parse Method	TCP_Discovery
	Protocols	Jython
	Discovered CIs/Relationships	Telnet
	Monitored CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	TQL	
	Schedule	ip_of_telnet
	Notes	

Pattern		
SSH_NET_Dis_TCP_Jython.xml	Parse Method	TCP_Discovery
	Protocols	Jython
	Discovered CIs/Relationships	SSH
	Monitored CIs/Relationships	clientserver & tcp relationships for ipserver /ipclient
	TQL	
	Schedule	ip_of_ssh
	Notes	

### XSL Parser

Pattern		
TCP_LIS_XML_DATA.xml	Parse Method	Network
	Protocols	Java
	Discovered CIs/Relationships	
	Monitored CIs/Relationships	
	TQL	new_probe
	Schedule	ip_of_ntcmd
	Notes	uses xsl engine

## Security Privileges for Patterns

Patterns	Requires	Creates (MAM CI)	Data Source
SNMP_NET_Dis_Connection.xml	SNMP Community	snmp	the various tables of a MIB
TELNET_NET_Dis_Connection.xml	Telnet User/Password	telnet	any valid telnet command, subjected to user privileges
WMI_NET_Dis_Connection.xml	WMI User/Password	wmi	any WMI valid query
NTCMD_NET_Dis_Connection.xml	Administrator Windows User/Password	ntcmd	any valid DOS command
SQL_NET_Dis_Connection.xml	Database User/Password	sqlserver, oracle, db2, sybase	any valid SQL statement, subject to user privileges
FTP_NET_Dis_Connection.xml	FTP User/Password	ftp	any valid ftp command
jboss_connection.xml	JMX Mbean Server User/Password	jboss	any valid JMX ObjectName
JMX_APP_DIS_WEBSPPHERE_connection.xml	JMX Mbean Server User/Password	websphere	any valid JMX ObjectName
JMX_APP_Dis_WL_Connection.xml	JMX Mbean Server User/Password	weblogic	any valid JMX ObjectName

---

**Note:** Every pattern that is based on a CI in the Creates MAM CI column, uses the credentials which are encapsulated in that CI. For example, snmp\_community).

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## Specific Pattern Data Source

Pattern	Data Source (table name)
SQL_APP_Dis_Oracle.xml	DBA_DATA_FILES, DBA_DB_LINKS, DBA_JOBS, DBA_OBJECTS, DBA_SNAPSHOTS, DBA_TABLESPACES, DBA_USERS, V\$BACKUP, v\$CONTROLFILE, v\$database, V\$DATAFILE, V\$LOG, V\$LOGFILE, v\$parameter, V\$RECOVER_FILE, V\$SESSION
SQL_APP_Dis_Db2.xml	IWH.USERFUNCTION
SQL_APP_Dis_Sqldatabase.xml	sysfiles
SQL_APP_Dis_SqlServer.xml	sysprocesses, sysdatabases, backupset, sysalerts, sysjobs, syslogins, sysjobhistory, sysjobschedules, sysperfinfo
SQL_APP_Dis_Sybase.xml	sysdatabases

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