



Netcool®/Proviso®

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Conveda Media Server Application Pack Installation/Configuration Guide

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Preface

This manual describes installation and configuration tasks associated with the Netcool/Proviso Convedia Media Server Application Pack.

Audience

The audiences for this manual are the network administration engineers at Micromuse customer sites who will install, configure, and use the Convedia Media Server Application Pack as part of their Netcool/Proviso installation. Micromuse Professional Services engineers may also find this manual useful.

To install and use the Convedia Media Server Application Pack, you should have a working knowledge of the following subjects:

- Netcool/Proviso DataMart
- TCP/IP networks
- Telecom network management
- Administration of the operating system's operating environment

The audiences should also be familiar with the specific technology that the Convedia Media Server Application Pack deals with, in this case Convedia Media Server.

Organization

This guide is organized as follows:

- Chapter 1, *Introduction*

Provides an introduction to the Convedia Media Server Application Pack. The introduction includes a summary of the components that make up the application pack.

- Chapter 2, *Installation and Configuration*

Describes how to install the DataChannel and Convedia Media Server Application Pack that provide support for the devices operating in the Convedia Media Server environment. Also provided are configuration-related instructions that are beyond the scope of the instructions that the *Netcool/Proviso Installation Guide* provides.

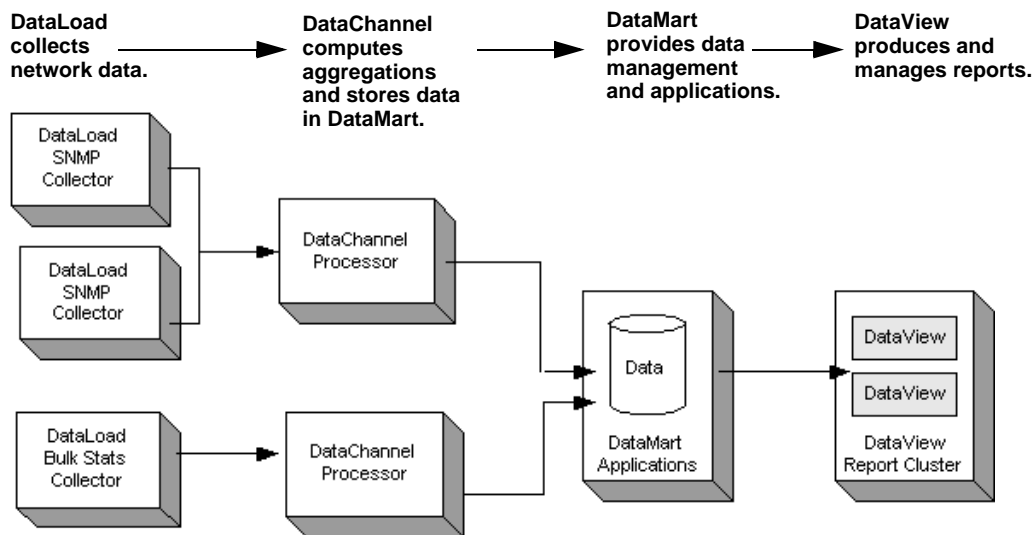
The Netcool/Proviso Product Suite

Netcool/Proviso is made up of the following components:

- **Netcool/Proviso DataMart** is a set of management, configuration and troubleshooting GUIs that the Netcool/Proviso System Administrator uses to define policies and configuration, as well as verify and troubleshoot operations.
- **Netcool/Proviso DataLoad** provides flexible, distributed data collection and data import of SNMP and non-SNMP data to a centralized database.
- **Netcool/Proviso DataChannel** aggregates the data collected through Netcool/Proviso DataLoad for use by the Netcool/Proviso DataView reporting functions. It also processes on-line calculations and detects real-time threshold violations.
- **Netcool/Proviso DataView** is a reliable application server for on-demand, web-based network reports.
- **Netcool/Proviso Application Packs** extend the Netcool/Proviso system with service-ready reports for network operations, business development, and customer viewing.

The following figure shows the different Netcool/Proviso modules.

Figure 1: Netcool/Proviso Modules



Netcool/Proviso Documentation

The following documents make up the Netcool/Proviso documentation suite.

Netcool/Proviso Guides

- *Netcool/Proviso Functional Overview*
Provides a brief overview of Netcool/Proviso, outlining major configuration tasks.
- *Netcool/Proviso Application Pack User Guides*
Suite of user guides that explain reporter sets, discovery and collection formulas, and how to install and configure the various application packs that Netcool/Proviso supports.
- *Netcool/Proviso CME Formula API Developer's Guide*
Describes how to plan, create, and deploy ECMAScript files that use the CME Formula API to calculate performance, event, and status metrics for a network inventory.
- *Netcool/Proviso Command Line Interface Guide*

Describes in reference format the command line tools that you can use to configure Netcool/Proviso.

- *Netcool/Proviso DataAccess Programming Guide*

Describes the DataAccess API that you can use to integrate the Netcool/Proviso DataView reporting system into an external portal. With Netcool/Proviso DataAccess, you can use other graphical packages to query the database metrics directly.

- *Netcool/Proviso DataMart Configuration Guide*

Explains how to use the DataMart GUI, as well as several command line tools, to configure Netcool/Proviso.

- *Netcool/Proviso DataMart Operation Guide*

Explains how to use the DataMart GUI to administer and monitor Netcool/Proviso.

- *Netcool/Proviso DataView User's Guide*

Explains how to create, modify, configure, and view the various reports that Netcool/Proviso supports.

- *Netcool/Proviso DataView Visual User's Guide*

Explains how to create, modify, configure, and view the search and diagnostic reports using DataView Visual.

- *Netcool/Proviso dbMgr Reference Guide*

Provides reference pages for the dbMgr database utility and its attendant commands.

- *Netcool/Proviso Error Messages Guide*

Lists in ordinal, reference format error messages produced by DataChannel and DataLoad. Whenever possible, explanations are offered, as well as remedial actions. Replaces an earlier Technical Note.

- *Netcool/Proviso Installation Guide*

Explains how to install and provisionally configure Netcool/Proviso and all of its attendant software (such as Oracle and SilverStream).

- *Netcool/Proviso Micromuse Netcool/Webtop Integration User's Guide*

Explains how to integrate Netcool/Proviso with Micromuse Netcool/Webtop.

- *Netcool/Proviso Service Level Agreement Configuration Guide*

Explains service level agreement reporting and how to create composite sub-elements.

- *Netcool/Proviso SNMP Inventory Management and Troubleshooting Guide*

Explains how to troubleshoot and manage the SNMP inventory.

Netcool/Proviso Technical Notes

- *Netcool/Proviso Technical Note: Backup Procedures*

Explains how to perform backups on the Netcool/Proviso DataChannel and database components.

- *Netcool/Proviso Technical Note: Changing to the New Skin*

Explains how to change from the old to the new portal skin.

- *Netcool/Proviso Technical Note: Registry and Space Management*

Explains how to manage the database registry, file space, and tablespace.

- *Netcool/Proviso Technical Note: DataChannel Secure File Transfer Installation*

Explains how to install OpenSSH for Secure File Transfer (SFTP) among Netcool/Proviso components.

- *Netcool/Proviso Technical Note: Most Loaded Hour Report*

- Explains how to configure and view a Most Loaded Hour report.
- *Netcool/Proviso Technical Note: Patch Releases*
Explains when and how to apply Netcool/Proviso patches.
- *Netcool/Proviso Technical Note: Persistent Report Refresh Mechanism*
Explains how to configure the portal page to enable report refreshing that is persistent.
- *Netcool/Proviso Technical Note: Purging Metric Data*
Explains how to purge stale metric data from the database.
- *Netcool/Proviso Technical Note: SNMP DataLoad High Availability*
Explains how high availability works with the DataLoad SNMP Collector.
- *Netcool/Proviso Technical Note: Setting SNMP Traps for Log Messages*
Explains how to set SNMP traps for Netcool/Proviso log messages.
- *Netcool/Proviso Technical Note: String Translation SNMP Formulas*
Explains two new SNMP formula functions that format in a human readable way the strings and IP addresses that are part of the SNMP table indexes.
- *Netcool/Proviso Technical Note: Tools for Version Reporting*
Explains the how to use the Netcool/Proviso CLI utilities to obtain information about the Netcool/Proviso applications installed on your system.
- *Netcool/Proviso Technical Note: Understanding the RPT Report Algorithm*
Explains the algorithm used to determine the predicted upgrade date for Resource Planning Table reports.

Netcool/Proviso Online Help

Online help suites are provided for the following Netcool/Proviso components:

- *Netcool/Proviso **DataMart***
- *Netcool/Proviso **DataView***

Chapter 1: Introduction

This chapter discusses the following topics:

Topic	Page
<i>How is the Data Collected?</i>	1
<i>How is the Data Processed and Loaded into the Database?</i>	2
<i>How is the Data Reported?</i>	3

Overview

Netcool/Proviso Application Packs are individually installed modules that contain discovery, grouping, collection, and reporting instructions created by Application Pack developers or Professional Services personnel for a specific network technology or network equipment provider, such as Convidia Media Server.

Once installed, an Application Pack “programs” Netcool/Proviso to inventory and group specific network resources, perform mathematical calculations on raw or aggregated data streams collected from these resources, and produce key performance monitoring metrics that are stored on the Netcool/Proviso database. Reporter sets designed for each Application Pack query the database for this information and display the results on a web portal in the form of specialized report tables, graphs, and charts.

This chapter provides an overview of how Application Packs work with Netcool/Proviso to collect, process, load, and report data from a network environment.

How is the Data Collected?

Inventory

After a Netcool/Proviso Application Pack has been installed, an inventory process must be run so that the Application Pack’s target network resources can be identified and modeled within Netcool/Proviso as sub-elements. Sub-elements must be created before data from any network resource can be collected, processed, and stored in the database.

How sub-elements are discovered depends on whether the target resources are SNMP resources or non-SNMP resources:

- For SNMP network resources, an Application Pack provides a discovery formula. Discovery formulas are used to evaluate network resources, determine which resources become sub-elements, and set values for items defined as properties in the formula.
- For non-SNMP network resources, an Application Pack provides a Bulk Adaptor Design File. Bulk Adaptor Design Files define how data fields that reside in files generated by network resources are used to create sub-elements and set values for items defined as properties.

During the database synchronization phase of the inventory process, the list of discovered sub-elements is compared to what exists in the database. Newly discovered sub-elements are assigned a resource identifier (RID) and timestamp, and the database uses both items to create a new entry for the sub-element to reflect the known state of the network inventory.

Once all the sub-elements have been discovered and created in the database, the inventory process organizes the sub-elements according to the grouping rules provided by an Application Pack. The grouping rules use the properties and values defined within inventory formulas or adaptor design files to filter the sub-elements into their appropriate collection or reporting groups.

Collection

Following the completion of the inventory process, Netcool/Proviso is ready to collect performance data for an Application Pack's target network resources. An Application Pack provides Netcool/Proviso with collection formulas that instruct a DataLoad collector residing in a DataChannel to collect specific types of performance data against a particular sub-element.

The types of collection formulas applied to the data depend on whether the sub-element is an SNMP resource or non-SNMP resource:

- For SNMP network resources, an Application Pack provides SNMP collection formulas. SNMP collection formulas instruct the SNMP Collector to take the data gathered during a specified collection interval, perform some mathematical operation on the data, and output the result as a performance metric.
- For non-SNMP network resources, an Application Pack provides Bulk collection formulas. A Bulk collection formula, unlike an SNMP collection formula, has no executable instructions. A Bulk collection formula consists of a metric name that is mapped by the Bulk Adaptor Design File to a statistic that resides in the input file generated by a network resource.

Either type of collection formula outputs a metric and corresponding unique metric identifier (MID) that are passed along the DataChannel to the Complex Metric Engine for processing.

How is the Data Processed and Loaded into the Database?

The Complex Metric Engine (CME) is a component in the DataChannel that performs calculations on data gathered by the SNMP or Bulk collectors deployed in a network. These calculations include the following:

- Pre-defined formulas that are provided by an Application Pack
- User-defined formulas created using the CME Formula API
- Time aggregations for sub-elements

In addition to performing calculations on the data stream in the DataChannel, the CME also buffers and sorts metric records according to their RIDs and MIDs to optimize how the data and metrics are stored in the database.

CME Operation

The CME is designed to work with data that is gathered over the space of one hour. Within that hour, there are several distinct phases that characterize the operation of the CME:

- *Loading Phase*
- *Building Phase*
- *Processing Phase*
- *Output Phase*

Loading Phase

During the beginning of each hour, the CME creates a new network configuration model based on the inventory structure that exists in the database at that time. This model is used as a snapshot of the network environment and serves as the basis for all metric processing for the entire duration of the hour. At the end of the hour, the CME polls the database for any changes that have been made to the inventory and creates a new network configuration model for the next hour.

As the CME reloads its configuration hourly, any metrics produced by sub-elements following the last polling period are rejected by the CME until the beginning of the next hour.

Building Phase

Once the current configuration model has been built, the CME creates a table of sub-elements and metrics that are expected for the current hour. The CME uses the RIDs and MIDs to build the table and determine which metrics should be arriving from the collectors. The table also specifies how resources are related, and determines if there are any CME formulas that must be applied to a sub-element's metrics once the data is gathered.

Processing Phase

Whenever new data arrives at the CME, it is evaluated and stored in the appropriate table location, along with any Resource Aggregation information. Once the input and processing dependencies for a metric in the table have been met, the CME processes the metrics and stores the data until the end of the hour.

Output Phase

At the end of the current hour, the CME outputs everything in memory to the Hourly and Daily Loaders. The data sent to the database loaders includes the sorted data for the current hour, and resource and group aggregations for each of the processing periods up to the current time. The Hourly Loader computes group and resource aggregations, while the Daily Loader creates metric statistics and inserts the data into the database.

How is the Data Reported?

The data collected, processed, and stored in the database by Netcool/Proviso is organized and output for customers using reporter sets that are designed by developers and Professional Services personnel for a specific Application Pack.

An Application Pack reporter set is a related group of reports that provide performance information on a specific set of devices or resources that exist in a network. Each report consists of a series of queries that retrieve related sub-elements and their corresponding metrics from the database using the RIDs and MIDs assigned during the inventory and collection processes. The retrieved results are then organized within the report and are displayed on a web portal in the form of tables, graphs, and charts.

An Application Pack provides a variety of reports and charts, including:

- Resource Summary Reports (RSTs) (sometimes referred to as Resource Summary Tables) aggregate data across time for an individual sub-element and define the statistics that are relevant for a measure of its network performance.
- Group Summary Reports (GSTs) (sometimes referred to as Group Summary Tables) aggregate data across both time and sub-elements, and define the statistics that are relevant for a measure of network performance for a group of resources.
- Detail Charts (DCs) display raw data for a metric that has been aggregated for an individual sub-element over a particular period of time.
- Dashboards display a series of abbreviated tables and charts that provide an overall summary of the metrics collected for the target network resource supported by the Application Pack.
- Timeseries charts present time series information, where the x axis is time and the y axis is the data value.
- TopN reports list the N highest values during a specified time range for a specific metric.
- Resource Distribution charts (often referred to as pie charts) show the distribution of resources across specific ranges. Typically, a legend for the Resource Distribution chart appears in the report.
- Resource Over Threshold Tables (RTTs) display a list of resources that have violated their threshold for a specific metric. Typically, users navigate to an RTT from a Group Summary Table (GST), using the threshold overflow cell navigation link.
- Ratio charts show the relationship of a single metric among different resources or a single resource among different metrics.

Chapter 2: Installation and Configuration

Follow these tasks to install and configure the Convedia Media Server Application Pack:

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Overview

The topics presented in subsequent sections discuss how to configure a DataChannel and associated subchannel, and explain configuration-related tasks you need to perform after installing the Convedia Media Server Application Pack. You should have access to the *Netcool/Proviso Installation Guide*, which the following sections reference for DataChannel configuration- and application pack installation-related tasks.

Configure a DataChannel and One or More Subchannels

Configure one or more DataChannels using the instructions in the *Netcool/Proviso Installation Guide*. Micromuse Professional Services provides guidance for the best installation setup for your site. In general, it is best to install the Convedia Media Server Application Pack on its own DataChannel, with one subchannel configured for each Collector type (SNMP, the legacy Bulk Collector, and/or the UBA Bulk Collector).

The Convidia Media Server Application Pack requires that you configure an SNMP Collector subchannel.

Go through the steps to add a DataChannel and subchannels as described in the *Netcool/Proviso Installation Guide*.

Note: Remember that if you have other DataChannels installed and running, and you intend to add a DataChannel for the Convidia Media Server Application Pack, then you must start the DataChannel installer with the `-f` option and specify the saved configuration file from your previous DataChannel installation. If you fail to use the previous installation's configuration file, you will overwrite and effectively uninstall any existing DataChannel configuration.

Install the Convidia Media Server Application Pack

Install the Convidia Media Server Application Pack on your network's Netcool/Proviso DataMart server, using the stand-alone Application Pack setup program described in the *Netcool/Proviso Technical Note: Stand-Alone Application Pack Installation*. When you see the **Select Packages** dialog, select **Convidia**.

Import Style Sheets from the Application Pack to DataView

When the application pack installation completes, import the style sheets for the Convidia Media Server Application Pack. Style sheets provide the basis for the look and feel of the displayed reports. All Netcool/Proviso Application Packs require these style sheets. See the *Netcool/Proviso Installation Guide* for instructions on how to import style sheets and for the note about re-importing style sheets if you re-install an Application Pack.

To learn more about style sheets and their role in configuring reports, see the *Netcool/Proviso Data View User's Guide*.

Import and Activate Data Collection Requests

The stand-alone Application Pack setup program automatically imports the data collection requests for the Convidia Media Server Application Pack. When the stand-alone Application Pack setup program imports the pre-defined data collection requests, it sets them all to inactive or idle (that is, the string **idle** displays in the **Active** column of the Netcool/Proviso DataMart Request Editor). You need to set these pre-defined data collection requests to active using the Request Editor. The instructions provided in this section assume you understand how to invoke and display the Request Editor.

To set the data collection requests to active, follow these steps:

1. Log in to the server that is running Netcool/Proviso DataMart by entering the username and password that you specified when installing DataMart. The default username and password (as recommended in the *Netcool/Proviso Installation Guide*) are `pvuser` and `PV`.
2. Change your working directory to `$PVMHOME` (by default, `/opt/datamart`).
3. Source the DataMart environment variables file by entering the following command:

```
. /$PVMHOME/dataMart.env
```

For example:

```
. /opt/datamart/dataMart.env
```

4. Type `pvm` and press **Enter** to run DataMart.
5. Click the **Configuration** tab, then, click **Request Editor** to open the Netcool/Proviso DataMart Request Editor.
6. Select the **Collection** tab.
7. Click **Refresh**.

The pre-defined data collection requests are loaded into the Request Editor from the database.

8. In the **Sub-Element Groups** pane, select all data collection requests in the following group:

```
Root->Sub-Element Collect->Convedia
```

Optionally, before making the selection, click the **Inactive** button in the **Filter** group box to display only idle requests.

9. In the Details group box near the bottom of the dialog, click the **Active** button to activate all the idle requests for the Convedia Media Server. The Request Editor toggles the idle setting for these data collection requests from **idle** to **active** in the **Active** column.
10. Click **Save**.

See the *Netcool/Proviso DataMart Configuration Guide* for more information on how to use the Request Editor.

Import the Application Pack's Pre-Defined Threshold Requests

When an application pack supplies pre-defined threshold requests, the stand-alone Application Pack setup program automatically loads them into the database and configures them. Because the Convedia Media Server Application Pack does not currently deliver any thresholds, the stand-alone Application Pack setup program has no pre-defined thresholds to load and configure.

Import the Application Pack's Pre-Defined Percentile Requests

The Convedia Media Server Application Pack does not currently deliver any percentiles. Therefore, there is nothing you need to do.

Merge the Application Pack's Element Inventory Control Rules

Element inventory control rules for the Convedia Media Server Application Pack are shipped in the file `convedia_inventory_elements.txt`. This file is installed in the following directory:

```
$PVMHOME/APFiles/convedia/datamart/conf
```


You must merge the contents of this file with the file `inventory_elements.txt` on the DataMart server. The `inventory_elements.txt` file is located in `$PVMHOME/conf` (typically, `/opt/datamart/conf`).

To merge the files, first copy or FTP `convedia_inventory_elements.txt` to the directory where `inventory_elements.txt` resides. Then add the contents of the file `convedia_inventory_elements.txt` to the end of `inventory_subelements.txt`.

The following example shows how to perform the merge using the `cat` utility:

```
$ cat convedia_inventory_elements.txt >> inventory_elements.txt
```

After the merge completes, you may want to check to ensure that the element inventory control rules for the Convedia Media Server Application Pack reside in the `inventory_elements.txt` file.

See the *Netcool/Proviso DataMart Configuration Guide* for a description of the fields that make up the entries in the `inventory_elements.txt` file.

Note: *The entries are typically merged at the end of the `inventory_elements.txt` file. The stand-alone Application Pack setup program overwrites the original `inventory_elements.txt` file. If there were any site-specific entries in it, you will need to put them back.*

Merge the Application Pack's Sub-Element Inventory Control Rules

Sub-element inventory control rules for the Convedia Media Server Application Pack are shipped in the file `convedia_inventory_subelements.txt`. This file is installed in the following directory:

```
$PVMHOME/APFiles/convedia/datamart/conf
```

You must merge the contents of this file with the file `inventory_subelements.txt` on the DataMart server. The `inventory_subelements.txt` file is located in `$PVMHOME/conf` (typically, `/opt/datamart/conf`).

To merge the files, first copy or FTP `convedia_inventory_subelements.txt` to the directory where `inventory_subelements.txt` resides. Then add the contents of the file `convedia_inventory_subelements.txt` to the end of `inventory_subelements.txt`.

The following example shows how to perform the merge using the `cat` utility:

```
$ cat convedia_inventory_subelements.txt >> inventory_subelements.txt
```

After the merge completes, you may want to check to ensure that the sub-element inventory control rules for the Convedia Media Server Application Pack reside in the `inventory_subelements.txt` file.

See the *Netcool/Proviso DataMart Configuration Guide* for a description of the fields that make up the entries in the `inventory_subelements.txt` file.

Note: *Make sure that you merge the entries at the end of the `inventory_subelements.txt` file. The stand-alone Application Pack setup program does not overwrite the original `inventory_subelements.txt` file.*

Create an Inventory Profile and Execute an Inventory

Create an inventory profile using the **Inventory Tool Wizard**. An inventory profile allows you to do the following:

- Divide your network between different SNMP community names. Grouping resources using alternative SNMP community names improves performance by providing collectors with multiple community names that limit the number of time-outs.
- Separate resources with invariants that require editing during synchronization from those that require no editing.
- Separate requests that you want to run at different times or different intervals.
- Have one profile for each collector.

See the *Netcool/Proviso DataMart Configuration Guide* for instructions on using the **Inventory Tool Wizard** to create an inventory profile.

After creating an inventory profile, you need to execute it to perform a discovery. To execute an inventory profile, you open the Inventory Tool window and select or deselect the appropriate checkboxes.

See the *Netcool/Proviso DataMart Configuration Guide* for instructions on executing an inventory profile.

Enable Application Pack Support for Localized Reports

The Convidia Media Server Application Pack provides support for localized reports. When the stand-alone Application Pack setup program displays the **Skip Localization** checkbox, do not check the box. If you do not check the **Skip Localization** checkbox, the stand-alone Application Pack setup program automatically handles all SilverStream file manipulation to enable support for localized reports.

***Note:** If your application pack provides support for localized reports, do not check the Skip Localization checkbox. Otherwise, you will have to run the stand-alone Application Pack setup program again (without checking the box) to enable application pack support for localized reports.*

Deploy Reports

The stand-alone Application Pack setup program loads rules for the new device. The Inventory process uses those rules to group elements and sub-elements. You must run autogrouping as part of the deploying reports task to associate reports with the groups defined during the Inventory process.

After the inventory completes execution, the elements and sub-elements associated with the Convidia Media Server Application Pack are created and the supplied reports are attached to the appropriate grouping rules. It is necessary to manually deploy (auto-group) these reports using the the Netcool/Proviso DataMart Resource Editor. The instructions provided in this section assume you understand how to invoke and display the Netcool/Proviso DataMart Resource Editor.

To deploy the reports that the Convidia Media Server Application Pack supplies, follow these steps:

1. On the DataMart server, open the Netcool/Proviso DataMart Resource Editor.
2. Click the **ReportSE** group tab.
3. Move the cursor to the left pane and scroll up to select any group under the **SUB-ELEMENTS->NOC Reporting** tree.
4. Right-click and select the **AutoGrouping** option from the menu. The AutoGrouping option places the reports in dynamically generated groups creating during the Inventory process.

5. Click **Yes** to continue. Click **Close** to exit the message box or click **Details** to view a description of any errors.

For more information on deploying reports and performing other tasks related to editing resources, see the *Netcool/Proviso DataMart Operation Guide*.

Check for Resources

Use the Netcool/Proviso DataMart Resource Editor to determine if the Netcool/Proviso resources (elements, sub-elements, properties, and so forth) were created after the inventory completes execution.

See the *Netcool/Proviso DataMart Configuration Guide* for information on using the Netcool/Proviso DataMart Resource Editor to display the Netcool/Proviso resources associated with the Convedia Media Server Application Pack.

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Xwpick

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SCOTTY Stack

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