

*InCharge*TM

Service Assurance Manager User's Guide for InfoVista Adapter

Version 1.0



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Preface

This document describes the configuration and operation of the InCharge Service Assurance Manager Adapter for InfoVista.

Intended Audience

This document is intended for personnel who need to configure and use the InCharge Adapter for InfoVista.

Prerequisites

Before you configure and use the InCharge Adapter for InfoVista, the following software must be installed on appropriate servers in your network:

- InfoVista software version 2.2 or 2.3. For complete requirements, see [Requirements for InCharge Adapter for InfoVista](#) on page 1.
- The InCharge Adapter for InfoVista. For information about installing InCharge adapters, see the *InCharge Installation Guide*.
- Other required InCharge applications: InCharge Global Console, InCharge Service Assurance Manager (Service Assurance), and InCharge Service Assurance Manager (SAM) Adapter Platform. For information about installing these InCharge applications, see the *InCharge Installation Guide*.

Document Organization

This guide consists of the following chapter.

1. THE INCHARGE ADAPTER FOR INFOVISTA	Provides an overview and explains how to configure and use the InCharge Adapter for InfoVista.
---------------------------------------	--

Table 1: Document Organization

Documentation Conventions

Several conventions may be used in this document as shown in Table 2.

CONVENTION	EXPLANATION
<code>sample code</code>	Indicates code fragments and examples in Courier font
keyword	Indicates commands, keywords, literals, and operators in bold
%	Indicates C shell prompt
#	Indicates C shell superuser prompt
<parameter>	Indicates a user-supplied value or a list of non-terminal items in angle brackets
[option]	Indicates optional terms in brackets
<i>/InCharge</i>	Indicates directory path names in italics
<i>yourDomain</i>	Indicates a user-specific or user-supplied value in bold, italics
<i>File > Open</i>	Indicates a menu path in italics
▲ ▼	Indicates a command that is formatted so that it wraps over one or more lines. The command must be typed as one line.

Table 2: Documentation Conventions

Directory path names are shown with forward slashes (/). Users of the Windows operating systems should substitute back slashes (\) for forward slashes.

Also, if there are figures illustrating consoles in this document, they represent the consoles as they appear in Windows. Under UNIX, the consoles appear with slight differences. For example, in views that display items in a tree hierarchy such as the Topology Browser, a plus sign displays for Windows and an open circle displays for UNIX.

Finally, unless otherwise specified, the term InCharge Manager is used to refer to InCharge programs such as Domain Managers, Global Managers, and adapters.

InCharge Installation Directory

In this document, the term **BASEDIR** represents the location where InCharge software is installed.

- For UNIX, this location is: */opt/InCharge<n>/<productsuite>*.
- For Windows, this location is: *C:\InCharge<n>\<productsuite>*.

The *<n>* represents the InCharge software version number. The *<productsuite>* represents the InCharge product suite that the product is part of.

Table 3 defines the *<productsuite>* directory for each InCharge product.

PRODUCT SUITE	INCLUDES THESE PRODUCTS	DIRECTORY
IP Management Suite	<ul style="list-style-type: none"> • InCharge IP Availability Manager • InCharge IP Performance Manager • InCharge Discovery Manager • InCharge Adapter for HP OpenView NNM • InCharge Adapter for IBM/Tivoli NetView 	/IP
Service Assurance Management Suite	<ul style="list-style-type: none"> • InCharge Service Assurance Manager • Global Console • InCharge Service Assurance Manager Business Impact Manager • InCharge Service Assurance Manager Failover System • InCharge Service Assurance Manager Notification Adapters • InCharge Service Assurance Manager Adapter Platform • InCharge SNMP Trap Adapter • InCharge Syslog Adapter • InCharge XML Adapter • InCharge Adapter for Remedy • InCharge Adapter for TIBCO Rendezvous • InCharge Adapter for Concord eHealth • InCharge Adapter for InfoVista 	/SAM
Application Management Suite	<ul style="list-style-type: none"> • InCharge Application Connectivity Monitor 	/APP
SMARTS Software Development Kit	<ul style="list-style-type: none"> • Software Development Kit 	/SDK

Table 3: Product Suite Directory for InCharge Products

For example, on UNIX operating systems, version 6.0 of InCharge IP Availability Manager is, by default, installed to `/opt/InCharge6/IP/smarts`. This location is referred to as **BASEDIR**/`smarts`.

Optionally, you can specify the root of **BASEDIR** to be something other than `/opt/InCharge6` (on UNIX) or `C:\InCharge6` (on Windows), but you cannot change the `<productsuite>` location under the root directory.

For more information about the directory structure of InCharge software, refer to the *InCharge System Administration Guide*.

Additional Resources

In addition to this manual, SMARTS provides the following resources.

InCharge Commands

Descriptions of InCharge commands are available as HTML pages. The *index.html* file, which provides an index to the various commands, is located in the **BASEDIR**/*smarts/doc/html/usage* directory.

Documentation

Readers of this manual may find other SMARTS documentation (also available in the **BASEDIR**/*smarts/doc/pdf* directory) helpful.

InCharge Documentation

The following SMARTS documents are product independent and thus relevant to users of all InCharge products:

- *InCharge Release Notes*
- *InCharge Documentation Roadmap*
- *InCharge Installation Guide*
- *InCharge System Administration Guide*
- *InCharge Operator's Guide*

InCharge Service Assurance Manager Documentation

The following SMARTS documents are relevant to users of the InCharge Service Assurance Management product suite.

- *An Introduction to InCharge Service Assurance Manager*
- *InCharge Service Assurance Manager Configuration Guide*
- *InCharge Service Assurance Manager Failover System User's Guide*
- *InCharge Service Assurance Manager User's Guide for Business Impact Manager*

The following SMARTS documents are relevant to InCharge Service Assurance Manager adapters.

- *InCharge Service Assurance Manager Notification Adapters User's Guide*
- *InCharge Service Assurance Manager Adapter Platform User's Guide*

- *InCharge XML Adapter User's Guide*
- *InCharge Service Assurance Manager User's Guide for Remedy Adapter*
- *InCharge Service Assurance Manager User's Guide for Concord eHealth Adapter*
- *InCharge Service Assurance Manager User's Guide for InfoVista Adapter*

Common Abbreviations and Acronyms

The following lists common abbreviations and acronyms that are used in the InCharge guides.

ASL	Adapter Scripting Language
CDP	Cisco Discovery Protocol
ICIM	InCharge Common Information Model
ICMP	Internet Control Message Protocol
IDS	Incremental Device Support
IP	Internet Protocol
MSFC	Multilayer Switch Feature Card
MIB	Management Information Base
MODEL	Managed Object Definition Language
RSFC	Router Switch Feature Card
RSM	Router Switch Module
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
VLAN	Virtual Local Area Network

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The InCharge Adapter for InfoVista

The InCharge Adapter for InfoVista integrates with the InfoVista suite of applications and enables you to do the following:

- Export topology from InCharge Service Assurance Managers and Availability Managers to the InfoVista VistaProvisioner product.
- Display InfoVista performance-related reports from an InCharge Global Console.
- View and respond to performance-related notifications at the InCharge Global Console that originate from the InfoVista Server.

This chapter describes these capabilities and how to configure and use this adapter.

Requirements for InCharge Adapter for InfoVista

The InCharge Adapter for InfoVista is supported on these platforms:

- Solaris 8 or Solaris 9
- Windows 2000 Server or Windows 2000 Advanced Server.

Note: The InCharge Adapter for InfoVista is not supported on the HP-UX, AIX, and Linux operating systems.

To ensure all necessary files are available, the InCharge Adapter for InfoVista must be installed on the same hosts as:

- InfoVista VistaProvisioner application 1.1 and InCharge Service Assurance Manager (6.0 or later), which are also coresident.
- InCharge Global Consoles (6.0 or later) and the InfoVista native client, which are also coresident. The InCharge Adapter for InfoVista cannot be used with pre-6.0 Global Managers.
- InCharge SAM Adapter Platforms

To install the InCharge Adapter for InfoVista, you must either:

- Be superuser (User ID 0) on UNIX platforms.
- Have administrative privileges on Windows platforms.

For InCharge Service Assurance Management suite hardware and additional software requirements including required X Server Settings (UNIX) and Java Applet requirements, see the *InCharge Installation Guide*.

Exporting Topology from InCharge to InfoVista

The InCharge Adapter for InfoVista permits InfoVista servers to leverage the power of InCharge autodiscovery to obtain an accurate topology of the managed network environment in real time. InCharge provides a powerful tool to accurately discover dynamically changing infrastructure components automatically. InCharge can provide InfoVista with information about all the physical and logical elements in layer 2 and 3 from InCharge IP Availability Manager(s) and with groups defined in the InCharge Global Manager(s).

The InCharge Adapter for InfoVista processes elements from InCharge IP Availability Manager(s) and groups from the InCharge Service Assurance Manager(s). The InfoVista Adapter then writes an export file for each InfoVista server that will import the topology. The InfoVista Adapter also writes the Dictionary file used by the InfoVista Performance Report tool.

Once the export and Dictionary files are written, the InfoVista Adapter exits. The export files must be imported by InfoVista to complete the transfer of the topology. InfoVista uses the VistaProvisioner component to import the files. The VistaProvisioner then initiates data collection for reports on the imported topology elements.

The exported topology can be imported into VistaProvisioner manually using the VistaProvisioner user interface. In addition, the complete topology transfer can be automated using `sm_sched` and the `runExportImport` script. For more information on automating the process, see [Automating the Transfer of Topology from InCharge](#) on page 12.

Displaying InfoVista Reports from the InCharge Global Console

The InCharge Adapter for InfoVista allows you to retrieve performance-related InfoVista reports directly from an InCharge Global Console. Predefined and ad hoc reports are available.

Predefined reports are displayed using the InfoVista native client and are accessed at the Global Console using these client tools:

- InfoVista Trap Report
- InfoVista Performance Report

Ad hoc reports are displayed by InfoVista's web-based VistaNext interface to produce reports for trend analysis, performance statistics, and troubleshooting. These reports are accessed at the Global Console using the following client tools:

- Create VistaNext Report
- View VistaNext Report
- View Related VistaNext Report

The InfoVista-related client tools are available for topology elements that have been exported from InCharge to InfoVista and for any notifications that relate to these elements. The classes of InCharge elements that can be exported include:

- Firewall
- Host
- Interface
- Router
- Service Offering
- Switch
- Unitary Computer System

Note: As with any tool, Global Manager administrator can permit or deny access to these tools by any user.

How InfoVista Client Tools Retrieve Reports

The InfoVista client tools retrieve reports from InfoVista in different ways, but all the tools display the reports on the host where the Global Console is running. The reports are displayed using either a browser or the InfoVista native client.

The VistaNext client tools, *Create VistaNext Report*, *View VistaNext Report*, and *View Related VistaNext Report*, all use a web-based interface to create and view ad hoc reports via the VistaPortal.

When you select a VistaNext client tool from the Global Console, it launches a browser. The tool also passes a URL to the browser that includes the InfoVista server name, user name (and password, optionally), and the identifier of the topology element that the report will document.

The *InfoVista Trap Report* tool starts the InfoVista native client rather than a browser to display the report. When you use the tool on a notification that originated as a trap from InfoVista, the tool passes information from the trap to the native client, including the InfoVista Server name, user name (and password, optionally), and the report name. The InfoVista native client then accesses the InfoVista Server and displays the InfoVista Trap report.

The *InfoVista Performance Report* tool uses a more complex approach to display a report using the InfoVista native client. When you select the *InfoVista Performance Report* tool at the Global Console, the corresponding client tool script is invoked. The client tool launches an server-based script on the Global Manager to obtain an export keyword. The server script consults a Dictionary file that was created by the InfoVista Adapter and is stored on the Global Manager. The server script returns the report keyword and InfoVista server name from the Dictionary file to the client tool.

The InfoVista Performance Report tool then starts the InfoVista native client. The tool passes the InfoVista Server name, user name (and password, optionally), element name, and, based on the keyword, the report name to the native client. The InfoVista native client then accesses the InfoVista Server and displays the appropriate report.

Converting InfoVista Traps to InCharge Notifications

InfoVista generates traps using performance-related reports running on an InfoVista server. The InfoVista traps include the related topological element, the InfoVista report, and the InfoVista server that is the source of the trap.

The InCharge SNMP Trap Adapter (Receiver) on the host with the InCharge SAM Adapter Platform receives the trap. If the Trap Adapter identifies the trap as originating from an InfoVista server, it invokes an `asl` hook script. The `infovistaTrap.asl` script identifies the topology element associated with the InfoVista trap and provides the element's identity to the Trap Adapter.

The InCharge SNMP Trap Adapter (Receiver) then creates a new notification that is sent to the Global Manager and displayed in the Global Console.

Configuring the InCharge Adapter for InfoVista

This section explains how to configure the InCharge Adapter for InfoVista and its related client tools.

Editing Adapter Configuration Files

As part of the InCharge deployment and configuration process, you will need to modify certain files. User modifiable files include InCharge tool scripts, configuration files, rule set files, and templates. Original versions of these files are installed into appropriate subdirectories under the **BASEDIR**/*smarts/* hierarchy. For example, original versions of Global Manager configuration files are installed to **BASEDIR**/*smarts/conf/ics*.

To edit a user modifiable file, create a local copy of the file in **BASEDIR**/*smarts/local* or one of its subdirectories. For example, a modified *ics.conf* file should be saved to **BASEDIR**/*smarts/local/conf/ics*. InCharge software is designed to first search for user modifiable files in **BASEDIR**/*smarts/local* or one of its subdirectories. If a modified version of a file is not found in the local area, InCharge software then searches appropriate nonlocal directories.

Note: Original versions of files may be changed or updated as part of an InCharge software upgrade. However, files located in **BASEDIR**/*smarts/local* are always retained during an upgrade.

To facilitate proper file editing, SMARTS provides the *sm_edit* utility. When used to modify an original version of a file, this utility automatically creates a local copy of the file and places it in the appropriate location under **BASEDIR**/*smarts/local*. This ensures that the original version of the file remains unchanged. In both UNIX and Windows environments, you can invoke *sm_edit* from the command line. Optionally, you can configure Windows so that *sm_edit* is automatically invoked when user-modifiable files are double-clicked in Windows Explorer.

To invoke the *sm_edit* utility from the command line, specify the path and the name of the file you want to edit under **BASEDIR**/*smarts*. For example, to edit the configuration file for the Global Manager, you invoke the *sm_edit* utility as follows:

```
% BASEDIR/smarts/bin/sm_edit conf/ics/ics.conf
```

The *sm_edit* utility automatically creates a local copy of the *ics.conf* file in the **BASEDIR**/*smarts/local/conf/ics* directory, if necessary, and opens the file in a text editor. If a local version of the file already exists, the *sm_edit* utility opens the local version in a text editor. In addition, *sm_edit* creates any necessary directories.

For more information about how to properly edit user modifiable InCharge files and how to use the *sm_edit* utility, refer to the *InCharge System Administration Guide*.

Integrating the InfoVista Adapter

Configure the InCharge Adapter for InfoVista using the files in Table 4. Edit only the InCharge configuration file installed on the same host as the application listed in the first column.

CORESIDENT APPLICATION	INCHARGE DIRECTORY (BELOW BASEDIR)	INCHARGE CONFIGURATION FILE(S)	DESCRIPTION
InCharge Global Console(s)	<i>actions/client/infovista</i>	<i>infoVistaTrapReport</i> <i>showVistaReport</i> <i>vistaNextCreateReport</i> <i>vistaNextShowRelated</i> <i>vistaNextShowReport</i>	Client tool scripts for retrieving reports from the InfoVista Server. Client tools are invoked from the Global Console by an operator.
InCharge Service Assurance Manager (Global Manager)	<i>conf/ics</i>	<i>configureInfoVistaTools.xml</i>	XML definition of InfoVista tools used by the Global Manager. Import this file using <i>sm_config</i> to configure the client tools related to the InfoVista Adapter.
	<i>conf/infovista</i>	<i>infovista.conf</i>	Configuration file for the InCharge Adapter for InfoVista.
	<i>script/infovista/server</i>	<i>runExportImport</i>	A sample script that can be used to automate the transfer of topology between InCharge and InfoVista. when used with a scheduling utility such as <i>sm_sched</i> .
InCharge SAM Adapter Platform	<i>conf/icoi</i>	<i>trap_mgr.infovista.conf</i> <i>trap_mgr.conf</i>	<i>trap_mgr.infovista.conf</i> is used to define and map incoming InfoVista traps to InCharge notifications. The content must be appended to the <i>trap_mgr.conf</i> file.
InfoVista VistaProvisioner	<i>conf/infovista/provisioner</i>	<i>def.txt</i> <i>library.txt</i> <i>report.pl</i> <i>appli.ini</i>	Configuration files that must be copied to the InfoVista VistaProvisioner directories to allow VistaProvisioner to import the InCharge topology information.

Table 4: Configuration Files for InfoVista Adapter

To configure the InCharge Adapter for InfoVista, you must complete all of the following steps:

- 1 At the host where the InCharge Service Assurance Manager is installed, do the following:
 - Invoke the *sm_config* command from the **BASEDIR**/*smarts/bin* directory to import the *configureInfoVistaTools.xml* to the Global Manager. For example:

```
# ./sm_config -s <global_manager> import▼
▲configureInfoVistaTools.xml
```

Refer to the *InCharge Service Assurance Manager Configuration Guide* for details about importing XML files to the Global Manager.

- ▼▲ Indicates the command must be typed as one line.
- Change the configuration parameters in the *infovista.conf* file to match your InCharge and InfoVista configurations. For details, refer to [Editing the infovista.conf Configuration File on page 8](#).
 - Automate the process of exporting the topology information from InCharge and then importing it into InfoVista. For more information on automating the process, see [Automating the Transfer of Topology from InCharge](#) on page 12.
 - 2 Edit the client tool files related to the InfoVista reports at each Global Console to match your browser and InfoVista configurations. For details, refer to [Editing the InfoVista Client Tool Files on page 9](#).
 - 3 At the host where VistaProvisioner is coresident with the InCharge Adapter for InfoVista, customize VistaProvisioner to import InCharge topology information. For detailed information, see [Customize VistaProvisioner to Import InCharge Topology](#) on page 11.
 - 4 At the host where InCharge SAM Adapter Platform is installed, append the content of *trap_mgr.infovista.conf* to the *trap_mgr.conf* file. Both files are in the **BASEDIR**/*smarts/conf/icoi*. This will map incoming InfoVista traps to InCharge notifications.

Editing the infovista.conf Configuration File

The configuration parameters for the InfoVista Adapter are specified in the local copy of *infovista.conf* file, located in the **BASEDIR**/*smarts/local/conf/infovista* directory.

To open and modify the default *infovista.conf* file, use *sm_edit* to ensure that the file is copied to **BASEDIR**/*smarts/local/script/server/infovista* and that it retains the proper permissions. For example, to open and modify the default *infovista.conf* file on UNIX, use the following command from **BASEDIR**/*smarts/bin*:

```
# ./sm_edit BASEDIR/smarts/conf/infovista/infovista.conf
```

Table 5 lists the configuration parameters of *infovista.conf* file.

VARIABLE	DEFAULT VALUE	DESCRIPTION
SAM_SERVER_NAME	INCHARGE-SA	InCharge Service Assurance Manager (Global Manager) from which groups can be exported.
DOMAIN_MANAGER_NAMES	EAST WEST INCHARGE	Domain Managers from which independent and contained objects will be exported.
EXPORT_FILE_NAME	C:\Program Files\InfoVista\Provisioner\smarts\config\x1-topology.txt	File containing the InfoVista topology. This file name must be different for each InfoVista server importing the InCharge topology.
INFOVISTA_SERVER	iv	InfoVista Server that will respond to requests for reports. May include management port.
SERVER_DICTIONARY_FILE	serverDictionary.data	The server dictionary file created under BASEDIR/local/conf/infovista . The dictionary file supports the InfoVista Performance Report client tool and includes data describing how each element was exported and to which server. Do not change this name because the client tool that brings up InfoVista Performance Report expects the file to have the default name. To avoid producing the server dictionary (which means the InfoVista Performance Report tool will not be used), set the file name to an empty string from command line using -D switch.

Table 5: Configuration Parameters for the InfoVista Adapter

Note: To support exporting the InCharge topology into multiple InfoVista Servers, repeat these variables keywords for each InfoVista Server: SAM_SERVER_NAME, DOMAIN_MANAGER_NAMES, EXPORT_FILE_NAME, and INFOVISTA_SERVER. The value for SAM_SERVER_NAME can be repeated using the same value for each InfoVista Server, but the other keywords must be different for each InfoVista Server.

Editing the InfoVista Client Tool Files

Each of the InfoVista client tool scripts must be edited to accurately reflect your configuration. The files are located in **BASEDIR/actions/client/infovista**.

The files are *infoVistaTrapReport*, *showVistaReport*, *vistaNextCreateReport*, *vistaNextShowRelated*, and *vistaNextShowReport*. On UNIX, the files end with the extension *.sh* and on Windows, the files end with the extension *.cmd*.

To open and modify the default client tool files, use `sm_edit` to ensure that the file is copied to **BASEDIR**/*smarts/local/actions/client/infovista* and that it retains the proper permissions. For example, to open and modify the default `showVistaReport.sh` file on UNIX, use the following command from **BASEDIR**/*smarts/bin*:

```
# ./sm_edit▼
▲ BASEDIR/smarts/actions/client/infovista/showVistaReport.sh
```

▼▲ Indicates the command must be typed as one line.

Table 6 lists the configuration parameters of InfoVista client tool files `infoVistaTrapReport` and `showVistaReport`.

VARIABLE	DEFAULT VALUE	DESCRIPTION
InfoVistaUserName	infoVistaTrapReport: administrator showVistaReport: operator	Name of InfoVista user InCharge will use.
InfoVistaPassword		Password for InfoVista user name
INFOVISTA_DIR	UNIX: <i>/opt/InfoVista/</i> Windows: <i>C:\Program Files\InfoVista\</i>	Path to directory where InfoVista is installed.
INFOVISTA_REPORT_VIEWER_FILE	UNIX: <i>Essentials/bin/ivreport</i> Windows: <i>Essentials\bin\ivreport</i>	Location of the InfoVista native client, relative to INFOVISTA_DIR.

Table 6: Configuration Parameters for the InfoVista Client Tool Files `infoVistaTrapReport` and `showVistaReport`

Table 7 lists the configuration parameters of InfoVista client tool files `vistaNextCreateReport`, `vistaNextShowRelated`, and `vistaNextShowReport`.

VARIABLE	DEFAULT VALUE	DESCRIPTION
InfoVistaServer	iv	The location of InfoVistServer.
InfoVistaWebPort	80	The port for Web interface (VistPortal).
InfoVistaUserName	operator	Name of InfoVista user InCharge will use.

VARIABLE	DEFAULT VALUE	DESCRIPTION
InfoVistaPassword		Password for InfoVista user name
BROWSER_DIR	UNIX: /opt/misc/netscape/netscape-4.79-28/ Windows: C:\Program Files\Internet Explorer\	Path to your browser for the computer where your the Global Console is installed.
BROWSER_EXECUTABLE	UNIX: netscape Windows: IEXPLORE.EXE	Name of browser executable for the computer where your the Global Console is installed.

Table 7: Configuration Parameters for the InfoVista Client Tool Files `vistaNextCreateReport`, `vistaNextShowRelated`, and `vistaNextShowReport`

About `sm_infovista`

Running the `sm_infovista` executable starts the InfoVista Adapter and exports the topology from InCharge Service Assurance Managers and Availability Managers to the Dictionary file and the export files defined in the `infovista.conf` file. After the adapter exports the topology, it exits.

The `sm_infovista` executable uses the following syntax:

```
sm_infovista [options ...]
```

The following options are available when running `sm_infovista`:

OPTION	DESCRIPTION
<code>--broker=<location></code>	Alternate InCharge broker location as <code><host>:<port></code>

Table 8: `sm_infovista` Options

Customize VistaProvisioner to Import InCharge Topology

VistaProvisioner is the portion of InfoVista that must be customized to import the InCharge topology. Perform the following steps:

- 1 At the host where VistaProvisioner and the InCharge Adapter for InfoVista are installed, copy the `InfoVista/Provisioner/Standard` subdirectory to new `InfoVista/Provisioner/SMARTS` subdirectory.
- 2 Append the last 2 lines of **BASEDIR**/`smarts/conf/infovista/provisioner/appli.ini` to the file `InfoVista/Provisioner/appli.ini`.

- 3 Replace the following files:
 - *InfoVista/Provisioner/SMARTS/appli/instance/def.txt* with **BASEDIR**/*smarts/conf/infovista/provisioner/def.txt*
 - *InfoVista/Provisioner/SMARTS/library.txt* with **BASEDIR**/*smarts/conf/infovista/provisioner/library.txt*
 - *InfoVista/Provisioner/SMARTS/subappli/report/report.pl.txt* with **BASEDIR**/*smarts/conf/infovista/provisioner/report.pl*
- 4 Using the VistaProvisioner interface, set up the server parameters to point at your InfoVista Server.

Automating the Transfer of Topology from InCharge

The *sm_infovista* utility performs only part of the operation of transferring the topology information from InCharge to InfoVista. As described earlier, *sm_infovista* exports the topology from InCharge SAM servers and InCharge AM servers to create an export file. The file must then be imported into the VistaProvisioner server for distribution to other InfoVista servers. To automatically schedule this complete topology transfer process, use the *sm_sched* utility to schedule the *runExportImport* script to run at a specific interval.

Editing the runExportImport script

The *runExportImport* script is located in **BASEDIR**/*smarts/script/server/infovista* directory. For UNIX, the file is *runExportImport.sh* and for Windows, the file is *runExportImport.cmd*.

Before using the *runExportImport* script, edit the file to ensure the values for the parameters in Table 9 are correct for your configuration:

VARIABLE	DEFAULT VALUE	DESCRIPTION
InfoVistaDirectory	UNIX: <i>/opt/InfoVista/Provisioner</i> Windows: <i>C:\Program Files\InfoVista\Provisioner</i>	Path to directory where InfoVista is installed.
InChargeDirectory	UNIX: <i>/opt/InCharge6/SAM/smarts</i> Windows: <i>C:\InCharge\SAM\smarts</i>	Path to directory where InCharge is installed.

Table 9: Configuration Parameters for the *runExportImport* Script

Use `sm_edit` to ensure that the file is copied to **BASEDIR**/*smarts/local/script/server/infovista* and that it retains the proper permissions. For example, to open and modify the default `runExportImport.sh` file on UNIX, use the following command from **BASEDIR**/*smarts/bin*:

```
# ./sm_edit▼  
▲BASEDIR/smarts/script/server/infovista/runExportImport.sh
```

▼▲ Indicates the command must be typed as one line.

About `sm_sched`

The `sm_sched` utility uses a control file to store configuration options and settings for the scheduled events. By default, `sm_sched` reads the control file called *sched.conf*, located in **BASEDIR**/*smarts/local/conf*. The `sm_sched` utility runs all of the jobs listed in the control file beginning two minutes from the time it is issued and repeats the jobs at the interval times specified. Up to 20 jobs may be performed simultaneously; if you have more than 20 jobs, the additional jobs are queued until the others are completed.

To modify the *sched.conf* file, use `sm_edit` to ensure that the file is copied to **BASEDIR**/*smarts/local/conf* and that it retains the proper permissions. For example, to open and modify the default *sched.conf* file, use the following command from **BASEDIR**/*smarts/bin*:

```
# ./sm_edit BASEDIR/smarts/conf/sched.conf
```

The *sched.conf* lists a number of jobs, or tasks, to be performed when the control file is called by `sm_sched`. A job is a line that consists of two items: a *time interval* and a *command*. Each job is on an individual line within the control file using the following syntax:

```
<time interval> <command>
```

A line beginning with whitespace or the `#` character is treated as a comment line and ignored by the utility.

The time interval has the syntax of `hh:mm:ss` and represents the interval of time that needs to elapse (the hours, minutes, and seconds) before the job is run. For example, "24:00:00", represents an interval of twenty-four hours. An empty field has a value of zero so "24:." also represents 24 hours.

After the time interval, type the `sm_infovista` command to be issued at a UNIX or Windows command prompt. For example, to run `sm_infovista` at the recommended interval of every 24 hours using the options values specified in the `infovista.conf` file, add the following to the control file:

- UNIX: `24:00:00 runExportImport.sh`
- Windows: `24:00:00 runExportImport.cmd`

Note: On UNIX systems, cron is usually used to schedule commands. If you desire, use cron to schedule `runExportImport` following the guidelines in this section.

Running the `sm_sched` Utility

The syntax for running `sm_sched` is as follows:

```
sm_sched [options...] [control-file]
```

Where `control-file` is the path and file name of the file listing the jobs you want executed. If you leave the value empty, it is assumed you want to use the default control file, `sched.conf` located in **BASEDIR**/`smarts/local/conf`.

Run `sm_sched` from the **BASEDIR**/`smarts/bin` directory and issue the following command:

```
% ./sm_sched
```

The `sm_infovista` records important information to its log file. The log file is located in the **BASEDIR**/`smarts/local/logs` directory and is named `infovista.log`.

Options for `sm_sched`

The following options are available when running `sm_sched`:

OPTION	DESCRIPTION	DEFAULT VALUE
<code>--maxjobs=<n></code>	Maximum number of jobs to be run simultaneously. Additional jobs listed in the control file are queued until one of the currently running jobs finishes.	20
<code>--retries=<n></code>	Number of retries to attempt for each job. The job is canceled after <code><n></code> consecutive failures and no further attempt is made. If <code><n></code> is 0, then there is no limit to the number of retries.	3
<code>--maxfails=<n></code>	Failure limit. The job is canceled after <code><n></code> failures. If <code><n></code> is 0, then there is no limit on the number of failures allowed.	100

Table 10: Command-Line Options for the `sm_sched` Utility

Results From sm_sched

Jobs listed in the control file are expected to execute without feedback. Should there be any output from the job commands, it is written to a log file called *sm_sched.log* located in **BASEDIR**/*smarts/local/logs*. Items logged by *sm_sched* are done so with a Warning severity.

Since the purpose of the *sm_sched* utility is to continuously schedule jobs, it normally does not exit. There are two conditions that would cause *sm_sched* to exit (and return an exit value):

RETURN CODE VALUE	DESCRIPTION
0	The utility has no further jobs to run.
non-zero	A problem occurred, preventing the utility from starting up or the utility could not find a file that was scheduled to run.

Table 11: sm_sched Exit Return Codes

Using the InfoVista Adapter from the Global Console

Once the InfoVista Adapter is installed and configured, you can view InfoVista reports and notifications from the Global Console.

Viewing an InfoVista Report

To invoke any InfoVista Report client tool, perform these steps:

- 1 Select and right-click one of the following:
 - A notification in the Notification Log Console
 - A map icon in the Map Console
 - A managed element in the topology tree of the Topology Browser Console

The popup menu including the Client Tools displays.

- 2 Select *Client Tools* and one of the following InfoVista reports:
 - *InfoVista Trap Report*
 - *InfoVista Performance Report*
 - *Create VistaNext Report*

- *View VistaNext Report*
- *View Related VistaNext Reports*

A browser window or InfoVista native client opens and displays the report that you selected. If a report is not available, a message displays that indicates the report is not available.

Viewing and Responding to InfoVista Notifications at the InCharge Global Console

Notifications that originate from InfoVista and arrive at the Global Console can be viewed and processed as any other InCharge notification. These notifications can be acknowledged, owned, and escalated. In addition, InfoVista-related client tools can be invoked on the notifications.

The InfoVista classes (called “Vistas”) are mapped to InCharge classes as show in Table 12.

VISTA NAME	INCHARGE CLASS
Router	Router
LAN Switch	Switch
ATM Switch	Switch
Server	Host
SNMP Node	Unitary Computer System
WAN Interface	Interface
LAN Interface	Interface
Resource Group	Service Offering

Table 12: InfoVista Classes and Corresponding InCharge Classes

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