HP OpenView Performance Insight

Interface Discovery Datapipe User Guide

Software Version: 2.0

Reporting and Network Solutions 6.0

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contents

Contents

Overview

As its name implies, the Interface Discovery Datapipe discovers interfaces on SNMP-manageable devices. In addition to discovering interfaces, the Interface Discovery Datapipe maintains configuration data for discovered interfaces. To ensure continuity of data if the value of *ifIndex* changes, the Interface Discovery Datapipe supports the use of the following alternate, persistent attributes:

- *ifDescr*
- *ifName*
- *ifAlias*

The Interface Discovery Datapipe includes a re-indexing log report. This report has three functions:

- It indicates the identifier used to name each interface
- It indicates the MIB-II ifIndex for the interface
- It tracks re-indexing events.

Data maintained by the Interface Discovery Datapipe is used by the following OVPI packages:

- ATM Report Pack
- Cisco Ping Report Pack
- Frame Relay Report Pack/Frame Relay CPE Datapipe
- Interface Reporting Report Pack/Interface Reporting ifEntry Datapipe
- MPLS VPN Report Pack
- NetFlow Interface Report Pack/NetFlow Interface Datapipe
- NetFlow Global View Report Pack/NetFlow Global View Datapipe

Version History

Version 1.1 of the Interface Discovery Datapipe was released May 2003. That release included minor fixes to version 1.0. Version 1.1 was released unchanged in October 2003. Version 2.0 was released April 2004 with RNS 5.0. Version 2.0 installs on OVPI 5.0 and supports Oracle database software as well as Sybase database software. Version 2.0 was released unchanged with RNS 6.0 in August 2004.

Sources for Additional Information

The following documents are related to this manual:

- *Interface Discovery Datapipe 2.0 Release Statement*

- *Interface Reporting ifEntry Datapipe 2.0 User Guide*

- *Interface Reporting Report Pack 4.5 User Guide*

- *RNS 6.0 Release Notes, August 2004*

User guides for the core product, OVPI, and user guides for the reporting solutions that run on OVPI, can be downloaded from the following web site:

http://www.hp.com/managementsoftware

Select **Technical Support > Product Manuals** to open the **Product Manuals Search** page. The user guides for OVPI are listed under **Performance Insight.** The user guides for reporting solutions and NNM components are listed under **Reporting and Network Solutions.**

Every manual listed under **Reporting and Network Solutions** indicates the date of publication. If a user guide is revised a reposted, the date of publication will change even if the software version number does not change. Since updated user guides are posted to this site on a regular basis, always search this site for updates before using an older PDF that may not be the latest PDF available.

Datapipe Installation

This chapter covers the following topics:

- Guidelines for a smooth installation
- Running Package Manager
- Additional steps for Remote Pollers
- Package removal

Version 2.0 of the Interface Discovery Datapipe requires OVPI 5.0. There are no package-level prerequisites for the Interface Discovery Datapipe.

Guidelines for a Smooth Installation

The RNS 6.0 CD includes components for NNM as well as components for OVPI. When you select OVPI components for installation, the install script on the CD extracts every OVPI package from the CD and copies them to the Packages directory on your system. When the extraction step finishes, the install script starts Performance Insight and launches the Package Manager install wizard.

If you have already extracted OVPI packages from the CD, everything is already on your system and available for installation. Install the Interface Discovery Datapipe by launching Performance Insight, starting Package Manager, and following the familiar on-screen directions. Before using Package Manager, review the following guidelines.

Removing an Earlier Version

Although some report packs can be upgraded, datapipes cannot be upgraded. Since there is no upgrade package for the Interface Discovery Datapipe 2.0, your first step is to uninstall the older version if you are running the older version.

Uninstalling an earlier version has the following side-effects:

- The IR ifEntry Datapipe depends on the Interface Discovery Datapipe. If you remove an older version of the Interface Discovery Datapipe, Package Manager will automatically remove the older version of the IR ifEntry Datapipe.

- You will lose interface configuration data. However, the data you lose will be recollected immediately and reports will not be affected.

- If you were polling a flagged collection — *Poll Flagged Interfaces Only* — you must re-provision the polling flag once version 2.0 is installed.

- You will lose polling group information. Reassign devices to the appropriate interface identifier group once version 2.0 is installed.

Distributed Systems

If your system is distributed, installation is more complicated. Install the Interface Discovery Datapipe on every OVPI server that performs polling. There is no need to install the Interface Discovery Datapipe on the central server, unless the central server is polling.

Running Package Manager

Insert the RNS 5.0 product distribution CD and follow the instructions for extracting OVPI solution components. On Windows, the instructions appear in a Main Menu that opens automatically. On UNIX, log in as root, mount the CD (if the CD does not mount automatically), navigate to the top level of the CD directory, and run the **./setup** command.

Once the OVPI packages have been extracted and copied to your system, the install script starts Package Manager. If you have the Package Manager install wizard up and running right now., start this procedure at step 4; otherwise begin at step 1.

1   Log in to the system. On UNIX systems, log in as root.

2   Stop OVPI Timer and wait for processes to terminate.

   Windows NT: Select **Settings > Control Panel > Administrative Tools > Services**

   UNIX: As root, do one of the following:

   > HP-UX: **sh /sbin/ovpi_timer stop**

   > Sun: **sh /etc/init.d/ovpi_timer stop**

3   From the Management Console, start Package Manager. The Package Manager welcome window opens.

4   Click **Next.** The Package Location window opens.

5   Click **Install**. Approve the default destination directory or browse to a different directory if necessary.

6   Click **Next.** The Report Deployment window opens. Type your OVPI username and password.

7   Click **Next.** The Package Selection window opens. Click the check box for:

   IFEntry_Disc_Datapipe 2.0

8   Click **Next.** The Type Discovery window opens. Accept the default to run Type Discovery.

> ➤ The Interface Discovery Datapipe includes vendor-specific type discovery files. These files will automatically assign the appropriate index-by group to the devices that belong to those vendors. Follow these steps if you want to assign additional device types to alternative interface identifiers manually:
> - Disable the Type Discovery option.
> - After the package is installed, use Polling Policy Management to assign the devices to the appropriate index-by group.

9   Click **Next.** The Selection Summary window opens.

10 Click **Install.** The Installation Progress window opens and the install begins. When the install finishes, a package installation complete message appears.

11 Click **Done**.

12 Restart OVPI Timer.

Windows NT: Select **Settings > Control Panel** > **Administrative Tools > Services**

UNIX: As root, do one of the following:

   HP-UX: `sh /sbin/ovpi_timer start`

   Sun: `sh /etc/init.d/ovpi_timer start`

The Interface Discovery Datapipe is now installed on your system.

Package Removal

Follow these steps to uninstall the Interface Discovery datapipe:

1   Log in to the system. On UNIX systems, log in as root.

2   Stop OVPI Timer and wait for processes to terminate.

3   From the Management Console, start Package Manager. The Package Manager welcome window opens.

4   Follow the on-screen directions for package removal and select the Interface Discovery Datapipe for removal. When the uninstall is complete, a package removal complete message appears.

5   Click **Done**.

6   Restart OVPI Timer.

Package Configuration

This chapter explains how to:

- Enable support for re-indexing

- Change an interface identifier

- Configure polling groups and polling policies for remote pollers

If you change an interface identifier for a given device *after* polling for that device has already started, the data collected after the change will use the new interface identifier and the pre-change data will not be associated with the post-change data. To avoid this outcome, assign all devices to the desired index-by groups before data collection begins.

Enabling Re-Indexing Support

The MIB-II definition does not guarantee a persistent value for ifIndex. Adding or removing an interface, upgrading software, or even rebooting the system may change the ifIndex value for an interface. If one of these events occurs and a unique and persistent identifier is not in use, data collected before re-indexing took place not be associated with the interface.

The Interface Discovery Datapipe provides the following alternate identifiers:

- ifDescr — supported by the index-by-ifDescr polling group

- ifName — supported by the index-by-ifName polling group

- ifAlias — supported by the index-by-ifAlias polling group

To enable re-indexing, select an alternate identifier (just *one* alternate identifier) that is unique for the device and persistent. Keep in mind that the Interface Discovery Datapipe includes vendor-specific Type Discovery files that automatically assign certain types of devices to an alternate interface identifier. As a result, some of the selection work is already done for you. If you are moving a device from index-by-ifIndex to any other group, the system will update the identifier and replace ifIndex with the new identifier.

The following table contains a list of device types and pre-assigned identifiers.

Device Type	Identifier Assigned by OVPI Type Discovery
Cisco Catalyst switches	ifName
Cisco routers	ifDescr
HP ProCurve switches (except 800T)	ifName

The Interface Discovery Datapipe installs vendor-specific type discovery files in the DPIPE_HOME/scripts directory. If you already have devices assigned to index-by groups, or if you want to assign devices manually, follow these steps:

1   Disable type discovery.

2   Remove the .dis file from the scripts directory.

3   Assign devices manually.

Changing an Interface Identifier

The index-by-ifIndex group is the default group. It automatically contains all the devices in the GENMIB2IF_Datapipe group that are not in the index-by-ifAlias, index-by-ifDescr, or index-by-ifName groups.

How to Change an Interface Identifier

Follow these steps to change an interface identifier:

1   For each device type, choose the interface identifier.

2   Assign each device of that type to the appropriate index-by group.

   a   Start the Management Console.

   b   Click the **Polling Policies** icon. The Polling Policy Management window opens.

   c   Select **Edit > Polling Groups**.

   d   Select **All Nodes of the Same Type** in the top pane, and the required index-by group in the bottom pane. Click **Edit**.

   e   Select the nodes to be assigned to this group in the left-hand pane, and click **>> to** move them into the group on the right. Click **OK** when complete.

3   Repeat the process above for other device types and index-by groups as necessary.

4   *Optional.* If you just assigned devices to a polling group that is different from the polling group that type discovery would put them in, remove the following Cisco or HP type discovery files from the DPIPE_HOME/scripts directory:

   • Cisco_device_by_ifName.dis

   • Cisco_router_by_ifDescr.dis

   • HP_ProCurve_by_ifName.dis

Duplicate Identifier Messages

If a device is assigned to an index-by group but the identifiers are not unique, then a duplicate identifier message, similar to the following message, will be inserted in the Trend log.

```
bcp_gateway,,WARNING,1984,2076,0,"the object [testhost.test.hp.com_AT3/0] is
duplicate for data table rv_ifentry_disc_ifname"
```

Configuring for Multiple Pollers

Additional steps are necessary if you are using the Interface Discovery Datapipe with multiple remote pollers. The standard installation configures four groups and eight polling policies for a single remote poller. Each remote poller will need its own polling group and polling policy.

The datapipe package includes group and collection policy files for two pollers. If you need to configure more than two pollers against a single database, you will need to generate additional sets of group files and policies.

1   Log in to the system. On UNIX, log in as root.

2   Navigate to the Interface Discovery Datapipe package directory:

UNIX:

```
$DPIPE_HOME/packages/IFEntry_Disc_Datapipe/IFEntry_Disc_Datapipe.ap
```

Windows:

```
%DPIPE_HOME%\packages\IFEntry_Disc_Datapipe\IFEntry_Disc_Datapipe.ap
```

3   Run this command:

trend_proc -f create_groups_multi_pollers.pro

4   Run this command:

collection_manager -import -file IFEntry_Disc_Collection_Policies_multi_pollers

5   Start Polling Policy Management and select **Edit > Datapipe Installations**.

6   Click **Create...** to create new pollers. Add the hostname and (optionally) the IP address of each poller and click **OK**.

7   When all pollers have been added, click **Close** to exit.

8   Click **All** in the left panel to display all polling policies.

9   Delete the original Flagged Discovery policies (those without an _p1 or _p2 at the end of the name).

10 Modify the new Flagged Discovery policies (those with an _p1 or _p2 at the end of the name) by double-clicking the policy.

   a   Change the **Polling Assigned to** setting for the poller1 policies to be the hostname of poller1 as configured in step 8.

   b   Change the **Polling Assigned to** setting for the poller2 policies to be the hostname of poller2 as configured in step 8.

At this point, the 15-minute policies should look similar to those in the following table.

Polling Policy	Table Alias Name for Data to be Collected	Group Name to Collect From	Poll From
Flagged_ifName_Disc_p1	x_IFEntry_Disc_ifName	discover-by-ifName-poller1	Hostname of poller1
Flagged_ifAlias_Disc_p2	xV_IFEntry_Disc_ifAlias	discover-by-ifAlias-poller2	Hostname of poller2
Flagged_ifDescr_Disc_p2	xV_IFEntry_Disc_ifDescr	discover-by-ifDescr-poller2	Hostname of poller2
Flagged_ifIndex_Disc_p2	xV_IFEntry_Disc_ifIndex	discover-by-ifIndex-poller2	Hostname of poller2
Flagged_ifName_Disc_p2	xV_IFEntry_Disc_ifName	discover-by-ifName-poller2	Hostname of poller2
Flagged_ifDescr_Disc_p2	xV_IFEntry_Disc_ifDescr	discover-by-ifDescr-poller2	Hostname of poller2
Flagged_ifIndex_Disc_p2	xV_IFEntry_Disc_ifIndex	discover-by-ifIndex-poller2	Hostname of poller2
Flagged_ifName_Disc_p2	xV_IFEntry_Disc_ifName	discover-by-ifName-poller2	Hostname of poller2

11 Modify the existing All Discovery policies by double-clicking the policy.

    a For the **Collect Data From** option, select **A Combination of Type and View**.

    b Click the **Create...** button for the **Group to Poll From** and create an *and* intersection between the index-by Type group and the poller1 View group.

    c Change the **Polling Assigned to** setting to be the hostname of poller1.

12 Add new All Discovery policies by selecting **File > Create Polling Policy...**

    a Create four new policies similar to the poller1 policies but with the Group to Poll From to be the equivalent poller2 group.

    b Change the **Collect Data From** to be **A Combination of Type and View**.

    c Click the **Create...** button for the **Group to Poll From** and create an **and** intersection between the index-by Type group and the poller2 View group.

    d Set the **Polling Assigned to** setting to be the hostname of poller2.

At this point, the daily policies should look similar to those in the table below.

Polling Policy	Table Alias Name for Data to be Collected	Group Name to Collect From	Poll From
All_ifIndex_Discovery_p2	xV_IFEntry_Disc_ifIndex	index-by-ifIndex-poller2	Hostname of poller2
All_ifName_Discovery_p2	xV_IFEntry_Disc_ifName	index-by-ifName-poller2	Hostname of poller2
All_ifAlias_Discovery_p2	xV_IFEntry_Disc_ifAlias	index-by-ifAlias-poller2	Hostname of poller2
All_ifDescr_Discovery_p2	xV_IFEntry_Disc_ifDescr	index-by-ifDescr-poller2	Hostname of poller2
All_ifAlias_Discovery	xV_IFEntry_Disc_ifAlias	index-by-ifAlias-poller1	Hostname of poller1

Polling Policy	Table Alias Name for Data to be Collected	Group Name to Collect From	Poll From
All_ifDescr_Discovery	xV_IFEntry_Disc_ifDescr	index-by-ifDescr-poller1	Hostname of poller1
All_ifIndex_Discovery	xV_IFEntry_Disc_ifIndex	index-by-ifIndex-poller1	Hostname of poller1
All_ifName_Discovery	xV_IFEntry_Disc_ifName	index-by-ifName-poller1	Hostname of poller1

13 Select **Edit > Polling Groups... > All Nodes in Same View** in the upper pane, then select poller1 in the lower pane. Assign nodes to be collected by poller1 to the poller1 View.

14 Select **Edit > Polling Groups... > All Nodes in Same View** in the upper pane, then select poller2 in the lower pane. Assign nodes to be collected by poller2 to the poller2 View.

Polling Groups and Polling Policies

A standard installation of the Interface Discovery Datapipe enables five polling groups and a combination of daily and 15-minute polling policies. Unless you need to enable support for multiple pollers, modifying the default polling policies is unnecessary.

Polling Groups

The polling groups enabled by installing the Interface Discovery Datapipe are described in the following table.

Name	Description
GENMIB2IF_Datapipe	Top-level group for all nodes that support MIB-II.
index-by-ifAlias	Subset of the GENMIB2IF_Datapipe group; contains all nodes that should use ifAlias as the identifier.
index-by-ifDescr	Subset of the GENMIB2IF_Datapipe group; contains all nodes that should use ifDescr as the identifier.
index-by-ifIndex	Subset of the GENMIB2IF_Datapipe group; containing all the devices that do not belong to the index-by-ifAlias, index-by-ifDescr, or index-by-ifName groups. Unless a device is assigned to a different group, the device defaults to ifIndex as the interface identifier. Editing this group is not necessary.
index-by-ifName	Subset of the GENMIB2IF_Datapipe group; contains all nodes that should use ifName as the identifier.

All four groups are based on GENMIB2IF_Datapipe. The index-by-ifIndex group is automatically re-populated by the system once an hour. If a device is reassigned to a new group, it will not immediately disappear from the index-by-ifIndex. However, thereafter, the device will be polled from its new index-by group.

Any of the five polling groups in the preceding table can be viewed and modified using Polling Policy Manager. To view or modify a polling group, open Polling Policy Management and select **Edit** > **Polling Groups** > **All Nodes of the Same Type**.

Polling Policies

A standard installation of the Interface Discovery Datapipe enables the following polling policies:

• Four daily policies, one for each index-by group

• Four 15-minute policies, one for each index-by group

Daily Policies

The daily policies discover (and subsequently, rediscover) all of the interfaces on all of the devices that support MIB-II. The daily policies are listed in the following table.

Policy Name	Table Alias Name for Data to be Collected	Group Name to Collect From
All_ifAlias_Discovery	xV_IFEntry_Disc_ifAlias	index-by-ifAlias
All_ifDescr_Discovery	xV_IFEntry_Disc_ifDescr	index-by-ifDescr
All_ifIndex_Discovery	xV_IFEntry_Disc_ifIndex	index-by-ifIndex
All_ifName_Discovery	xV_IFEntry_Disc_ifName	index-by-ifName

15-Minute Policies

The 15-minute policies discover all of the interfaces for flagged devices only. These policies are listed in the following table.

Policy Name	Table Alias Name for Data to be Collected	Group Name to Collect From
Flagged_ifAlias_Discovery	xV_IFEntry_Disc_ifAlias	discover-by-ifAlias
Flagged_ifDescr_Discovery	xV_IFEntry_Disc_ifDescr	discover-by-ifDescr
Flagged_ifIndex_Discovery	xV_IFEntry_Disc_ifIndex	discover-by-ifIndex
Flagged_ifName_Discovery	xV_IFEntry_Disc_ifName	discover-by-ifName

The Interface Discovery Datapipe adds a flag column called ifEntry_discover_flag to the core managed node table ksi_managed_node. If a re-indexing event is detected for a particular node, or if a new node is added to the system, the discover flag is set and the interfaces on that node will be re-discovered during the next polling cycle.

Index