

# Newbridge Preprocessor

Software Version: 3.00

HP Performance Insight 5.40

---

## User Guide

February 2009



## Legal Notices

### Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

### Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

### Copyright Notices

© Copyright 2002–2009 Hewlett-Packard Development Company, L.P.

No part of this document may be copied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard Company. The information contained in this material is subject to change without notice.

This product includes Xerces XML Java Parser software, which is Copyright (c) 1999 The Apache Software Foundation. All rights reserved.

This product includes JDOM XML Java Parser software, which is Copyright (C) 2000-2003 Jason Hunter & Brett McLaughlin. All rights reserved.

This product includes JClass software, which is (c) Copyright 1997, KL GROUP INC. ALL RIGHTS RESERVED.

This product includes J2TablePrinter software, which is © Copyright 2001, Wildcrest Associates (<http://www.wildcrest.com>)

This product includes Xalan XSLT Processor software, which is Copyright (c) 1999 The Apache Software Foundation. All rights reserved.

This product includes EXPAT XML C Processor software, which is Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd and Clark Cooper Copyright (c) 2001, 2002 Expat maintainers.

This product includes Apache SOAP software, which is Copyright (c) 1999 The Apache Software Foundation. All rights reserved.

This product includes O'Reilley Servlet Package software, which is Copyright (C) 2001-2002 by Jason Hunter, [jhunter\\_AT\\_servlets.com](mailto:jhunter_AT_servlets.com). All rights reserved.

This product includes HTTPClient Package software, which is Copyright (C) 1991, 1999 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

This product includes Perl software, which is Copyright 1989-2002, Larry Wall. All rights reserved.

This product includes Skin Look And Feel software, which is Copyright (c) 2000-2002 L2FProd.com. All rights reserved.

This product includes nanoXML software, which is Copyright (C) 2000 Marc De Scheemaeker, All Rights Reserved.

This product includes Sixlegs PNG software, which is Copyright (C) 1998, 1999, 2001 Chris Nokleberg

This product includes cURL & libcURL software, which is Copyright (c) 1996 - 2006, Daniel Stenberg, <[daniel@haxx.se](mailto:daniel@haxx.se)>. All rights reserved.

This product includes Sixlegs PNG software, which is Copyright (C) 1998, 1999, 2001 Chris Nokleberg

This product includes cURL & libcurl software, which is Copyright (c) 1996 - 2006, Daniel Stenberg, <daniel@haxx.se>. All rights reserved.

This product includes Quartz - Enterprise Job Scheduler software, which is Copyright 2004-2005 OpenSymphony

This product includes Free DCE software, which is (c) Copyright 1994 OPEN SOFTWARE FOUNDATION, INC., (c) Copyright 1994 HEWLETT-PACKARD COMPANY, (c) Copyright 1994 DIGITAL EQUIPMENT CORPORATION, Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

This product includes DCE Threads software, which is Copyright (C) 1995, 1996 Michael T. Peterson

This product includes Jboss software, which is Copyright 2006 Red Hat, Inc. All rights reserved.

This product includes org.apache.commons software developed by the Apache Software Foundation (<http://www.apache.org/>).

#### Trademark Notices

Java™ is a U.S. trademark of Sun Microsystems, Inc. Java™ and all Java based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Oracle® is a registered U.S. trademark of Oracle Corporation, Redwood City, California.

UNIX® is a registered trademark of The Open Group.

Windows® and Windows NT® are U.S. registered trademarks of Microsoft® Corporation.

## Documentation Updates

This guide's title page contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

**<http://h20230.www2.hp.com/selfsolve/manuals>**

This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

**<http://h20229.www2.hp.com/passport-registration.html>**

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

## Support

You can visit the HP Software Support Online web site at:

**<http://www.hp.com/go/hpsoftwaresupport>**

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

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

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

**[http://h20230.www2.hp.com/new\\_access\\_levels.jsp](http://h20230.www2.hp.com/new_access_levels.jsp)**

To register for an HP Passport ID, go to:

**<http://h20229.www2.hp.com/passport-registration.html>**



---

# Contents

<b>1</b>	<b>Overview</b> .....	9
	Moving Performance Data from the Network to PI.....	9
	Tasks for the User.....	9
	Sources for Additional Information.....	10
<b>2</b>	<b>Installing the Preprocessor</b> .....	11
	Installation Prerequisites.....	11
	Installing the Newbridge Preprocessor.....	13
	Package Removal.....	14
<b>3</b>	<b>Installing Newbridge Datapipes</b> .....	15
	Guidelines for a Smooth Install.....	15
	Installing a Newbridge Datapipe.....	17
<b>4</b>	<b>Editing Config Files</b> .....	19
	Configuration File Format.....	19
	Sample Configuration File.....	19





# 1 Overview

If you are running the Frame Relay Report Pack or the ATM Report Pack, and you want to collect performance data from Newbridge devices, the data you collect from these devices must be pre-processed before it can be sent to your HP Performance Insight (PI) server for further processing.

The Newbridge Preprocessor is responsible for formatting and filtering data compiled by the Newbridge MainStreetXpress 46020. Formatting produces a file that the PI server is able to read. Filtering ensures that the datapipe receives the statistics expected by the report pack. In addition, filtering removes a lot of unnecessary data that would otherwise degrade the performance of PI.

This guide explains how to install the Newbridge Preprocessor, how to install Newbridge datapipes, and how to edit the configuration files that come with each Newbridge datapipe. Editing configuration files is optional. Keeping the defaults is strongly recommended.

## Moving Performance Data from the Network to PI

The performance data you see in an PI report resides in base tables associated with the report pack. The following steps describe how this data moves from a Newbridge device in a network to the base tables in a report pack.

- 1 The MainStreetXpress 46020 Network Manager collects statistical data from Newbridge and non-Newbridge devices and produces binary data files.
- 2 The ST\_formatter utility unpacks and decrypts these binary data files, producing a formatted file.
- 3 The Newbridge Preprocessor performs the following tasks:
  - Filters output from the ST\_formatter utility
  - Partitions output from the ST\_formatter utility
  - Assigns data to a protocol-specific datapipe
  - Reformats data into an ASCII CSV file compatible with PI
  - Instructs PI to read the ASCII CSV file and populate datapipe feeder tables

After datapipe feeder tables are populated, PI is ready to use the data in datapipe feeder tables to populate report pack base tables.

## Tasks for the User

Although the Newbridge Preprocessor is a separate package, it cannot operate unless at least one of our Newbridge datapipes is installed. Your tasks are as follows:

- Install the Newbridge Preprocessor.
- Verify that the Newbridge Preprocessor was installed successfully.
- Verify that the procedure file calls the script correctly.
- Install one or both of these report packs:
  - Frame Relay Report Pack
  - ATM Report Pack
- Install one or both of these datapipes:
  - Newbridge Frame Relay Datapipe
  - Newbridge ATM Datapipe
- Copy configuration files from the datapipe directory to the NEWBRIDGE/config directory.

If required, you may modify the configuration files. This is done by editing the file, a step discussed in [Chapter 4, Editing Config Files](#). Unless your reporting requirements are unusual, editing configuration files is unnecessary.

## Sources for Additional Information

The following documents are related to this manual:

- *Newbridge Preprocessor Release Statement*
- *Newbridge Frame Relay Datapipe Release Statement*
- *Newbridge ATM Datapipe Release Statement*
- *Frame Relay Report Pack User Guide*
- *ATM Report Pack User Guide*
- *PI Report Packs, CD-ROM Release Notes, February 2009*

The user manuals for the reporting solutions that run on PI can be downloaded from the following web site:

**<http://h20230.www2.hp.com/selfsolve/manuals>**

The user guides for PI are listed under **Performance Insight**. The user guides for report packs and datapipes are listed under **Performance Insight Reporting Solutions**. The entry for a manual indicates the month and year it was posted to the web. If a manual is revised and reposted, the date will change. Since revised manuals are reposted from time to time, be sure to compare your PDF to the web edition and download the web edition if it is newer.

## 2 Installing the Preprocessor

This chapter covers the following topics:

- Installation prerequisites
- Installing the Newbridge Preprocessor
- Uninstalling the Newbridge Preprocessor

All references to environment variables have the following syntax: `{VARIABLE}`

### Installation Prerequisites

The Newbridge Preprocessor is independent of PI versions. The following items are prerequisites:

- Perl 5.xx
- ST\_formatter Utility

The ATM Report Pack and the Frame Relay Report Pack are not prerequisites. You may install either report pack at the same time you install the Newbridge Preprocessor, or you may install either report pack later, after installing the Newbridge Preprocessor.

### Running the ST\_formatter Utility

ST\_formatter reformats binary data files obtained from the MainStreetXpress 46020 Network Manager and produces ASCII output files in a variety of formats. It must be run as specified below:

```
ST_formatter -t -s -i -delim comma -field space -date yyymd infile outfile
```

Where *infile* is the file from the 46020 and *outfile* is the file that must be delivered to the Newbridge Preprocessor. Files should be delivered complete. Provided these files are both on the same file system, this can be achieved by moving (rather than copying) the files from the output directory of ST\_formatter to the input directory of the Newbridge Preprocessor.

### Package Contents

The Newbridge Preprocessor package contains:

- Perl script
- Example configuration files
- A procedure file (`.pro`) that controls the Newbridge Preprocessor

After the package is installed, the procedure file resides in the *scripts* directory. The procedure file calls the Perl script. After installation, the Perl script resides in the *bin* directory.

## Directory Structure

The Newbridge Preprocessor cannot operate unless several files and directories are identified. See the following table for details.

Directory	Function	Default
Save	Retains a copy of the input data	<i>{NEWBRIDGE}/save</i>
Config	Contains the configuration files that come with the datapipe package	<i>{NEWBRIDGE}/config</i>
Out	Output directory for the Preprocessor	<i>{NEWBRIDGE}/out</i>
In	Location of data output from ST_formatter	<i>{NEWBRIDGE}/in</i>
Work	Contains output from the Preprocessor	<i>{NEWBRIDGE}/work</i>
trend.log	Records process start and stop times	<i>{NEWBRIDGE}/tmp/trend.log</i>

## Creating the Newbridge Environment Variable on UNIX

Default locations for these directories are based on an environment variable called *{NEWBRIDGE}*. To use the default locations, this variable must be defined for the trendadm user. Follow these steps.


- 1 Navigate to `{DPIPE_HOME}/lib/Cshrc`.
- 2 Add this line: `setenv NEWBRIDGE <directory>`
- 3 Restart OVPI Timer.

If you do not want to use the defaults, you must edit the `.pro` file, entering the values you want to use.

## Creating the Newbridge Environment Variable on NT

Follow these steps to add or change the values of environment variables

- 1 While logged in as trendadm, select **Settings > Control Panel**, and double-click **System**.
- 2 On the Advanced tab, click **Environment Variables**, then click **New**.
- 3 Enter the variable name NEWBRIDGE and the desired directory in variable value.
- 4 Click **OK**.

 Windows 2000 saves changes in the registry; the next time you start your computer, they are available automatically. Prior to this you may have to close and reopen running programs for the new settings to take effect.

# Installing the Newbridge Preprocessor

Follow these steps to extract the Newbridge Preprocessor from the report pack CD and copy it to the Packages directory on your system.

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 Stop OVPI Timer and wait for processes to terminate.

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

*UNIX:* As root, do one of the following:

**HP-UX:** `sh /sbin/init.d/ovpi_timer stop`

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

- 3 Insert the report pack CD in the CD-ROM drive. On Windows, a Main Menu opens automatically; on UNIX, the CD may or may not mount automatically. If the CD does not mount automatically, navigate to the top level of the CD directory and run the `./setup` command.
- 4 Select PI report packs by typing **1** in the choice field. Press **Enter**. The install script displays a completion bar. When the extract finishes, the install script starts Package Manager. The Package Manager welcome window opens.
- 5 Login by typing your PI user name and password.
- 6 Click **Next**. The Package Location window opens.
- 7 Click **Install**; approve the default installation directory or select a different directory.
- 8 Click **Next**. The Report Deployment window opens.
- 9 Disable the default for Deploy Reports; accept the defaults for application server name and port. (If you are also installing a package with reports, keep the default for Deploy Reports.)
- 10 Click **Next**. The Package Selection window opens.
- 11 Click the check box next to: *Newbridge Preprocessor 3.0*.
- 12 Click **Next**. The Type Discovery window opens. To run Type Discovery immediately after package installation, accept the default.
- 13 Click **Next**. The Selection Summary window opens.
- 14 Click **Install**. The Installation Progress window opens. When installation finishes, a package install complete message appears.
- 15 Click **Done** to return to the Management Console.
- 16 Restart OVPI Timer.

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

**HP-UX:** `sh /sbin/init.d/ovpi_timer start`

**Solaris:** `sh /etc/init.d/ovpi_timer start`

## Testing for Proper Installation

To verify that the Newbridge Preprocessor is properly installed, bring up a command prompt in the DPIPE\_HOME directory and type the following command:

```
perl bin/newbridge_preprocessor.pl -h
```

If the Newbridge Preprocessor installed properly, you will see a help window.

## Testing the .Pro File

To test that the procedure file calls the script correctly, follow these steps:

- 1 Make sure that there are no files in the source directory.
- 2 Type the following command from a command prompt in the DPIPE\_HOME directory:

```
trend_proc -f scripts/NewbridgePreprocessor.pro
```

- 3 Navigate to the trend log and verify that entries to the log indicate that the script was started and stopped.

## The Output Directory

When the Newbridge Preprocessor is installed, it creates an output directory, which serves as the SourceDirectory for Newbridge Datapipes. The path is:

```
{DPIPE_HOME}/data/ImportData/Newbridge
```

The location of the output directory is fixed. Do not change it.

## Package Removal

Follow these steps to uninstall the Newbridge Preprocessor:

- 1 Stop the OVPI Timer process and wait for processes to terminate.
- 2 Start Package Manager. The Package Manager welcome window opens.
- 3 Click **Next**. The Package Location window opens.
- 4 Click **Uninstall**. The Package Selection window opens; select *Newbridge Preprocessor*.
- 5 Click **Next**. The Selection Summary window opens.
- 6 Click **Uninstall**. A Progress window opens and the removal begins.
- 7 When the package removal complete message appears, click **Done**.
- 8 Restart OVPI Timer.

# 3 Installing Newbridge Datapipes

This chapter covers the following topics:

- Guidelines for a smooth installation
- Source and disposition directives
- Installing a Newbridge datapipe

## Guidelines for a Smooth Install

The following datapipes are distributed with the Newbridge Preprocessor on the February 2009 report pack CD:

- Newbridge Frame Relay Datapipe 4.10
- Newbridge ATM Datapipe 3.00

Insert the CD in the CD-ROM drive and follow the directions for extracting packages from the CD to the Packages directory on your system. When the extract finishes, you are prompted to launch PI and start Package Manager.

## Package Contents

A Newbridge datapipe package contains:

- TEEL files that define table and file formats
- A procedure (.pro) file that controls calls to ee\_collect and trendmapper
- Rex files that format key data
- Rotation files that step data into the report pack
- Configuration files for the Newbridge Preprocessor

Installing a datapipe causes certain files to relocate:

- The procedure file that controls calls to ee\_collect and trendmapper moves to the scripts directory
- Rex files move to the bin directory

## Installation Prerequisites

A Newbridge datapipe has the following prerequisites:

- PI 5.40 or higher
- All available Service Packs for PI 5.40

- Newbridge Preprocessor 3.00
- At least one of the following report packs:
  - Frame Relay Report Pack
  - ATM Report Pack

You can install the Newbridge Preprocessor, one or both report packs, and one or both Newbridge datapipes at the same time.

## Distributed Environments

If your PI system is distributed, the installation process is more complicated. You must install Newbridge datapipes on every server that performs polling. Typically, the central server in a distributed system does not poll.

## Input Filenames

The Newbridge Preprocessor creates ASCII CSV files suitable for `ee_collect`. The file names use the original switch file name and either the Newbridge class number or the name assigned to that class in the configuration files. After the number or class, a string identifies raw (count) or rate (delta) data.

Following are examples of output file names produced for use with the ATM datapipe:

- *filename.2.count* uses a class number and contains raw ATM PVC data
- *filename.atm\_pvc.count* uses a class name and contains raw ATM PVC data
- *filename.6.delta* uses a class number and contains rate ATM Port data
- *filename.atm\_port.count* uses a class name and contains rate ATM Port data

The suffix comes from the `CLASSNAME` directive in the Newbridge Preprocessor configuration files.

## Source and Disposition Directives

TEEL files define table formats and they also contain directives. Some directives are specific to a platform, and other directives are specific to a customer or a site. The file itself will indicate whether the directive is specific to a platform, customer, or site.

### SourceDirectory

The directive for `SourceDirectory` indicates the path to the output directory for the Newbridge Preprocessor. The `SourceDirectory` is:

```
{DPIPE_HOME}/data/ImportData/Newbridge_Preprocessor
```

The output directory for the Newbridge Preprocessor is fixed; there is no need to change the `SourceDirectory` path immediately after installing the datapipe.



## SourceDisposition

The directives for SourceDisposition indicate what ee\_collect will do with files after it has collected them and where they should be placed. The default SourceDisposition is:

```
{NEWBRIDGE}/eecollected
```

If you wish to change the disposition, or keep the same disposition but change the destination directory, change the SourceDisposition directives immediately after installing the datapipe.

## Configuration Files for the Preprocessor

Each datapipe package includes multiple configuration files for use with the Newbridge Preprocessor. Immediately after installing the datapipe, these files must be copied from the installation directory to the preprocessor's configuration directory. The default configuration directory is defined using the NEWBRIDGE environment variable.

## Installing a Newbridge Datapipe

Follow tasks 1 through 4 to install a Newbridge datapipe.

**Task 1:** Use Package Manager to select and install the datapipe

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 Stop OVPI timer and wait for processes to terminate.

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

*UNIX:* As root, do one of the following:

```
HP-UX: sh /sbin/init.d/ovpi_timer stop
```

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

- 3 Launch Performance Insight and select **Management Console**.
  - 4 Select **Tools > Package Manager**. The Package Manager welcome window opens.
  - 5 Click **Next**. The Package Location window opens.
  - 6 Follow the on-screen directions:
    - When prompted, type your PI user name and password.
    - When prompted to accept or cancel the Deploy Reports default, disable it, unless you are also installing a package that contains reports, in which case you can keep the default.
    - When the Package Selection window opens, select one or both of the following datapipes:
      - *Newbridge Frame Relay Datapipe 4.1*
      - *Newbridge ATM Datapipe 3.0*
- When installation is complete, a package install complete message appears.
- 7 Click **Done** to return to the Management Console.

### Task 2: Modify TEEL files as required (skip this task if the defaults are suitable)

- 1 Verify the SourceDirectory directives in the TEEL files. These files should indicate that the default SourceDirectory is:  

```
{NEWBRIDGE}/out
```
- 2 If the Newbridge Preprocessor does not use the default directory, modify the SourceDirectory path. If you modify the SourceDirectory directive, change only the directory; do **not** change the pattern match for the files themselves, for example \*.atm\_port\*. The datapipe requires the pattern match.
- 3 If you want to use the {NEWBRIDGE} environment variable in the SourceDirectory, make sure that it is set up correctly for the trendadm user.
- 4 If you are not using the default directives for SourceDisposition, open the appropriate TEEL files and modify these directives.
- 5 If you want to use the {NEWBRIDGE} environment variable in the SourceDisposition, make sure that it is set up correctly for the trendadm user.

### Task 3: Copy configuration files to the appropriate configuration directory

- 1 Locate the installation directory. The naming convention is:  

```
{DPIPE_HOME}/packages/datapipe_directory/datapipe.ap
```
- 2 Locate the configuration files. The naming convention is newbridge.\*
- 3 Copy the configuration files to the {NEWBRIDGE}/config directory. If you are installing the Newbridge Frame Relay Datapipe on a Windows system, copy files from:

```
%DPIPE_HOME%\packages\Newbridge_FR_Datapipe\Newbridge_FR_Datapipe.ap\newbridge.*  
to:  
%NEWBRIDGE%\config
```

### Task 4: Restart OVPI Timer

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

**UNIX:** As root, do one of the following:

```
HP-UX: sh /sbin/init.d/ovpi_timer start
```

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

## 4 Editing Config Files

The configuration files supplied with each Newbridge Datapipe determine which kinds of statistics the Newbridge Preprocessor will output. Editing these files is not recommended. However, if you choose to edit these files, you can modify how the Newbridge Preprocessor performs filtering.

The datapipe will not operate correctly unless the configuration files that come with the datapipe are placed in the configuration directory. For details about the path to this directory, see [Directory Structure](#) on page 12.

If you are installing a customized datapipe, you need customized configuration files.

### Configuration File Format

A configuration file is an ASCII text file. The name of the configuration file is determined by the Newbridge class in question. For example, frame relay interface statistics are defined in a file called `newbridge.3`.

A configuration file can contain comments on any line. A hash symbol (#) indicates the start of a comment. To indicate that a statistic is required, enter its Newbridge identification number on a line. Enter just one statistic number on each line.

`CLASSNAME=<name>` is supported. If this directive is found in the configuration file, then `<name>` instead of class number is used to identify the output files. For more information about the statistics that are available and how they are numbered, refer to documents available from Newbridge.

The contents of a sample configuration file are displayed on the next page.

### Sample Configuration File

```
#####
#  Version @(#) newbridge.1 /main/2 mcameron Fri Mar 30 15:15:30 2004 @(#)
#  Solutions Engineering Group
#  Copyright 2004, Hewlett-Packard Development Company, L.P.
#  Package: Newbridge FrameRelay
#####
# Each line contains a stat number within the stat class
# OR
# contains a label=value pair.
# Currently the only supported label is CLASSNAME
# the value for CLASSNAME will be used for the suffix of the output file
```

```
# if there is no CLASSNAME defined then the numeric stat class will be
# used.
CLASSNAME=fr_pvc
1 # Rx Bytes (36120/36170)
2 # Tx Bytes (36120/36170)
3 # Rx Frames (36120/36170)
4 # Tx Frames (36120/36170)
31 # Rx Discards DE set (36120/36170)
32 # Tx Discards DE set (36120/36170)
33 # Rx Discards DE clear (36120/36170)
34 # Tx Discards DE clear (36120/36170)
75 # Rx frames DE bit set (36120/36170)
76 # Tx frames DE bit set (36120/36170)
233 # Rx Discards (36170)
319 # Tx frames FECN set (36120/36170)
320 # Tx frames BECN set (36120/36170)
619 # Rx frames FECN set (36120/36170)
620 # Rx frames BECN set (36120/36170)
1085 # Tx Bytes DE set 1 (36170)
1301 # Rx Bytes DE set 1 (36170)
```

## We appreciate your feedback!

If an email client is configured on this system, by default an email window opens when you click on the bookmark "Comments".

In case you do not have the email client configured, copy the information below to a web mail client, and send this email to **docfeedback@hp.com**

**Product name:**

**Document title:**

**Version number:**

**Feedback:**



