

# HP OpenView Enterprise Discovery

(formerly Peregrine Enterprise Discovery)

Software Version: 2.1

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## Migrating from Network Discovery

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# 1 Introduction

## Why Read This Guide?

**Read this guide only if you were using Peregrine’s Network Discovery software.**

If you were using Network Discovery, and have migrated to the new Enterprise Discovery 2.1, you have a license that is not available to all Enterprise Discovery users. This “Alarms license” provides you with extra alarm data that was available with Network Discovery. This way, you can migrate to the new versions of Enterprise Discovery without losing any of the functionality you are used to having.

As you read through the normal set of Enterprise Discovery documentation, you will notice that several alarms and related features are not discussed at all. These alarms are only available for you, and will be covered in this document.

Most of the functionality is the same with or without the Alarms license, but there are several subtle differences throughout the User Interface.

## The Complete Set of Enterprise Discovery Licenses

In order to keep these features separate from the rest of Enterprise Discovery, they are packaged with an Alarms license. The following packages are available, with Alarms being included in options 6, 7, and 8:

**Table 1 License Options**

| <b>Option</b> | <b>Contents</b>   |
|---------------|---|
| 1             | Discovery + Inventory   |
| 2             | Discovery + Inventory + Software Utilization                                    |
| 3             | Discovery + Network Topology  |
| 4             | Discovery + Inventory + Network Topology  |
| 5             | Discovery + Inventory + Network Topology + Software Utilization                 |
| 6             | Discovery + Network Topology + <i>Alarms</i>                                    |
| 7             | Discovery + Inventory + Network Topology + <i>Alarms</i>                        |
| 8             | Discovery + Inventory + Network Topology + Software Utilization + <i>Alarms</i> |

## License Options

### Discovery

With this license, Enterprise Discovery will ping and poll your network IP ranges to find devices. This will give you some basic information on the devices, such as when they are added to or removed from the network.

### Inventory

With this license, you can create scanners to scan your network servers and workstations. You can automatically deploy agents to these devices, and then deploy the scanners to determine the hardware and software installed on each device. This data will be combined with the Discovery data in the Enterprise Discovery database.

### Software Utilization

With this license, you can expand your inventory data, as the scanners will capture details on what software is used on each Windows workstation, and report how often it is used and who is using it. You will see this Utilization data appear in the Scan Data Viewer, and in Reports.

### Network Topology

With this license, you can expand your discovery data, by calculating and displaying connectivity information for your network. Adding a topology license means that you will find additional alarms in the Health Panel/Alarms Viewer, such as device breaks, line breaks, etc. This also adds many new Reports.

### Alarms

The Alarms option was designed specifically for users of Peregrine Network Discovery who need to upgrade to Enterprise Discovery. The standard Enterprise Discovery package does not include these extra alarms and attributes. This option will give you more alarms in the Health Panel, in reports, and more attribute information throughout the web UI (Service Analyzer, Device Manager, etc).

## 2 Enterprise Discovery Alarms

The Alarms license gives you access to a large number of statistics and attributes. The following sections describe the types of alarms you will be able to see in the Health Panel and elsewhere in the web UI.

### Line Breaks

Identifies lines that are broken. A line is broken when its status is down and the line break is not due to devices at either end being broken.

### Utilization

Identifies lines that are used heavily—that is, that have a lot of traffic. Describes the amount of traffic on the line as a percentage of capacity.

Available only to devices with byte counters or frame counters. For media with variable length packets, utilization is calculated by directly reading bytes counts from every interface. For media with fixed length packets (for example, ATM cells), utilization is derived from frame counts.

On the Port Manager Statistics panel, you will see three Utilization graphs:

- Utilization In
- Utilization Out
- Line Utilization

### Utilization In and Out

In and Out utilization for Half Duplex and Full Duplex ports are calculated using a common algorithm.

In both cases, Enterprise Discovery reads the byte/frame count and port speed for each interface from the device MIB. Enterprise Discovery calculates the bit count per second by computing the difference between two successive byte/frame counts and dividing this by the poll period. The port utilization is calculated by dividing the bit count per second by the port speed.

For variable: In Utilization is calculated by taking the InByte count per port, converting this value to the Bit per second value, dividing by the Port speed, and multiplying by 100 to get a percentage. i.e.  $[(\text{InByte} \times 8\text{Bits}) / \text{Port Speed}] \times 100$ .

For fixed length: In Utilization is calculated by taking the InFrame count per port, converting this value to the Bit per second value, multiplied by the number of bytes per frame, dividing by the Port speed, and multiplying by 100 to get a percentage. i.e.  $[(\text{InFrame} \times 8\text{Bits} \times \text{BytesperFrame}) / \text{Port Speed}] \times 100$ .

Out Utilization is similarly calculated by taking the OutByte (or OutFrame) count per port.

## Line Utilization

Line utilization is determined using different methods, depending on whether the ports are Half Duplex or Full Duplex.

### Half Duplex

Line Utilization is equal to the total of InUtilization and OutUtilization. Unlike Full Duplex, the IN and OUT on a Half Duplex line occur on the same channel, and the value for one limits the value of the other. Given a 100 Mbps Half Duplex line, if the IN traffic is 90 Mbps, the OUT traffic can be at most 10 Mbps. In all cases, the sum of both values cannot exceed 100 Mbps. As a result, it makes sense to use the sum of the IN and OUT to calculate the line utilization. If this total reaches a threshold, an alarm is triggered.

### Full Duplex

Line Utilization for a full duplex port is the maximum value of either the In or Out Utilization.

Enterprise Discovery calculates line utilization this way because the primary objective is to inform the user whenever the line utilization becomes a concern. It becomes a concern whenever it approaches the maximum utilization (or reaches a threshold and triggers an alarm). For a Full Duplex line, the In and Out occur on two separate channels, and the value for one does not limit the value of the other. The values are independent of each other, and their values are limited only by the line speed. Given a 100 Mbps Full Duplex line, for example, the In traffic may be 90 Mbps while the Out traffic may be 30 Mbps, but each cannot exceed 100 Mbps.

## Delay

Delay is calculated for lines, however the delay values are associated with the ports at both ends of the line. The delay values for the two ports will be the same.



It is possible to alarm only one end of the line if the interface types (and alarm thresholds) are different.

Delay alarms identify lines with long queuing delays. The response time, measured in milliseconds, is a portion of the time taken by a device to respond to a ping. This includes the following:

- the time a packet waits in the router queue before being transmitted
- the time to process the packet at the other end after being received



The calculation does not include the delay across the link.

The values are calculated based on round trip delays (ping responses) from the devices at both ends of the line. The round trip delay for a device is the mean of the ping responses received during a poll cycle.

The delay value is half the difference between the mean round trip delays of the two devices minus the lowest value recorded for this line.



Enterprise Discovery receives one ping per poll cycle for the scheduled request and will receive some additional pings for fast break requests.



## Jitter

Jitter is calculated as the difference between the delay value for the current poll cycle and the delay value for the previous poll cycle. It is measured in milliseconds, and is bi-directional.



Jitter does not appear in the Health Panel, but it does appear in the Service Analyzer “summary graphs” panel, and in the State panel of the Device Manager.

## Collisions

Identifies the number of collisions per second detected on every line in the network with values above the thresholds.

## Broadcasts

Identifies the number of broadcasts per second detected on every line in the network with values above the thresholds. Broadcasts are part of normal network operation, but large numbers of broadcasts must be investigated and the cause rectified.

There are three types of broadcast alarms:

- Broadcast In
- Broadcast Out
- Source of Broadcast

Source of Broadcast alarms only occur in devices that Network Discovery has determined to be broadcast sources such as servers, routers and workstations.

Broadcast In and Broadcast Out can apply to any device showing high broadcast levels, including switches and FDDI devices which are not seen as a sources of broadcasts, but as devices that forward the broadcast sent to them. Only source of broadcast alarms are seen in the event log.



When you are looking for the source of a broadcast, set the priority on your map window to 1. This will help you determine which workstation might be causing the broadcasts.

## Errors

Identifies the number of errors per second detected on every line in the network with values above the thresholds.

Exactly what errors are reported depends on the MIBs of the devices at either end of the line. Not all devices detect all errors.

## Frame Relay

Attributes relating to your frame relay connections: Data Delivery Ratio, Frame Delivery Ratio, Discard Eligibility In, Discard Eligibility Out, BECN, FECN.

## Device Breaks

Identifies when a device is no longer accessible by Enterprise Discovery.

## Packet Loss

Identifies managed core network devices (for example, routers and switches) that are dropping frames. Describes the percentage of frames that are dropped by each managed device. Calculated on unicast data, inbound and outbound, for all ports of the device. Percentage is calculated over the past 5 sampling periods.

The criteria for Enterprise Discovery to calculate “Packet Loss” is as follows:

- The device must be router or a switch.
- All ports of the device must have unicast counter attributes.
- All ports must have valid port statistics (i.e. if a port does not have a valid counter, such as if the statistics filtered out by the mapping module for any reason, the “Packet Loss” attribute will not be calculated).
- If a port has status bit up but has frames and unicast counters “0”, the “Packet Loss” attribute will not be calculated. Even if it has out statistics different than “0”.



If a port has in or out frames 0 but in or out unicast = 0, the “Packet Loss” attribute will not be calculated.

Packet loss is calculated on a per device basis, more specifically if there are backplane connections to your devices the packet loss statistics might be slightly “off”.

## Disk Utilization

The percentage used on each disk partition.

## CPU Utilization

The percentage of the cycles used by each processor.

## Load Average

A calculation of how much of the CPU is being used.

Example: If the CPU is all being used, it's maxed out for scheduled processes, then the load average will be 1. If there are twice as many processes scheduled than the CPU can handle, the load average will be 2.

## Memory Utilization

The memory used by all running processes.

## Backplane Utilization

For some Cisco devices, taken from a MIB variable.

## Printer

Paper count.

## UPS

UPS battery capacity and UPS battery time remaining.

## Port MTTR

Mean time to repair (MTTR) identifies ports that take a long time to repair. A running average of the number of hours broken against how many times it was broken.

Example: A port has failed twice. The first time, it was broken for 4 hours. The second time, it was broken for 8 hours. The MTTR for this device is  $(4 + 8) / 2 = 6$  hours.

## Port MTBF

Mean time between failures identifies ports that fail frequently. A running average of the number of days in operation measured against the number of times a ports has failed.

Example: A port has been in operation for 100 days and Enterprise Discovery has seen it fail twice. The MTBF for this device is 50 days.

## Port Moves

Identifies if the connection to a device has changed from one port to another.

Example: A workstation is attached to a switch at port 2. You detach the workstation from port 2, and reattach it to port 8. That would create a Port Move event. The change is recorded on the workstation, not the switch. The workstation has not necessarily changed location, only the switch port to which it connects.

## Device MTTR

Mean time to repair (MTTR) identifies devices that take a long time to repair. A running average of the number of hours broken against how many times it was broken.

Example: A device has failed twice. The first time, it was broken for 4 hours. The second time, it was broken for 8 hours. The MTTR for this device is  $(4 + 8) / 2 = 6$  hours.

## Device MTBF

Mean time between failures identifies devices that fail frequently. A running average of the number of days in operation measured against the number of times a device has failed.

Example: A device has been in operation for 100 days and Enterprise Discovery has seen it fail twice. The MTBF for this device is 50 days.

## Device Moves

Identifies devices recently moved, or had a change in connection to the network.

Moves are not reported for devices that have been added recently. If a device appears in Adds, it will not appear in Moves.

The time to detect changes in connectivity depends on the sampling period for the network.

Example: A workstation is attached to a switch. You detach the workstation, and reattach it to another switch. That would create a Device Move event, because Network Discovery thinks the workstation has changed location. The change is recorded on the workstation, not the switch. The workstation has not necessarily changed location, only the switch to which it connects.

### Notes

- Does not include virtual devices as anchor devices—connections to a virtual device are not considered relevant
- Does not include cases where the current and previous connections are to virtual devices
- Does not include cases where the current and previous connections are the same, or are probably the same (as in the cases where the only one connection is known).

---

## 3 Network Data Analysis + Alarms

With the addition of the Alarms license to your Enterprise Discovery server, you will see more data throughout the web user interface. See the total list of available alarms in [Chapter 2, Enterprise Discovery Alarms](#).

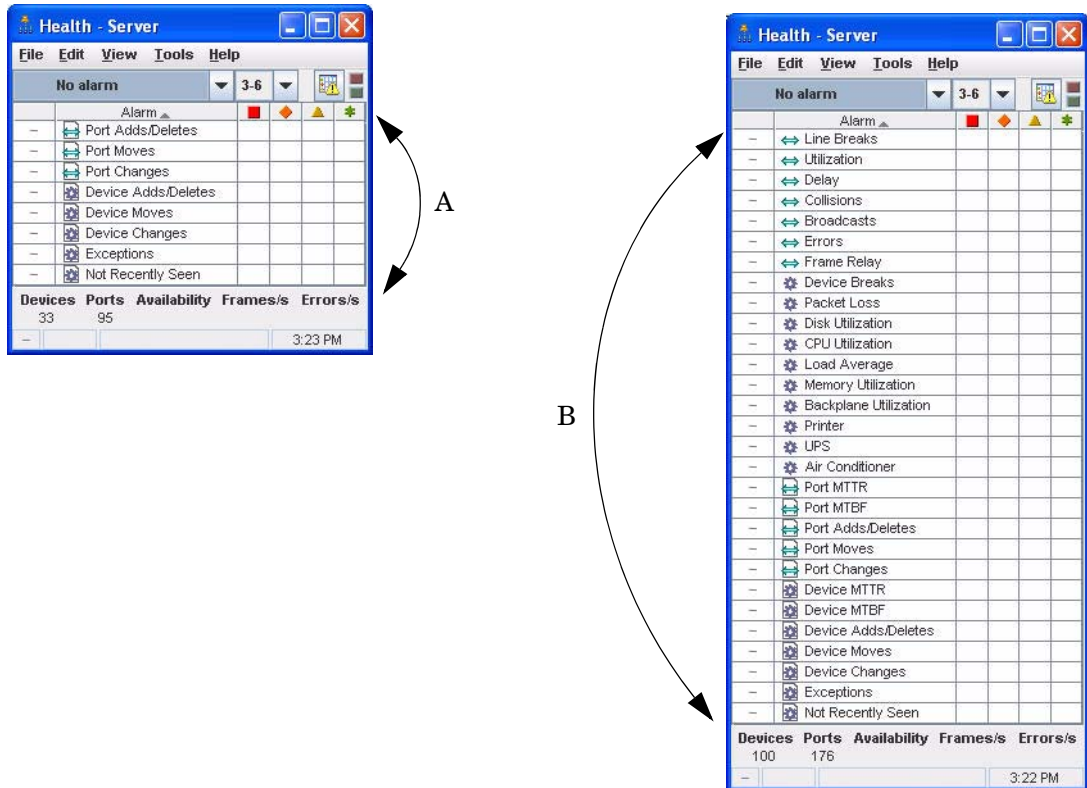
The *Network Data Analysis Guide* provides detailed information on the features that deal with the device data discovered through network polling. These features will all have small differences if you have an Alarms license:

- [Health Panel, Alarms Viewer, and Network Map](#) on page 14
- [Service Analyzer](#) on page 15
- [Events Browser](#) on page 18
- [Reports](#) on page 19
- [Device Manager](#) on page 28
- [Port Manager](#) on page 31
- [Attribute Manager](#) on page 32

# Health Panel, Alarms Viewer, and Network Map

The Health Panel displays all the Alarm categories available on your Enterprise Discovery server. To see the whole list available to you, click **View** and deselect **Hide Inactive Alarms**.

In the following diagram, you can see the additional alarm categories displayed with the Alarms license (B).



The Alarms Viewer and Network Map look the same regardless of your license, with only the available alarms appearing.

# Service Analyzer

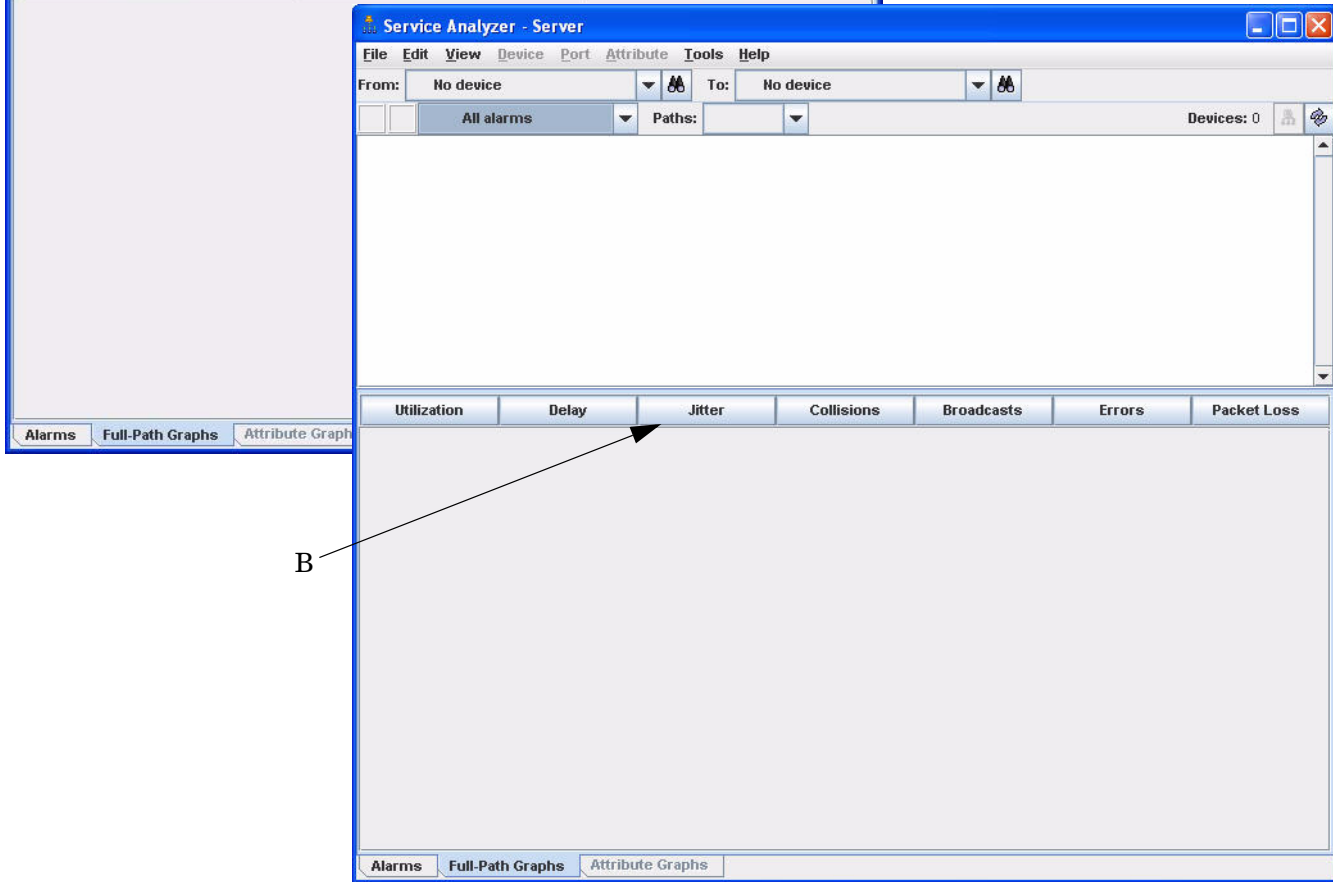
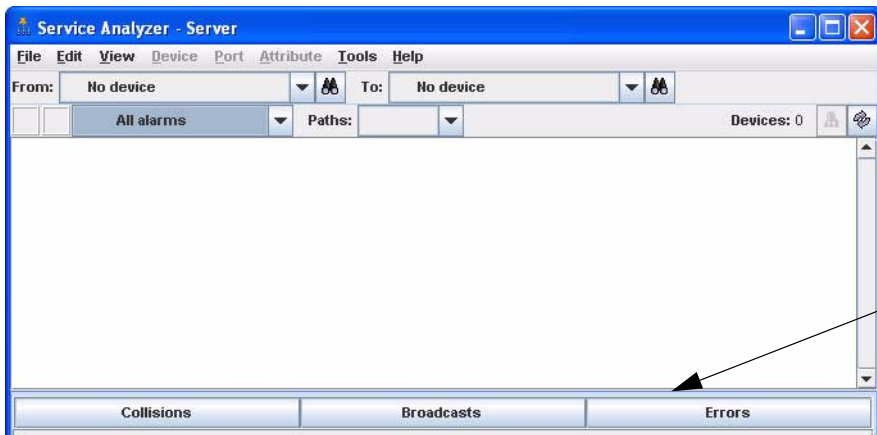
The Service Analyzer has very few changes with the addition of the Alarms license.

Without the Alarms license, you will see the following alarm categories on the Full-Path Graphs tab (A):

- Collisions
- Broadcasts
- Errors

With the Alarms license, you will see the following alarm categories on the Full-Path Graphs tab (B):

- Utilization
- Delay
- Jitter
- Collisions
- Broadcasts
- Errors
- Packet Loss





## Full-Path Graphs

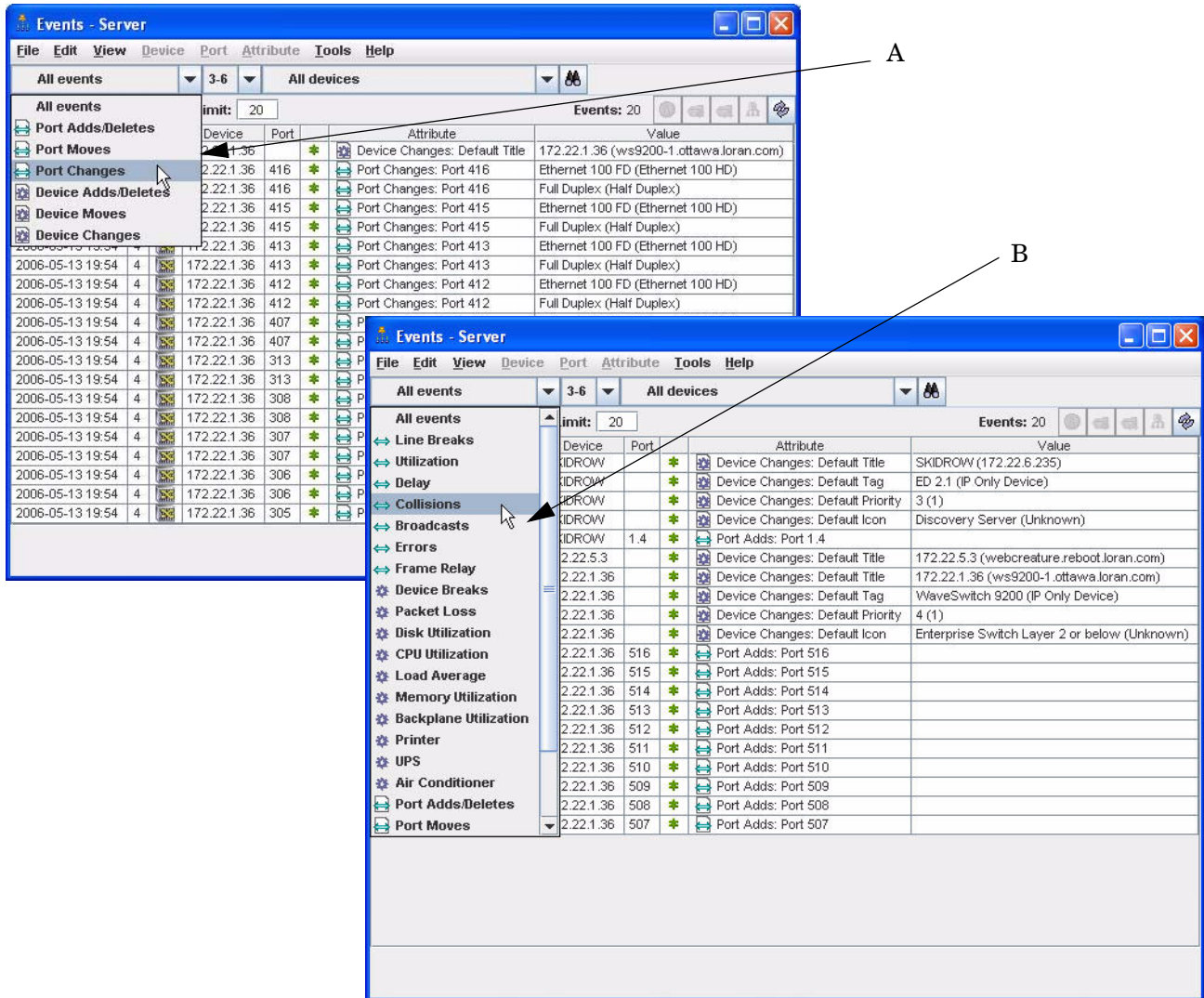
The Full-Path Graphs tab shows a summary of the entire path for the following alarm categories:

**Table 2**    **Graphs**

| <b>Alarm Category</b> | <b>Notes</b>  |
|-----------------------|---|
| Utilization           | Utilization in percentage; for ports, bi-directional                |
| Delay                 | Delay in milliseconds; for ports                                    |
| Jitter                | Jitter (change in delay) in milliseconds; for ports, bi-directional |
| Collisions            | Collisions per seconds; for ports                                   |
| Broadcasts            | Broadcasts in frames/sec.; for ports, bi-directional                |
| Errors                | Errors in frames/sec.; for ports                                    |
| Packet Loss           | Packet loss in percentage; for devices                              |

# Events Browser

The Events Browser displays all recent events (Network or User Access events) on your network. With the Alarms license, you will see more alarms listed here (B), similar to what appears in the other features of the web user interface.



# Reports

Reports are also dependent on license. If you have the Alarms license (B), you will see reports about alarms, performance issues, and resource-managed devices.

| Executive/Summary Network Reports |   |
|-----------------------------------|---|
| Network Documentation             | Inventories of local devices in the network by various classifications and in several formats |

| Scanned Device Reports   |  |
|--------------------------|--|
| Scanned Device Summaries | Summary counts of locally scanned devices grouped by different device properties with drill-down to device details |
| Applications             | Local software application license and installation counts grouped by application, version, and publisher          |
| Unrecognized Files       | Summary and detail reports of unrecognized application files found on scanned devices.                             |

| WAN Reports                        |   |
|------------------------------------|---|
| Frame Relay                        | Frame Relay inventory reports                         |
| Point to Point Serial              | Point to Point Serial line inventory report           |
| Serial to Service Provider Network | Service Provider Network Serial line inventory report |
| Digital Subscriber Line (DSL)      | Digital Subscriber line inventory report              |
| ATM                                | ATM line inventory report                             |
| WAN Wide                           | WAN Wide line inventory report                        |

| LAN Reports  |                                    |
|--------------|------------------------------------|
| LAN Backbone | LAN Backbone line inventory report |
| FDDI         | FDDI line inventory report         |
| Token Ring   | Token Ring inventory report        |

| Device Reports           |                               |
|--------------------------|-------------------------------|
| Servers                  | Servers inventory report      |
| Routers                  | Routers inventory report      |
| Input and Output Devices | I/O Devices inventory report  |
| Web Servers              | Web Servers inventory reports |

| Executive/Summary Network Reports |   |
|-----------------------------------|---|
| Network Documentation             | Inventories of local devices in the network by various classifications and in several formats |
| Performance Summaries             | Graphical summaries of network performance as a whole and various subsets of the network      |
| Alarm Summaries                   | Devices and ports alarmed during the report period  |
| Network Wide                      | Network wide device availability, line utilization and throughput                             |

| Scanned Device Reports   |  |
|--------------------------|--|
| Scanned Device Summaries | Summary counts of locally scanned devices grouped by different device properties with drill-down to device details |
| Applications             | Local software application license and installation counts grouped by application, version, and publisher          |
| Unrecognized Files       | Summary and detail reports of unrecognized application files found on scanned devices.                             |

| WAN Reports                        |   |
|------------------------------------|---|
| Frame Relay                        | Summary and detailed Frame Relay reports                          |
| Point to Point Serial              | Summary and detailed Point to Point Serial line reports           |
| Serial to Service Provider Network | Summary and detailed Service Provider Network Serial line reports |
| Digital Subscriber Line (DSL)      | Summary and detailed Digital Subscriber line reports              |
| ATM                                | Summary and detailed ATM line reports                             |
| WAN Wide                           | Summary and detailed WAN Wide line reports                        |

| LAN Reports  |  |
|--------------|--|
| LAN Backbone | Summary and detailed LAN Backbone line reports |
| FDDI         | Summary and detailed FDDI line reports         |
| Token Ring   | Summary and detailed Token Ring line reports   |

| Device Reports                |   |
|-------------------------------|---|
| Servers                       | Inventory, availability, and resource summaries for Servers, resource utilization details for resource managed Servers                                  |
| Routers                       | Inventory, availability, and resource summaries for Routers, resource utilization details for resource managed Routers                                  |
| Input and Output Devices      | Inventory, availability, and resource summaries for I/O devices, resource utilization details for resource managed I/O devices, and paper usage reports |
| Resource Managed Workstations | Inventory, availability, and resource summaries for Resource Managed Workstations, resource utilization details   |
| Web Servers                   | Inventory, availability, and resource summaries for Web Servers, resource utilization details for resource managed Web Servers                          |

The following section explains all the Reports available with an Alarms Licence. To see the other reports available, see the *Network Data Analysis Guide*.

## Executive/Summary Network Reports

Executive Summary reports are about the network as a whole. Here is one example of how you might use them—just to see what’s in your network.

To view the Executive/Summary Network Inventory Reports

- Click **Reports > Network Documentation > Device Inventory Summary**
- Or click **Reports > Network Documentation > Device Inventory**

You may have very little idea of what is actually in your network beyond the core network devices:

- There may be several people responsible for the network.
- Someone or several people may be adding equipment without informing you.
- You may be new to the job and the last person didn’t keep complete records or records you can understand.

- Some or all of the network management may have been delegated to someone outside your organization.
- You may be outside the organization whose network you must manage.

The Device Inventory Summary report tells you what is in your network, and the Device Inventory report tells you in more detail.

The following Reports are available:

| <b>Folder</b>          | <b>Report</b>                      | <b>Type</b>      |
|------------------------|------------------------------------|------------------|
| Network Documentation  | Network Classification             | pie graph, table |
|                        | Network Devices by Function        | pie graph, table |
|                        | End Nodes by Function              | pie graph, table |
|                        | Device Inventory Summary           | table            |
|                        | Device Inventory by Category       | table            |
|                        | Device Inventory by UNSPSC         | pie graph, table |
|                        | Device Inventory by Virtual LAN    | table            |
|                        | Port Inventory by Virtual LAN      | table            |
|                        | Device Inventory                   | list             |
|                        | Resource Managed Device Inventory  | list             |
|                        | Device Resource Inventory          | list             |
|                        | Resource Managed Device Attributes | list             |
|                        | Resource Inventory and Usage       | table            |
|                        | Frame Relay PVC Inventory          | table            |
|                        | Possible Modems Report             | list             |
|                        | Underutilized Equipment            | table            |
| End Node Top Talkers   | table                              |                  |
| End Node Top Listeners | table                              |                  |

| <b>Folder</b>         | <b>Report</b>                  | <b>Type</b>     |
|-----------------------|--------------------------------|-----------------|
| Performance Summaries | Network Summary Reports        | line/bar graphs |
|                       | WAN Summary Reports            | line/bar graphs |
|                       | Frame Relay Summary Reports    | line/bar graphs |
|                       | Serial to SPN Summary Reports  | line/bar graphs |
|                       | DSL Summary Reports            | line/bar graphs |
|                       | Point to Point Summary Reports | line/bar graphs |
|                       | ATM Summary Reports            | line/bar graphs |
|                       | LAN Backbone Summary Reports   | line/bar graphs |
|                       | FDDI Summary Reports           | line/bar graphs |
|                       | Token Ring Summary Reports     | line/bar graphs |

| <b>Folder</b>                | <b>Report</b>                          | <b>Type</b>     |
|------------------------------|--|-----------------|
| Alarm Summaries <sup>a</sup> | Line Breaks                            | table           |
|                              | Line Utilization <sup>a</sup> .        | table           |
|                              | Delay                                  | table           |
|                              | Collisions                             | table           |
|                              | Broadcasts                             | table           |
|                              | Errors                                 | table           |
|                              | Frame Relay FDR/DDR                    | table           |
|                              | Frame Relay FECN/BECN                  | table           |
|                              | Discard Eligibility In/Out             |                 |
|                              | Device Breaks                          |                 |
|                              | Packet Loss                            |                 |
|                              | CPU Utilization                        |                 |
|                              | Memory Utilization                     |                 |
|                              | Load Average                           |                 |
|                              | Disk Utilization                       |                 |
|                              | Virtual Memory Utilization             |                 |
|                              | Backplane Utilization                  |                 |
|                              | Paper Count                            |                 |
|                              | UPS Battery Capacity                   |                 |
|                              | UPS Battery Time Remaining             |                 |
| Network Wide                 | Network Availability                   | line/bar graphs |
|                              | Mean Network Utilization <sup>b</sup>  | line/bar graphs |
|                              | Peak Network Utilization <sup>c</sup>  | line/bar graphs |
|                              | Mean Network Throughput <sup>b</sup> . | line/bar graphs |
|                              | Peak Network Throughput <sup>c</sup> . | line/bar graphs |
|                              | Inventory                              | list            |
|                              | Availability Details                   | table           |
|                              | Utilization Details                    | table           |

- a. Line alarm reports include connected lines only.
- b. For the Mean graphs, only mean values are used, so the lines represent the “mean of the means.”
- c. For the peak graphs, only peak values are used. This means that the bars on the graphs represent the highest peak utilization value of all the peak values from the network devices.

## Performance Summaries

These folders contain the following periods:

- Today
- Last 7 Days
- Last Week
- This Month
- Last Month

## Alarm Summaries

These folders contain the following periods:

- Yesterday
- Last 7 Days
- Last Week
- This Month
- Last Month

## Network Wide

The folders for Availability Details and Utilization Details contain the following periods:

- Yesterday
- Last 7 Days
- Last Week
- This Month
- Last Month

## WAN Reports

Frame Relay reports, as an example, can tell you if you are getting the service you are paying for. Note, for instance, the Data Delivery Ratio Report, one of the detailed reports. The Data Delivery Ratio Report tells you which Permanent Virtual Circuits (PVCs) are dropping data and is a good guide to whether or not you are getting the Frame Relay service you are paying for and whether you could do with less.

To view a [Data Delivery Ratio Report](#):

- Click **Reports > WAN Reports > Frame Relay Service > Data Delivery Ratio**

There are two report structures for WAN Reports:

- Frame Relay folder
- all other folders

---

**Frame Relay Summary Reports**

---

Frame Relay Availability

---

Frame Relay Mean Utilization

---

Frame Relay Peak Utilization

---

Frame Relay Mean Throughput

---

Frame Relay Peak Throughput

---

**Frame Relay Detail Reports**

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Inventory

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Connected DLCI Inventory

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Availability Details

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Mean Time Between Service Outage (MTBSO)

---

Mean Time To Service Repair (MTTSR)

---

PVC Utilization

---

Over Utilized PVCs

---

Under Utilized PVCs

---

Interface/DLCI Utilization

---

Congested PVCs

---

Data Delivery Ratio (DDR)

---

Frame Delivery Ratio (FDR)

---

Unconnected Frame Relay Ports

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Delay Details

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In the following table, <WAN\_type> stands for one of the following:

- Point to Point (Serial)
- Serial to SPN (Service Provider Network)
- DSL (Digital Subscriber Line)
- ATM (Asynchronous Transfer Mode)
- WAN (WAN Wide)



| Report/Folder               | Type            |
|-----------------------------|-----------------|
| <b>Summary Reports</b>      |                 |
| <WAN_type> Availability     | line/bar graphs |
| Mean <WAN_type> Utilization | line/bar graphs |
| Peak <WAN_type> Utilization | line/bar graphs |
| Mean <WAN_type> Throughput  | line/bar graphs |
| Peak <WAN_type> Throughput  | line/bar graphs |
| <b>Detail Reports</b>       |                 |
| Inventory                   | list            |
| Availability Details        | table           |
| Utilization Details         | table           |

## LAN Reports

LAN reports give you inventory information and information about the availability, throughput and utilization of your Local Area Network whether you have a LAN backbone, FDDI, or Token Ring.

In the following table, <LAN\_type> stands for one of the following:

- LAN Backbone
- FDDI
- Token Ring

| Report/Folder               | Type            |
|-----------------------------|-----------------|
| <b>Summary Reports</b>      |                 |
| <LAN_type> Availability     | line/bar graphs |
| Mean <LAN_type> Utilization | line/bar graphs |
| Peak <LAN_type> Utilization | line/bar graphs |
| Mean <LAN_type> Throughput  | line/bar graphs |
| Peak <LAN_type> Throughput  | line/bar graphs |
| <b>Detail Reports</b>       |                 |

| Report/Folder        | Type  |
|----------------------|-------|
| Inventory            | table |
| Availability Details | table |
| Utilization Details  | table |

The folders for Availability Details and Utilization Details contain the following periods:

- Yesterday
- Last 7 Days
- Last Week
- This Month
- Last Month

## Device Reports

Device reports give you inventory information and information about availability, throughput and utilization, broken down by category of device. They can also give you such information as what servers are using the most memory for a given time.



The Inventory report exported to a CSV file reflects the default map configuration for the current account.

All other reports reflect the Prime map configuration and its packaging.

Device reports are available for the following groupings of devices:

- Servers
- Routers
- Input and Output Devices
- Resource Managed Workstations
- Web Servers

| Report/Folder           | Type  |
|-------------------------|-------|
| <b>All Devices</b>      |       |
| Inventory               | list  |
| Availability Details    | table |
| Utilization Details     | table |
| <b>Resource Managed</b> |       |
| Top CPU Utilization     | table |
| Top Memory Utilization  | table |

| <b>Report/Folder</b>                       | <b>Type</b> |
|--|-------------|
| Top Load Average                           | table       |
| Disk Utilization Greater than 50%          | table       |
| Virtual Memory Utilization Greater than 5% | table       |

The Resource Managed folders contain the following:

- Inventory
- Yesterday
- Last 7 Days
- Last Week
- This Month
- Last Month



The Web Servers reports will reflect the default map configuration for the current account.

# Device Manager

The following buttons will be available in the Device Manager only if you have an Alarms license.

|   |            |  |
|---|------------|--|
|  | State      | This panel displays current values for attributes.<br>For more information, see <a href="#">page 28</a> .  |
|  | Statistics | This panel provides a second toolbar with which to view or export detailed historical statistics of the device. The statistics may be viewed in graph or table form, and may be exported in Comma Separated Value (CSV) form.<br>For more information, see <a href="#">page 28</a> . |

## State

This panel displays current values for attributes.

This panel is not available if the object is not in the Enterprise Discovery database.

## Attributes

See **Help > Classifications > Supported device/port attributes**.

The displayed attributes will differ depending on whether or not the device is managed, the type of device, and if resource management is configured.

- ▶ The Enterprise Discovery server itself will have the most attributes because you will see attributes for the server, and for the network as a whole.
- ▶ The Enterprise Discovery server itself will not have any Breaks or Total Breaks data.

Information on attributes is collected from the network regularly (during each poll cycle). The information is the latest available, and so may be different each time you view it. Enterprise Discovery only shows you attributes that are relevant.

When data in a table has a gray background, the data shown is considered stale, because it was obtained before the beginning of your selected time period.

A blank space indicates that data is not available for a device or port.

- ▶ If a device had a partitioned disk, each partition will appear as a separate “Disk” attribute. You can open an Attribute Manager for each partition. Each partition may have a different disk serial number (assigned by the device OS).

## Statistics

This panel provides a second toolbar with which to view or export detailed historical statistics of the device. The statistics may be viewed in graph or table form, and may be exported in Comma Separated Value (CSV) form.

Not all statistics are available for all devices. Only available statistics appear in the list box. Statistics are a subset of Attributes ([Attributes](#) on page 28).

Statistics for the past two to three days are averaged every five minutes, statistics for the past 33 days are averaged every hour, and statistics for the past 365 days are averaged every day.

▶ The y-axis maximum pull-down list only applies when graphing data. It allows you to change the topmost data point on the y-axis. Some of the options may have no effect on the display depending on the actual data. The highest data point is always shown, regardless of your selection.

## Graph

Whenever a graph contains multiple averages, the data is adjusted to the lowest common denominator and the data points used are indicated on the graph. For example, a graph of the past seven days contains only one-hour data points.

At the beginning of data collection, Enterprise Discovery shows whatever data it has at five-minute intervals—even if you want to see statistics for long periods of time. This can be changed if you select a different option from the granularity pull-down list.

Gray portions of the graph indicate that data was not available for a period. Darker gray is used for unavailable data plotted in dark blue, lighter gray for unavailable data plotted in light blue. Also shown on the graph are horizontal lines representing alarm thresholds (depending on the option you have selected in the pull-down list).

You can change the graph by changing the selection in any of the pull-down lists. You can change the statistic, the interval, the maximum levels, and the granularity of data displayed.

▶ Every account can have its own default settings for the statistic, interval, maximum levels, and granularity. See **Administration > Account administration > Account properties**.

## Table

The table shows a tabular view of the statistics.

## Export

Creates a Comma Separated Value (CSV) file of the data. Popular spreadsheets such as Microsoft Excel can import CSV files if you want to sort or graph the statistics in a way that is beyond the capabilities of Enterprise Discovery.

## Statistics

Available statistics depend on the device model.

Notes on some statistics:

- **Total Breaks:** This statistic reports cumulative values.
- **Downtime:** This statistic reports cumulative values.
- **Total In Bytes:** Some devices do not report traffic in bytes, so this menu item may not appear. For such devices, try Total In Frames.
- **Total Errors:** Includes only errors in that the device stores in its MIB. Enterprise Discovery does not control which errors are stored, and cannot report errors that the device does not chose to store.
- **Total Collisions:** Only available for Ethernet half duplex. Also restricted to devices that report collisions in the dot3StatsEntry object of their MIB.

## Interval

Past 2 hours | Past 4 hours | Past 6 hours | Past 12 hours | Past 24 hours | Past 48 hours | Past 7 days | Past 30 days | Past 90 days | Past 180 days | Past 365 days | Today | This week | This month | This quarter | This half | This year | Last week | Last month | Last quarter | Last half | Last year

## Maximum

These attributes show the Max value of the vertical axis. If you have set alarm thresholds (Utilization, Delay, etc.), the Threshold Max is shown with a red line.

| Selection                     | Description  |
|-------------------------------|--|
| Threshold Max                 | The vertical axis will show the maximum threshold value, if the thresholds have been configured.   |
| Data Max                      | The vertical axis will show the maximum value of the data gathered.  |
| Data Max with Thresholds      | Same as “Data Max.” However, if thresholds have been configured, they will be displayed as horizontal lines.   |
| Attribute Max                 | Used for graphs such as Utilization, Availability, or Disk Space so that the Vertical axis is adjusted according to the Max value of these Attributes. For example, the maximum level for Utilization is 100%. |
| Attribute Max with Thresholds | Same as “Attribute Max.” However, if thresholds have been configured, they will be displayed as horizontal lines.  |



The y-axis maximum drop down list only applies when graphing data. It allows you to change the topmost data point on the y-axis. Some of the options may have no effect on the display depending on the actual data. The highest data point is always shown, regardless of your selection.

## Granularity

Default granularity | 5-minute granularity | Hourly granularity | Daily granularity

# Port Manager

The following buttons will be available in the Port Manager only if you have an Alarms license.

|   |            |   |
|---|------------|---|
|  | State      | This panel displays current values for attributes.<br>For more information, see <a href="#">page 31</a> .   |
|  | Statistics | This panel provides a second toolbar with which to view or export detailed historical statistics for the port. The statistics may be viewed in graph or table form, and may be exported in Comma Separated Value (CSV) form.<br>For more information, see <a href="#">page 31</a> . |

## State

This panel displays current values for attributes.

This panel is not available if the object is not in the Enterprise Discovery database.

## Table

There is a list of supported device and port attributes in **Help > Classifications > Supported Device/Port Attributes**.

These values are collected from the network regularly and may change each time they are viewed. The values shown are the latest information available.

When data in a table has a gray background, the data shown is considered stale, because it was obtained before the beginning of your selected time period. To change the time before data is considered stale, see the section on Account Properties in the *Customization Guide*.

The left-most column is for attributes that are associated with the alarm categories on the Health Panel. The alarm icon in this column tells you at a glance if the port is experiencing problems. The column also includes Operational Status.

A blank space indicates that data is not available for a device or port.

## Statistics

This panel provides a second toolbar with which to view or export detailed historical statistics for the port. The statistics may be viewed in graph or table form, and may be exported in Comma Separated Value (CSV) form.

Inbound and outbound data is displayed for several statistics. Average values and peak values are available for several statistics.

Not all statistics are available for all ports. Only available statistics appear in the list box. Statistics are a subset of Attributes (see **Help > Classifications > Supported Device/Port Attributes**).

The Statistics panel in the Port Manager works the same as in the Device Manager. See the description above in [Device Manager](#) on page 28.

## Attribute Manager

The following button will be available in the Attribute Manager only if you have an Alarms license.

### Statistics

This panel provides a second toolbar with which to view or export detailed historical statistics for the attribute. The statistics may be viewed in graph or table form, and may be exported in Comma Separated Value (CSV) form.



“No data available” means that no data has yet been collected for the attribute. This is normal if the device or port was discovered less than 48 hours before.

The Statistics panel in the Attribute Manager works the same as in the Device Manager. See the description in [Statistics](#) on page 28 in [Device Manager](#).



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