Release Notes

CA | NetQoS Multi-Port Collector

Version 2.1

October 2010

These release notes provide information about version 2.1 of the CA NetQoS Multi-Port Collector. They include the following information:

What's New in this Release?

This is the third release of the Multi-Port Collector product. This version includes the following new features:

- Support for CA NetQoS SuperAgent, version 9.0.

  The addition of aggregation functionality allows the Multi-Port Collector to monitor WAN-optimized environments, such as Cisco WAAS, and CA NetQoS GigaStor environments without requiring a separate Aggregator appliance.
- Integrated data collection with WAN Optimization and CA NetQoS GigaStor collection devices.

  The Multi-Port Collector can now calculate response time metrics from the packet digest files provided by a Cisco Wide-Area Application Engine (WAE) or GigaStor.
- Automated server-to-Collector port assignment, based on number of packets seen.
- Usability improvements based on customer feedback.

Like the SuperAgent Standard Collector, the CA NetQoS Multi-Port Collector receives data by means of a SPAN (mirror) port or a network tap to observe all relevant traffic. Both Collectors can also receive packet digests from WAN Optimization devices or CA NetQoS GigaStor appliances. But unlike the SuperAgent Standard Collector, the Multi-Port Collector provides support for multiple SPAN sources, or physical ports. You can connect each of the available ports on the Multi-Port Collector to a separate switch mirror port and greatly reduce the effort associated with maintaining separate collection devices when monitoring a large system with CA NetQoS SuperAgent.

What's Changed?

Be aware of the following changes to the product between the previous version and the present release:

- CA NetQoS SuperAgent 9.0 reduces the server footprint required to support data collection from Cisco WAE devices and CA NetQoS GigaStor appliances by consolidating the Aggregator appliance functionality into a Multi-Port Collector.
- A Multi-Port Collector now supports multiple types of *collector feeds*, a term introduced in SuperAgent 9.0 to describe sources of response time data. For example, a SuperAgent Multi-Port Collector can have a:
  - Multi-Port collector feed for each logical port that receives mirrored TCP packets from the server SPAN
  - WAN Optimization collector feed that receives packet digest files from WAN optimization devices such as Cisco WAEs
  - GigaStor collector feed that receives packet digest files from a NetQoS GigaStor appliance
- You should plan to consult the SuperAgent Release Notes before settling on a collection strategy because SuperAgent scalability guidance has changed.
- Some terminology on the SuperAgent Collector Administration pages has been revised slightly to accommodate multiple collection device types, and multiple collector feeds.
- A new process, the Data Transfer Manager, or DTM, has been added to support monitoring in WAN-optimized environments. Its status is reported on the System Status and Process Status Administration pages. After you add the Multi-Port Collector as a SuperAgent collection device, this process should always be running, even if you have not added WAE devices (and hence, the process is not used).
- Collection device configuration in the SuperAgent Management Console has changed slightly.

  If the Multi-Port Collector cannot be contacted when you attempt to add it from the Collector Properties page, you have an opportunity to indicate the Collector type by selecting the **Is Multi-Port Collector** check box.

Note: The option on this page to **Enable Multiple Monitor NIC**s does not apply to the Multi-Port Collector.

Hardware Specifications

The Multi-Port Collector hardware platform consists of:

- 3U rack-mount SuperMicro
- 48 GB of memory
- dual quad-core processor with a total of 8 CPUs
- Four 500-GB disk drives, and twelve 1-TB disk drives
- multi-port network card with full-packet capture capability
- a separate 1-GB Ethernet NIC for management data and communications with the SuperAgent Management Console

Each appliance contains two RAID controllers, configured as RAID 5. The total disk capacity of 14 TB is distributed as described in the following table:

RAID Controller	Description
System array	Used for the system, database, and packet capture investigation files. Four 500-GB disks.
Data array	Used for the raw data capture files. Twelve 1-TB disks.

For its packet-capture functionality, the Multi-Port Collector uses a high-performance network adapter with packet-capture and filtering capabilities. The available network adapters for the Multi-Port Collector are as follows:

Collector Configuration	Hardware Description
4 x 1 Gb Collector	Network adapter with four 1-Gbps monitoring ports (either copper or fiber connections).
8 x 1 Gb Collector	Network adapter with four 1-Gbps monitoring ports (either copper or fiber connections). A four-port expansion card (also 1-Gbps rate, copper connections).
2 x 10 Gb Collector	Network adapter with two 10-Gbps monitoring ports (fiber connections).

System Specifications

The Multi-Port Collector runs on CentOS 5.2 64-bit Linux.

CA NetQoS SuperAgent version 9.0 is required. The previous SuperAgent version, 8.3, must run with the previous version of the Multi-Port Collector (2.0) and will not work with Multi-Port Collector version 2.1.

For the present release, the system has additional optimizations to allow it to receive, process, and forward packet digest collector feeds from a Cisco WAE device or NetQoS GigaStor. See "Product Scalability and Performance" on page 4 for guidelines to avoid overloading the Management NIC on the Collector.

Web Browser Support

Microsoft Internet Explorer versions 7 and 8 are supported for viewing the Multi-Port Collector Web interface.

Although we have also tested the product with Mozilla Firefox version 3.0, we found a few minor limitations and recommend that you use Internet Explorer 7 or 8 instead.

Product Scalability and Performance

For all Multi-Port Collector configurations, performance and scalability are largely dependent on the amount of data being spanned to each passively mirrored port and the number of sessions represented by the data traffic. Additional consideration should also be taken when assigning WAN optimization devices or GigaStor collector feeds to a Multi-Port Collector.

The main hardware constraint on the volume of traffic that can be captured to disk is the write rate, the rate at which the RAID controller can write data to the hard disk drives. This rate is improved by the packet-slicing option that is used by default. The default Multi-Port Collector hardware filter slices packets so that only packet headers are captured and written to disk because the resulting smaller file sizes reduce disk contention.

For packet capture, on average, the Collector supports write-to-disk rates ranging from 300 to 400 MBytes per second across all active logical ports. The **2 x 10 Gbps** configuration tends to achieve the higher end of the range, as it writes fewer but larger files, while the **8 x 1 Gbps** configuration writes multiple, smaller files, creating opportunities for more disk contention.

SuperAgent Considerations

While the write rate and other hardware constraints mentioned in the previous section are important aspects of traffic scalability, another factor to consider is the capacity of the SuperAgent metric engine to process the passively mirrored TCP packets into five-minute summary files and send them to the SuperAgent Management Console. This processing capability is further constrained when WAN optimization devices or a CA NetQoS GigaStor are assigned to a Multi-Port Collector.

To avoid overloading the Management NIC, avoid assigning WAN optimization feeds to a Collector that is also receiving packet digests from a GigaStor. This configuration is supported, but performance is dependent on traffic volume. A single Multi-Port Collector can process packet digest files from all three segments ([Client], [WAN], and [Server]) for up to 50,000 optimized connections. If possible, avoid assigning more than one data center WAN optimization device to the same Collector, and load-balance the branch devices.

In addition to a Multi-Port Collector, a SuperAgent Management Console can also support other collection devices, including Standard Collectors and WAN optimization devices. The processing load that is created by adding a Collector to SuperAgent is expressed as a *collection unit*. For example, a SuperAgent Standard Collector consumes one of the available collection units, and a 64-bit SuperAgent Management Console supports up to 15 collection units.

One Multi-Port Collector is the equivalent of **five** collection units.

Collector Scalability Guidelines

For the **8 x 1 Gbps** configuration, the metric engine performs well:

- with all 8 ports active, receiving at 70% of total capacity, or approximately 5.6 Gbps.
- with 2.5 million active sessions.

For the **2 x 10 Gbps** configuration, the metric engine performs well:

- with both ports receiving a data rate of approximately 2.5 Gbps (for a combined total of 5 Gbps).
- with 4 million active sessions (2 million per port).

Throughput can be increased slightly by decreasing the number of simultaneous sessions; the metric engine on the **2 x 10 Gbps** configuration was still performing well:

- with both ports receiving a data rate of approximately 3.2 Gbps (for a combined total of 6.4 Gbps).
- with 2 million active sessions (1 million per port).

Individual results vary based on throughput, file sizes, the number of active ports, and the number of sessions.

Note: Multi-Port Collector Analysis query response times increase as the hourly throughput increases. In addition, the overall size of the metric database starts to degrade query times as the number of total entries approaches 7 billion.

Open Issues and Workarounds

This section describes known issues in Multi-Port Collector and suggested workarounds.

Issue	Workaround
No support for multiple domains.	The ability to monitor data from separate domains, often with overlapping IP addresses, is supported by SuperAgent version 9.0, but the Multi-Port Collector version 2.1 supports only a single domain. You can define a domain in the CA NetQoS Performance Center and then select it in the Multi-Port Collector Properties in the SuperAgent Management Console, but this domain then applies to all logical ports. However, any additional collector feeds assigned to the same Multi-Port Collector, such as a WAN Optimization device or a GigaStor, will support separate domain definitions. Users who needed to monitor servers with duplicate IP addresses (in different domains) were able to do this in past releases of SuperAgent by assigning different names to these servers. This scenario is no longer supported with a Multi-Port Collector. To monitor such servers, upgrade to SuperAgent 9.0, use a standard Collector, and create domain definitions in the CA NetQoS Performance Center.
22250 - Network Subnet column doesn't always sort as expected	In the Network view, the **Network Subnet** column on the **TCP** tab may not sort IP addresses as you might expect. This behavior results from the way address values are stored in the database. The value for the first portion of the IP address is an internal key representation of the subnet and, depending on the address value that is being stored, it can often be stored as a negative number. This behavior will therefore affect any subnet of 128.0.0.0 or greater. Sorting in descending order places negative values at the bottom of the column, which yields an unexpected sorting result if the largest value for the first 32 bits of one of the subnet addresses is moved to the bottom of the column. As a workaround, re-sort the same table rows by clicking another column.

Issue	Workaround
Defect 20814 - Color legend missing in Stacked Trend PDF export for TCP Bytes views.	None is available at this time., except to select a different chart format for export to PDF. The PDF is less useful without the legend that enables the reader to identify the source of each set of data points.

Defect 18174 - Restarting capture daemon may intermittently give CC_NO_MORE error starting logical port.	After you restart the `nqcapd` process for another reason, an SNMP trap is sent, indicating that a logical port could not be started. The `nqnapacapd` log indicates an error similar to the following:
	`20090122-07:35:20 [Error] Could not start packet feed(6): 5`
	`20090122-07:35:20 High Level Error: NTCI_ERRCODE_DRIVER_ERROR`
	`Low Level Error: NT_CC_NO_MORE`
	This error indicates that the capture card driver needs to allocate memory for transfer of captured buffers, but the memory is fragmented, preventing the necessary blocks from being allocated.
	As a workaround, try restarting the `nqcapd` process. If the problem still occurs, log into the Multi-Port Collector appliance using the Linux account provided by NetQoS (see the Installation chapter of the *User Guide*) and restart the server.

Defect 22432 - Export to PDF broken when another browser window/tab is open for same session	We are aware of an issue with the Export to PDF feature if you simultaneously access the Multi-Port Collector Web interface from two different browser instances, or from two separate tabs within the same instance, on the same computer. This might occur during drilldown from SuperAgent if another browser instance is already logged into the Web interface, or if you initiate Session Analysis from multiple reporting contexts. The main symptoms would be: • User actions, such as filter selection, performed in one window or tab affect the behavior of the other tab, or • The exported PDF shows a view that was selected in another window or tab. We have only seen these problems with Internet Explorer 8 or Mozilla Firefox 3.0; these browsers assign the same session to both windows/tabs. To avoid these problems, do not perform Export to PDF in multiple browser instances or from multiple browser tabs on the same computer at the same time. Or re-select a chart format for the PDF so that the Collector re-issues the database query for the desired view.

Issue	Workaround
Defect 18173 - The Multi-Port Collector does not support the Collector Device Thresholds for Discarded Packets nor Fragmented Packets that trigger Collector Device Incidents.	You can set collection device thresholds for the Collector in SuperAgent Administration. However, the Multi-Port Collector does not support the thresholds for Discarded Packets or Fragmented Packets. As a workaround, check the System Status page in the Multi-Port Collector Web interface. The Capture Card Statistics table provides the bit rate being received on each physical interface, as well as the number of packets dropped by the capture card.

Product Support

CA provides a broad range of customer support and product documentation for the CA NetQoS Multi-Port Collector. For your convenience, CA provides one site where you can access the information you need for your Home Office, Small Business, and Enterprise CA products.

Where to View the Latest Product Information

The latest product information is available on the CA Support Online Web site. You can access the site and also see current contact information for the CA Support team at:

http://support.ca.com/

You are instructed how to create a CA user account the first time you access the site. You can use this account to access the Knowledge Base, product advisories, and updates. We recommend regularly checking the Support by Product section for applicable updates and fixes.

Product Documentation

The Multi-Port Collector Web interface includes a complete online Help system to help you administer the product and interpret status and performance data. Most Help is context-sensitive.

In addition to the online Help and these release notes, you can find useful information in the following documents:

- *CA NetQoS Multi-Port Collector Setup Guide*
- *CA NetQoS Multi-Port Collector User Guide*
- *CA NetQoS SuperAgent Administrator Guide*

Reading the Setup Guide, a brief document that is included in the box along with the appliance itself, is required. It provides a list of items included in the box, diagrams showing where cables must be plugged in, and step-by-step instructions for cabling and starting up the appliance, installing the software, enabling network access, and creating a connection to CA NetQoS SuperAgent.

We strongly recommend reading the *Multi-Port Collector User Guide*, which contains all the information compiled in the online Help, plus a comprehensive installation chapter that provides tips for setting up a SPAN port to capture the data you are most interested in monitoring.

You can access the product documentation in the following ways:

- The Setup Guide is included in the shipping box with the appliance.
- On the CA Support Web site, use the **Product** list to find the SuperAgent product page. Click the link to the Documentation page. This page provides links to the Multi-Port Collector documentation, in addition to the SuperAgent documentation.
- The User Guide is also available as a link on the About page in the Multi-Port Collector Web Interface. Click the **About** link to access that page.
- In the Multi-Port Collector Web Interface, click the **Help** link.

Customer Support

If you have problems with or questions about a NetQoS product, go to the CA Support Online site at http://support.ca.com/. We recommend visiting this site regularly to see product advisories and download hotfixes.

If you do not have access to the Web and you are in the United States or Canada, contact CA at (877) 225-5224.