

Installation Guide

**CA Application Delivery Analysis
Multi-Port Monitor**
Version 10.1



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Chapter 1: Introduction

CA Multi-Port Monitor is a powerful appliance that captures session-level packet data from a monitored data center. The appliance captures data for reporting in CA Application Delivery Analysis (CA ADA) and CA Application Performance Management (CA APM).

- Data from TCP packet headers help CA ADA monitor end-to-end performance to measure application response time.
- Data from full HTTP packets help CA APM map transactions in your environment to monitor the end-user experience and measure service-level agreements.

This document describes how to install the appliance. After installation is complete, you can configure the appliance as a monitoring device for CA ADA, CA APM, or both.

The CA6300 MTP appliance ships with a Nuvoton WPCM450 Baseboard Management Controller (BMC) for IPMI support. The Intelligent Platform Management Interface (IPMI) allows you to not only remotely control and power cycle the appliance, but also provides support for sending environmental alerts related to power, temperature, fans, and other items affecting the health of the CA6300. The IPMI feature is optional, but highly recommended.

Important: For information about post-installation configuration tasks, see the Multi-Port Monitor online help or the *CA Multi-Port Monitor Administrator Guide*.

Chapter 2: System Specifications

The Multi-Port Monitor CA6300 appliance has the following specifications:

Platform Supported: CA Multi-Port Monitor

Processors: (2) Intel® E5-2630v2 2.6GHz Xeon® Six Core

Chipset: Intel® C602J Chipset

Memory: 128 GB DDR3 1600MHz Reg ECC DIMM (8 x 16 GB)

Drive Controller: Data Array: Adaptec® RAID 7805Q

Drive Bays: Hard Drive 16 x 3.5" Hot-swappable SAS / SATA Drive Bays

Drives:

- OS: (2) 240GB Intel® SSD/SATA III 2.5in 7MM SSD
- Data: (16) 2TB Seagate® 7200 128MB SAS 3.5in Hard Drives

Serverboard: Supermicro® X9DRD-EF Serverboard Dimensions: 12 x 13.00 in (304.8 mm x 330.2 mm)

Chassis: Supermicro® Chassis 836BE16-R920B

Dimensions: (WxHxD) 17.2 x 5.2 x 25.5 in. (437 x 132 x 648 mm)

Communications: Dual-Port Intel® i350 Gigabit Ethernet Controller

Out-Of-Band Management (IPMI support): Nuvoton® WPCM450 Baseboard Management Controller

Rack Support: MCP-290-00053-0N Quick Rail Set

Chapter 3: How to Install Multi-Port Monitor

The process of installing Multi-Port Monitor follows these steps:

- Unpack, inspect, and rack mount the appliance
- Insert the hard drives
- Connect the cables
- (Optional) Configure the BIOS for IPMI
- Install the software
- Enable network access
- Enable RAID monitoring

After you install Multi-Port Monitor, see the following guides for more information:

- *Integration with CA Application Delivery Analysis.* This guide describes how to configure Multi-Port Monitor as a monitoring device for CA Application Delivery Analysis.
- *Integration with CA Transaction Impact Manager.* This guide describes how to install and configure CA Transaction Impact Monitor (TIM) on the Multi-Port Monitor.

Unpack, Inspect, and Rack Mount the Appliance

CA Technologies ships a carton containing the appliance, drives, cables, rack mount rails, and software CD.

Follow these steps:

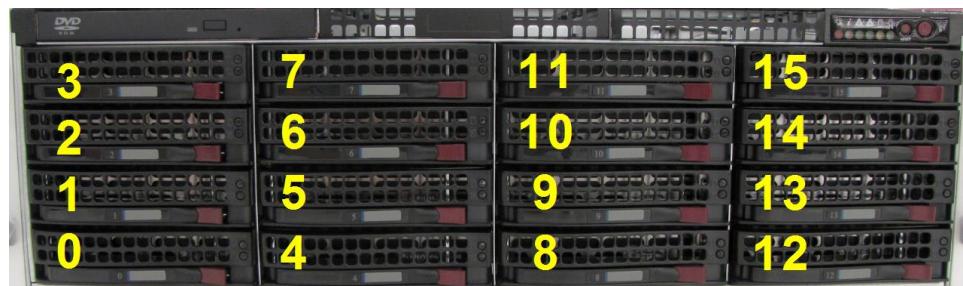
1. Unpack the carton.
2. Verify that the carton contains all of the items from the parts list that is included in the carton.
If an item is not present, contact [CA Technical Support](#).
3. Mount the appliance in the server rack.

Important: Insert the drives and connect the cables *before* connecting power to the appliance.

Insert the Drives

The appliance ships with 16 external disk drives. Each drive is labeled with an identifying number: 0 through 15. Manually insert the disk drives into the slots on the front of the appliance. Do not insert drives from one appliance into another appliance.

Important: The appliance does not detect drives that are inserted in the wrong order. If drives are not detected, the data array used for Analysis Reports and packet storage will not be available.



Follow these steps:

1. Insert drives 0 through 3 in the slots in the first column, starting at the bottom.
2. Insert drives 4 through 7 in the slots in the second column.
3. Insert drives 8 through 11 in the slots in the third column.
4. Insert drives 12 through 15 in the slots in the fourth column.

All drives are installed and the appliance is ready for cabling.

Connect the Cables

The appliance ships with all required cables, which are labeled.

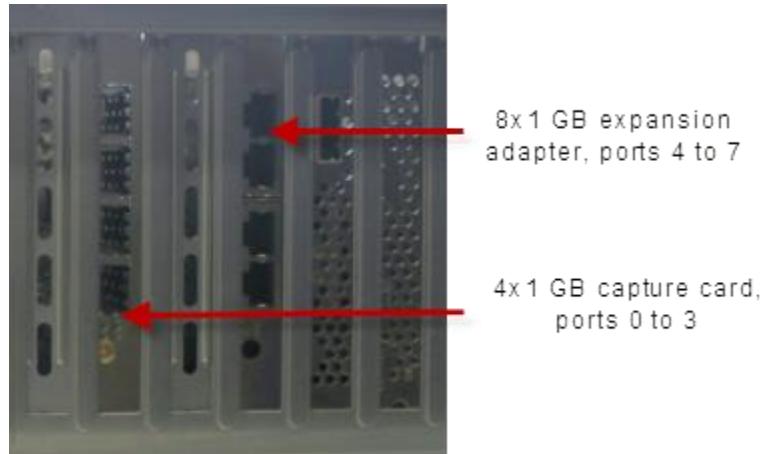
Important: Connect the cables *before* connecting power to the appliance.

Follow these steps:

1. Connect the management cable to the eth0 Network Interface Card on the back of the appliance.



2. Connect the other end of the management cable to a switch that permits network access for the Multi-Port Monitor web interface.
3. Connect each monitoring cable to a port on the back of the appliance. For more information, see [How to Identify Monitoring Ports](#) (see page 21).



Note: The 2x10 Gbps capture card (not pictured) has two ports: Port 0 and Port 1.

4. Connect the other end of each monitoring cable to a mirrored port on the switches that handle the traffic you want to monitor. For more information, see [Port Mirroring](#) (see page 24).

5. Connect the cables for the monitor and keyboard to the USB and video ports on the back of the appliance.

You need the monitor and keyboard to install the software.

6. (Optional) Connect the IPMI cable to the dedicated IPMI network interface port on the back of the appliance.



Note: Be sure to connect an RJ45 cable to the dedicated IPMI network port before powering on the appliance. If the dedicated IPMI port is not connected to the network at power on, the BMC controller will look for a shared LAN port to use instead. If the wrong port is being used, or you wish to change the configuration later, be sure to power cycle the appliance for the new IPMI port to be detected.

7. Connect the power cord and the backup power cord to the outlets on the back of the appliance.
8. Connect the other end of each power cord into a separate uninterruptible power supply.

The appliance is ready for (optional) IPMI configuration and MTP software installation.

[\(Optional\) Configure IPMI Support](#)

The CA6300 MTP appliance ships with a Nuvoton WPCM450 Baseboard Management Controller (BMC) for IPMI support. The Intelligent Platform Management Interface (IPMI) allows you to not only remotely control and power cycle the appliance, but also provides support for sending environmental alerts related to power, temperature, fans, and other items affecting the health of the CA6300. The IPMI feature is optional, but highly recommended.

You configure the CA6300 MTP appliance for IPMI by configuring the BIOS.

Enable a COM port for Serial-Over-Lan (SOL):

1. Press the Delete key at boot time to enter the BIOS Setup utility.
2. Select Advanced. Press Enter to open the Advanced menu.
3. Select Remote Access and press Enter.
4. Enable the COM port for SOL.

The COM port for SOL is marked with an asterisk (*) when enabled. If no port is enabled, choose COM2 or COM3 and press Enabled.

Enable all USB ports for Keyboard, Video, and Mouse Redirection (KVMR):

1. From the Advanced menu, select Advanced Chipset Control and press Enter.
2. From the Advanced Chipset Control submenu, select South Bridge Control and press Enter.
3. Verify that all on board USB ports are enabled (highlighted). If necessary, enable USB ports by selecting USB Functions and pressing Enabled, or press Enter to enable all on board USB ports.

Set the IP address for IPMI:

1. From the Advanced menu, select IPMI Configuration and press Enter.
2. In the IPMI Configuration submenu, select Set LAN Configuration and press Enter to set the IP address.
3. Follow the instructions in the BIOS Setup Utility to save your changes and exit.
4. The CA6300 will boot.

Note: for detailed information on using and configuring the IPMI feature available with the CA6300 MTP appliance, refer to
<http://www.supermicro.com/products/nfo/IPMI.cfm?pg=list>

Install the Multi-Port Monitor Software

Install the Multi-Port Monitor software using the CD that is provided in the shipping carton with the appliance. The Multi-Port Monitor software must match the the prerequisites file that is already installed on the appliance.

After the installation, we recommend that you visit the Download Center on [CA Support](#) to verify that you have the latest software version. If necessary, upgrade the Multi-Port Monitor to the latest version.

Important: The CentOS operating system is installed on the appliance. Do not install additional operating system software.

Follow these steps:

1. Press the red Power button on the front of the appliance.

The initial Linux screen opens.

2. Log in with the following credentials:

- User name: netqos
- Password: changeme

3. Type the current password and a new password.

4. Type the new password again to confirm it.

Multi-Port Monitor verifies that the password meets the security requirements. Hints are provided for passwords that are too simple.

Note: If the following message appears, you supplied too many rejected passwords. The operating system opens the Linux login screen. Return to step 2.

"Authentication token manipulation error"

When the login is successful, the Linux command-line interface opens.

5. Insert the CD into the DVD tray. The CD is auto-mounted to the /misc/cd folder. The auto-mount can take up to 30 seconds.

6. List the contents of the CD in the Linux command-line interface:

ls /misc/cd

- If the auto-mount is successful, the interface displays a list of the contents. Continue with Step 8.
- If the auto-mount is not successful, the following message appears: "No such file or directory." Continue with Step 7.

7. Manually mount the CD if the auto-mount is not successful:

```
sudo mkdir /mnt/cd  
sudo mount -t auto /dev/dvd /mnt/cd  
ls /mnt/cd
```

8. Launch the setup script:
 - Use this command if the CD was auto-mounted:
`sudo /usr/bin/php /misc/cd/setup-mtp`
 - Use this command if you manually mounted the CD:
`sudo /usr/bin/php /mnt/cd/setup-mtp`
- The Select Time Zone screen opens.
9. Press Tab to move the cursor to the list of time zones and select the desired time zone.
10. Press Tab to select the Next button, and then press Enter.
11. Type the date and time in the New Date and New Time fields.
Note: If the date and time are correct in the fields, do not retype the information.
12. Press Tab to select the Next button, and then press Enter.
The setup script untars the archive containing the executable and performs other configuration tasks. Software is installed to the /opt folder. When the setup completes, a confirmation message appears.
13. Unmount the CD:
 - Use this command if the CD was auto-mounted:
`sudo umount /misc/cd`
 - Use this command if you manually mounted the CD:
`sudo umount /mnt/cd`
14. Open the DVD tray:
 `eject /dev/dvd`
15. Remove the CD.
16. Restart the appliance:
`sudo reboot`

The appliance restarts and is ready for the configuration of network access.

Enable Network Access

Use the Network Settings Utility on the appliance to assign an IPv4 address to the management interface and enable network access. Network access is required for communication with CA Application Delivery Analysis and CA APM. An IPv6 management address is not supported.

Note: If network address translation (NAT) is enabled between the Multi-Port Monitor and the ADA Manager, additional steps are required. See the *Integration with CA Application Delivery Analysis Guide* for more information.

Follow these steps:

1. At the startup screen, press Enter to start the Network Settings Utility.
2. Press Tab to select the Configure button, and then press Enter.
3. In the list of network devices, perform one of the tasks to select the management interface:
 - Press Enter to select eth0 (the default interface) as the management interface.
 - Press Tab to a different interface, then press the space bar to select the interface. Press Tab to select the Next button, and then press Enter.
4. Type the IPv4 address, subnet mask, and default gateway IPv4 address of the management NIC. Make a note of the IP address so that you can add the monitoring device to CA Application Delivery Analysis.
5. If you did not select eth0 in step 3, press Tab to move to the check box labeled "Use this NIC for the Management NIC." Then press the space bar to enable the check box.
6. Press Tab to select the Next button, and then press Enter.
7. Type a fully qualified DNS host name for the appliance in the Hostname field.
8. Type the IPv4 address of the local DNS server in the Nameserver 1 field.
9. *(Optional)* Type IPv4 addresses for secondary DNS servers in the remaining Nameserver fields.
10. Type the host name or IPv4 address of the Network Time Protocol (NTP) server you want to use in the NTP Server field. The default is pool.ntp.org.

Note: CA Application Delivery Analysis and CA APM collect information from multiple sources. The NTP synchronizes the clocks of all related servers, which allows Multi-Port Monitor to correlate data and incidents correctly.
11. Press the arrow key to select the Next button, and then press Enter.
A confirmation message appears.
12. Press the arrow key to select the Yes button, and then press Enter.

The Network Settings utility returns to the startup screen.

13. Access the Multi-Port Monitor web interface from a web browser. Use the following syntax in the browser Address field:

`http://<hostname>/`

If network configuration is successful, the Multi-Port Monitor Login page opens. The appliance is ready for configuration of RAID monitoring.

Using a Browser with IPMI

When IPMI is configured in the BIOS and cabled properly, you can use a browser on a remote machine in the network to access the CA6300 MTP appliance.

Follow these steps:

1. Open a browser window from a computer that is connected to the same network as the CA6300 MTP appliance.
2. Enter the IP address of the CA6300 MTP appliance in the browser address bar.
3. A login screen is displayed. Enter your Username and Password, and click Login.
 - Default Username: ADMIN
 - Default Password: ADMIN
4. The IPMI main page is displayed in the browser with the following tabs available:
 - System Information
 - Server Health
 - Configuration - configure IPMI settings
 - Remote Control - Launch a KVM console and perform power control and server management
 - Maintenance - Update firmware and reset the CA MTP 6300 appliance
 - Miscellaneous - Post snooping codes and launch the SOL console
 - Language - Currently, only English is supported
 - Help - get help with IPMI

Note: for detailed information on using and configuring the IPMI feature available with the CA6300 MTP appliance, refer to
<http://www.supermicro.com/products/nfo/IPMI.cfm?pg=list>

Enable RAID Monitoring

Multi-Port Monitor provides RAID status monitoring when the Adaptec Storage Manager (arcconf) utility is installed. Multi-Port Monitor receives RAID-related SNMP traps when the utility is installed. When the utility is not installed the RAID section indicates *Status unavailable* on the System Status page in the web interface.

Follow these steps:

1. Download the arcconf utility, arcconf_v1_6_21062.zip, from the [Adaptec](#) website at http://www.adaptec.com/en-us/speed/raid/storage_manager/arcconf_v1_6_21062_zip.php.

Note: Version v1_6_21062 for 64-bit Linux is the only version that has been tested with Multi-Port Monitor.

2. Copy the arcconf_v1_6_21062.zip file to the /tmp folder on the appliance. Use a method of your choosing, such as the [WinSCP](#) secure copy client.

Note: Secure copy tools require credentials to log in to the appliance. Use the netqos account.

3. Log in to Linux on the appliance using the netqos account.

4. Install the .rpm file:

```
sudo /opt/NetQoS/install/setupRAIDCLI.sh /tmp/arcconf_v1_6_21062.zip
```

The message “Stopping Adaptec Storage Manager agent” is normal.

5. Verify the status of the RAID controller:

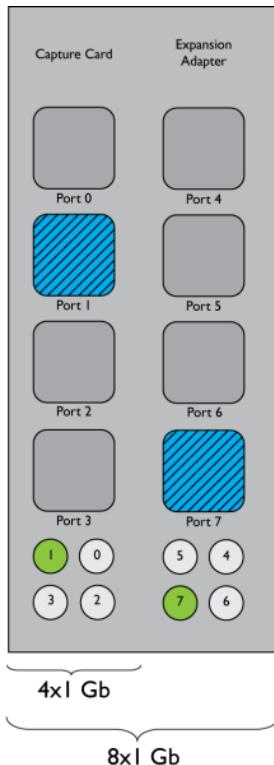
```
sudo /usr/StorMan/arcconf getconfig 1
```

After the Adaptec utility is installed, the System Status page on the Multi-Port Monitor web interface displays the status of both RAID arrays. Because RAID status is monitored every 2 minutes, you can experience a short delay before the status appears on the System Status page.

The appliance is ready for configuration as a monitoring device for CA Application Delivery Analysis, CA APM, or both. For information about post-installation configuration tasks, see the Multi-Port Monitor online help or the *CA Multi-Port Monitor Administrator Guide*.

Appendix A: How to Identify Monitoring Ports

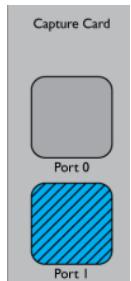
The following diagram, which represents the back of the appliance, shows how a 1-Gbps adapter identifies ports internally.



Below each series of four ports is a set of four lights. As each cable is connected, its corresponding light is illuminated. In this illustration, Port 1 on the four-port adapter is cabled and active. Port 7 on the four-port expansion adapter is similarly cabled and active.

[Enable RAID Monitoring](#)

In the following diagram, Port 1 is cabled and active on the adapter for the 2x10-Gbps configuration.



Appendix B: Best Practices for Deployment

This section contains the following topics:

[Appliance Placement](#) (see page 23)

[Port Mirroring](#) (see page 24)

[Port Requirements](#) (see page 24)

Appliance Placement

The Multi-Port Monitor appliance requires connectivity to a SPAN or mirror port on each network switch that handles the traffic you want to monitor. Connectivity typically occurs at the access layer.

The appliance must be able to *see* as much of the relevant network traffic as possible. Consider the following questions:

- Which applications do you want to monitor?
- Which servers host these applications?
- To which switches are these servers connected?
- From which subnets do users access the monitored applications?

If your network or traffic volume is exceptionally large, you can purchase an additional appliance to balance the processing load.

Port Mirroring

On a network switch, the *port mirroring* function sends copies of network packets from one port to another switch or port for analysis. Port mirroring is a safe, effective way to mirror traffic to CA Application Delivery Analysis monitoring devices. Some switches do not provide a diverse range of TCP packet-mirroring capabilities. Where traffic cannot be mirrored optimally, use alternatives such as fiber taps.

Note: The port mirroring function on Cisco switches is named Switched Port Analyzer (SPAN).

Mirror the switch ports, where traffic travels to and from the monitored servers, to the ports where Multi-Port Monitor is connected. When mirror ports are configured correctly, CA Application Delivery Analysis monitors the flow of application among clients and servers without the use of desktop or server agents.

For more information, see the *CA Best Practices for Data Acquisition Guide*.

Port Requirements

The Multi-Port Monitor appliance requires several ports to be open to support the following communication paths:

- Between CA Application Delivery Analysis and the appliance.
- Between Enterprise Manager and the appliance, when CA TIM is installed.
- To allow access to the web interface for Multi-Port Monitor administration.

Port	Direction	Description
80	Inbound from CA Application Delivery Analysis and Enterprise Manager	<ul style="list-style-type: none">■ HTTP for web interface access■ Enterprise Manager communications with CA TIM
80	Outbound to CA Application Delivery Analysis	Multi-Port Monitor web service requests for configuration data
161	Inbound	SNMP MIB queries
162	Outbound	SNMP traps
7878	Inbound	TCP flows containing packet digests from WAE devices. Note: Needed only if a WAE device is a monitor feed.

Port	Direction	Description
8080	Inbound from CA Application Delivery Analysis and Enterprise Manager	<ul style="list-style-type: none">■ CA Application Delivery Analysis web service requests for data■ Enterprise Manager requests for the network health data that appears on the Defect Details page in the CA APM console.
9995	Inbound	UDP flows containing packet digests from the CA GigaStor Connector. Note: Needed only if CA GigaStor is a monitor feed.