



CM7196A Quick Start Guide

The *CM7196A Quick Start Guide* documents installation, configuration and local operation.

01. Check the kit's contents are complete

#	item	part #	links to Opengear stores				
1	CM7196A	CM7196A					
1	Rack mount kits (2 ears, 4 rack screws for cage, 4 case nuts, & 6 screws)	590001	US	UK	EU	AU	INT
2	region-specific IEC power cables	n/a	Not sold separately				
2	UTP RJ-45 patch cables	440016	US	UK	EU	AU	INT
1	DB9F-to-RJ45, Cisco Straight-to-modem/DCE, X2 pinout mode serial adapter	319014	US	UK	EU	AU	INT
1	DB9F-to-RJ45 crossover serial adapter	319015	US	UK	EU	AU	INT
1	DB9M-to-RJ45, Cisco Straight-to-3rd-party-console X2 pinout mode serial adapter	319016	US	UK	EU	AU	INT

02. Assemble the hardware and power the CM7196A up

01. If rack-mounted: attach the rack kit to each side of the *CM7196A* before placing into the rack.
02. Connect the *CM7196A* to your primary network via either *NET1(C)* or *NET1(S)*. *NET1(C)* is an RJ45 port. *NET1(S)* takes an SFP (Small Form-factor Pluggable transceiver) module for connecting to either copper or fibre.
03. For Out-of-Band (OOB) management: connect the *NET2* port (either the RJ45 or the SFP *NET2* port) to a management network.

Note: *NET1* and *NET2* constitute four ports logically paired as two. Each pair consists of an RJ45 port for copper (C) and a Small Form-factor Pluggable (S or SFP) connection for fiber-optic. One of each pair can be active at a time. If no SFP module is present, the RJ45 port is active. If an SFP module is plugged in and establishes a working link, the SFP port activates and the paired (C) port deactivates.

04. Connect other devices to the *CM7196A*'s free serial ports; USB ports; and (if OOB management is not required) *NET2* ethernet port as required.

*CM7196A*s have 48 front-facing serial ports (numbered 1–48) and 48 rear-facing serial ports (numbered 49–96). The front-panel also presents the *NET1* and *NET2* ports, two USB ports and an RJ45 serial management console server port.

05. Plug in the power cable and turn on power to the *CM7196A*.

*CM7196A*s have dual, universal AC power supplies with automatic failover. Use the supplied, region-specific power cables to plug these models into mains electricity.

03. Connect to the CM7196A

The CM7196A is addressable at either of two IP addresses:

01. its built-in address of 192.168.0.1/24.
02. the address its on-by-default DHCP client accepts from a DHCP server on your network.

Using a browser on the same network as the CM7196A's NET1 ports with an IP address in one of the CM7196A's network ranges (ie 192.168.0.x/24 or the range used by your DHCP server):

03. Enter **https://192.168.0.1/** or **https://[DHCP-supplied address]/** in the address bar and press **Enter**.

Note: the CM7196A has a self-signed SSL certificate. 'Untrusted connection' errors will present.

04. Click through these errors to load the CM7196A login page.
05. Enter the default system username and passcode:

Username: **root**

Password/Passcode: **default**

and press **Submit** or press **Enter**

05. The Opengear Management Console (OMC) *Welcome* page loads.

Note: the OMC logs you out after 20 inactive minutes. The current page stays loaded, however, and clicking any UI element loads the login page. Log back in and the requested page loads.

04. Set a strong, high-entropy passcode for the root user

01. Click **Serial & Network > Users & Groups**.
02. Click **Edit** for the **Root User**.
03. Enter a strong, high-entropy passcode in the **Password** field.
04. Re-enter the passcode in the **Confirm** field.
05. Click **Apply**.

05. Set NET1's network configuration method

01. Click **System > IP**.
02. Click **Network Interface** if it is not the front-most tab.
03. For **Configuration Method** click either the **DHCP** or **Static** radio button.
04. If **Static**, enter an **IP Address** and **Subnet Mask** for the NET1 interface.

06. Set NET2's network configuration method

The ethernet ports which make up NET2 are set to inactive by default. To activate them:

01. Click **System > IP**.
02. Click **Management LAN Interface** to make it the front-most tab.
03. Click the **Deactivate this network interface** checkbox to de-select this option and activate NET2.
04. For **Configuration Method** click either the **DHCP** or **Static** radio button.
05. If **Static** enter an **IP Address** and **Subnet Mask** for the NET2 interface. For OoB, set these for your management network. For IP-passthrough, set these to match an unused private IP range.

Note: HTTPS and SSH are enabled to the CM7196A by default. To change settings for the CM7196A, and for connected ports, click **System > Services > Service Access and adjust as required.**

07. Configure serial devices

01. Select **Serial & Networks > Serial Port** to display the labels, modes and protocol options for each serial port. By default all serial ports are in disabled mode.
02. Click **Edit** to configure a given serial port.
03. Change the **Common Settings** (*Baud Rate, Parity, Data Bits, Stop Bits, and Flow Control*) to match those of the device being controlled.
04. Select the Console Server Settings protocols (*SSH, Telnet, Web Terminal, and RFC2217*) to be used for the network connection to that port.
05. Set a **Logging Level**. There are five available levels and they log data as follows:
 0. off (no data collected for the selected port).
 1. user connection events.
 2. data transferred **to & from** the port; flow control status changes; & user connection events.
 3. data transferred **from** the port; flow control status changes; & user connection events.
 4. data transferred **to** the port; flow control status changes; & user connection events.
06. Click **Apply**.

08. Attach USB devices

The CM7196A has two front-facing USB ports. With a USB-to-serial adapter, any of these ports can function as a serial port. Front-facing ports have two common uses, however:

01. Connecting to USB consoles on UPS supplies and Cisco devices.
02. In-situ flash drive attachment to load updated firmware or saved configuration files.

09. Create required local users and groups

Note: Don't rely on the root user. Create at least one extra user with full administrative access

For each required user:

01. Select **Serial & Network > Users & Groups**.
02. Click **Add User**
03. Enter a **Username**.
04. Enter a strong, high-entropy passcode in the **Password** field.
05. Re-enter the passcode in the **Confirm** field.
06. Nominate the **Accessible Ports** available to this user.
07. Choose the user's **Group**.

For limited access to the CM7196A's GUI and CLI interfaces, check the *user* group.

For full access to the CM7196A's GUI and CLI interfaces, check the *admin* group.

Note: new users are, by default, granted no management access. They must be placed in a group to have any access to the Infrastructure manager's management GUI and CLI interfaces.

08. Click **Apply**.

10. Access device consoles

Choose a protocol for accessing device consoles.

To connect to the *pmshell chooser* menu via SSH:

01. SSH in to the CM7196A's IP address.
02. add `:serial` to the username. (eg: `admin_user:serial`.)

To connect to a given console directly via SSH:

01. SSH in to the CM7196A's IP address.
02. add the port number or label to the username. (eg: `admin_user:port02` or `admin_user:routerName`.)

To connect to a given serial port directly via SSH:

01. SSH in to TCP port 3000 plus the serial port number at the *Infrastructure manager's* IP address.
02. To connect to serial port 2, for example, SSH in to `3002`.

To connect via Telnet:

01. Telnet in to the CM7196A's IP address at port 2000 plus the port number.

To connect to a particular console using a web-browser:

01. login to the Opengear Management Console (see **step 03** above).
02. select **Manage > Devices > Serial** and click the port's *Web Terminal* link.

11. Other Opengear Management Console configuration options

To further monitor serial ports and to add monitoring of EMDs, UPSs, RPCs (eg PDUs and IPMI devices) and to add monitoring of hosts and user logins:

01. Select **Alerts & Logging > Auto-Response**
02. Check the desired *Check Conditions* (eg temperature, battery level, and data patterns).
03. Specify the desired *Trigger Actions* (eg an e-mail alert, an SMS message, or a Nagios or SNMP alert sent to a nominated destination).

For more detailed monitoring and control of UPSs, RPCs, PDU power strips and servers with embedded IPMI BMCs, using open source *NUT* and *Powerman* tools:

01. Select **Manage > Power** or
02. run the shell-based `pmshe11` **Power Menu**.

Assuming a Log Level other than 0, logs of all communications with attached serial and network devices, system activity, UPS, PDU and EMD status can be viewed and saved.

To view logs

01. Select **Manage > Port Logs** or **Manage > Host Logs**.

To save logs:

01. Select **Alerts & Logging > Port Log**
02. Save the log history either locally or remotely.