EX 1100 and EX 2110 Secure WAN Managers

Installation and Setup Guide

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This guide describes how to physically install the EX Series Secure WAN Manager™ (EX device) and configure the MGMT (management) interface for network access to the Command-Line Interface (CLI).

Note: This guide applies only to the EX 1100 and EX 2110 models (shown above). For other EX models, see the *EX Series Secure WAN Manager Installation and Setup Guide*, included on the documentation CD.

Inspection

Inspect the box carefully ***before*** opening it. If the box is damaged, contact the shipper for instructions on filing a claim. Opening a damaged box before inspection by the shipper will void any potential shipping claims.

Caution: Do not attempt to install or operate damaged equipment. As with any electrical equipment, personal injury or damage to other equipment can result from commissioning damaged electrical equipment.

Regulations

Follow all applicable regulations for installation of electrical equipment.

Unpacking

Carefully unpack your EX device and included items from the box.

Check the Contents

Confirm that the following items are included with the EX device:

- Cables: one AC power, two Cat-5E Ethernet, one Serial to RJ-45 console
- Hardware: rack-mount kit (2 front brackets, 2 rear brackets, and two support rails)
- Product documentation, CD (User Manuals, Release Notes, and so on)

Other Requirements

Other equipment needed for installation:

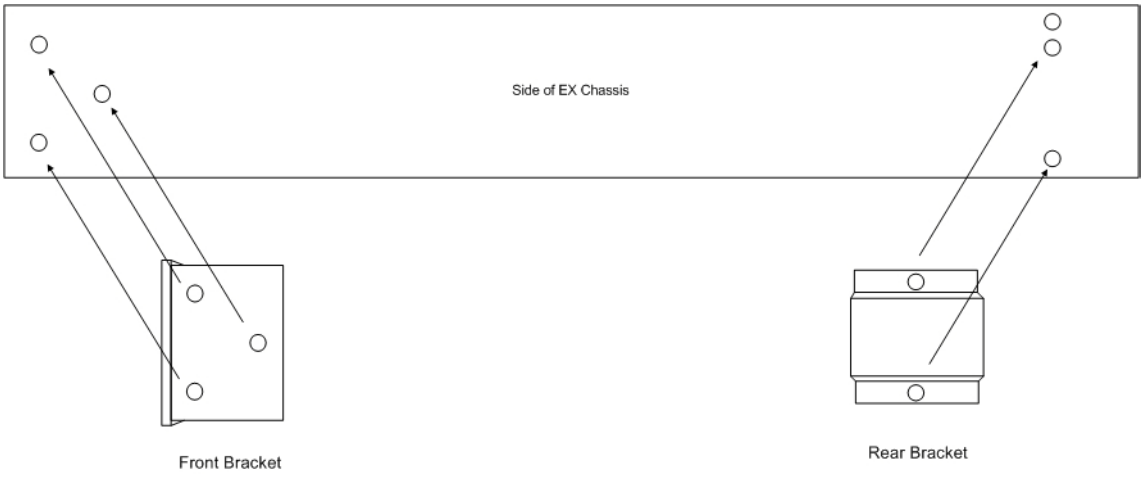
- Notebook or workstation PC (Windows, Linux, Mac)
  – Must have compatible Ethernet connectivity
- Web browser (IE 5.5 or later, Mozilla Firefox 1.0.4 or later)
- Terminal Emulation Software (PuTTy, HyperTerminal, or similar)

Installation

Rack Mounting

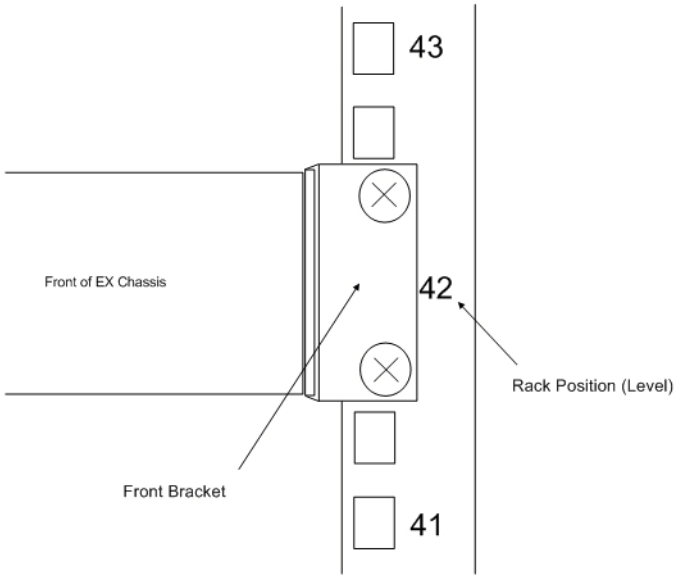
1. Attach the front and rear mounting brackets to the side of the EX device as shown in Figure 1. Repeat on the other side before continuing to the next step.

FIGURE 1. Attaching the front and rear brackets to the device



2. Attach the EX device to the front of the rack as shown in Figure 2. Make sure to fasten front brackets.

FIGURE 2. Attaching the device to the front of the rack

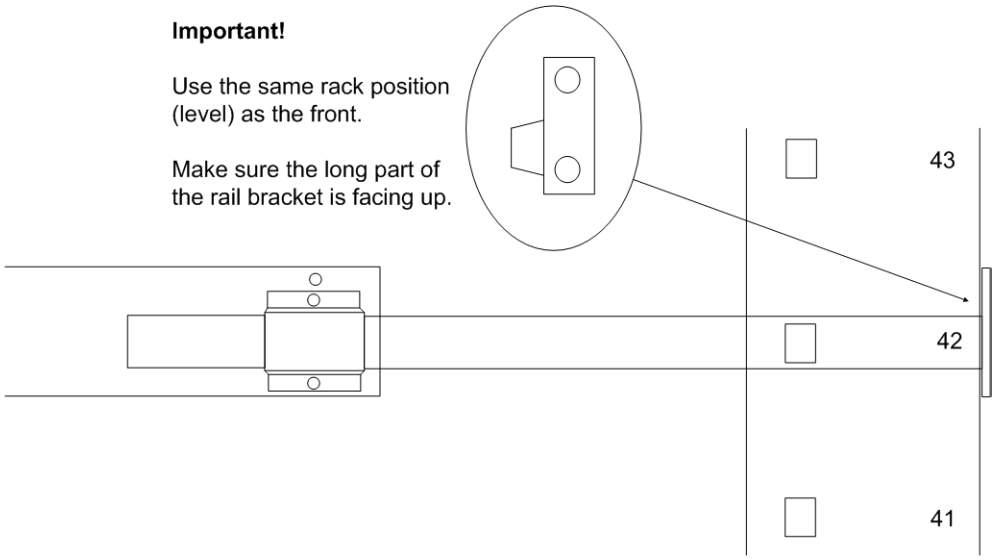


3. Insert the rail bracket through the rear bracket on one side of the EX device, and fasten the bracket to the rack, as shown in Figure 3.

Note: Make sure the rear of the rail bracket is oriented as shown in Figure 3. The longer end of the rear of the bracket should be facing up and outward. Also make sure to use the same rack level as used for the front.

Repeat for the other side.

FIGURE 3. Attaching the device to the rear of the rack



4. Check all screws to verify that they are snug.

Interface Connections

The EX 1100 provides the following interfaces:

- Ethernet data interfaces – 4 1-Gigabit copper interfaces
- Management interfaces – 1 serial console interface (Console) and 1 Ethernet interface (MGMT)

The EX 2110 provides the following interfaces:

- Ethernet data interfaces – 6 1-Gigabit copper interfaces and 2 10-Gigabit fiber interfaces
- Management interfaces – 1 serial console interface (Console) and 1 Ethernet interface (MGMT)

1. Connect the serial cable to the serial console interface.
2. Connect Ethernet cables to the data interfaces you plan to use.
3. Optionally, connect an Ethernet cable to the MGMT interface.

Front Panel Status LEDs

TABLE 1 Front panel LED status indications — EX 1100 and EX 2110

LED	Color		Status	Description
Power	Green		On	Power is switched ON
			Off	No power connected
HDD	Yellow		On	Hard disk under access
			Off	No Data access
Status	Green		On	When system under access
			Off	No power access
Ethernet Ports (Cat-5)	**L/A**	Green	Off	LNK - Link down
			On	LNK - Link up
			Flash	ACT - Activity
	SP	Off	Off	10M
		Green	On	100M
		Orange	On	1G
Ethernet[1] Ports (Fiber)	**L/A**	Green	Off	LNK - Link down
			On	LNK - Link up
	ACT	Green	Off	ACT - No activity
			Flash	ACT - Activity

1. Fiber Ethernet ports appear on the EX 2110 but do not appear on the EX 1100.

Power

Power-on Instructions

To power on the EX device:

1. Verify that all connections have been made according to "Interface Connections" on page 6 prior to connecting the device to an electrical outlet.

2. Connect the terminal and/or network connections as described in Step 1 of "Initial Configuration" on page 8.

3. The EX device automatically boots when the power plug is connected to an electrical outlet. If the device does not boot automatically, it can be manually booted by quickly flipping the power switch.

Note: Power OFF – To perform a graceful shutdown, use the **shutdown** command in the CLI. You will be prompted to save your configuration information before the EX device powers down.

Force Power OFF – If the system stops working and requires a forced shutdown, press and hold the power switch in the "1" position for four seconds. Keep in mind that this forced shutdown will cause a loss of configuration information that has not been manually saved.

Initial Configuration

The EX device can be initially configured using the console connection. It is recommended that you read this procedure entirely before starting. Entering a question mark **?** and pressing Enter at the console displays help at the current level. Enter a command or keyword, a “space”, and **?** to display help specific to that command or keyword. This also works for commands that have sub-commands.

Connection via Console (USB or Serial Port)

1. Using a USB or serial port cable, connect the EX device to a computer with terminal emulation software (for example, HyperTerminal) using the respective ports on both devices.
2. Power on the computer and the EX device.
3. Set the terminal emulation software for 9600 baud and 8-N-1 (8 bits - no parity - 1 stop bit). Once you are connected, the login prompt will appear on the terminal.

Login via CLI

1. Log into the EX device with the default username (admin) and the default password (a10).

```
login as: admin
Welcome to EX
Using keyboard-interactive authentication.
Password:***

[type ? for help]
```

2. Enable the privileged EXEC level by typing **enable** and pressing Enter. There is no default password.

```
EX>enable
Password:(press enter only)
EX#
```

3. Access the configuration mode by typing **config** and pressing Enter.

```
EX#config
EX(config)#
```

How to Configure an IP Address

Note: In the factory default configuration, Ethernet port 4 has IP address 192.168.1.10/24. You can use either a console connection or another PC with IP address 192.168.1.x/24. To connect to 192.168.1.10, connect the PC to Ethernet port 4. You can *not* assign IP address 192.168.1.x/24 to any port other than Ethernet port 4, unless the IP address on Ethernet port 4 is removed or changed to another subnet.

Here is an example of how to configure an IP address on the EX device. In this example, IP address 192.168.2.228/24 is assigned to the management port.

1. Access the configuration level for the management port, and assign an IP address to the port:

```
EX(config)#interface management
EX(config-if:mgmt)#ip address 192.168.2.228 /24
```

2. Verify the interface IP address change:

```
EX(config-if:mgmt)#show interfaces management
management is up, line protocol is up
  Hardware is Ethernet, address is 0013.7217.3C1F
  Internet address is 192.168.2.228/24, broadcast is 192.168.2.255
...
```

Change the Admin Password

A10 Networks recommends that you change the admin password immediately for security. In the CLI:

```
EX>enable
Password:******
```

Note: The default enable password is blank. Just press Enter.

```
EX#config
EX(config)#admin admin password newpassword
```

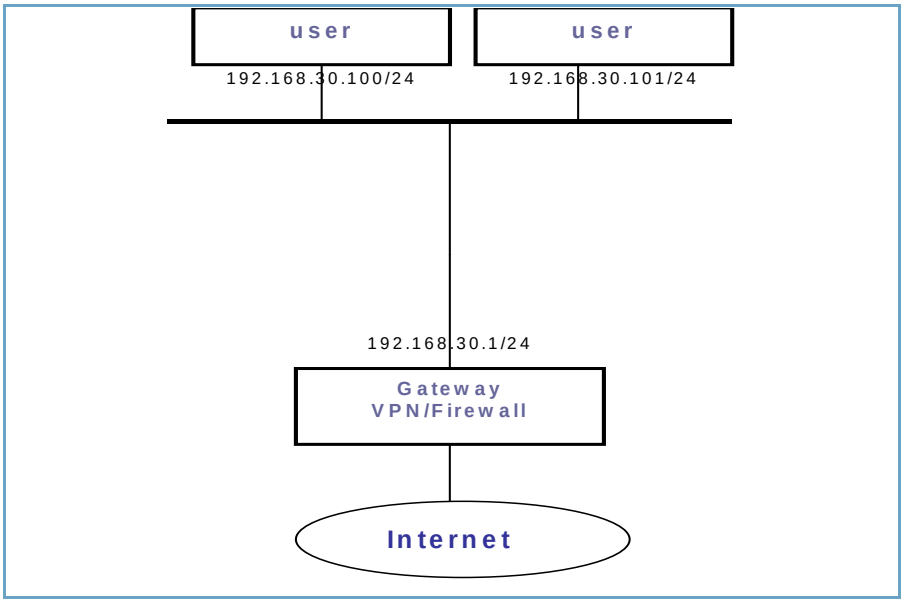
The EX device is now network accessible for configuration under the new IP address and admin password.

Working in Transparent Mode

The EX device can be inserted into an existing network while in transparent mode, so that you do not need to change the existing network topology.

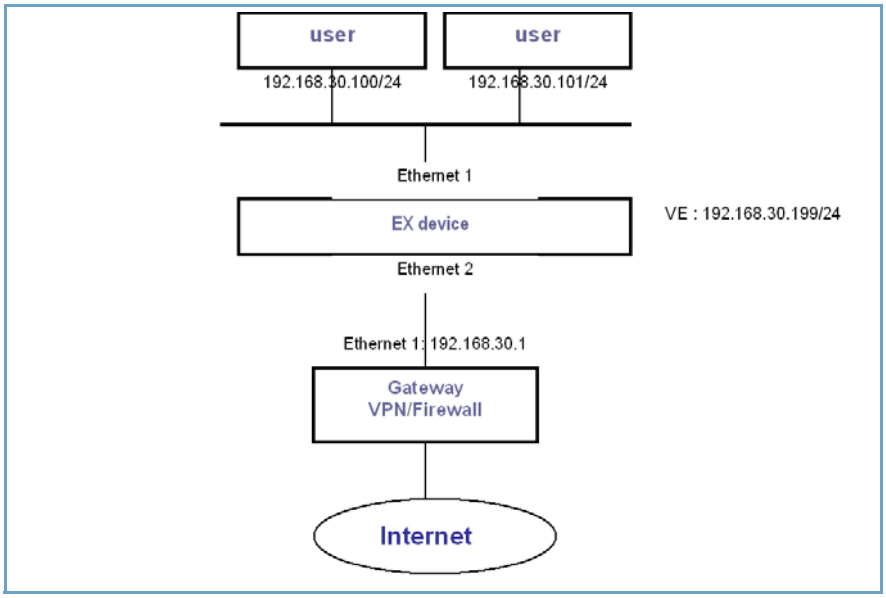
To deploy the EX device in transparent mode, you must configure a VLAN. The following topology is offered as a simple example. In the existing company topology, the admin uses 192.168.30.1 as the default gateway.

FIGURE 4 Existing company topology without EX device



After the EX device is added to the topology, the existing network configuration does not need to be changed.

FIGURE 5 Existing company topology with EX device



Note: Ethernet ports 1 and 2 on the EX device do not have IP addresses. They are added to untagged VLAN 1. VLAN 1 has IP address 192.168.30.199/24.

Configure the EX device using the CLI

Add the VLAN:

```
EX(config)#vlan 1
EX(config-vlan:1)#untagged ethernet 1
EX(config-vlan:1)#untagged ethernet 2
EX(config-vlan:1)#exit
EX(config)#
```

Configure the IP interface:

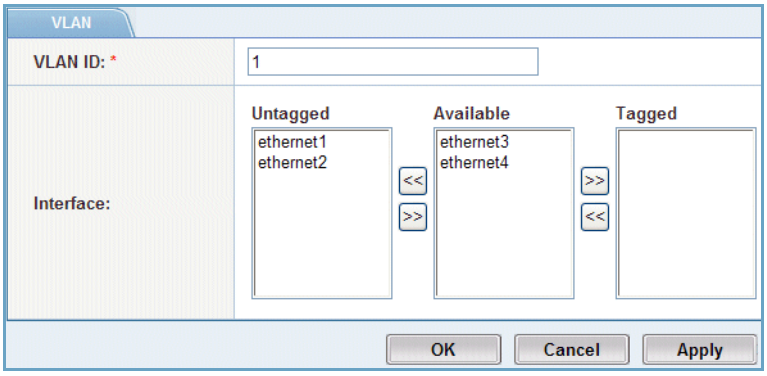
```
EX(config)#interface ve 1
EX(config-if:ve1)#ip addr 192.168.30.199 /24
EX(config-if:ve1)#exit
```

Configure the EX device using the Web GUI

Add the VLAN:

1. Select Configure > Network > VLAN.
2. Click New. The VLAN tab appears. (See Figure 6.)
3. In the VLAN ID field, enter 1.
4. In the Available list, select ethernet1 and ethernet2.
5. Click << to move the selected interfaces to the Untagged list:
6. Click OK. The new VLAN appears in the VLAN table.

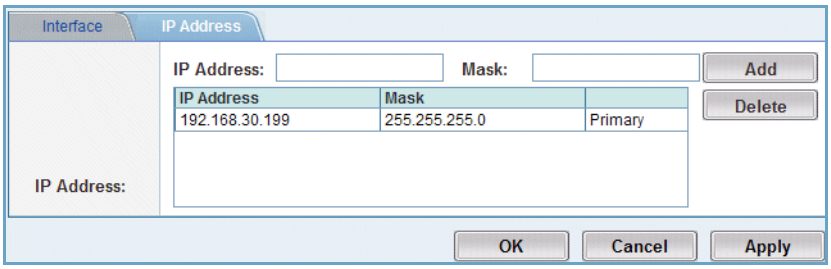
FIGURE 6 Transparent Mode – VLAN Tab



Configure the IP interface:

1. Select Configure > Network > Interface.
2. In the Interface column, click on ve1. (This is the virtual Ethernet interface created by the EX device when you create VLAN 1.) The Interface tab is displayed.
3. Click IP Address to display the tab. (See Figure 7.)
4. In the IP Address field, enter 192.168.30.199.
5. In the Mask field, enter 255.255.255.0.
6. Click Add. The address appears in the list as the primary IP address on ve1.
7. Click OK.

FIGURE 7 Transparent Mode – IP Address Tab

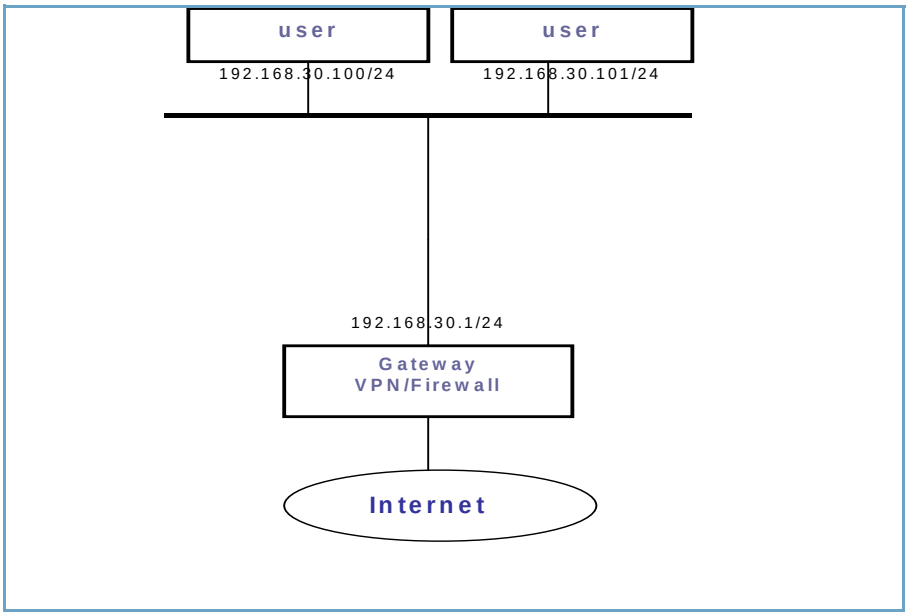


Working in Gateway mode

In gateway mode, the EX device serves as the default gateway. This might require an IP address change for the company's existing gateway.

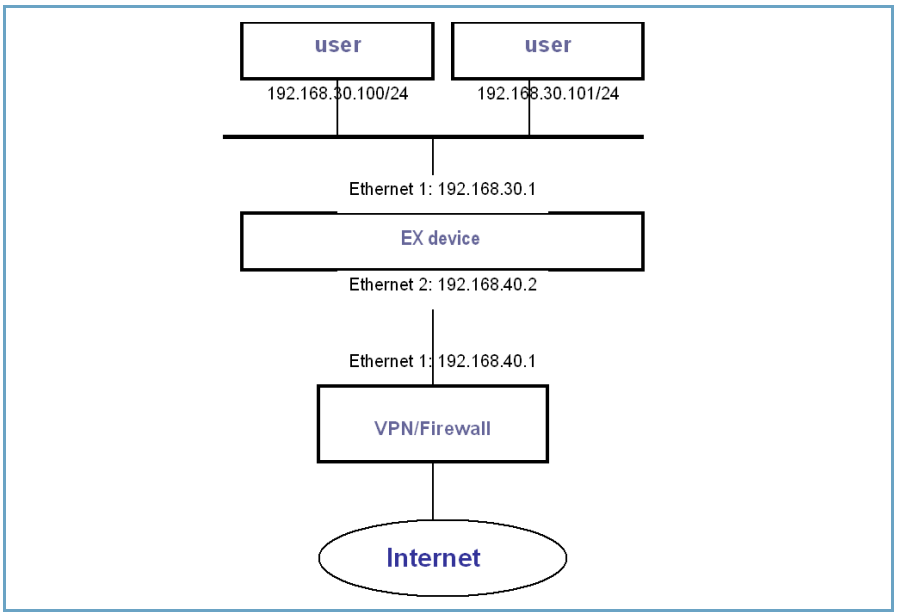
Here is an example. In the existing company topology, the admin points the default gateway to 192.168.30.1.

FIGURE 8 Existing topology – default gateway 192.168.30.1



After the EX device is added to the network, the existing network configuration is changed as follows.

FIGURE 9 New topology – after adding EX device as gateway



Note: Ethernet ports 1 and 2 need to have IP addresses assigned. The IP address of the original gateway is changed from 192.168.30.1 to 192.168.40.1. IP address 192.168.30.1 is now assigned to port 1 on the EX device. Also on the EX device, the default gateway is set to 192.168.40.1.

Configure the EX device using the CLI

Configure Ethernet port 1:

```
EX(config)#interface ethernet 1
EX(config-if:ethernet1)#ip addr 192.168.30.1 /24
EX(config-if:ethernet1)#exit
```

Configure Ethernet port 2:

```
EX(config)#interface ethernet 2
EX(config-if:ethernet2)#ip addr 192.168.40.2 /24
EX(config-if:ethernet2)#external
EX(config-if:ethernet2)#exit
```

Configure the default route:

```
EX(config)#ip route 0.0.0.0 /0 192.168.40.1
```

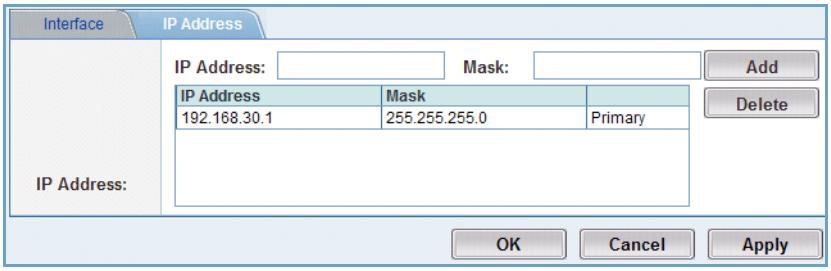
Configure the EX device using the Web GUI

Note: You can *not* use the GUI to configure IP addresses or any other settings until you use the CLI to add at least one IP address to the device. Your Web browser needs the IP address in order to reach the device.

Configure Ethernet port 1:

1. Select Configure > Network > Interface.
2. In the Interface column, click on ethernet1. The Interface tab is displayed.
3. Click IP Address to display the IP Address tab. (See Figure 10.)
4. In the IP Address field, enter 192.168.30.1.
5. In the Mask field, enter 255.255.255.0.
6. Click Add. The address appears in the list as the primary IP address on the interface.
7. Click OK.

FIGURE 10 Gateway Mode – IP Address Tab for ethernet1



Configure Ethernet port 2:

1. Select Configure > Network > Interface.
2. In the Interface column, click on ethernet2. The Interface tab is displayed. (See Figure 11.)
3. Change the interface location by selecting External.
4. Click IP Address to display the IP Address tab. (See Figure 12.)
5. In the IP Address field, enter 192.168.40.2.
6. In the Mask field, enter 255.255.255.0.
7. Click Add. The address appears in the list as the primary IP address on the interface.
8. Click OK.

FIGURE 11 Gateway Mode – Interface Tab for ethernet2

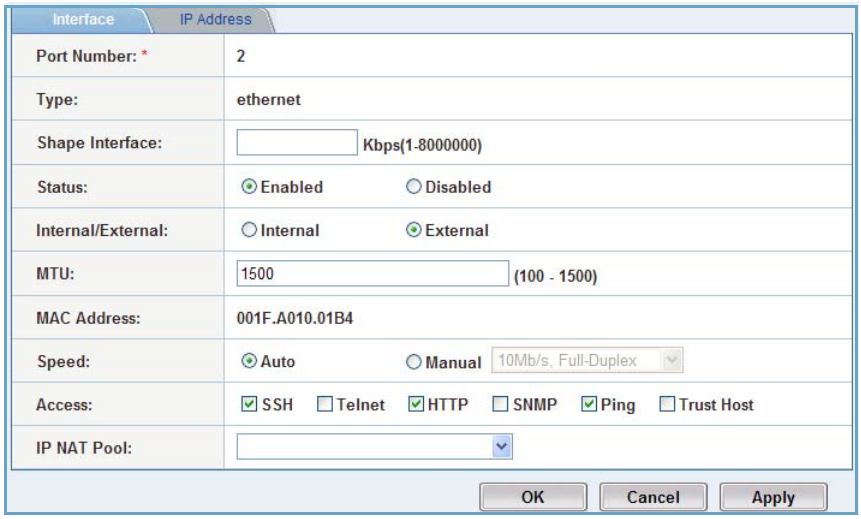
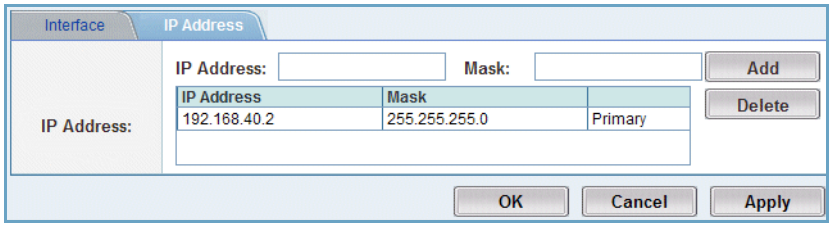


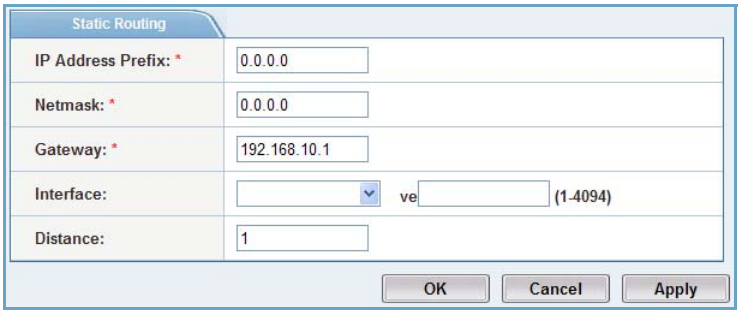
FIGURE 12 Gateway Mode – IP Address Tab for ethernet2



Configure the default route:

1. Select Config > Network > Routing.
2. On the menu bar, select Static, if not already selected.
3. Click New. The Static Routing tab is displayed. (See Figure 13.)
4. In the IP Address Prefix and Netmask fields, enter “0.0.0.0” in each field. (The address and mask 0.0.0.0 0.0.0.0 indicates a default route.)
5. In the Gateway field, enter 192.168.40.1.
6. It is not necessary to change the Interface, ve or Distance fields.
7. Click OK. The new static route appears in the list of static routes.

FIGURE 13 Gateway Mode – Static Route Tab



More Information

To configure EX features, see the following documents, located on the documentation CD:

- *EX Series Graphical User Interface User Manual*
- *EX Series Command Line Interface User Manual*
- *EX Series aFleX Scripting Language Reference*

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