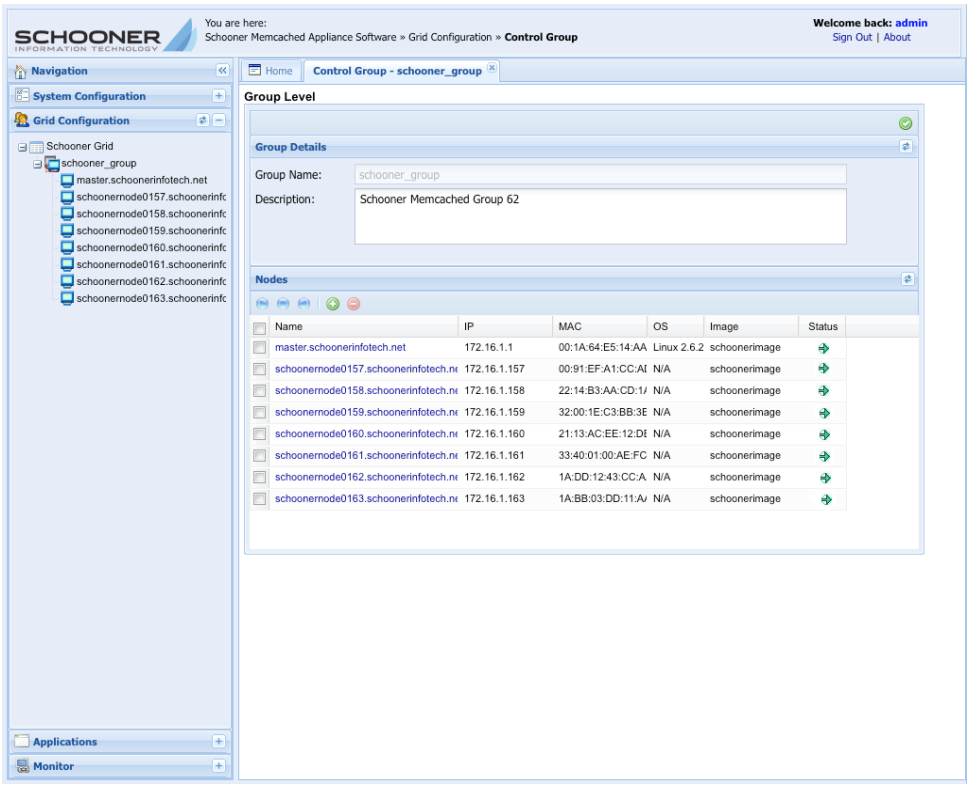
# Installation & Setup Guide

## Schooner Appliance for Memcached™

Version 2.0

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### Technical Support

Go to the IBM support Web site at http://www.ibm.com/systems/support/to check for technical information, hints, and tips

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Schooner Appliance for Memcached™ - Installation & Setup Guide

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# Contents

# Chapter 1: Introduction

## Welcome

Thank you for purchasing Schooner Appliance for Memcached™ and welcome to Schooner's new world of smart, fast, scalable, and cost-effective data access.

This document explains how to:

- rack-mount and connect your appliance
- configure it using the FirstTime Wizard
- add additional nodes

To find out how to manage and monitor your Schooner appliance using the Schooner Administrator control console, see the Schooner Appliance for Memcached *Application & Administration Guide*.

## Schooner Administration Architecture

### Master Node

The Schooner Administrator operates through a "master node" that maintains the configuration of all Schooner nodes in the "grid" or collection of Schooner nodes. To perform maintenance on any node in the grid, log into the Schooner Administrator located on the master node and access the "client node" you wish to administer. In the event of master node failure, a new master node will be automatically selected. Log into the Schooner Administrator on any node, and you will be redirected to the master node.

### Client Node

A client node in the Schooner Administrator system is simply a non-master member of the Schooner grid. Client nodes belong to a "group" of which there may be several in a grid.

All maintenance operations are performed via remote calls from the master node to the client nodes.

### Alternate Administration

Schooner Appliance for Memcached nodes may also be administered via Command Line Interface (CLI) See **Chapter 5**. If this method is chosen, your administration system is responsible for maintaining all nodes without a Schooner master node.

# Prerequisites

### Ethernet Network Infrastructure

The Schooner Alliance for Memcached system assumes:

- A 1-Gb Ethernet network for command, control, and administration. The 1-Gb port is configured as **eth0**.
- A 10-Gb Ethernet network to handle application traffic. The 10-Gb port is configured as **eth8**.

  If your network does not support 10-Gb Ethernet, you may use the 1Gb Ethernet connectors **eth1** to **eth7**.

### Laptop Computer and/or Keyboard/Monitor

You will need a laptop computer to configure your Schooner system through the FirstTime Wizard. Once setup is complete, the laptop is no longer needed.

Alternatively, you can connect a keyboard and monitor to your Schooner appliance and use a Command Line Interface (CLI) to configure your Schooner system. You may find this more convenient, although the FirstTime Wizard offers more assistance.

# Hardware Overview

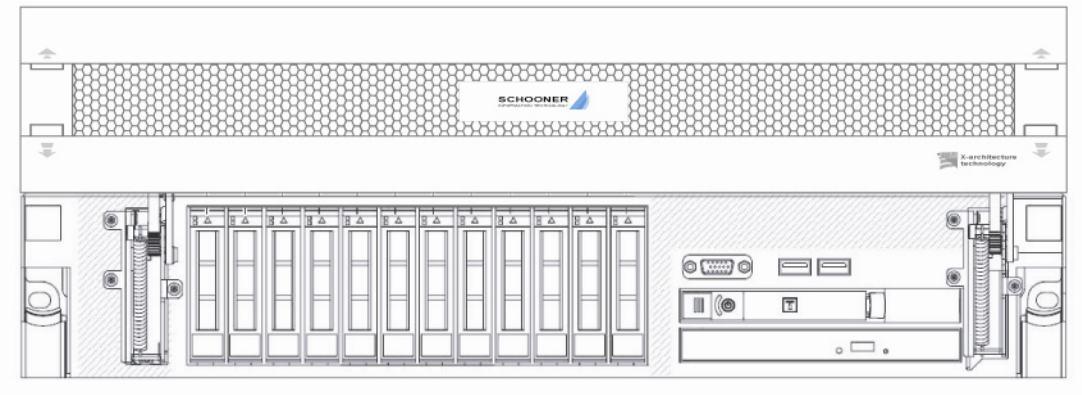
This section provides a brief description of your Schooner hardware, including its connectors and indicators.

### Front Door

Five LEDs are visible through the front door. They are described later in this chapter as part of the operator information panel description. The balance of the front-panel controls, connectors, and indicators are accessed by raising the front door.

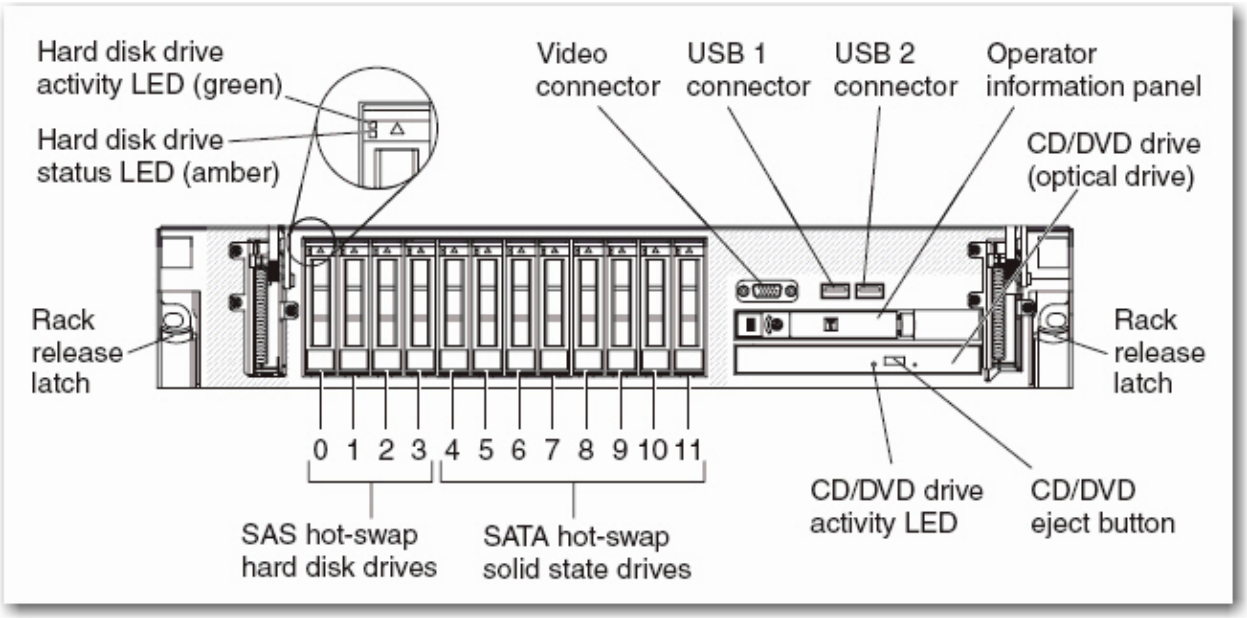
Raise the door by first pressing upward simultaneously on the two release levers (see the figure below).

While continuing to press the levers, swing the spring-loaded door first out and then up.

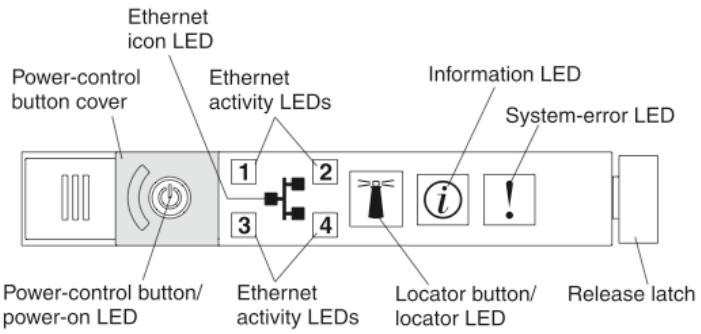


## Front Panel

All of the front-panel components, connectors and indicators are shown in the following two figures.



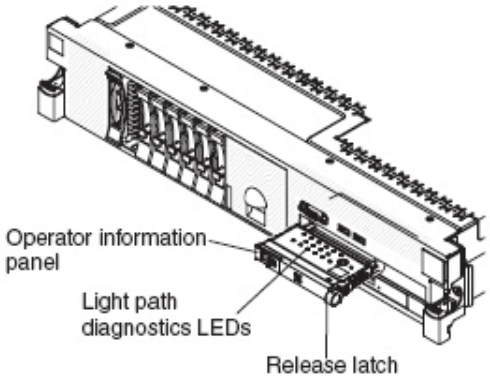

The **operator information panel** controls and indicators are illustrated in the following figure.



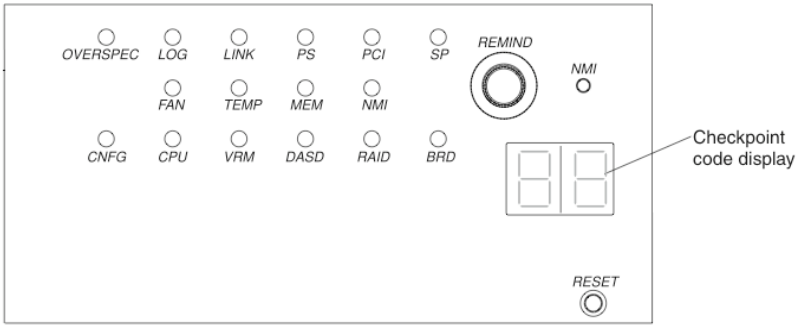

There is a light path diagnostics panel on the top of the operator information panel.

To access the diagnostics panel:

1. Push the release latch, on the right side of the operator information panel, to the left.
2. Pull the operator panel out from the chassis until the panel's hinge is exposed and it pivots down.

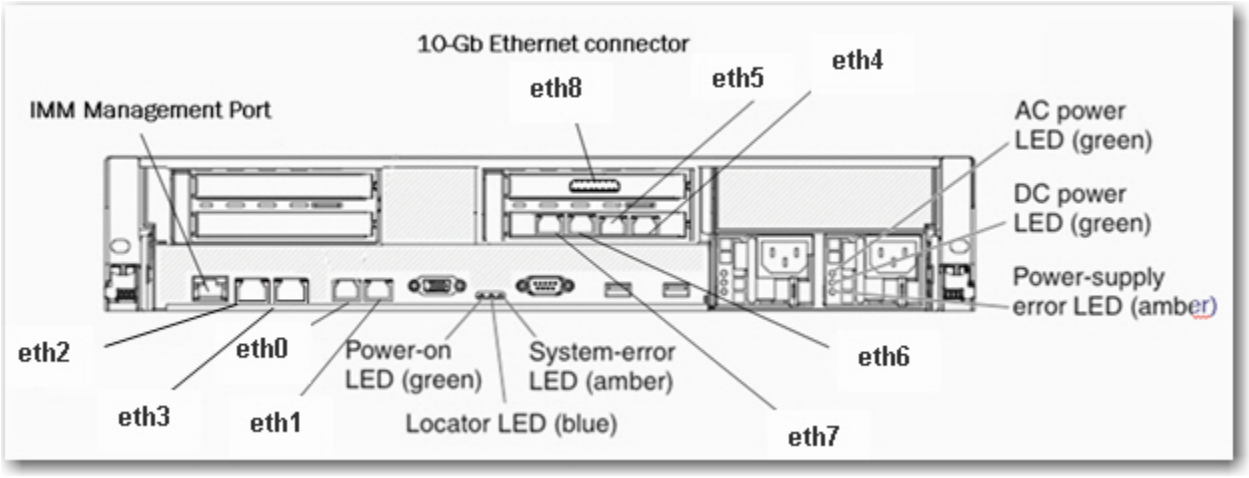



The diagnostics panel is shown in the following figure. Refer to the IBM *Problem Determination and Service Guide*, on the Documentation CD, for instructions about the use of the diagnostics panel.



### Rear Panel

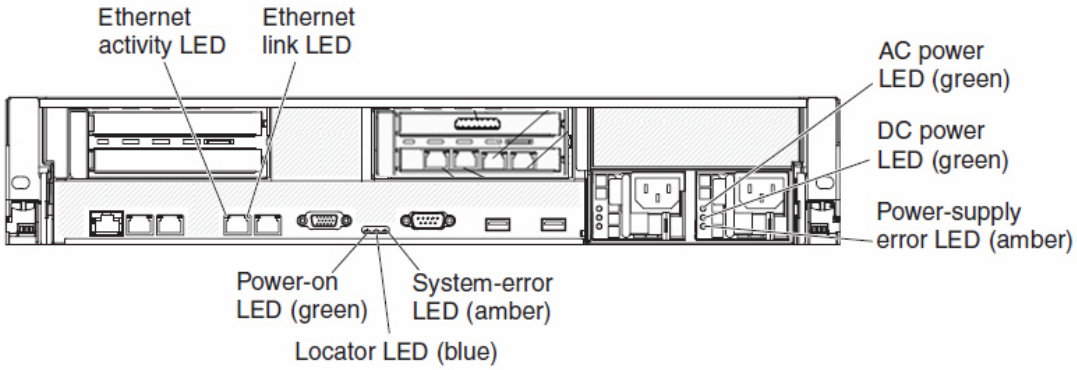
The following figure illustrates the PCI connectors and LED indicators on the real panel of Schooner Appliance for Memcached.




- **Ethernet connectors -** Connect the appliance to a network. The rear panel contains nine network connectors: eight jacks for 1-Gb Ethernet traffic and one CX4 connector for 10-Gb Ethernet traffic, labeled “Chelsio”
- **Power-cord connectors -** Connect the appliance to power sources. The two must always be connected to different power sources for system fail-over.
- **USB connectors -** Connect USB devices, e.g., USB mouse, keyboard, etc. to the appliance.
- **Serial connector -** Connect a 9-pin serial device to this appliance. The serial port is shared with the integrated management module (IMM). The IMM can take control of the shared serial port to perform text console redirection and to redirect serial traffic, using Serial over LAN (SOL).
- **Video connector -** Connect the appliance to a monitor. The video connectors on the front and rear of the appliance can be used simultaneously.

  **Note:** The maximum video resolution is 1280 x 1024 at 75 Hz.
- **IMM Management Port -** Connect the appliance to a network for systems-management information control. This connector is used only by the IMM.

The figure below illustrates the LEDs on the rear panel.




- **Ethernet activity LEDs** - When any of the LEDs is illuminated, it indicates that the appliance is transmitting to or receiving signals from the Ethernet LAN connected to the corresponding Ethernet port.
- **Ethernet link LEDs** - When illuminated, they indicate that there is an active link connection on the 10BASE-T, 100BASE-TX, or 1000BASE-TX interface for the Ethernet port.
- **AC power LED** - Each hot-swap power supply has an AC power LED and a DC power LED. When the AC power LED is illuminated, it indicates that sufficient power is coming into the power supply through the power cord. During typical operation, both the AC and DC power LEDs are illuminated.
- **DC power LED** - Each hot-swap power supply has a DC power LED and an AC power LED. When the DC power LED is illuminated, it indicates that the power supply is supplying adequate DC power to the appliance. During typical operation, both the AC and DC power LEDs are illuminated.
- **Power-supply error LED** - When illuminated, it indicates that there is a power failure.
- **System-error LED** - When illuminated, it indicates that a system error has occurred. An LED on the light path diagnostics panel is also illuminated to help isolate the error. This LED is the same as the system-error LED on the front of the appliance.
- **Locator LED** - Visually locate the given appliance among other appliances. Use the IBM Systems Director to light this LED remotely. This LED is the same as the locator LED on the front of the appliance.
- **Power-on LED** - The states of the power-on LED are as follows:
  - **Off** - AC power is not present or the power supply or the LED itself has failed.
  - **Flashing rapidly (4 times per second)** - The appliance is powered off and is not ready to be powered on. The power-control button is disabled. Approximately 3 minutes after the appliance is connected to AC power, the power-control button becomes active.

- **Flashing slowly (once per second) -** The appliance is powered off and is ready to be powered on. You can press the power-control button to turn it on.
- **Illuminated** - The appliance is powered on.
- **Fading on/off** - The appliance is in a reduced-power state. To wake the appliance, press the power-control button or use the integrated management module (IMM) Web interface.

# Chapter 2: Install, Connect, and Boot

## Rack Mounting

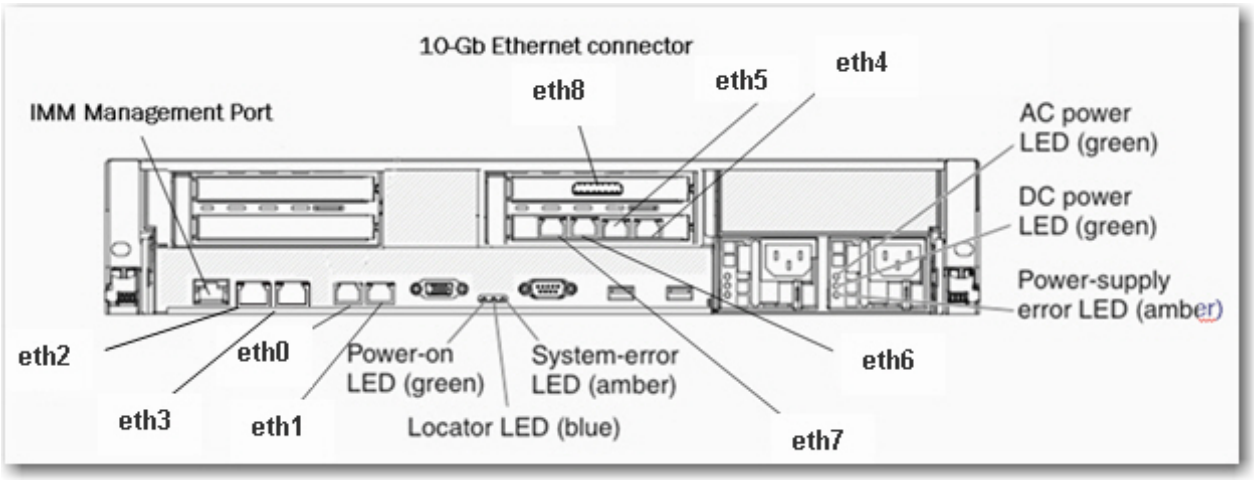
To rack-mount your Schooner appliance, refer to IBM's "Rack Installation Instructions" included in your Schooner package.

**Note:** Do not install this appliance in the top 2U's in your rack. Otherwise, you will not be able to put the bezel in the up position. And if the bezel cannot open, then you will not be able to access the front panel and the SSD drives.

## Connect Schooner Appliance to a Network

Your Schooner Appliance for Memcached has 9 (NICs):

| NIC | Speed | Description |
|---|---|---|
| eth0 | 1 Gb/sec | Administration subnet, through which you control the appliance |
| Eth1~eth7 | 1 Gb/sec | Application subnets, through which your application calls Memcached |
| Eth8 | 10 Gb/sec | Application subnet, through which your application calls Memcached |




To connect the Schooner appliance to your network:

1. Take an Ethernet cable (which can be a 1-Gb or 10-Gb).
2. Connect one end of the cable to a network switch.
3. Connect the other end of the cable to one of the Ethernet at the rear panel of the appliance.

When cabling, it is highly recommended that it should start with the eth0 (the administration interface) connector, which is your administration subnet that is mainly used for controlling the communication among the various nodes on your Schooner system. The other Ethernet connectors, namely from eth0 through eth7,

are your application subnets which are the interfaces on which Memcached clients will connect to the Schooner Memcached Server. If your network supports the 10-Gb Ethernet, make sure you connect the Schooner appliance via the 10-Gb eth8 connector for application network traffic; otherwise, you may use any, some, or all of the 1-Gb Ethernet connectors (i.e., from **eth1** to **eth7**). **In any case, no gateway should be assigned to the messaging interface if it is set in direct connect mode.**

## Power Up the Appliance

Schooner Appliance for Memcached runs on the IBM System x Express Model 3650 M2 (part number: 7838-ABx).

The servers are equipped with dual power supplies that have an IEC C14 connector. Schooner ships the product along with a 6-foot power cord with either an IEC C13 connector (often used for 230VAC power distribution units) or NEMA 5-15 connector (used in the US for 120VAC power distribution units). However, Schooner does not supply power cords and keyboards appropriate for all countries in Europe, such as the CEE 7-7 power connector used in France and Germany and the UK BSI1363 power connector used in the United Kingdom and its former colonies. If other connectors or lengths are required, the customer needs to procure them locally on their own expense.

The dual power supplies are designed for system failover in case of power failure. Therefore, they must be connected to two independent power grids so that if there is power outage in one power grid, there will still be power coming in to keep the system operating.

After you have your Schooner appliance connected to your network, the next step is to power it up. By design, once connected to the power sources, the Schooner appliance will automatically start to boot up and power on itself automatically after it has successfully gone through the initial system boot process. No action is required on the part of the user to turn it on. However, the appliance may not power on automatically if it has failed the initial system boot checks. In that case, you will need to power on the server manually instead.

To manually power up your Schooner appliance:

1. Open the appliance's front panel and press the **Power** button. The (green) power light will start flashing as the appliance is booting up.
2. Wait for approximately 2 minutes for the system to complete the boot process.

   Note: The green power light will turn stable once the system boots up and is ready to operate.

## Configure Nodes

All nodes that are added to the system must be initialized, one by one, using the Schooner FTW CLI, as discussed in **Chapter 4: Command Line Interface**.

The Schooner Administrator requires that all members of the same Memcached grid be powered on and connected to the same network at the time of initialization/installation. Assume that you want to install three Schooner Memcached appliances on a network. You must follow the steps outlined below to install, connect, and boot them one by one:

1. Install, connect, and boot Schooner appliance A.
2. Install, connect, and boot Schooner appliance B,
3. Install, connect, and boot Schooner appliance C,
4. Start the FTW CLI and configure appliance A.
5. Start the FTW CLI and configure appliance B.
6. Start the FTW CLI and configure appliance C.

   Note: When you reach the end of the configuration of a node, you will be asked whether to start the Memcached instance or not. You must type “y(es)” to skip this step for all nodes until you have reached the very last node. At that point, you must either type “n(o)” or press the Enter key on your keyboard to start the Memcached instance.

Now that your Schooner Memcached system is set up and operational, you can manage your Schooner Memcached system either by continuing to use the CLI commands or by launching the Schooner Administrator GUI.

# Chapter 3: Configuring Your Schooner Appliance for Memcached

Now that your Schooner Appliance for Memcached is installed, connected, and booted, the procedures in this chapter will help you get it up and running in your network.

If you are using the Schooner Administrator, your appliance's FirstTime Wizard GUI will assist you in the process. If you are going to use the CLI and administer the nodes with your own administration system, you will need to execute the FirstTime Wizard CLI (see below).

## Preparations

1 Determine the network configuration of your Schooner system's master node, which will control all the other nodes in your Schooner system. Fill in the values in the following table:

| Property | Description | eth0 (administration subnet) | eth8 (application subnet) |
|---|---|---|---|
| IP | The master node's IP address on each subnet | | |
| Mask | Subnet mask for each subnet | | |
| Gateway | The gateway IP address on each subnet | | |
| Bootproto | Static or DHCP | | |
| MTU | Network MTU | | |
| Host Domain | The Internet or intranet domain in which your Schooner system will run | | |

See the table on page 8 for more information about the network interfaces, **eth0** through **eth8**. If your network does not support 10-Gb Ethernet, you may use the 1-Gb Ethernet connectors **eth1** to **eth7.** If you're not sure what to enter, consult your network administrator.

2 Make sure at least 5 minutes have elapsed since booting the Schooner appliance.

3 Obtain a laptop computer running either Windows or Linux.

4 Note down the laptop's IP configuration so that you can restore it later.

5 Using a standard Ethernet cable, connect the laptop to the **eth0** port on the rear panel of the Schooner appliance.

- If it is more convenient to connect a keyboard and monitor to your Schooner appliance than a laptop, you can use a Command Line Interface (CLI) instead of the FirstTime Wizard to configure your Schooner system. For instructions, see Chapter 4: Command Line Interface.

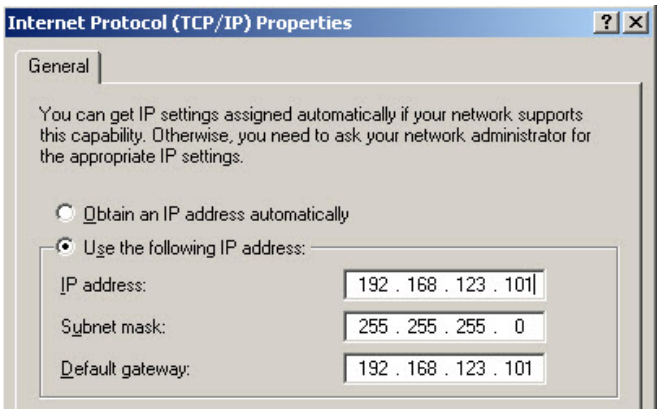
## Initiate the Online Network

Your Schooner Appliance's default IP address is 192.168.123.100. In this procedure, you will set up your laptop client and then check the connection to the Schooner server.

The steps for this task may vary, depending on the operating system you are using.

### Windows

1. Display the Network Connections control panel.
2. Edit the Internet Protocol (TCP/IP) properties, as shown in the figure below.




3. From the Start menu, choose **All Programs>Command Prompt.**
   - **Command Prompt** may also be called **Run Command**.
4. Type the command:
   `ping 192.168.123.100`
   You should see a response from the Schooner server.

### Linux

1. Launch a terminal window.
2. Type the command:
   `ifconfig eth0 192.168.123.101/24`
   This assigns the laptop client an IP address of 192.168.123.101, with a subnet mask of 255.255.255.0.
3. Ping the server:
   `ping 192.168.123.100`
   You should see a response from the Schooner server.

# Chapter 4: Command Line Interface

## Important Notes:

- Prior to starting to configure Schooner Appliance for Memcached, you must have all machines (nodes) up live and connected to the same network. Refer to General Operational Procedures at the beginning of Chapter 2.
- Initial configuration of Schooner Appliance for Memcached must be performed through the Schooner FirstTime Wizard (FTW) CLI on all nodes, one at a time. Refer to General Operational Procedures at the beginner of Chapter 2.
- A terminal program like PuTTY (if you are using the MS Windows operating system) is required in order to access the Schooner FTW CLI. You can also use the CLI commands via SSH.

## Configure Schooner Memcached

Each and every Schooner appliance (node) that is physically added to your network must go through the same configuration process using the same steps outlined below.

**To configure Schooner Memcached:**

4 Start the terminal program (e.g., **PuTTY**) **and** connect to the appliance using its **eth0** host name or IP address.

5 Log into the appliance as user "**admin" with the** default password "**admin".**

6 Run the FTW CLI by executing the following command:
`/opt/schooner/memcached/bin/run_cli_ftw`

7 When prompted to accept the End User License Agreement, type "`y`" and press **Enter**. The FTW CLI main screen appears:

```
+-------------------------------------------------------------+
| Welcome to the Schooner Administrator FirstTime Wizard CLI. |
| The following are the steps for the Schooner FTW:           |
|    1) Hostname and Domain Configuration (Required)          |
|    2) Network Interface Configuration (Required)            |
|    3) DNS Configuration (Optional)                          |
|    4) NTP Configuration (Optional)                          |
|    5) Timezone Configuration (Optional)                     |
|    6) Modify User Password (Optional)                       |
|    7) SMTP Server Configuration (Required)                  |
|    8) SNMP Configuration (Optional)                         |
|    9) Memcached Configuration (Required)                    |
+-------------------------------------------------------------+
```

8 Configure the hostname and domainn:

```
+-------------------------------------------------------------------------------------------+
| Step1. Hostname and Domain Configuration (Required)                                       |
| Hostname and Domain Name configuration is required                                        |
| Please Note:                                                                              |
|   1. This step is required, you will proceed to the Hostname and Domain Name Configuration |
|   2. This step could change the admin interface that is used for internal management      |
+-------------------------------------------------------------------------------------------+
Hostname and Domain Name Configuration is required, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:
The hostname needs to be changed to (Default "lab28"):
The domain needs to be changed to (Default "schoonerinfotech.net"):
The admin interface needs to be changed to (Default "eth0"):
[Success] Hostname and Domain Name have been reconfigured
```

9 Confiure the network interface:

**Note:** You should at least complete the configuration of the “eth0” connector which is the administration interface that you will use to manage your Schooner system.

```
+-------------------------------------------------------------------------------------------------------+
| Step2. Network Interface Configuration (Required).                                                    |
| This step will specify the configuration parameters for your network interfaces.                      |
| Please Note:                                                                                          |
|   1. This step is required, you will proceed to the Network Interface Configuration.                  |
|   2. If an interface BOOTPROTO is set to "dhcp", all configuration for such interface will           |
|      be ignored. you need login again by new ipaddress or hostname if connect from remote host       |
|   3. If the IP address of eth0 is changed, you need login again by new ipaddress or hostname if      |
|      connect from remote host                                                                         |
|   4. If an interface is used by mesh core, such interface should not be attached to a bond device    |
|      and such interface should not be enabled on VLAN                                                 |
+-------------------------------------------------------------------------------------------------------+
Nic Configuration is required, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:
+-----------------------------------------+
| ID    Select Actions for Nic configuration |
+-----------------------------------------+
| 1     Show NIC List                     |
| 2     Basic Configuration               |
| 3     Bonding Configuration             |
+-----------------------------------------+
Please select one option from the list above (type e/q to escape): 1
+-----------------------------------------------------------------------------------------------------------------------------------+
| interface  master  ip           vip           vlan  netmask        macaddress         gateway   bootproto  mtu   status   |
+-----------------------------------------------------------------------------------------------------------------------------------+
| eth0       N/A     10.1.20.28   10.1.20.128   N/A   255.255.0.0    00:21:5E:DB:FD:48  10.1.1.1  static     1500  up       |
| eth1       N/A     172.16.1.1   N/A           N/A   255.255.255.0  00:21:5E:DB:FD:4A  N/A       static     1500  up       |
| eth2       N/A     172.16.2.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DC  N/A       static     1500  up       |
| eth3       N/A     172.16.3.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DD  N/A       static     1500  up       |
| eth4       N/A     172.16.4.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DE  N/A       static     1500  up       |
| eth5       N/A     172.16.5.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DF  N/A       static     1500  up       |
| eth6       N/A     172.16.8.28  172.16.8.128  N/A   255.255.255.0  00:07:43:05:C4:27  N/A       static     8000  up       |
+-----------------------------------------------------------------------------------------------------------------------------------+
+-----------------------------------------+
| ID    Select Actions for Nic configuration |
+-----------------------------------------+
| 1     Show NIC List                     |
| 2     Basic Configuration               |
| 3     Bonding Configuration             |
+-----------------------------------------+
+-----------------------------------------------------------------------------------------------------------------------------------+
| id  interface  master  ip           vip           vlan  netmask        macaddress         gateway   bootproto  mtu   status   |
+-----------------------------------------------------------------------------------------------------------------------------------+
| 1   eth0       N/A     10.1.20.28   10.1.20.128   N/A   255.255.0.0    00:21:5E:DB:FD:48  10.1.1.1  static     1500  up       |
| 2   eth1       N/A     172.16.1.1   N/A           N/A   255.255.255.0  00:21:5E:DB:FD:4A  N/A       static     1500  up       |
| 3   eth2       N/A     172.16.2.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DC  N/A       static     1500  up       |
| 4   eth3       N/A     172.16.3.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DD  N/A       static     1500  up       |
| 5   eth4       N/A     172.16.4.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DE  N/A       static     1500  up       |
| 6   eth5       N/A     172.16.5.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DF  N/A       static     1500  up       |
| 7   eth6       N/A     172.16.8.28  172.16.8.128  N/A   255.255.255.0  00:07:43:05:C4:27  N/A       static     8000  up       |
+-----------------------------------------------------------------------------------------------------------------------------------+
Please select one option from the list above (type e/q to escape): 2
Enter the ip address for interface eth1 (Default "172.16.1.1"): 172.16.1.28
Enter the virtual ip address for interface eth1 (Default "N/A"): 172.16.1.128
Enter the VLAN number (Default "N/A"):
Enter the netmask for interface eth1 (Default "255.255.255.0"):
Enter the gateway for interface eth1 (Default "N/A"):
Enter the bootproto for interface eth1 (Default "static"):
Enter the MTU for interface eth1 (Default "1500"):
+-----------------------------------------------------------------------------------------------------------------------------------+
| interface  master  ip           vip           vlan  netmask        macaddress         gateway   bootproto  mtu   status   |
+-----------------------------------------------------------------------------------------------------------------------------------+
| eth1       N/A     172.16.1.28  172.16.1.128  N/A   255.255.255.0  00:21:5E:DB:FD:4A  N/A       static     1500  up       |
+-----------------------------------------------------------------------------------------------------------------------------------+
+-----------------------------------------------------------------------------------------------------------------------------------+
| id  interface  master  ip           vip           vlan  netmask        macaddress         gateway   bootproto  mtu   status   |
+-----------------------------------------------------------------------------------------------------------------------------------+
| 1   eth0       N/A     10.1.20.28   10.1.20.128   N/A   255.255.0.0    00:21:5E:DB:FD:48  10.1.1.1  static     1500  up       |
| 2   eth1       N/A     172.16.1.28  172.16.1.128  N/A   255.255.255.0  00:21:5E:DB:FD:4A  N/A       static     1500  up       |
| 3   eth2       N/A     172.16.2.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DC  N/A       static     1500  up       |
| 4   eth3       N/A     172.16.3.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DD  N/A       static     1500  up       |
| 5   eth4       N/A     172.16.4.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DE  N/A       static     1500  up       |
| 6   eth5       N/A     172.16.5.1   N/A           N/A   255.255.255.0  00:15:17:AB:D7:DF  N/A       static     1500  up       |
| 7   eth6       N/A     172.16.8.28  172.16.8.128  N/A   255.255.255.0  00:07:43:05:C4:27  N/A       static     8000  up       |
+-----------------------------------------------------------------------------------------------------------------------------------+
Please select one option from the list above (type e/q to escape): e
Are you sure you want to make the changes listed above? y)es, n)o y/n [y]:


+-----------------------------------------+
| ID    Select Actions for Nic configuration |
+-----------------------------------------+
| 1     Show NIC List                     |
| 2     Basic Configuration               |
| 3     Bonding Configuration             |
+-----------------------------------------+
Please select one option from the list above (type e/q to escape): e
[Success] Network Interfaces on the Appliance have been reconfigured
Restarting the admin service: 100%[Success]
```

**10** Configure DNS (Domain Name Service):

```
+-------------------------------------------------------------------------------+
| Step3. DNS Configuration (Optional).                                          |
| This step will specify the configuration parameters for DNS name servers.     |
| Please Note:                                                                  |
|   1. This step is optional and can be skipped                                 |
|   2. If the BOOTPROTO option for eth0 is set to DHCP, the system will automatically |
|      configure DNS with the information passed from the DHCP server.          |
+-------------------------------------------------------------------------------+
DNS configuration is optional, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:

+-----------------------------+
| Primary         10.1.0.101  |
+-----------------------------+
| Secondary       209.133.21.10 |
+-----------------------------+
Do you want to configure the primary dns server? y/n [y]:
Enter the IP address for primary dns server (Default "10.1.0.101"): 10.1.0.101
Do you want to configure the secondary dns server? y/n [y]:
Enter the IP address for secondary dns server (Default "209.133.21.10"): 209.133.21.10
+-----------------------------------------------------+
| id              oldServerName    newServerName      |
+-----------------------------------------------------+
| 1               10.1.0.101       10.1.0.101         |
| 2               209.133.21.10    209.133.21.10      |
+-----------------------------------------------------+
Are you sure you want to make the changes listed above? y/n [y]:
[Success] DNS Settings have been reconfigured
```

**11** Configure NTP (Network Time Protocol). You must sync with the NTP servers to ensure a proper clock setting.

```
+-------------------------------------------------------------------------------------------------+
| Step4. NTP Configuration (Optional).                                                            |
| Please specify the NTP servers.                                                                 |
| Please Note:                                                                                    |
|   1. This step is optional and can be skipped                                                   |
|   2. This step will allow you to: Add, Delete and Sync the time from a Remote NTP server        |
|   3. If you are syncing with a Remote NTP server, please ensure NTPD is started and enabled by  |
|      the local firewall. ("man iptables" for assistance)                                        |
+-------------------------------------------------------------------------------------------------+
NTP Configuration is optional, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:

+---------------------------------+
| ID    Select Actions            |
+---------------------------------+
| 1     Show NTP Servers          |
| 2     Add NTP Server            |
| 3     Delete NTP Servers        |
| 4     Sync Time From NTP Server |
+---------------------------------+
Please select one option from the list above (type e/q to escape): 4
+-----------------------------+
| ID    NTP server            |
+-----------------------------+
| 1     0.centos.pool.ntp.org |
| 2     1.centos.pool.ntp.org |
| 3     2.centos.pool.ntp.org |
+-----------------------------+
Please select one option from the list above (type e/q to escape): 3
SUCCESS: The time has been successfully synced with 2.centos.pool.ntp.org
+---------------------------------+
| ID    Select Actions            |
+---------------------------------+
| 1     Show NTP Servers          |
| 2     Add NTP Server            |
| 3     Delete NTP Servers        |
| 4     Sync Time From NTP Server |
+---------------------------------+
Please select one option from the list above (type e/q to escape): e
[Success] NTP settings have been reconfigured
```

**12** Configure the time zone.

```
+-------------------------------------------------------------------------------+
| Step5. Timezone Configuration (Optional).                                     |
| Please specify the timezone configuration properties for your Master Node.    |
| Please Note:                                                                  |
|   1. This step is optional and can be skipped.                                |
+-------------------------------------------------------------------------------+
Timezone configuration is optional, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:
+-------------------------------------------------+
| ID    Select Actions for timezone configuration |
+-------------------------------------------------+
| 1     Show Current Timezone & Daylight Saving Time |
| 2     Configure Timezone                        |
| 3     Configure Daylight Saving Time            |
+-------------------------------------------------+
Please select one option from the list above (type e/q to escape): 3
Do you want to enable daylight saving time?, y)es, n)o y/n/b [y]:
SUCCESS: Daylight saving time has been successfully reconfigured
+-------------------------------------------------+
| ID    Select Actions for timezone configuration |
+-------------------------------------------------+
| 1     Show Current Timezone & Daylight Saving Time |
| 2     Configure Timezone                        |
| 3     Configure Daylight Saving Time            |
+-------------------------------------------------+
Please select one option from the list above (type e/q to escape): 1
+-------------------------------------------+
| timezone              America/Los_Angeles |
+-------------------------------------------+
| DST                   enabled             |
+-------------------------------------------+
+-------------------------------------------------+
| ID    Select Actions for timezone configuration |
+-------------------------------------------------+
| 1     Show Current Timezone & Daylight Saving Time |
| 2     Configure Timezone                        |
| 3     Configure Daylight Saving Time            |
+-------------------------------------------------+

Please select one option from the list above (type e/q to escape): e
[Success] Timezone has been reconfigured
```

**13** Change admin user password:

```
+-----------------------------------------------------------+
| Step6. Modify User Password (Optional).                   |
| This step will allow you to change the admin password.    |
| Please Note:                                              |
|   1. This step is optional and can be skipped             |
+-----------------------------------------------------------+
Admin User Password Configuration is optional, skip it?, y)es, n)o, b)ack y/n/b [n]: y
[Skip] Modify User Password (Optional)
```

**14** Configure SMTP (email) for Phone Home support:

```
+-------------------------------------------------------------------------+
| Step7. SMTP Server Configuration (Required)                             |
| Schooner Appliance SMTP Server Configuration is required                |
| Please Note:                                                            |
|   1. This step is required, you will proceed to the SMTP Server Setup   |
+-------------------------------------------------------------------------+
SMTP Server Configuration is required, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:
+-----------------------------------------------------------------+
| id  key             value                           status      |
+-----------------------------------------------------------------+
| 1   SMTP_SERVER     10.1.0.101                      enabled     |
| 2   SMTP_PORT       25                              enabled     |
| 3   SENDMAIL_BIN    /usr/lib/sendmail -t -i         disabled    |
| 4   MY_NAME         Schooner Information Technology enabled     |
| 5   MY_EMAIL        bob@bogus.com                   enabled     |
| 6   REPLY_TO                                        disabled    |
| 7   USE_TLS         true                            disabled    |
| 8   SIGNATURE_FILE  &/email.sig                     disabled    |
| 9   ADDRESS_BOOK    &/email.address.template        enabled     |
| 10  SAVE_SENT_MAIL  ~                               disabled    |
| 11  TEMP_DIR        /tmp                            disabled    |
| 12  GPG_BIN         /usr/bin/gpg                    enabled     |
| 13  GPG_PASS                                        disabled    |
| 14  SMTP_AUTH       LOGIN                           disabled    |
| 15  SMTP_AUTH_USER                                  disabled    |
| 16  SMTP_AUTH_PASS                                  disabled    |
+-----------------------------------------------------------------+
Please select one option from the list above (type e/q to escape): 1
Do you want to enable the parameter 'SMTP_SERVER'?, y)es, n)o y/n/b [y]:
Please type value for SMTP_SERVER: 10.1.0.101
+-----------------------------------------------------------------+
| id  key             value                           status      |
+-----------------------------------------------------------------+
| 1   SMTP_SERVER     10.1.0.101                      enabled     |
| 2   SMTP_PORT       25                              enabled     |
| 3   SENDMAIL_BIN    /usr/lib/sendmail -t -i         disabled    |
| 4   MY_NAME         Schooner Information Technology enabled     |
| 5   MY_EMAIL        bob@bogus.com                   enabled     |
| 6   REPLY_TO                                        disabled    |
| 7   USE_TLS         true                            disabled    |
| 8   SIGNATURE_FILE  &/email.sig                     disabled    |
| 9   ADDRESS_BOOK    &/email.address.template        enabled     |
| 10  SAVE_SENT_MAIL  ~                               disabled    |
| 11  TEMP_DIR        /tmp                            disabled    |
| 12  GPG_BIN         /usr/bin/gpg                    enabled     |
| 13  GPG_PASS                                        disabled    |
| 14  SMTP_AUTH       LOGIN                           disabled    |
| 15  SMTP_AUTH_USER                                  disabled    |
| 16  SMTP_AUTH_PASS                                  disabled    |
+-----------------------------------------------------------------+
Please select one option from the list above (type e/q to escape): 5
Do you want to enable the parameter 'MY_EMAIL'?, y)es, n)o y/n/b [y]:
Please type value for MY_EMAIL: myemail@mycompany.com
+-----------------------------------------------------------------+
| id  key             value                           status      |
+-----------------------------------------------------------------+
| 1   SMTP_SERVER     10.1.0.101                      enabled     |
| 2   SMTP_PORT       25                              enabled     |
| 3   SENDMAIL_BIN    /usr/lib/sendmail -t -i         disabled    |
| 4   MY_NAME         Schooner Information Technology enabled     |
| 5   MY_EMAIL        myemail@mycompany.com           enabled     |
| 6   REPLY_TO                                        disabled    |
| 7   USE_TLS         true                            disabled    |
| 8   SIGNATURE_FILE  &/email.sig                     disabled    |
| 9   ADDRESS_BOOK    &/email.address.template        enabled     |
| 10  SAVE_SENT_MAIL  ~                               disabled    |
| 11  TEMP_DIR        /tmp                            disabled    |
| 12  GPG_BIN         /usr/bin/gpg                    enabled     |
| 13  GPG_PASS                                        disabled    |
| 14  SMTP_AUTH       LOGIN                           disabled    |
| 15  SMTP_AUTH_USER                                  disabled    |
| 16  SMTP_AUTH_PASS                                  disabled    |
+-----------------------------------------------------------------+
Please select one option from the list above (type e/q to escape): e
Are you sure you want to make the changes?, y)es, n)o y/n/b [y]:
SUCCESS: Set SMTP Server Configuration
+-----------------------------------------------------------------+
| id  key             value                           status      |
+-----------------------------------------------------------------+
| 1   SMTP_SERVER     10.1.0.101                      enabled     |
| 2   SMTP_PORT       25                              enabled     |
| 3   SENDMAIL_BIN    /usr/lib/sendmail -t -i         disabled    |
| 4   MY_NAME         Schooner Information Technology enabled     |
| 5   MY_EMAIL        myemail@mycompany.com           enabled     |
| 6   REPLY_TO                                        disabled    |
| 7   USE_TLS         true                            disabled    |
| 8   SIGNATURE_FILE  &/email.sig                     disabled    |
| 9   ADDRESS_BOOK    &/email.address.template        enabled     |
| 10  SAVE_SENT_MAIL  ~                               disabled    |
| 11  TEMP_DIR        /tmp                            disabled    |
| 12  GPG_BIN         /usr/bin/gpg                    enabled     |
| 13  GPG_PASS                                        disabled    |
| 14  SMTP_AUTH       LOGIN                           disabled    |
| 15  SMTP_AUTH_USER                                  disabled    |
| 16  SMTP_AUTH_PASS                                  disabled    |
+-----------------------------------------------------------------+
[Success] SMTP Server Configuration for the Schooner Appliance has been reconfigured
```

**15** Configure SNMP:

```
+-----------------------------------------------+
| Step8. SNMP Configuration (Optional)          |
| SNMP Configuration is optional                |
| Please Note:                                  |
|   1. This step is optional and can be skipped |
+-----------------------------------------------+
SNMP Configuration is optional, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]: y
[Skip] SNMP Configuration (Optional)
```

**16** Configure Schooner Memcached:

```
+-------------------------------------------------------------------------------------------------------------------------------+
| Step9. Memcached Configuration (Required)                                                                                     |
| Memcached Configuration is mandatory                                                                                          |
| Please Note:                                                                                                                  |
|   1. This step is mandatory and can NOT be skipped                                                                            |
|   2. This step would display the cluster nodes list first which is used to generate the memcached property file               |
+-------------------------------------------------------------------------------------------------------------------------------+
Memcached Configuration is mandatory, would you like to skip it?, y)es, n)o, b)ack y/n/b [n]:
+-----------------------------------------------------------------------+
| id  name                        cluster          ip          status   |
+-----------------------------------------------------------------------+
| 0   lab28.schoonerinfotech.net  SchoonerCluster  10.1.20.28  UP       |
+-----------------------------------------------------------------------+
Please select one node if you want to change its hostname(press "ENTER" to skip and continue):
Generating/Sync the memcached property file...[Success]
Would you like to skip the starting of the memcached instances in the cluster?, y)es, n)o, b)ack y/n/b [n]:
Starting Memcached on node "lab28.schoonerinfotech.net" ...[Success]
[Success] Memcached Configuration is finished
+-------------------------------------------------------------------------+
| Congratulations, the First Time Wizard CLI has completed successfully.  |
+-------------------------------------------------------------------------+
```

**Note:** When you reach the end of the configuration of each node, you will be asked whether or not to start the Memcached instance in the cluster. You should click “y(es)” to skip the step unless you are configuring the last node. At the end of the configuration of the last node, you must type “n(o)” or press the Enter key on your keyboard to start the Memcached instance. This will start Memcached on all the nodes.

Once you have completed the above-mentioned tasks, you must execute the Schooner Appliance for Memcached Command Line Interface (CLI) in order to start the Schooner Memcached application. If you need help to move one, just type ”memcli”.

Documentation on the Memcached CLI is contained in the *Application & Administration Guide*.

The default Schooner Appliance for Memcached configuration is compatible with the standard Memcached TCP/UDP port settings (port 11211).

# Chapter 5: Configure the IMM

The integrated management module (IMM) consolidates the service processor functionality, Super I/O, video controller, and remote presence capabilities in a single chip on the Schooner Appliance server system board. This is a vital subsystem which provides system monitoring and alert capabilities. It is highly recommended that the customer enable the IMM which provides the following:

- Email alerts to customer for critical system level hardware events
- SNMPv1 capability
- Real-time monitoring of system level hardware

## Overview of Access to the IMM

The IMM supports both static and Dynamic Host Configuration Protocol (DHCP) IP addressing. The default static IP address assigned to the IMM is 192.168.70.125. The IMM is initially configured to attempt to obtain an address from a DHCP server; and when it fails to do so, it uses the static IP address. The IMM provides the choice of using a dedicated systems-management network connection or one that is shared with the server. The default connection for the Schooner Appliance is to use the dedicated systems-management network connector. This is a 100-Mb Ethernet interface.

After you have started the Schooner Appliance, you can use the Setup utility to select an IMM network connection. The server with the IMM hardware is shown below as being configured to use the IMM static IP address.

### Set UP the IMM Network Connection

To set up the IMM network connection through the Setup utility, complete the following steps:

1. Turn on the server.

   **Note:** Approximately 2 minutes after the server is connected to AC power, the power-control button becomes active which indicated the IMM has restarted. You will now see the IBM System x Server Firmware welcome screen displayed.

2. When the prompt <F1> Setup is displayed, press F1.
3. From the Setup utility main menu, select System Settings.
4. On the next screen, select Integrated Management Module.
5. On the next screen, select Network Configuration.
6. Highlight DHCP Control. There are three IMM network connection choices in the DHCP Control field:
   - Static IP
   - DHCP Enabled
   - DHCP with Failover (default)

7. Select one the Static IP if not selected already from the network connection choices.
8. Specify the IP address, the subnet mask, and the default gateway.
9. You can also use the Setup utility to select a dedicated or shared IMM network connection. On the Network Configuration screen, select Dedicated or Shared in the Network Interface Port field.

   Note: To find the locations of the Ethernet connectors on your server that are used by the IMM, see the (section earlier).
10. Select Save Network Settings.
11. Exit from the Setup utility.

**Notes:**

- You must wait for approximately 1 minute for changes to take effect before the server firmware is functional again.
- You can also configure the IMM network connection through the IMM Web interface. For more information see below.

### Connect to the IMM

You can connect a laptop directly to either eth0 (shared mode) or (IMM Management Port) or access from another server in your network with the static IP you have entered for the IMM above.

1. From the remote computer, enable web access by entering the following link http://"static ip of the IMM". For example, if you are using the default static IP http://192.168.254.125 that you have set up early, you will see the IMM login access page (if the log-in is successful).
2. Enter the following (the text is case-sensitive and the numerical 0 is used in PASSW0RD):
   - User Name [USERID]
   - Password [PASSW0RD]

   Once entry is granted, you will see the following:

   **Welcome USERID.**

   Opening web session to xxx.xxx.xxx.xxx (*which is the IP you have configured.*)

Note: Your session will expire if no activity occurs for the specified timeout period. When that occurs, you will be prompted to sign in again using your login ID and password. Once have you have logged in, make sure to select the desired timeout period, which by default is no time limit on the session (see below).

```
Inactive session timeout value: [no timeout]
```

1. Click Continue. The Integrated Management Module screen appears.

   You should then use the menu options on the left-hand side of the screen to validate some important system information.

   First of all, you need to check the Vital Product Data to make sure that the

firmware revisions are up to date. Check with the Schooner Support team to make sure that you have the latest firmware releases installed.

2. Select Monitors>Vital Product Data.

**Firmware VPD**

| Firmware Type | Version String | Release Date |
|---|---|---|
| IMM | YUOO24I-2009/06/22 | 06/22/2009 |
| UEFI | D6E126A-2009/06/26 | 06/26/2009 |
| DSA | D6YT37A-2009/06/19 | 06/19/2009 |

Check against the latest revisions to see if there is a pending update. See the Schooner Software Update process for more information.

3. Next we will check the IMM Identification Info and its system time by clicking IMM Control>System Settings.

4. Enter the following information about the Schooner Appliance and click **Save**:

**IMM Information**

```
Name       [   ]
Contact    [   ]
Location   [   ]
```

This information is used in the email alerts to aid in identification of the Schooner Appliance.

5. Set IMM Date and Time according to the Customer's time zone (or configure the IMM for a local NTP server, if available) by clicking the Set IMM Date and Time link. See below.

**IMM Date and Time**

```
Date (mm/dd/yyyy)     / /
Time (hh:mm:ss) : :
GMT offset
```

Notes:

- Set only the GMT offset for the desired time zone.
- Select “Automatically adjust for daylight saving changes” only if there is a DST for that time zone.

6. Optionally, if you have an internal NTP server and would like to use it, you may want to configure for Network Time Protocol (NTP) here. Otherwise skip this entry.

**Network Time Protocol (NTP)**

```
NTP auto-synchronization service [Disable/Enable]
NTP server host name or IP address [        ]
NTP update frequency (in minutes) [80]
```

7. Enter the desired information and Save.

### Set Up the IMM Recipients

It is critical to setup an alert recipient. You can use the Schooner Support as a base recipient and add another specific recipient from your local administration hierarchy.

To create an email alert recipient:

1. Under IMM Control, click Alerts.
2. Click Add Recipient (or to edit a recipient, click the corresponding link).

```
Remote Alert Recipient
Status                  [Disable/Enable]
Name              [Schooner Support]
E-mail address (userid@hostname) [   ]
```

3. Check the Include event log with e-mail alerts check box.
4. Select the following alerts that you want to be notified of.

```
Monitored Alerts
Select the alerts that will be sent to remote alert
recipients.
Critical Alerts
Warning Alerts
System Alerts
```

5. Check the desired boxes and Save.

   Note: It is recommended that at least Critical Alerts be included.

### Configure the Baud Rate for the IMM Serial Port

You need to configure the Baud rate for the IMM serial port if you have not yet done so. This is required for remote console access over the IMM's CLI interface.

To configure the Baud rate for the IMM serial port:

1. Under IMM Control, click Serial Port.
2. Enter the following information and click Save.

   ```
   Baud rate [38400]
   Serial Port 2 (COM2)
   ```

### Configure the User-Specific IMM Network Interface

To configure your user-specific IMM network interface:

1. Under IMM Control, click Network Interfaces.
2. Make the following selection and/or entries:

```
Ethernet
Interface [Enabled]
DHCP  [Disabled - Use static IP configuration]
*** Currently the static IP configuration is active
for this interface.
*** This static configuration is shown below.
Hostname [xxxIMM]
Static IP Configuration (enter the following):
IP address [xxx.xxx.xxx.xxx]
Subnet mask [xxx.xxx.xxx.xxx]
Gateway address [xxx.xxx.xxx.xxx]
```

3. Enter desired information and Save.

### Configure the IMM Network Protocols for Schooner Appliance

The IMM defines certain network protocols. This section shows the default network settings for the Schooner Appliance.

To set up user-specific network configurations:

1. Under IMM Control, click Network Protocols. The following information appears on the screen:

```
Simple Network Management Protocol (SNMP)
SNMPv1 agent [Enabled]
SNMPv3 agent [Disabled]
SNMP traps [Enabled]
SNMPv1 Communities
Community Name Access Type Host Name or IP Address
[public]   1.  [trap]      [xxx.xxx.xxx.xxx]
Subnet mask              [xxx.xxx.xxx.xxx]
Gateway address       [xxx.xxx.xxx.xxx]
```

2. Make sure to enable up SNMPv1, identify and enter the user's SNMP host. You can add up to 3.
3. Set up the desired user-specific configurations and leave the selections at the default, except for those mentioned above.
4. Set DNS parameters, if available and appropriate, as shown below.

**Domain Name System (DNS)**

DNS [Disable/Enable]

DNS server IP address 1 [xxx.xxx.xxx.xxx]

DNS server IP address 2 [xxx.xxx.xxx.xxx]

DNS server IP address 3 [xxx.xxx.xxx.xxx]

5. Set up the email host, which is required in order to enable IMM alerts. See below.

**Simple Mail Transfer Protocol (SMTP)**

SMTP server host name or IP address [xxx.xxx.xxx.xxx]

### Configure the IMM Security Settings

Configuring security settings for IMM involves setting up SSH access, generating the security key (if it has not already been done), and enabling SSH. Typically this has been enabled already.

To enable security settings for the IMM:

1. Under IMM Control, click Security.
2. On the IMM>Security screen, make sure the following settings are set as below:

**Secure Shell (SSH) Server**

SSH Server [Enabled]

**SSH Server Key Management**

SSH server key status: [SSH Server key is installed]

### Reboot the IMM

After changing network settings you will need to reboot the IMM for the changes to take effect. Make sure you save your configuration before restarting the system.

To reboot the IMM:

1. Under IMM Control, click Restart IMM.
2. Click Restart.

### Back Up IMM Configuration

After rebooting the IMM, enter the IMM configuration file again and back up its configuration.

To back up the IMM configuration:

1. Under IMM Control, click Configuration File.
2. Click Backup.

   Note: You can always review your current configuration by clicking the View the current configuration summary link before backing it up.