CHAPTER 1

Basic Setup

This guide is designed to help you get your Cisco Video Surveillance Storage System components up and running in a short amount of time. It provides basic setup instructions and complete system configuration details. It does not cover the physical features or rack installation instructions for the storage system. For that information, see the *Cisco Video Surveillance Storage System Hardware Installation Guide*.

This guide describes the Management Console (GUI) and its features and functions used to access and configure Cisco Video Surveillance Storage System components from a web-based interface.

All Cisco Video Surveillance Storage System components have a common operating system and nearly identical Management Consoles. Therefore, this guide is appropriate for all Cisco Video Surveillance Storage System components.

This guide covers all of the features that can be accessed through the Management Console. However, because Cisco Video Surveillance Storage System components are shipped preconfigured, only the basic setup procedures in this chapter are needed for most installations.

Basic setup consists of the following procedures:

- Initial Network Address Setup
- Set Up the System
- Set Date and Time

Note These instructions assume that you are setting up one storage unit or one storage unit/expansion unit pair. If you are setting up more than one, you must perform these procedures for each system.

Initial Network Address Setup

Before you can configure your Cisco Video Surveillance Storage System component through the Management Console, you must assign a unique IP address to it's management port (**MGMT** on CPS-SS-4RU units) and enter the proper gateway and DNS settings.

Configure the Cisco Video Surveillance Storage System Component IP Address

There are two methods to set the IP address of you Cisco Video Surveillance Storage System unit. The first method is using the Web GUI of these storage systems. The second method is to use the Serial Port interface of these systems. The Web GUI is the preferred method.

Add a Route to Access the Desired IP Address

Adding a route doesn't change the IP address of the unit; it simply maps a path to the unit's existing IP address. This method requires your workstation to be directly connected to the same Ethernet network that the unit's management port (**Net 0** or **MGMT**) is connected to.

To add a route to access the IP address of the unit's RAID Controllers, you must have access to the command line interface or a terminal window.

Note The IP addresses 10.11.12.13 and 10.11.12.14 are the system defaults.

Step 1 At the command prompt, enter the information according to your OS:

- Windows: `route add 10.11.12.13 mask 255.255.255.255 <workstationIPaddress>`
- Linux: `/sbin/route add 10.11.12.13/32 gw <workstationIPaddress>`
- Solaris: `route add 10.11.12.13 mask 255.255.255.255 <workstationIPaddress>`

where <*workstationIPaddress*> is the IP address of the workstation you are using.

Step 2 To add a path to the second controller, repeat Step 1, but replace the first IP address with `10.11.12.14`.

Step 3 Open a Web browser. and enter the IP address **10.11.12.13** or **10.11.12.14** (if a second RAID controller is also present). You can access the Web GUI interface of the system with either of these two IP addresses. The Home page of the system should be displayed with this access.

Step 4 Click the **Configure Network** tab on the left hand side of the Home page.

Step 5 In the Configure Network page, you can set a Static IP address and subnet mask, Gateway IP address, and DNS IP address.

Step 6 Click **Save and Apply Changes**.

Use the Serial Port to Change the IP Address

To use the serial port on your Cisco Video Surveillance Storage System component to configure the IP address, you must directly connect your computer to the unit using the supplied Mini-DIN cable. You must also have a terminal emulation program installed on the computer.

Step 1 Connect the serial cable to your computer's serial (or COM) port.

Step 2 Connect the other end of the serial cable to the Cisco unit's serial port.

Step 3 Open the terminal emulation program and set up a new connection. It should be 115,200 bits per second, 8 data bits, 1 stop bit, no parity bits, and no flow control.

Step 4 Activate the serial connection to the unit.

The system management console is displayed.

Step 5 Using the arrow buttons on your keyboard, navigate to **Configure network** and press Enter.

The Network Menu is displayed.

Step 6 Navigate to **Set static IP address** and press Enter.

Step 7 In the dialog box, enter the IP address and press Enter.

The new IP address is saved.

Step 8 Navigate to **Apply new settings** and press Enter.

Accept the EULA

Step 1 Launch a web browser (Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, etc.).

Step 2 In the browser's address field, enter the IP address of the unit.

Step 3 Press **Enter** or click the browser's **Go** button.

The login screen for the unit is displayed.

Note The login screen varies depending on the type of unit you are connected to. However, the **Click Here to Login** button is always displayed.

Step 4 Click the **Click Here to Login** button to log in to the unit.

The Cisco End-User Software License Agreement screen is displayed.

Step 5 Read the EULA, check the box at the end to indicate your agreement, then click the **I Agree** button.

A message is displayed, indicating that you have agreed to the terms of the EULA.

Note In order to access the full functionality of the unit, you *must* agree to the terms of the EULA.

Note After you have agreed to the terms of the EULA, the Cisco End-User Software License Agreement screen will not be displayed again unless you select **Tech Support > EULA** (see End-User License Agreement, page 12-1).

Set Up the System

Once you accept the EULA, the Management Console displays the Quick Start Configuration Checklist, which guides you through the process of getting your system set up. The items on the Quick Start Configuration Checklist are:

- Security
- System Name
- Network Settings
- Array Configuration
- Volume Configuration and Access

Each item in the list displays its status on the Quick Start Configuration Checklist. If an item has a green check mark next to it, that item has been completed with a recommended setting. If an item has a red exclamation point next to it, that item has either not been completed or has an unrecommended setting. The Quick Start Configuration Checklist is only displayed automatically the first time you log in to a system, though it can always be accessed by going to **Quick Start > Check List**.

Security

To protect the integrity of the unit, it is strongly recommended that you at least create a password for the ADMIN account. This prevents unauthorized personnel from making changes to the unit's configuration.

To change security settings, click the **Change Security Settings** button. This takes you to the Password Configuration page.

Step 1 Next to **Change "ADMIN" login password requirement to**, select **Required**.

Step 2 Enter the password into the **New Password** and **Confirm Password** fields. Passwords should be eight characters or longer and can contain both letters and numbers, but not special characters or punctuation.

Step 3 Click **Set ADMIN Password**.

A message is displayed, informing you that the password has been set.

Step 4 Select **Quick Start > Check List** to return to the Quick Start Configuration Checklist.

Passwords take effect immediately. The next time you try to access a configuration page, the Management Console will ask you to enter the user name and password to gain access. Both fields are case-sensitive, and user names must be entered in all capitals ("ADMIN" or "USER").

For more information about the Password Configuration page, see Security Settings, page 11-4.

System Name

Although the system comes preconfigured with a name, it is recommended that you change it to a name more suitable to your environment.

Step 1 In the **RAID system name** field, type the name. You are limited to a maximum of 63 characters.

Step 2 Click **Set System Name**.

A message is displayed, letting you know that the setting has been changed.

Step 3 Click the **Back** button to return to the Quick Start Configuration Checklist.

Network Settings

It is recommended that you confirm your network settings to make sure that they will work with your local area network (LAN) setup. To do so, click the **Change Network Settings** button. This takes you to the Configure Network Settings page.

Note These instructions are for configuring the system management port only.

Step 1 Make sure that the following settings for the **Management** port (for CPS-SS-4RU units) are appropriate for your network:

- **Port Settings**: For most networks, the default setting of **Auto Speed, Auto Duplex** is recommended. However, if your LAN switch doesn't support auto-negotiation, you can "force" one or both settings. The options are:

  Auto Speed, Auto Duplex
  Auto Speed, Fixed Full Duplex
  Auto Speed, Fixed Half Duplex
  Fixed to 100Mbit Full Duplex
  Fixed to 100Mbit Half Duplex
  Fixed to 10Mbit Full Duplex
  Fixed to 10Mbit Half Duplex

- **Assign IP Address**: You can choose whether to **Use DHCP** (Dynamic Host Configuration Protocol) or **Use Static IP**.

  If you select **Use DHCP**, then no other configuration is needed.

  Note NOTE: In order to use DHCP, your network must be configured for DHCP. If it is not, you *must* use a static IP address.

  If you select **Use Static IP**, then you must fill in the **Static IP Address** and **Subnet Mask**. If you wish to use a time server (see Configure Time and Date, page 11-3), you may also wish to fill in values for **Gateway**, **Primary DNS**, and **Secondary DNS**.

Step 2 Repeat Step 1 for the second controller.

Step 3 After making changes, do one of the following:

- Click **Save Configuration**. The new network settings will take effect after the next unit restart.
- Click **Save & Apply Changes**. The new network settings will take effect immediately.

Step 4 Select **Quick Start > Check List** to return to the Quick Start Configuration Checklist.

For more information about configuring network settings, see Configure Network Settings, page 11-1.

Array Configuration

RAID arrays must be set up before volumes (where data is stored) can be assigned to them. To set up RAID arrays, click the **Change Array Configuration** button. This takes you to the Basic Quick Start page.

If you want control over more parameters, click the **Expert** tab to be taken to the Expert Quick Start page (see Expert Quick Start Array Configuration, page 1-7).

Note For complete control over RAID configuration, volume configuration, logical unit number (LUN) mapping, and host access, see Create a New RAID Array, page 6-1, Create a Logical Volume, page 7-1, Map Logical Volumes, page 7-4, and Host Access Configuration, page 8-1.

Basic Quick Start Array Configuration

Arrays are limited to the disks physically contained in a single Cisco Video Surveillance Storage System component.

Note If the system you are setting up is a storage unit/expansion unit pair, you are first asked to select the unit that you wish to configure. Select the unit you wish to configure, then click **Next**. When you are finished, you can configure the second enclosure by repeating this procedure.

The Basic Quick Start configuration page is displayed.

Note Only SATA disk drives can be used in the RAID array. SAS and SSD are not supported. If your Cisco Video Surveillance Storage System component contains a mixture of disk drive types, the Basic Quick Start configuration page will have two or three Quick Start Options sections, one for each drive type. Choose only the SATA option.

Step 1 Using the drop-down lists, set the following parameters:

- **Number of arrays**: Choose the number of RAID sets that you wish to create. The maximum number depends on the number of disks detected in the unit.
- **Select RAID level**: Choose the RAID level that all RAID sets will be configured for. You can choose from the following:

  RAID 0 (striped)
  RAID 1 (mirrored)
  RAID 4 (parity)
  RAID 5 (rotating parity)
  RAID 6 (rotating dual parity)

  Note For more information on RAID levels, see Appendix A, “RAID Levels”.

- **Number of pool spares**: Choose the number of spare disks that will be available to use as backups in case a RAID disk fails. The maximum number of pool spares depends on the number of disks detected in the unit.
- **Number of volumes per array**: This setting controls whether or not each RAID array will be further divided into two or more smaller volumes. The default setting is **1**. The number of volumes per array can be anywhere from **1** to **10**.
- **Limit volume size to less than 2TB**: This option is unchecked by default. If your hosts do not support volumes of more than 2TB in size, check this option.

Step 2 Click **Next**.

The New Configuration Preview page is displayed.

Step 3 Ensure that the settings for **Arrays**, **Volumes**, **Pool Spares**, and **Volume Access** are correct.

Step 4 If all settings are acceptable, select the confirmation check box, then click the **Quickstart** button.

Caution If any arrays or volumes have already been configured on the unit, the Management Console displays a warning dialog. If you wish to continue, click the check box and select **Confirm Quickstart Configure**. If you do not wish to continue, click **CANCEL Quickstart**.

Note Although your volumes are available immediately, Quickstart continues to run in the background. The Quickstart operation may take as much as several hours to complete, depending on the size and number of the disk drives in the unit. You can check the progress of the operation by going to **RAID Information > Progress**.

Step 5 Select **Quick Start > Check List** to return to the Quick Start Configuration Checklist.

Step 6 Proceed to Volume Configuration and Access, page 1-9.

Expert Quick Start Array Configuration

Arrays are limited to the disks physically contained in a single Cisco Video Surveillance Storage System component.

Note If the system you are setting up is a storage unit/expansion unit pair, you are first asked to select the unit that you wish to configure. Select the unit you wish to configure, then click **Next**. When you are finished, you can configure the second enclosure by repeating this procedure.

The Expert Quick Start configuration page is displayed.

Note Only SATA disk drives can be used in the RAID array. SAS and SSD are not supported. If your Cisco Video Surveillance Storage System component contains a mixture of disk drive types, the Basic Quick Start configuration page will have two or three Quick Start Options sections, one for each drive type. Choose only the SATA option.

Step 1 Using the drop-down lists, set the following parameters:

- **Number of arrays**: Choose the number of RAID sets that you wish to create. The maximum number depends on the number of disks detected in the unit.
- **Select RAID level**: Choose the RAID level that all RAID sets will be configured for. You can choose from the following:

  RAID 0 (striped)
  RAID 1 (mirrored)
  RAID 4 (parity)
  RAID 5 (rotating parity)
  RAID 6 (rotating dual parity)

  Note For more information on RAID levels, see Appendix A, “RAID Levels”.

- **Number of pool spares**: Choose the number of spare disks that will be available to use as backups in case a RAID disk fails. The maximum number of pool spares depends on the number of disks detected in the unit.
- **Number of volumes per array**: This setting controls whether or not each RAID array will be further divided into two or more smaller volumes. The default setting is **1**. The number of volumes per array can be anywhere from **1** to **10**.
- **Limit volume size to less than 2TB**: This option is unchecked by default. If your hosts do not support volumes of more than 2TB in size, check this option.

Step 2 Using the drop-down lists, set the following parameters under Advanced Options:

- **Select stripe size**: The default stripe size is **128Kbytes**. You can choose to use smaller stripes by selecting **64Kbytes**, **32Kbytes**, or **16Kbytes**.
- **Select host connection type**: By default, this setting is set to **Fibre/SAS/10Ge iSCSI (multi-path)**, which maps all logical unit numbers (LUNs) to all available Fibre Channel/SAS-to-Host/10GbE iSCSI ports. If you wish to change the mapping, select one of the following:

  Note SAS drives are not supported with the Cisco Video Surveillance Storage System. iSCSI is supported on Cisco Video Surveillance Systems (VSM) deployed as a Virtual Machine for VSM releases 7.2 or higher.

  None (leave unmapped): The LUNs will not be associated with any ports on the unit and will not be available to the host. You can later manually assign each LUN to one or more ports using the procedure under Volume Configuration and Access, page 1-9 or **Configure Volumes > Map Volume** (see Map Logical Volumes, page 7-4).

  Fibre/SAS/10Ge iSCSI (non-redundant): Assigns each LUN to a single available Fibre Channel port.

  Fibre/SAS/10Ge iSCSI (multi-path): Assigns LUNs to all available Fibre Channel/SAS/10Gb iSCSI ports (requires multipathing software).

  iSCSI (non-redundant): Not supported.

  iSCSI (multi-path): Not supported.
- **Select default host access**: This setting defaults to **Read/Write**. This will allow all attached hosts to access all volumes on this unit.
- **Online Create**: When this box is checked, volumes on this unit will be available immediately, with RAID creation continuing in the background. This does, however, slow down the RAID creation process. You can speed up the creation process by unchecking this box, in which case volumes will be unavailable until RAID creation is complete.
- Leave free space on each array for future volumes/expansion: By default, the volumes will take up all of the space in the RAID arrays. This setting lets you keep a percentage of the RAID array space free for additional volumes or expansion of current volumes. Select **0%**, **10%**, **25%**, **50%**, or **75%**.

Step 3 Click **Next**.

The New Configuration Preview page is displayed.

Step 4 Ensure that the settings for **Arrays**, **Volumes**, **Pool Spares**, and **Volume Access** are correct.

Step 5 If all settings are acceptable, select **Check this checkbox to confirm**, then click the **Quickstart** button.

Caution If any arrays or volumes have already been configured on the unit, the Management Console displays a warning dialog. If you wish to continue, click the check box and select **Confirm Quickstart Configure**. If you do not wish to continue, click **CANCEL Quickstart**.

Note The Quickstart operation may take as much as several hours to complete, depending on the size and number of the disk drives in the unit. You can check the progress of the operation by going to **RAID Information > Progress**.

Step 6 Select **Quick Start > Check List** to return to the Quick Start Configuration Checklist.

Step 7 Proceed to Volume Configuration and Access, page 1-9.

Volume Configuration and Access

Although default volume and host access configuration is performed during Basic or Expert Quick Start, you may wish to change settings for individual volumes. To do so, click the **Change Volume Mapping** button. This takes you to the Map Logical Volumes page.

Find the volume that you wish to change, then click its **Next** button in the far right column.

- You can change the volume's LUN mapping by selecting a new LUN in the drop-down list.
- You can chance the volume's **Default Access** privileges by selecting the button under **Deny** (hosts cannot access this volume unless specifically configured to do so), **Read** (hosts are able to read, but not alter, this volume unless specifically configured to do so), or **R/W** (hosts have full read and write privileges to this volume).

  Note NOTE: To ensure integrity of data, it is recommended that you change this setting to **Deny**.

- You can change the **Group Default** access privileges by checking the **Use Default** check box (host groups use the **Default Access** setting) or by selecting the button under **Deny** (host groups cannot access this volume unless specifically configured to do so), **Read** (host groups are able to read, but not alter, this volume unless specifically configured to do so), or **R/W** (host groups have full read and write privileges to this volume).
- You can change the access privileges for host groups and individual hosts by checking the **Use Default** check box (host uses the Default Access setting; host group uses the Group Default setting) or by selecting the buttons under **Deny** (host or host group cannot access this volume), **Read** (host or host group is able to read, but not alter, this volume), or **R/W** (host or host group has full read and write privileges to this volume).

After making any changes, click the **Apply Changes** button. A message is displayed, informing you that changes to the volume have been made.

For more information about volumes, see Chapter 7, "Volume Configuration". For more information about host access, see Chapter 8, "Host Access Configuration".

When the Quick Start Checklist is Complete

When you have finished configuring the settings listed on the Quick Start Configuration Check List, do the following:

Step 1 Scroll to the bottom of the list.

Step 2 Uncheck the **Show the configuration checklist on home page** check box.

Step 3 Click **Close Checklist**. You are taken to the Home page (see Chapter 3, "Home Screen").

Set Date and Time

It is important to set the date and time so that events in the event log (see Event Log, page 5-7) and SNMP traps (see SNMP/SYSLOG Settings, page 11-2) show the correct time stamp.

- In the Management Console, select **Configure Network > Date & Time**. The Configure Time and Date page is displayed.

There are two ways to set the unit's time and date: manually and automatically.

To Set the Time and Date Manually

Step 1 Enter the time in the **Time entered in 'hh:mm:ss' format** field.

Note The time entered in the **Time entered in 'hh:mm:ss' format** field will be set when the **Save Settings** button is clicked. Therefore, it is suggested that you enter the time rounded to the next five minute mark, then click **Save Settings** when the entered time is reached.

Step 2 Enter the date using the **Date** drop-down lists.

Step 3 Select the **Timezone relative to GMT (GMT offset)** using the drop-down list.

Step 4 Click **Save Settings**.

To Set the Time and Date Automatically

Note For automatic time setting to work, you may have to configure the Gateway setting for your network. See Configure Network Settings, page 11-1 for more information.

Step 1 Select the **Timezone relative to GMT (GMT offset)** using the drop-down list.

Step 2 Next to **Time server IP address to use for auto time and date configure**, do one of the following:

- Select **Use IP address from list** and select a time server IP address from the drop-down list.
- Select **Use entered IP address** and enter the IP address of a known time server into the text box.

Step 3 Next to **Time server protocol**, select either **Daytime** or **SNTP**.

Step 4 If you entered a time server IP address in Step 2 and selected **Daytime** in Step 3, select the **Time server time and date format** using the drop-down list.

Note If you do not know the format of the time server data, click the **Retrieve Time Server Data** button. The data is retrieved and displayed next to **Data retrieved from contacting the daytime server**. Use this data to choose the proper format in the **Time server time and date format** dropdown list.

Step 5 If you wish the unit to contact the time server every twenty-four hours to update the time and date, select the check box next to **Set system time and date by the time server every 24 hours**.

Step 6 Click **Save Settings**.

Step 7 If you wish to update the time immediately, click the **Contact Time Server To Auto Configure Time And Date** button. The time and date are updated immediately.