Comms Logger Cold Start Guide

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Advanced Simulation Technology inc.
500A Huntmar Park Drive ▪ Herndon, Virginia 20170 USA
(703) 471-2104 ▪ asti-usa.com

Product Name: Comms Logger

Comms Logger Cold Start Guide

ASTi
500A Huntmar Park Drive
Herndon, Virginia 20170 USA

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Revision history

Date	Revision	Version	Comments
6/7/2017	B	0	Edited content for accuracy, grammar, and style.
2/5/2019	C	0	Updated instructions for Red Hat 6.X.
10/21/2020	D	0	Updated instructions for Red Hat 7.X.
2/22/2021	E	0	Added "Configure the RAID array," and "Verify the RAID drives' status."
3/10/2021	F	0	Removed all deprecated Red Hat 6.X references, including "Comms Logger cold-start procedure for Red Hat 6.X." Updated "(Optional) Media check." Mapped ASTi system part numbers, software versions, and BIOS versions for clarity in "Set up the BIOS."
7/28/2021	F	1	Updated the 2U chassis diagram.
1/27/2022	F	2	Removed all Unified Comms references from the cold-start procedure. Made minor edits to grammar and style.
6/23/2022	F	3	Updated the 2U chassis diagram to include the Power and Hard Drive LEDs.
10/7/2022	F	4	Removed "license" references from the Red Hat Enterprise Linux export statement in the front matter. Updated the 2U chassis diagram to move the Eth card to the third slot.
3/8/2023	F	5	Updated the Red Hat Enterprise Linux export statement in the front matter.
3/11/2024	G	0	Added "BIOS HW-1XXXXX-1XX or HW-2XXXXX-1XX."

Contents

1.0 Introduction

The cold-start procedure(s) described in this document allow you to build Comms Logger systems from scratch. This cold start guide refers to Comms Logger software running on a specialized, three-drive hardware system, consisting of one main drive and two additional drives, set in a RAID1 array used only for storing Comms Logger data. There are three main reasons for using the cold-start procedure:

- Installing the latest software version
- Rebuilding a damaged hard drive
- Creating a spare hard drive

***Caution**: Performing a cold-start procedure erases the main drive; however, the cold-start procedure preserves data on the two RAID1 array data drives.*

The following steps outline the cold-start procedure:

1. To back up the Comms Logger server, go to Section 3.0, "System backups" on page 4.
2. To set up the BIOS, ensuring the cold-start procedure runs properly, go to Section 4.0, "Set up the BIOS" on page 6.
3. *(Optional)* To perform a media check, go to Section 5.0, "(Optional) Media check" on page 10.
4. Complete the Comms Logger cold-start procedure, erase the hard drive, and install the Red Hat and Comms Logger software. For cold-start procedure instructions, go to Section 6.0, "Cold-start procedure for Comms Logger 7.X" on page 11.
5. To restore the Comms Logger server, go to Section 7.0, "System restoration" on page 12.

2.0 Required equipment

To complete the Comms Logger cold-start procedure, you will need the following items:

- A Comms Logger 2U or 4U platform with a removable hard drive
- Keyboard
- Monitor
- *(Optional)* Mouse
- Comms Logger installation media (i.e., DVD, USB drive, ISO)
- Network data
  - Eth0 IPv4 address
  - Subnet mask

2.1 Record network data

To record your server's network data, follow these steps:

1. From the top right, go to **Manage** () > **Network Configuration**.

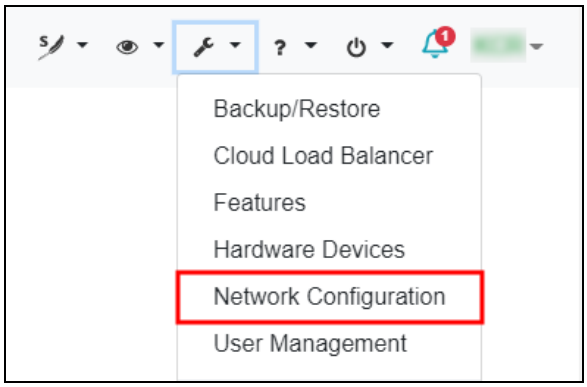

Figure 1: Network Configuration navigation

2. Record your device's **IPv4 Address** and **Subnet Mask** for future reference.

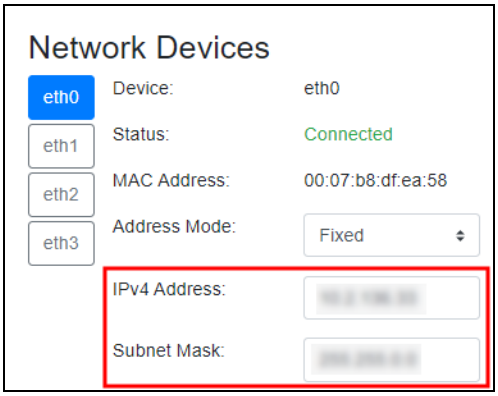

Figure 2: Comms Logger server network information

3.0 System backups

The cold-start procedure completely erases the Comms Logger server's hard drive, including scenarios, system users, and Distributed Interactive Simulation (DIS) settings. To back up your data in the Comms Logger web interface, follow these steps:

1. Open a web browser on a computer or tablet sharing a network with the Comms Logger server.
2. In the address bar, enter the Comms Logger server's IP address.
3. Log into the Comms Logger server using the following default credentials:

Username	Password
admin	astirules

4. From the top right, go to **Manage** ( ) > **Backup/Restore**.

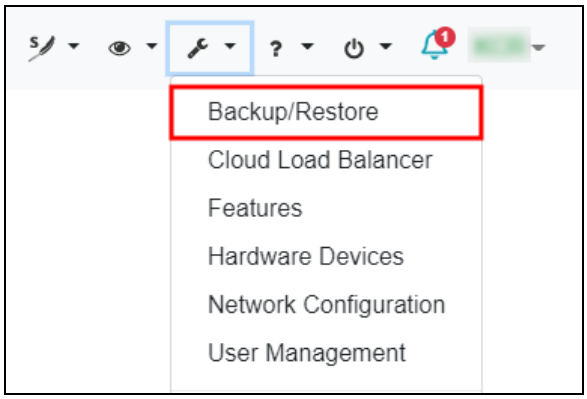

Figure 3: Backup/Restore navigation

5. To create a new backup of your Comms Logger server, select .
6. To download the backup to your computer's local hard drive, choose a backup to save.

7. To save your backup, select **Download Selected** ( ).

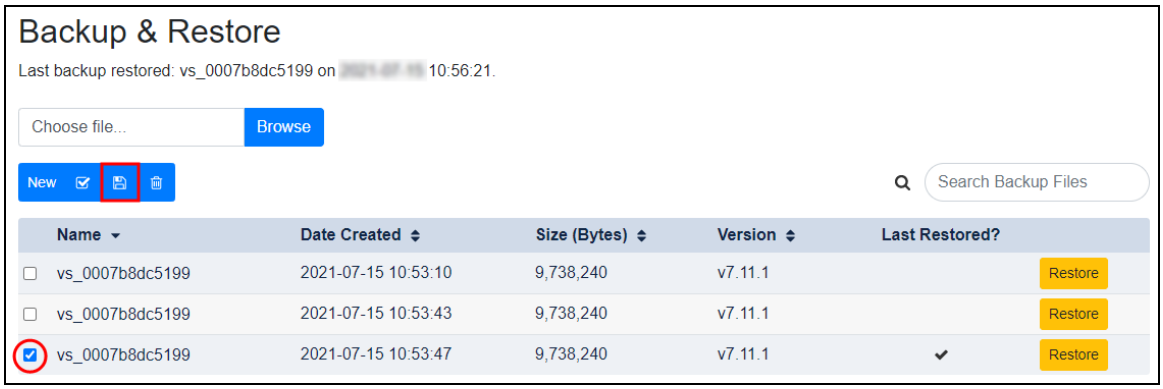

Figure 4: Backup & Restore settings

4.0 Set up the BIOS

To ensure the cold-start procedure runs properly, set up the BIOS as described in the following sections. First, check the ASTi label on the rear of the chassis for the system's part number. Table 1, "Verify the system's BIOS" below shows which BIOS version the system is using:

Part Number	ASTi Software Version	Red Hat (RHEL) Version	BIOS Version
VS-REC-SYS VSH-57310-89	v2.0 and later	RHEL 7	Q17MX/AX
VS-REC-SYS VSH-27210-86	v1.0–1.1	RHEL 6	Q67AX

Table 1: Verify the system's BIOS

4.1 BIOS HW-1XXXXX-1XX or HW-2XXXXX-1XX

To set up the BIOS for the HW-1XXXXX-1XX or HW-2XXXXX-1XX chassis configuration, follow these steps:

1. Reboot the server, and immediately press Del as the system boots to enter the **BIOS Setup Utility**.
2. Press F9 to open **Load Optimal Defaults?**, and select **Yes**.
3. On **Main**, set **System Date** and **System Time** using Greenwich Mean Time.
4. Go to **Advanced** > **Power & Performance**, and set **C states** to **Disabled**.
5. To save and reset, press F10. When **Save & reset** appears, select **Yes**. Wait as the server reboots.

4.2 BIOS Q17MX or Q17AX

To set up BIOS version Q17MX or Q17AX, follow these steps:

1. Reboot the server, and immediately press Del as the system boots to enter the **BIOS Setup Utility**.
2. Press F3 to open **Load Optimal Defaults?**, and select **Yes**.
3. On **Main**, set **System Date** and **System Time** using Greenwich Mean Time.
4. Go to **Chipset** > **PCH-IO Configuration**, and set the following:
    a. **Onboard LAN1 Controller** to **Enabled**
    b. **Onboard LAN2 Controller** to **Enabled**
    c. **System State After Power Failure** to **Always On**

5. Press Esc. Go to to **Chipset** > **System Agent (SA) Configuration**, and set **VT-d** to **Enabled**.
6. Press Esc. Go to **Advanced** > **CSM Configuration**, and set **Network** to **Legacy**.
7. To save and reset, press F4. When the "Save configuration and reset?" message appears, select **Yes**. Wait as the server reboots.
8. As the system reboots, press Del to return to **BIOS Setup Utility**.
9. Go to **Advanced** > **CPU Configuration**, and set the following:
    a. **Hyper-threading** to **Disabled**
    b. **Intel Virtualization Technology** to **Enabled**
10. Press Esc. Go to **Advanced** > **SATA Configuration**, and set **SATA Mode Selection** to **AHCI**.
11. Press Esc. Go to **Super IO Configuration** > **Serial Port 1 Configuration**, and set **Serial Port** to **Disabled**.
12. Press Esc. Go to **Serial Port 2 Port Configuration**, and set **Serial Port** to **Disabled**.
13. Press Esc. Go to **Serial Port 3 Port Configuration**, and set **Serial Port** to **Disabled**.
14. Press Esc. Go to **Serial Port 4 Port Configuration**, and set **Serial Port** to **Disabled**.
15. Press Esc. Go to **Serial Port 5 Port Configuration**, and set **Serial Port** to **Disabled**.
16. Press Esc. Go to **Serial Port 6 Port Configuration**, and set **Serial Port** to **Disabled**.
17. Press Esc twice, go to **Boot**, and set the **Boot Option Priorities** as follows:
    a. **Boot Option #1** to the *DVD drive*

***Important**: If available, do not select the Unified Extensible Firmware Interface (UEFI) option for DVD or USB.*

    b. **Boot Option #2** to the *hard drive* option
    c. **Boot Option #3** to the *network* option
    d. **Boot Option #4** to **Disabled**

***Note**: Hardware names and model numbers may vary depending on your hardware type.*

18. To save and reset, press F4. When the “Save configuration and reset?” message appears, select **Yes**. Wait as the server reboots.

4.3 BIOS Q67AX 2.14.1219 and later

To set up BIOS Q67AX 2.14.1219 and later, follow these steps:

1. Reboot the server, and immediately press Del as the system boots to enter the **BIOS Setup Utility**.
2. Press F3, and set “Load Optimized Defaults?” to **Yes**.
3. On **Main**, set **System Date** and **System Time** using Greenwich Mean Time.
4. Go to **Chipset** > **PCH-IO Configuration**, and set the following:
    a. **Onboard LAN1 Controller** to **Enabled**
    b. **Onboard LAN2 Device** to **Enabled**
    c. **Restore AC Power Loss** to **Power On**
5. Press Esc. Go to **Chipset** > **System Agent (SA) Configuration**, and set **VT-d** to **Enabled**.
6. Press Esc. Go to **Boot** > **CSM parameters**, and set **Launch PXE OpROM policy** to **Legacy only.**
7. To save and reset, press F4. A confirmation message requests, “Save configuration and reset?” Select **Yes**.
8. As the system reboots, press Del to return to **BIOS Setup Utility**.
9. Press Esc. Go to **Advanced** > **CPU Configuration**, and set the following:
    a. **Hyper-threading** to **Disabled**
    b. **Intel Virtualization Technology** to **Enabled**
10. Press Esc. Go to **SATA Configuration**, and set **SATA Mode Selection** to **AHCI.**
11. Press Esc. Go to **SMART Settings**, and set **SMART Self Test** to **Enabled.**
12. Press Esc. Go to **Super IO Configuration** > **COM1 Port Configuration**, and set **Serial Port** to **Disabled**.
13. Press Esc. Go to **COM2 Port Configuration**, and set **Serial Port** to **Disabled**.
14. Press Esc. Set **CIR Controller** to **Disabled**.
15. Press Esc. Go to **Second Super IO Configuration** > **COM3 Port Configuration**, and set **Serial Port** to **Disabled**.

16. Press Esc. Go to **COM4 Port Configuration**, and set **Serial Port** to **Disabled**.
17. Press Esc. Go to **COM5 Port Configuration**, and set **Serial Port** to **Disabled**.
18. Press Esc. Go to **COM6 Port Configuration**, and set **Serial Port** to **Disabled**.
19. Press Esc twice, and go to **Third Super IO Configuration** > **COM7 Port Configuration**. Set **Serial Port** to **Disabled**.
20. Press Esc. Go to **COM8 Port Configuration**, and set **Serial Port** to **Disabled**.
21. Press Esc. Go to **COM9 Port Configuration**, and set **Serial Port** to **Disabled**.
22. Press Esc. Go to **COM10 Port Configuration**, and set **Serial Port** to **Disabled**.
23. Press Esc twice, go to **Boot**, and set **Boot Option Priorities** as follows:
    a. **Boot Option #1** to the *DVD drive* option
    b. **Boot Option #2** to the *hard drive* option
    c. **Boot Option #3** to the *network* option

    

    ***Note**: Hardware names and model numbers may vary depending on your hardware type.*

24. Press Esc. Go to **Network Device BBS Priorities**, and set the following:
    a. **Boot Option #2** to **Disabled**
    b. **Boot Option #3** to **Disabled** (if present)
    c. **Boot Option #4** to **Disabled** (if present)
    d. **Boot Option #5** to **Disabled** (if present)
    e. **Boot Option #6** to **Disabled** (if present)

    

    ***Note**: The number of boot options may vary depending on your external Ethernet configuration.*

25. To save and reset, press F4. When the “Save configuration and reset?” message appears, select **Yes**. Wait as the server reboots.

5.0 (Optional) Media check

Follow the instructions below to verify the integrity of the Comms Logger installation media. This procedure is useful if you suspect a problem with your DVD. The verification will fail if a file on the DVD is unreadable due to scratches or marks. You only need to verify the DVD contents once, whether you are cold-starting one or several systems with the same DVD.

***Caution**: If verification succeeds, the cold-start procedure automatically starts, erasing your hard drive. You cannot perform a media check separately from the cold-start procedure.*

To verify DVD contents, follow these steps:

1. Turn on the Comms Logger server. As it boots, insert the Comms Logger Software Installation DVD into the disc drive within 10 seconds of turning it on.

   

   ***Important**: If the Comms Logger server boots from the hard drive, reboot the system, and hold the Alt key as it restarts.*

2. At the boot prompt, run **mediacheck**.
3. The screen displays “Starting media check on *device,*” where *device* represents the hardware device's name. To abort the check, press Esc. The test takes approximately five to ten minutes to complete.
4. If the media check passes, the cold-start procedure automatically begins. If DVD verification fails, the screen displays a “System halted” message. In that case, contact ASTi to receive new software DVDs.

6.0 Cold-start procedure for Comms Logger 7.X

***Caution**: Performing a cold-start procedure will completely erase the system hard drive.*

To complete the Comms Logger cold-start procedure for Comms Logger 7.X or 8.X, follow these steps:

1. Connect a monitor, keyboard, and mouse to the Comms Logger server.
2. Turn on the server.
3. Insert the Comms Logger Software Installation DVD, and reboot the server.
4. When the Comms Logger welcome screen appears, press Enter to begin installing the software. Wait 10–15 minutes for installation to complete. Depending on your network configuration, iSCSI installation may take 20–25 minutes to complete.
5. Eject the Comms Logger Software Installation DVD.
6. Reboot the server.

   ***Important**: If the system hangs after reboot, press the RESET button on the front of the chassis.*

7. Log into the system using the following default credentials:

Username	Password
root	abcd1234

8. *(Optional)* To set the IP address and subnet mask, enter **ace-net-config -a** xxx.xxx.xxx.xxx **-n** yyy.yyy.yyy.yyy, where xxx.xxx.xxx.xxx is the IP address and yyy.yyy.yyy.yyy is the netmask.

   This configuration sets the IP address and netmask for Eth0, which you can use to access the Comms Logger web interface via a browser to complete the network setup.
9. *(Optional)* For more network settings, enter **ace-net-config -h**, and press Enter.
10. To activate the changes, enter **reboot**, and press Enter.

7.0 System restoration

To restore the data saved in Section 3.0, "System backups" on page 4, follow these steps:

1. Open a web browser on a computer or tablet sharing a network with the Comms Logger server.
2. In the address bar, enter the Comms Logger server's IP address.
3. Log into the Comms Logger server using the following default credentials:

Username	Password
admin	astirules

4. From the top right, go to **Manage** ( ) > **Backup/Restore**.

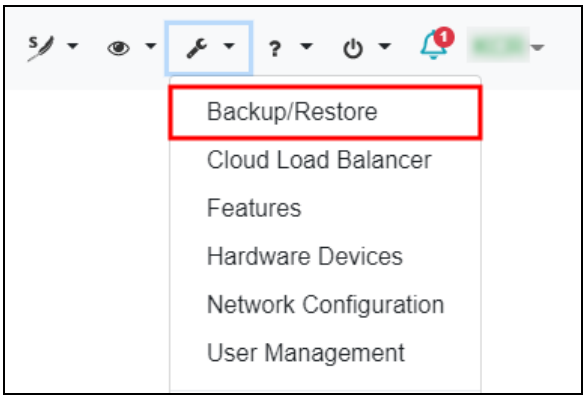

Figure 5: Backup/Restore navigation

5. Select **Browse**, and find the backup on your local system.

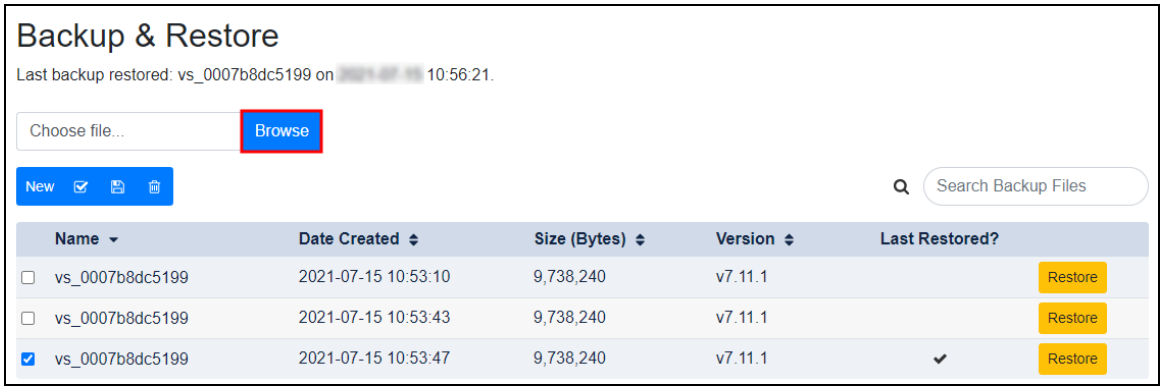

Figure 6: Browse button

6. Select Restore.
7. When prompted, reboot the Comms Logger server.

8. Following reboot, log back into the web interface.
9. From the top right, go to **Manage** ( ) > **Network Configuration**.

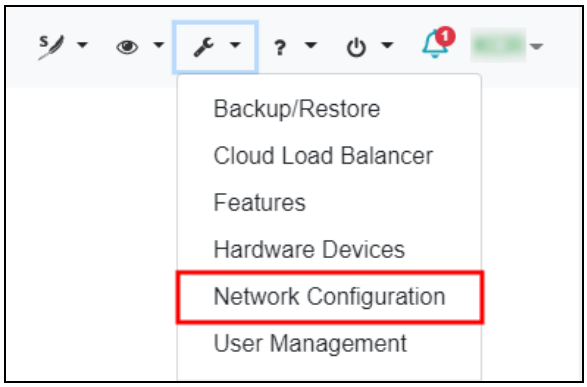

Figure 7: Network Configuration navigation

10. On **Network Configuration**, go to **Settings**.
11. Under **General Networking**, in **Cloud ID**, enter a cloud ID for the Comms Logger server.

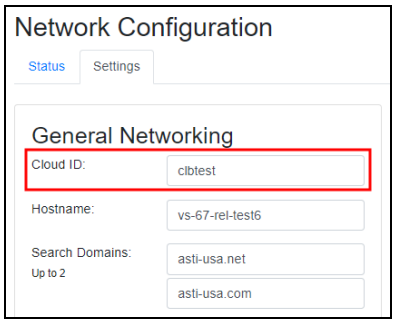

Figure 8: Cloud ID setting

12. In the bottom right, under **Pending Changes**, select **Save Changes**.
13. In the top right, go to **Scenario** > **Restart**.

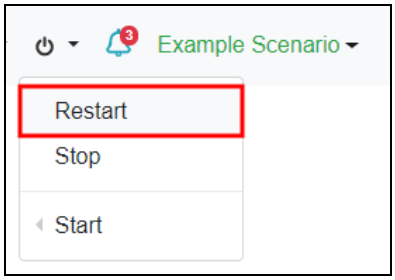

Figure 9: Restart scenario

14. Ensure the Comms Logger server contains a valid USB License Key.

Appendix A: Memory Test (Comms Logger 7.X and 8.X)

The Memory Test is a useful troubleshooting tool if you are experiencing problems such as system lockup, freezing, random rebooting, or graphics/screen distortion. ASTi recommends running this test several times to ensure that the memory is fully functional. You may wish to run the test overnight.

To perform a Memory Test, follow these steps:

1. Turn on the Comms Logger server.
2. Insert the Comms Logger Software Installation DVD, and reboot the Comms Logger server.
3. At the prompt, run **memtest86**. For best results, let the Memory Test run overnight.
4. The Memory Test will run indefinitely until manually stopped. To stop the Memory Test, press the Esc key. If the Memory Test failed, contact ASTi for assistance.
5. To restore the Comms Logger server to service, remove the DVD, restart the server, and wait for it to reboot.

Appendix B: RAID arrays

The Comms Logger server comes with two removable RAID1 drives that store recordings. You will need to complete these configuration instructions if you install a new RAID array or wipe your drive (e.g., for security reasons). Before starting, make sure you have already completed the Comms Logger cold-start procedure described in Section 6.0, "Cold-start procedure for Comms Logger 7.X" on page 11.

This chapter discusses the following topics:

- RAID array configuration
- RAID array verification

B-1 Configure the RAID array

To set up the RAID array, follow these steps:

1. For hardened systems, log into the system with the following credentials:

Username	Password
astiadmin	admin

   To switch to the root user account, do the following:

   a. Enter **su**, and press Enter.

   b. Enter the root password (i.e., **abcd1234** by default), and press Enter.

   For non-hardened systems, log into the system directly as root:

Username	Password
root	abcd1234

2. At the prompt, enter **ace-discap-setup-raid1**, and press Enter. If the command is successful, the system generates a lengthy output that ends with the following:

```
Creating file system, this may take a few minutes

Finished setting up raid1 array

Making sure there is a current recording running

*created and started recording {rid recording ID}

Making sure discribe directory is created and has the right
permissions

!!! please restart the machine !!!
```

3. Reboot the server.

4. Log into the system using the following default credentials:

Username	Password
root	abcd1234

5. To verify the drive configuration, enter **cat /proc/mdstat**, and press Enter.

6. The screen displays **resync=*N.N*%,** where *N.N* is the completed resync percentage. Wait approximately one to two hours for the resync to finish.

***Note**: The system will not resync if you previously configured the drives as a RAID (e.g., you removed and reinstalled the drives to replace a failed motherboard). Instead, the system will generate a successful output, described below.*

7. Run **cat /proc/mdstat** periodically to check the resync status. When the system is finished resyncing, it generates an output similar to the following:

```
Personalities: [raid1]

md0 : active raid1 sdb[0] sdc[1]

488386496 blocks [2/2] [UU]

unused devices: <none>
```

The numbering of **sdb**, **sdc**, and **blocks** may vary depending on your configuration.

***Important**: If an (F) appears next to **sdb** or **sdc** (e.g., **sdb[0](F)** or **sdc[1](F)**), the drive has failed. Contact ASTi at support@asti-usa.com for assistance.*

8. Reboot the server.

B-2 Verify the RAID drives' status

To verify the RAID drives are correctly configured, follow these steps:

1. Log into the system using the following default credentials:

Username	Password
root	abcd1234

2. To obtain the Comms Logger server's IP address, at the prompt, enter **/sbin/ifconfig/eth0**, and press Enter.
3. Write down the Comms Logger server's IP address (e.g., *xxx.xxx.xxx.xxx*).
4. Open a web browser on a computer or tablet sharing a network with the Comms Logger server.
5. In the address bar, enter the Comms Logger server's IP address.
6. Log into the Comms Logger web interface using the following default credentials:

Username	Password
admin	astirules

7. Under **RAID Status**, verify **Drive A** and **Drive B** display “Up:”

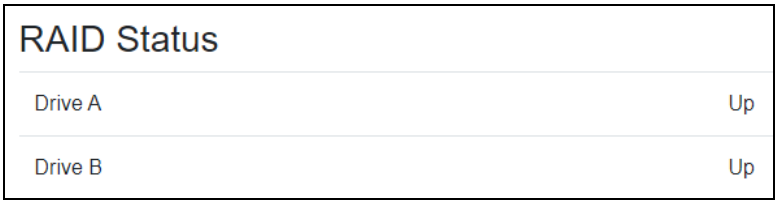

Figure 10: Working RAID drives

