

Replacing an ATM3SA CRU

This procedure describes how to replace an ATM3 ServerNet adapter (ATM3SA) CRU in a NonStop S-series server online. You might need to replace an ATM3SA CRU if it has failed or partially failed. You do not need to shut down the system before replacing an ATM3SA CRU.



Caution: If a previously installed ATM3SA CRU and backplane connectors have damaged pins, remove the ATM3SA CRU and install a filler panel in the vacant slot. Attach red tags to the filler panel to identify the slot. Do not move the damaged ATM3SA CRU to a different, undamaged slot. Both the ATM3SA CRU and backplane (or enclosure) must be replaced. For backplane replacement, see the backplane replacement section of the NonStop S-Series Service Provider Supplement.



Note: Whenever you handle an ATM3SA CRU, you should follow [standard operating practices](#) to avoid damage to the equipment.

The following is a high-level summary of the tasks required to complete the ATM3SA CRU replacement procedure. Each task in this outline is linked to step-by-step instructions about how to perform the task. Angle-brackets (for example, <line-name>) are used in command syntax to indicate values that you must provide. After you complete a task, click the check box.

Preparation:

- 1 [Gather the proper tools.](#)
- 2 [Identify any communications lines using the ATM3SA CRU to be replaced.](#)
- 3 [Quiesce any customer applications using the ATM3SA CRU to be replaced.](#)
- 4 [Stop the communications lines using the ATM3SA CRU to be replaced.](#)




Note: This step is optional. Communications lines are suspended when an ATM3SA CRU is removed and are automatically resumed when the ATM3SA CRU is replaced. You should be aware that numerous Event Management Service (EMS) messages are generated if communications lines are not stopped before the ATM3SA CRU is removed; these messages do not require any recovery action.

- 5 [Determine the physical location of the ATM3SA CRU to be replaced.](#)
- 6 [Abort the ATM3SA CRU to be replaced.](#)

- 7 [Label the communications cables connected to the ATM3SA CRU to be replaced.](#)

Replace the ATM3SA CRU:

- 1 [Remove the ATM3SA CRU to be replaced.](#)
- 2 [Inspect the new ATM3SA CRU and backplane.](#)
- 3 [Install the new ATM3SA CRU.](#)

 **Note:** Wait a minimum of 30 seconds after removing the old ATM3SA CRU before installing the new ATM3SA CRU.

- 4 [Check the installation of the new ATM3SA CRU.](#)

Resume Operations:

- 1 [Start the new ATM3SA CRU.](#)
- 2 [Restart the communications lines.](#)

 **Note:** You need to perform this step only if you stopped communications lines that were using the ATM3SA CRU that was replaced.

- 3 [Verify that the communications lines are restarted.](#)
- 4 [Resume customer applications.](#)

Related Topics

The following topics contain information related to this procedure:

- [Viewing the Operator Log \(\\$0\) Using the OSM or TSM Event Viewer](#)
- [Viewing the Service Log \(\\$ZLOG\) Using the OSM or TSM Event Viewer](#)
- [Managing the Windows NT Event Viewer Application Log](#)
- [Managing the Windows Event Viewer Application Log](#)

Standard Operating Practices



Caution. Replace only one CRU or FRU at a time. Attempting to replace more than one hardware component at a time might cause serious system outages, processor halts, and connectivity problems.

Whenever you replace a CRU or a FRU, use the following standard operating practices to minimize any potential damage to the equipment:

- Complete HP training courses on system support for NonStop S-series servers.
- Inspect the replacement CRU or FRU for any physical damage before installing it. Check the connectors on the CRU, FRU, or backplane for bent or broken pins and for any other obvious damage. If there is damage to the CRU or FRU, you need to order another one.
- Remove all jewelry and metal accessories, such as rings, watches, and necklaces, before working with the equipment. These items can damage electrical equipment or result in personal injury.
- Restrain any dangling items that can get caught in electromechanical equipment, such as long hair and sleeves, before working with the equipment.
- Follow the [ESD Guidelines](#) for working in an electrostatic discharge (ESD)-protected environment and for handling CRUs and FRUs.
- Avoid permanent damage to components from overheating by observing the time limits for an enclosure door to be open with only one fan running.

The following table indicates the amount of time that components in a fully loaded NonStop S-series system enclosure, with the appearance-side door open and only one fan operating, can operate before overheating.

Safe Operating Times With Enclosure Door Open

Altitude	Ambient Room Temperature			
	25°C (77°F)	30°C (86°F)	35°C (95°F)	38°C (100°F)
Sea level	>45 minutes	36 minutes	21 minutes	13 minutes
1,524 meters (5,000 feet)	38 minutes	22 minutes	13 minutes	8 minutes
3,048 meters (10,000 feet)	25 minutes	14 minutes	10 minutes	5 minutes

For example, if your computer room has an ambient room temperature of 25°C (77°F) and is at an altitude of 1,524 meters (5,000 feet), you have approximately 38 minutes to replace or reinstall the second fan before components inside a system enclosure overheat.

Related Topic

[ESD Guidelines](#)

ESD Guidelines



Figure: [Working in an ESD-Protected Environment](#)

Observe the following electrostatic discharge (ESD) guidelines whenever servicing electronic components:

- Obtain an ESD protection kit and follow the directions that come with the kit. You can purchase an ESD kit from HP (T99247-A00) or from a local electronics store. Ensure that your ESD wriststrap has a built-in series resistor and that the kit includes an antistatic table mat.
- Before you unpack a replacement CRU or FRU, place the CRU or FRU package on the antistatic table mat and attach the grounding clip on your wriststrap to the mat.
- When you unpack the CRU or FRU, do not cut into the ESD protective bag surrounding the CRU or FRU. The protective bag protects the CRU or FRU and can be reused for storing the CRU or FRU that has been replaced.
- Before you move the CRU or FRU from the antistatic table mat, attach the grounding clip from your ESD wriststrap to any unpainted metal surface on the CRU or FRU frame.
- Before you bring a CRU or FRU in contact with a system enclosure, attach the grounding clip on your ESD wriststrap to any unpainted metal surface on the enclosure frame.
- When you remove a CRU or FRU from a system enclosure, first pull the CRU or FRU partway out of the slot and then attach the grounding clip on your ESD wriststrap to any unpainted metal surface on the CRU or FRU frame.
- Store CRUs or FRUs that require ESD protection in ESD protective bags.
- The figure [Working in an ESD-Protected Environment](#) illustrates how to use an ESD kit when servicing CRUs or FRUs.

i Note: An ESD protection kit can be purchased from HP using the following order number and part number:

Order Number: ESD-kit

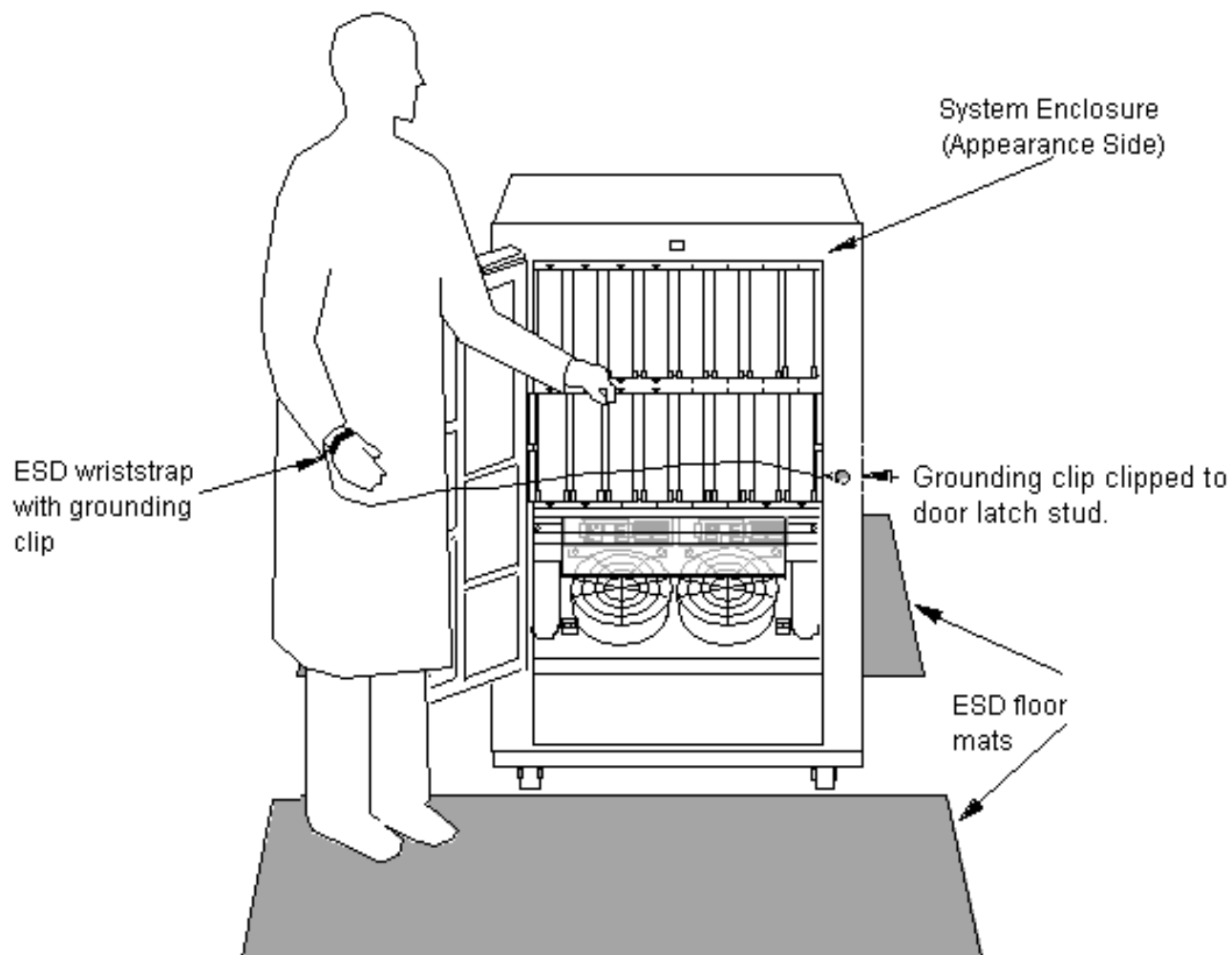
Part Number: T99247-A00

Related Topic

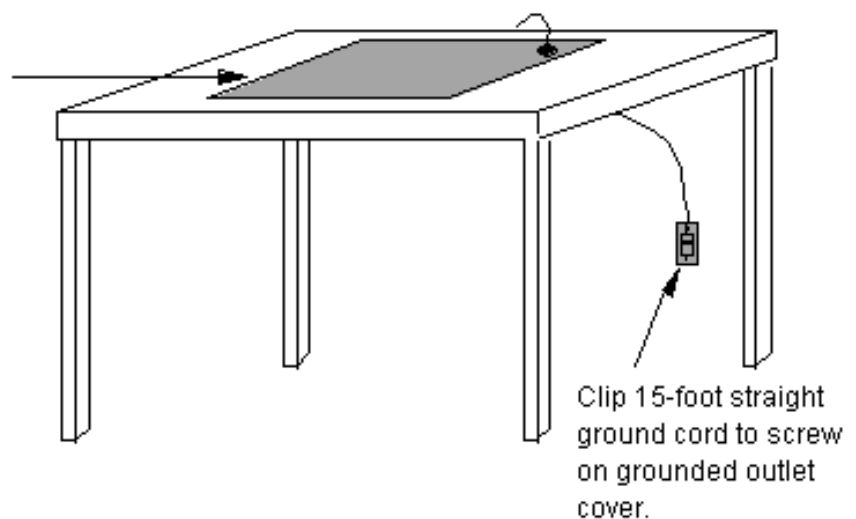
[Standard Operating Practices](#)

Figure: Working in an ESD-Protected Environment

This figure illustrates how to use an ESD kit when servicing customer-replaceable units (CRUs) and field-replaceable units (FRUs).




ESD antistatic table mat.
Mat should be connected
to a soft ground (1 megohm min.
to 10 megohm max.)



Gathering the Proper Tools to Assist With CRU and FRU Replacement

You will need some or all of the following tools to replace a CRU or a FRU:

Tool	Used to...
Electrostatic discharge (ESD) wriststrap with grounding clip	Protect the CRU or FRU from damage caused by electrostatic discharge.
Antistatic mat (recommended)	Provide a static-free environment for removal and installation of a CRU or FRU.
Flashlight	Check the connectors for bent or broken pins.
Phillips screwdriver	Loosen the captive thumbscrews on a disk drive CRU.

 **Note:** An ESD protection kit can be purchased from HP using the following order number and part number:

Order Number: ESD-kit

Part Number: T99247-A00

Identifying the Communications Lines That Use an ATM3SA CRU

The Asynchronous Transfer Mode (ATM) subsystem provides access to the ATM ServerNet adapter (ATM3SA) CRU. The following NonStop subsystems and utilities may be configured to access an ATM3SA CRU through the ATM subsystem:

- The TCP/IP subsystem, which can interface to the ATM subsystem to provide connectivity to TCP/IP networks. The following NonStop subsystems and utilities can interface to the TCP/IP subsystem to use an ATM3SA CRU:
 - The Expand subsystem, which can be configured to establish Expand-over-IP connections through the TCP/IP subsystem.
 - Telserv and the File Transfer Protocol (FTP), which use the socket library to establish connections through the TCP/IP subsystem.
 - Other NonStop subsystems that can be configured to establish connections through the TCP/IP subsystem.
- The Expand subsystem, which can interface to the ATM subsystem to provide Expand-over-ATM connections.

The [figure](#) illustrates how these subsystems and utilities use the ATM subsystem to access an ATM3SA CRU.

The following procedure should help you identify the NonStop subsystems and utilities that are configured to use an ATM3SA CRU. Specific instructions are provided for identifying Expand-over-IP and Expand-over-ATM lines.




Tip: You will need to make a note of the information you obtain during this procedure. You can record this information on the [planning worksheet](#) provided or you can use the SCF LOG command to capture both the command and the display that is produced to a file. To start logging, type LOG <logfile> at the SCF prompt. To stop logging, type LOG at the SCF prompt.

- 1 Determine the TCP/IP processes, subnets, and Internet Protocol (IP) addresses associated with the ATM line on the ATM3SA CRU.

Use the SCF INFO SUBNET command:

```
INFO SUBNET $*.*
```

Scan the output of the command for the name of the ATM line object associated with the ATM3SA CRU and then find the associated TCP/IP processes, subnets, and IP addresses. Make a note of this information.

 **Note:** The ATM line name is the same as the ATM3SA CRU (adapter) name.

The [example](#) shows the output of this command.

- 2 Identify the names of Expand-over-IP and Expand-over-ATM lines configured on the system.

Use the following SCF LISTDEV command to display the single Expand-over-IP and Expand-over-ATM lines:

```
LISTDEV TYPE 63,0
```

Use the following SCF LISTDEV command to display the Expand-over-IP and Expand-over-ATM lines that are part of a multiline path:

```
LISTDEV TYPE 63,2
```

The [example](#) shows the output of this command.

- 3 Determine if any of the Expand-over-IP or Expand-over-ATM lines configured on the system use the ATM3SA CRU.

Use the SCF INFO LINE command with the DETAIL option for each Expand-over-IP and Expand-over-ATM line:

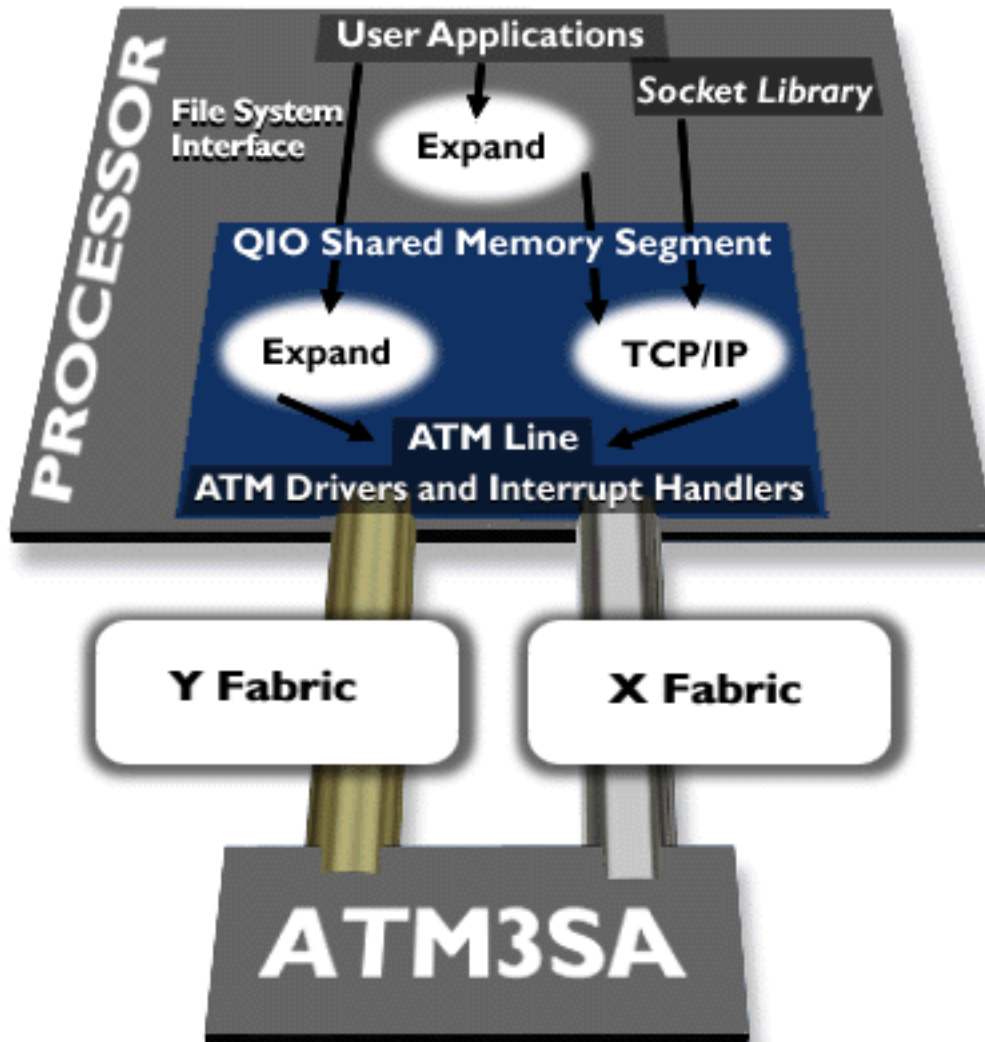
```
INFO LINE $<line-name>, DETAIL
```

For Expand-over-ATM lines, scan the output of the command for the name of the ATM line. Make a note of the Expand-over-ATM lines that use the ATM line.

For Expand-over-IP lines, scan the output of the command for the TCP/IP process and IP address used by the Expand-over-IP line and then compare this information to the TCP/IP processes and IP addresses that you found in Step 1. Make a note of the Expand-over-IP lines that use these TCP/IP processes and IP addresses.

The [example](#) shows the output of this command.

Figure: How NonStop Subsystems and Utilities Access an ATM3SA CRU



ATM3SA CRU Planning Worksheet

Print this worksheet and use it to record information about an ATM ServerNet adapter (ATM3SA) CRU.

TCP/IP Processes, Subnets, and Internet Protocol (IP) Addresses:

TCP/IP Process: _____ Subnet: _____ IP Address: _____

TCP/IP Process: _____ Subnet: _____ IP Address: _____

TCP/IP Process: _____ Subnet: _____ IP Address: _____

TCP/IP Process: _____ Subnet: _____ IP Address: _____

Expand-Over-IP Lines:

TCP/IP Process: _____ IP Address: _____ Expand Line: _____

TCP/IP Process: _____ IP Address: _____ Expand Line: _____

TCP/IP Process: _____ IP Address: _____ Expand Line: _____

TCP/IP Process: _____ IP Address: _____ Expand Line: _____

Expand-Over-ATM Lines:

Expand Line: _____

Expand Line: _____

Expand Line: _____

Expand Line: _____

Example: Determining the TCP/IP Processes and IP Addresses for an ATM Line

This is an example of the SCF INFO SUBNET command:


```
->INFO SUBNET $*.*
```

```
TCPIP Info SUBNET \JULIE.$ZTC01.*
```

Name	Devicename	*IPADDRESS	TYPE	*SUBNETMASK	SuName	QIO	*R
#LOOP0	\NOSYS.\$NOIOP	127.0.0.1	LOOP-BACK	%HFF000000		OFF	N
#SN1	\JULIE.L018	172.16.35.15	ETHERNET	%HFFFFFFF00		ON	N
#SN2	\JULIE.\$AM2	172.16.192.20	ATM	%HFFFFFFF00		ON	N

The following information should help you interpret the display:

- The TCP/IP process name is displayed in the first line of output
- The subnet name is displayed in the Name column
- The Asynchronous Transfer Mode (ATM) line name is displayed in the Devicename column
- The Internet Protocol (IP) address is displayed in the IPADDRESS column

 **Note:** You can easily scan for ATM subnets by looking in the TYPE column. ATM subnets are displayed as type ATM.

In this example, which is partial output, the ATM line named \$AM2 is associated with the subnet named #SN2 on the TCP/IP process named \$ZTC01 and has the IP address 172.16.192.20.

Example: Identifying the Expand-Over-IP and Expand-Over-ATM Lines on a System

This is an example of the SCF LISTDEV command display for single Expand-over-IP and Expand-over-ATM lines:

```
->LISTDEV TYPE 63,0
```

LDev Name	PPID	BPID	Type	Rsize	Pri	Program	
109	\$ATMLH	3,9	2,7	(63,0)	3	199	\COWBOY.\$DATA00.T9057ADJ.LHOBJ
159	\$IPCORE	0,16	1,15	(63,0)	3	199	\COWBOY.\$DATA00.T9057ADJ.LHOBJ

In this example, one Expand-over-ATM line (named \$ATMLH) and one Expand-over-IP line (named \$IPCORE) are configured on the system.

This is an example of the SCF LISTDEV command display for Expand-over-IP and Expand-over-ATM lines that are part of a multiline path:

```
->LISTDEV TYPE 63,2
```

LDev Name	PPID	BPID	Type	Rsize	Pri	Program	
56	\$ATMLH1	2,16	3,16	(63,2)	3	199	\COWBOY.\$DATA00.T9057ADJ.LHOBJ
84	\$ATMLH2	2,16	3,16	(63,2)	3	199	\COWBOY.\$DATA00.T9057ADJ.LHOBJ

In this example, two Expand-over-ATM lines (named \$ATMLH1 and \$ATMLH2) are configured as part of a multiline path.

Example: Determining the Expand Lines That Use an ATM3SA CRU

This is an example of the SCF INFO LINE command with the DETAIL option for an Expand-over-ATM line that uses a permanent virtual circuit (PVC):

```
-> INFO LINE $ATMH, DETAIL
```

```
EXPAND Detailed Info LINE $ATMH
```

```
*Associatedev...$AM2 *Associatesubdev #IP
Rsize..... 3 *Speed..... 74666 Delay..... 0:00:00.10
Framesize.... 132 Txwindow..... 7 *Timeinactivity 0:00:00.00
*Maxreconnects 0 *Timerreconnect 0:00:30.00*Aftermaxretries PASSIVE
*Timerprobe 0:00:30.00*Retryprobe..... 3 Startup..... OFF
L2Protocol... Net^Atm ConnEp.....%H30070984 ListenEp..... %H30112778
*CallType..... PVC VPI..... 0 VCI..... 0
*PvcName..... PVC01
```

The ATM line is shown in the `Associatedev` field. In this example, the Expand-over-ATM line named `$ATMH` uses the ATM line named `$AM2`.

This is an example of the SCF INFO LINE command with the DETAIL option for an Expand-over-ATM line that uses a switched virtual circuit (SVC):

```
->INFO LINE $ATMH1, DETAIL
```

```
EXPAND Detailed Info LINE $ATMH1
```

```
*Associatedev.. $AM2 *Associatesubdev #IP
Rsize..... 3 *Speed..... 74666 Delay..... 0:00:00.10
Framesize.... 132 Txwindow..... 7 *Timeinactivity 0:00:00.00
*Maxreconnects 0 *Timerreconnect 0:00:30.00*Aftermaxretries PASSIVE
*Timerprobe 0:00:30.00*Retryprobe..... 3 Startup..... OFF
L2Protocol... Net^Atm ConnEp.....%H30070984 ListenEp..... %H30112778
*CallType..... SVC VPI..... 0 VCI..... 0
*AtmSel..... %H80
*DestAtmAddr.. (ISON SAP:%H47009181000100006170597C0140000C80001000)
```

The ATM line used is shown in the `Associatedev` field. In this example, the Expand-over-ATM line named `$ATMH1` uses the ATM line named `$AM2`.

This is an example of the SCF INFO LINE command with the DETAIL option for an Expand-over-IP line that uses an ATM3SA CRU:

```
->INFO LINE $IPYEA,DETAIL
```

```
EXPAND Detailed Info LINE $IPYEA
```


```
*Associatedev... $ZTC23 *Maxconnects. 0 Delay.... 0:00:00.10
Framesize..... 132 *Speed..... 74666 *Retryprobe 3
*Timerinactivity 0:00:00.00 *Timerprobe.. 0:00:30.00 Txwindow.. 7
*AfterMaxRetries PASSIVE StartUp..... OFF Rsize..... 3
*Timerreconnect. 0:00:30.00 L2Protocol... Net^IP
*DestIpAddr 172.17.203.37 *DestIpPort 2003
*SrcIpAddr 172.17.208.20 *SrcIpAddr 2003
```

The TCP/IP process used by the Expand-over-IP line is shown in the `Associatedev` field and the local Internet Protocol (IP) address is shown in the `SrcIpAddr` field. In

this example, the Expand-over-IP line named \$IPYEA uses the TCP/IP process named \$ZTC23 and the IP address 172.17.203.37.

Quiescing Customer Applications

- 1 Notify end users that applications will be temporarily unavailable.
- 2 Perform any actions necessary to quiesce customer applications.

 **Note:** The actions required to perform this step depend on the customer's application.

Stopping the Communications Lines That Use an ATM3SA CRU

- 1 Stop the activity on the lines.

Use the SCF ABORT LINE command to stop the activity on a single line:

```
ABORT LINE $<line-name>
```

Use the SCF ABORT PATH command to stop the activity on all the lines in an Expand multiline path:

```
ABORT PATH $<path-name>
```

- 2 Verify that the lines are in the STOPPED state.

Use the SCF STATUS LINE command for a single line:

```
STATUS LINE $<line-name>
```

Use the SCF STATUS PATH command for an Expand multiline path:

```
STATUS PATH $<path-name>
```

The [example](#) shows the output of these commands.

- 3 Stop the WAN subsystem input/output processes (IOPs).

Use the SCF STOP DEVICE command:

```
STOP DEVICE $ZZWAN.#<device-name>
```

- 4 Verify that the WAN subsystem IOPs are in the STOPPED state.

Use the SCF STATUS DEVICE command:

```
STATUS DEVICE $ZZWAN.#<device-name>
```

The [example](#) shows the output of this command.

- 5 Stop the TCP/IP subnets associated with the Asynchronous Transfer Mode (ATM) line on the ATM ServerNet adapter (ATM3SA) CRU.



Caution: Make sure that the TACL session from which you are issuing SCF commands is not running on the one of the subnets that you are about to stop.

Use the SCF STOP SUBNET command:

```
STOP SUBNET $<tcpip-process>.#<subnet>
```

- 6 Verify that the TCP/IP subnets are in the STOPPED state.

Use the SCF STATUS SUBNET command:

```
STATUS SUBNET $<tcpip-process>.#<subnet>
```

The [example](#) shows the output of this command.

Example: Verifying That a Line Is Stopped

This is an example of the SCF STATUS LINE command:

```
-> STATUS LINE $LINE1
```

```
EXPAND Status LINE
```

Name	State	PPID	BPID	CIU-Path	ConMgr-LDEV
\$LINE1	STOPPED	2, 10	3, 7	A	91

Note that the line is in the STOPPED state.

This is an example of the SCF STATUS PATH command:

```
-> STATUS PATH $PATH
```

```
EXPAND Status PATH
```

Name	State	PPID	BPID	Lines #
\$PATH	STOPPED	2, 15	3, 15	2

Note that the path is in the STOPPED state.

Example: Verifying That a WAN Subsystem IOP Is Stopped

This is an example of the SCF STATUS DEVICE command:

```
-> STATUS DEVICE $ZZWAN.#LINE1
```

```
WAN Manager STATUS DEVICE for DEVICE \COWBOY.$ZZWAN.#LINE1  
State :..... STOPPED
```

```
LDEV number.... 110
```

```
PPIN..... 2 ,13          BPIN..... 3 ,14
```

Note that the WAN subsystem input/output process (IOP) is in the STOPPED state.

Example: Verifying That a TCP/IP Subnet Is Stopped

This is an example of the SCF STATUS SUBNET command:

```
-> STATUS SUBNET $ZTC01.#SN2
```

```
TCPIP Status SUBNET \COWBOY.$ZTC01.#SN2
```

Name	Status
#SN2	STOPPED

Note that the subnet is in the STOPPED state.

Determining the Physical Location of an ATM3SA CRU

Use the SCF INFO ADAPTER command:

```
INFO ADAPTER $<adapter-name>
```

Scan the output of the command for the group, module, and slot location. Record this information in your log book.

The [example](#) shows the output of this command.

Example: Determining the Location of an ATM3SA CRU

This is an example of using the SCF INFO ADAPTER command:

```
-> INFO ADAPTER $AM2
```

```
ATM Info ADAPTER   \HANSOLO.$AM2

LOCATION (grp,mod,slot).. 1, 1, 53
ACCESSLIST..... 1, 3
AMP Filename (is use)..... \HANSOLO.$SYSTEM.SYS01.AMP
*AMPFILENAME..... $SYSTEM.SYS*.AMP
DownLd Filename (in use)... \HANSOLO.$SYSTEM.SYS01.C7838P00
*DLFILENAME..... $SYSTEM.SYS*.C7838P00
DownLd File Version..... T7838G02^15FEB98^06Feb98
Dump Filename (in use).... \HANSOLO.$SYSTEM.SYS01.C7838D00
*DUMPFILNAME..... $SYSTEM.SYS*.C7838D00
Firmware Filename (in use). \HANSOLO.$SYSTEM.SYS01.C8158R00
*FIRMWFILNAME..... $SYSTEM.SYS*.C8158R00
Firw File Version.....
*AUTORELOAD..... ON          AUTODUMP.....ON
*AUTOFIRMUP..... OFF
*PROBCOUNT..... 3          *PROBEINERVAL (0.01 sec)
300
MAC Address..... 00 00 00 00 00 00H
*Product Id..... T3860      Adapter Type.....ATM
Part Number..... 108502
Serial Number..... VOAMH9    Hardware
Revision...X31-00
Media Type..... MULTINODE    Transmit Type.....SONET
*SYSDISC.....
*SYSOBJID.....
*SYSCONTACT.....
*SYSNAME.....
*SYSLOCATION.....
*SYSSERVICE..... 4
```

The location is shown in the LOCATION field of the command display. In this example, the ATM ServerNet adapter (ATM3SA) CRU named \$AM2 is located in group 1, module 01, slot 53.

Aborting an ATM3SA CRU

- 1 Abort the ATM3 ServerNet adapter (ATM3SA) CRU ADAPTER object and its subordinate objects.

You can use SCF, the OSM Service Connection, or TSM Service Application to perform this step.

Using SCF:

Use the SCF ABORT ADAPTER command with the SUB ALL option:

```
ABORT ADAPTER $<adapter-name>, SUB ALL
```

The SUB ALL option aborts the ADAPTER object and all its subordinate objects.

Using OSM or TSM:

1. In the tree pane, select the ATM3SA CRU.
 2. Select **Display> Actions**.
 3. Click **Abort**.
 4. Click **Perform action**.
- 2 Verify that the ATM3SA CRU ADAPTER object is in the STOPPED state.

Use the SCF STATUS ADAPTER command:

```
STATUS ADAPTER $<adapter-name>
```

The [example](#) shows the output of this command.

Example: Verifying That the ADAPTER Object for an ATM3SA CRU Is Stopped

This is an example of using the SCF STATUS ADAPTER command:

```
-> STATUS ADAPTER $AM2
```

```
ATM Status ADAPTER
```

Name	State	Substate	Trace	Time Loaded
\$AM2	STOPPED	UNKNOWN	OFF	10 Feb 1998, 11:00

Note that the ADAPTER object is in the STOPPED state.

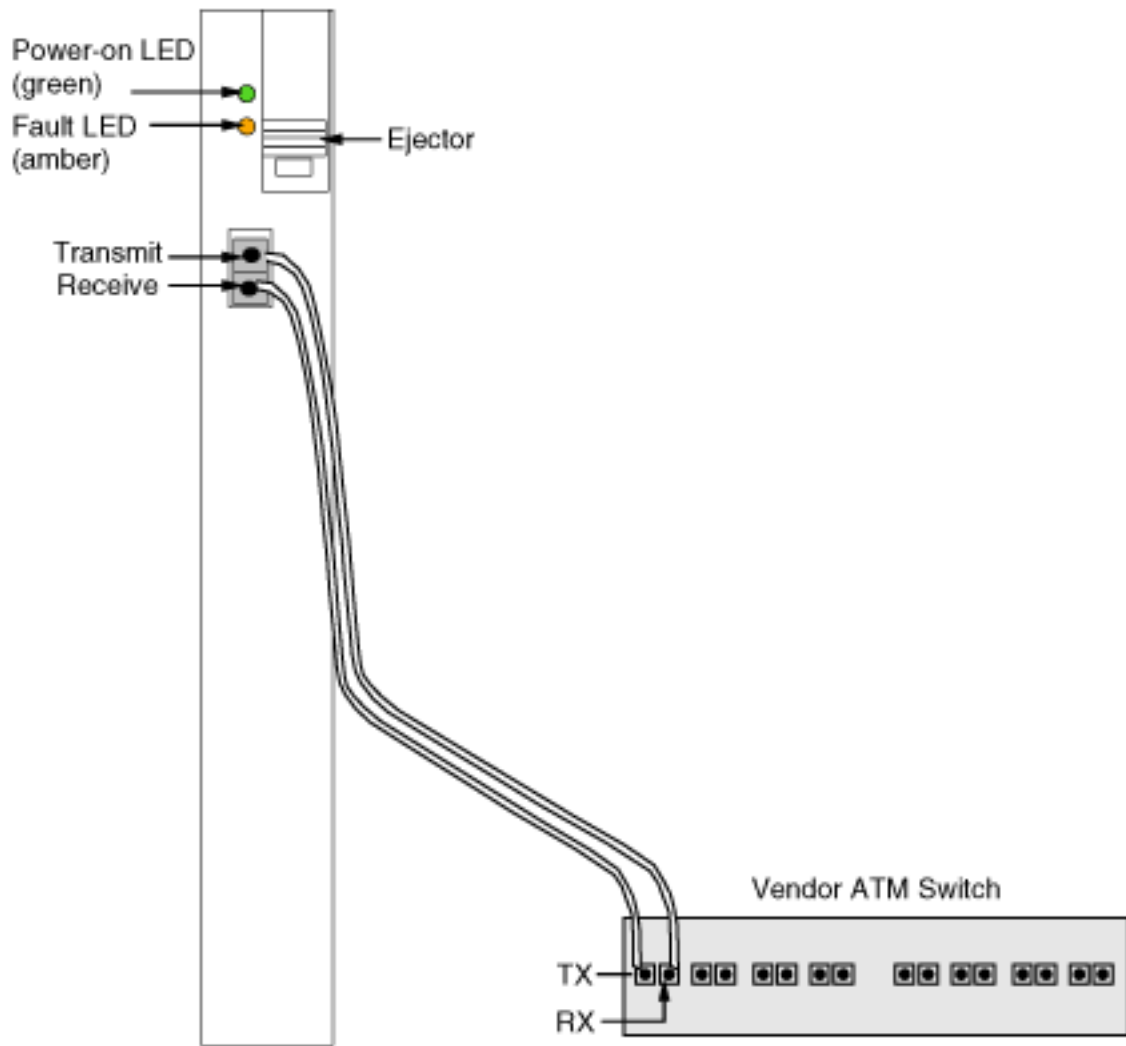
Labeling Communications Cables for an ATM3SA CRU

- 1 Find the [group, module, and slot](#) in which the ATM ServerNet adapter (ATM3SA) CRU is installed.

The [figure](#) shows the the ATM3SA CRU slot locations.

- 2 Tag each fiber optic cable connected to the ATM3SA CRU with a physical label, preferably at both ends. The label should include the following information:
 - The logical device name assigned to the Asynchronous Transfer Mode (ATM) line. For example, \$ATM2.
 - Whether the cable should be connected to the Transmit or Receive port on the ATM3SA CRU. The Transmit port is the top port and the Receive port is the bottom port. The [figure](#) shows the location of the the Transmit and Receive ports.
 - A description of the equipment and connector to which the cable is to be connected.
 - The slot location of the ATM3SA CRU to which the cable is connected.

Figure: ATM3SA CRU External Indicators



Removing an ATM3SA CRU

Note: Whenever you handle an ATM ServerNet adapter (ATM3SA) CRU, you should follow [standard operating practices](#) to avoid damage to the equipment.

- 1 Disconnect the fiber optic cables from the ATM3SA CRU.
- 2 Put on your electrostatic discharge (ESD) wriststrap and connect the grounding clip securely to an exposed, unpainted, metal surface on the service side of the system enclosure, such as the processor multifunction (PMF) CRU or I/O multifunction (IOMF) CRU ventilation holes

The [figure](#) shows how to connect the grounding clip to the ventilation holes on the PMF CRU or IOMF CRU.

- 3 Unlatch the ejector on the ATM3SA CRU by pressing the blue-green tab on the ejector and pulling the ejector outward to unseat the ATM3SA CRU from the backplane.
- 4 Grasp the ATM3SA CRU by its ejector in one hand and slowly pull the ATM3SA CRU out of the slot while supporting the bottom edge of the ATM3SA CRU with the other hand.

Note: The ATM3SA CRU weighs 6.75 pounds (3 kilograms).

The [figure](#) shows how to pull the ATM3SA CRU out of the slot.

- 5 Place the ATM3SA CRU in an ESD protective bag and return it to its original packing container.

Figure: Grounding Clip Connected to PMF CRU or IOMF CRU Ventilation Holes

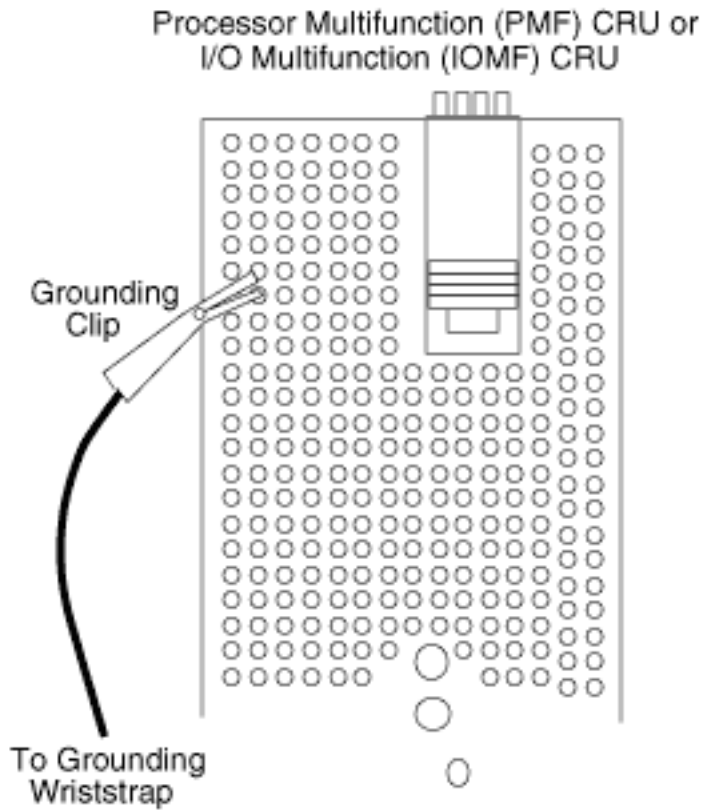
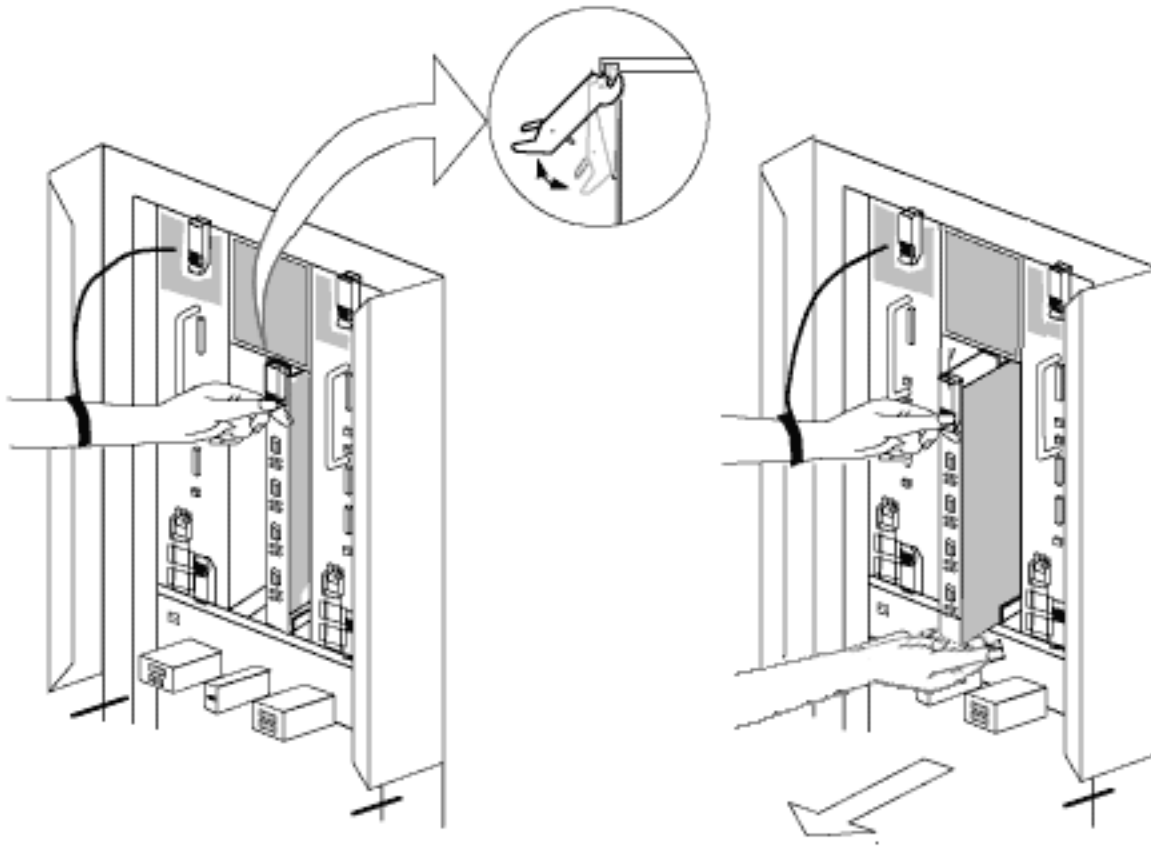




Figure: Removing an ATM3SA CRU




Inspecting an ATM3SA CRU


 **Note:** Whenever you handle an ATM ServerNet adapter (ATM3SA) CRU, you should follow [standard operating practices](#) to avoid damage to the equipment.

Visually inspect the ATM3SA CRU and the backplane connector for damage. Use a flashlight, if necessary, to check for bent or broken pins. You can damage pins by bumping or jamming the ATM3SA CRU's shell against a surface, which can partially close the hole in the connector-pin socket. If an ATM3SA CRU has a damaged connector-pin socket, do not install it.

 **Caution:** If you plug an ATM3SA CRU that has a damaged socket into a slot, that ATM3SA CRU's backplane pins and the connectors on other adapter boards that are plugged into that slot can be damaged. Moving a damaged board from slot to slot can damage other slots and other adapter boards.

Installing an ATM3SA CRU

 **Note:** Whenever you handle an ATM ServerNet adapter (ATM3SA) CRU, you should follow [standard operating practices](#) to avoid damage to the equipment.

- 1 Put on the electrostatic discharge (ESD) wriststrap and attach the grounding clip to the antistatic mat.
- 2 Place the package containing the ATM3SA CRU on the antistatic mat.
- 3  **Caution:** When opening the packing container, be careful not to cut into the ESD protective bag.

Open the packing container and remove the ATM3SA CRU.

- 4 Disconnect the grounding clip of your ESD wriststrap from the antistatic mat and connect it to an exposed, unpainted metal surface on the ATM3SA CRU.
- 5 Grasp the ATM3SA CRU by its ejector in one hand, support the bottom edge of the ATM3SA CRU with the other hand, and carry the ATM3SA CRU to the service side of the system enclosure and set it down.

 **Note:** The ATM3SA CRU weights 6.75 pounds (3 kilograms).

- 6 Disconnect the grounding clip of your ESD wriststrap from the ATM3SA CRU and connect it to an exposed, unpainted, metal surface on the service side of the system enclosure, such as the processor multifunction (PMF) CRU or I/O multifunction (IOMF) CRU ventilation holes.

The [figure](#) shows how to connect the grounding clip to the ventilation holes on the PMF CRU or IOMF CRU .

- 7 With the ejector on the ATM3SA CRU in the full-open position, grasp the ATM3SA CRU by the ejector with one hand and support the bottom edge of the ATM3SA CRU with the other hand. Hold the ATM3SA CRU so that its ejector is at the top and insert the ATM3SA CRU into the upper part of the carrier.

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Caution: Apply equal pressure to both the top and bottom of the ATM3SA CRU when pushing it into the slot to avoid damaging the connector pins. If pins are damaged, both the ATM3SA CRU and the backplane (or enclosure) must be replaced.

Push the ATM3SA CRU to the rear of the slot, but don't force it.

The [figure](#) shows how to install an ATM3SA CRU.

- 9 Press the blue-green tab on the ATM3SA CRU ejector and latch the ejector to seat the ATM3SA against the backplane.
- 10 Disconnect the grounding clip of your ESD wriststrap from the enclosure.
- 11 Connect the fiber optic cables to the ATM3SA CRU. Use the labels on the cables to make sure that the Transmit port on the ATM3SA CRU is connected to a Receive (RX) port on the vendor ATM switch and the Receive port on the ATM3SA CRU is connected to a Transmit (TX) port on the vendor ATM switch.

The [figure](#) shows how to connect the fiber optic cables to the ATM3SA CRU and vendor ATM switch.

Figure: Installing an ATM3SA CRU

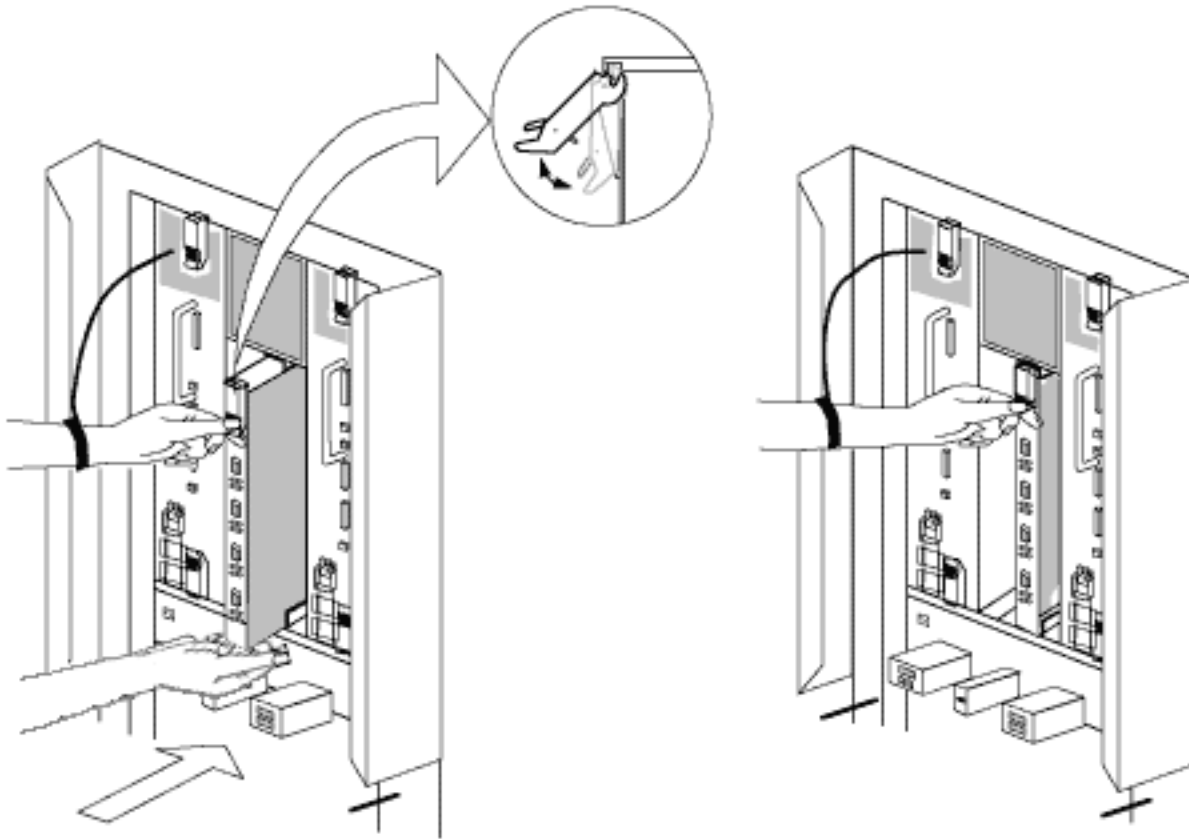
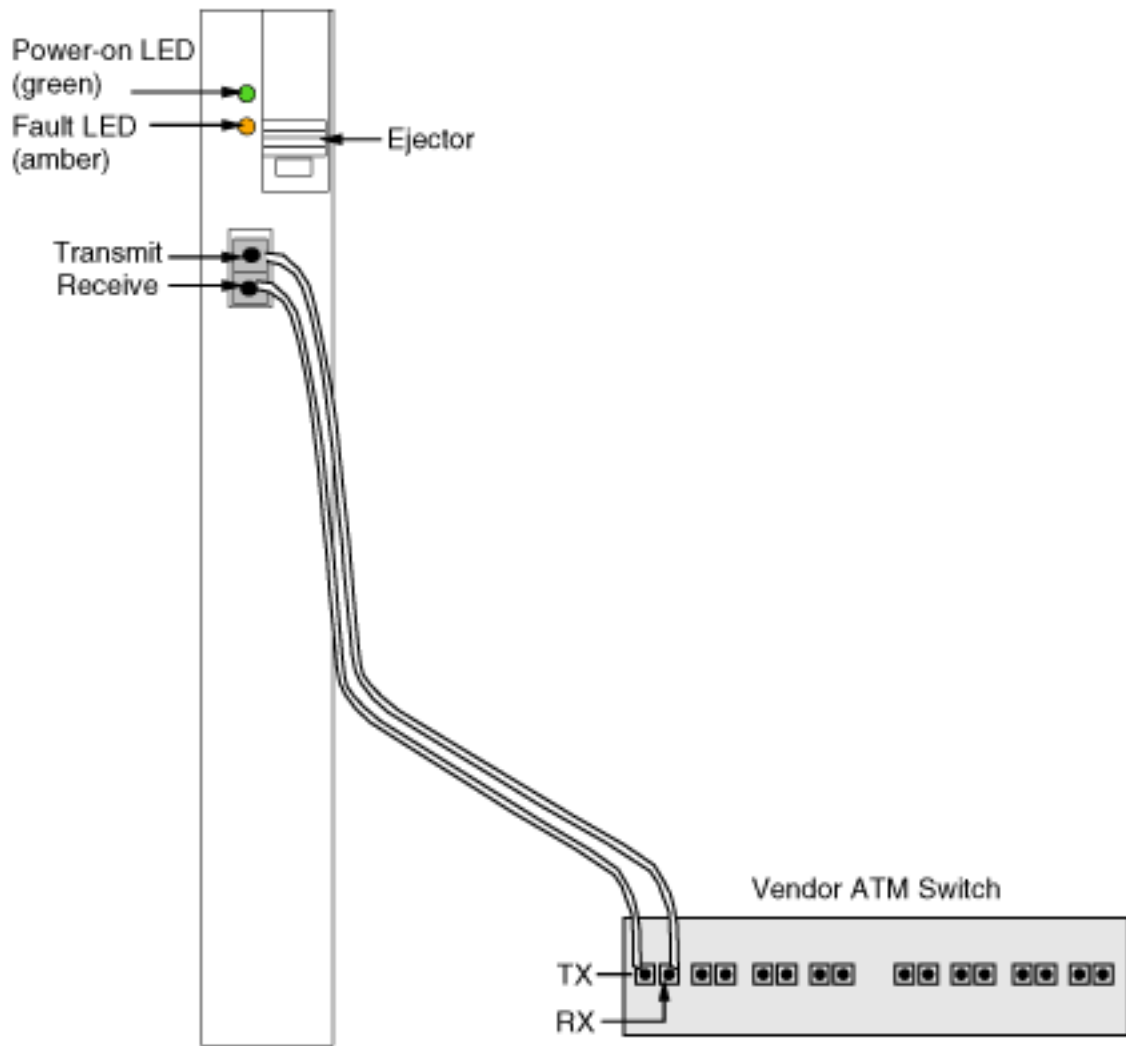



Figure: ATM3SA CRU Hardware Connection



Checking the Installation of an ATM3SA CRU

- 1 Make sure that the power-on LED (green light) is on.

 **Note:** The fault LED (amber light) flashes when the ATM ServerNet adapter (ATM3SA) CRU is installed and continues to flash while the condition of the ATM3SA CRU is tested. The test that is executed is the power-on self-test (POST). The fault LED goes off when the POST successfully finishes.

The [figure](#) shows the location of the power-on LED and fault LED.

- 2 If the power-on LED does not come on, one or more of the POST tests might not have passed or the POST was never started. Do one or both of the following:
 - Reseat the ATM3SA CRU.
 - Check the ATM3SA CRU and backplane connector for damaged pins.

If the power-on LED does not come on after you reseat the ATM3SA CRU, you must replace the ATM3SA CRU. [Click here](#) to return to the beginning of this procedure.

If the ATM3SA CRU or backplane connector have damaged pins, both the ATM3SA CRU and backplane (or enclosure) must be replaced. For backplane replacement instructions, see the NonStop S-Series Service Provider Supplement. For ATM3SA CRU replacement instructions, [click here](#) to return to the beginning of this procedure.

Starting an ATM3SA CRU

Note: An ATM ServerNet adapter (ATM3SA) CRU usually starts automatically within a few minutes after it has been installed.

- 1 Verify that the ATM3SA CRU ADAPTER object is in the STARTED state.

Use the SCF STATUS ADAPTER command:

```
STATUS ADAPTER $<adapter-name>
```

The [example](#) shows the status of the ADAPTER object.

- 2 If the ATM3SA CRU ADAPTER object is in the STOPPED state, start it and its subordinate objects.

You can use SCF, OSM, or TSM to perform this step.

Using SCF:

Use the SCF START ADAPTER command with the SUB ALL option:

```
START ADAPTER $<adapter-name>, SUB ALL
```

Using OSM or TSM:

1. In the tree pane, select the ATM3SA CRU
 2. Select **Display> Actions**.
 3. Click **Start**.
 4. Click **Perform action**.
- 3 If the SCF STATUS ADAPTER command shows that the ADAPTER object is still in the STARTING state after a few minutes or if OSM or TSM indicates that the resource needs attention, do the following:
 - Check for event messages in the Event Message Service (EMS) log using the OSM or TSM Event Viewer. Refer to the Operator Messages Manual for cause, effect, and recovery information for event messages.
 - Check the firmware version of the new ATM3SA CRU. Update the firmware if necessary.


To use the OSM Multi-Resource Actions dialog box, see the OSM online help or the OSM User's Guide.

To use TSM to check the firmware version, do the following:

1. From the **Display** menu, choose **Firmware Update**. The Firmware Update dialog box is displayed.
2. From the **Resource type** menu, choose ATM CRU.
3. From the **Display** menu, select **Down-rev** to display the ATM3SA CRUs to be updated. A list of resources whose firmware is older than the version of the SYSnn is displayed in the **Available** list box.

If the ATM3SA CRU appears in the Available list box, do the following to update its firmware:

1. Select the ATM3SA CRU and click **Add** to include it in the **Selected** window.
2. Click **Specify other location** if you want to specify the volume and subvolume for the firmware file location.

 **Note:** TSM downloads the firmware object code file from the configured location (specified by the FIRMWAREFILENAME attribute) unless you specify a different volume and subvolume.

3. Choose **Perform action** to update the firmware. You can monitor the action in the **Firmware Update Action Summary** dialog box.

Example: Verifying That the ADAPTER Object for an ATM3SA CRU Is Started

This is an example of using the SCF STATUS ADAPTER command:

```
->STATUS ADAPTER $AM2
```

```
ATM Status ADAPTER
```

Name	State	Substate	Trace	Time Loaded
\$AM2	STARTED	OPERATIONAL	OFF	10 Feb 1998, ..

Note that the ADAPTER object is in the STARTED state.

Starting the Communications Lines That Use an ATM3SA CRU

- 1 Start the TCP/IP subnets.

Use the SCF START SUBNET command:

```
START SUBNET  
$<tcpip-process-name>.#<subnet-name>
```

- 2 Start the WAN subsystem input/output processes (IOPs).

Use the SCF START DEVICE command:

```
START DEVICE $ZZWAN.#<device-name>
```

- 3 Start the lines.

Use the SCF START LINE command to start a single line:

```
START LINE $<line-name>
```

Use the SCF START PATH command to start all the lines in an Expand multiline path:

```
START PATH $<path-name>
```

Verifying That the Communications Lines That Use an ATM3SA CRU Are Started

- 1 Verify that the TCP/IP subnets are started.

Use the SCF STATUS SUBNET command:

```
STATUS SUBNET
$<tcpip-process-name>.#<subnet-name>
```

The [example](#) shows the output of this command.

- 2 Verify that the WAN subsystem input/output processes (IOPs) are started.

Use the SCF STATUS DEVICE command:

```
STATUS DEVICE $ZZWAN.#<device-name>
```

The [example](#) shows the output of this command.

- 3 Verify that the lines are started.

Use the SCF STATUS LINE command for a single line:

```
STATUS LINE $<line-name>
```

Use the SCF STATUS PATH command for an Expand multiline path:

```
STATUS PATH $<path-name>
```

The [example](#) shows the output of these commands.

- 4 If a SUBNET, DEVICE, LINE, or PATH object is not in the STARTED state, check the event log by using the OSM or TSM Event Viewer. See the Operator Messages Manual for event message cause, effect, and recovery information.

Example: Verifying That a TCP/IP Subnet Is Started

This is an example of the SCF STATUS SUBNET command:

```
-> STATUS SUBNET $ZTC01.#SN2
```

```
TCPIP Status SUBNET \COWBOY.$ZTC01.#SN2
```

Name	Status
#SN2	STARTED

Note that the subnet is in the STARTED state.

Example: Verifying That a WAN Subsystem IOP Is Started

This is an example of the SCF STATUS DEVICE command:

```
-> STATUS DEVICE $ZZWAN.#LINE1
```

```
WAN Manager STATUS DEVICE for DEVICE \COWBOY.$ZZWAN.#LINE1  
State :..... STARTED
```

```
LDEV number.... 110
```

```
PPIN..... 2 ,13
```

```
BPIN..... 3 ,14
```

Note that the WAN subsystem input/output process (IOP) is in the STARTED state.

Example: Verifying That a Line Is Started

This is an example of the SCF STATUS LINE command:

```
-> STATUS LINE $LINE1
```

```
EXPAND Status LINE1
```

Name	State	PPID	BPID	CIU-Path	ConMgr-LDEV
\$SATH00	STARTED	2, 10	3, 7	A	91

Note that the line is in the STARTED state.

This is an example of the SCF STATUS PATH command:

```
-> STATUS PATH $PATH
```


```
EXPAND Status PATH
```

Name	State	PPID	BPID	Lines #
\$PSHOT	STARTED	2, 15	3, 15	2

Note that the path is in the STARTED state.

Resuming Customer Applications

- 1 Perform any actions necessary to resume customer applications.

 **Note:** The actions required to perform this step depend on the customer's application.

- 2 Notify end users that applications are now available.

Viewing the Operator Log (\$0) Using the OSM or TSM Event Viewer


You can use either the OSM or the TSM Event Viewer to view \$0.

Using OSM

- 1 From a system console, launch the OSM Event Viewer or by doing one of the following:
 - From the Start button:
 - a. Select: **Start>Programs>HP OSM>OSM Event Viewer**. The OSM Event Viewer Home Page appears.
 - b. Select a system.
 - **From the OSM Service Connection:**
 - a. **Log on to the server using the OSM Service Connection**
 - b. **Select Tools>Event Viewer.**

The Log On dialog box appears.

- 2 Enter a NonStop Kernel operating system user ID and password and click **Log on**.
- 3 In the Event Source(s) field, enter **\$0**.

 **Note:** You can also select the timeframe and other filter criteria.

- 4 Click **Show Events**.
- 5 Browse through the event messages that are stored in \$0 for information on when these events were generated.

For detailed information about an event, click the link for that event. The Event Detail dialog box appears.

For more information on event messages, refer to the Operator Messages Manual.

See the OSM Migration Guide or the OSM User's Guide for more information on launching and logging on to the OSM Event Viewer. See OSM Event Viewer online help for information on using the OSM Event Viewer.

Using TSM

- 1 From a system console, launch the TSM Event Viewer Application by doing one of the following:
 - From the Start button, select:
 - For TSM client software Versions 2000A and later:
Start>Programs> Compaq TSM>TSM Event Viewer
 - For TSM client software Versions 10.0 and earlier:
Start>Programs>TSM Client> TSM Event Viewer
 - Log on to the server using the TSM Service Application and select **Display>Events**.
 - Open the TSM Low-Level Link and select **Display>Events**.

The TSM EMS Event Viewer dialog box appears.

- 2 Select **File>Log on**. The Log on to NSK System dialog box appears.
- 3 Select a server, type in a NonStop Kernel operating system user ID, and click **OK**.
- 4 From the **Setup** menu, choose **Source** criteria.
- 5 On the Setup Search Criteria **Sources** tab, under **Available Sources**, choose **\$0**, and, if necessary, click **Add** to add it to the list of Selected Sources. If there are other sources listed in the Selected Sources list, you might want to remove them. Select the source you wish to remove, and click **Remove**. When you are done, click **OK**.

 **Note:** You can also select the timeframe and subsystem events you wish to view.

- 6 Browse through the event messages that are stored in \$0 for information on when these events were generated.

For detailed information about an event, select the event and from the **Display** menu, choose **Detail**. The Event Detail dialog box appears.

For more information on event messages, see the Operator Messages Manual.

See the TSM Online User Guide for more information on launching and logging on to the TSM Event Viewer. See TSM Event Viewer online help for information on using the

TSM Event Viewer.

Viewing the Service Log (\$ZLOG) Using the OSM or TSM Event Viewer


You can use either the OSM or the TSM Event Viewer to view \$ZLOG.

Using OSM

- 1 From a system console, launch the OSM Event Viewer or by doing one of the following:
 - **From the OSM Service Connection:**
 - a. **Log on to the server using the OSM Service Connection**
 - b. **Select Tools>Event Viewer.**
 - From the Start button:
 - a. Select: **Start>Programs>HP OSM>OSM Event Viewer**. The OSM Event Viewer Home Page appears.
 - b. Select a system.

The Log On dialog box appears.

- 2 Enter a NonStop Kernel operating system user ID and password and click **Log on**.
- 3 In the Event Source(s) field, enter **\$ZLOG**.

 **Note:** You can also select the timeframe and other filter criteria.

- 4 Click **Show Events**.
- 5 Browse through the event messages that are stored in the \$ZLOG for information on when these events were generated.

For detailed information about an event, click the link for that event. The Event Detail dialog box appears.

For more information on event messages, refer to the Operator Messages Manual.

See the OSM Migration Guide or the OSM User's Guide for more information on launching and logging on to the OSM Event Viewer. See OSM Event Viewer online help for information on using the OSM Event Viewer.

Using TSM

- 1 From a system console, launch the TSM Event Viewer Application by doing one of the following:
 - From the Start button, select:
 - For TSM client software Versions 2000A and later:
Start>Programs> Compaq TSM>TSM Event Viewer
 - For TSM client software Versions 10.0 and earlier:
Start>Programs>TSM Client> TSM Event Viewer
 - Log on to the server using the TSM Service Application and select **Display>Events**.
 - Open the TSM Low-Level Link and select **Display>Events**.

The TSM EMS Event Viewer dialog box appears.

- 2 Select **File>Log on**. The Log on to NSK System dialog box appears.
- 3 Select a server, type in a NonStop Kernel operating system user ID, and click **OK**.
- 4 From the **Setup** menu, choose **Source** criteria.
- 5 On the Setup Search Criteria **Sources** tab, under **Available Sources**, choose **\$ZLOG**, and if necessary, click **Add** to add it to the list of Selected Sources. If there are other sources listed in the Selected Sources list, you might want to remove them. Select the source you wish to remove, and click **Remove**. When you are done, click **OK**.

 **Note:** You can also select the timeframe and subsystem events you wish to view.

- 6 Browse through the event messages that are stored in the \$ZLOG for information on when these events were generated.

For detailed information about an event, select the event and from the **Display** menu, choose **Detail**. The Event Detail dialog box appears.

For more information on event messages, see the Operator Messages Manual.

See the TSM Online User Guide for more information on launching and logging on to the TSM Event Viewer. See TSM Event Viewer online help for information on using the

TSM Event Viewer.

Managing the Windows NT Event Viewer Application Log

The event viewer has 3 logs: an Application log, a Security log, and a System log. Each log can contain a limited number of entries; for example, 512 KB. The Application log can hit the maximum size when you are running the TSM service application or performing a system discovery using the TSM Low-Level Link.

 **Note:** OSM is not supported on workstations running the Windows NT operating system.

To prevent a log from becoming full, clear or reconfigure the log. You can change the size of the log and select options such as "Overwrite events as needed" and "Overwrite events older than xx days." Normally, the default is "Overwrite events older than 7 days."

To clear the NT Application Event Log:

- 1 Log on as an administrator or a member of the administrator's group.
- 2 On the task bar, select **Start> Programs> Administrative Tools (Common)> Event Viewer**. The Event Viewer window appears.
- 3 From the log menu, select **Application**.
- 4 From the log menu, select **Clear All Events**. All NT Application events are cleared from the log file.
- 5 Close the Event Viewer window.

To configure the NT Application Event Log:

- 1 On the tool bar, select **Status**. The Event Viewer window appears.
- 2 From the log menu, select **Application**.
- 3 From the log menu, select **Log Settings**. The Event Log Settings dialog box appears.
- 4 You can increase the size of the log file, and select one of the overwrite options.
- 5 Close the Event Viewer window.

For more information, refer to the NT Event Viewer online help.

Managing the Windows Event Viewer Application Log

The event viewer has 3 logs: an Application log, a Security log, and a System log. Each log can contain a limited number of entries; for example, 512 KB. The Application log can hit the maximum size when you are running the TSM Service Application (but not the OSM Service Connection) or performing a system discovery using the OSM or TSM Low-Level Link. To prevent a log from becoming full, clear or reconfigure the log. You can change the size of the log and select options such as "Overwrite events as needed" and "Overwrite events older than xx days." Normally, the default is "Overwrite events older than 7 days."

To clear the Application Log:

- 1 Log on as an administrator or a member of the administrator's group.
- 2 On the task bar, select **Start>Settings>Control Panel**, and then double-click **Administrative Tools** and **Event Viewer**. The Event Viewer window appears.
- 3 In the control tree pane, click the log you want to clear.
- 4 Select **Action>Clear all Events**. A message appears "Do you want to save xx Log before clearing it?" Click **Yes** to save the log entries. Click **No** to permanently discard the entries.
- 5 Close the Event Viewer window.

To configure the Application Log:

- 1 Log on as an administrator or a member of the administrator's group.
- 2 On the task bar, select **Start>Settings>Control Panel**, and then double-click **Administrative Tools** and **Event Viewer**. The Event Viewer window appears.
- 3 In the control tree pane, click the log you want to change.
- 4 Select **Action>Properties** and click the **General** tab.
- 5 To change the log's size, change the setting in the **Maximum log size** box.

- 6 Select an option under **When the maximum log size is reached:**
 - Overwrite events as needed.
 - Overwrite event older than xx days (default= 7 days).
 - Do not overwrite events (clear log manually).
- 7 Click **Clear Log** to put the new settings into effect. A message appears "Do you want to save xx Log before clearing it?" Click **Yes** to save the log entries. Click **No** to permanently discard the entries.
- 8 Click **OK** to close the xx Log Properties window..
- 9 Close the Event Viewer window.



Notes:

- After you clear a log, only new events will appear in the log.
- If you select **Do not overwrite events (clear log manually)** in the Properties dialog box of an active log, you must periodically clear the System Log when the log reaches a certain size or when a message notifies you that the log is full.
- You must delete archived logs. These logs cannot be cleared.

For more information, refer to Event Viewer online help. Click **Action** and then **Help**.