

# **ATM Release Notes**

## **For HP-UX Application Release AR0602**

**Edition 5**

**HP 9000 Systems**



**Manufacturing Part Number: J3572-90012**

**E0602**

U.S.A.

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# **1 ATM Release Note**

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## Announcement

This release note contains information that applies to all versions of the ATM product. Version-specific information is located in subsequent chapters, as follows:

- Chapter 2: HP-UX 11.0 ATM software products (version I.11.00.100)
- Chapter 3: HP-UX 11i ATM software products (version K.11.11.30)
- Chapter 4: HP-UX 10.20 ATM software products (version I.10.20.80)

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**NOTE** This Application Release does not contain the ATM software for HP-UX 10.20.

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For a complete list of the corresponding ATM software for each ATM adapter, please refer to Chapter 2 of the *ATM Configuration and Troubleshooting Guide* (HP Part Number B1056-90007).

## Documentation Availability

Table 1-1 below shows how the documentation for this version of the ATM link software products may be obtained in printed form, on the Instant Information CD or on the HP WWW site <http://www.docs.hp.com>, under “Networking & Communications.”

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**NOTE** Although the J2468A adapter has been discontinued, its documentation also applies to other adapters that are still available.

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**Table 1-1** Documentation Availability

Document Title	Part Number	Print	Instant Info CD	WWW Site
<i>HP A5483A HP-PCI ATM/622 Adapter Installation Quick-Reference Card</i>	A5483-9000 4	X		X
<i>HP A5513A and A5515A HP-PCI ATM/155 Adapters Installation Quick-Reference Card</i>	A5513-9000 4	X		X

**Table 1-1 Documentation Availability (Continued)**

<b>Document Title</b>	<b>Part Number</b>	<b>Print</b>	<b>Instant Info CD</b>	<b>WWW Site</b>
<i>J2468A, J3573A, J2469A &amp; J2499A HP-HSC ATM/622 &amp; ATM/155 Adapters Hardware Installation Guide</i>	5966-8702	X		X
<i>HP J3420B HP-HSC ATM/155 Adapter for Industrial Workstations Installation Guide</i>	J3420-9000 1	X	X	X
<i>ATM Configuration and Troubleshooting Guide</i>	B1056-9000 7	X		X
<i>HP ATM Release Note (this document)</i>	J3572-9001 2	X		X

## **Software Availability**

The Native Language Support for all ATM software products are as follows:

- The software is available only in English.
- The product manuals—for both the software and the adapters—are available only in English.



## **2 ATM Version I.11.00.100**

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## What's in This Version

The information in this section is for version I.11.00.100 of the ATM link software products. This software is designed to run on HP-UX version 11.00.x.

### Features and Benefits

This version of the ATM link software products offers the following new features and benefits:

- Support for the A5483A, A5513A, and A5515A HP-PCI adapters on the HP VISUALIZE UNIX J7000 workstation.
- Support for EMS HA (Event Monitoring Service High Availability) over ATM products on HP-UX workstations (7xx series). Please refer to Chapter 6 of *ATM Configuration and Troubleshooting Guide*, HP part number B1056-90007 for detailed information about this feature.

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**NOTE** ATM software versions starting with 11.00.40 carry a new revision of the ATM stack which supports LAN emulation version 2.0 and Multiprotocol Over ATM (MPOA) version 1.0.

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### Software Availability

Table 2-1 below shows how the ATM software and cards are available on HP-UX 11.00 platform.

**Table 2-1 ATM Adapters and Corresponding Software for HP-UX 11.00**

ATM Adapter	Corresponding ATM Software	
	“New” Software Number	“Old” Software Number
A5483A (HP-PCI ATM/622)	A5483A (HP-PCI ATM/622 Link Software for A5483A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 11.0)

**Table 2-1 ATM Adapters and Corresponding Software for HP-UX 11.00**

ATM Adapter	Corresponding ATM Software	
	“New” Software Number	“Old” Software Number
A5513A (HP-PCI ATM/155)	A5513A (HP-PCI ATM/155 Link Software for A5513A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 11.0)
A5515A (HP-PCI ATM/155)	A5515A (HP-PCI ATM/155 Link Software for A5515A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 11.0)
J2468A (HP-HSC ATM/622)	J2468A (HP-HSC ATM/622 Link Software for J2468A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 11.0)
J2469A (HP-HSC ATM/155)	J2469A (HP-HSC ATM/155 Link Software for J2469A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 11.0)
J2499A (HP-HSC ATM/155)	J2499A (HP-HSC ATM/155 Link Software for J2499A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 11.0)
J2804A (HP-PB ATM/155)	J2804A (HP-PB ATM/155 Link Software for J2804A)	J2805BA (HP-PB ATM/155 Link Software for HP-UX 11.0)
J3420B (HP-HSC ATM/155)	J3420B (HP-HSC ATM/155 Link Software for J3420B)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 11.0)

**Table 2-1 ATM Adapters and Corresponding Software for HP-UX 11.00**

ATM Adapter	Corresponding ATM Software	
	“New” Software Number	“Old” Software Number
J3557A (HP-PCI ATM/155)	J3557A (HP-PCI ATM/155 Link Software for J3557A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 11.0)
J3573A (HP-HSC ATM/622)	J3573A (HP-HSC ATM/622 Link Software for J3573A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 11.0)

**TIP**

When you run `swinstall` to install the ATM software, you will see “new” software products that have the same names as the ATM adapter product numbers (for example, A5483A). However, you *also* will see software products that have the “old” software product numbers (J2805BA, J2806CA, and J3572BA). In the future, the “old” software products will no longer be displayed in `swinstall`, and you will see only the “new” software products. Until then, Table 2-1 above will show the “old” software product numbers *and* the “new” numbers. Also, although the J2468A, J2804A, and J3557A adapters have been discontinued, they and their corresponding software numbers are still shown in Table 2-1 (and you will still see them when you run `swinstall`, for backwards compatibility). See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for more details about installing the ATM software products.

## Known Problems and Workarounds

The known problems and corresponding workarounds for version I.11.00.80 of the ATM link software on HP-UX 11.0 are as follows:

- On HP VISUALIZE UNIX B1000, C3000, J5000, and J7000 Workstations, if you are running a firmware version earlier than 3.2, the A5513A and A5515A HP-PCI ATM/155 adapters do not work if they are installed in the 66 MHz slots of those workstations (slot 2 of the B1000 and C3000, and slots 4 and 7 of the J5000 and J7000). The adapters *do* work if they are installed in the 33 MHz slots of those workstations.

**Workaround:** Install B1000/C3000/J5000/J7000 firmware version 3.2 or later. The firmware version 3.2 is available as firmware patch PF\_CBCJ0032 (contact your Hewlett-Packard representative for patch installation information). After the firmware is installed, the adapters will work in any of the PCI slots in the B1000, C3000, J5000, and J7000 workstations. Instructions for checking the firmware revision number are provided in the workstation owner's guide (interrupt the boot process and enter the command `IN -FV` at the main menu of the boot console).

- If you are running an HP ATM version later than I.11.00.10 and are using a Nortel Centillion ATM switch that has a software version earlier than 4.0, you will most likely experience interoperability problems (see Nortel support reference number CR 80877).

**Workaround:** Upgrade your Nortel Centillion switch to software version 4.0 or later.

- Installation error when installing EMS on a system where the Japanese version of EMS is already installed.

The error messages that are generated are as follows:

```
ERROR: The EMS (B5736BA) and EMS Japanese (B5736BJ)
       products cannot be selected together. Exit swinstall,
       and run it again - this time only marking and installing
       one or the other.
```

```
ERROR: The "checkinstall" script for "EMS-Config" failed (exit code
       "1"). The script location was
       "/var/tmp/AAAa02046/catalog/EMS-Config/pfiles/checkinstall".
       * This script had errors and the execution of this product
       cannot proceed until the problem is fixed. Check the above
       output from the script for further details.
```

Although these error messages occur, you *do not* have to do anything: ATM and EMS will operate correctly.

## Known Problems and Workarounds

- If you have installed the HP-UX Extension Pack 9905 and are running `swinstall` to install a new version of ATM on top of a previous version of ATM, `swinstall` might seem to be “hung,” with “Rebooting” in the Status field of the “Install Analysis” window.

Select the Logfile... button. You should see this error in the “Log File” window:

```
Internal error. "system_name": You do not have the required
permissions to perform this SD operation. Please check to see that
you have the required permissions using the "swacl" command or see
your system administrator for assistance. This error occurred in
function "SMC_DisplayLogInfo", source file "smc_details.c", line
2110. Please give this information to your Hewlett-Packard support
contact..
```

You should exit the user interface immediately. Proceed at your own risk!

**Workaround:** At this point, select the OK button to exit the “Log File” window. This takes you back to the “Install Analysis” window, where the Status field should contain “Ready.” From the “File” menu, select Exit to exit `swinstall`. The system will reboot, and when it has finished rebooting, the ATM software installation is complete (and correct).

- While an ATM adapter is operational, if you disconnect the ATM cable from the switch and reconnect it to another switch, the ELAN interfaces configured over the ATM adapter might not start automatically.

**Workaround:** Run the `atminit` command to restart the adapter and all of its LANE interfaces.

- When using a FORE switch, you might experience a delay (approximately two to three minutes) in your ELAN interfaces coming up after you reboot the system.

**Workaround:** Ensure that you have *either* of these installed: (1) the FORE patch `asx-i960_6.0.1_1.48662E` or (2) a release of FT later than FT 5.4.

- During system startup, an ELAN interface’s initialization might not complete before the IP initialization starts. This can lead to errors if the IP configuration uses that ELAN interface. An example of this is when static routes use the ELAN interface.

**Workaround:** To avoid this, a tunable delay parameter (`ATM_ELAN_TIMEOUT`) has been added to the ATM subsystem file (`/etc/rc.config.d/atmconf`). This parameter specifies how long the ATM startup script waits for the ELAN interface initializations to complete. Note that the default value for the `ATM_ELAN_TIMEOUT` parameter is 0 (zero), which means “no delay.”

- You might have to specify the LAN type during ELAN interface configuration, if you are in *either* of these situations:

- You have an ELAN connectivity problem, and your ATM switch's manufacturer diagnoses the problem as being caused by the absence of the LAN type during configuration.
- Your ATM switch provides the capability of specifying the LAN type during configuration, and you have configured the LAN Emulation services to require the LAN type during configuration.

**Workaround:** The *only* way you can do this is to manually specify the LAN type (the parameter is called `lan_type`) in the ELAN interface's configuration file; you cannot do this within SAM. Set the parameter `HP_ATM_ELAN_TYPE` as follows:

`HP_ATM_ELAN_TYPE = 802.3` for Ethernet

`HP_ATM_ELAN_TYPE = 802.5` for Token Ring

However, keep in mind that each time you use SAM to modify the interface's configuration, SAM overwrites the ELAN interface configuration file. So, for example, you've manually specified the LAN type in an ELAN interface's configuration file. Then, you later use SAM to modify some other part of the interface's configuration. When you save the configuration in SAM, the previous configuration file (with the LAN type you manually specified) is overwritten. This means you then must manually re-edit the configuration file to re-specify the LAN type.

- At this time, HP's implementation of Multiprotocol Over ATM (MPOA) supports putting the MPS on *only* a FORE router.
- In MPOA, if a shortcut route consists of MPCs that are on HP systems and an MPS that is on a Cisco router, when you try to send traffic over that shortcut, no data will be transferred over the shortcut. This might cause the applications to hang. If you issue the command `atmmgr card_instance_number show` on the MPCs, you will see that a shortcut VCC is established between the MPCs. However, the traffic will not be able to travel over the shortcut VCC.
- In an HA configuration with local recovery, if you have floating IP addresses configured, you may not be able to traffic after both the primary and backup elan interfaces go down, and the primary elan interface comes up before the secondary interface. If both elan interfaces come up, you may recover normal traffic on the secondary interface, by forcing the primary interface to go down temporarily, for instance, by disconnecting and reconnecting the cable (do not reset either the ATM card or the elan interface). If you want the traffic back on the primary interface, for instance, after traffic has resumed on the secondary interface and the primary is up, force the secondary interface to go down temporarily by disconnecting and reconnecting the cable (do not reset either the ATM card or the elan interface).

## Known Problems and Workarounds

- If you are planning on upgrading your operating system to HP-UX version 11i on an L-class or N-class server, you may need to update your system firmware. For additional details, please refer to the *Readme Before Installing or Updating to HP-UX 11i* document provided with your HP product.

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## Compatibility Information and Installation Requirements

This section describes the requirements for installing version I.11.00.80 of the ATM link software on HP-UX 11.0.

### OS Platform and Version Compatibility

You must have already installed HP-UX 11.0 before you install the ATM software.

### Software Requirements

The various software requirements for this release of ATM are described in the subsections below.

#### HP-UX Operating System Patch Dependencies

Table 2-2 below lists the HP-UX 11.0 Operating System patches that ATM has dependencies on. Please note that only some of the patches are required, but we strongly recommend that you also install the other patches listed.

**Table 2-2**                    **ATM HP-UX 11.0 Operating System Patch Dependencies**

<b>HP 9000 System</b>	<b>Required/Recommended</b>	<b>32-Bit/64-Bit</b>	<b>Patch Number</b>	<b>Description</b>
Servers & workstations	Required	32 & 64	PHKL_18543 (also in HP-UX 11.0 ACE 9911)	WSIO CDIO, shared interrupts, and 16-cycle timeout
	Recommended	32 & 64	PHNE_20008	STREAMS
	Recommended	32 & 64	PHNE_20436	ARPA Transport

Contact your Hewlett-Packard representative to install the patch that is appropriate for your HP 9000 system.

### **High Availability Requirements**

To use the High Availability feature for remote recovery, version A.10.10 of the MC/ServiceGuard software must be installed on all cluster systems running the software.

### **V-Class Firmware Requirements**

For this release of ATM, the A5483A, A5513A, and A5515A HP-PCI adapters require the following V-Class system firmware versions:

- For Model V22~~xx~~: Test Station software version 5.0.
- For Model V2500: Test Station software version 1.1.

## Hardware Requirements

You must have an appropriate ATM adapter installed in your HP 9000 system. You can combine adapters, as long as they are all supported for your system. Table 2-3 below lists the supported adapter configurations for HP-UX 11.0. Note that discontinued adapters are not shown.

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**WARNING** For T600 and V-Class servers, the ATM adapters must be installed by qualified Hewlett-Packard personnel. On all of the other models of HP 9000 systems shown in Table 3-3 below, the ATM adapters are customer installable.

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**Table 2-3 HP-UX 11.0 Supported ATM Adapter Configurations**

Bus Type	HP 9000 System	ATM Adapter	Maximum Adapters per System	Maximum VCs per Adapter	Maximum VCs per System
HP-HSC 155	K570/580 and T600 servers	J2469A	6	2048	6144
	K-Class servers (other than K570/580)	J2469A	4	2048	6144
	R380/390 servers and B-, C-, and J-Class workstations	J2499A	4	2048	6144
	D-Class servers	J2499A	4	2048	6144
	74x industrial workstations	J3420B	4	2048	6144

**Table 2-3 HP-UX 11.0 Supported ATM Adapter Configurations (Continued)**

<b>Bus Type</b>	<b>HP 9000 System</b>	<b>ATM Adapter</b>	<b>Maximum Adapters per System</b>	<b>Maximum VCs per Adapter</b>	<b>Maximum VCs per System</b>
HP-HSC 622	D-Class servers	J3573A	1	4096	6144
	R380/390 servers	J3573A	2	4096	6144
HP-PCI 155	V-Class servers	A5513A	16	2048	6144
		A5515A	16	2048	6144
	L-Class and N-Class servers	A5513A	16	2048	6144
	L-Class and N-Class servers	A5515A	16	2048	6144
	B1000, C3000, J5000, and J7000 workstations	A5513A	4	2048	6144
		A5515A	4	2048	6144
HP-PCI 622	V-Class servers	A5483A	8	4096	6144
	L-Class and N-Class servers	A5483A	16	4096	6144
	B1000, C3000, J5000, and J7000 workstations	A5483A	4	4096	6144

**Important:** Listed below are some things you should keep in mind when using the information shown in the table above:

- The “Maximum Adapters per System” column shows the maximum number of ATM adapters the ATM software can support for each class of HP 9000 system. However, keep in mind that some models within a class might have fewer physical slots available for ATM adapters than the number shown in the “Max. Adapters per System” column. Increasing the number of adapters lets you increase the number of VCs (see “Disk Space and Memory Requirements” on page 22 for memory-related limitations). The effective bandwidth will depend mostly on the number and type of HP 9000 systems.
- The “Maximum VCs per Adapter” also depends on the HP 9000’s available RAM at system boot time—the driver checks the amount and limits the number of available VCs accordingly. Table 2-4 below shows, for each affected adapter, the amount of available RAM and the corresponding VC limit. Note that discontinued adapters are not shown.

**Table 2-4 Maximum VCs per Adapter Based on Available RAM**

<b>HP ATM/155 Adapters (A5513A, A5515A, J2469A, J2499A, and J3420B)</b>		<b>HP ATM/622 Adapters (A5483A and J3573A)</b>	
<b>Available RAM</b>	<b>Maximum VCs per Adapter</b>	<b>Available RAM</b>	<b>Maximum VCs per Adapter</b>
Less than or equal to 32 MBytes	256	Less than or equal to 32 MBytes	256
Less than or equal to 64 MBytes	512	Less than or equal to 64 MBytes	512
Less than or equal to 128 MBytes	1024	Less than or equal to 128 MBytes	1024
Greater than 128 MBytes	2048	Less than or equal to 256 MBytes	2048
n/a	n/a	Greater than 256 MBytes	4096

You also can use the `atmmgr show -c` command to display the maximum number of VCs (called “VCCs” in the command’s output) for an adapter.

## Disk Space and Memory Requirements

The disk space and memory requirements are shown below (discontinued adapters are not shown).

- HP-HSC bus.
  - Disk space required to install: 13 MBytes.
  - Disk space required to run: None.
  - Memory space required: Table 2-5 below shows the amount of memory that is required if the maximum number of VCs are configured on each type of ATM adapter. Note that systems with less memory available can support fewer VCs. Also, other drivers present in the system share the memory resources, which might reduce the total number of VCs that can be opened.

**Table 2-5 Memory Requirements for Maximum Configured VCs—HP-HSC**

<b>ATM Adapter</b>	<b>Max. VCs Open Simultaneously</b>	<b>Memory Required (in MBytes)</b>
J2469A and J2499A	2048	256
J3420B	2048	256
J3573A	4096	512

- Swap space required: Not specified.
- HP-PCI bus.
  - Disk space required to install: 12 MBytes.
  - Disk space required to run: None.
  - Memory space required: Minimal.
  - Swap space required: Not specified.

## System State at Installation

To install the ATM adapter, you must turn the system's power off. After you install the ATM adapter, turn the system's power on. Then, install the ATM software (the system is automatically rebooted as part of the installation process).

## **Software Installation Instructions**

See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for detailed information about installing the ATM link software.

Estimated time to install: 30 minutes (this includes hardware and software installation).

## **Known Compatibility or Incompatibility with Third-Party Products**

The ATM software products operate with all UNI 3.0-, UNI 3.1-, and UNI 4.0-compliant ATM switches and equipment that comply with LAN Emulation over ATM versions 1.0 and 2.0 and MPOA version 1.0.

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## Patches and Fixes in This Version

This section lists the fixes and patches that have been applied in version I.11.00.100 of the ATM link software products.

### Patches

This release contains ATM defect fixes through PHNE\_26730.

### Fixes

This release contains the fixes listed in Table 2-6 below.

**Table 2-6** Fixes Included in This Release

CR/SR Number	Description
JAGad93987	Enhancement Request for support of HA ATM on workstation class systems.
JAGae08235	Use of non-recommended keywords in the ATM product and patch control scripts.
JAGae10213	Enhancement request for the <code>elstat</code> command to display the list of multicast MAC address registered on an ELAN interface.
JAGae09966	Failure Indication messages logged by LEC stack are not intuitive.
JAGae01380	Data Page fault in the function <code>LDI_F0_search1_sap_entry()</code>
JAGae00281	Multicast traffic over ATM ELAN may not be restored after failover.
JAGad90435	SAM adds the line <code>ATM_VAR=0</code> instead of updating or replacing it in the <code>/etc/atm/atm_x/nic/atmconf</code> (where <code>x=0,1,2....16</code> ) file, each time the atm configuration is accessed.
JAGad90063	The <code>atmconfig show -n</code> command causes the system to panic if the specified CIP interface corresponds to a non-existent ATM NIC.

**Table 2-6 Fixes Included in This Release (Continued)**

<b>CR/SR Number</b>	<b>Description</b>
JAGad78323	Panic in LDI_F_set_fastpath/bcopy while processing a badly formatted DLPI msg.
JAGad78122	While starting or stopping an ELAN-configured interface card, the following error message is displayed: “[CAAM] Bad Call Reference Value”
JAGad71898	While replacing an obsoleted J3557A ATM card with a new A5513A card, the system fails to initialize the card and displays the error message: “ATM_err_1304: VPI/VCI range is invalid”
JAGad33804	Panic in SPutMsg with vmtrace ON while running netperf tests.
JAGab50672	Memory leak in the 512-byte bucket while running heavy traffic on ELAN interfaces.

**Table 2-6**                    **Fixes Included in This Release (Continued)**

<b>CR/SR Number</b>	<b>Description</b>
JAGad67952	While configuring lan cards on a system using SAM, the following message is displayed even when there are no ATM cards present in the system:

## Software Availability in Native Languages

The Native Language Support for all ATM software products are as follows:

- The software is available only in English.
- The product manuals—for both the software and the adapters—are available only in English.



# **3 ATM Version I.11.11.30**

## What's in This Version

The information in this section is for version K.11.11.30 of the ATM link software products. This software is designed to run on HP-UX version 11i.

### Features and Benefits

This version of the ATM link software products offers the following new features and benefits:

- Support for OLAR (Online Addition and Replacement) with A5483A, A5513A, and A5515A on L- class, N-class, V-class and Superdome servers. Please refer to Chapter 2 of *Configuring HP-UX For Peripherals*, HP part number B2355-90698 for detailed information about this feature.

If you plan on upgrading an existing L-class or N-class system to HP-UX release 11i, read the required OLAR patch information in the Section titled, "Known Problems and Workarounds."

- Support for A5483A, A5513A, and A5515A adapters on the HP VISUALIZE UNIX B2000 and J6000 workstations.
- Support for EMS- HA (Event Monitoring Service High Availability) over ATM products on HP-UX workstations (7xx series). Please refer to Chapter 6 of *ATM Configuration and Troubleshooting Guide*, HP part number B1056-90007 for detailed information about this feature.
- Support for A5483A, A5513A, and A5515A adapters on L3000, A400, A500, and SuperDome servers
- ATM drivers for HSC and PCI adapters support automatic update from HP-UX 10.20 or 11.0 to HP-UX 11i using the *update-ux* tool and specifying the ATM bundle name at the command line or in the GUI when invoked with the *-i* option.

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**NOTE** Automatic update is not supported for the software for HP-PB adapter (J2804A and J2805BA). The software for HP-PB adapter must be re-installed after an update from HP-UX 10.20 or 11.0 to HP-UX 11i

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- ATM can now be selected for installation during an HP-UX 11i cold install. This can reduce the number of system reboots required.

## Software Availability

below shows how the ATM software and cards are available on HP-UX 11.11 platform.

**Table 3-1 ATM Adapters and Corresponding Software for HP-UX 11.11**

ATM Adapter	Corresponding ATM Software	
	Software Number on HP-UX 11i	“Old” Software Numbers on HP-UX 11.0 or HP-UX 10.20
A5483A (HP-PCI ATM/622)	ATM-00 (PCI ATM; Supptd HW=A5483A/ A5513A/A5515A/J3557A; SW=J3572AA/J3572BA)	A5483A or J3572BA
A5513A (HP-PCI ATM/155)	ATM-00 (PCI ATM; Supptd HW=A5483A/ A5513A/A5515A/J3557A; SW=J3572AA/J3572BA)	A5513A or J3572BA
A5515A (HP-PCI ATM/155)	ATM-00 (PCI ATM; Supptd HW=A5483A/ A5513A/A5515A/J3557A; SW=J3572AA/J3572BA)	A5515A or J3572BA
J2468A (HP-HSC ATM/622)	ATM-01 (HSC ATM: Supptd HW=J2468A/ J2469A/J2499A/J3420B/ J573A; SW=J2806CA)	J2468A or J2806CA
J2469A (HP-HSC ATM/155)	ATM-01 (HSC ATM: Supptd HW=J2468A/ J2469A/J2499A/J3420B/ J573A; SW=J2806CA)	J2469A or J2806CA

**Table 3-1 ATM Adapters and Corresponding Software for HP-UX 11.11**

ATM Adapter	Corresponding ATM Software	
	Software Number on HP-UX 11i	“Old” Software Numbers on HP-UX 11.0 or HP-UX 10.20
J2499A (HP-HSC ATM/155)	ATM-01 (HSC ATM: Supptd HW=J2468A/ J2469A/J2499A/J3420B/ J573A; SW=J2806CA)	J2499A or J2806CA
J2804A (HP-PB ATM/155)	J2804A (HP-PB ATM/155 Link Software for J2804A)	J2804A or J2805BA (HP-PB ATM/155 Link Software 6.0 for HP-UX 9000)
J3420B (HP-HSC ATM/155)	ATM-01 (HSC ATM: Supptd HW=J2468A/ J2469A/J2499A/J3420B/ J573A; SW=J2806CA)	J3420B or J2806CA
J3557A (HP-PCI ATM/155)	ATM-00 (PCI ATM; Supptd HW=A5483A/ A5513A/A5515A/J3557A; SW=J3572AA/J3572BA)	J3557A or J3572BA
J3573A (HP-HSC ATM/622)	ATM-01 (HSC ATM: Supptd HW=J2468A/ J2469A/J2499A/J3420B/ J573A; SW=J2806CA)	J3573A or J2806CA

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**TIP**

The software product numbers have been consolidated in HP-UX 11i. The software product number corresponding to all ATM PCI adapters is ATM-00. The software product number corresponding to all HSC adapters is ATM-01. The product number corresponding to HP-PB adapters is unchanged (J2804A).

When a system (with ATM product already installed) is updated from HP-UX 10.20 or 11.0 to HP-UX 11i using the *update-ux* tool, you will no longer see the “old” ATM software product numbers. Instead you will see the new ATM software product numbers for HP-UX 11i. Automatic update is not supported for the software for HP-PB adapter. The software for HP-PB adapter must be re-installed after an update from HP-UX 10.20 or 11.0 to HP-UX 11i.

See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for more details about installing the ATM software products.

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## Known Problems and Workarounds

The known problems and corresponding workarounds for version K.11.11.10 of the ATM link software on HP-UX 11i are as follows:

- For those wishing to use OLAR, your system may need to update its firmware. For additional details, please refer to the *Readme Before Installing or Updating to HP-UX 11i* document provided with your HP product.
- On HP VISUALIZE UNIX B1000, C3000, J5000, and J7000 Workstations, if you are running a firmware version earlier than 3.2, the A5513A and A5515A HP-PCI ATM/155 adapters do not work if they are installed in the 66 MHz slots of those workstations (slot 2 of the B1000 and C3000, and slots 4 and 7 of the J5000 and J7000). The adapters *do* work if they are installed in the 33 MHz slots of those workstations.

**Workaround:** Install B1000/C3000/J5000/J7000 firmware version 3.2 or later. The firmware version 3.2 is available as firmware patch PF\_CBCJ0032 (contact your Hewlett-Packard representative for patch installation information). After the firmware is installed, the adapters will work in any of the PCI slots in the B1000, C3000, J5000, and J7000 workstations. Instructions for checking the firmware revision number are provided in the workstation owner's guide (interrupt the boot process and enter the command `IN -FV` at the main menu of the boot console).

- If you are using a Nortel Centillion ATM switch that has a software version earlier than 4.0, you will most likely experience interoperability problems (see Nortel support reference number CR 80877).

**Workaround:** Upgrade your Nortel Centillion switch to software version 4.0 or later.

- Installation error when installing EMS on a system where the Japanese version of EMS is already installed.

The error messages that are generated are as follows:

```
ERROR: The EMS (B5736BA) and EMS Japanese (B5736BJ)
       products cannot be selected together. Exit swinstall,
       and run it again - this time only marking and installing
       one or the other.
```

```
ERROR: The "checkinstall" script for "EMS-Config" failed (exit code
"1"). The script location was
"/var/tmp/AAAAa02046/catalog/EMS-Config/pfiles/checkinstall".
* This script had errors and the execution of this product
  cannot proceed until the problem is fixed. Check the above
  output from the script for further details.
```

Although these error messages occur, you *do not* have to do anything: ATM and EMS will operate correctly.

- While an ATM adapter is operational, if you disconnect the ATM cable from the switch and reconnect it to another switch, the ELAN interfaces configured over the ATM adapter might not start automatically.

**Workaround:** Run the `atminit` command to restart the adapter and all of its LANE interfaces.

- When using a FORE switch, you might experience a delay (approximately two to three minutes) in your ELAN interfaces coming up after you reboot the system.

**Workaround:** Ensure that you have *either* of these installed: (1) the FORE patch `asx-i960_6.0.1_1.48662E` or (2) a release of FT later than FT 5.4.

- During system startup, an ELAN interface's initialization might not complete before the IP initialization starts. This can lead to errors if the IP configuration uses that ELAN interface. An example of this is when static routes use the ELAN interface.

**Workaround:** To avoid this, a tunable delay parameter (`ATM_ELAN_TIMEOUT`) has been added to the ATM subsystem file (`/etc/rc.config.d/atmconf`). This parameter specifies how long the ATM startup script waits for the ELAN interface initializations to complete. Note that the default value for the `ATM_ELAN_TIMEOUT` parameter is 0 (zero), which means “no delay.”

- You might have to specify the LAN type during ELAN interface configuration, if you are in *either* of these situations:
  - You have an ELAN connectivity problem, and your ATM switch's manufacturer diagnoses the problem as being caused by the absence of the LAN type during configuration.
  - Your ATM switch provides the capability of specifying the LAN type during configuration, and you have configured the LAN Emulation services to require the LAN type during configuration.

**Workaround:** The *only* way you can do this is to manually specify the LAN type (the parameter is called `lan_type`) in the ELAN interface's configuration file; you cannot do this within SAM. Set the parameter `HP_ATM_ELAN_TYPE` as follows:

`HP_ATM_ELAN_TYPE = 802.3` for Ethernet

`HP_ATM_ELAN_TYPE = 802.5` for Token Ring

However, keep in mind that each time you use SAM to modify the interface's configuration, SAM overwrites the ELAN interface configuration file. So, for example, you've manually specified the LAN type in an ELAN interface's configuration file. Then, you later use SAM to modify some other part of the interface's configuration. When you

save the configuration in SAM, the previous configuration file (with the LAN type you manually specified) is overwritten. This means you then must manually re-edit the configuration file to re-specify the LAN type.

- At this time, HP's implementation of Multiprotocol Over ATM (MPOA) supports putting the MPS on *only* a FORE router.
- In MPOA, if a shortcut route consists of MPCs that are on HP systems and an MPS that is on a Cisco router, when you try to send traffic over that shortcut, no data will be transferred over the shortcut. This might cause the applications to hang. If you issue the command `atmmgr card_instance_number show` on the MPCs, you will see that a shortcut VCC is established between the MPCs. However, the traffic will not be able to travel over the shortcut VCC.
- In an HA configuration with local recovery, if you have floating IP addresses configured, you may not be able to traffic after both the primary and backup elan interfaces go down, and the primary elan interface comes up before the secondary interface. If both elan interfaces come up, you may recover normal traffic on the secondary interface, by forcing the primary interface to go down temporarily, for instance, by disconnecting and reconnecting the cable (do not reset either the ATM card or the elan interface). If you want the traffic back on the primary interface, for instance, after traffic has resumed on the secondary interface and the primary is up, force the secondary interface to go down temporarily by disconnecting and reconnecting the cable (do not reset either the ATM card or the elan interface).

## Compatibility Information and Installation Requirements

This section describes the requirements for installing version K.11.11.10 of the ATM link software on HP-UX 11i.

### OS Platform and Version Compatibility

HSC and PCI support automatic update of the OS using the *update-ux* tool, but for HP-PB you must first install HP-UX 11i.

### Software Requirements

The various software requirements for this release of ATM are described in the subsections below.

#### High Availability Requirements

To use the High Availability feature for remote recovery, version A.11.09 of the MC/ServiceGuard software must be installed on all cluster systems running the software.

#### V-Class Firmware Requirements

For this release of ATM, the A5483A, A5513A, and A5515A HP-PCI adapters require the following V-Class system firmware versions:

- For Model V22<sub>xx</sub>: Test Station software version 5.0.
- For Model V2500: Test Station software version 1.1.

## Hardware Requirements

You must have an appropriate ATM adapter installed in your HP 9000 system. You can combine adapters, as long as they are all supported for your system. The table below lists the supported adapter configurations for HP-UX 11i. Note that discontinued adapters are not shown.

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**CAUTION** For SuperDome, T600, and V-Class servers, the ATM adapters must be installed by qualified Hewlett-Packard personnel. On all of the other models of HP 9000 systems shown in the table below, the ATM adapters are customer installable.

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**Table 3-2 HP-UX 11i Supported ATM Adapter Configurations**

Bus Type	HP 9000 System	ATM Adapter	Maximum Adapters per System	Maximum VCs per Adapter	Maximum VCs per System
HP-HSC 155	K570/580 and T600 servers	J2469A	6	2048	6144
	K-Class servers (other than K570/580)	J2469A	4	2048	6144
	R380/390 servers and B-, C-, and J-Class workstations	J2499A	4	2048	6144
	D-Class servers	J2499A	4	2048	6144
	74x industrial workstations	J3420B	4	2048	6144
HP-HSC 622	D-Class servers	J3573A	1	4096	6144
	R380/390 servers	J3573A	2	4096	6144

**Table 3-2 HP-UX 11i Supported ATM Adapter Configurations (Continued)**

<b>Bus Type</b>	<b>HP 9000 System</b>	<b>ATM Adapter</b>	<b>Maximum Adapters per System</b>	<b>Maximum VCs per Adapter</b>	<b>Maximum VCs per System</b>	
HP-PCI 155	V-Class servers	A5513A	16	2048	6144	
		A5515A	16	2048	6144	
	L-Class and N-Class servers	A5513A	16	2048	6144	
	L-Class and N-Class servers	A5515A	16	2048	6144	
	A400 and A500 servers	A5513A	A400 = 2 A500 = 4	2048	6144	
		A5515A	A400 = 2 A500 = 4	2048	6144	
	B1000, B2000, C3000, J5000, J6000, and J7000 workstations	A5513A	4	2048	6144	
		A5515A	4	2048	6144	
	SuperDome	A5513A	16	2048	6144	
		A5515A	16	2048	6144	
	HP-PCI 622	V-Class servers	A5483A	8	4096	6144
		L-Class and N-Class servers	A5483A	16	4096	6144
A400 and A500 servers		A5483A	A400 = 2 A500 = 4	4096	6144	
B1000, C3000, J5000, J6000, and J7000 workstations		A5483A	4	4096	6144	
SuperDome		A5483A	16	4096	6144	

**NOTES:** Listed below are some things you should keep in mind when using the information shown in the table above:

- The “Maximum Adapters per System” column shows the maximum number of ATM adapters the ATM software can support for each class of HP 9000 system. However, keep in mind that some models within a class might have fewer physical slots available for ATM adapters than the number shown in the “Max. Adapters per System” column. Increasing the number of adapters lets you increase the number of VCs (see “Disk Space and Memory Requirements” on page 51 for memory-related limitations). The effective bandwidth will depend mostly on the number and type of HP 9000 systems.
- The “Maximum VCs per Adapter” also depends on the HP 9000’s available RAM at system boot time—the driver checks the amount and limits the number of available VCs accordingly. The table below shows, for each affected adapter, the amount of available RAM and the corresponding VC limit. Note that discontinued adapters are not shown.

**Table 3-3 Maximum VCs per Adapter Based on Available RAM**

<b>HP ATM/155 Adapters (A5513A, A5515A, J2469A, J2499A, and J3420B)</b>		<b>HP ATM/622 Adapters (A5483A and J3573A)</b>	
<b>Available RAM</b>	<b>Maximum VCs per Adapter</b>	<b>Available RAM</b>	<b>Maximum VCs per Adapter</b>
Less than or equal to 32 MBytes	256	Less than or equal to 32 MBytes	256
Less than or equal to 64 MBytes	512	Less than or equal to 64 MBytes	512
Less than or equal to 128 MBytes	1024	Less than or equal to 128 MBytes	1024
Greater than 128 MBytes	2048	Less than or equal to 256 MBytes	2048
n/a	n/a	Greater than 256 MBytes	4096

You also can use the `atmmgr show -c` command to display the maximum number of VCs (called “VCCs” in the command’s output) for an adapter.

## Disk Space and Memory Requirements

The disk space and memory requirements are shown below (discontinued adapters are not shown).

- HP-HSC bus.
  - Disk space required to install: 13 MBytes.
  - Disk space required to run: None.
  - Memory space required: Table 4-4 below shows the amount of memory that is required if the maximum number of VCs are configured on each type of ATM adapter. Note that systems with less memory available can support fewer VCs. Also, other drivers present in the system share the memory resources, which might reduce the total number of VCs that can be opened.

**Table 3-4 Memory Requirements for Maximum Configured VCs—HP-HSC**

ATM Adapter	Max. VCs Open Simultaneously	Memory Required (in MBytes)
J2469A and J2499A	2048	256
J3420B	2048	256
J3573A	4096	512

- Swap space required: Not specified.
- HP-PCI bus.
  - Disk space required to install: 12 MBytes.
  - Disk space required to run: None.
  - Memory space required: Minimal.
  - Swap space required: Not specified.

## System State at Installation

To install the ATM adapter, you must turn the system’s power off (except on systems which support OLAR). After you install the ATM adapter, turn the system’s power on.

To install the ATM adapter on systems which support OLAR (Online Addition and Replacement) namely SD-Class, N-Class and L-Class servers, it is not necessary to turn the system's power off.

If ATM software is not already installed, install the ATM software (the system is automatically rebooted as part of the install process). The ATM software can be installed as part of an OS update or OS installation on HP-UX 11i.

## **Software Installation Instructions**

See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for detailed information about installing the ATM link software.

Estimated time to install: 30 minutes (this includes hardware and software installation).

## **Known Compatibility or Incompatibility with Third-Party Products**

The ATM software products operate with all UNI 3.0-, UNI 3.1-, and UNI 4.0-compliant ATM switches and equipment that comply with LAN Emulation over ATM versions 1.0 and 2.0 and MPOA version 1.0.

## Patches and Fixes in This Version

This section lists the fixes and patches that have been applied in version K.11.11.10 of the ATM link software products.

### Patches

This release contains ATM patches through PHNE\_26683.

### Fixes

This release contains the fixes listed in Table 3-5 below.

**Table 3-5 Fixes Included in This Release**

CR/SR Number	Description
JAGad93987	Enhancement Request for support of HA ATM on workstation class systems.
JAGae08235	Use of non-recommended keywords in the ATM product and patch control scripts.
JAGae09966	Failure indication messages logged by LEC stack are not intuitive.
JAGae10213	Enhancement request for the <code>elstat</code> command to display the list of multicast MAC address registered on an ELAN interface.
JAGae01380	Data Page fault in the function <code>LDI_F0_search1_sap_entry()</code> .
JAGae00281	Multicast traffic over ATM ELAN may not be restored after failover.
JAGad90435	SAM adds the line <code>ATM_VAR=0</code> instead of updating or replacing in the <code>/etc/atm/atm_x/nic/atmconf</code> (where <code>x=0,1,2....32</code> ) file, each time the atm configuration is accessed.
JAGad90063	The <code>atmconfig show -n</code> command causes the system to panic if the specified CIP interface corresponds to a non-existent ATM NIC.
JAGad78323	Panic in <code>LDI_F_set_fastpath/bcopy</code> while processing a badly formatted DLPI msg.

**Table 3-5**                    **Fixes Included in This Release (Continued) (Continued)**

<b>CR/SR Number</b>	<b>Description</b>
JAGad78122	While starting or stopping an ELAN-configured interface card, the following error message is displayed: “[CAAM Bad Call Reference Value”
JAGad76851	When an ELAN interface is stopped or deleted, the interface name is not removed completely from the lanscan output.
JAGad75133	Online addition (OLA) of a PCI ATM card fails with the following error message:  “ATM startup script fails /usr/sbin/olrad.d/atm2pci[89]: /tmp//usr/sbin/olrad.d/atm2pci.12200: Cannot create the specified file. /usr/sbin/olrad.d/atm2pci[93]: /tmp//usr/sbin/olrad.d/atm2pci.12200: Cannot find or open the file. rm: /tmp//usr/sbin/olrad.d/atm2pci.12200 non-existent“
JAGad71898	While replacing an obsoleted J3557A ATM card with the new A5513A card, the system fails to initialize the card and displays the error message: “ATM_err_1304:VPI/VCI range is invalid”
JAGad33804	Panic in SPutMsg with vmtrace ON while running netperf tests.
JAGab50672	Memory leak in the 512-byte bucket while running heavy traffic on ELAN interfaces.

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## Software Availability in Native Languages

The Native Language Support for all ATM software products are as follows:

- The software is available only in English.
- The product manuals—for both the software and the adapters—are available only in English.



# **4 ATM Version I.10.20.80**

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## What's in This Version

The information in this section is for version I.10.20.80 of the ATM link software products. This software is designed to run on HP-UX version 10.2x.

### Features and Benefits

This version of the ATM link software products offers the following new features and benefits:

- Support of the A5483A, A5513A, and A5515A HP-PCI adapters on the HP VISUALIZE UNIX J7000 workstation.

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**NOTE** ATM software versions starting with 10.20.40 carry a new revision of the ATM stack which supports LAN emulation version 2.0 and Multiprotocol Over ATM (MPOA) version 1.0.

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### ATM Software Availability

Table 4-1 shows how the ATM software and cards are available on the HP-UX 10.20 platform

**Table 4-1 ATM Adapters and Corresponding Software For HP-UX 10.20**

ATM Adapter	Corresponding ATM Software	
	“New” Software Number	“Old” Software Number
A5483A (HP-PCI ATM/622)	A5483A (HP-PCI ATM/622 Link Software for A5483A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 10.20)
A5513A (HP-PCI ATM/155)	A5513A (HP-PCI ATM/155 Link Software for A5513A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 10.20)

**Table 4-1 ATM Adapters and Corresponding Software For HP-UX 10.20**

ATM Adapter	Corresponding ATM Software	
	“New” Software Number	“Old” Software Number
A5515A (HP-PCI ATM/155)	A5515A (HP-PCI ATM/155 Link Software for A5515A)	J3572BA (HP-PCI ATM/155 & ATM/622 Link Software for HP-UX 10.20)
J2468A (HP-HSC ATM/622)	J2468A (HP-HSC ATM/622 Link Software for J2468A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 10.20)
J2469A (HP-HSC ATM/155)	J2469A (HP-HSC ATM/155 Link Software for J2469A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 10.20)
J2499A (HP-HSC ATM/155)	J2499A (HP-HSC ATM/155 Link Software for J2499A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 10.20)
J2804A (HP-PB ATM/155)	J2804A (HP-PB ATM/155 Link Software for J2804A)	J2805BA (HP-PB ATM/155 Link Software for HP-UX 10.20)
J3420B (HP-HSC ATM/155)	J3420B (HP-HSC ATM/155 Link Software for J3420B)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 10.20)
J3573A (HP-HSC ATM/622)	J3573A (HP-HSC ATM/622 Link Software for J3573A)	J2806CA (HP-HSC ATM/155 & ATM/622 Link Software for HP-UX 10.20)

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**TIP** When you run `swinstall` to install the ATM software, you will see “new” software products that have the same names as the ATM adapter product numbers (for example, A5483A). However, you *also* will see software products that have the “old” software product numbers (J2805BA, J2806CA, and J3572BA). In the future, the “old” software products will no longer be displayed in `swinstall`, and you will see only the “new” software products. Until then, Table 4-1 will show the “old” software product numbers *and* the “new” numbers. Also, although the J2468A and J2804A adapters have been discontinued, they and their corresponding software numbers are still shown in Table 4-1 (and you will still see them when you run `swinstall`, for backwards compatibility). See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for more details about installing the ATM software products.

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## Known Problems and Workarounds

The known problems and corresponding workarounds for version I.10.20.80 of the ATM link software on HP-UX 10.20 are as follows:

- On HP VISUALIZE UNIX B1000, C3000, J5000, and J7000 Workstations, if you are running a firmware version earlier than 3.2, the A5513A and A5515A HP-PCI ATM/155 adapters do not work if they are installed in the 66 MHz slots of those workstations (slot 2 of the B1000 and C3000, and slots 4 and 7 of the J5000 and J7000). The adapters *do* work if they are installed in the 33 MHz slots of those workstations.

**Workaround:** Install B1000/C3000/J5000/J7000 firmware version 3.2 or later. The firmware version 3.2 is available as firmware patch PF\_CBCJ0032 (contact your Hewlett-Packard representative for patch installation information). After the firmware is installed, the adapters will work in any of the PCI slots in the B1000, C3000, J5000, and J7000 workstations. Instructions for checking the firmware revision number are provided in the workstation owner's guide (interrupt the boot process and enter the command `IN -FV` at the main menu of the boot console).

- If you are running an HP ATM version later than I.10.20.10 and are using a Nortel Centillion ATM switch that has a software version earlier than 4.0, you will most likely experience interoperability problems (see Nortel support reference number CR 80877).

**Workaround:** Upgrade your Nortel Centillion switch to software version 4.0 or later.

- Installation error when installing EMS on a system where the Japanese version of EMS is already installed.

The error messages that are generated are as follows:

```
ERROR: The EMS (B5736BA) and EMS Japanese (B5736BJ)
       products cannot be selected together. Exit swinstall,
       and run it again - this time only marking and installing
       one or the other.
```

```
ERROR: The "checkinstall" script for "EMS-Config" failed (exit code
"1"). The script location was
"/var/tmp/AAAa02046/catalog/EMS-Config/pfiles/checkinstall".
* This script had errors and the execution of this product
cannot proceed until the problem is fixed. Check the above
output from the script for further details.
```

Although these error messages occur, you *do not* have to do anything: ATM and EMS will operate correctly.

## Known Problems and Workarounds

- While an ATM adapter is operational, if you disconnect the ATM cable from the switch and reconnect it to another switch, the ELAN interfaces configured over the ATM adapter might not start automatically.

**Workaround:** Run the `atminit` command to restart the adapter and all of its LANE interfaces.

- When using a FORE switch, you might experience a delay (approximately two to three minutes) in your ELAN interfaces coming up after you reboot the system.

**Workaround:** Ensure that you have *either* of these installed: (1) the FORE patch `asx-i960_6.0.1_1.48662E` or (2) a release of FT later than FT 5.4.

- You might have to specify the LAN type during ELAN interface configuration, if you are in *either* of these situations:

- You have an ELAN connectivity problem, and your ATM switch's manufacturer diagnoses the problem as being caused by the absence of the LAN type during configuration.
- Your ATM switch provides the capability of specifying the LAN type during configuration, and you have configured the LAN Emulation services to require the LAN type during configuration.

**Workaround:** The *only* way you can do this is to manually specify the LAN type in the ELAN interface's configuration file; you cannot do this within SAM. Set the parameter `HP_ATM_ELAN_TYPE` as follows:

`HP_ATM_ELAN_TYPE = 802.3` for Ethernet

`HP_ATM_ELAN_TYPE = 802.5` for Token Ring

However, keep in mind that each time you use SAM to modify the interface's configuration, SAM overwrites the ELAN interface configuration file. So, for example, you've manually specified the LAN type in an ELAN interface's configuration file. Then, you later use SAM to modify some other part of the interface's configuration. When you save the configuration in SAM, the previous configuration file (with the LAN type you manually specified) is overwritten. This means you then must manually re-edit the configuration file to re-specify the LAN type.

- At this time, HP's implementation of Multiprotocol Over ATM (MPOA) supports putting the MPS on *only* a FORE router.
- In MPOA, if a shortcut route consists of MPCs that are on HP systems and an MPS that is on a Cisco router, when you try to send traffic over that shortcut, no data will be transferred over the shortcut. This might cause the applications to hang. If you issue the

`command atmmgr card_instance_number show` on the MPCs, you will see that a shortcut VCC is established between the MPCs. However, the traffic will not be able to travel over the shortcut VCC.

- If you are planning on upgrading your operating system to HP-UX version 11i on an L-class or N-class server, you should read the required OLAR patch information in the Section titled, “Known Problems and Workarounds” in Chapter 3 of this document.

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## Compatibility Information and Installation Requirements

This section describes the requirements for installing version I.10.20.80 of the ATM link software on HP-UX 10.20.

### OS Platform and Version Compatibility

You must have already installed HP-UX 10.20 (HP-UX 10.20 ACE for the B1000, C3000, J5000, and J7000 workstations) before you install the ATM software.

### Software Requirements

The various software requirements for this release of ATM are described in the subsections below.

#### HP-UX Operating System Patch Dependencies

Table 4-2 below lists the HP-UX 10.20 Operating System patches that ATM has dependencies on. Please note that only some of the patches are required, but we strongly **recommend** that you also install the other patches listed.

**Table 4-2** ATM HP-UX 10.20 Operating System Patch Dependencies

HP 9000 System	Required/Recommended	Patch Number	Description
Servers	Required	PHNE_19187	STREAMS
	Recommended	PHNE_19936	ARPA Transport
	Recommended	PHCO_19783	Special files
	Recommended	PHCO_19046	SAM (Y2K)
	Recommended	PHKL_14283	select ( )
	Recommended	PHKL_16751	CCIO
	Recommended	PHNE_18924	LAN
	Recommended	PHNE_20656	LAN

**Table 4-2                    ATM HP-UX 10.20 Operating System Patch Dependencies**

<b>HP 9000 System</b>	<b>Required/Recommended</b>	<b>Patch Number</b>	<b>Description</b>
Workstations	Required	PHNE_15202	STREAMS
	Recommended	PHNE_19937	ARPA Transport
	Recommended	PHCO_19783	Special files
	Recommended	PHCO_19046	SAM (Y2K)
	Recommended	PHKL_14282	select ( )
	Recommended	PHKL_16750	CCIO
	Recommended	PHNE_18173	LAN
	Recommended	PHNE_20725	LAN

Contact your Hewlett-Packard representative to install the patch that is appropriate for your HP 9000 system.

**High Availability Requirements**

To use the High Availability feature for remote recovery, version A.10.10 or later of the MC/ServiceGuard software must be installed on all cluster systems running the software. As stated earlier, High Availability is supported on only HP 9000 servers (not on workstations).

## Hardware Requirements

You must have an appropriate ATM adapter installed in the HP 9000 system. You can combine adapters, as long as they are all supported for the system. For a complete list of the corresponding ATM software for each ATM adapter, please refer to Chapter 2 of the ATM Configuration and Troubleshooting Guide (HP Part Number B1056-90007).

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**WARNING** For T600 servers, the ATM adapters must be installed by qualified Hewlett-Packard personnel.

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- The “Maximum VCs per Adapter” also depends on the HP 9000’s available RAM at system boot time—the driver checks the amount and limits the number of available VCs accordingly. Table 4-3 below shows, for each affected adapter, the amount of available RAM and the corresponding VC limit. Note that discontinued adapters are not shown.

**Table 4-3 Maximum VCs per Adapter Based on Available RAM**

HP ATM/155 Adapters (A5513A, A5515A, J2469A, J2499A, and J3420B)		HP ATM/622 Adapters (A5483A and J3573A)	
Available RAM	Maximum VCs per Adapter	Available RAM	Maximum VCs per Adapter
Less than or equal to 32 MBytes	256	Less than or equal to 32 MBytes	256
Less than or equal to 64 MBytes	512	Less than or equal to 64 MBytes	512
Less than or equal to 128 MBytes	1024	Less than or equal to 128 MBytes	1024
Greater than 128 MBytes	2048	Less than or equal to 256 MBytes	2048
n/a	n/a	Greater than 256 MBytes	4096

You also can use the `atmmgr show -c` command to display the maximum number of VCs (called “VCCs” in the command’s output) for an adapter.

## Disk Space and Memory Requirements

The disk space and memory requirements are shown below (discontinued adapters are not shown).

- HP-HSC bus.
  - Disk space required to install: 8 MBytes.
  - Disk space required to run: None.
  - Memory space required: Table 4-4 below shows the amount of memory that is required if the maximum number of VCs are configured on each type of ATM adapter. Note that systems with less memory available can support fewer VCs. Also, other drivers present in the system share the memory resources, which might reduce the total number of VCs that can be opened.

**Table 4-4 Memory Requirements for Maximum Configured VCs—HP-HSC**

ATM Adapter	Max. VCs Open Simultaneously	Memory Required (in MBytes)
J2469A and J2499A	2048	256
J3420B	2048	256
J3573A	4096	512

- Swap space required: Not specified.
- HP-PCI bus.
  - Disk space required to install: 12 MBytes.
  - Disk space required to run: None.
  - Memory space required: Minimal.
  - Swap space required: Not specified.

## **System State at Installation**

To install the ATM adapter, you must turn the system's power off. After you install the ATM adapter, turn the system's power on. Then, install the ATM software (the system is automatically rebooted as part of the installation process).

## **Software Installation Instructions**

See the *ATM Configuration and Troubleshooting Guide* (p/n B1056-90007) for detailed information about installing the ATM link software.

Estimated time to install: 30 minutes (this includes hardware and software installation).

## **Known Compatibility or Incompatibility with Third-Party Products**

The ATM software products operate with all UNI 3.0-, UNI 3.1-, and UNI 4.0-compliant ATM switches and equipment that comply with LAN Emulation over ATM versions 1.0 and 2.0 and MPOA version 1.0.

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## Patches and Fixes in This Version

This section lists the fixes and patches that have been applied in version I.10.20.80 of the ATM link software products.

### Patches

This release contains ATM patches through PHNE\_22587.

### Fixes

This release contains the fixes listed in Table 4-5 below.

**Table 4-5** Fixes Included in This Release

<b>CR/SR Number</b>	<b>Description</b>
JAGad53408	FORE HE Card not recognized as HP card on boot of V22x0.
JAGad43098	Many ERROR logging messages: [CAAM] Bad Call Reference Value.
JAGad83144	Data page fault in function asAsdRstInd (K460 11.0 vmtrace on).
JAGad26995	Data page fault in function IAM_F0_Irput.