

HP-PB 10/100Base-TX/9000 Quick Installation Guide

The 10/100Base-TX combination card supports both 10Mbit/s and 100Mbit/s full- and half-duplex operations. HP recommends installing the 10/100Base-TX/9000 software before installing the hardware card. For detailed information about each of the steps below and for declarations of conformity, refer to the online manual *Using HP-PB 10/100Base-TX/9000* available in www.docs.hp.com or on the Instant Information CDROM. View the latest release notes either in `/opt/networkdocs` or on the Instant Information CDROM.

Step 1: Prepare to install the 10/100Base-TX software

- Log in as `root`.
- Check that the `/usr/bin`, `/usr/sbin` and `/sbin` directories are in your PATH using the command: `echo $PATH`.
- Check that the HP-UX version is 10.20 or later using the command: `uname -a`.
- Install the appropriate patches for your system as described in the "Required Patches" section of the online Release Notes or the online README. View the online files either in Instant Information or in `/opt/networkdocs`. Release notes are in `hppb100bt_relno.pdf`.
- Fill out the configuration worksheet for each card you are installing. **Refer to the other side of this card for the network configuration worksheet.**
- Determine whether the connection is to be 10 Mbits/s or 100 Mbits/s.

Step 2: Install the 10/100Base-TX software (skip this step if you ordered option 0D1--pre-installation)

- Load the software media (CDROM) into the appropriate drive.
- Run the `swinstall` program to install the software using the command: `swinstall`.
- Change the host name after "Source Host Name," if necessary.
- Click on the Source Depot Path to identify the registered depot for the appropriate source depot path and activate the **OK** button to return to the Software Selection Window.
- Highlight the 10/100Base-TX software (**A3495A**).
- Choose **Mark** for Install from the "Actions" menu to choose the product to be installed.
- Choose **Install** from the "Actions" menu to begin product installation and open the Install Analysis Window.
- Activate the **OK** button in the Install Analysis Window when the Status field displays a "Ready" message.
- Activate the **YES** button at the Confirmation Window to confirm that you want to install the software. `swinstall` loads the fileset, runs the control scripts for the filesets, and builds the kernel. Estimated time for processing: 3 to 5 minutes. When the status field indicates "Ready," a Note Window opens. Activate the **OK** button on the Note Window to reboot the system.
- After the system reboots, login as `root`, and execute the command: `shutdown -h`. Make sure the system is halted before you continue.

Step 3: Access the system card bay

- Wait for the system to shutdown completely, and then power off the system by pressing the system off button. Unplug the system.
- Open the system to gain access to the HP-PB backplane, if applicable.
- Select the lowest empty HP-PB slot and remove the slot cover.

Step 4: Install the HP-PB10/100Base-TX card

- Observe the antistatic precautions.

- Record the card serial number from the card.
- Grasp the card by its edges or faceplate with both hands, insert the card into the slot, and press the card firmly into place.
- Secure the card by folding in the extractor levers and securing the retaining screws and reassemble the system.

Step 5: Attach the system to the network

- Attach the 8-pin (RJ-45) plug on your twisted-pair LAN cable into the RJ-45 connector on the card. The same RJ-45 connector is used for either 10 or 100 Mbit/s operation.
- Attach the free end of the cable to any unused port on the appropriate hub or switch (or into a wall jack that is connected to a hub or switch). Connect power cable to system. Set the hub or switch speed and duplex mode. Both full duplex and half-duplex operation are supported.
- Power up the system. The 10/100Base-TX card will run a self-test automatically. Any error messages will appear on the terminal display or system console. You can also use the `dmesg` command to retrieve startup messages later.
- Verify that the LEDs on the card reflect the correct mode of operation. Refer to the illustration on the next page for the LED pattern for normal 10 Mbit/s and 100 Mbit/s operation. Verify that the Test LED is OFF.
- When the system is up, log in as `root` and verify that the card and its hardware path are displayed by executing the command: `ioscan`.

Step 6: Configure the card using SAM

- Run the System Administration Manager: `sam`.
- Double click **Networking and Communications**.
- Double click **Network Interface Cards**.
- Highlight the HP-PB 10/100Base-TX card and choose **Configure** from the **Actions** menu.
- Fill in the form according to the instructions using the Network Card Configuration Worksheet.
- Activate the **OK** button to activate the card and then select **exit** from the "File" menu until you exit SAM.

Step 7: Verify the installation

- Obtain the PPA (HP-UX 11.x) or the NMID (HP-UX 10.x) and the station address of your card by executing the command: `lanscan`.
- Verify that no errors have occurred during installation by running the following command:
`linkloop -i <PPA> <station address>`
for HP-UX 11.0 and above or
`linkloop -i <NMID> <station address>`
for HP-UX 10.20.
- Verify connectivity with a remote system by executing the command: `ping <Remote_IP_Address> and netstat -in`.

HP-PB 10/100Base-TX/9000 installation is complete when you have successfully run `linkloop` and `ping`. If you want to verify the installation further, go to "Verifying the Installation" in chapter 1 of the online *Using HP-PB 10/100Base-TX/9000* manual.

To configure remote systems, go to “Configuring Network Connectivity” in chapter 2 of the online user’s manual. Do this step only if remote systems have not been previously configured.

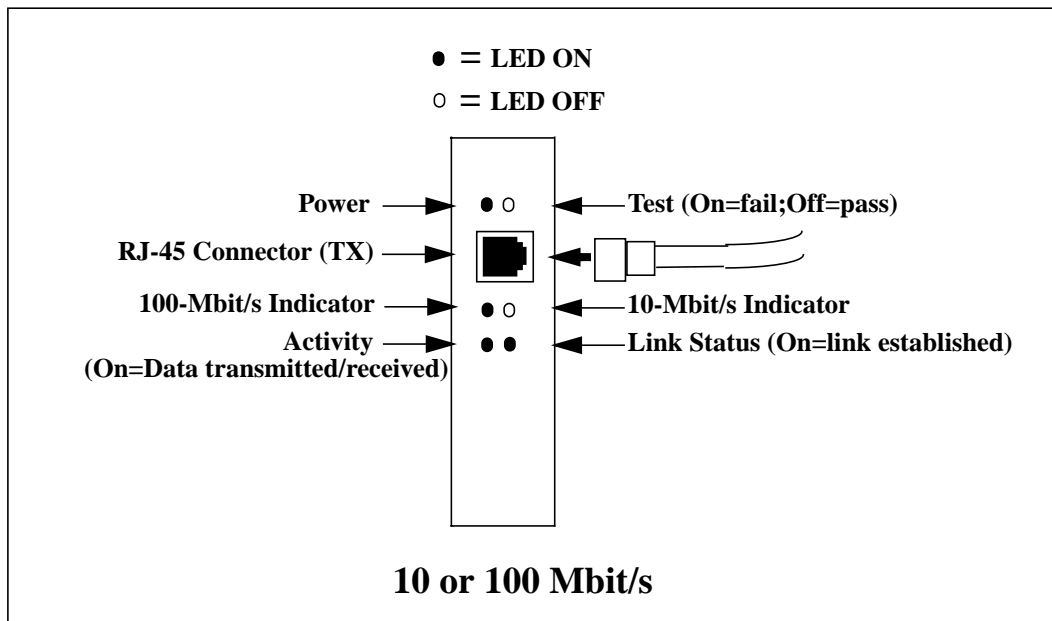
Network Card Configuration Worksheet

Fill out one worksheet for each card you are installing.

Data Type	Required/Optional	Default	Where to Configure	Example	Your System
Internet address	Required	0.0.0.0	SAM, ifconfig	192.6.20.2	
Subnet mask	Required if using subnetting	Subnet mask not used	SAM, ifconfig	255.255.248.0	
Station address	Required	As shown on card	lanadmin -A, SAM	0x0060b0c4012f	
Host name alias for this network interface (card)	Required if system is connected to more than 1 network	None	SAM	abcde	
Link speed	Required	None	Hub or switch*	100-MBit/s Hub	

*The speed configuration of the 10/100Base-TX card is determined by the speed setting of the hub or switch port to which the card is connected. The card automatically senses this speed. The card only runs at one speed at a time. To verify the speed selection, use the LED indicators on the front of the 10/100Base-TX card as shown below or run *lanadmin* and check the link speed and duplex mode at the LAN Interface Status Display.

HP-PB 10 Mbit/s or 100-Mbit/s LAN Card



HP-PB 10/100Base-TX/9000 Quick Troubleshooting Guide

Follow the steps below in sequence to quickly isolate 10/100Base-TX/9000 problems on your system. The flowcharts referred to in the procedures are in the online *Using HP-PB 10/100Base-TX/9000* manual available in www.docs.hp.com or on the Instant Information CDROM.

Check the HP-UX 10.20 (or later) Directory Path

Prior to completing the steps below, check that the `/usr/bin`, `/usr/sbin`, and `sbin` directories are in your PATH using the command: `echo $PATH`.

Step 1: Network Level Loopback Test

- ❑ Check the IP network level connection with the remote host using the `ping(1M)` command. Example: `ping 192.6.20.2`.

Successful? If packets are being returned, your system has network level connectivity to the remote host. If not, refer to flowchart 1. Press Ctrl C to stop the ping output.

Step 2: Connections/LED Test

- ❑ Check that the RJ-45 cable is connected to the 10/100Base-TX connector on the HP-PB card and to a 10/100Base-TX hub or switch.
- ❑ Check that the card LEDs indicate normal operation. Refer to the illustration on the second page of this card and the table on the last page of this card for the LED pattern for normal operation.

Successful? If the LED pattern indicates normal operation. If not, refer to flowchart 2.

Step 3: Configuration Test

- ❑ Check that the 10/100Base-TX/9000 interface is configured by displaying information about all 10/100Base-TX cards that are successfully bound to the system using the command: `lanscan`.
Successful? Yes, if `lanscan` indicates the interface and hardware are 'up.' If not, refer to flowchart 3.
- ❑ If the Base-TX switch cannot autonegotiate, run `lanadmin` and ensure that the duplex mode is set the same as at the hub or switch (it can be half- or full-duplex mode).
- ❑ Check the log data (error and disaster messages) for 10/100Base-TX using the `netfmt` command. Example: `netfmt -v -f /var/adm/netttl.LOG00 | more`.
Successful? Yes, if the problem stated in the log file is fixed. If not, refer to flowchart 4.
- ❑ Display IP information about the interface you want to test using the `ifconfig(1M)` command. Example: `ifconfig lan1`.

Successful? Yes, if the output shows the correct Internet address and the flag: UP. If not, refer to flowchart 5.

Step 4: Network Level Loopback Test

- ❑ Check that a correct entry exists for the remote system in your system's ARP cache using the `arp(1M)` command. Example: `arp 192.6.20.2`.

Successful? Yes, if there is an ARP cache entry for the remote host. If not, refer to flowchart 6.

Step 5: Link Level Loopback Test

- ❑ Check the link layer connectivity using the `linkloop(1M)` command with the NMID (or PPA) of your 10/100Base-TX card and the station address of the remote host. Command syntax:
`linkloop -i <NMID> <Station Address>`
(for HP-UX 10.20) and
`linkloop -i <PPA> <Station Address>`
(for HP-UX 11.0 and above).

Use `lanscan` on the local system to obtain the NMID and station address.

Successful? Yes, if an OK status is returned. If not, refer to flowchart 7.

Step 6: Subnet Test

- ❑ Check the host name, subnet number, and subnet mask of the interface using the `ifconfig(1M)` command. Example: `ifconfig lan1`
Successful? Yes, if the host portion of the IP address and subnet number part of the IP address are not all 0s or all 1s and the subnet mask is what you expect. If not, use SAM to enter the mask or IP address.
- ❑ Check that all the hosts on the network are using the same subnet mask and that the mask has been set on all interfaces by executing the `ifconfig(1M)` command on each node in the network. Example: `ifconfig lan1`

Successful? Yes, if the subnet masks are all the same. If not, use SAM to connect the mask or IP address. Refer to the *Installing and Administering LAN/9000 Software* manual for additional information about subnet masks.

Step 7: Transport Level Loopback Test Using ARPA

- ❑ Check the transport level connection with the remote host using the `telnet(1)` command. For example: `telnet abcde`.
Successful? Yes, if you have transport level connectivity to the remote host. If not, refer to flowchart 8.
- ❑ Check the route tables on the source and destination nodes using the command: `netstat -r`.
Successful? If the routing tables are not correct, refer to the `route` man page.

Refer to the on-line manual pages for more detailed information about the commands listed in the above steps.

For the Gateway Remote Loopback Test, refer to flowchart 9 in the online *Using HP-PB 10/100Base-TX/9000* manual.

If you are still having problems connecting your system to the network, contact your HP support representative.

In the following HP-PB 10/100Base-TX LED Matrix:

X = LED ON, and
O = Flashing

HP-PB 10/100Base-TX LED Matrix

Power	10	100	Link	Activity	Test	Description
X						Improperly seated card or defective card.
X	X					Driver has not initialized card. Link cable is not connected either to card or to hub or switch.
X		X				Same as above but is for 100Base-TX.
X	X				X	Driver couldn't complete the initialization of the card because an error has been detected. Card may be defective.
X		X			X	Same as above but is for the 100Base-TX mode.
X	X		X			Normal quiescent state for 10Base-T.
X		X	X			Normal quiescent state for 100Base-TX.
X	X		X	O		Normal state during transfer of 10Base-T data. This state is also seen when the card is connected to a switch and the card is quiescent. Switch is sending link pulses.
X		X	X	O		Same as above but is for the 100Base-TX mode.