ASANTÉ

Chapter 1

Introducing AsantéPrint

Thank you for purchasing AsantéPrint or AsantéPrint 8.

AsantéPrint and AsantéPrint 8 are high-speed Ethernet to LocalTalk hardware converters that enable you to connect LocalTalk printers or other LocalTalk peripherals to an Ethernet network. With AsantéPrint, you can use LocalTalk resources over the faster Ethernet and don't need to buy special Ethernet printers or peripherals.

AsantéPrint comes in two versions—AsantéPrint and AsantéPrint 8. With AsantéPrint you can connect up to two LocalTalk devices; with AsantéPrint 8 you can connect up to eight.

You can access LocalTalk devices from any Macintosh on the Ethernet. To access LocalTalk devices from an IBM PC or PC compatible, you need network operating system software, such as Novell's NetWare for Macintosh, Microsoft's Macintosh Services for LAN Manager, Apple's AppleShare or Sitka's TOPS. Please consult these third-party manufacturers for more detailed information.

AsantéPrint works transparently, passing print and data requests between the Ethernet and LocalTalk devices. It is compatible with laser printers and printers supporting Apple's LocalTalk standards. AsantéPrint is compatible with the following printers:

- Apple LaserWriters
- Apple ImageWriters II
- Hewlett-Packard laser printers
- NewGen Systems Turbo PS Series printers
- Other third-party LocalTalk printers

Your AsantéPrint package contains the following items:

- AsantéPrint unit
- External power supply
- T-connector or RJ-45 cable
- AsantéPrint Manager software
- Advanced Network Security Protocol (ANSP) cdev software
- This AsantéPrint User's Guide

All information in this manual applies to both AsantéPrint and AsantéPrint 8. Any information applying to only one version is clearly indicated.

The term Macintosh is used to refer to any computer on the Ethernet that can access LocalTalk devices attached to an AsantéPrint unit.

About AsantéPrint hardware

Before you install your AsantéPrint device, you need to know what medium (cable) is being used on your Ethernet network.

Ethernet networks, according to the IEEE 802.3 standard, can run on a variety of media. The most popular Ethernet media are Thick Coaxial cable (10Base5), Thin Coaxial cable (10Base2), and Unshielded Twisted Pair (10BaseT) telephone wire. Another Ethernet medium, the Apple Ethernet Cabling System, uses self-terminating thin coaxial cables and connectors.

AsantéPrint connectors

AsantéPrint provides the following connectors for the most popular Ethernet media.

Connector	Cable
DB-15	AUI cable to external transceiver on thick Ethernet cable
BNC	Thin cable
RJ-45	UTP (unshielded twisted pair) cable
Mini DIN-8	LocalTalk connector

To connect the AsantéPrint unit to the LocalTalk network, a standard mini DIN-8 pin connector and a LocalTalk connector box are used. If the AsantéPrint unit is connected to a single LocalTalk device, a mini DIN-8 serial cable is used. The media switch on the AsantéPrint unit lets you confirm or change the Ethernet connector.

Display status LEDs

Ten display lights on the front of the AsantéPrint unit indicate activity on the Ethernet and LocalTalk networks. The lights are described in detail in Chapter 2.

About AsantéPrint software

The AsantéPrint package includes two software tools—AsantéPrint Manager and ANSP cdev (Advanced Network Security Protocol).

AsantéPrint Manager

AsantéPrint Manager software enables you to configure and manage an AsantéPrint unit and view extensive statistics for Ethernet and LocalTalk packets for easy troubleshooting.

With AsantéPrint Manager you can:

- Locate an individual AsantéPrint device on the network and query its operational status (for example, configuration, Ethernet address, uptime)
- Place LocalTalk devices in Phase 2 zones
- Establish password protection on a LocalTalk device connected to the AsantéPrint unit
- Remotely configure an AsantéPrint device
- View extensive statistics on the Ethernet and LocalTalk network to make network troubleshooting easier
- Restart any AsantéPrint device remotely

ANSP (Advanced Network Security Protocol)

ANSP software enables you to access a password protected LocalTalk device. If you do not have this software installed on your Macintosh, secured LocalTalk devices are not available to you in the Chooser window.

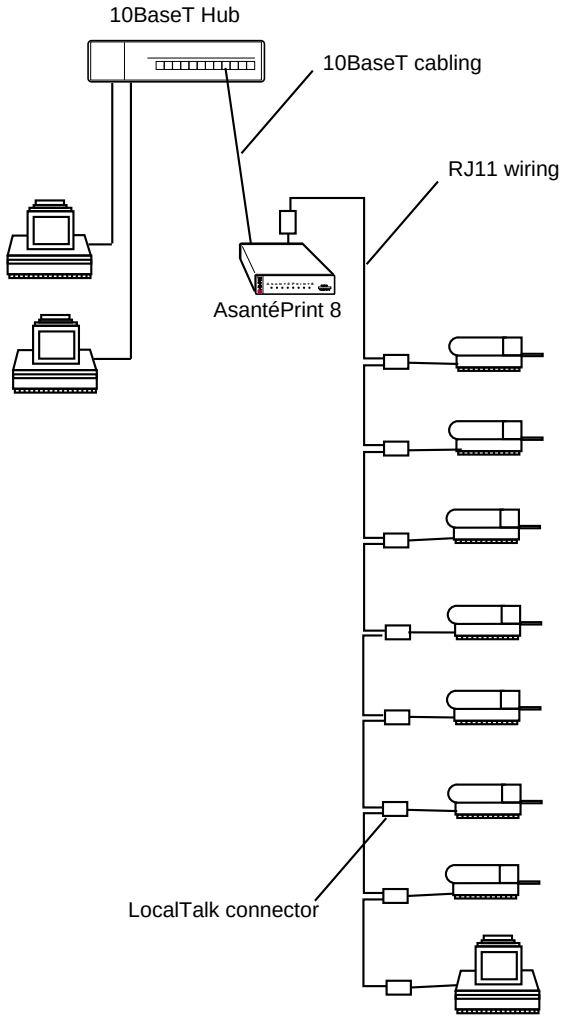


Figure 1-1 Example of a 10BaseT Ethernet configuration

The above illustration shows an AsantéPrint 8 unit connected, on one side to a twisted pair Ethernet cable and, on the other side, to a LocalTalk network with seven LocalTalk printers and one Macintosh.

Installing AsantéPrint

To install AsantéPrint, you will perform the following steps:

1. Determine the cable type on your Ethernet
2. Select the EtherTalk mode
3. Connect AsantéPrint to the Ethernet network
4. Connect AsantéPrint to the LocalTalk network
5. Power up AsantéPrint

Each operation is described in the following sections.

Determining the cable type

The most popular Ethernet media are Thick Coaxial cable (10Base5), Thin Coaxial cable (10Base2) and Unshielded Twisted Pair (10BaseT) telephone wire. Another Ethernet medium, the Apple Ethernet Cabling System, uses self-terminating thin coaxial cables and connectors.

Determine the cable type used on your Ethernet network.

Using the media switch

Confirm or change the Ethernet connector using the media switch on the AsantéPrint back panel. (See Figure 2-1 below.)

1 Power off the AsantéPrint unit if you need to use the media switch to change the Ethernet connector setting.

You will use the appropriate connectors, provided by AsantéPrint, for your Ethernet cable:

Thick Ethernet cable requires a DB-15 connector. Thin Ethernet cable requires a BNC connector. UTP (unshielded twisted pair) cable requires an RJ-45 connector and a 10BaseT hub.

2 For the **AUI** connector, the switch should be to the **left**. For the **BNC** or **UTP** connector, it should be to the **right**.

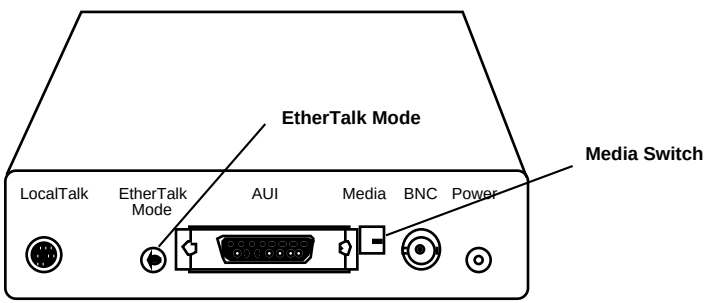


Figure 2-1 EtherTalk Mode rotary switch and media switch

Selecting the EtherTalk mode

You need to specify which EtherTalk mode is used on the Ethernet network to which the AsantéPrint unit is connected.

You can configure the AsantéPrint unit for EtherTalk Phase 1, EtherTalk Phase 2, or AutoSense.

EtherTalk Phase 1—allows one network to have only one zone, with a maximum of 254 nodes.

EtherTalk Phase 2—allows one network (which can include subnetworks) to have multiple zones, with each zone capable of supporting a maximum of 253 nodes.

AutoSense—allows the AsantéPrint unit to automatically determine the EtherTalk mode on your network. This is the default.

When the **rotary switch** is set to **1 or 2,** it **overrides** the EtherTalk mode set by the AsantéPrint Manager software.

Setting the EtherTalk Mode rotary switch

To select the EtherTalk mode, use the EtherTalk Mode rotary switch (on the AsantéPrint back panel):

The EtherTalk Mode settings are:

1—Phase 1

2—Phase 2

0—AutoSense (default)

If the switch is set to **0** (AutoSense), you can set the EtherTalk mode, if you wish, in the AsantéPrint Manager Configuration Menu to EtherTalk Phase 1 or EtherTalk Phase 2. Refer to "Edit Configuration" on page 3-7 for information.

Connecting AsantéPrint to an Ethernet network

The instructions below show how to connect the AsantéPrint unit to thick, thin, and twisted pair Ethernet cable.

Connecting to thick Ethernet cable

The Ethernet cable you will connect to the AsantéPrint unit must be in place and should be **terminated** at both ends with network terminating resistors. You need a connector or transceiver at the location where you will connect the AsantéPrint unit.

To connect AsantéPrint to a thick Ethernet cable:

1. Plug one end of the male 15-pin transceiver cable into the 15-pin transceiver connector on the back of the AsantéPrint unit, as shown in Figure 2-2 below.
2. Secure the cable by sliding the locking guide on the sides of the connector.
3. Connect the transceiver cable to the Ethernet cable.

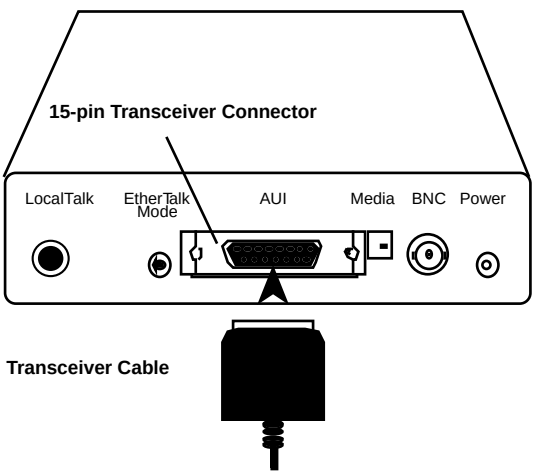


Figure 2-2 Connecting the 15-pin transceiver to the AsantéPrint unit

Example of thick Ethernet configuration

The illustration below shows an AsantéPrint 8 unit connected on one end to a thick Ethernet network and to a LocalTalk network (with eight devices) on the other end. (AsantéPrint allows only two LocalTalk devices).

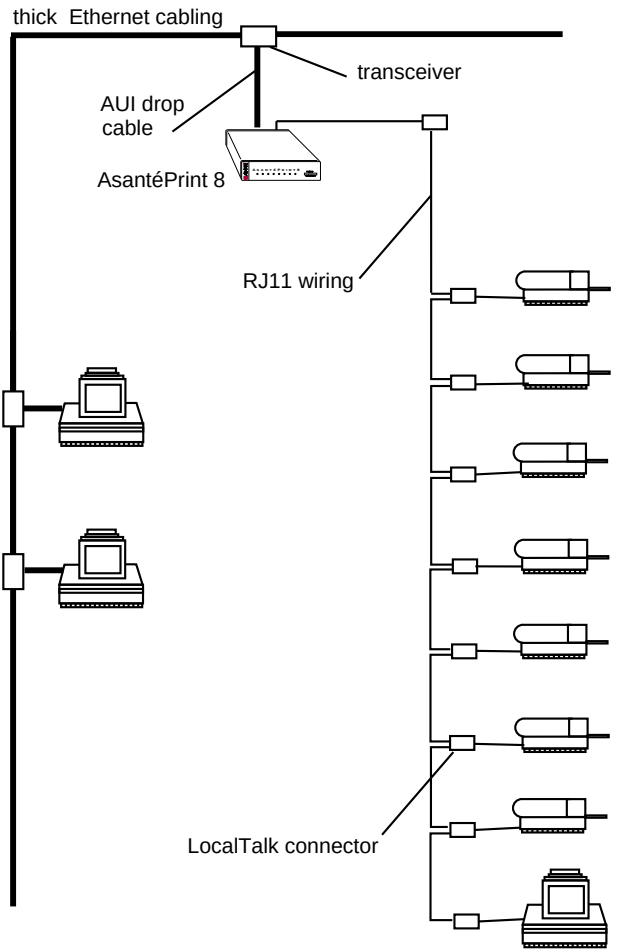


Figure 2-3 Example of a thick Ethernet configuration

Connecting to thin Ethernet cable

To connect the AsantéPrint unit to a thin Ethernet cable:

1 Connect a T-connector to the BNC connector on the back panel of the AsantéPrint unit, as shown in Figure 2-4.

Lock the T-connector in place by twisting its securing sleeve clockwise.

2 Make sure that the T-connector is connected to the thin Ethernet cable on both sides.

If the AsantéPrint unit is the last device on the Ethernet, connect one end of its T-connector to the thin Ethernet cable and install a 50 ohm network terminator on the other end of its T-connector.

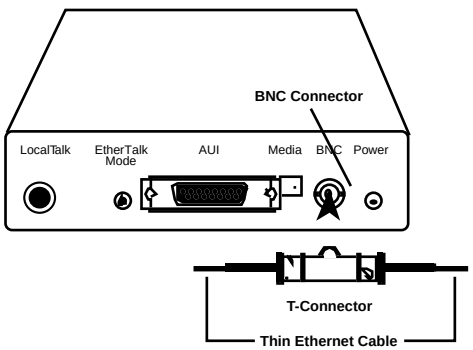


Figure 2-4 Installing the T-connector onto the AsantéPrint BNC connector

Example of a thin Ethernet configuration

The illustration below shows an AsantéPrint 8 unit connected on one end to a thin Ethernet network and to a LocalTalk network (with eight devices) on the other end. (AsantéPrint allows only two LocalTalk devices.)

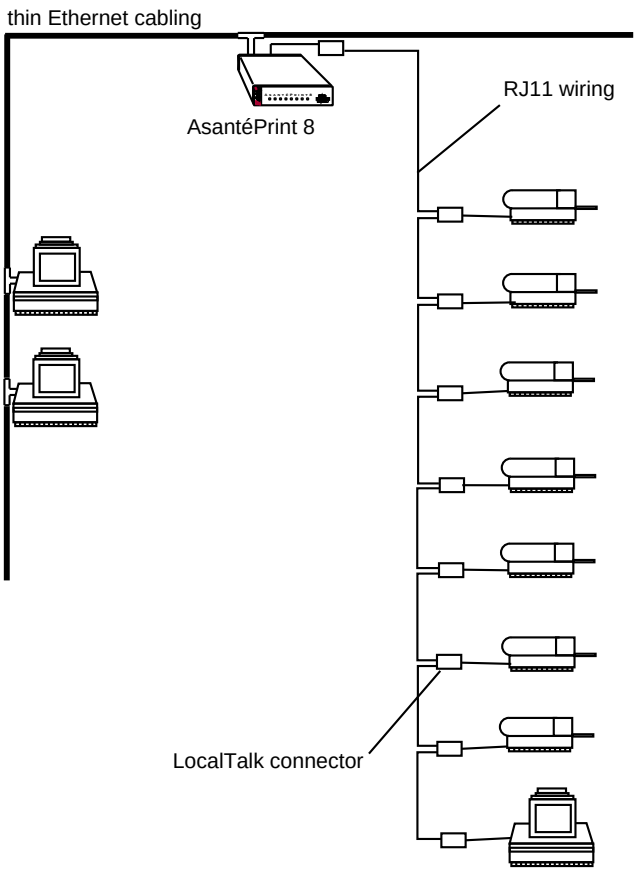


Figure 2-5 Example of a thin Ethernet configuration

Connecting to twisted pair Ethernet

In this example, an unshielded twisted pair wire is connected to a 10BaseT compatible hub such as the Asanté10T Hub.

To connect the AsantéPrint unit to twisted-pair Ethernet:

1 Make sure your hub is designed for the IEEE 10BaseT specifications.

2 Plug in the twisted pair cable (from the hub) into the RJ-45 connector on the AsantéPrint unit as show in Figure 2-6.

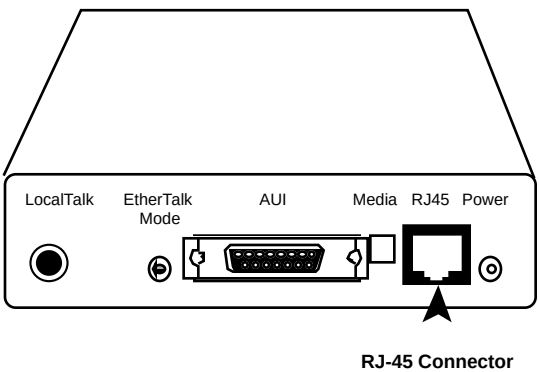


Figure 2-6 RJ-45 connector on the AsantéPrint unit

Example of twisted pair Ethernet configuration

The illustration below shows an AsantéPrint 8 unit connected to a twisted pair Ethernet network on one end and to a LocalTalk network (with eight devices) on the other end. (AsantéPrint allows only two LocalTalk devices.)

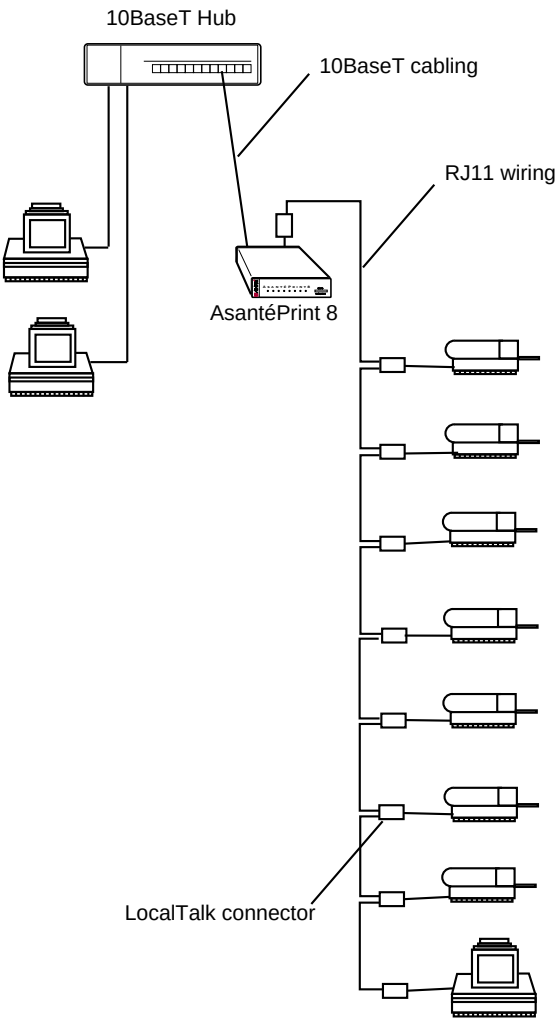


Figure 2-7 Example of a 10BaseT Ethernet configuration

Terminating the Ethernet cable

Observe the following termination requirements for the Ethernet cable you are using.

Thick cable

Verify that a 50-ohm terminator is connected to the transceiver at each end of the Ethernet network (i.e., connected to the first and last transceiver).

If a transceiver is already installed, the AsantéPrint unit can be installed without interrupting network activity.

Thin cable

Verify that a 50 ohm BNC terminator is connected to each end of the Ethernet network (i.e., connected to the first and last device on the network).

Δ Note: The terminators for thick and thin Ethernet cable are physically different.

Twisted pair cable

You do not need to worry about terminating the twisted pair cable. One end of the cable is terminated in the AsantéPrint unit and the other end of the cable is terminated in the hub.

Self-terminating thin cable

You don't need to terminate the cable or T-connector if your network uses self-terminating thin cable.

Connecting AsantéPrint to a LocalTalk network

To connect the AsantéPrint unit to the LocalTalk network, you use a standard **mini DIN-8 pin connector** (on the back panel of the AsantéPrint unit) and a **LocalTalk connector box**.

If you are connecting the AsantéPrint unit to only one LocalTalk device, you use a mini DIN-8 serial cable.

A LocalTalk network can run over shielded or unshielded twisted-pair cable. Each station on the network, including the AsantéPrint unit, requires a LocalTalk connector module to connect to the cable.

To connect the AsantéPrint unit to a LocalTalk network:

1 Connect a LocalTalk connector module to the mini DIN-8 pin connector on the AsantéPrint unit.

Before you push the connector into place, make sure it is correctly situated. Don't force it in or you may damage it.

2 Connect one end of the LocalTalk cable to the LocalTalk connection box attached to the AsantéPrint unit.

Then plug the other end of the LocalTalk cable into another LocalTalk connection box connected to a LocalTalk printer.

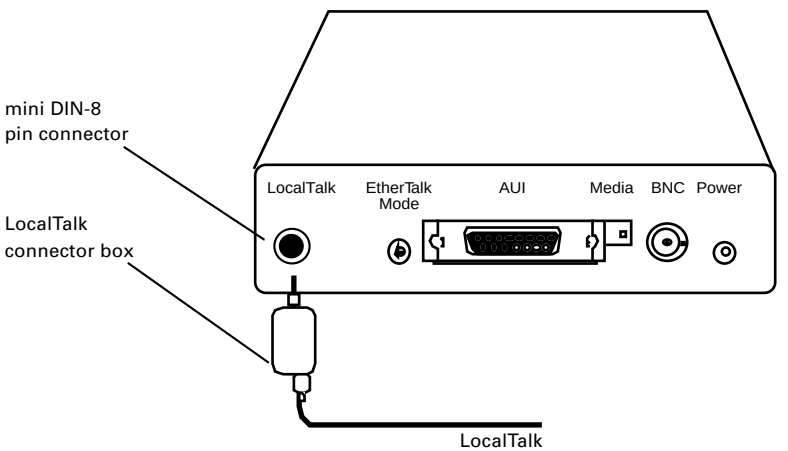


Figure 2-8 Connecting the LocalTalk connection box

Powering up AsantéPrint

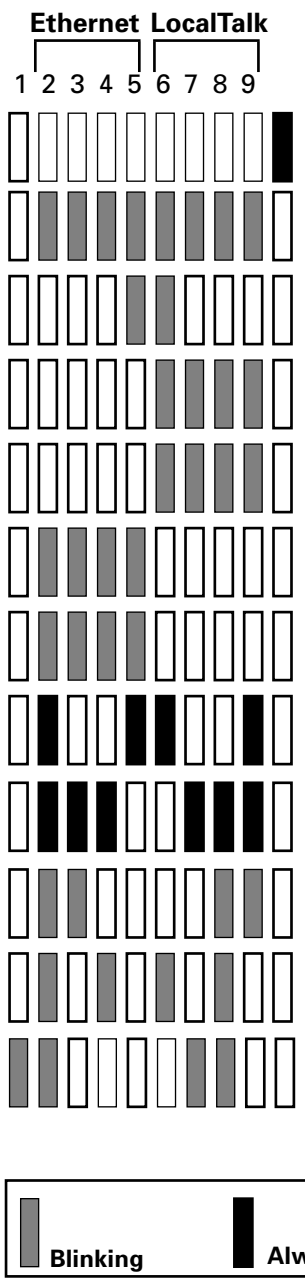
Connect the AsantéPrint unit to a power supply and power it up.

AsantéPrint takes approximately 15 seconds to come up on your network. During this time it automatically detects the presence of LocalTalk devices and registers them as nodes on the Ethernet. Its default EtherTalk configuration is AutoSense.

Chapter 3 describes how to configure AsantéPrint using the AsantéPrint Manager software.

AsantéPrint LEDs

The ten LEDs (Light Emitting Diodes) on the AsantéPrint front panel indicate activity on the Ethernet and LocalTalk networks. The lights are described in Figure 2-9.



Status	Description
10	On 10BaseT cabling, Link Integrity on
2-8	Initial start-up
5, 6	Self diagnostic on startup
6, 7, 8, 9	LocalTalk send packets
9, 8, 7, 6	LocalTalk receive packets
5, 4, 3, 2	Ethernet send packets
2, 3, 4, 5	Ethernet receive packets
2, 5, 6, 9	EPROM erase in operation
2, 3, 4, 7, 8, 9	EPROM download in
2, 3, 8, 9	Invalid network condition operation
2, 4, 6, 8	Device error, call Asanté Technical Support
1, 2, 7, 8	Router on LocalTalk side —data loop detected

Figure 2-9 Display status LEDs

Using AsantéPrint Manager Software

AsantéPrint Manager software enables you to configure and manage AsantéPrint units.

You can run AsantéPrint Manager from any Macintosh computer on the Ethernet. (Routers on the network supporting AppleTalk protocols do not interfere.)

This chapter describes how to

- ❏ Install AsantéPrint Manager software
- ❏ Configure AsantéPrint
- ❏ Display AsantéPrint Statistics

Installing AsantéPrint Manager

To install AsantéPrint Manager, insert the AsantéPrint disk into a Macintosh computer on the Ethernet network that includes an AsantéPrint unit. (You can install AsantéPrint Manager on your hard disk.)

Selecting an AsantéPrint unit

To select an AsantéPrint unit:

1 Double-click the AsantéPrint Manager icon.

The *Select an AsantéPrint* dialog box appears.

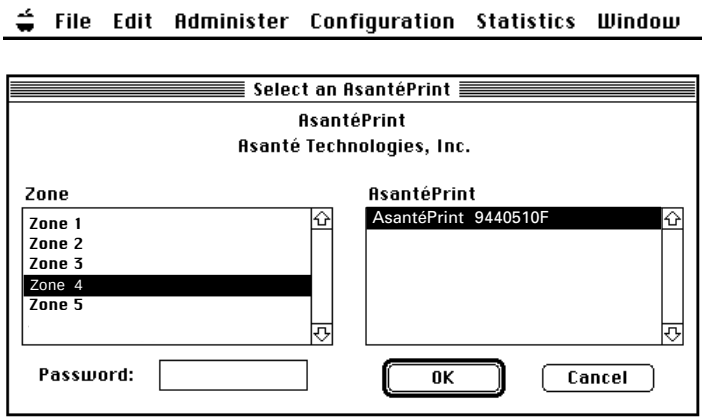


Figure 3-1 Select an AsantéPrint dialog box

Your Macintosh computer's zone is selected in the Zone window; a list of the AsantéPrint units in the zone appears in the AsantéPrint window.

2 Select a zone and an AsantéPrint unit in the zone.

If you have multiple zones, you may need to scroll through the zones to find the zone containing the AsantéPrint unit of your choice.

3 Enter the AsantéPrint unit's password.

The default password is: **letmein**

The password is required to configure the AsantéPrint or display statistics information.

Δ Note: You can configure the AsantéPrint unit with a new password. If you lose the new password, you can use **letmein** after power up for the first five minutes.

4 Click **OK** or press **return**. The AsantéPrint Status screen appears displaying information about the selected unit and the LocalTalk devices connected to it.

The name of the selected AsantéPrint unit appears in the title bar. The unit's default name, containing its Ethernet address, appears if the name has not been changed. The following information is given:

- AsantéPrint ROM software version number
- Hardware configuration of ROM and RAM
- EtherTalk mode
- Date this AsantéPrint unit was last configured
- Ethernet address of the selected AsantéPrint unit
- UpTime—the amount of time since last restart

Below this, information about the attached LocalTalk devices is given— the Name, Type, Phase 2 Zone Name, Network Number and Node Number (see Figure 3-2).

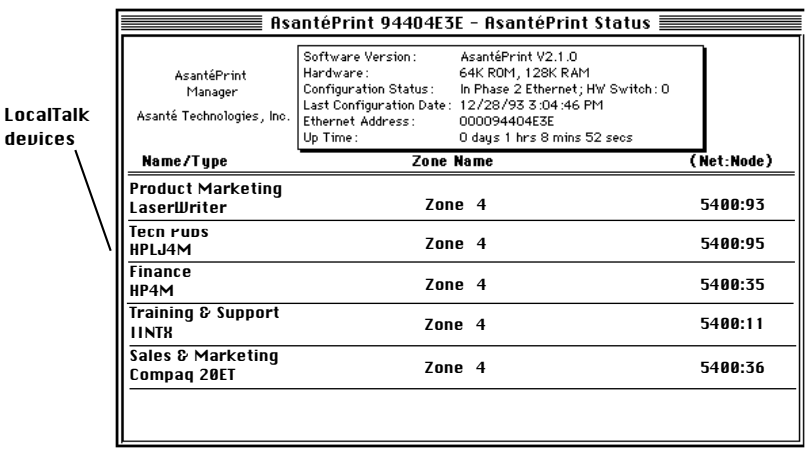


Figure 3-2 AsantéPrint Status window

About the AsantéPrint Manager menus

This is an overview of the AsantéPrint Manager menus you will use when you configure an AsantéPrint unit.

The AsantéPrint Manager menu options appear in the menu bar:

File menu

The File menu options are

- **Open Stats**—lets you display previously saved statistics. This option is active only when no configuration exists in the edit area.
- **Save Stats**—lets you save the statistics values.
- **Quit**—returns you to the Finder.

Figure 3-3 File menu

Administer menu

Use the Administer menu to control and restart the AsantéPrint unit. The menu options are

- **Choose AsantéPrint**—lets you select an AsantéPrint unit from the *Select an AsantéPrint* dialog box.
- **Restart AsantéPrint**—restarts the AsantéPrint unit. (This takes approximately 15 seconds.)

Figure 3-4 Administer menu

Configuration menu

Use the Configuration menu to configure the AsantéPrint unit.

This Configuration menu options are

- **Edit Configuration**—lets you select the EtherTalk mode of your Ethernet and edit the zone and password of a LocalTalk device. The EtherTalk mode is selected in the *Use EtherTalk* pop-up menu and its options are *EtherTalk Phase 1*, *Phase 2*, or *Autosense*.
- **Edit Name and Zone**—lets you to edit the name and zone of the AsantéPrint unit.
- **Edit Password** —lets you to edit the password for the selected AsantéPrint unit.
- **Download Configuration**—you **must** download after editing the AsantéPrint configuration.

Figure 3-5 Configuration menu

Statistics menu

Use the Statistics menu to display a variety of statistics windows containing information on packet types and errors from the selected AsantéPrint unit.

Figure 3-6 Statistics menu

Window menu

Use the Window menu to move between open windows during configuration. All open windows, including the Statistic window, appear in the menu.

Figure 3-7 Window menu

Configuring an AsantéPrint unit

The Configuration menu allows you to:

- ❏ Set the AsantéPrint unit's EtherTalk mode
- ❏ Edit the AsantéPrint unit's name and EtherTalk Phase 2 zone
- ❏ Set the ANSP password for the LocalTalk devices
- ❏ Edit the password for accessing AsantéPrint Manager for the selected AsantéPrint unit.

You must download your configuration changes using the **Download Configuration** command.

Edit Configuration

Use **Edit Configuration** to edit the

- ❏ EtherTalk mode in the *Use EtherTalk* box
- ❏ Phase 2 zone name of the selected LocalTalk device
- ❏ ANSP password of the selected LocalTalk device

1 Select **Edit Configuration** in the Configuration menu.

Figure 3-8 Configuration menu

The AsantéPrint Configuration dialog box appears.

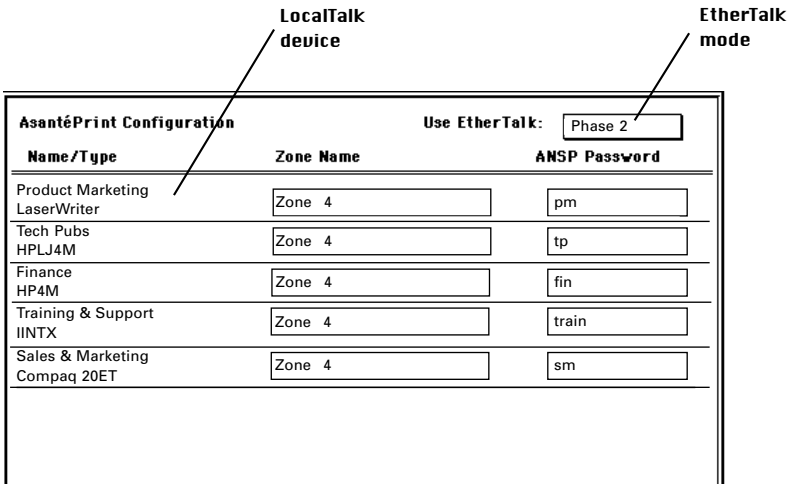


Figure 3-9 AsantéPrint Configuration dialog box

The **Name and Type** of each LocalTalk device appears in the first column. The name is a unique text string (with a maximum of 32 alphanumeric characters). The type corresponds to the service the device provides (selected in the Chooser). Examples of types include LaserWriter for printers and AFPServer for AppleShare servers.

The **Zone Name** and the **ANSP Password** for each LocalTalk device appear in the second and third column, respectively.

The **EtherTalk mode** appears in the *Use EtherTalk* box.The modes are explained below.

2 To select the EtherTalk mode:

— Make sure the **rotary switch** on the unit is set to **0** (for Autosense). If it is set to **1 or 2,** it **overrides** the setting in the Configuration dialog box.

— Open the *Use EtherTalk* pop-up menu and select the mode. (See Figure 3-9.)

The EtherTalk mode options are

EtherTalk Phase 1—supports only one zone name. In this configuration, the AsantéPrint unit listens for and replies to Phase 1 lookup requests only. The edit boxes in the *Zone Name* column are disabled.

EtherTalk Phase 2—support more than one zone name (seeded by a router). In this configuration, the AsantéPrint unit listens for and replies to Phase 2 lookup requests only. You can enter the zone name for each LocalTalk device in the *Zone Name* edit box.

AutoSense—means the AsantéPrint unit listens to the network when it first comes up and determines which EtherTalk mode to use. If it hears a Phase 2 broadcast or a mixture of Phase 1 and Phase 2 broadcasts, it uses Phase 2 and puts the AsantéPrint unit in the default zone. If it hears only Phase 1 broadcasts, it uses Phase 1.

3 To edit the **zone name** of a LocalTalk device, edit the text in the *Zone Name* text box.

The *Use EtherTalk* box in the AsantéPrint Configuration dialog box must be set to **Phase 2**.

The AsantéPrint unit and all LocalTalk devices attached to it are in the same logical zone when the unit is installed. You can place the devices into different logical zones on the same network as the AsantéPrint unit. If you do not specify a logical zone for a device, the device is automatically put in the same zone as the AsantéPrint unit.

4 To set the **ANSP password** of a LocalTalk device, edit the text in the *ANSP Password* text box. (See Figure 3-9.)

Δ Note: To access the password protected LocalTalk device from a Macintosh, you must add the device to your ANSP list on your Macintosh. You can use the *Add* or *Show Network* options. With **Show Network**, you must add the device to the ANSP list **first**, and then enter the ANSP Password in AsantéPrint Configuration. For more information, see "Using Show Network to add a device to ANSP" on page 4-5.

5 Click **OK** to save the edits, close the dialog box and return to the AsantéPrint Status window.

To cancel the changes, click **Cancel**.

Δ Note: After closing the dialog box, you **must** use the **Download Configuration** command to execute your changes.

Edit Name and Zone

Use **Edit Name and Zone** to edit the name and zone of the AsantéPrint unit.

Phase 2 must be selected in the *Use EtherTalk* box.

1 Select **Edit Name and Zone** from the **Configuration** menu. The *Edit AsantéPrint Name and Zone* dialog box appear.

2 Enter the new name of the AsantéPrint unit.

The maximum number of characters is 32 and embedded spaces are allowed. Use a name that is easy to remember and can be associated with the unit's function.

3 Enter the new zone name and click **OK**.

Figure 3-10 shows an example.

If you do not enter a zone, the AsantéPrint unit is put in the default zone for your Ethernet.

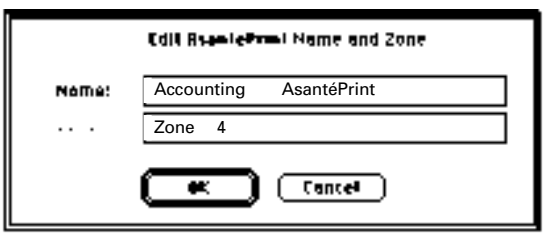


Figure 3-10 Edit AsantéPrint Name and Zone dialog box

Edit Password

Use **Edit Password** to edit the password of the AsantéPrint unit:

1 Select **Edit Password** in the Configuration menu.
The Edit Password for Configuration dialog box appears.

Figure 3-11 Edit Password for Configuration dialog box

2 Enter the new password.

Use any alpha-numeric combination of eight characters or less. If you forget the password you set, a built-in safety feature lets you use the default password, **letmein,** for five minutes after power up, along with any password set with AsantéPrint Manager.

Δ **Note:** For absolute security, keep the AsantéPrint unit in a locked room or closet to prevent unauthorized persons from reconfiguring the unit.

Download Configuration

Use **Download Configuration** whenever you have changed the AsantéPrint unit's configuration.

1 Select **Download Configuration** from the Configuration menu.

A dialog box prompts you to send the configuration information to the AsantéPrint unit.

2 Click **OK** to download. The AsantéPrint unit is restarted and back on the network in 15 seconds.

To cancel the download and return to the previous screen, click **Cancel**.

Erasing downloaded configuration

To erase the downloaded configuration and to return the AsantéPrint unit to its default settings:

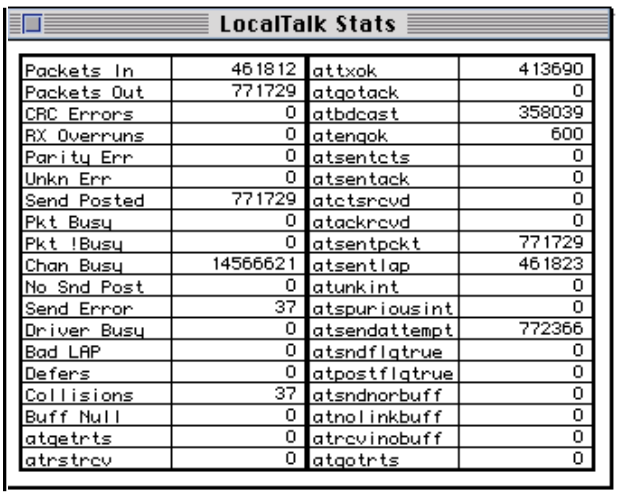
- ❑ Power off the unit.
- ❑ Set the **rotary switch** (on the back panel) to **5**.
- ❑ Power on again and wait about 3 seconds.
- ❑ Power off.
- ❑ Set the **rotary switch** to **0, 1** or **2** (AutoSense, EtherTalk Phase 1 or 2).
- ❑ Power on.

The AsantéPrint unit is reset to the factory default settings. All previous settings are canceled.

Displaying AsantéPrint statistics

The following descriptions are provided to aid a network manager in interpreting the LocalTalk, Ethernet and Buffer diagnostics displayed in the AsantéPrint Manager statistics window.

LocalTalk Statistics



LocalTalk Stats

Packets In	461812	attxok	413690
Packets Out	771729	atgotack	0
CRC Errors	0	atbdcast	358039
RX Overruns	0	atengok	600
Parity Err	0	atsentcts	0
Unkn Err	0	atsentack	0
Send Posted	771729	atctsrcvd	0
Pkt Busy	0	atackrcvd	0
Pkt !Busy	0	atsentpckt	771729
Chan Busy	14566621	atsentlap	461823
No Snd Post	0	atunkint	0
Send Error	37	atspuriousint	0
Driver Busy	0	atsendattempt	772366
Bad LAP	0	atsndflgtrue	0
Defers	0	atpostflgtrue	0
Collisions	37	atsndnorbuff	0
Buff Null	0	atnolinkbuff	0
atgetrts	0	atrcvinobuff	0
atrstrcv	0	atgotrts	0

Figure 3-12 LocalTalk Stats table

LocalTalk Statistics Column 1

Packets In

Total LocalTalk packets received.

These statistics can be used to get a general idea of how busy the LocalTalk receive channel is by resetting statistics and then monitoring it over time.

Packets Out

Total LocalTalk packets transmitted.

These statistics can be used to get a general idea of how busy the LocalTalk transmit channel is by resetting statistics and then monitoring it over time.

CRC Errors

LocalTalk CRC Errors.

More than a few of this type of error is generally an indication of a wiring error on your LocalTalk network. Check for termination on each end of the network and look for bad punch downs on twisted pair LocalTalk networks.

RX Overruns

LocalTalk FIFO became too full on receive.

More than a few of these errors indicate a network wiring or hardware problem in the printer or AsantéPrint.

Parity Err

Bad Parity detected on a received data byte.

Usually an indication of bad LocalTalk wiring or running the wiring near a noise source. It could also indicate a hardware failure in the printer or AsantéPrint.

Unkn Err

Unknown error from LocalTalk driver. Should not occur under normal operation.

Send Posted

Packet posted to LocalTalk driver to be transmitted. Occurs every time a LocalTalk packet is sent.

Pkt Busy

Transmit semaphore is false, but a packet is still queued

Pkt !Busy

Transmit complete, but no packet queued.

Should not occur under normal operation.

Chan Busy

Attempt to send, but transmit semaphore is set. Occurs quite often under busy network conditions and does not indicate an error.

No Snd Post

Transmit complete, but transmit semaphore not set. Should not occur under normal operation.

Send Error

Error posting transmit to LocalTalk driver. A generic error which can be identified using other statistics.

Driver Busy

Driver indicated it was busy when posting a transmit. May occur under normal operation.

Bad LAP

Bad AppleTalk LAP type on received packet. An indication of software installed on a device that doesn't meet Apple Computer's specifications.

Collisions

Too many collisions occurred during a LocalTalk send. Occasionally occurs on very busy LocalTalk networks.

Defers

Too many back offs occurred due to traffic on LocalTalk. Occasionally occurs on very busy LocalTalk networks.

Buff Null

LocalTalk was passed a null buffer from calling routine. Should not occur under normal operation.

atgetrts

Not used.

atrstrcv

Reset the receive channel. Occurs occasionally under normal operation.

LocalTalk Statistics Column 2

attxok

Transmit occurred normally. Occurs when a LocalTalk packet is transmitted.

atgotack

Not used.

atbdcast

Sent a broadcast packet. Occurs in normal operation.

atenqok

Enquiry call to claim an address returned OK. Occurs in normal operation.

atsentcts

Not used.

atsentack

Sent an acknowledgment in response to an address inquiry. Occurs in normal operation.

atctsrcv_int:

Ethernet receive no error interrupt. A generic indication of a receive with no errors.

atackrcvd

Received an acknowledgment on an address inquiry. Another LocalTalk device has this LocalTalk address. Occurs occasionally under normal operation.

atsentpckt

Sent a packet. Occurs under normal operation.

atsentlap

Sent a clear-to-send or acknowledge.

atunkint

Not used.

atspuriousint

Not used.

atsendattempt

A LocalTalk send was attempted. Occurs under normal operation.

atsndflgtrue

A send was attempted with send semaphore set. Should not occur under normal operation.

atpostflgtrue

A send was attempted with the post semaphore set. Should not occur under normal operation.

atsndnorbuff

A send was attempted without an active receive buffer. May occur occasionally under normal operation.

atnolinkbuff

No buffers available from buffer pool for LocalTalk. If this occurs frequently, the LocalTalk channel is too busy. Using one AsantéPrint per printer may yield additional performance.

atrcvinobuff

Not used.

atgotrts

Not used.

Ethernet Statistics

Statistics are given for the following types of Ethernet packets in the Ethernet Statistics table:

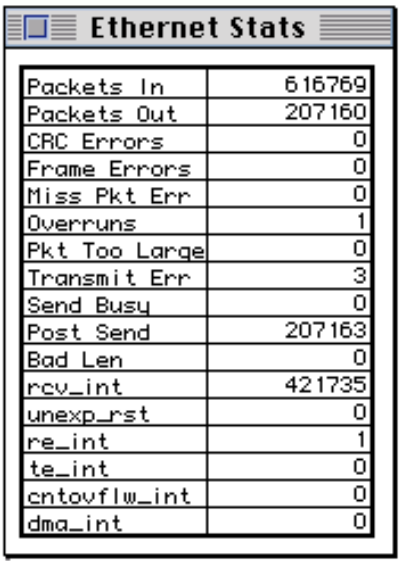


Figure 3-13 Ethernet Stats table

Packets In

Total Ethernet packets received. Statistic can be used to get a general idea of how busy the Ethernet receive channel is by resetting statistics and then monitoring it over time.

Packets Out

Total Ethernet packets transmitted. Statistic can be used to get a general idea of how busy the Ethernet transmit channel is by resetting statistics and then monitoring it over time.

CRC Errors

Ethernet CRC errors.

A large number of these errors indicates a wiring problem or a failing Ethernet adapter on your Ethernet network.

Frame Errors

Ethernet received packet that does not end on a byte boundary. A large number of these errors indicates a wiring problem or a failing Ethernet adapter on your Ethernet network.

Miss Pkt Err

Ethernet packet intended for node missed because buffer is full. May indicate a need to segment the Ethernet with routers or bridges to decrease the overall traffic flow to a given node.

Overruns

Ethernet chip ring buffer overflow. May be an indication that you need to segment your Ethernet with routers or bridges to decrease the overall traffic flow to a given node.

Pkt Too Large

Packet received too large for buffers, packet discarded. May occur in normal operation if TCP/IP or other protocols are used on the network. If your network is AppleTalk only, it may be indicate a hardware adapter is malfunctioning.

Transmit Err

Ethernet chip transmit error. May occur in normal operation. A large number of these errors indicate a very busy Ethernet network, or a wiring error on the Ethernet.

Send Busy

Transmit semaphore set cannot post packet to driver. Occurs in normal operation.

Post Send

Packet posted to LocalTalk driver to be transmitted. Occurs in normal operation.

Bad Len

Transmit packet is larger than transmit buffer. Should not occur in normal operation.

rcv_int

Ethernet received no error interrupt. A generic indication of a receive with no errors.

unexp_rst

Unexpected Ethernet chip reset. Should not occur in normal operation.

re_int

Ethernet receive error interrupt. A generic indication of a receive error.

te_int

Ethernet transmit error interrupt. yA generic indication of a transmit error.

cntovflw_int

Ethernet tally counter full. Should occur in normal operation.

dma_int

Remote DMA interrupt (should not occur in normal operation).

Buffer Statistics

Statistics are given for the following types packets in the Buffer Stats table.

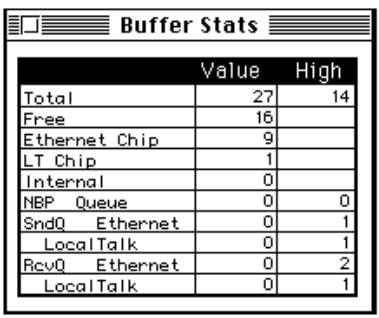


Figure 3-14 Buffer Stats table

Total

Total Buffers available. Number is the total number of memory buffers built into your AsantéPrint.

Free

Total Buffers currently free. Number of buffers which are currently not allowed.

Ethernet Chip

Buffers allocated for Ethernet chip ring buffer. A general indication of the memory allocated to the Ethernet chip in the unit.

LT chip

Buffers allocated for LocalTalk channel. Under normal operation, the LocalTalk channel always has a buffer available to receive info.

Internal

Buffers allocated for internal router use. Used for various internal housekeeping chores.

NBP Queue

NBP replies awaiting password verification. Used for password verification.

SndQ Ethernet

Ethernet Buffers currently on Ethernet send queue. Buffers waiting to be sent out on the Ethernet.

LocalTalk

Currently on LocalTalk send queue. Buffers waiting to be sent on the LocalTalk.

RcvQ Ethernet

Ethernet Buffers currently on Ethernet receive queue. Received Ethernet buffers waiting to be processed.

LocalTalk

Buffers currently on LocalTalk receive queue. Received LocalTalk buffers waiting to be processed.

Δ Note: The **Value** column in the Buffer Stats represents the value for the statistics and the v column represents a high water mark or a maximum value the statistic has reached. The *High* value for the Total Buffers represents the lowest value reached.

Advanced Network Security Protocol (ANSP)

To access a LocalTalk device protected by a password, you must have the Advanced Network Security Protocol (ANSP) cdev software installed and properly configured on your Macintosh.

The ANSP cdev software requires the AsantéPrint unit (attached to the protected device) to request the password from the Macintosh before it grants access to the device.

If you do not have the ANSP cdev software on your Macintosh, the protected LocalTalk devices do not appear in the Chooser window.

In the example below, two Macintosh computers with ANSP software installed can access three password protected LocalTalk printers.

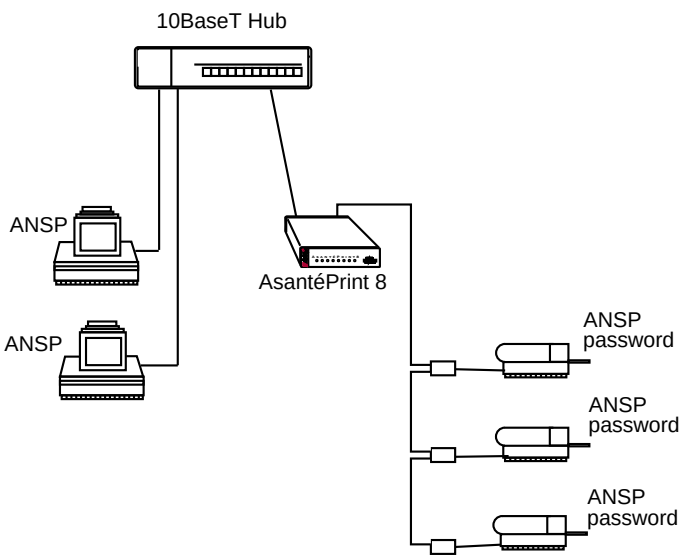


Figure 4-1 Example of two Macintosh computers on the Ethernet with ANSP installed

Installing ANSP

Install the ANSP cdev software on all Macintosh computers that need access to password protected LocalTalk devices attached to an AsantéPrint unit.

Δ Note: Before you install the software, make a back-up copy of the original AsantéPrint diskette. Use the backup diskette as the installer diskette.

To install the ANSP cdev software:

1 Insert the AsantéPrint diskette containing the ANSP cdev software in the Macintosh.

2 Drag the ANSP icon from the diskette to the *Control Panels* folder (for System 6.x—drag the ANSP icon to the *System* Folder).

3 Restart the Macintosh.

Adding a LocalTalk device to ANSP

To manually add a LocalTalk device to the ANSP cdev software on a Macintosh:

1 Open the **ANSP** icon in the *Control Panels* folder.

The ANSP dialog box appears.

No devices appear if you are adding for the first time.

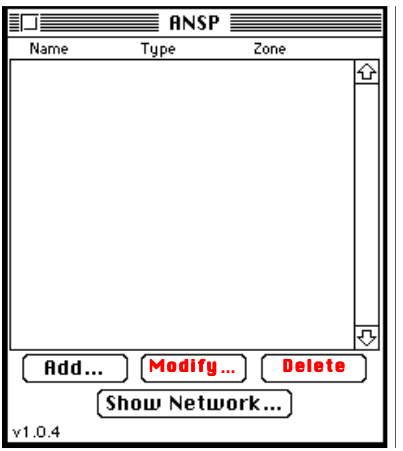


Figure 4-2 ANSP dialog box

2 To add a LocalTalk device, you can select **Add** or **Show Network**. Our example explains **Add** first.

Select **Add**.

A form appears.

3 Type name of the LocalTalk device, its type, zone, and the password and click **OK**

An example appears below.

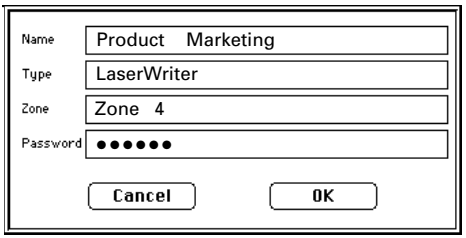


Figure 4-3 Adding a LocalTalk device to ANSP

Be sure you enter the **same** name, type, zone, and password as they appear in the AsantéPrint Configuration menu (see Figure 3-9 on page 3-8).

The added device appears in the ANSP dialog box.

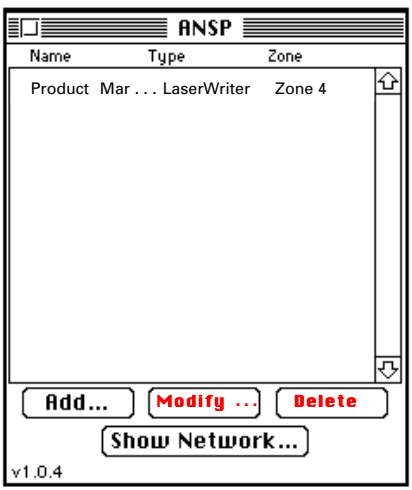


Figure 4-4 Entry in the ANSP dialog box

Using Show Network to add a device to ANSP

With **Show Network,** you need to add a LocalTalk device to the ANSP list **first** and then assign a password to the device with AsantéPrint Manager (see page 3-9). This is necessary because password protected devices do not appear in the *Show Network* dialog box.

To add a LocalTalk device to ANSP using **Show Network:**

1 Select **Show Network**.

A dialog box appears displaying, on the left, your EtherTalk zones (with the default zone automatically selected) and, on the right, all devices in the zone. This box lets you easily add a device without typing, thereby avoiding spelling errors.

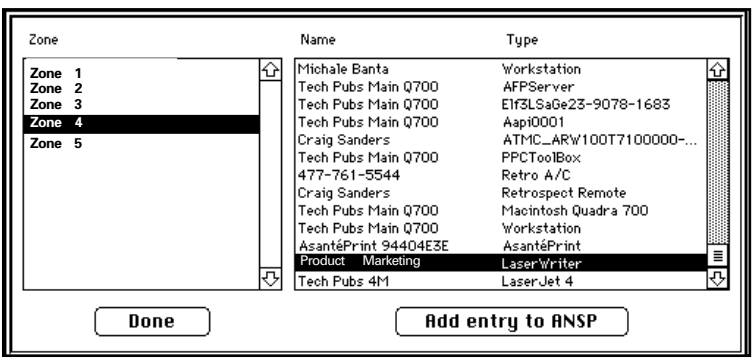


Figure 4-5 Show Network dialog box

2 Select the LocalTalk device and click **Add entry to ANSP**. (See Figure 4-5 below).

3 **Click Done. to close the dialog box.**

The added device appears in the ANSP dialog box . Before you close it, you are reminded that you **must restart** your Macintosh for your changes to ANSP to take effect.

4 Restart your Macintosh.

Modifying the password for the LocalTalk device

If the network manager has changed the password for a specific LocalTalk device, or if you have entered the password incorrectly, you can modify it as follows:

1 From the ANSP dialog box, select the LocalTalk device and click **Modify**.

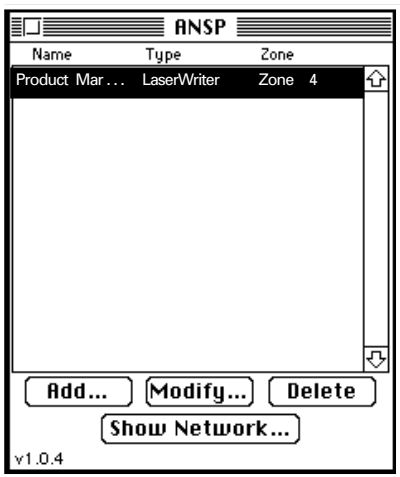


Figure 4-6 Selecting the LocalTalk device to be modified

A form for the device appears with the password in bullets (see Figure 4-6 below).

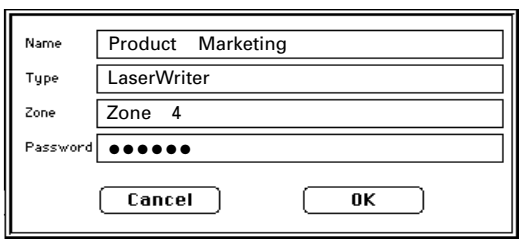


Figure 4-7 Modifying the ANSP password

2 Edit the password and click **OK**.

The password must be the same password assigned in the ANSP password edit box in the AsantéPrint Manager (see Figure 3-9 on page 3-8).

3 Restart the Macintosh.

Deleting an ANSP entry

To delete a LocalTalk device entry in the ANSP dialog box:

Select the entry in the ANSP list and click **Delete**.

How ANSP Works

When the Chooser looks up the addresses of network services, such as printing services, in an AppleTalk zone, it uses Name Binding Protocol (NBP) software which maps the services to the physical addresses of specific network devices. (For more information about NBP, see Chapter 7 of *Inside AppleTalk*.)

AsantéPrint filters NBP Lookups directed for the devices on its LocalTalk side. These lookups come either directly or indirectly when a Macintosh user selects a device with the Chooser. If the requested LocalTalk device is configured with an ANSP password, AsantéPrint sends a password verification packet to the requesting Macintosh. If AsantéPrint receives the correct password from the Macintosh, the NBP Lookup is answered.

The device (or service) appears in the Chooser.

TroubleShooting

Questions and Answers

The most common problems are related to faulty LocalTalk cabling. Always check your cable, its termination, and the power connections.

Δ Note: If you have a problem with your AsantéPrint device and nothing presented here solves it, contact your Asanté dealer or call Asanté Technical Support.

Q Why can't I see the AsantéPrint unit with AsantéPrint Manager software?

A If your Macintosh computer is running AsantéPrint Software Manager on LocalTalk, it won't be able to see the AsantéPrint device. The solution is to switch your Macintosh over to EtherTalk.

If your Ethernet network has several zones, you may be looking for the AsantéPrint unit in a zone other than the default zone. Find out what your default zone is and look there.

If your Ethernet is running both Phase I and Phase II, and your network doesn't have a Phase I or Phase II router, the AsantéPrint unit may auto-configure itself differently from the Macintosh running the AsantéPrint software Manager.

Go to your Macintosh Control Panel, choose **Network**, and determine if it is Phase I or Phase II. Force the AsantéPrint unit to the same Phase by using the rotary switch on the back panel. Zero is AutoSense (the factory setting); 1 is Phase I, and 2 is Phase II. You can also use the AsantéPrint Manager to set the phase if the rotary switch is set to 0 (AutoSense).

Q Why don't the front panel LED lights come on when I turn on my AsantéPrint unit?

A Make sure that the AC adapter is properly plugged in and connected to your AsantéPrint unit. If the problem still continues, contact Technical Support.

Q I just replaced my Internet router with an AsantéPrint unit and all my zones have disappeared. Why?

A The AsantéPrint unit is not a router, and therefore does not allow you to configure zones. Use another router on your Internet to create zones.

Q Can I connect more than two LocalTalk devices to an AsantéPrint unit?

A AsantéPrint 8 supports eight LocalTalk devices. A configuration of more than eight is illegal and won't work. AsantéPrint supports two LocalTalk devices. A configuration of more than two is illegal and won't work.

Q When I put the AsantéPrint unit on my network I can't see any devices behind it. Lights 1, 2, 7 and 8 are blinking on the AsantéPrint front panel. What's happening?

A In this case, the AsantéPrint unit has detected a router on its LocalTalk side. This is an illegal configuration for AsantéPrint and must be avoided. Some modems, such as the Shiva Net Modem E, and other peripheral devices act as "half routers." When such a device is on the LocalTalk side, behind the AsantéPrint, its routing functionality must be turned OFF for it to work properly with AsantéPrint.

Q Can I print to a LocalTalk laser printer connected to AsantéPrint from an IBM PC or PC compatible on the Ethernet network?

A Yes. Network operating system software, such as Novell's NetWare for Macintosh, Microsoft's Macintosh Services for LAN Manager, or Apple's AppleShare or Sitka's TOPS enables you to use LocalTalk printers. Please consult these third-party manufacturers for more detailed information.

Q Why does it take a long time to print a job through my AsantéPrint unit?

A When printing is slow, the first thing you need to check is the statistics window in the AsantéPrint Manager software. You may find a number of CRC errors, Send errors, or other problems. If the errors show up on the LocalTalk side, the problem is with either the LocalTalk wiring, a LocalTalk connector, or, possibly, an unterminated LocalTalk network. If the problem is on the Ethernet side, it could be a bad transceiver, or a faulty piece of cable.

Technical Specifications

LocalTalk printers supported by AsantéPrint

AsantéPrint supports the following LocalTalk printers

- ❏ Apple LaserWriter Pro
- ❏ Apple LaserWriter II NTX
- ❏ Apple LaserWriter IIf
- ❏ Apple LaserWriter IIg
- ❏ Apple Personal LaserWriter NTR
- ❏ Apple ImageWriter II
- ❏ Hewlett Packard LaserJet
- ❏ HP LaserJet 4M
- ❏ HP LaserJet 4ML
- ❏ HP DeskWriter
- ❏ HP DeskWriter C
- ❏ Compaq PAGEMARQ 20
- ❏ QMS-PS 410
- ❏ Spectra Star (color printer)
- ❏ NewGen System Turbo PS Series

Standards Supported

AsantéPrint supports

- ❏ IEEE 802.3 Ethernet specifications for Thick (10Base5), Thin (10Base2), and unshielded twisted pair (10BaseT) media
- ❏ AppleTalk Phase 1 and Phase 2

Software included

The following software is included in the AsantéPrint package

- ❑ AsantéPrint Manager
- ❑ Advanced Network Security Protocol (ANSP) control panel device

Ethernet Ports

AsantéPrint and AsantéPrint 8 have the following ports

- ❑ AUI/RJ-45
- ❑ AUI/BNC

On-Board RAM

AsantéPrint—32K

AsantéPrint 8—128K

Power Supply

115VAC at 30 Watts

60 Hz (220V available)

Dimensions

5.5"W x 7.5" L x 1.5"H

Weight

1lb and 10.6 oz.

Warranty

5 years

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