

NetVenue Provisioning Guide

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NetVenue

Provisioning Guide

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1 Overview

This guide is designed to assist owners and planners of the NetVenue system to ensure that all parts of the system are provisioned.

All components of the NetVenue system must be installed and configured correctly. Figure 1-1 shows the relationship between different parts of the NetVenue system. This is a simplified diagram. Each chapter will explore a section of the NetVenue system in greater depth.

The pay telephony component of the NetVenue system is optional. It is included in this figure to show the complete system.

Figure 1-1 : System Overview

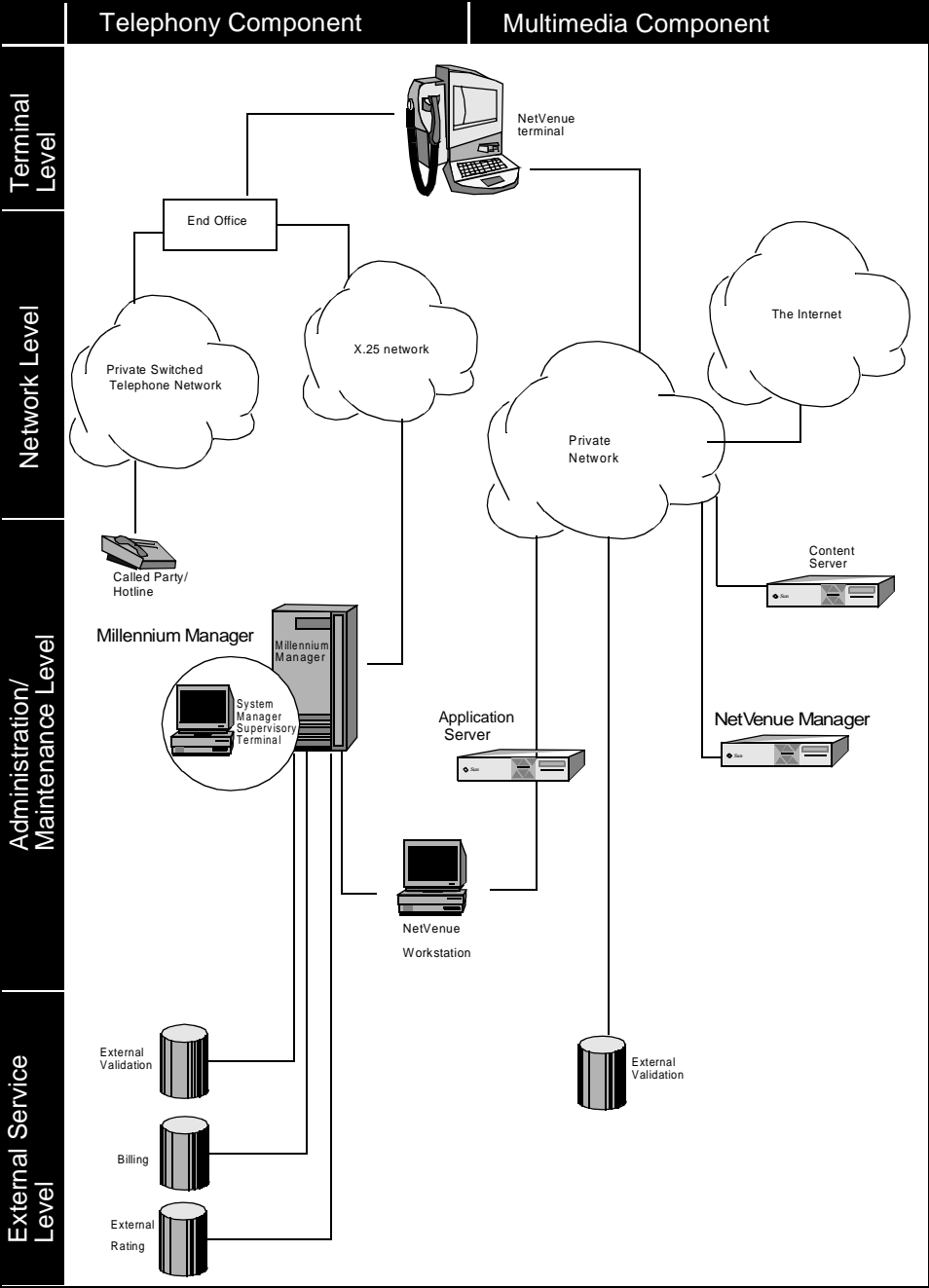


Figure 1-1 shows the four levels of the NetVenue System:

- Terminal level
- Network level
- Administration and maintenance level
- External service level

Terminal level

The terminal level is the only portion of the NetVenue system which the public interacts with. It consists of terminals, from which users can access the Internet/Intranet, send and receive E-mail, perform transactions, print receipts, and make phone calls.

The terminal can be connected to the network in several different ways, depending on your network requirements.

Network level

While the entire NetVenue terminal system is a network, it will often use many other networks for connectivity. The network level can consist of any of the following networks:

- A private IP network allows the terminals to connect with the NetVenue Manager, the maintenance center, content servers, and the Internet/Intranet.
- The Internet can be accessed through the private network. From here, users can access different types of content, including E-mail, applications, and public Web servers connected to the Internet.
- The X.25 network allows the telephony component of the NetVenue terminal to connect with the Millennium Manager through the terminal's POTS (Plain Old Telephone Service) line.
- The Private Switched Telephone Network (PSTN) is used by the telephony component of the NetVenue ter-

minimal to contact a called party or the help line.

Administration and maintenance level

The administration and maintenance level is where system administrators, help desk personnel, and maintenance technicians control and interact with the system.

- The Millennium Manager system controls the pay telephony component of the NetVenue terminals. The Millennium Manager validates cards and configures pay telephony parameters. This management software is run on a Tandem computer, and is controlled from PC workstations running Millennium Telco Maximizer software.
- The NetVenue Manager controls the multi-media portion of the NetVenue system. The NetVenue Manager coordinates pay-per-use services and stores alarms when the terminals are not operating properly. The NetVenue Manager runs on a Sun computer, and is controlled from workstations.
- Content servers provide Web-based content and services that run on the NetVenue terminal.
- Maintenance centers coordinate the repair and maintenance of the NetVenue terminals and monitor terminal activity.
- The application server allows maintenance technicians and system administrators to control the NetVenue Manager through the Admin tools suite.

External service level

The external service level consists of the services provided by other companies to support the NetVenue system.

These include:

- Card validation facilities to clear credit cards.

- Call rating databases, such as CGI and MORRIS, which must be accessed to rate calls.

Other provisioning requirements

In addition to these components, there are several other aspects of the NetVenue system which must be provisioned for:

- Arrangements must be made for pay-per-use services. Agreements with credit card companies must be set up.
- Services must be developed. This consists of top level menus, and HTML/Java content for services.
- Installation and maintenance personnel must be provisioned for. Nortel Networks offers courses in various aspects of management of the system, and can help companies manage their network.

Appendix A contains a provisioning checklist. Use this checklist to ensure that you have provisioned for all aspects of the NetVenue system.

2 Terminal provisioning

This section explains how to select a suitable site for a NetVenue terminal. This section also discusses customizing the NetVenue terminals for your company.

Site requirements

When selecting a site to install the NetVenue terminal, the standards and guidelines of the operating company should be followed. In general, ensure the following conditions are met:

- There must be sufficient network connectivity. A network connection (ISDN, Ethernet) and POTS line can be provided to the site.
- There must be power dedicated to the NetVenue terminal. NetVenue terminals require supplementary local power from a 115-volt wall plug-in.
- The site must be accessible for public use if applicable.
- There must be adequate lighting.
- There must be sufficient privacy for the user.
- The location must not be near excessive noise or vibration.
- The location must not be near sources of grease, smoke or dust.

- The location must not be near moving machinery, piled merchandise, narrow aisles or stairways.
- The NetVenue terminals and wiring must be at least 152 mm (6 inches) from neon light fixtures, transformers, or other equipment that could have inductive effects.
- If the terminal needs to be removed at a later date, the mounting surfaces must be inexpensive to repair.
- Any necessary furniture must be installed.

Supplementary power requirements

Provisioning for supplementary power must be taken into account when selecting a site:

- In current payphone installations, furniture has supplementary power provided for the booth lighting. This power might not be available 24 hours a day. Some booths may obtain power from signs that are turned on only at night. This type of power source will not be adequate for the proper installation of the NetVenue terminal.
- To ensure that the terminal is completely installed and tested, supplementary 110 VAC power must be in place prior to installation. The necessary lead period for the installation of the supplementary power must be taken into account in the installation planning stage.
- Costs for wiring, conduits, and service entrances must be taken into account during the business analysis process.

The following are the supplementary power requirements for the NetVenue terminal:

Power Source: Local power using a wall plug-in (110 volt AC)

Supplying power to the NetVenue terminal is the responsibility of the operating company.

Peripheral support

The terminal supports additional peripheral devices including a debit pad, ticket printer and laser printer. These devices can be attached within a kiosk enclosure. Contact Nortel Networks for more information on kiosk units.

Terminal customization

The design of the NetVenue terminal housing allows the customization of the product for each individual customer. When ordering the terminal, you must request:

- ID bezel
- lock
- keyboard model

Depending on your connection requirements, you may also need:

- IAS module
- ISDN router

The ID bezel can be customized with decals, embossing, and silk-screens with company logos and colors. These often must be ordered well in advance of the installation date.

The NetVenue terminal allows for customer-specific locking keys. Be sure to obtain these prior to installing the terminals.

The keyboard is currently available in two models: English and French.

Determining terminal connection requirements

The terminal requires one of two types of network connections.

- If the network connection is Ethernet, then the terminal can connect to it.
- If the network connection is ISDN, then the a router kit must be installed in the terminal.

For more information on these connectivity options, see the TCP/IP network and telephony network sections of this document.

If a terminal is to be used for pay telephony, it is preferable that the analog line has answer supervision. If the line does not have answer supervision and is to be used for pay telephony, then an IAS module must be installed in the terminal during installation.

Line information should be available from the line provider, but it is recommended that you test the line prior to installation.

Terminal settings

You must also record information for each terminal, and come up with a unique name for each terminal.

Naming conventions

Each terminal requires a unique, eight character name. This name can use any combination of letters and numbers. Table 2-1 shows examples of valid names:

Table 2-1: Naming conventions

Terminal Type	Convention	Example
Lab Terminal	LABSTN<#>	LABSTN01
Demo Terminal	DEMOSTN<#>	DEMOSTN1
Production Terminal	<Customer><#>	VANAIR01

Settings

Table 2-2 shows the configuration parameters that must be recorded for each terminal.

Table 2-2: Configuration parameters

Item	Value	Notes
Terminal Name		A brief, unique name for this terminal. It will be used as the computer and hard drive name.
IP address		This set of parameters is required for the networking configuration. You can obtain these parameters from your network administrator.
Subnet mask		
Default gateway		
DNS server (primary and secondary DNS)		
Security database server IP address		This set of parameters is required to configure the database connection the terminal uses. You can obtain these parameters from your terminal administrator.
Security database instance name		
Security database user ID		These parameters are required for the terminal to access the security database. These are in encrypted form.
Security database password		
Terminal access code		These parameters are required only if pay telephony is installed on the terminal.
Personal Identification Number (PIN)		
Terminal ID		
Millennium Manager Phone number		

3 NetVenue Manager

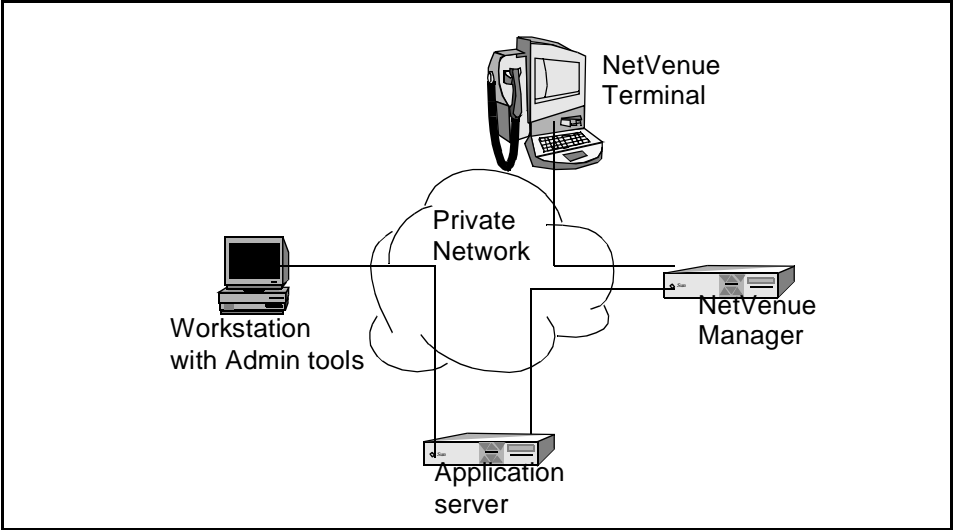
This section explains provisions that must be made for running the NetVenue Manager. These provisions include the hardware and software necessary for setting up the server and the requirements for the workstations that are used for administering the system.

The NetVenue Manager is a server accessed by terminals and by administration, help desk, and maintenance workstations.

Figure 3-1 shows the relationship between the components that make up the NetVenue Manager system.

- A computer with the Admin Tools Suite is used to change settings for the NetVenue system.
- This computer communicates with the application server, where the Admin Tools are run.
- The application server makes any changes on the NetVenue Manager.
- When the terminal logs on to the database server, it checks for and downloads the new information.

Figure 3-1: NetVenue Manager setup



Sun hardware requirements

The NetVenue Manager uses the *Solaris operating system on *Sun hardware. Two servers can be used for the NetV-
enue Manager, depending on the network size.

The Sun Ultra 5 is recommended for smaller networks, and the Sun Ultra Enterprise 2 is recommended for larger networks. Table 3-1 shows the configurations of these servers.

Table 3-1: Server hardware configurations

	Sun Ultra 5		Sun Ultra Enterprise 2	
	Minimum Configuration	Fully Configured	Minimum Configuration	Fully Configured
Capacity in NetVenue terminals	<100	100-1000	100-1000	>1000
CPU	One 270 Mhz Sparc-Class	One 270 Mhz Sparc Class	One 300 Mhz Sparc-Class	Two 300 Mhz Sparc-class

	Sun Ultra 5		Sun Ultra Enterprise 2	
	Minimum Configuration	Fully Configured	Minimum Configuration	Fully Configured
RAM	128 MB	512 MB	512 MB	2 GB
Internal Hard Drives	4 GB	8-40 GB mirrored	8-40 GB mirrored	TBD
Total disk storage	12 GB	100 GB	100 GB	1 TB
Sun supplied monitor, keyboard, and mouse	yes	yes	yes	yes
Sun supplied 8mm tape back-up device	yes	yes	yes	yes
Built-in CD-ROM	yes	yes	yes	yes
Dual-power capabilities 120 Volt/240Volt	yes	yes	yes	yes
10/100BT Ethernet Network Card	yes	yes	yes	yes

Using a central server with remote servers

If the network contains a central server with multiple remote servers, a fully configured Ultra Enterprise 2 is recommended. It is also recommended that the server disks be mirrored. This server is the central server on to which other remote servers can replicate their data.

Uninterruptible power supply

Each server is configured with uninterruptible power supply (UPS). To protect against a general power failure in the

facility hosting the server, the UPS should be capable of running the server for at least 20 minutes. American Power Conversion UPS is recommended.

Software requirements

The NetVenue Manager server software requires a Sun Solaris 2.5.1 operating system or higher, and Oracle RDBMS version 7.3 or higher.

Solaris 2.5.1 operating system

The Solaris operating system is a UNIX system capable of supporting the NetVenue network. The operating system requires 500 MB of disk space plus an additional 512 MB for UNIX swap space. A configured system running Solaris on Ultra 5 or Ultra Enterprise 2 with 128 MB of core RAM will leave approximately 65 MB of core RAM free.

Oracle RDBMS

The multimedia server software requires *Oracle release 7.3.4 for the Solaris 2.5.1 operating system. The Oracle software requires approximately 500 MB of disk space to install. An additional 1 GB of disk storage space is required to configure the NetVenue database tables.

Workstation requirements

The workstation must be a Pentium 166 or greater with 64 MB of RAM, and Windows 95. The workstation also must have access to the application server over a private network.

4 TCP/ IP network

This section explains procedures that must be established to control the flow of information. These procedures establish how calls are recorded and processed, and how reports and alarms are distributed.

The NetVenue terminals, the application servers and the customer content servers are often distributed over a wide geographical area, making the IP network critical. Even with a localized deployment of terminals, the engineering of the multimedia network can affect the operation of the NetVenue terminals.

The multimedia network supports the system by:

- providing data connections between the terminal, the application server and customer content server
- providing remote access from the maintenance centers to the terminal for various management functions
- distributing alarm notifications to the maintenance centers

Terminals can be connected to the network through an ISDN terminal adapter Ethernet, or other terminal adapter.

When provisioning the network, consider the location and number of content servers. Larger networks require more content servers. Remote NetVenue Managers can also be set up on a larger network.

You must also provision a housing facility for these servers. The housing facility must meet the operating environment for the server you select, and must be secure.

Configuring ISDN

Integrated services digital network (ISDN) is one way to connect a NetVenue terminal to the private network.

The ISDN line allows dialing in to either the public switched telephone network (PSTN) or a private network. Through these connections, it can connect to the Internet, servers, workstations, and the Millennium Manager.

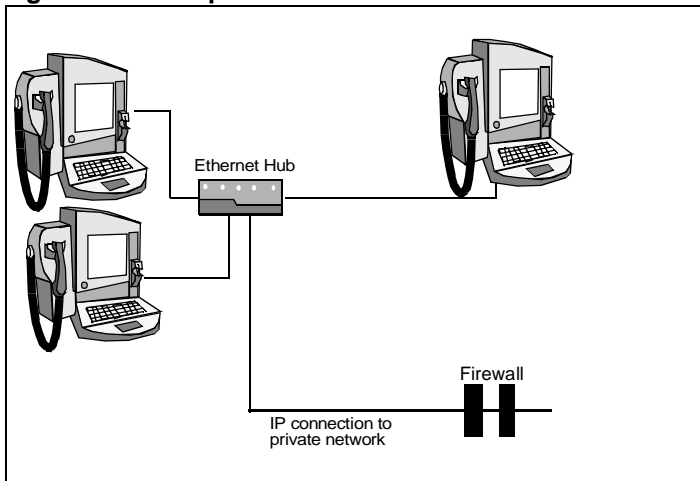
ISDN interface specifications:

Connector:	RJ-45
Conductors:	Tip and Ring

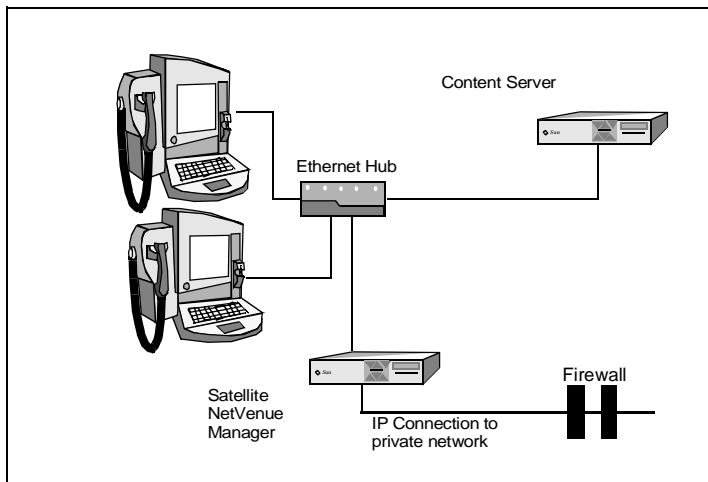
Ethernet

Ethernet is another option for connecting NetVenue terminals to the network. Terminals can be installed on an existing Ethernet network, or on a new one. In its simplest form, one or more NetVenue terminals are connected to an Ethernet hub, which is then connected to the private network.

Figure 4-1 shows how several terminals can be connected to one Ethernet hub. Every NetVenue terminal has its own static IP address.

Figure 4-1: Multiple terminals on Ethernet

Ethernet can be used to connect to servers and databases as well as the NetVenue terminals. The satellite NetVenue Manager connects to the private network, and through it NetVenue terminals can access the NetVenue Manager and the Internet as shown in Figure 4-2.

Figure 4-2: Ethernet with content server and satellite database

If you plan to use an Ethernet connection, be sure to order the Ethernet terminal, which does not come with an ISDN router.

The specifications for the Ethernet interface are:

Physical:	10BaseT
Protocol:	TCP/IP
Connector:	RJ-45
Conductors:	UTA CAT5

Registering IP addresses

You must register private IP addresses for each of the following:

- terminal
- router
- database server
- application server

As well, any other device on the network, such as proxy servers, firewalls, and content servers, all require IP addresses.

5 Content servers

This section explains provisioning for content servers. There are several ways in which the servers can be set up, depending on the type of network, and on the amount and type of information being distributed. There are many ways the content server can be connected to the network.

Setting up content servers is the responsibility of the operating company.

Content servers on the private network

One common way of connecting a content server to the NetVenue network is to connect it directly to a private network, on which the terminals operate. The content server has its own IP address, and NetVenue terminals can be told through the Admin Tools Suite which content server to access.

Content server on the Internet

Another option is to connect the content server to the Internet. With this configuration, both NetVenue terminals and public Internet users can access the information on the content server.

Sites requiring more security can use Secure Sockets Layers (SSL) to encrypt information as it travels over the Internet.

E-mail server

E-mail is an external service which is available on all NetVenue terminals, if this feature is enabled. Operating companies do not need to set up a server for E-mail.

Proxy server

If access to public Internet sites is going to be available to NetVenue terminal users, it is recommended that one or more proxy servers be installed in the network.

These servers provide two important benefits:

- the server can block access to questionable material which may not be appropriate for public viewing.
- the speed of user interface increases, since most proxy servers can store the most recently-accessed Web sites.

6 Application server

The application server allows administration personnel to make changes to the NetVenue Manager database. This includes configuring E-Commerce, monitoring, and menu development.

The application server can either be installed on a fast Pentium computer (400 Mhz or greater), or on the same server as the NetVenue Manager. The machine must have Windows NT4.0 Server installed on it, with at least Service pack 4.

If possible, Internet Explorer 5.0 should be installed on the computer, along with Java Virtual Machine.

Before installing the application server, the database must be installed and configured.

7 Millennium Manager

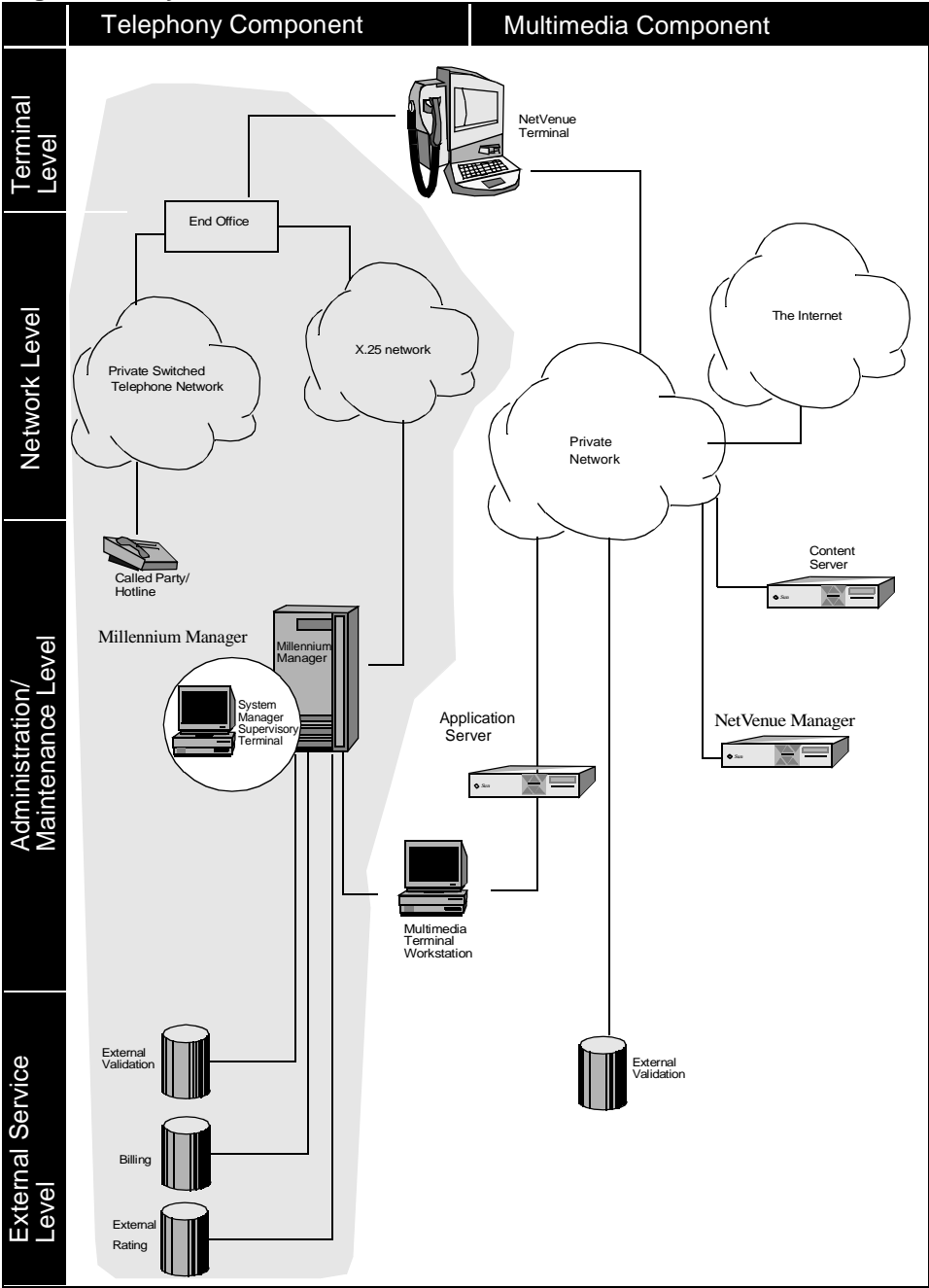
The Millennium Manager is a server that maintains Millennium terminals, including the pay telephony element of the NetVenue terminal.

NetVenue terminals connect to the Millennium Manager, external databases, and other parts of the system through an X.25 network, or through a standard analog line that calls a modem pool local to the Millennium Manager.

The Millennium system hardware consists of a Tandem computer, server software, workstations for the operators, and connections to the terminals. The grey area in Figure 7-1 shows the portion of the telephony component that the operating company is responsible for.

If the terminals are being used without the pay telephony feature, then the components within the grey area do not need to be set up. However, a phone line must still be connected to the terminals so that the terminals can call the help line.

Figure 7-1: System Overview



Tandem computer

The Millennium Manager is an On-Line Transaction Processing (OLTP) application running on a Tandem main-frame computer. The Tandem computer and its operating system are designed for nonstop operation. All the hardware is duplicated. If one component fails, another will take over for it. Software runs redundantly, to ensure its availability to users and to external devices. This allows simultaneous operation by many users, real time management of the terminals, and integration with external agencies for call rating and credit card validation.

Some Millennium customers do not need a dedicated Millennium Manager. For these customers, Nortel Networks can provide setup through a Millennium Manager Service Bureau.

Workstation provisioning guidelines

Central office and maintenance center personnel who configure and manage the Millennium terminals need workstations. The workstations run the Millennium Telco Maximizer application, which is used for

- adding new terminals to the Millennium Manager database
- modifying the configurations of the existing terminals
- obtaining the current status of terminals
- transferring Millennium Manager reports and other status information from the Millennium Manager to PC-based applications.

A common choice for a workstation is a Pentium PC-based platform or better, with at least eight MB memory, a hard drive and a floppy drive. The operating system software should be at least Windows 95, with 25 MB of free hard disk space. A CD-ROM drive is recommended.

To access the Millennium Manager, the workstation requires two programs:

- A terminal emulation package supplied by Tandem.
- Telco Maximizer supplied by Nortel Networks.

In typical configurations, the most cost-effective way to access the Millennium Manager is through a public dial-up port on the local value-added network (VAN). To accomplish this, the workstation requires a modem. Use an internal or external Hayes-compatible modem capable of connecting at 9,600 bps or faster. The appropriate external telephone line must also be provisioned.

Payphone alarms

Payphone alarms can be sent to the maintenance centers through E-mail, or they can be sent to the Millennium Website. Consult your Nortel Networks representative for information on this service. A standard report is generated at regular intervals. Alarms are sent out only when the NetV-enue terminal encounters a condition that requires it to send one, such as bad memory (RAM), or a card reader blockage, or unauthorized terminal access.

8 Payphone network

The NetVenue terminal pay telephony component uses the same network as a standard Millennium terminal. Enhanced telephony is optional.

Communication interfaces

The Millennium Manager server connects to the terminals using X.25 packet switched network (PSN) communication links. Each Millennium terminal has a 212A modem that can send data at 1,200 bps. The connection between the workstations and the Millennium Manager also uses PSN links, although the connection may be achieved through dial-up/direct dial, TCP/IP, or LAN.

Connecting to an existing payphone network

If a Millennium telephony network already exists, the NetVenue terminal CO line needs only to be connected to the existing modem pool. All information about the payphone component, including the alarms, will be sent to the Millennium Manager, not the Multimedia Manager.

Setting up a new telephony network

See the *Millennium Provisioning Guide* for information on setting up a telephony network.

9 Maintenance centers

A maintenance center is necessary to allow technicians to monitor the system and quickly respond to any alarms that require action.

To provide effective support for the installation, repair, and maintenance of the NetVenue terminals, a number of items must be provided by the operating company.

Alarm distribution

Typically, pay telephony alarms received by the Millennium Manager are routed to the Maintenance Center that services the area. Alarms are sent to E-mail accounts. These alarms can be read or downloaded to a workstation. As an additional service, alarms can be also be posted on the Millennium Web site. Talk to your Nortel Networks representative for more information about this.

Workstations

The workstation must be a Pentium 166 or greater with 64 MB of RAM, and Windows 95. The workstation also must have access to the application server over a private network.

Maintenance personnel responsible for the telephony component will also need a workstation to run Millennium

Manager. See Millennium Manager workstations in the Millennium Manager section of this document.

Tools required

This is a list of the tools required for installation and maintenance of the terminal.

Table 9-1:Tools and Equipment Required

Tool	Function
Voltmeter	Test voltage of supplementary power supply
ESD wrist strap	Protect electronic components from electrostatic (ESD) damage
Router software	Test ISDN and program router
Butt end test set	Test the CO line to the terminal and use during fault resolution procedures
Cleaning Card (PO713140 - dry type)	Clean card reader
Cable plug crimper	Add RJ11 or RJ45 connectors to required cables
Crescent wrench	Miscellaneous functions
Small slot-head screwdriver	Miscellaneous functions
#1 Type 1A cross-recess screwdriver	Miscellaneous functions
Valid credit card/ smart card	Test card readers
External CD-ROM unit	The external CD-ROM unit can be plugged into the terminal motherboard for software installation, upgrading, and maintenance.

Tool	Function
Bootable CD with software	Re-install terminal software in case of hard-drive failure, etc.
Customer content CD	For placing large image files, movie files, and sound files on the terminal.
IDE cable	For connecting the CD-ROM to the mainboard. One end must be able to plug into the portable CD-ROM unit, while the other end connects to the secondary IDE channel.
Paper roll	Replacing the receipt printer paper
PC compatible portable computer	Configuring the router

Other hand tools may be required for each installation site. In addition, it is recommended that during the initial implementation stages of the NetVenue terminals, the repair vehicles be provisioned with one complete set of field replaceable parts. As the operating company gains experience with the terminals and with the management of the alarms, the number of spare parts carried in the repair vehicles can be optimized.

Printer paper

The NetVenue terminal does not contain printer paper when it is shipped. The Maintenance center should have printer paper on-site when installing the terminals.

Consult the product catalog for information on contacting approved paper distributors.

10 Service provisioning

Service development is a separate manual: *Application developer handbook*. This chapter is provided as an overview of NetVenue services.

NetVenue uses four types of customer-defined content:

- Front-end navigation menus. These menus provide an inviting, user-friendly interface, while HTML is used for Internet/Intranet content.
- Web services, which can include Java, ActiveX, or APIs.
- Java services, which are written in the Java programming language and communicate with the terminal using Java APIs.
- Terminal services, which are stand alone programs, using the ActiveX API.

Front-end menus

Navigation and front-end menus and web toolbars can be created using the Admin Tools Suite.

The user interface is downloaded from the server to the terminal. Every time there are changes to the menus, the changes are uploaded from the front-end menu developer's

workstation to the server and downloaded onto each NetVenue terminal when it is idle.

Web services

The terminal supports the following technologies through the Web browser:

- HTML
- DHTML
- Java
- JavaScript
- Cascading Style Sheets

There are several off-the-shelf tools available for Web service creation and maintenance.

Once created, the Web service is stored on a content server. When changes are made to HTML content, only the page on the server needs to be changed.

The HTML API offers a number of HTML commands that are unique to the NetVenue system. These commands instruct the NetVenue to print receipts, clear credit card transactions, or dial hotline phone numbers.

For more information on HTML API, see the ***Application Developer Handbook***.

Java services

The terminal supports Java 1.2 (also called Java 2.0). A Java service can use Java APIs to print receipts, clear credit cards, ordial hotline phone numbers. Java is a powerful programming language that is platform independent. When developing a Java service, you must follow a few rules, as specified in the ***Application Developer Handbook***.

Terminal services

Terminal services can be written in any programming language that supports ActiveX, such as C++ and Visual Basic. When developing a terminal service, you must follow the guidelines set out in the ***Application Developer Handbook***.

11 Planning payment methods

This section explains payment issues, including setting up billing methods, determining which payment methods are acceptable, and how much to charge.

Card validation

The cards that can be accepted by the terminal depend on the type of card, and the available merchant agreements between the operating company and the card-issuing institutions.

Currently the following cards can be accepted:

- MasterCard
- Diners Club
- Visa
- EnRoute
- American Express
- Smart card format
- Interac debit card

To accept these cards as a method of payment, the operating company must have merchant agreements with each of the card-issuing institutions. The operating company must also

decide whether to clear the cards itself, or to use one of the clearing houses supported by the terminal software.

Other card types

The terminals can be configured to accept other cards. For example, companies may want to process loyalty cards, and schools may want to accept student cards. For these cards you may need to supply bitmap art for the Card prompt screen.

Pay-per-use

Pay-per-use (PPU) is a method of charging for NetVenue terminal use based on elapsed time. Users can decide how long and how much they are willing to spend. Services such as E-mail and Internet browsing are potential PPU services.

PPU charges start once the first URL of the Web service loads and ends when the user exits the service or the service ends.

Credit cards and prepaid Nortel Networks stored-value smart cards are the supported methods of payment for PPU sessions. For credit card support, clearing is provided by external authorization facilities (service providers).

The following rates are configurable per service and are charged to the user:

- An up-front charge to cover transaction costs and possibly material costs. This covers a number of minutes - for example, \$2.50 for the first three minutes.
- Consumption (currency) rate per minute -- for example, \$0.50 per minute.
- An authorization amount (credit only)

The following parameters are configurable per service:

- an upper time limit per session which, when expired, causes another card authorization to occur. This works with the above authorization amount.
- an initial grace period, in seconds, during which the user incurs no charges

Call rating

All call rating for the pay telephony service occurs through the standard Millennium interface. Internally, the terminal can rate calls, including local calls and 1-800 numbers. It can be set to deny calls as well. Some calls must be rated by external databases.

Two external databases are supported. CGI and MORRIS rating systems provide services for Canadian and American customers.

Call billing preparation

Pay telephony billing information uploads from the terminal to the Millennium Manager in the form of Call Detail Records (CDRs). The Millennium Manager creates billing files, and downloads them to the telco across XCOM or FTP lines or other lines using a similar protocol.

The requirements of each billing computer are unique. Talk to your Technical Account Manager or your own billing people about your billing provisioning.

Multimedia service billing information is sent to the NetVenue Manager.

12 Personnel management

The operating company must train people to fill certain positions when provisioning its NetVenue system.

Identifying team members

You will need the following people:

- Project co-ordinator (operating company)
- Project co-ordinator (Nortel)
- Network Engineering – voice/data (operating company)
- Information systems (operating company)
- Service developer (operating company)
- Terminal installation and maintenance prime (operating company)
- Technical administration prime (operating company)
- Primary support (Nortel)

Training

Nortel Networks provides a number of courses to ensure the successful implementation of the NetVenue system. These may include:

- Installation and repair
- System administration and monitoring
- Content development

Courses are based on the needs of the customer. Nortel Networks reserves the right to supply the required access to the various parts of the system based on experience of personnel and ownership of equipment.

In addition to the courses provided by Nortel Networks, the operating company should provide internal training for some staff, including:

- Training for sales personnel to give them an overview of the features and benefits of the NetVenue terminal.

Customized courses are available upon request.

Appendix A: Provisioning Checklist

Fill out this checklist to ensure that you have provisioned for everything necessary for the NetVenue system. For more information on any of these items, refer to the corresponding chapter.

Terminal provisioning

- ☐ Ensure locations are serviced by a CO switch that can provide the correct lines, such as the ISDN line.
- ☐ Perform a site survey prior to installation to verify:
 - Location meets the operating company site requirements.
 - Supplementary power requirements are met.
 - Adequate wiring for each terminal (up to three wire pairs per station)
- ☐ Ensure supplementary power--110 volt outlet--is available at all terminal sites.
- ☐ Ensure that power source is suitable and not accessible to user.
- ☐ Design artwork to identify the operating company.
- ☐ Design the decals required to cover the terminal and make arrangements for their supply.
- ☐ Obtain customer-specific keys.

NetVenue Manager provisioning

- ☐ Connect the appropriate network lines to the site.
- ☐ Install the necessary hardware for the server.
- ☐ Install the operating system, database, and other necessary software on the server.
- ☐ Configure the uninterruptible power supply (UPS) to last for at least 20 minutes.
- ☐ Set up workstations.
- ☐ Establish procedures for assigning new terminal orders.
- ☐ Establish detailed methods for network engineering.
- ☐ Establish procedures for notifying the technical administrator of new installations.
- ☐ Establish trouble call handling procedures for NetVenues.
- ☐ Establish problem escalation procedures and management of alarms.
- ☐ Establish procedures for modifying the terminal configuration.
- ☐ Establish call settlement and accounting procedures.
- ☐ Establish and communicate security policies for password control, administration tools, terminal monitoring and maintenance, E-commerce and administration.

Multimedia network provisioning

- ☐ Establish the number of servers required and housing facilities needed.
- ☐ Assign personnel to maintain the server.
- ☐ Establish a network between servers, terminals, and workstations.

ISDN provisioning

(complete only if ISDN terminals are being used)

- ☐ Ensure that the terminals ordered are the ISDN model.
- ☐ Connect an appropriate line to the site.

Ethernet provisioning

(complete only if Ethernet terminals are being used)

- ☐ Ensure that the terminals ordered are the Ethernet model.
- ☐ Connect an appropriate line to the site.

Content servers provisioning

- ☐ Determine the number and location of content servers, and application servers required on the network.
- ☐ Set up housing facilities and network connections for the servers.

Millennium Manager provisioning

(complete only if the NetVenue terminals will be used for pay telephony.)

- ☐ Set up a Tandem computer for running the Millennium Manager
- ☐ Set up workstations with the necessary software on them.

Payphone network provisioning

(complete only if the NetVenue terminals will be used for pay telephony.)

- ☐ Establish connections to an X.25 network connected to the Millennium Manager.
- ☐ Establish a procedure for receiving and managing payphone alarms.

Maintenance center provisioning

- ☐ Establish destination equipment and appropriate communications facilities for alarm distribution.
- ☐ Obtain tools and equipment for installing, maintaining, and repairing the terminals.
- ☐ Obtain spare parts for the terminals.
- ☐ Install workstations for maintenance of the telephony and multimedia components.

Service provisioning

- ☐ Create Web toolbars with Admin Tools Suite.
- ☐ Create Web services.
- ☐ Create artwork and buttons for the telephony application if required.
- ☐ Create front-end navigational menus with Admin Tools Suite.
- ☐ Create attract loop movies for in and out of service.

Help desk provisioning

- ☐ Determine the requirements for staffing the help desk.
- ☐ Install telephony equipment.
- ☐ Install workstations for the maintenance of the telephony and multimedia components.

Payment methods provisioning

- ☐ Provide list of commercial credit cards that will be accepted for each merchant for multimedia services.
- ☐ Provide list of smart cards that will be accepted.
- ☐ Determine the processing requirements for the billing methods.

- ☐ Provide merchant agreements for each accepted commercial credit card.
- ☐ Provide operating company rating structures for services (complete only if the NetVenue terminals will be used for telephony).
- ☐ Provide rating structures for participating carriers for input into rating databases for phone service (complete only if the NetVenue terminals will be used for pay telephony).
- ☐ Establish procedures for the on-going maintenance of rating data (complete only if the NetVenue terminals will be used for pay telephony).

Personnel management provisioning

- ☐ Define and schedule training requirements.
- ☐ Identify team members and publish a contact list and procedures.

Configuration provisioning

- ☐ Obtain IP addresses for content servers, service providers, terminals, workstations and laser printers.
- ☐ Obtain basic pay telephony configuration information for terminal function.

Appendix B: System management guidelines

This appendix outlines how Nortel recommends the NetVenue terminals will be run and maintained.

The operating company should assign administrators to run the terminals and serve as contacts for field technicians when problems are escalated.

The company should do the following:

- Develop and issue detailed methods for network traffic and plant assignment procedures.

Items that have to be considered include the serving switch ISDN requirements, CLLI and NXX; number blocks to be used; and service dates for installations and repairs.

- Configure any network equipment, such as routers, before installing a terminal, so that the new terminal can connect to the various servers. Establish procedures for assigning new terminal orders.
- Establish trouble call handling procedures. In addition to the traditional sources of trouble reporting (customer complaints, field personnel), the NetVenue terminal also generates alarm notifications whenever it detects a problem.
- Put in place guidelines on the steps to be taken prior to dispatch.

The maintenance center can perform a number of problem analysis functions before sending a technician.

- Create problem escalation procedures, so that field personnel will have somewhere to call in case of a problem in the field. This is usually the maintenance center.
- Establish procedures for modifying the NetVenue terminal in the field. These procedures will be used whenever changes to the operating software or the application must be downloaded to the terminals.

The NetVenue terminals are easy to configure. Usually, operating parameters can be modified remotely and downloaded to the terminal without a site visit.

Nortel Networks can often provide default configuration options. The following configuration parameters must be defined, depending on what options each terminal has.

- Services that will be accessed on the Customer Content server have been developed and tested.
- A list of free and denied calls must be provided if pay telephone service is used.
- Network architecture that connects all devices must be planned.
- Rating requirements have been determined for all charges such as Pay-per-use services as well as payphone calling services.
- A list of the accepted credit/ debit cards and smart cards must be provided.
- In a multi-carrier environment, a list of allowed inter-exchange carriers must be provided and the default carrier selection for 0+, 1+ and commercial credit card calls for each payphone must be supplied.
- Terminal name
- IP address
- Subnet mask

- Router address
- Name server security
- Database server IP address
- Database instance name
- Terminal serial number

Nortel Networks provides technical assistance during the planning stages of the implementation to ensure that the appropriate NetVenue terminal configuration options have been selected.

Glossary

The following terms and abbreviations appear in this document or documents mentioned in this one.

ac

See alternating current

alternating current

A flow of electricity that changes its direction on a regular basis.

API

See application programming interface.

application programming interface

(API) Software that an application program uses to request and carry out lower-level service performed by the computer's or telephone system's operating system. For the NetVenue terminals, API can be written in the HTML code, to activate the printer or payphone.

attachment

A file that is sent along with an E-mail.

attract loop video

A video that is repeatedly displayed by the NetVenue terminal to attract potential users.

billing validation

The verification and authorization of calls billed to sources such as collect calls, third number calls and credit card calls.

call detail record

(CDR) A feature that provides information such as calling and called numbers, date, time of connection and call duration for calls originating from, and sometimes completed to, the stations of a business communication system, allowing communication costs to be allocated to individual users or departments and station activity to be measured for system management purposes. For the NetVenue terminal, this information is collected by the Millennium Manager.

call rating

Checking a call against a database to see what the charges for that call are. The NetVenue terminal can use the CGI or MORRIS databases to rate calls in Canada and the US. Local calls and 1-800 numbers can be rated internally.

calling-card validation

(CCV) A Common Channel Signaling 7 (CCS7) service that allows operators to validate card numbers in the network service database system.

card clearing

Making sure a card is valid, or that enough funds exist on the card. The NetVenue terminal can clear cards using records stored in the system, or with records from an external source.

card reader

A device that reads information off of stripe or chip cards, such as smart cards or credit cards.

CCITT

The French acronym for the International Telegraph and Telephone Consultative Committee.

CDR

See call detail record

central processing unit

(CPU) The portion of a computer that executes programmed instructions, perform arithmetic and logical functions on data, and controls input/output functions.

content server

A computer which stores NetVenue terminal content, usually HTML API content.

CPU

See central processing unit

craft interface

Part of the maintenance level of the Web Terminals. It is used by technicians to maintain, install, and operate the telephony component of the terminal. It appears on the soft-payphone interface.

credit card

Users can pay for services by charging them to a card, then paying the credit card company at a later date.

database

(DB) A set of data, part or the whole of another set of data and consisting of at least one file, that is sufficient for a given purpose or for a given data processing system.

DB

See database.

dc

See direct current.

decal

An adhesive image that is applied to the surface of a terminal. It often contains company logos.

direct current (dc)

An almost nonpulsating unidirectional current in which the changes in value are either zero or so small that they can be ignored.

E-commerce

Electronic commerce. Financial transactions for a commercial business is done through an electronic medium, such as the Internet.

E-mail

See electronic mail.

E-mail server

A database which stores the E-mail accounts of users.

electronic mail

(E-mail) A form of communication, developed as an alternative to the exchange of physical documents by traditional postal or courier services, that allows users to send messages by electronic means and to consult received messages at their convenience. Electronic mail services are generally considered to include telex, teletex, facsimile, and electronic messaging.

electrostatic discharge

A transfer of electrostatic charge either caused by direct contact between two bodies that have a different electrostatic potentials, or induced by an electrostatic field. It is important to protect against ESD as sensitive components in the terminal can be damaged.

embedded Web browser

A software application for Web navigation that runs inside another program.

encryption

A security function that allows information to be put into a code before it is sent. It is unlocked when it reaches its destination. The NetVenue terminal supports 128 bit encryption, which is the highest level of encryption currently available for Internet use.

ESD

See electrostatic discharge.

Ethernet

A communications network standard that

- is for a 10-Mbps (megabit per second) baseband local area network (LAN) bus using carrier sense multiple access with collision detection (CSMA/CD) as the access method,
- is implemented at the Physical Layer in the International Organization for Standardization (ISO) Open Systems Interconnection -- Reference Model (OSI-RM), and
- establishes
 - (i) the physical characteristics of the network and
 - (ii) the use of various cabling technologies, such as thick or thin coaxial cable, unshielded twisted pair cables, and fiber optic cables.

FCC

Federal Communications Commission. The US government body which regulates the American telecommunications industry.

file transfer protocol

(FTP) The Transmission Control Protocol/Internet Protocol (TCP/IP) protocol that is

- (a) a standard high-level protocol for transferring files from one computer to another,
- (b) usually implemented as an application level program, and
- (c) uses the Telnet and TCP protocols.

firmware

An ordered set of instructions and data stored in a way that is functionally independent of main storage. The term "firmware" describes microcode in read-only memory (ROM). At the time they are coded, micro-instructions are software. When they are put into ROM they become part of the hardware (microcode), or a combination of hardware and software (microprograms). Usually, microcode is permanent and cannot be modified by the user, but there are exceptions.

frame relay

A statistically multiplexed interface protocol for packet-switched data communications. Characteristics of frame relay include fast data transmission speeds, and neither flow control nor error correction.

front-end navigation menus

A series of user friendly screens that help the user find information.

FTP

See File Transfer Protocol.

glidepad

A pointing device activated when a user touches a small surface on the keyboard bezel. It controls an on-screen cursor.

hard drive

A stand-alone disk drive that reads and writes data on rigid disks and can be attached to a port on the system unit.

hardware

Any part of a computer that physically exists. The monitor, hard-drive, and printer are all examples of hardware.

HTML

See hypertext markup language.

hypertext markup language

(HTML) An application of SGML (Standard Generalized Markup Language [ISO 8879]) implemented in conjunction with the World Wide Web to facilitate the electronic exchange and display of simple documents using the Internet.

IAS

See inferred answer supervision

integrated services digital network

(ISDN) A set of standards proposed by the CCITT to establish compatibility between the telephone network and various data terminals and devices. ISDN is a fully digital network, in general evolving from a telephone integrated digital network. It provides end-to-end connectivity to support a wide range of services, including circuit-switched voice, circuit-switched data, and packet-switched data over the same local facility.

Industry Canada Label

The certification process that ensures that equipment meets certain telecommunications network protective, operational, and safety requirements. This certification does not guarantee the equipment will operate to the satisfaction of the user.

inferred answer supervision

The process of determining when a call has been connected by mechanical means when answer supervision is not available on the telephone line.

Internet

A worldwide interconnection of individual networks operated by government, industry, academia, and private parties. The Internet originally served to interconnect laboratories engaged in government research, and has now been expanded to serve millions of users and a multitude of purposes.

Internet protocol address

(IP address) A unique address for a specific computer or network device (TCP/IP host) on the Internet. IP addresses are normally printed in dotted decimal form such as 128.127.50.224.

Intranet

A private network that uses Internet software and Internet standards. It is generally reserved for use by people who have been given the authority and passwords necessary to use that network.

IP address

See Internet protocol address.

ISDN

See integrated services digital network

ISDN router

Connects an ISDN line to an Ethernet line.

Java

An object oriented networked programming language and platform. Popular on the Internet, because it runs on any system.

Java Applets

Small programs written in the Java programming language that can run inside a Web browser.

loyalty card

A card provided by institutions or businesses. It can allow users to charge transactions to the card, or give users discounts on transactions.

memory

See random access memory

menu

A list of choices that a user can select from.

merchant agreement

An agreement between a card-issuing institution and a merchant who wishes to accept that card as a method of payment. In the case of the NetVenue terminal, the operating company is that merchant.

Millennium Manager

The control centre of the telephony portion of the NetVenue terminal network.

Telco Maximizer

A Windows-based application that works with a PC and a Tandem mainframe in client-server architecture. It provides a graphical user interface into the Millennium Manager.

motherboard

The main circuit board within a computer, bearing the primary components of a computer system, including the processor, main storage, support circuitry, bus controller and bus connector.

multimedia

The combination of multiple elements of communication, such as sound, text, graphics, and animation.

NetVenue Manager

A central database which stores information and records for the multimedia side of the NetVenue system.

ODBC

See Open database connectivity

open database connectivity

(ODBC) A Microsoft standard that allows databases created by various relational and non-relational database programs to be accessed by a common interface.

operating system

(OS) The software that interprets instructions given by applications software programs and causes a computer's or telephone system's components (CPU, peripherals) to work according to those instructions.

OS

See operating system.

packet-switched network

(PSN) A specialized communication system designed to carry digital data. Streams of data are divided into packets or units of standard size and sent along the network. Each packet has an address and system for checking the accuracy of the original data.

Pay-per-use

A system requiring users to pay for a service based on how much they use it.

PCP

See printed circuit pack

Pixel

Abbreviation for picture element. The smallest unit of area of a video screen image. The single point on a CRT display. The single point in a facsimile transmission.

plug-and-play

(PnP) A technology consisting of hardware and software components that card, PC and operating system manufacturers incorporate into their products in order to make an add-in card capable of identifying itself and the resources it requires.

POTS

Plain Ordinary Telephone Service or Plain Old Telephone Service. In reference to the NetVenue terminals, this is one method that connects the telephony component of the NetVenue terminal to the end office.

PPU

See Pay-Per-Use.

Pre-paid integrated circuit card

Also known as a smart card, telecard, or chip card. Users buy the cards and use them to pay for telephone calls or PPU services by inserting them into the card reader. They contain an electrically erasable programmable read-only memory chip that records the value of the card. This value decreases as the card is used.

printed circuit pack

A series of circuits manufactured as a card. There are two printed-circuit packs (PCPs) in the credit card and multi-pay terminals. The control PCP contains the integrated circuits that control all the functions of the terminal except those available in the power-fail mode. The telephony PCP contains the circuits that interface with the telephone line.

PSN

See packet-switched network.

PSTN

See public switched telephone network.

public-switched telephone network

(PSTN) The worldwide voice telephone network accessible to all those with telephones and access privileges.

QuickTime

A format for displaying videos.

RAM

See random access memory

random access memory

(RAM) Memory into which data can be written and from which data can be read. A solid state memory device used for transient memory stores. Information can be entered and retrieved from any storage position.

remote database

A database that replicates the central database, and acts as a database to a smaller number of terminals.

secure socket layer

(SSL) Secure socket layer is an encryption process that uses a secure connection between two computers to establish a unique number which is then used to encrypt/decrypt information sent between the two computers.

server

A network device that provides service to the network users by managing shared resources.

silk-screen

A method of painting the company logos or other images on to a terminal.

smart card

See pre-paid integrated circuit card

soft-tooling

Manufacturing by computer.

software

Programs, applications, and utilities that exist as binary code. They can be run, edited, and erased.

Tandem

A computer with two processors that run simultaneously. If one processor breaks down, the other carries on.

TCP/IP

See transmission control protocol/Internet protocol

terminal emulation package

Software that allows a user at one computer interface to display output from and submit input to a dissimilar computer platform.

tip and ring

An old fashioned way of saying "plus" and "minus", or ground and positive in electrical circuits.

touch force

The amount of pressure required to operate a button or key.

touch screen

A transparent screen which fits over the monitor. Users can touch the screen to activate on-screen buttons, in the same way that clicking with a mouse would activate them.

transmission control protocol/Internet protocol

(TCP/IP) A protocol stack, designed to connect different networks, on which the Internet is based. It was designed to withstand a partial deterioration of the network.

uniform resource locator

(URL) A standardized way of representing different documents, media and network services on the World Wide Web.

Uninterruptible power supply

(UPS) A device that is inserted between a primary power source, such as a commercial utility, and the primary power input of equipment to be protected, such as a computer system, for the purpose of eliminating the effects of transient anomalies or temporary outages.

UPS

See uninterruptible power supply

URL

See uniform resource locator.

vacuum flourescent display

The dot matrix display which Millennium payphones use to display visual prompts, the craft interface, and advertising. On the NetVenue terminals, the VFD is replaced by the soft-payphone interface which appears on the monitor.

validation

See card validation.

value-added network

(VAN) A network using the communication services of other commercial carriers, using hardware and software that permit enhanced telecommunication services to be offered.

VAN

See value added network.

VFD

See vacuum fluorescent display.

VGA adapter

Allows a VGA monitor to be used by a Macintosh system.

watchdog

A device which restarts parts of the NetVenue terminal system that are not responding.

workstation

A computer that allows technicians and administrators to interact with a database, server, terminal, or other computer.

X.25 network

A CCITT-defined network layer protocol that is used in packet switching to establish, maintain, and clear virtual circuit connections between an ISDN terminal and a destination in the packet switching network.

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NetVenue

Provisioning Guide

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