VPN, Remote LAN, advanced multiprotocol routing and voice support in one manageable package

IBM 2212 Access Utility

Highlights

Open standards-based software offers virtual private networks

Secure IP Security connections over the Internet keep your operating costs low

Carries SNA through the IP network and Internet

Hardware encryption option and high performance provide central site solution for VPN

Remote LAN access and advanced router functions in a single integrated solution

Modem bank solution for remote LAN users

Previewed voice solutions provide voice compression and combine voice and data networks

IP load balancing and native APPN/HPR routing provide cost-effective and flexible central site solution

The preview of High-Performance System Card and Encryption/Compression CPCI Adapter offer performance that meets VPN requirements

Modular design makes hardware upgrades simple

Remote management functions allow centralized software tailoring

IBM's powerful, scalable and modular branch office solution

The IBM 2212 Access Utility is a branch office in a box. The IBM 2212 Access Utility makes it easy to connect local area networks (LANs) to your mobile workforce via remote LANs, or branch offices to the Internet or to company backbone, using advanced multiprotocol virtual private networks (VPNs). The IBM 2212 Access Utility provides both cost-effective computing across a broad—range of remote locations, as well as the flexibility to grow in meeting tomorrow's networking needs.

The IBM 2212 Access Utility offers four adapter slots. The unit can operate using flash memory or the hard drive, and the system card will be available as either a standard or high-performance option. All models of the IBM 2212 Access Utility have 64 MB of DRAM and, in flash-based models, 48 MB of flash memory, allowing even the most advanced applications to operate effectively. Four CPCI adapter slots enable future adapter additions, encompassing long-term networking needs and appli-cations like RLAN, voice integration and VPN encryption.

IBM 2212 Access Utility Model 40F

Models with a hard drive are ideal for applications utilizing permanent data media, such as Network Station Thin Server function and Permanent Topology Database of APPN/HPR protocol. The hard drive option should be chosen when the IBM 2212 Access Utility acts as a SNA/APPN node. The hard drive offers a considerable problem management advantage by allowing traces to be stored without using an external trace file server.

The PowerPC® based system card is available as a Standard System Card and a High Performance Card is previewed. Both system cards have four WAN ports and come equipped with a standard slot for Ethernet or Token-Ring PMC card. Encryption in the VPN concentration points requires high performance of IBM 2212 Access Utility, because all of the secured IP tunnels demand simultaneous encryption/decryption. Encryption and compression can be improved even further in very demanding environments by using the Encryption/Compression CPCI Adapter.

VPN security in robust networking software

IBM Access Integration Services (AIS) software maximizes the power of your existing network and opens up connectivity possibilities to keep pace with upcoming network expansions. AIS is preloaded on the IBM 2212 Access Utility at the time of manufacture and includes a Configuration Program to assist in deploying the IBM 2212 Access Utility.

AIS provides security, scalability, and availability. AIS software is also engineered to enable the use of virtual private networks for cost-conscious, high-performance networking on public IP backbones.

Virtual private networks can be deployed as an extension of your corporate intranet across a public network to create a secure connection through an encrypted "tunnel." Once built, virtual private networks use IP-based networks, such as the Internet, as dedicated transmission lines, offering encryption and firewall technologies that prevent unauthorized access. IBM envisions three broad applications for virtual private network technology:

- For the remote user who needs access to the corporate intranet from remote locations using the Internet, or another TCP/IP network
- For branch-office connection to a central corporate intranet without leasing or installing dedicated optical-fiber, copper, or coaxial cable
- For business partners or suppliers who need access to internal corporate data without the benefit of a trusted, dedicated connection

In all three applications, virtual private networks use the Internet for secure connectivity and data transfer. Encryption is used for packet transmission and hosts use firewall technologies to prevent unauthorized access. Most importantly, based upon research conducted by Infonetics Research, Inc., virtual private networks can reduce WAN networking costs by as much as 20 to 47% and remote access networking costs by as much as 60 to 80%.

Encryption performance

Virtual private networks are based on encrypted, secure IP tunnels. Encryption combines both performance- and memory-intensive functions. The High Performance System Card and Encryption/Compression CPCI Adapter offer the performance that is needed in the concentration points in virtual private networks.

Hardware and software for dependable routing solutions

When equipped with one of the many available ISDN adapters, the IBM 2212 Access Utility and AIS are dependable ISDN solutions. The BRI adapters offer increased bandwidth and provide backup capability without requiring more expensive Primary Rate ISDN (PRI) service. With the Point-to-Point Protocol multilink tool—supplied with the IBM 2212 Access Utility—bandwidth can be increased dynamically by grouping the B-channels and other media. And for even greater bandwidth administration, rely on IBM's award-winning Bandwidth Reservation System (BRS) to manage traffic priority over Frame Relay, PPP, and dial connections.

Network Dispatcher for scalable servers

The Network Dispatcher function allows system administrators to build and manage scalable Web servers. It provides load balancing and high availability to users in environments with multiple servers, high traffic volume and many clients. Superior to Domain Name Servers' round-robin queuing, it enables large numbers of individual servers to be linked into large, virtual-server clusters for efficient management.

Branch Extender for APPN/SNA growth

IBM Branch Extender technology, a component of AIS, enables a single Advanced Peer-to-Peer Networking® (APPN) SNA network to scale up to thousands of branch locations. With Branch Extender, the IBM 2212 Access Utility can service many branch locations and eliminate the need for more network nodes. This reduces overall topology and routing traffic and improves bandwidth use.

Permanent APPN/HPR Topology Database support

The native APPN/HPR function offers high traffic performance without protocol conversion. For network startup, the IBM 2212 Access Utility supports APPN/HPR Permanent Topology Database on the hard drive. The IBM 2212 Access Utility hard drive option offers the required permanent data media. Permanent Topology Database is important when the IBM 2212 Access Utility is used as the concentration APPN/HPR router in front to AS/400® and other APPN servers. The IBM 2212 Access Utility does not have to learn the network topology from the network, which significantly expedites the network startup.

DIALs for LAN connection

For even greater flexibility in network access, the IBM Dial-In Access to LANs feature allows remote users to dial into a LAN and access resources, emulating a local attachment. DIALs also allows LAN-attached users to dial out to a WAN. The remote LAN access functions offered by the 2210 broaden its compatibility with IBM 8235 featuring the same DIALs support.

TCP/IP network-ready

The IBM 2212 Access Utility was designed to take advantage of the latest enhancements and standards offered by the Internet Engineering Task Force (IETF). Enhancements to each protocol and link type improve security, administration, reliability and network efficiency. Among the IBM 2212 Access Utility's innovative features are increased X.25 scalability, X.25 Closed User Group facilities, and X.25 local support over TCP/IP. The IBM 2212 Access Utility also provides the following benefits:

- Broadened remote concentration to encompass a full complement of link types (Frame Relay (SVC/PVC), PPP, SDLC, SDLC relay, V.25bis, X.25, and V.34) for the WAN ports on the system card and 4-port WAN CPCI adapters.
- IP routing includes ICMP, TCP, UDP, RIP, OSPF V2, BGP-4, static routes, Multicast Extensions to OSPF (MOSPF), ARP, InARP, IP Access Controls, RSVP and IP Version 6 support.
- Advanced SNA support with APPN Network Node (NN), APPN Intermediate Session Routing (ISR), HPR, Dependent LU Requester (DLUR), Version 2-compliant Data Link Switching (DLSw) including NetBIOS support, Branch Extender, Boundary Access Node (BAN), and LAN Network Manager. Permanent APPN/HPR Topology Database is supported on the hard drive, APPN/HPR and other SNA functions can be used with flash.
- TN3720E server support enables IP access to SNA host applications. Distributed TN3270E servers across an IP, subarea, or APPN network to provide:
  - Better availability by eliminating a single point of failure with a central gateway
  - Scalability with incremental capacity per IBM 2212 Access Utility site instead of a large, central-site, server gateway
- The Enterprise Extender function with Class of Service (CoS) and SNA priority capabilities provides better service levels than DLSw to SNA users running over an IP backbone.
- IETF Layer 2 Tunneling Protocol (L2TP) standard support enables the tunneling of multiprotocol PPP traffic across intranets, extranets or the Internet.
- BAN support to enable end stations attached to the IBM 2212 Access Utility to make a direct connection through Frame Relay to a front-end controller such as the IBM 3745 Communication Controller or the IBM 3746 Nways® Multiprotocol Controller. A similar, direct connection can also be established between the IBM 2212 Access Utility and an IBM AS/400® system.
- HPR to provide high-speed, native SNA transport with nondisruptive routing around failed connections, and adaptive rate-based congestion control.
- DLUR to enable 3270 traffic to utilize HPR and APPN transports.
- APPN Network Node support to provide routing and directory services to Ethernet, Token-Ring, and SDLC-attached end nodes.
- APPN ISR to provide the forwarding of session data to the next node along the path.

Thin Server support

In the new world of network computing, a Network Station (NS) must get its boot image from the network. A typical storage place for this boot image to reside would be on the host (such as an AS/400), acting as the server for the NS. One problem that can occur is if there are too many NSs attached to the same host and all of them are activated in the same short timeframe. This will cause an overload of traffic to and from the host serving the boot images to the NSs. Another potential problem can arise when the NSs are located at a remote branch office and must get the load images over slow-speed WAN lines. The solution is the placement of the Thin Server function in the branch office router, which reduces network load and increases availability. Benefits include:

- NSs at remote sites are not dependent on slow-speed WAN connections.
- NS startup is faster and availability is better.
- Power outage demands are not visible to the central site.
- It is easy to configure.
- When the hard drive option is used, the Thin Server Function is not dependent on uplink connection availability after power on.

Standards-based interoperability

AIS is based on open industry standards, vendor specifications, and protocol implementations that conform to current Internet Engineering Task Force (IETF) RFC levels. IBM participates in industry initiatives such as the IETF, ATM Forum, IEEE, APPN Implementers Workshop (AIW), and the Network Interoperability Alliance. The protocol implementations in AIS provide a full set of features to ensure network reliability, security and interoperability.

IBM 2212 Access Utility models at a glance

Model[1]	Adapters CCPI+PMC	System card	Memory media	SW preload
40F	4 + 1	Standard	Flash	Standard[2]
40H	4 + 1	Standard	Hardfile	All

Notes: [1] Model Naming Convention
First character: Number of adapter slots outside system card
Second character: System card type, 0=Standard, 5=High Performance
Third character: Memory media type, F=Flash, H=Hardfile
[2] Standard = all except Thin server, APPN/HPR and TN3270E. Other codeloads available on code server in Internet without additional charge.

Adapters and features

- 1-port Token Ring PMC Adapter
- 1-port 10/100 Ethernet PMC Adapter
- 2-port Token-Ring CPCI Adapter
- 2-port 10/100 Ethernet CPCI Adapter
- 4-port WAN CPCI Adapter
- 2-port ISDN BRI-S/T CPCI Adapter
- 2-port ISDN BRI-U CPCI Adapter
- 1-port ISDN PRI T1/J1 CPCI Adapter
- 1-port ISDN PRI E1 CPCI Adapter
- 2-port ISDN PRI T1/J1 CPCI Adapter
- 2-port ISDN PRI E1 CPCI Adapter

Invest today—grow tomorrow

All models of the IBM 2212 Access Utility are shipped preloaded with AIS licensed software. These software tools offer the flexibility to accommodate future networking requirements.

If you are considering the increased use of dial services for backup and for remote offices with only occasional network access, you can use the ISDN BRI and PRI adapters and asynchronous external modems.

Remote installation—quickly and easily

Extending the corporate network to small, remote offices typically means that skilled technical personnel at a central location must install routers for distant locations that lack skilled personnel. The IBM 2212 Access Utility is designed to meet that challenge.

All IBM 2212 Access Utility models also contain a service port supporting asynchronous communication for configuration and maintenance. All models support the industry's open network management standard, SNMP. Management of the system can be accomplished using SNMP managers. Management application support is provided by many of IBM's management programs, including the Nways Enterprise Manager and the Campus Manager LAN for AIX® products. You can also use IBM Nways Workgroup Manager for Windows NT® for smaller networks.

IBM 2212 Access Utility at a glance

Installation	All models can be placed on a flat surface or mounted in a rack in a wiring closet.
ISO 9000	The IBM 2212 Access Utility was developed and is manufactured by IBM under a registered ISO 9000 quality management system.
IBM Access Integration Services	*Routing protocols* TCP/IP IPX AppleTalk 2 Banyan VINES DECnet IV DECnet V/OSI *SNA* APPN NN APPN ISR HPR DLUR Branch Extender DLSw (RFC 1795 and 2166) including NetBIOS support SDLC primary and secondary SDLC Multiple SNA PU support *BAN and Boundary Network Node (BNN)* LAN Network Manager (LNM) Extended Border Node *Bridging* Source-route bridging (SRB) Transparent bridging (TB) Source-route transparent bridging SRB-TB translational bridging IP bridging tunnel
Software	*Switched networks* V.25bis (PPP) ISDN BRI and PRI (PPP or Frame Relay) WAN restoral (PPP) WAN reroute from Frame Relay, PPP, or X.25 link failures Dial on demand V.34 for remote LAN access *WAN data link controls* Frame Relay (RFC 1490) including BAN support, SVC and PVC PPP Multilink PPP over mixed media X.25 including QLLC and X.25 DTE Transport (XTP) for X.25 over a TCP/IP network SDLC *Virtual Private Networking* IP Security AAA security Layer 2 Tunneling Protocol (L2TP) Bandwidth Reservation System Interactive Network Dispatcher Enterprise Extender TN3270E Server Dial-In/Dial-Out Access for LANs (DIALs) remote LAN access Secure ID Network Address Translation (NAT) IP Address Pooling Virtual Connections IP/IPX

IBM 2212 Access Utility at a glance (continued)

Dimensions	**2212 Model 40F**	**2212 Model 40H**
Width	• 440 mm (17.3 in.) without rack-mounting frame • 480 mm (18.9 in.) with rack-mounting frame	• 440 mm (17.3 in.) without rack-mounting frame • 480 mm (18.9 in.) with rack-mounting frame
Depth	305 mm (12 in.)	305 mm (12 in.)
Height	89 mm (3.5 in.)	89 mm (3.5 in.)
Weight	6.61 kg (15.8 lb)	7.71 kg (17 lb)

Serial interfaces	EIA 232-D/V.24/V.28, V.35, V.36/EIA 449, and X.21 *Note: Dial support provided using V.25bis and V.34.*
LAN interfaces	Ethernet: IEEE 802.3 10/100 Mbps auto-sensing Connections: AUI and 10BASE-T (RJ-45) Token Ring: IEEE 802.5 at 4 or 16 Mbps Connections: 9-pin D-connector and RJ-45
Memory features	32-MB DRAM expansion 64-MB DRAM expansion
Adapter features	1-port Token Ring PMC Adapter 1-port 10/100 Ethernet PMC Adapter 2-port Token-Ring CPCI Adapter 2-port 10/100 Ethernet CPCI Adapter 4-port WAN CPCI Adapter 2-port ISDN BRI - S/T CPCI Adapter 2-port ISDN BRI-U CPCI Adapter 1-port ISDN PRI T1/J1 CPCI Adapter 1-port ISDN PRI E1 CPCI Adapter 2-port ISDN PRI J1/T1 CPCI Adapter 2-port ISDN PRI E1 CPCI Adapter
Electrical requirements	Automatically senses line voltage within an input range of 110 to 240V ac at 50 to 60 Hz (U.S. power cord included with every IBM 2212 Access Utility model.)
Operating environment	Temperature: 10 to 40.6°C (50 to 105°F) Relative humidity: 8% to 80% Maximum wet-bulb temperature: 27°C (80°F)
2212 certifications	Safety certifications: EN 60950, UL 1950, CSA 950 Electromagnetic compliance certification: FCC Class A (U.S.A.) VCCI Class A (Japan) ICES-003 Class A (Canada) European Community Mark of Conformity (CE Mark), for Class B CISPR 22 / European Standard EN 55022
Warranty	One-year warranty

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