IBM Sales Manual (US) - Document 3172-390

3172-390 IBM NCP Multinetwork Server Solution Model 390

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1 IBM U.S. Product Life Cycle Dates

Type	Model	Announced	Available	Marketing Withdrawn	Replaced By
3172-390		1995/07/10	1995/08/25	1997/07/25	None

2 Abstract

The IBM 3172 Interconnect Controller is a high-speed, channel-attached gateway optimized for attachment of local area networks (LANs), synchronous data link control (SDLC) networks, and Frame-Relay Networks to IBM host processors. In addition, the 3172 can provide the NCP Server function to activate, manage, and complement the 3745 Communication Controller with NCP.

Model Abstract 3172-390

(For IBM US, No Longer Available as of July 25, 1997)

The IBM 3172 Interconnect Controller Model 390 NCP Multinetwork Server Solution, also referred to as the NCP Server, provides a low-cost and flexible complement for the 3745 Communication Controller with NCP. The NCP Server activates, manages, and complements the NCP on any of your 3745 models. Some of the components of this solution are an operating system, VTAM, and NetView. Although actually communicating over a token-ring or SDLC communication link, the NCP Server will treat your 3745 as locally attached.

The 3172 Model 390 combines the features and proven reliability of the 3172 and an integrated S/390 Microprocessor Complex (P390) to produce a system that executes the NCP Multinetwork Server software. The 3172 Model 390 connects to the 3745 using an Auto LANStreamer or Wide Area Connector Adapter.

With the NCP Server, you will experience the following benefits: improved APPN capabilities in traditional 3745 networks; short-term backup of a mainframe network owner during S/390 maintenance or unscheduled outages; distribution of network management functions for the 3745; and dynamic IP Routing capability for MVS users.

If you have communications attachments on your 3745, the NCP Server can help you enable members of today's Subarea networks to participate in APPN in a more granular way. During this period of transition, the ability to simultaneously support Subarea and APPN technologies is maintained. This offering, coupled with the 3746 Model 900 APPN Network Node and the 3746 Nways Multinetwork Controller, gives you flexible and complementary solutions for the evolution to APPN.

In addition to the APPN network node functions, the NCP Server lets you perform subarea functions related to 3745/NCP, such as CMC backup, distributed control point, and network management.

3 Highlights

- Provides connectivity to IBM S/370, S/390, and ES/9000* hosts as a LAN/WAN-to-host gateway.
- Supports SNA or TCP/IP data flows through parallel or IBM Enterprise Systems Connection* (ESCON*) channels to the following LAN types:
  - IBM Token-Ring
  - Ethernet
  - Fiber Data Distributed Interface (FDDI)
  - ATM

- Provides extensions of LAN connectivity to the WAN through multiprotocol Frame-Relay.
- Provides SDLC, Frame-Relay, and LAN connectivity for SNA devices.
- Provides all the functions of a dedicated client/server.
- Offers preloaded software packages available from the factory.

Model Highlights 3172-390

The 3172 Model 390 NCP Multinetwork Server Solution provides the following:

- A Pentium** 90 MHz Processor and an IBM S/390(TM) Microprocessor Complex for the capability to execute the NCP Multinetwork Server software in a S/390 and OS/2(R) Warp environment.
- A more flexible and concise VTAM/NCP APPN composite network node
- Subarea support processor, backup communication management configuration (CMC), backup network host capability or dynamic IP routing
- Preloaded software to simplify installation
- Token-Ring or SDLC attachment to the 3745.

4 Description

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The 3172 Model 390 combines the features and proven reliability of the 3172 and an integrated S/390 Microprocessor Complex (P390) to produce a system that executes the NCP Multinetwork Server software. The 3172 Model 390 connects to the 3745 using an Auto LANStreamer or Wide Area Connector Adapter.

With the NCP Server, you will experience the following benefits:

- Improved APPN capabilities in traditional 3745 networks
- Short-term backup of a mainframe network owner during S/390 maintenance or unscheduled outages
- Distribution of network management functions for the 3745
- Dynamic IP routing

If you have communications attachments on your 3745, the NCP Server can help you enable members of today's Subarea networks to participate in APPN in a more granular way. During this period of transition, the ability to simultaneously support Subarea and APPN technologies is maintained. This offering, coupled with the 3746 Model 900 APPN Network Node and the 3746 Nways Multinetwork Controller, gives you flexible and complementary solutions for the evolution to APPN.

In addition to the APPN network node functions, the NCP Server lets you perform subarea functions related to 3745/NCP, such as CMC backup, distributed control point, dynamic IP routing, and network management.

Model Description 3172-390

The 3172 Model 390 includes the following:

- IBM S/390 Microprocessor Complex with 32 MB ECC standard memory, expandable to 128 MB
- Pentium 90 MHz Processor Card
- 32 MB ECC memory on the 3172 system board
- 4 GB Hard File and SCSI Adapter
- Monitor with XGA Adapter and monitor extension cable
- Keyboard and keyboard extension cable
- Mouse and mouse extension cable
- Diskette Drive

The 3172 Model 390 provides two options that will preload the NCP Multinetwork Server for VM or MVS software on the 4 GB hard file at the factory to provide simplified installation.

The 3172 Model 390 may be Token-Ring or SDLC attached to the 3745 using existing adapters, either the Auto LANStreamer MC 32 Adapter or the Wide Area Connector Adapter with V.35 or with V.35 and EIA-232 interfaces.

The 3172 Model 390 is available for rack mounting or for the desktop environment. An optional Parallel Printer Adapter provides for print capability from the NCP Multinetwork Server environment.

Two memory expansion options for the S/390 Microprocessor Complex (P390) are available:

- The 32 MB P390 Memory Expansion Card, for a total of 64 MB of memory
- The 96 MB P390 Memory Expansion Card, for a total of 128 MB of memory

The NCP Server provides the following benefits:

- Shrink the VTAM/NCP Composite Network Node
- Backup Host CMC or Subarea Support Processor
- Distribution of network management functions for the 3745
- Dynamic IP Routing

Shrink the VTAM/NCP Composite Network Node

The NCP Server gives more flexibility to use the 3745 in an APPN network. In essence, the APPN VTAM/NCP composite network node has been shrunk.

The shrinking comes about by shifting the network functions from one VTAM host, which often has the responsibility for more than one 3745/NCP to the NCP Server, which is responsible for the one 3745/NCP to which it is attached. In this case, the NCP Server is now performing APPN control point functions of topology database updates and directory services updates.

The NCP Server has maximized the APPN flexibility of the 3745 by reducing the number of path tables and the amount of pre-definition which is necessary. This is a new and economical solution to enable certain members of today's subarea network to become members of tomorrow's APPN network. Examples of this are 3745s with NCP and EP (PEP) as well as 3745s with BSC attachments using NCP.

Backup Host CMC or Subarea Support Processor

When one large host is responsible for activating multiple 3745/NCPs, all the activation flows between the large host and each of those resources, are processed at the large host. Often, the curve depicting the number of resources activated over a period of time shows a linear to the second order relationship. As we get to a larger number of resources, we consume considerably more time. This is compounded by the fact that more time is being consumed because we are starting to queue activities.

With the NCP Server acting as the control point for processing activation flows for its attached 3745/NCP, one should experience a performance improvement in the activation process over that which was described in the preceding paragraph. In addition, the NCP Server could represent another option: providing reliability improvement by being utilized as backup host control points for the 3745/NCPs.

In support of this scenario which distributes the activation processing, the focal point NetView at the large host sends an activation command to the distributed NetViews in the NCP Servers. The NetView and VTAM, which runs in each of the NCP Servers perform the activation processes for resources at their respective 3745/NCPs independently.

The NCP Server will not activate resources on a single NCP as quickly as a 390 host directly attached to that 3745. However, the NCP Server can activate them in a reasonable period of time. Thus, by activating these resources on multiple 3745/NCPs in parallel, the overall network activation time will improve.

The ownership of those resources has also been distributed. The resources can be owned on a continuous basis by the large host and backed up by the NCP Servers. Or if preferred, the resources can be owned on a continuous basis by the NCP Servers and backed up by the CMC function of the large host. In either case, one has an improved capability for providing 24 hours by 365 days network availability.

Dynamic Routing (RIP) for 3745/IP Networks

The implementation of dynamic routing in NCP can be compared to the APPN composite node implementation in that NCP depends on the host for assistance. In this case, it is TCP/IP rather than VTAM that provides the support. NCP has a copy of the IP routing tables in its own storage, but relies on the host for RIP processing and table updates.

In today's world, the 3745/NCP communicates with the application host via a communication mechanism called SNALINK, a VTAM application. The Routing Information Protocol (RIP) processing function, which is called NCPROUTE, and RIP table updates are actually performed in that host. The host informs NCP of changes and NCP updates its copy of the tables. This works nicely since NCP cycles are used for routing, and NCP's routes are dynamically updated.

The NCP Multinetwork Server provides the RIP table updates. The updates still flow to the 3745/NCP storage; they simply flow across the token-ring or SDLC connection. A small portion of network services is being used to transport these RIP table updates to NCP. The RIP processing for this is performed geographically right next to it. The amount of network resource required for these flows is being reduced by creating, in this case, a CMC-type host for RIP processing. This allows the mainframe to act as an application host with higher availability because the impact from NCP IP support is reduced.

The dynamic routing (RIP) capability is available only in the MVS option of the NCP Multinetwork Server. It is not available in the VM option.

The NCP Server capabilities described above are supported in both production and test environments.

5 Product Positioning

The IBM 3746 Nways Multinetwork Controller should be considered as the ultimate APPN network node in the 3745/3746 controller family. The NCP Server should be considered as an enabler for portions of the subarea network that must coexist with the IBM 3746 Nways Multinetwork Controller

and/or the 3746 Model 900 Network Node. This is of particular value if you have 3745s that may not be replaced by a 3746 APPN Network Node for either functional of business reasons, but may want APPN capability throughout the network.

Many users view the NCP Server as a back-up host during CMC outages. Since the NCP Server supports only a single 3745, it is not a replacement for the CMC but is to be used only during times when backup is required. You can use it on every 3745, or only on particularly critical controllers.

6 Model

6.1 Model Summary Matrix

Model	Microprocessors	Memory
390	Pentium 90 MHzandS/390 Microprocessor Complex	32 MB32 MB, 64 MB, 128 MB

7 Maximum

A maximum of one 3172-390 may be attached to the 3745.

8 Customer Setup (CSU)

None.

9 Devices Supported

None.

10 Model Conversions

None.

11 Technical Description

The 3172 Model 390 contains two processor complexes:

- The IBM S/390 Microprocessor Complex with 32 MB ECC standard memory, expandable to 128 MB
- The Pentium 90 MHz Processor Card with 32 MB ECC standard memory on the system board.

The S/390 Microprocessor Complex provides the functions of a S/390 processor in a Micro Channel(TM) card. The card has 32 MB of memory, expandable to 64MB with the optional 32 MB P390 Memory Expansion Card or to 128 MB with the optional 96 MB P390 Memory Expansion Card. This memory is completely separate from the 3172-390 memory. It is dedicated to the S/390 Microprocessor Complex and is only used to support the S/390 environment of the NCP Multinetwork Server software.

The Pentium 90 MHz Processor features a 64-bit data bus and 32-bit address bus capability. The Pentium processor supports the OS/2 operating system and applications of the NCP Multinetwork

Server. The 32 MB ECC memory on the 3172 Model 390 system board supports the Pentium processor.

The 3172 Model 390 also includes the following:

- 4 GB Hard File and SCSI Adapter
- Monitor with XGA Adapter and monitor extension cable
- Keyboard and keyboard extension cable
- Mouse and mouse extension cable
- Diskette Drive

The 3172 Model 390 provides two options that will preload the NCP Multinetwork Server for VM or MVS on the 4GB hard file at the factory to simplify installation.

The 3172 Model 390 may be Token-Ring or SDLC attached to the 3745 using either the Auto LANStreamer MC 32 Adapter or a Wide Area Connector Adapter with V.35 or with V.35 and EIA-232 interfaces.

The 3172 Model 390 with the NCP Multinetwork Server provides the following applications:

- Improved APPN capabilities in traditional 3745 networks by creating a VTAM/NCP APPN composite network node made up of a single 3745 and NCP Multinetwork Server
- Short-term backup of a Communication Management Configuration (CMC) or network host capabilities for the attached 3745 during S/390 maintenance or unscheduled outage
- Distribution of network management functions for the 3745
- Dynamic Routing (RIP) for 3745/IP networks

The 3172 Model 390 is available for rack mounting or for the desktop environment. An optional Parallel Port Adapter provides for print capability from the NCP Multinetwork Server environment.

12 Physical Specifications

- Width: 483mm (19.0 inches)
- Depth: 484mm (19.1 inches)
- Height: 306mm (12.0 inches)
- Weight: 13.95kg (31 lbs)
- Heat output: 250 W (850 BTU/hr)
- Acoustical data: The declared sound power emission level is 5.7 bels for both operating and idle. The mean value of the space-averaged sound pressure emission levels at the 1-meter position is 44.0 dB for both operating and idle.

13 Operating Environment

Power requirement for the 3172 Model 390:

- Cycles per second: 50 or 60 Hz
- Phase: single phase
- Nominal voltage tolerance: 200 - 240 V AC
- Machine rating: 2.5A
- Maximum input power: 0.6kVA

Power requirement for the 3172 Model 390 with Table Top Feature:

- Cycles per second: 50 or 60 Hz
- Phase: single phase
- Nominal voltage tolerance: 90 - 137 V AC
- Machine rating: 2.5A
- Maximum input power: 0.6kVA

Temperature and humidity requirements for the 3172 Model 390:

- Temperature: 10 to 40C (50 to 105F)
- Relative Humidity: 8 to 80 percent
- Wet Bulb: 27C (80F)

The 3172-390 may be installed in a Class A, B, or C environment. When the Table Top Feature (#2550) is not ordered, the 3172-390 may be mounted in either an IBM9309-002 Rack Enclosure or in a compatible EIA 19-inch rack. Refer to the IBM 3172 Interconnect Controller Model 3 and Model 390 Hardware Planning Guide, GA27-4003, for planning and installation requirements.

14 Limitations

The 32 MB memory expansion card attaches to the S/390 Microprocessor Complex in the 3172 Model 390. It is not compatible with the 96 MB P390 memory expansion card. Only one optional memory expansion card may be installed in a 3172 Model 390.

15 Hardware Requirements

The 3172 Model 390 must be attached to the 3745 through either a token-ring or wide area connection.

Maintenance updates of the NCP Multinetwork Server software will require that a CD-ROM drive be externally attached to the SCSI adapter of the 3172 Model 390. A dedicated CR-ROM device is not required, but one must be available for use during maintenance updates.

16 Software Requirements

The NCP Multinetwork Server software supports all levels of NCP which support the IBM 3745 Communication Controller, namely ACF/NCP Versions 5, 6, and 7. However, the functions that can be achieved with the NCP Multinetwork Server software may be different depending upon the level of NCP installed on the 3745. The functions and the minimum level of NCP required to operate with the NCP Multinetwork Server software are:

- Networking Functions, CMC Backup – any release of ACF/NCP Version 5 or later.
- APPN – ACF/NCP Version 6 Release 2 or later.
- APPN Border Node, Connection Network – ACF/NCP Version 7 Release 1 or later.
- IP Dynamics – ACF/NCP Version 7 Release 1 or later

The 3172-390 will ship from the factory with NCP Multinetwork Server software for VM or MVS preloaded on the 4GB hard file. Specify hardware feature code 3550 for VM or hardware feature code 3551 for MVS.

The purchase price of the 3172 Model 390 includes the NCP Multinetwork Server software. HOWEVER, A SEPARATE SOFTWARE ORDER FOR EITHER NCP Multinetwork Server for MVS (PRPQ: P85480, PID: 5799-XDD) or the NCP Multinetwork Server for VM (PRPQ: P85479, PID: 5799-XDC), MUST BE PLACED for backup media, licensing, and asset registration purposes.

Refer to PRPQ P85479 or P85480 for additional details, features, and ordering information for the NCP Multinetwork Server for MVS or VM.

17 Publications

The following publications are shipped with the 3172 Model 390:

- NCP Multinetwork Server with the 3172 Interconnect Controller Model 390 Configuration and User's Guide (SC31-6264)
- Licensed Program Specification VM (GC31-6265)
- Licensed Program Specification MVS (GC31-6269)
- IBM 3172 Interconnect Controller Model 3 Maintenance Information (SY27-0334)
- IBM 3172 Interconnect Controller Status Codes (GA27-3951)
- IBM 3172 Interconnect Controller Model 3 Diagnostics Guide (GA27-4063)
- IBM 3172 Interconnect Controller Model 3 LAN Adapters Supplement to Maintenance Information (GA27-4020)
- IBM 3172 Interconnect Controller Models 1, 2, 3, and 390 Parts Catalog (S131-0103)
- IBM 3172 Interconnect Controller Model 390 Supplement to Maintenance Information (GA27-4082)
- IBM 3172 Interconnect Controller Related Publications (GX27-3980)
- IBM 3172 Interconnect Controller 3/390 Adapter Charts (GX27-3981)
- IBM 3172 Interconnect Controller Safety Notices (GA27-3866)

- IBM 3172 Interconnect Controller Operator's Guide (GA27-3970)
- IBM 3172 Interconnect Controller Model 3 Auxiliary Supplement to Maintenance Information (GA27-4053)
- IBM 3172 Interconnect Controller Model 3 and Model 390 Addendum to Hardware Library (GA27-4129)
- IBM 3172 Interconnect Controller Installation Survey (P/N 41H7544)
- IBM 3172 Interconnect Controller Model 390 Warranty (P/N 55H8137)
- Printed Form, License (Z125-3301)
- Printer Form, Pointer Sheet (Z127-1000)

If the V.35 Wide Area Connector Adapter (feature code 2910) is ordered, **IBM Interconnect Controller Model 3 Communications Adapters Supplement to Maintenance Information (GA27-4021)** will also be provided.

18 Features – Specify/Special/Exchange

18.1 No Charge Specify Codes

IBM 9309-002 Rack Enclosure with the 3172-390

Specify code #9501 when ordering 9309-002 Rack Enclosure for the 3173-390. This specify code is a routing code to enable AAS to route the order to the plant of manufacture for the 3172-390.

Specification of languages for the 9309-002 Rack Enclosure is optional. The default language is determined from the country code. To override the default, refer to the sales manual for the IBM 9309 Rack Enclosure.

For the IBM 9309 Rack Enclosure power cable a specify code is required. For US and Canada (except for Chicago), specify #9080 for a cable with a watertight connector or specify #9081 for a nonwatertight connector. For Chicago specify #9986 and either #9080 for a 6-ft watertight connector cable or #9081 for a 6-ft nonwatertight connector cable.

For World Trade countries the default rack power cable is determined by the country code.

Specify the number of 3172-390 units to be installed in the 9309-002 Rack Enclosure at the factory when ordering the first 3172-390:

- One - Specify #9203
- Two - Specify #9204
- Three - Specify #9205

NOTE: Now order the individual 3172-390 units with the appropriate features. Order Rack Mount Assembly (#2500) with each 3172-390 to be installed in the 9309-002.

The system number on the 9309-002 and 3172-390s must be the same to get the units shipped together in the same rack.

IBM 3172-390 Interconnect Controller Ordering Specifications

Shipping Group languages defaults will be determined by the country code. No specify required.

Specify #9640 for power cord if the 3172 is to be mounted in a 9309-002 Rack Enclosure. This specify can be ordered via MES.

For installation in an EIA 19-inch rack:

- Specify #9601: Power cord with watertight connector for US and Canada (for raised floor)

- Specify #9602: Power cord with nonwatertight connector for US and Canada
- Specify #9621: Power cord with watertight connector for Chicago (for raised floor)
- Specify #9622: Power cord with nonwatertight connector for Chicago

Power Receptacle Requirements

- For US and Canada, use a Russelstoll 3743U-2 for watertight power plug.
- For US and Canada, use a NEMA L6-15P for nonwatertight power plug.

Ordering Requirements

The 3172 Interconnect Controller Model 390 will ship from the factory with the NCP Multinetwork Server software for VM or MVS preloaded on the 4GB hardfile. One of the following PRPQs (P85479 or P85480) MUST be ordered for registration and billing purposes and must also have the same system number as the 3172 Interconnect Controller Model 390. The preload feature content must be ordered at the same time as the 3172 Model 390 hardware to allow for proper scheduling.

Failure to comply with the ordering instructions listed in PRPQ P85479 or P85480 may result in delayed shipments to your 3172 Model 390 order.

- NCP Multinetwork Server for VM Hardware Preload Feature (#3550)

  NCP Multinetwork Server for VM (PRPQ P85479)
- NCP Multinetwork Server for MVS Hardware Preload Feature (#3551)

  NCP Multinetwork Server for MVS (PRPQ P85480)

The PRPQs listed above are pre-installed on the 3172 Interconnect Controller Model 390 hardfile at the manufacturing site and are shipped with publications and media. Refer to the appropriate PRPQ for additional details, features, and ordering information for the NCP Multinetwork Server for VM or MVS.

18.2 Special Feature Codes – Chargeable

#2235 - Auto LANStreamer MC 32

(For IBM US, No Longer Available as of July 25, 1997)

This adapter attaches to a 16 or 4 Mbps Token-Ring Network that conforms to the IEEE 802.5 architecture. This adapter has one RJ45 connector. The adapter is shipped with a conversion cable (RJ45 to shielded twisted pair cable) that plugs into the RJ45 connector on the adapter and into which the standard Token-Ring adapter cable (IBM P/N 6339098 or equivalent) plugs. The standard Token-Ring adapter cable must be ordered separately. A single cable (IBM P/N 60G1063 or equivalent) may be ordered separately to replace the combination of the conversion cable and standard Token-Ring adapter cable. This adapter also supports the use of Token-Ring Shielded or Unshielded Twisted-Pair cable containing two pairs of wires. This twisted-pair cable can have either an RJ45 connector on each end or an RJ45 connector on one end and an RJ11 connector on the other end and must be ordered separately. Field installable: Yes. Maximum: 2.

#2500 - Rack Mount Assembly

(For IBM US, No Longer Available as of July 25, 1997)

This feature allows the 3172 Model 390 to be mounted in the 9309-002 Rack Enclosure. The feature includes slides and a tray. Each 3172 Model 390 mounted in the 9309-002 must be ordered with this feature. This feature may also be used to installed the 3172 Model 390 in a compatible OEM EIA rack. Refer to the "3172 Interconnect Controller Model 003 Hardware Planning Guide," GA27-4003, for more information. Limitations: This feature is mutually exclusive with the Table Top Feature (#2550). Field installable: Yes. Maximum: 1.

#2550 - Table Top Feature

(For IBM US, No Longer Available as of July 25, 1997)

When this feature is ordered, the 3172-390 will be shipped with covers and feet suitable for the desktop environment. Order this feature if you do not want to install your 3172-390 in a 9309-002 rack or in an EIA rack. In the US and Canada, the 220 Volt power supply will be replaced with a 110V power supply so that the 3172-390 may be plugged into an ordinary wall outlet. For other countries, the table top version will keep the standard 220V power supply. No additional specify code is required; the country code will determine the voltage and power cord. Limitations: This feature is mutually exclusive with the Rack Mount Assembly (#2500). Field installable: No. Maximum: 1.

#2750 - 96MB P390 Memory Expansion Card

(For IBM US, No Longer Available as of July 25, 1997)

This feature provides an additional 96MB of memory for the S/390 Microprocessor Complex. This card plugs onto the existing S/390 Microprocessor Complex and extends into the adjacent Micro Channel slot, expanding the S/390 memory to a total of 128MB. Limitations: This feature is mutually exclusive with #2752. Field Installable: Yes. Maximum: 1.

#2751 - Parallel Port Adapter

(For IBM US, No Longer Available as of July 25, 1997)

This feature provides a parallel port for printer attachment. It is optional and plugs into one of the slots of the 3172-390. An IBM Compatible Printer can be attached to this port using a shielded parallel printer cable. The printer can then be used to print data from the NCP Multinetwork Server environment. The cable is not included with this feature. Field Installable: Yes. Maximum: One.

#2752 - 32MB P390 Memory Expansion Card

(For IBM US, No Longer Available as of July 25, 1997)

This feature provides an additional 32MB of memory for the S/390 Microprocessor Complex. This card plugs onto the existing S/390 Microprocessor Complex and does not extend into the adjacent Micro Channel slot, expanding the S/390 memory to a total of 64MB. Limitations: This feature is mutually exclusive with #2750. Field Installable: Yes. Maximum: 1.

#2910 - V.35 Wide Area Connector Adapter

(For IBM US, No Longer Available as of July 25, 1997)

This feature consists of the Wide Area Connector (WAC) common card and a CCITT V.35 electrical interface board (EIB), providing one V.35 port that supports speeds up to 2.048 Mbps. A 5 meter cable and wrap plug are shipped with this feature. Field installable: Yes. Maximum: 1.

#2922 - EIA-232D Wide Area Connector Interface

(For IBM US, No Longer Available as of July 25, 1997)

This feature provides an EIA-232D electrical interface board (EIB), which adds a second WAC interface port to the WAC adapter (#2910). The EIA-232D EIB supports speeds up to 19.2 Kbps. A 5 meter cable and wrap plug are shipped with this feature. Prerequisites: The V.35 WAC Adapter (#2910) must be installed. Field installable: Yes. Maximum: 1.

#3550 - NCP Multinetwork Server VM Preload

(For IBM US, No Longer Available as of July 25, 1997)

This feature provides a service to preload the NCP Multinetwork Server for VM on the 3172-390 hard file at the factory.

19 Feature Exchanges

Not available.

20 Accessories

None.

21 Customer Replacement Parts

None.

22 Machine Elements

None.

23 Supplies

None.

Diskettes

None.

Trademarks

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