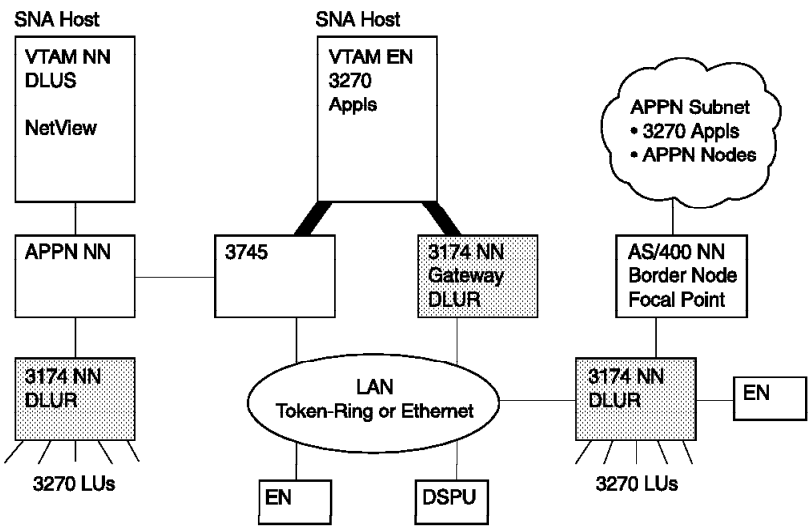
IBM

APPN
ADVANCED PEER-TO-PEER NETWORKING

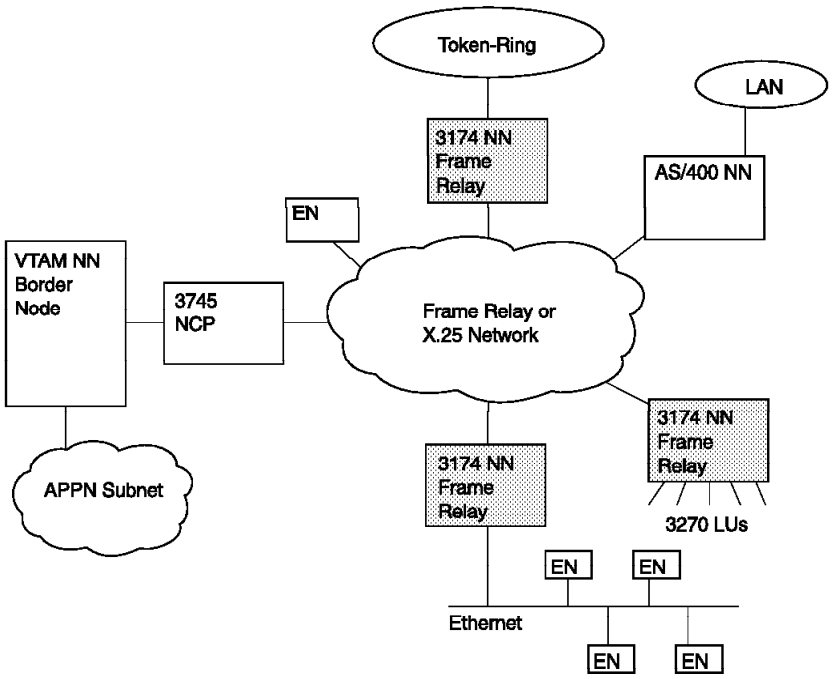
3174—Anywhere in Your Evolving APPN Network

For the First Time—3174 NN



- Opens APPN to 3270 applications using Dependent LU Requestor/Dependent LU Server (DLUR/DLUS)
- No longer tied directly to VTAM/NCP
- Transports network management to any APPN Focal Point (FP)
- Attaches to APPN Border Nodes (BNs) for sub-network connectivity

For the First Time—3174 NN



- Interconnects LANs with WAN communication, allowing the 3174 to communicate to another 3174 using frame relay or X.25 communication
- Provides shared access previously provided for LANs to WANs, supporting a maximum of 225 frame relay or X.25 connections to APPN nodes (ENs, LENs, NNs, VTAM/NCP, 3174 NNs)
- No longer requires LAN adapter for APPN

3174 APPN Energizes Today's Customer Networks

The APPN® extensions provided by Configuration Support-C Release 5 substantially increase your ability to build and interconnect networks that can be complex, vertical, and multi-vendor. Whether your network requires traditional 3270 support or APPN Network Node (NN) support, or both, the 3174 is the controller that can provide it all.

The APPN Advantage

APPN nodes may be of all sizes or capabilities. APPN protocol routes data natively across any link type, and around congested or failed nodes. With adaptive pacing, APPN regulates traffic to prevent overloading the node capacity or losing data.

APPN simplifies network definition. Logical Units (LUs) need to be defined at the origin node only (not at the 3174 NN), fewer LUs are needed because of multiple sessions, the network topology is distributed automatically to NNs, session routes are calculated dynamically by NNs, and the resource directory is updated dynamically as applications are moved or added. Also, the 3174 supports self-defining LUs, allowing VTAM® to create LU definitions dynamically.

APPN-Fulfilled for 3270 Applications

IBM recognizes that our customers have a huge investment in Dependent LU applications. Because a lengthy migration to LU 6.2 applications is anticipated, APPN provides you with Dependent LU Requester/Dependent LU Server (DLUR/DLUS) support. The 3174's DLUR function allows you to preserve your investment in 3270 applications and still take advantage of APPN technology.

With DLUR/DLUS support, Dependent LUs can take advantage of APPN routing. Once the route is selected, the 3270 data stream is routed natively over the APPN network. Also, the DLUR function allows you the flexibility to locate the 3174 NN anywhere in the APPN network and still be able to use coax-attached, dependent workstations and printers, and maintain 3174 network management functions, such as Response Time Monitor.

More Details About DLUR

The DLUR function is used with the Dependent LU Server (DLUS) function in ACF VTAM V4R2 to provide APPN support for 3270 applications. DLUR/DLUS support uses an LU 6.2 session pipe to encapsulate System Services Control Point (SSCP) control data so that equivalent subarea functions are provided.

The session data route is calculated directly between the LU session partners, and the session data is routed natively, **not encapsulated**, through the APPN network. The route may or may not traverse the DLUS node. The DLUS node and the host applications can be located anywhere in an APPN network as long as the DLUR node has a path to the DLUS node and the DLUS node has a path to the host applications. This support allows the SSCP function to remain in VTAM; however, any APPN NN is able to calculate the best route for data.

Also, system definition is made easier with dynamic PU and LU definitions in VTAM. The 3174 supports locally attached dependent LUs only; this support has not been extended to downstream PU 2.0 nodes.

What is the DLUR Advantage?

The DLUR function offers you the flexibility in your current 3174 networks or in your expanding networks. With DLUR/DLUS support, management and definition is simplified. As 3270 workstations and controllers upgrade to APPN with DLUR and subarea nodes migrate to VTAM V4R2, PU 2.0 gateways and multi-host support will no longer be required. APPN overcomes the deficiencies of the LAN gateway (PU 2.0 passthru) by eliminating polling for multi-drop links, eliminating static definition of LAN addresses to station addresses, and eliminating definition of multiple PUs and LUs. Also, you can move your dependent LU devices throughout the network without having to deal with VTAM definitions or have concerns with problem management.

With DLUR/DLUS support for 3270 applications, the 3174 APPN NN provides seamless backup and recovery for links and nodes with no additional definition and without requiring the user to switch to another logical terminal. Because APPN has dynamic routing and directory information, the best route is chosen without static user definitions.

3174 Transports APPN Network Management to Focal Point

The management services of the 3174 APPN NN can now communicate to APPN Focal Points transported by an LU 6.2 session with Multiple Domain Support (MDS). This support allows the Focal Point (NetView™ V2R4 or AS/400®) to be located anywhere in an APPN network and removes the restriction that requires the 3174 to be directly attached to receive network management support. The Focal Point can be explicitly defined at the 3174, or the 3174 can be made aware of its Focal Point by the Focal Point's Sphere of Control.

Also, End Nodes (ENs) served by the 3174 can choose any Focal Point for any type of network management application. The 3174 NN supports the routing of this network management data from the EN, eliminating the need for the EN to maintain a separate session directly with an APPN Focal Point.

3174 Uses New APPN Functions

Border Nodes (BNs) provided by AS/400 and VTAM allow sessions across APPN sub-networks. Sub-networks are identified by different Network IDs, and when used with APPN, decrease the topology data base size and the number of network flows. With the release of Configuration Support-C Release 5, the 3174 NN can attach to BNs which allow connection to sub-networks.

Also, the 3174 can now query an APPN Central Directory, which reduces the 3174's directory size requirements. The Central Directory automatically receives updates from other NNs as they join the network and conducts searches on behalf of the NNs.

3174 Delivers Advanced Connectivity with Current Hardware

With the 3174's existing communication adapter, the 3174 offers APPN support for X.25 or frame relay networks with a maximum of 225 links. You can use WANs to interconnect LANs and take advantage of reliable APPN routing and guaranteed delivery. Also, you gain network efficiency as an APPN single-link connection (DLCI or Virtual Circuit) carries multiple sessions. The LAN adapter is now optional for the APPN feature.

More Details About APPN Frame Relay

APPN Frame Relay support is available with the 3174 Frame Relay Communications feature. This support is compatible with the Frame Relay Boundary (BNN) function and the Frame Relay Frame Handler support in NCP V7R1. It uses 802.2 logical link control (LLC) and RFC 1490 for multiplexing protocols over a single Permanent Virtual Connection (PVC) to interoperate with AS/400, 3172, RouteXpander/2, and VTAM/NCP.

The 3174 NN can communicate directly with another 3174 NN (DTE to DTE) without a frame relay network (FRBS) or use standard frame relay DTE communication through a public or private frame relay network to remote APPN NNs and ENs.

More Details About APPN X.25

APPN X.25 support is similar to existing X.25 Single-Link Multi-Host support and provides equivalent X.25 options. As a DTE, the 3174 NN may have multiple virtual circuits that communicate across an X.25 network to remote DTEs that may be VTAM/NCP Low Entry Networking (LEN)/APPN nodes, APPN NNs, APPN ENs, or LEN ENs. The 3174 uses the QLLC protocol layer and supports Permanent Virtual Circuits (PVCs) and Switched Virtual Circuits (SVCs); however, the SVCs are persistent and do not disconnect.

Summary

The 3174 NN provides you with a pathway to new technologies (for example, APPC and frame relay) and allows you to maintain your 3270 applications and use existing hardware, lines, and wiring. Without losing your investment, you can benefit from packet-switched X.25 communication and frame relay communication. The 3174 is uniquely positioned to provide you with comprehensive, manageable networking solutions for the 90′s as outlined in IBM's NS Networking Blueprint.

For More Information

For more information about the 3174, APPN, and these and other APPN enhancements, contact your local IBM marketing representative, or call 1-800-IBM-CALL.

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