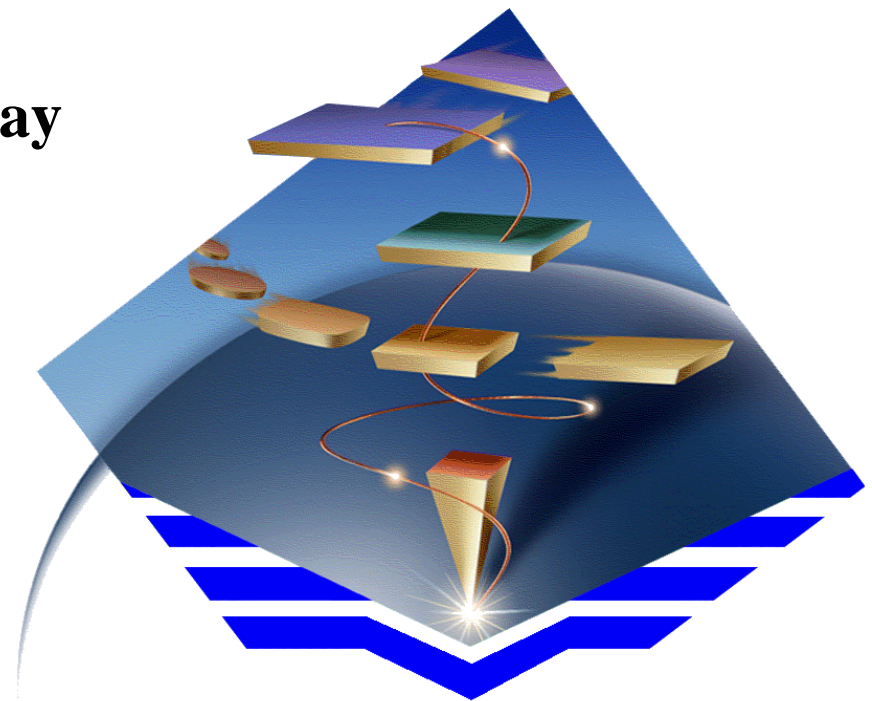

Communications Server for AIX

**The premiere multifunction gateway
for the AIX environment**

IBM eNetwork Software



IBM Software

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Those wonderful acronyms ...

API	Application Programming Interface
APPC	Advanced Program to Program Communication
APPN	Advanced Peer to Peer Networking
BOS	Base Operating System
CDLC	Channel Data Link Control
DOS	Disk Operating System
ESCON	Enterprise Systems Connection
FDDI	Fiber Distributed Data Interface
FTP	File Transfer Program
ISC	Interprocess System Communication
LAN	Local Area Network
LU	Logical Unit
PC	Personal Computer
PU	Physical Unit
RJE	Remote Job Entry
SDLC	Synchronous Data Link Control
SNA	Systems Network Architecture
SNMP	Simple Network Management Protocol
VTAM	Virtual Telecommunications Access Method
WAN	Wide Area Network

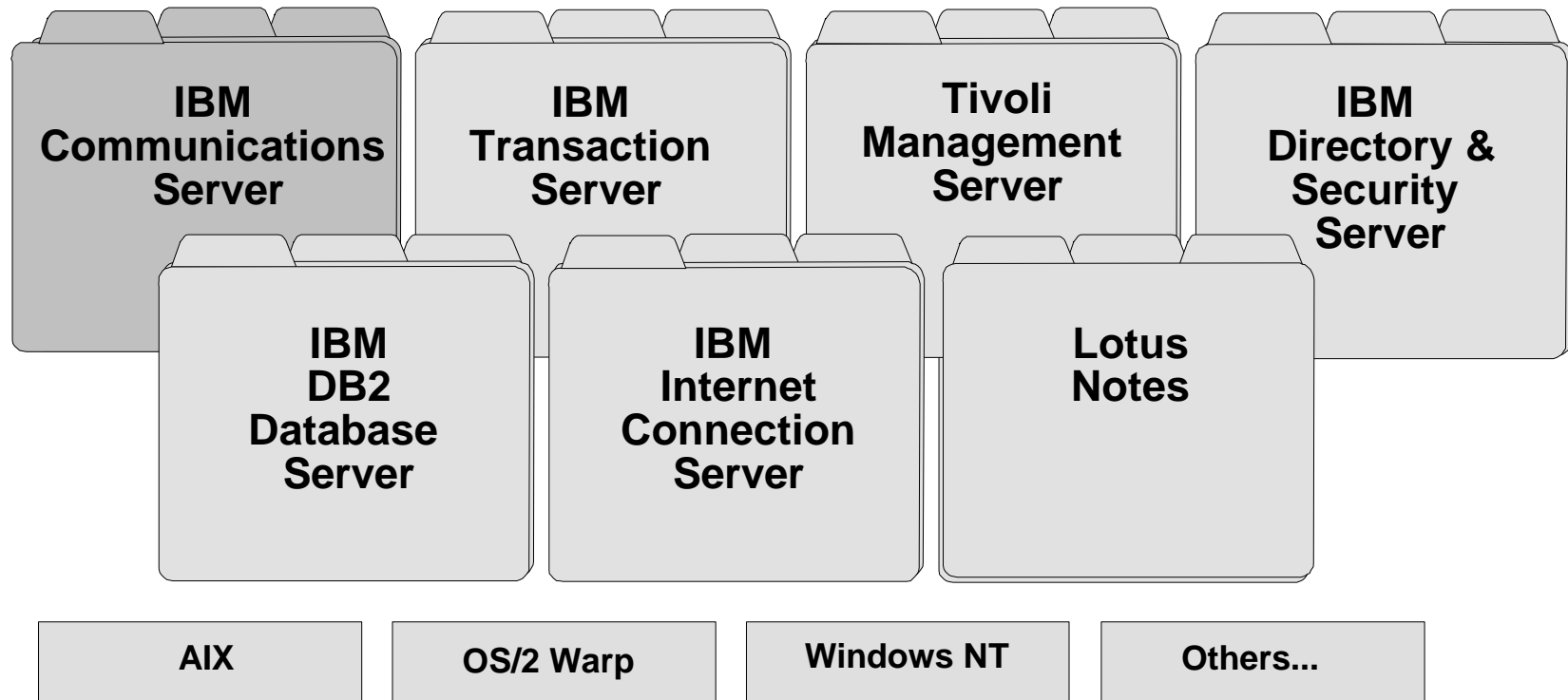
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Agenda

- ▶ **Communications Server for AIX Functional Overview**
 - **Communications Server for AIX**
 - **SNA Client Access**
 - **IBM Host On-Demand**
 - **Sample Scenarios**
 - **Summary**

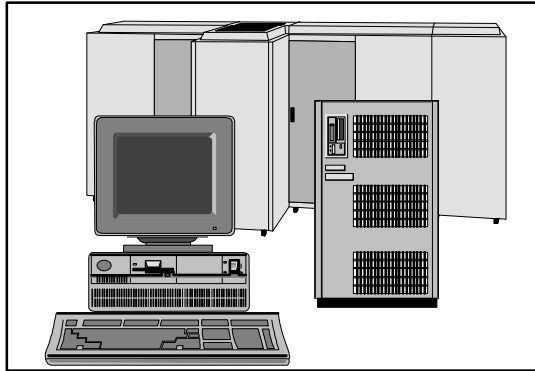
IBM Software Servers

- The industry's most comprehensive software server family
 - Seven modular application servers
 - Multiple platforms...the widest choice of operating systems & clients
 - Integration Tested



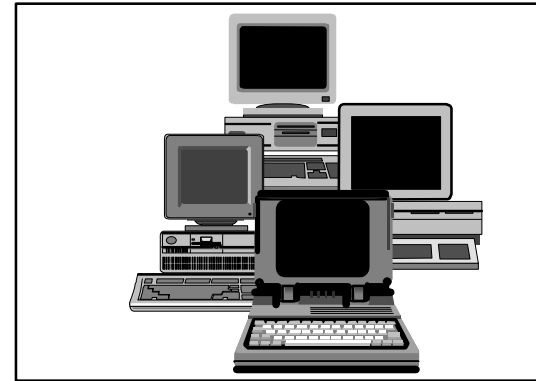
IBM Software

IBM eNetwork Software



Servers

Communications Server for OS/390
Communications Server for AIX
SNA Client Access for AIX
SNA Application Access for AIX
Communications Server for OS/2 Warp
Communications Server for NT
NetWare for SAA
NetWare for SAA: AS/400 Edition



Clients

Personal Communications AS/400 and 3270 (for OS/2, Win 3.1, Win 95, Win NT)
Personal Communications AS/400 (for OS/2, Win 3.1, Win 95, Win NT)
CS/2 Access Feature for OS/2
CS/2 Access Feature for Windows
Internet Connection for Windows

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Communications Server for AIX

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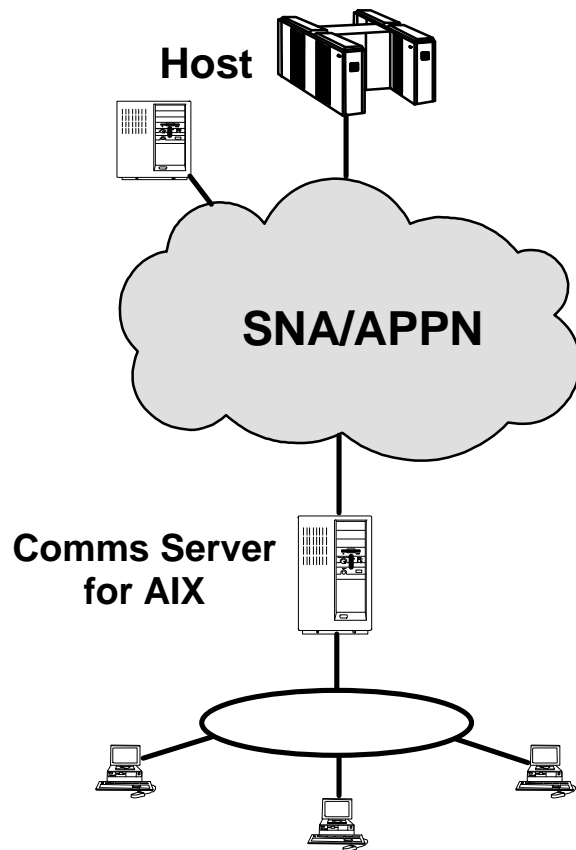
Communications Server

The solution for companies who want to:

- Have the freedom to make application decisions based on business needs, not network protocols
- Connect users to the Intranet or Internet to exploit network computing advances
- Sharpen their competitive edge by developing best-of-breed applications without updating their network or building parallel networks
- Leverage their current investments and run SNA applications over TCP/IP networks and vice versa
- Improve their network's availability, efficiency and performance
- Be positioned for the applications and networks of the future
- Buy from the people that introduced networking

IBM Software

Communications Server for AIX



- ▶ **Provides SNA communications to AIX networks**
 - APPN Networks (Network Node and End Node)
 - High Performance Routing(HPR) intermediate node
 - Dependent LU Requester (DLUR) for 3270 over APPN
 - Subarea Networks
- ▶ **Provides powerful gateway for SNA clients and 3270 traffic**
- ▶ **Provides multiprotocol networking through AnyNet technology**
- ▶ **SMP efficient**
- ▶ **Channel Connectivity - including Multi Path Channel support(MPC)**
- ▶ **Application Programming Platform, including APPC Toolkit**
- ▶ **IBM 3270 Host Connection (HCON) single session**

IBM Software

What's New with Comm Server for AIX V4

▶ **Packaging**

- Enhanced/simplified Packaging
- Expanded languages supported
- Common installation with other IBM Software Servers for AIX

▶ **Multiprotocol support**

- AnyNet APPC over TCP/IP gateway
- AnyNet Sockets over SNA gateway

▶ **SNA/APPN enhancements**

- High Performance Routing (HPR) intermediate node support
- Dependent LU requester (DLUR)
- Non-blocking CPI-C APIs

▶ **Performance enhancements**

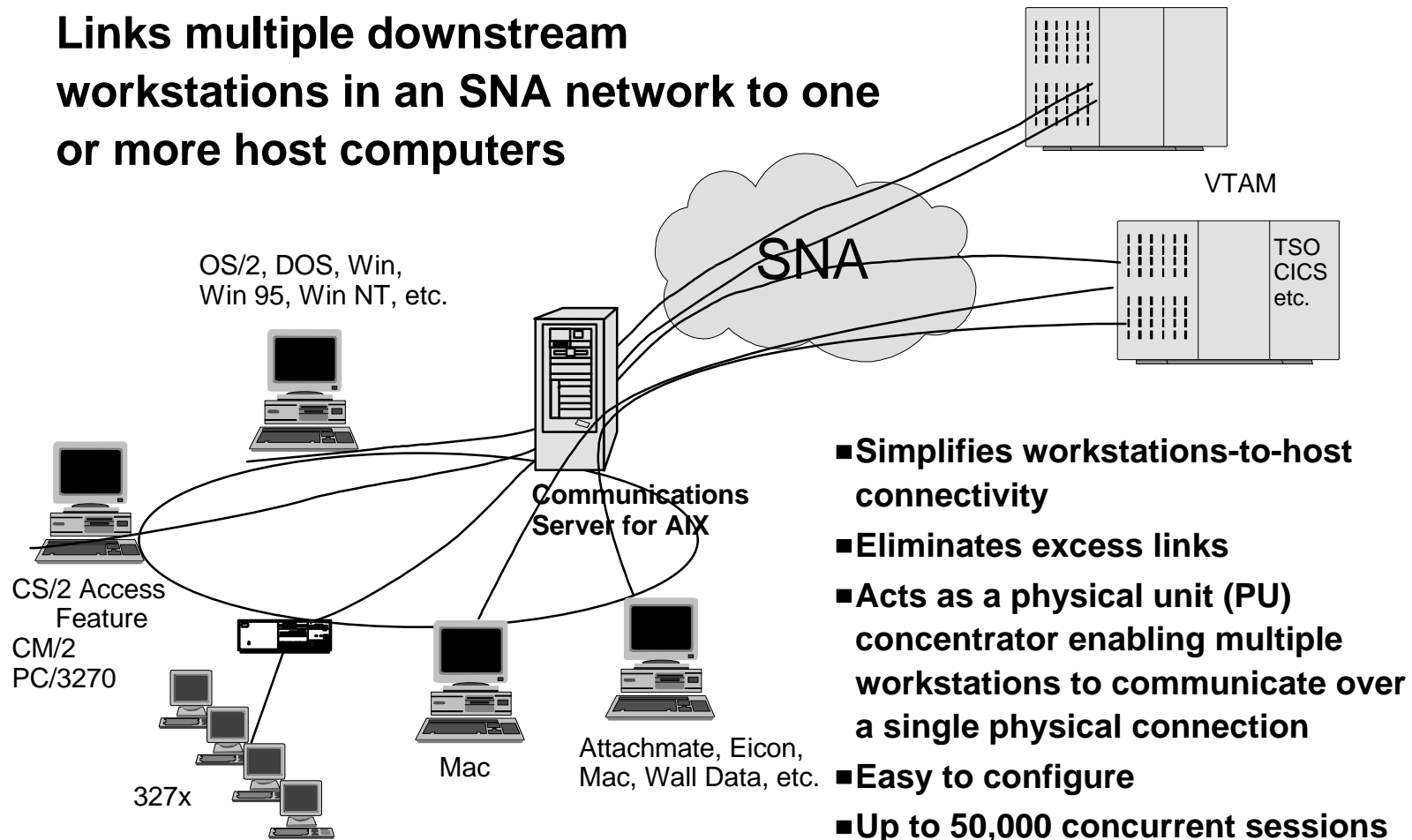
- Support of V.35 links for SDLC increases throughput to 100 KBytes/sec
- Supports up to 50,000 concurrent sessions

▶ **Single session IBM 3270 Host Connection (HCON)**

IBM Software

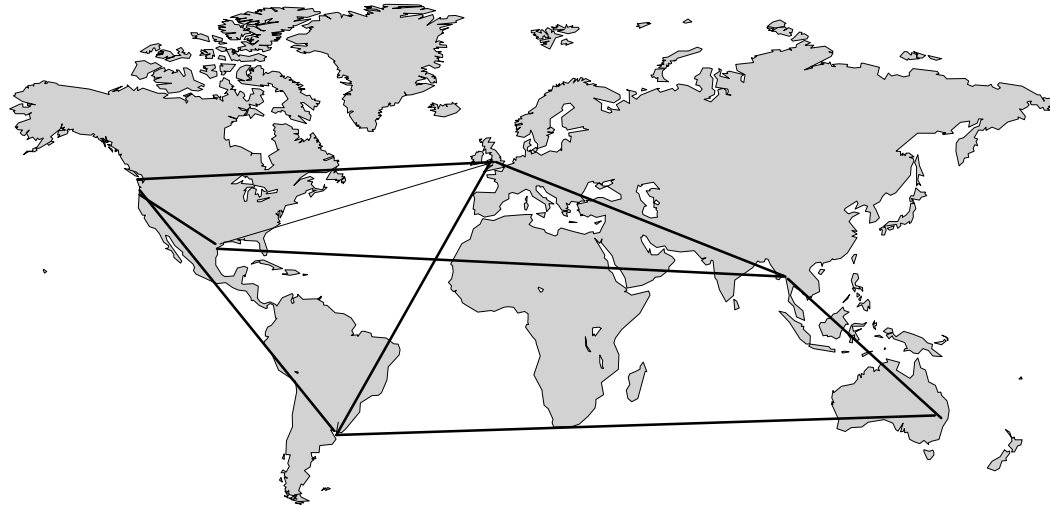
SNA Gateway

Links multiple downstream workstations in an SNA network to one or more host computers



IBM Software

APPN



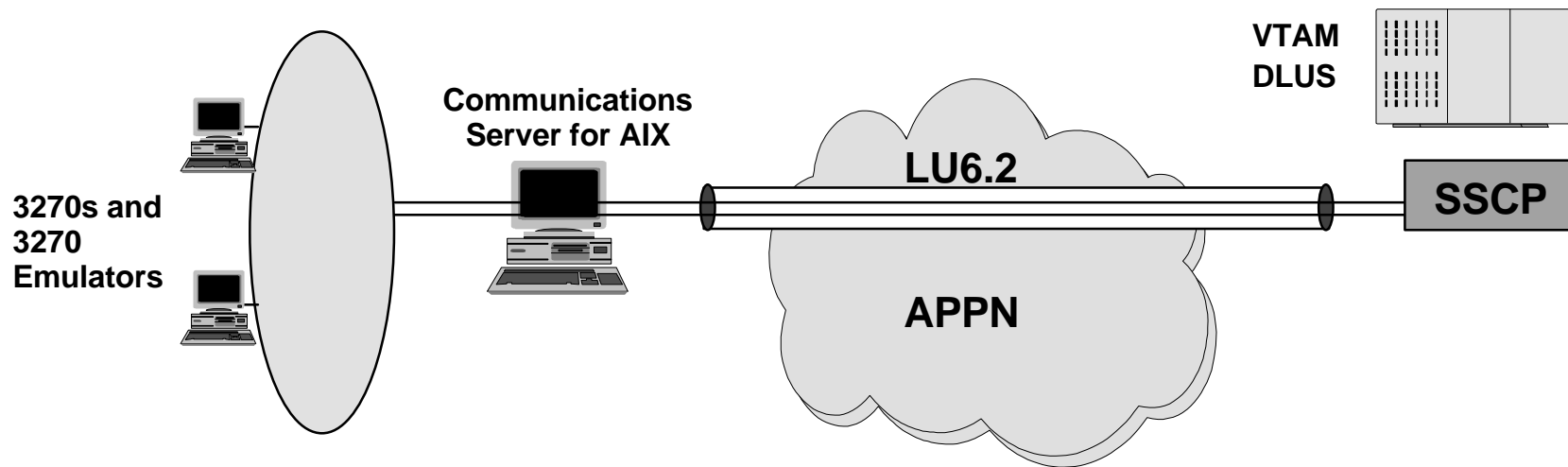
- ▶ **Dynamic connectivity and resource location**
- ▶ **Dynamically add, delete or move any resource**
- ▶ **Only UNIX SNA with Network Node support**
- ▶ **APPC Application Suite provided**
- ▶ **DLUR and HPR**

IBM Software

High Performance Routing (HPR)

- ▶ **Provides intermediate routing capability in a HPR network in support of:**
 - **100% network availability with maximum throughput and efficiency**
 - **Prepares SNA networks for high speed networks of the future**
 - **Non-disruptive rerouting**
 - **Application specific prioritization**
 - **Congestion Control**
 - **Deterministic routing**

Dependent LU Requester (DLUR) in SNA Gateway



- DLUR, in conjunction with VTAM's dependent LU server (DLUS) function, enables dependent LUs (LU1, 2, 3, and dependent LU6.2) to operate unchanged in an APPN network, without changing applications
- DLUS establishes an LU6.2 session with, and provides SSCP services to, the DLUR node.
- SNA Gateway provides services to the downstream dependent LUs.
- Supports up to 50,000 concurrent sessions
- Protects investment in 3270s (real and emulators) and other dependent LU applications while migrating new applications to LU6.2 and APPN

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Integrated multiprotocol support

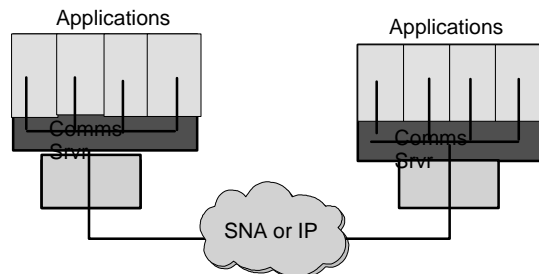
Any user accessing any application ... anywhere

- ▶ **Communications Server for AIX function**
 - **APPC over TCP/IP access node**
 - **Sockets over SNA access node**
 - **APPC over TCP/IP gateway**
 - **Sockets over SNA gateway**

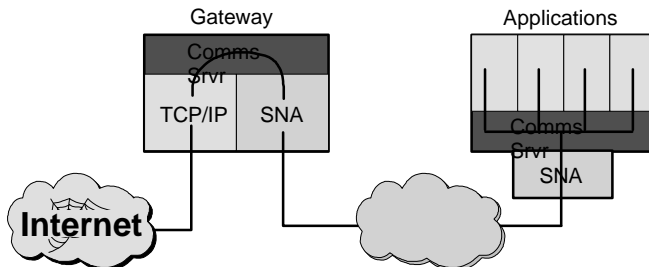
- ▶ **SNA Client Access for AIX**
 - **TN3270E Server**

IBM Software

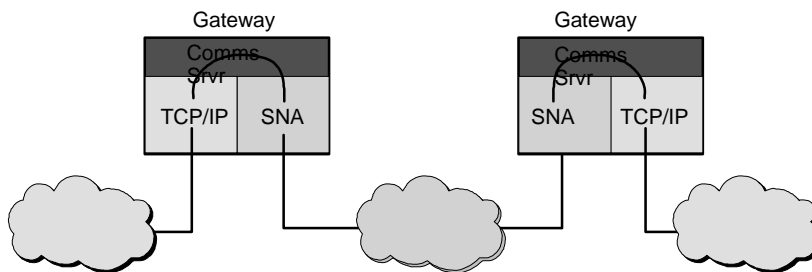
Advanced Multiprotocol Support



Access node: Supports nonnative application



Single gateway: Joins 2 unlike networks



Paired gateways: joins two like networks with unlike backbone

- **Simplifies application selection, network design, and operation**
 - e.g. Internet access from SNA and IP
- **Expands application scope and gives end users broader choice of applications**
- **Award-winning, standards-based, software solution**
 - Compensates for differences in protocols

IBM Software

Response Time/Performance

- ▶ **Virtually unlimited scalability**
 - Tens of Thousands of concurrent sessions supported
 - Hundreds of transactions per second

- ▶ **Hardware scalability**

- ▶ **SMP Exploitation**
 - Utilizes all processors by splitting processing over available processors
 - 3.3 times performance improvement on a 4-way SMP system over a uniprocessor

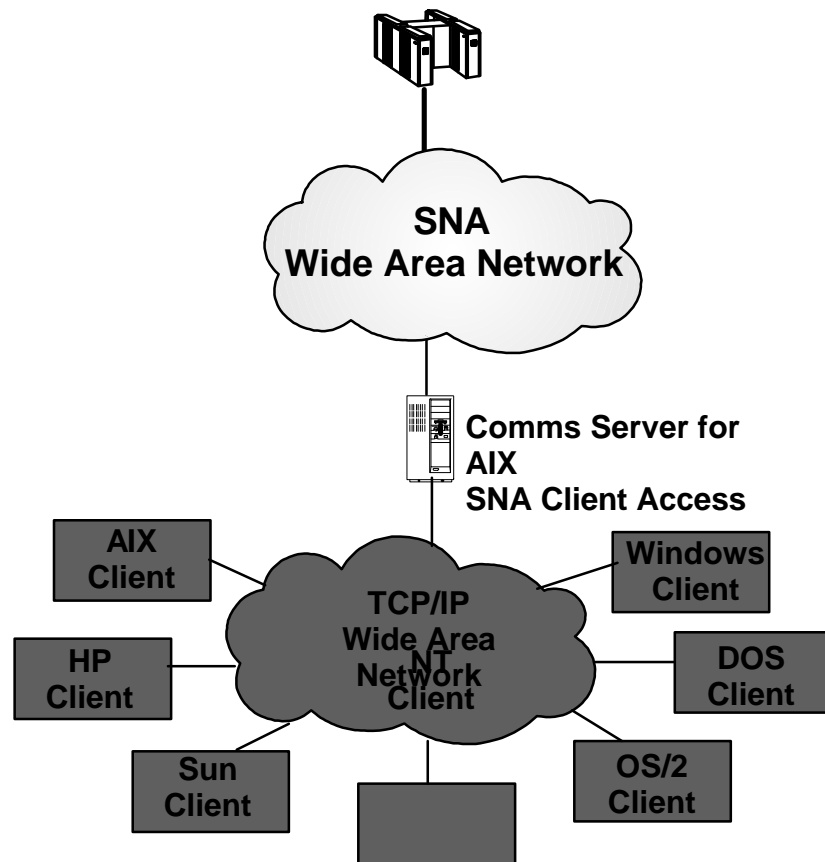
- ▶ **Communications Server for AIX integration in AIX kernel**

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SNA Client Access for AIX

IBM Software

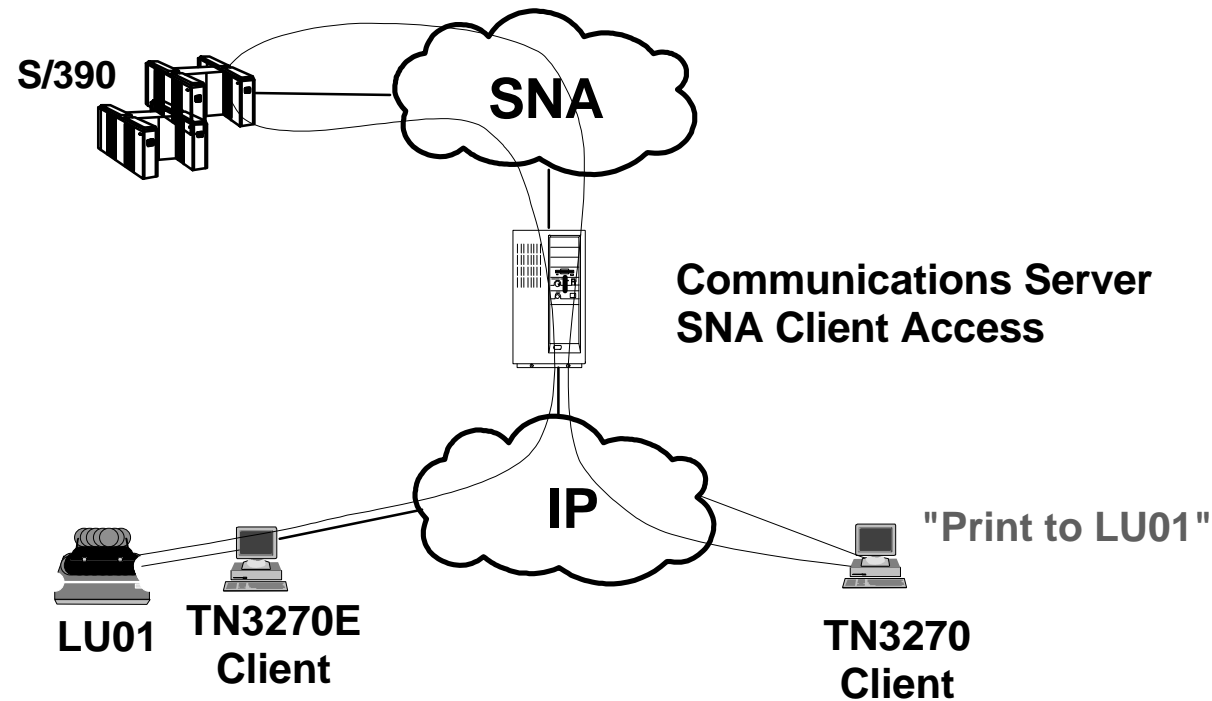
SNA Client Access for AIX



- ▶ Enables customers to connect a wide range of TCP/IP clients on DOS, OS/2, AIX, HP, SUN, WindowsNT, and Windows platforms to SNA networks
- ▶ Multi-vendor TCP/IP connectivity to SNA
- ▶ TN3270E/5250 Server
- ▶ Client support for:
 - TN3270E
 - TN3270
 - TN5250
 - APPC APIs
 - 3770 RJE
 - LU0

IBM Software

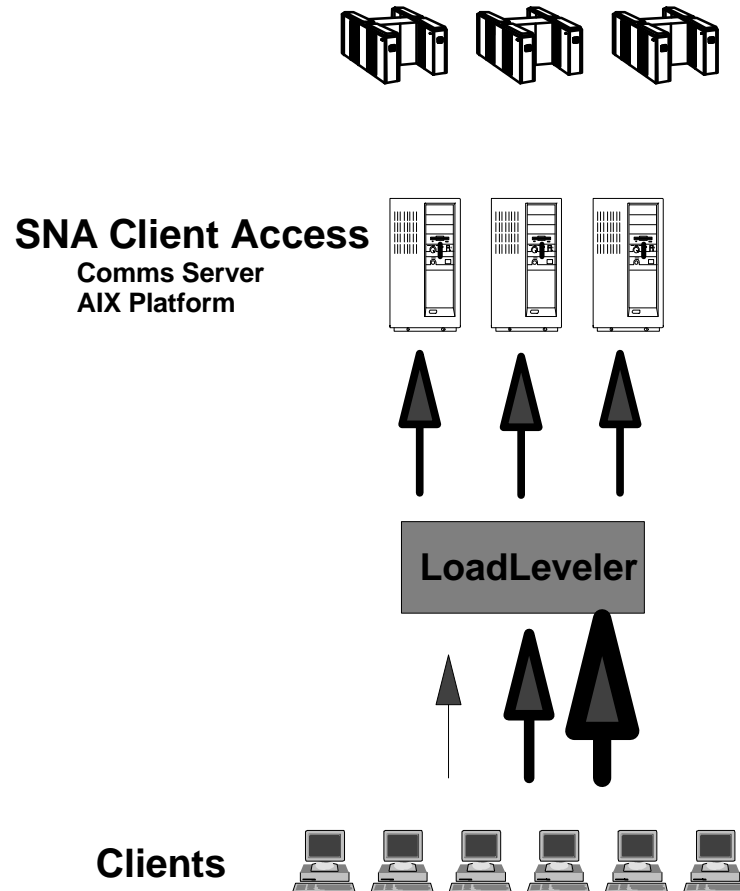
TN3270E Support



- ▶ Host print support on local printer
- ▶ Specific LU request support
- ▶ Definite response

IBM Software

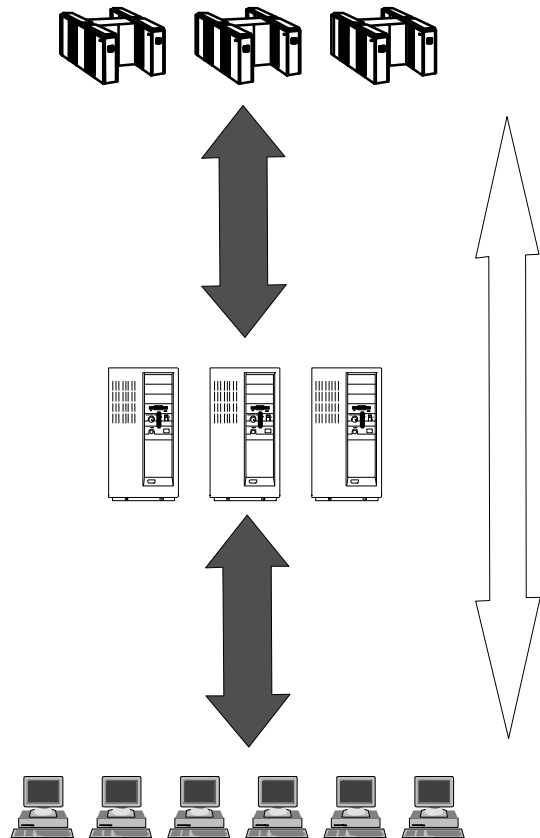
Load Balancing



- ▶ Control and balance workload across Gateways
- ▶ Optimum response time, reliability and availability
- ▶ Clients routed to machine based on:
 - Host LU availability
 - Link speed
 - Client/Host connection load
 - Overall system load
 - Machine processor speed
- ▶ LoadLeveler resides on one AIX machine

IBM Software

Response Time Monitoring



► NetView Response Time Monitor Integration

- Performance measurements
 - ★ *Host to client*
 - ★ *Host to server*
 - ★ *Server to client*

► Reduced administration costs

- No new applications needed
- No new network administrator training on new applications

IBM Software

LU Pooling

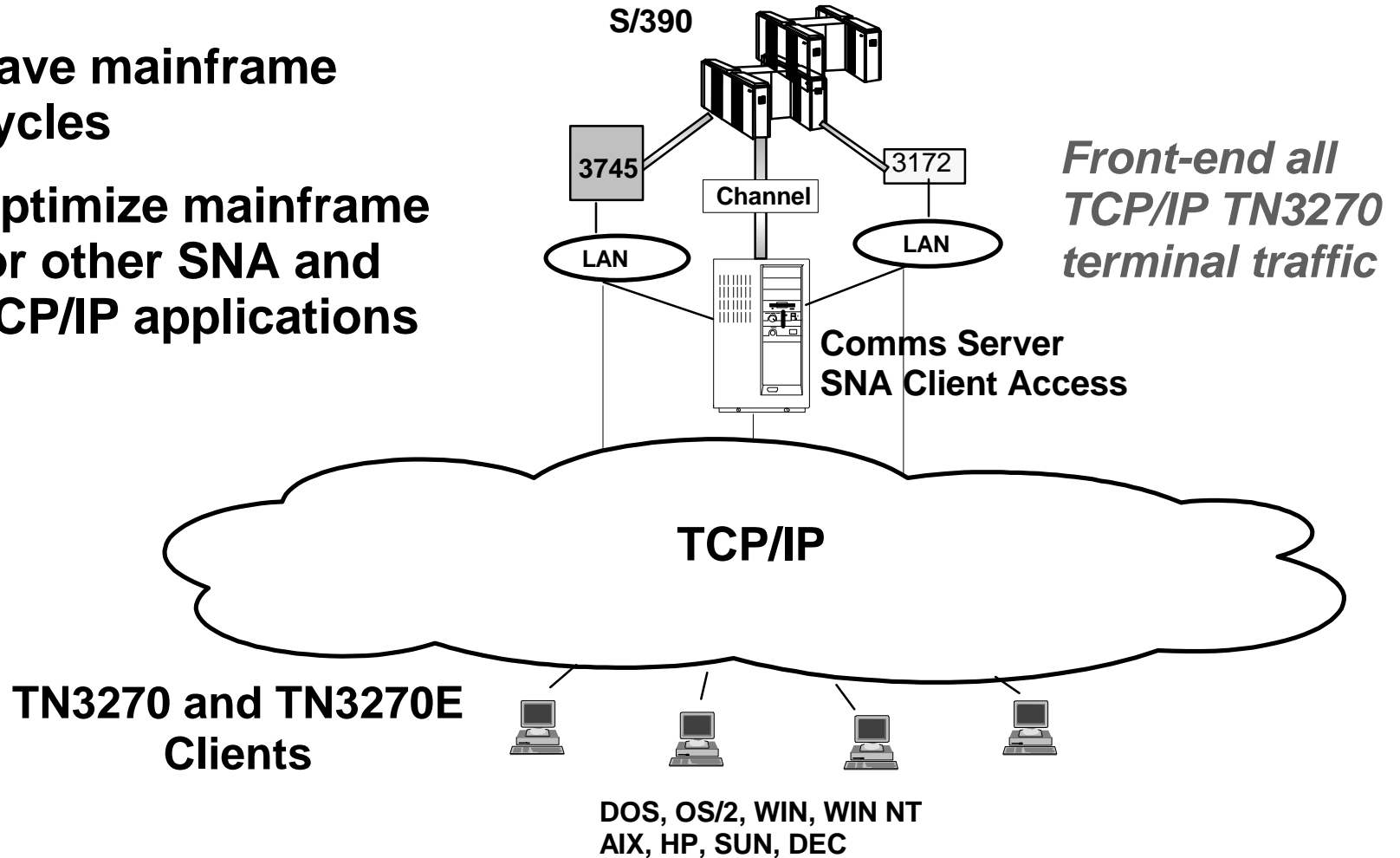


- **Assign pools of LUs to groups of users**
- **Pools can span server**
 - ▶ Guaranteed access even if system fails
- **Easy to add new users and new resources**
- **Default SNA resources based on ip address**
- **Time-out parameters enhanced**

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TN3270 Offload

- ▶ Save mainframe cycles
- ▶ Optimize mainframe for other SNA and TCP/IP applications



IBM Software

Security

- ▶ **Limit, manage, restrict and control access to SNA resources**
 - **Host Access**
 - **LU Access**
 - **LU and User Pools**

- ▶ **Tie LU to specific terminal ID / IP address**

- ▶ **Minimal administration setup**

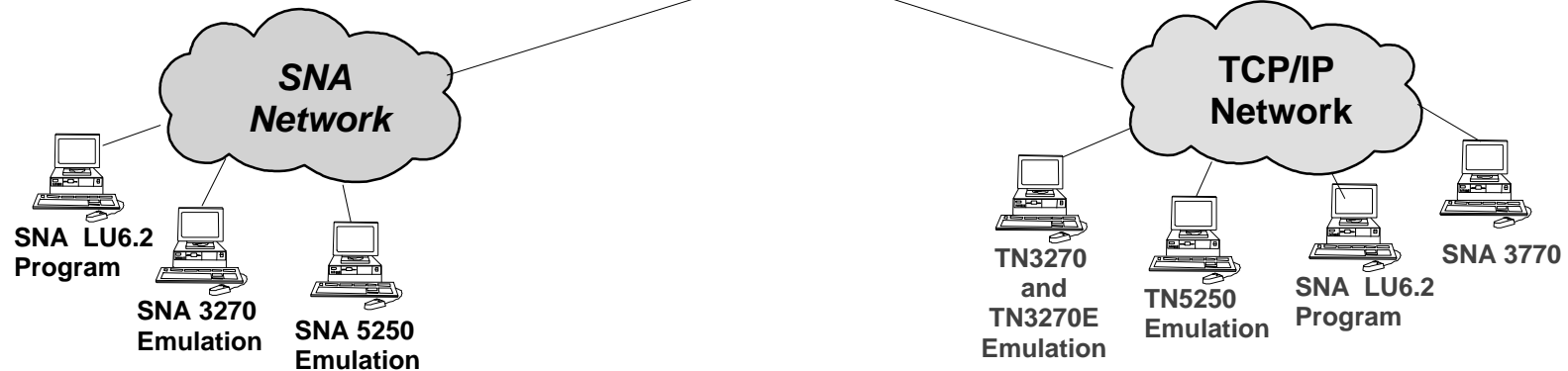
Enterprise Gateway

**First ESCON Channel
attached enterprise
gateway in the industry!**



**Comms Server
SNA Client Access**

**Thousands of Users
with sub-second
access**



Multiprotocol and Multi-platform support

IBM Software

Networking Connectivity

▶ APPN Support

- Network node and End node
- HPR
- DLUR

▶ SNA Connectivity

- SDLC (512KB)
- Token Ring
- Ethernet
- X.25
- FDDI
- Channel (ESCON & BkMux)

▶ TCP/IP Connectivity

▶ SNA Clients

- 3270 Emulation
- 5250 Emulation
- LU0, 1, 2, 3 and 6.2 applications

▶ TCP/IP Clients

- TN3270E
- TN3270
- TN5250
- APPC APIs
- 3770 RJE
- LU0

Open Networking = Choice

IBM Software

Availability and Reliability

▶ **Fault Resilience**

- **Backup host**
- **Dynamic connectivity**
- **Non-disruptive rerouting**
- **Load Balancing**
- **Automatic Switchover**
- **Hot Standby**

✓ **SNA Characteristics**

- **SNA Gateway**
- **APPN**
- **HPR (future)**

✓ **SNA Client Access**

✓ **Load Leveler for AIX**

✓ **HACMP for AIX**

IBM Software

Manageability and Control

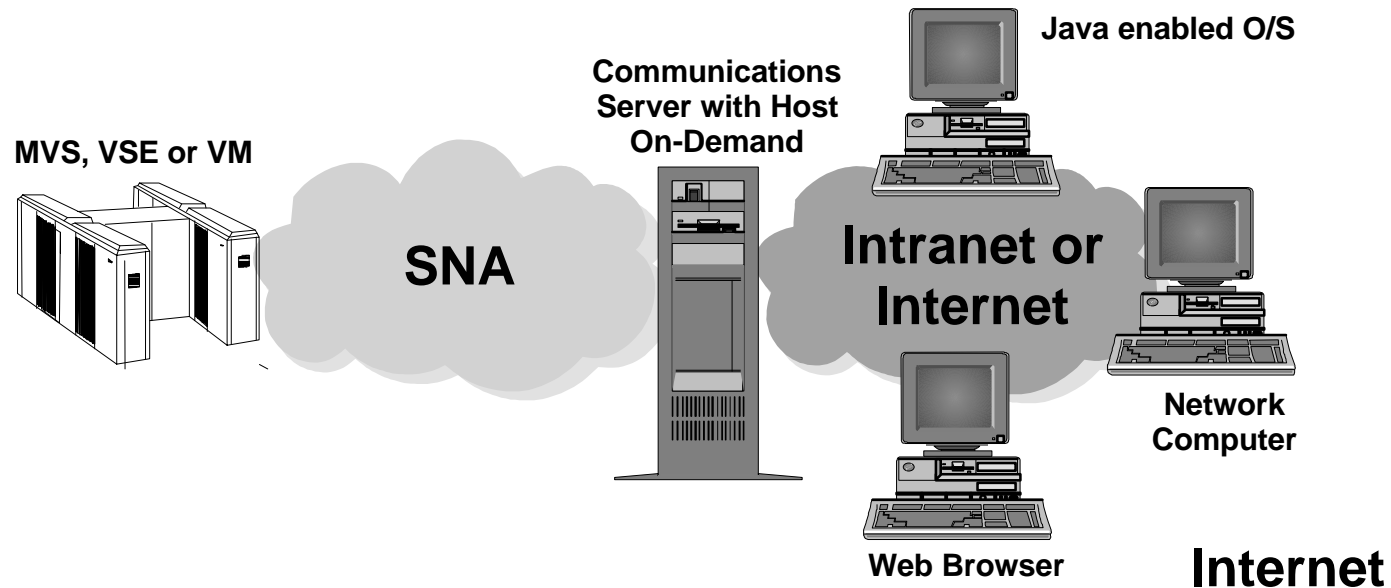
- ▶ **xsna**
- ▶ **NetView**
- ▶ **APPN subagent**
- ▶ **Visibility
end-to-end (RTM)**
- ▶ **Dynamically add new users**
- ▶ **View SNA line and session status**
- ▶ **Display SNA resources and connected client status**
- ▶ **Restrict access to SNA resources**
- ▶ **Associate LU to specific terminal ID / IP-address**
- ▶ **Scalability with simplicity**
 - **User pools**
 - **LU pools**

IBM Software

IBM Host On-Demand

IBM Software

IBM Host On-Demand



- ▶ Allows Java enabled browsers to seamlessly access centralized content and services
- ▶ Provides high performance, low cost solution for web-centric end users who require SNA content or services
- ▶ Allows customers to leverage their IBM Communications Server investment by expanding its reach to Web browser clients
- ▶ Extends the reach of SNA application content and services to Java enabled clients

IBM Software

IBM Host On-Demand -- Key Features

- ▶ Provides emulator function on demand
- ▶ Java based implementation
- ▶ Customized 3270 windows
- ▶ Multiple concurrent sessions
- ▶ Persistent sessions
- ▶ Platform flexibility:
 - Clients: Java enabled platforms
 - Servers:
 - Communications Server for OS/2 4.1
 - Communications Server for AIX 4.2 (with SNA Client Access for AIX)
 - Communications Server for NT (Beta)
 - NetWare for SAA 2.2
- ▶ Security is the same as TN3270 sessions
- ▶ Investment protection
 - No programming required
 - No incremental cost for Host On-Demand
- ▶ Technically: a TN3270 solution implemented in JAVA

IBM Software

IBM Host On-Demand -- Availability

▶ **General Availability - Now**

- Communications Server for OS/2
- Communications Server for AIX (with SNA Client Access for AIX)
- Communications Server for Windows NT (Shipped with product)
- NetWare for SAA

▶ **Available with the Communications Servers or via WWW at no additional charge**

- only applicable usage charge for Communications Servers apply

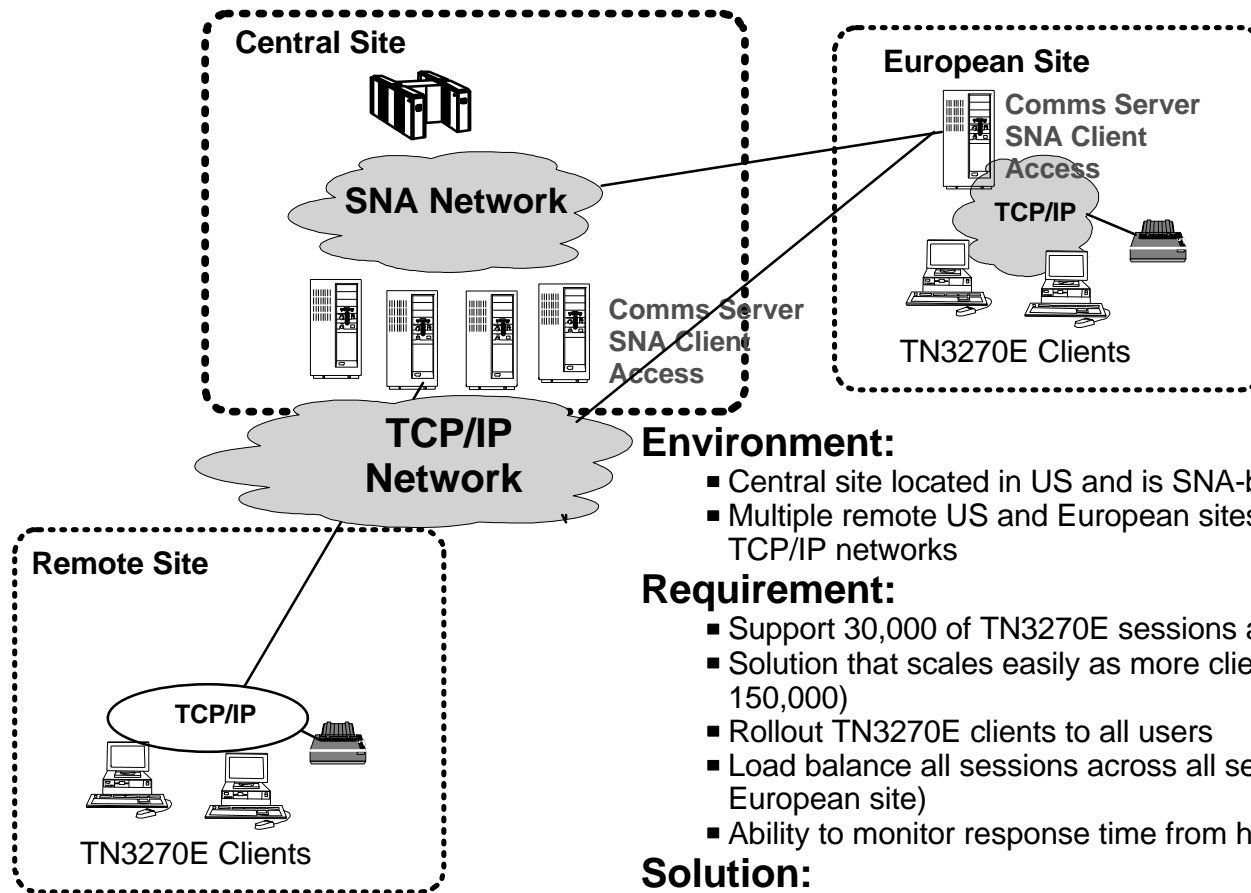
▶ **World Wide Web URL:**

- <http://www.networking.ibm.com/hex/hexprod>

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Sample Scenarios

Manufacturing Industry - Central Office Solution



Environment:

- Central site located in US and is SNA-based network
- Multiple remote US and European sites are predominantly TCP/IP networks

Requirement:

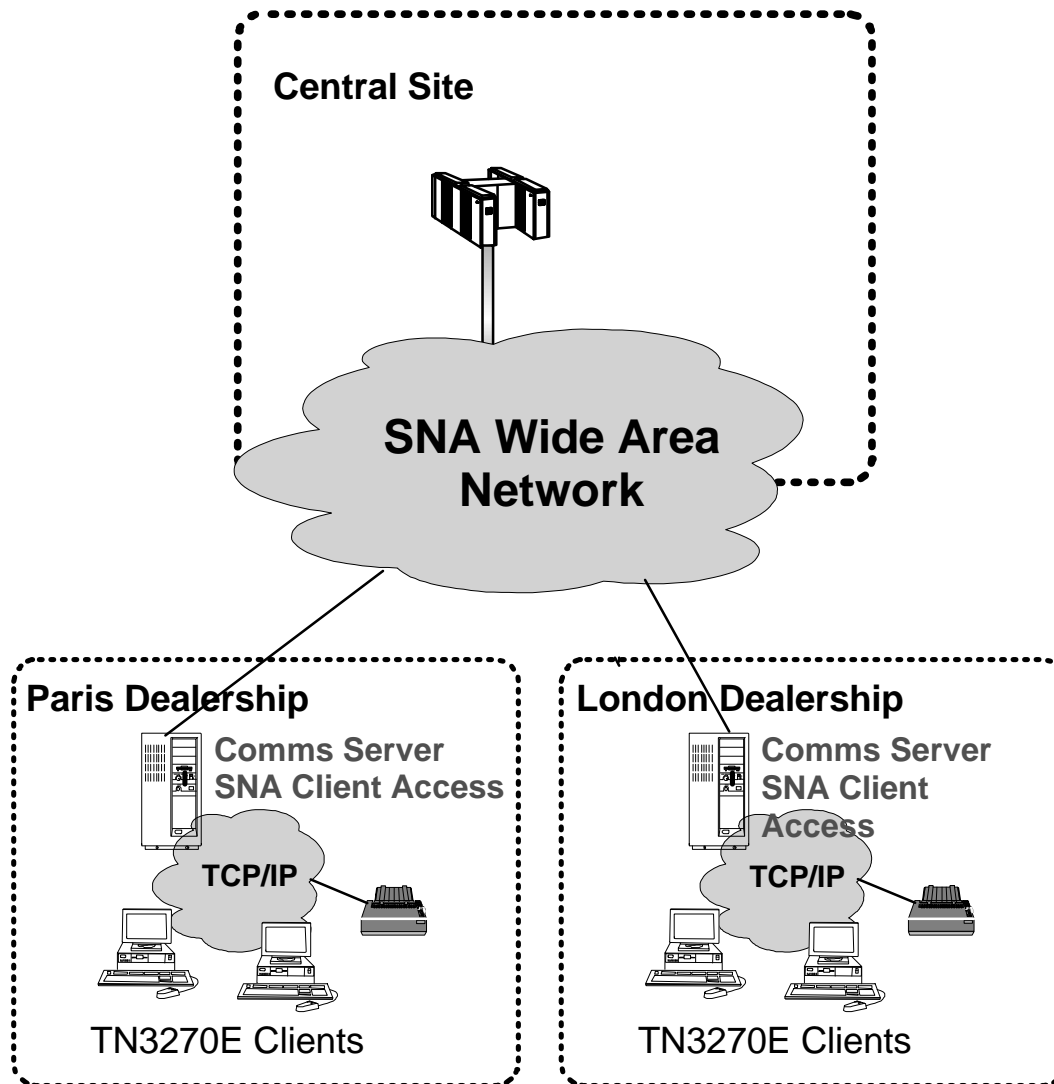
- Support 30,000 of TN3270E sessions across network
- Solution that scales easily as more clients are rolled out (goal 150,000)
- Rollout TN3270E clients to all users
- Load balance all sessions across all servers (including European site)
- Ability to monitor response time from host to client

Solution:

- Communications Server for AIX and SNA Client Access for AIX installed on 4 RS/6000s utilizing Load Balancing and Response Time Monitoring functions
- Install Personal Communications AS/400 and 3270 on all user workstations

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Retail Industry - Branch Office Solution



Environment:

- SNA backbone network connecting central sites to all 200 dealerships
- Each remote dealership has an RS/6000 and about 50 LAN-based TCP/IP workstations

Requirement:

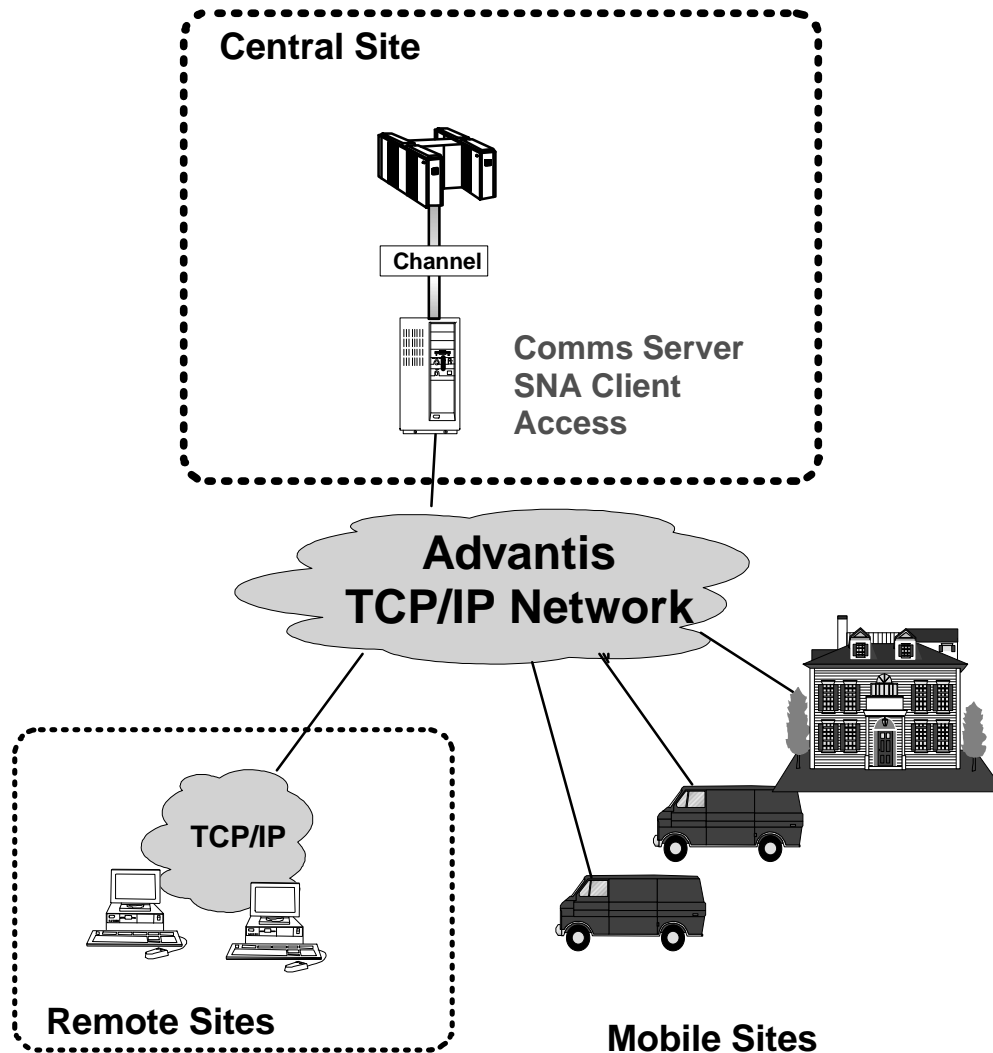
- Provide 50 users access to host applications
- Support S/390 and AS/400
- Instant in-house print-outs of results of mainframe application processing (e.g. copies of orders placed by dealership)

Solutions:

- SNA Client Access for AIX and Communications Server for AIX installed at existing RS/6000 each dealership

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Services Industry



Environment:

- SNA-based central site warehouses and processes vital customer and inventory data
- RS/6000 SP at central site
- Mobile units and other remote sites rely on TCP/IP communications

Requirement:

- Support 10,000 TN3270 sessions

Solutions:

- Install SNA Client Access for AIX and Communications Server for AIX on 3 nodes of existing channel-attached RS/6000 SP
- Utilize Advantis TCP/IP network

IBM Software

Communicaitons Server for AIX:

- The premier multifunction gateway for the AIX environment
- Key product advantages:
 - Reduces costs by enabling network consolidation
 - Mission critical provider of end-to-end solutions
 - Better ease of use and any-to-any network integration
 - IBM's excellence in service and support

Where to go for Additional Information

■ Publications

- SC31-8247 Communications Server for AIX Up and Running !
- SG24-2591 Communications Server for AIX Explored (Redbook)

■ World-Wide Web Home Pages

- <http://www.ibm.com> IBM Home Page
- <http://www.raleigh.ibm.com/asf/asfprod.html> Communications Server for AIX
- <http://www.raleigh.ibm.com/any/anyover.html> IBM AnyNet
- <http://www.software.ibm.com/is/sw-servers> IBM Software Server

■ Collaterals

- G325-3565 Communications Server
- G325-3572 Communications Server for AIX
- G325-3448 SNA Client Access for AIX
- G520-8000 Software Server Overview Brochure
- G325-5207 Communications Server Family Brochure
- G325-5102 Use your SNA network for internet access
- G325-3650 Integrate SAP R/3 and your SNA or APPN Network

■ Application briefs

- G325-3655 Royal Bank of Trinidad and Tobago Branches Out

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