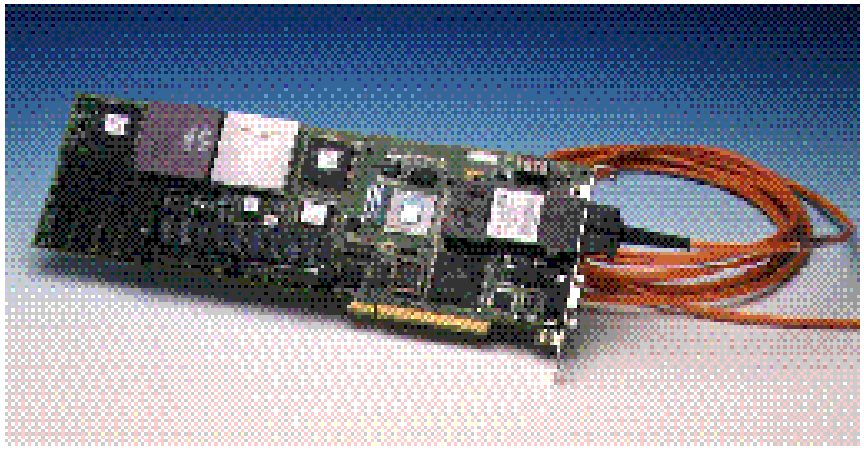
Netfinity ESCON Adapter



Options

by

IBM

Today s Discussion

- Market Dynamics
- The Technology
- Customer Solutions
- Future Directions

Netfinity

Overview

IBM Netfinity

Gateway/Application Server
- CS/NT, SNA Server
- SAP, Baan, PeopleSoft

ESCON Adapter

- **Direct Channel Attachment**
- **Up to Two 200Mbps Connections**
- **SNA/Server Consolidation**
- **Efficient Client/Server Application Deployment (ERP, Business Intelligence)**
- **Transfer Blocks of 64,000 Bytes**

IBM S/390

Application/Data Server
- CICS
- DB2, etc.

Netfinity

Market Dynamics

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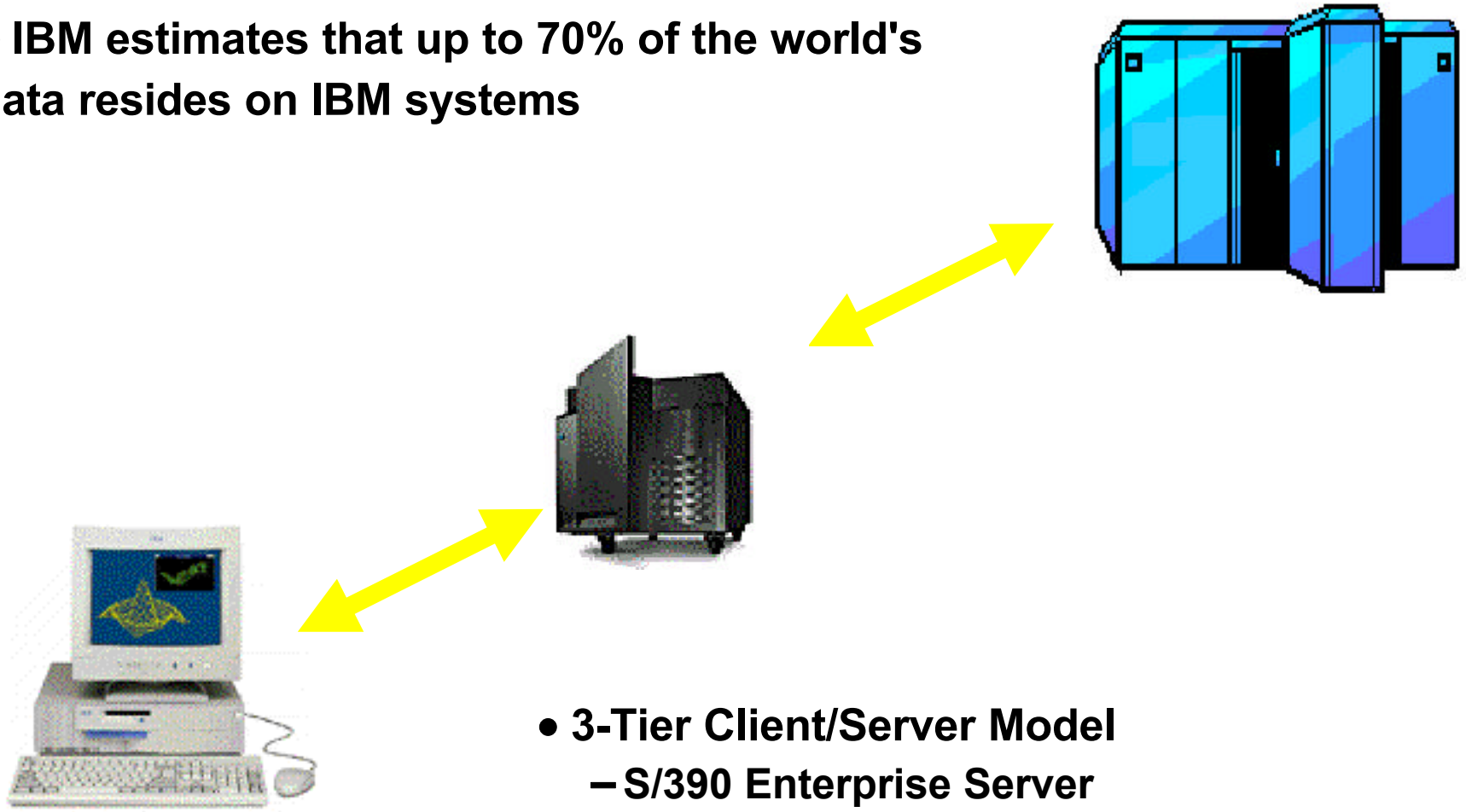
Enterprise Networks

- IBM estimates that up to 70% of the world's data resides on IBM systems



- 3-Tier Client/Server Model
  - S/390 Enterprise Server
  - UNIX or Windows NT Intermediate Server
  - Windows or browser-based Clients

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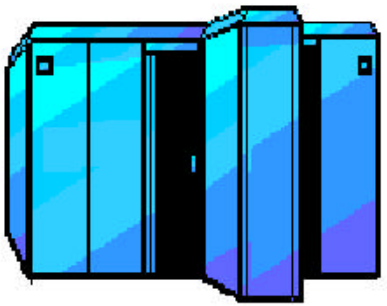
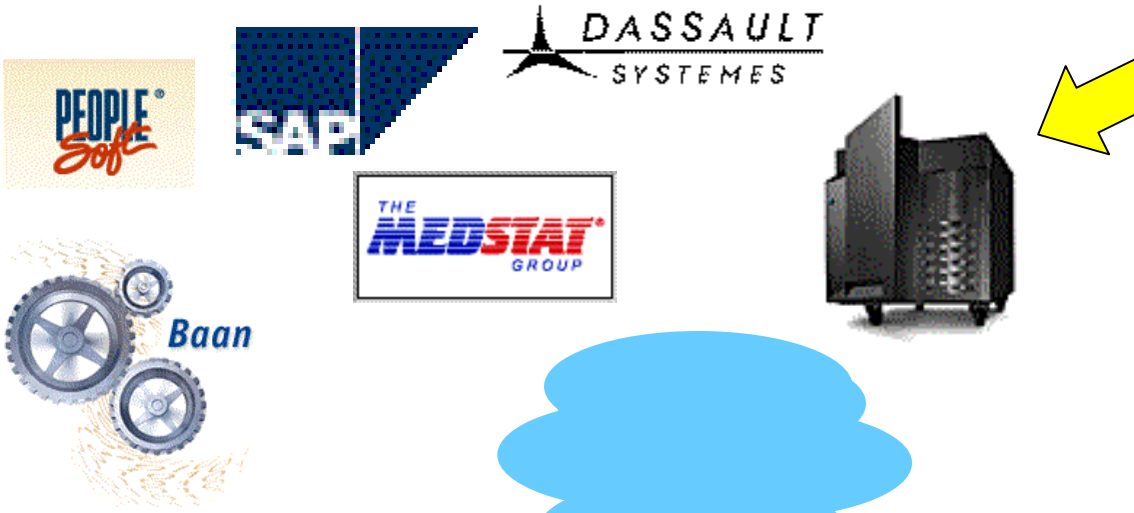
Directions

- *Deployment of new applications on Servers*
- *Access to legacy data and applications*
- *Web enabled*



Data and Application Access



Microsoft BackOffice :

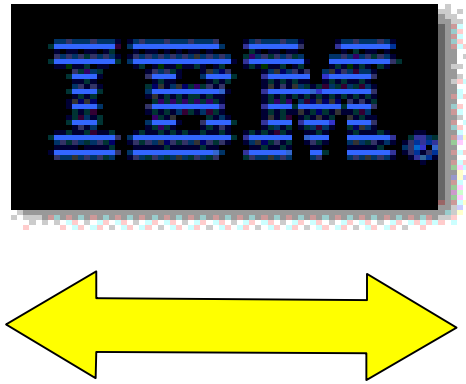
- *SNA Server for Host Access*

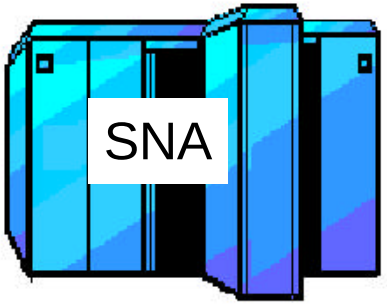
IBM Enterprise Host Access :

- *CS/NT for Host Access*
- *Host Publisher*
- *Host On-Demand*

Netfinity

Why IBM?





Data and Application Access

IBM Enterprise Host Access :

- **Netfinity Server**
- **Netfinity ESCON Adapter**
- **Communications Server for NT**
- **Host On-Demand**

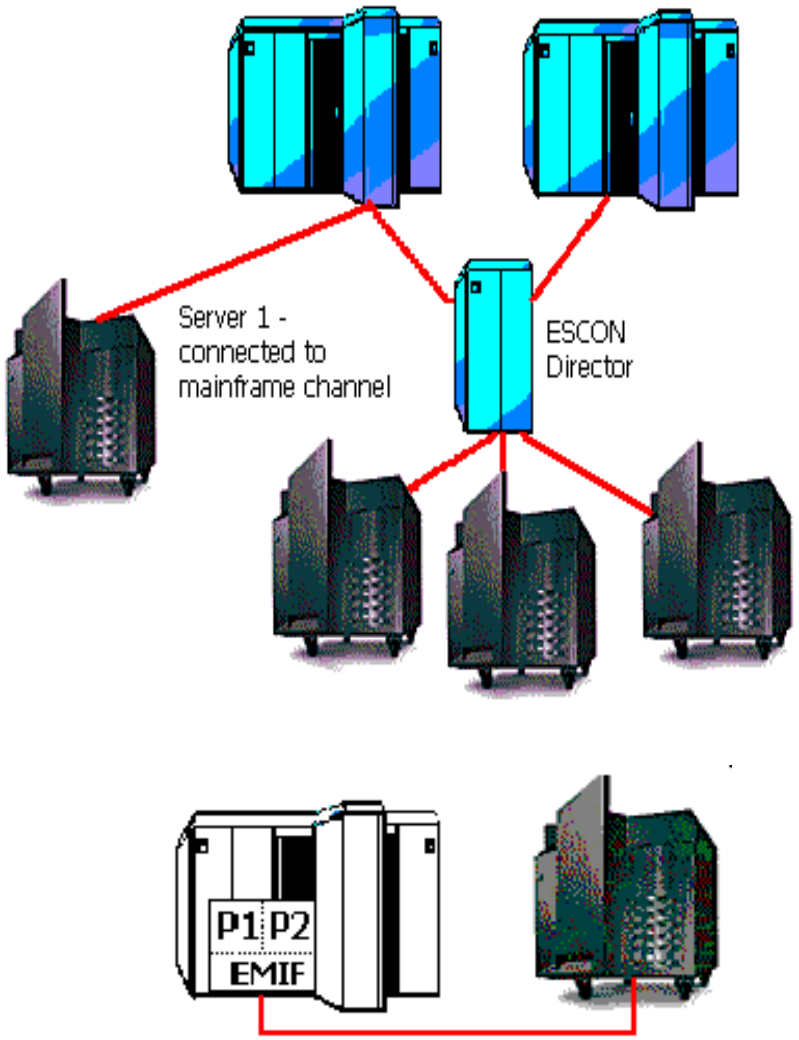
- *Complete, Integrated Solution*
- *Worldwide Support*
  - *S/390, Netfinity, NT Software*
- *Performance*
  - *MPC*

Netfinity

The Technology

Netfinity

What is ESCON?



ESCON - Enterprise System Connection

- Point-to-Point Dual Fiber Connection
- Speeds up to 17Mbps
- Connects controllers to mainframes

ESCON Director

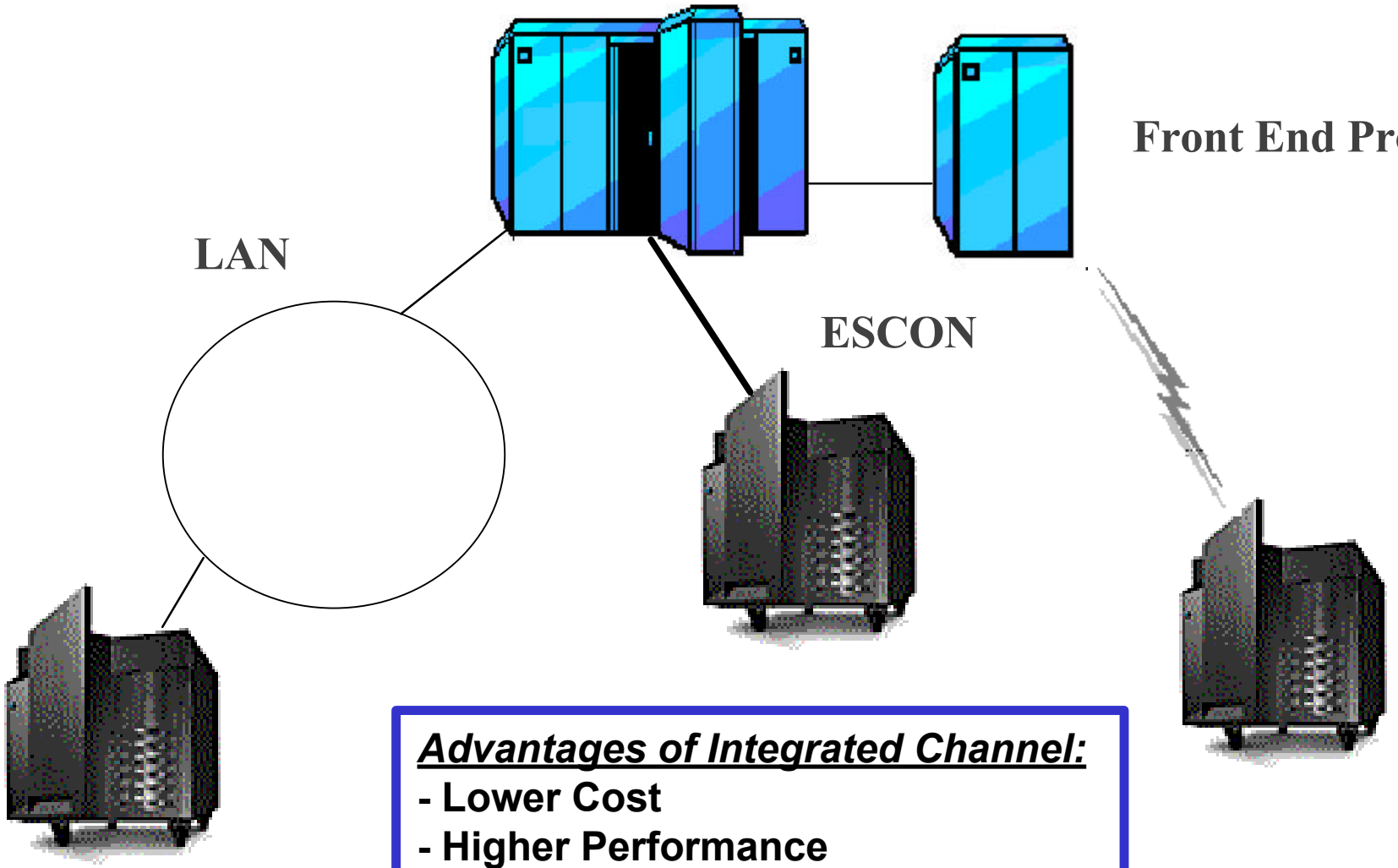
- Multiple controllers to connect to 1 Channel
- A single controller to connect to multiple channels

ESCON Multiple Image Facility (EMIF)

- Allows single controller to connect to multiple Logical Partitions (System Images)

Netfinity

Why ESCON?

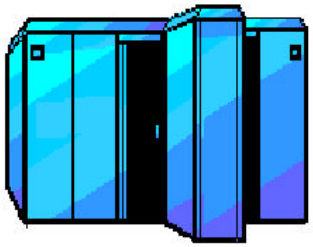


Advantages of Integrated Channel:

- Lower Cost
- Higher Performance
- Flexible environment

Netfinity

What need?



SNA
TCP/IP

Windows NT, UNIX, NetWare

SNA, TCP/IP, IPX, Netbios, etc.

Windows 95/98
Windows NT, OS/2

1. **Clients need Access to Mainframe-based applications (CICS, TSO, etc.).**
2. **Clients need to pull down files from Mainframe.**
3. **Applications running on Clients need access to mainframe data.**
4. **Servers need to retrieve/store files on the mainframe.**
5. **Applications running on the Servers need to access / update data on the mainframe.**

KEYS: TCP/IP and SNA

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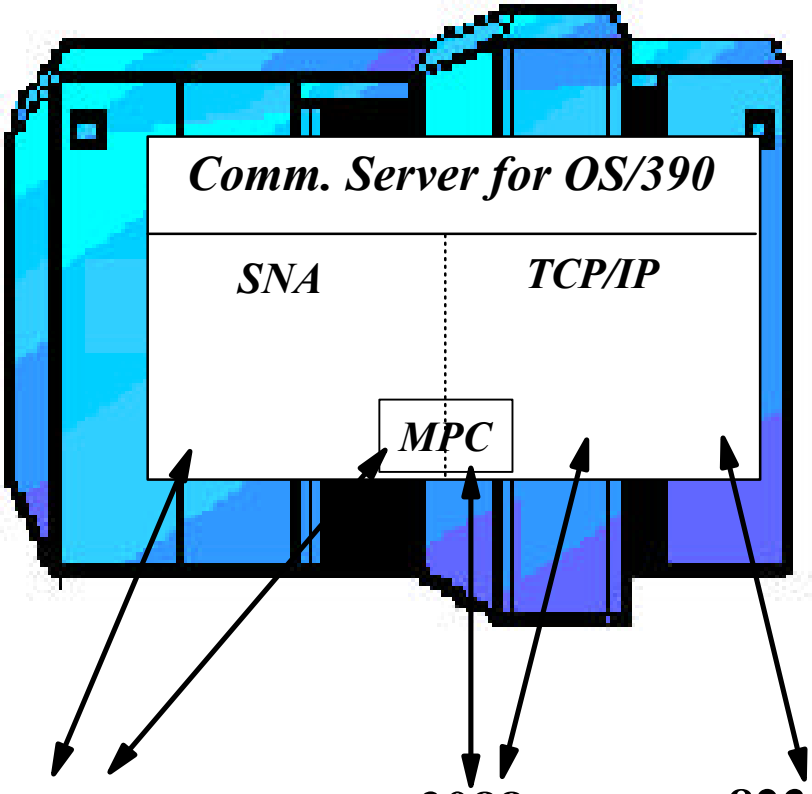
Mainframe Software



3174

Comm Server
SNA Server (Non MPC)
NetWare SAA (Non MPC)

3088

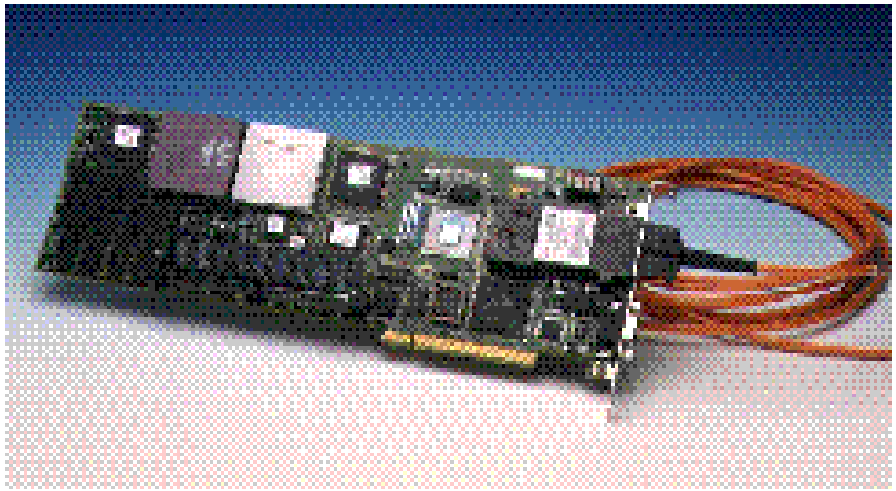
NT TCP/IP
Stack

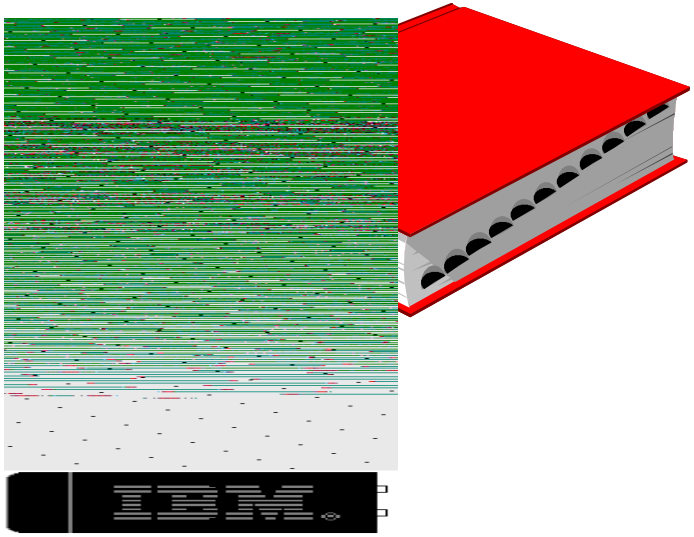
8232/3172

TCP/IP PassThru

Netfinity

Netfinity ESCON Adapter



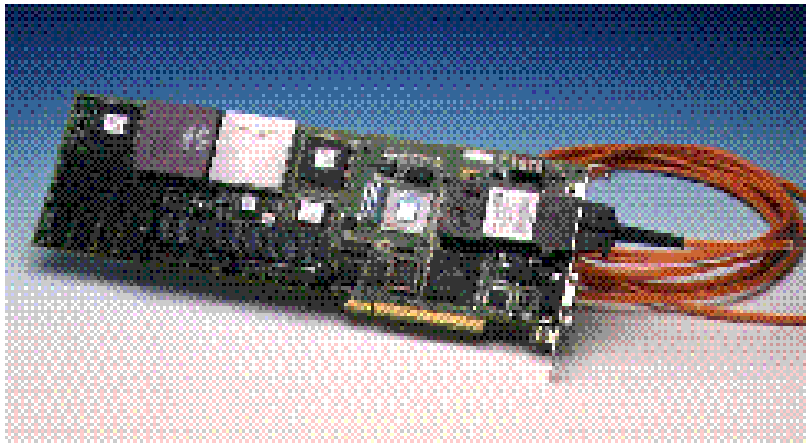


The Kit:

- PCI ESCON Adapter
- CD-ROM
- Installation Manual
- ESCON Wrap Plug

Netfinity

Netfinity ESCON Adapter

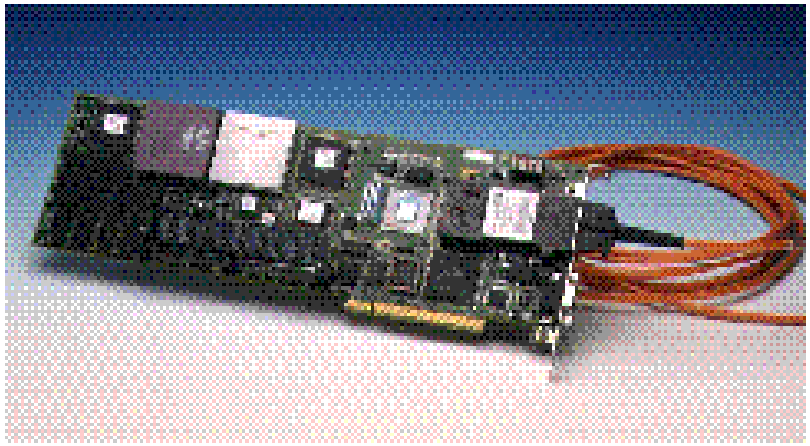


The Hardware:

- Single full-size PCI Card--requiring full-length slo
- Maximum 2 per System
- Analogous to a Network Interface Card
- Rear Connectors--ESCON MIC (1) and DB9 (1)
- Dual LED Status Display
- Connects directly to IBM ESCON Channel
- Supports channel speed up to 200Mbps
- No Board Jumpers and Switches
- Cable optional

Netfinity

Netfinity ESCON Adapter

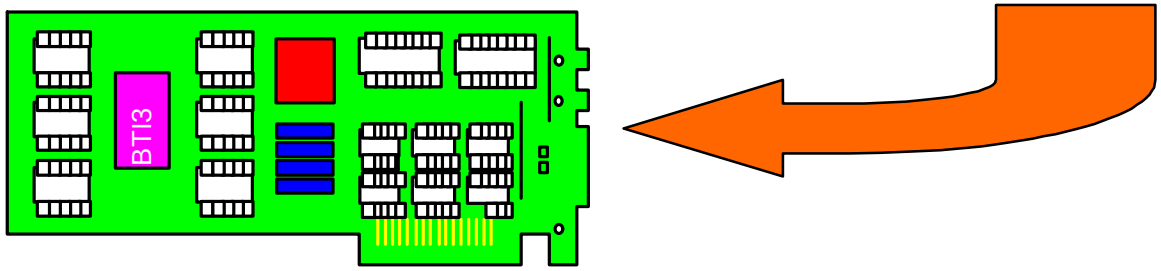


The Hardware:

- **Intel 80960CA RISC Processor--33MHz**
- **1MB Static Memory--Control Storage**
- **1MB Flash PROM**
- **RS232 Serial Port Controller (16550 UART)**
- **Programmable Timer (Intel 82C54)**
- **4MB Buffer Memory**
- **512KB Descriptor Memory**
- **PLX PCI Controller (PCI 9060)**

Netfinity

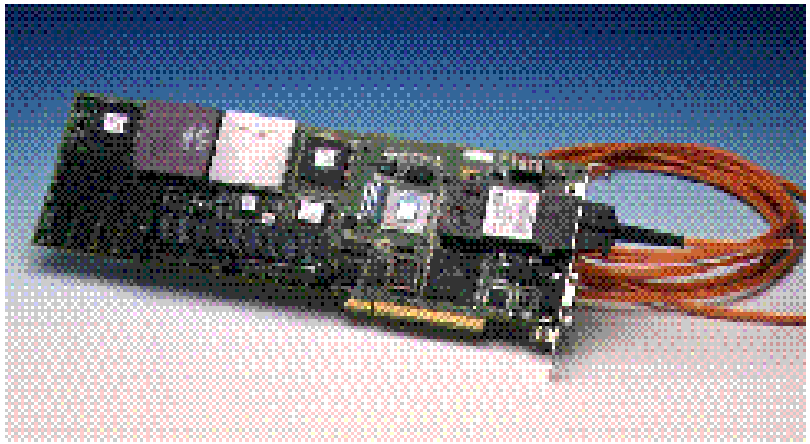
Netfinity ESCON Adapter



- *Uses IBM s ESCON Enabler Technologies*
  - *Full 200Mbps throughput*
  - *Complete ESCON protocol support*
  - *ESCON Multiple Image Facility (EMIF)*
- *Compatibility with IBM s S/390 ESCON channels*

Netfinity

Netfinity ESCON Adapter



All Emulations Support EMIF!

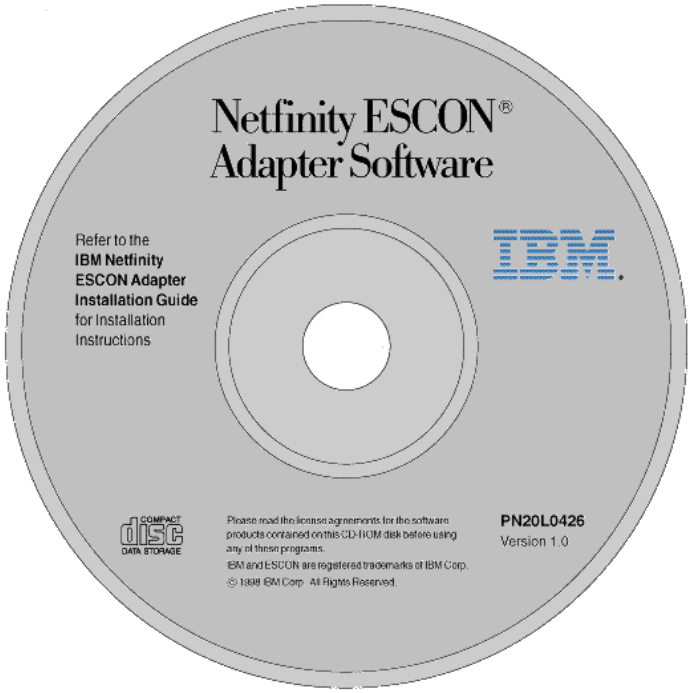
The Firmware:

At Startup the Intel 960 run Power On Self-Test (POST) and then loads the emulations

- **3174 Emulation**
  - **Emulates IBM 3174 Local SNA Controller**
  - **Used for SNA connections to VTAM in mainframe**
- **8232 Emulation**
  - **Emulates IBM 8232 device**
  - **Used for TCP/IP Passthrough to IBM mainframe TCP/IP**
- **3088 Emulation**
  - **Emulates Subset of IBM 3088 device**
  - **Used with MPC and VPPA**

Netfinity

Netfinity ESCON Adapter

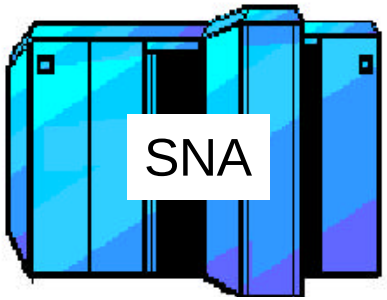


The CD-ROM:

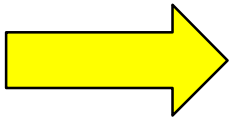
- **Adapter Firmware and Firmware Utilities**
- **ESCON Adapter (Network) Driver**
- **Channel Driver for NetWare**
- **Data Link Control for Communications Server for Windows NT**
- **Data Link Service for Microsoft s SNA Server**
- **TCP/IP Passthrough for Windows NT**
- **TCP/IP Passthrough for NetWare**
- **MPC Driver for Windows NT**
- **Virtual Point-to-Point Adapter (VPPA) driver**

Netfinity

Comm. Server for Windows NT



SNA, APPN,
TCP/IP, AnyNet

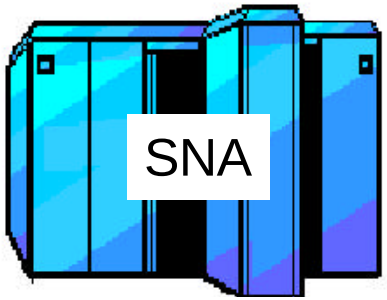


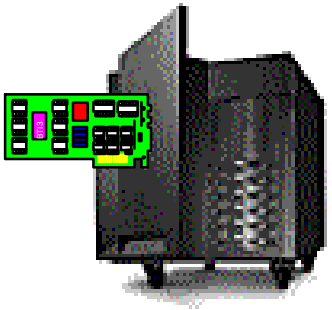
ESCON Adapter 3174 Emulation		
ESCON Adapter Driver		
Data Link Control		
Communications Server for Windows NT		
LLC-2	*AnyNet* / *TCP/IP*	
LAN Adapter(s)		

- **Full APPN Network Node**
- **Supports AnyNet**
- **TN3270E Support**
- **for High-Performance Routing (HPR)**

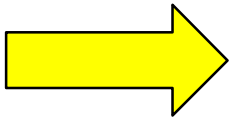
Netfinity

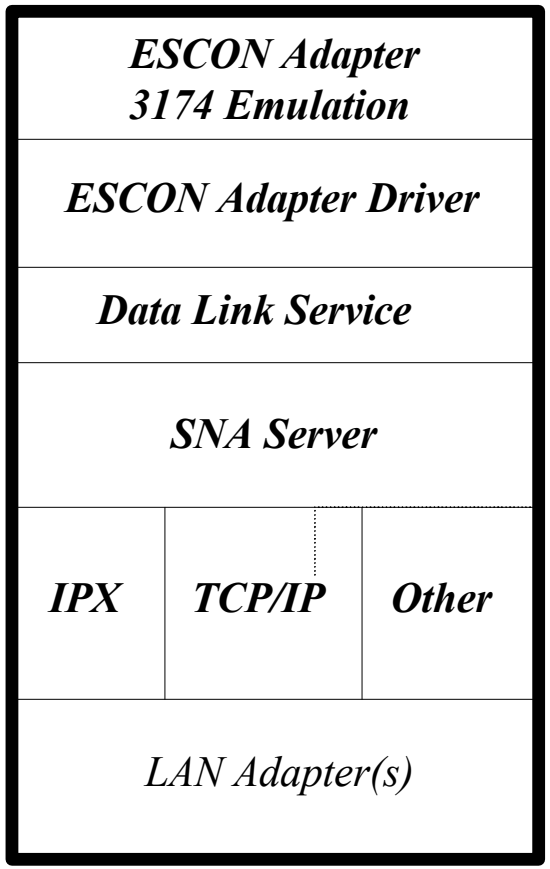
Microsoft s SNA Server





SNA,TCP/IP,
IPX, Netbios,
and More

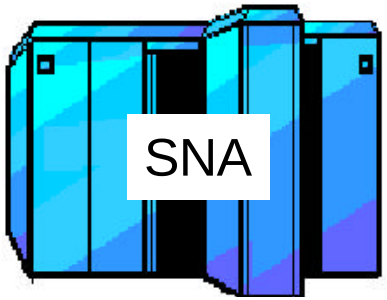




- **PU 2.0 and PU2.1 Support**
- **TN3270E Support**
- **for LAN Clients (IPX, Netbios, Vines, etc.) running 3270 Emulation**

Netfinity

intraNetWare for SAA



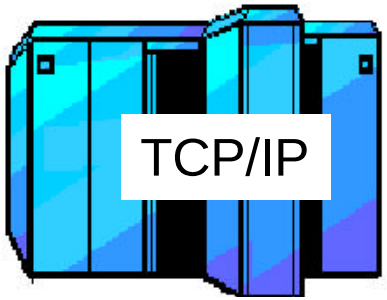
SNA, APPN,
TCP/IP, AnyNet

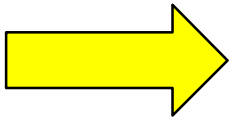
ESCON Adapter 3174 Emulation		
Channel Driver for NetWare		
intraNetWare for SAA		
LLC-2	*TCP/IP*	*IPX*
LAN Adapter(s)		

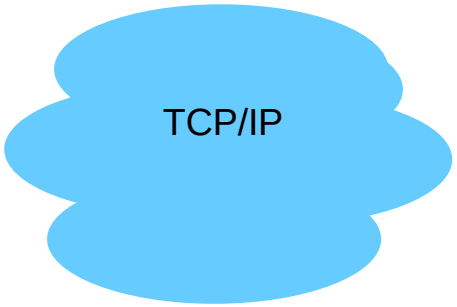
- **Full APPN Network Node**
- **Support for IPX Clients**
- **TN3270E Support**
- **for High-Performance Routing (HPR)**

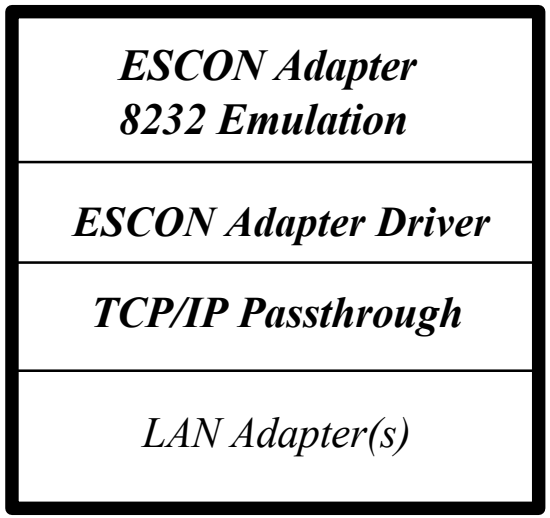
Netfinity

TCP/IP Passthrough for Windows NT





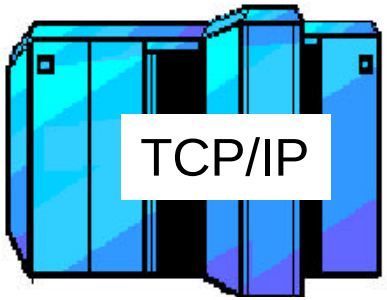


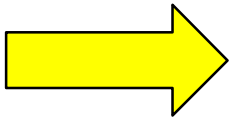


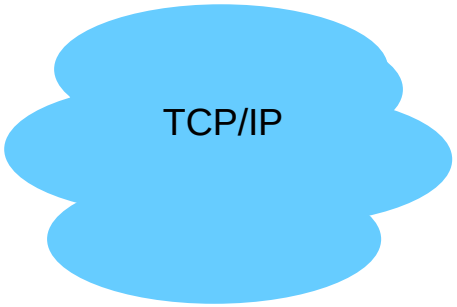
- **Installs as a Windows NT Protocol**
- **High-Speed Pass Through of TCP/IP Packets**
- **IP Address Filtering**
- **Uses 2 Sub-Channels for High-Performance**
- **Supports Leading Mainframe TCP/IP Stacks**

Netfinity

TCP/IP Passthrough for NetWare





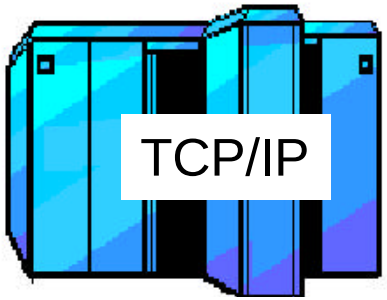


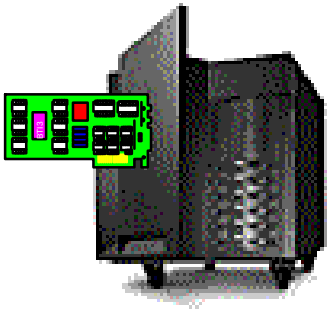
ESCON Adapter 8232 Emulation
ESCON Adapter Driver
TCP/IP Passthrough
LAN Adapter(s)

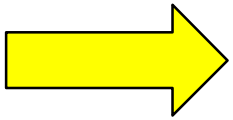
- **High-Speed Pass Through of TCP/IP Packets**
- **Uses 2 Sub-Channels for High-Performance**
- **Supports Leading Mainframe TCP/IP Stacks**

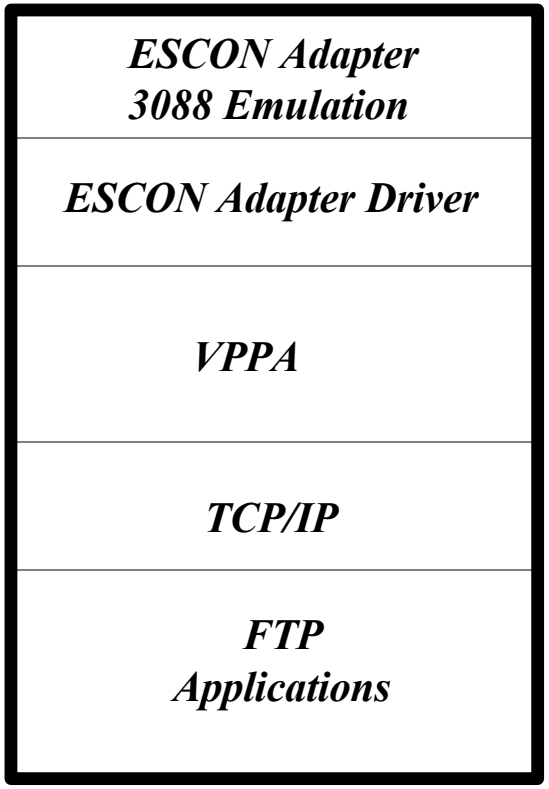
Netfinity

Virtual Point-to-Point Adapter





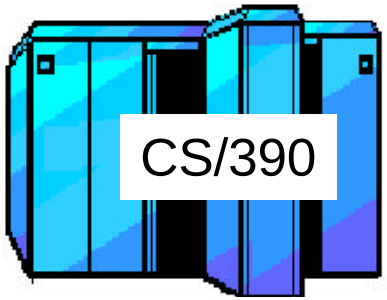


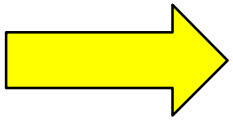


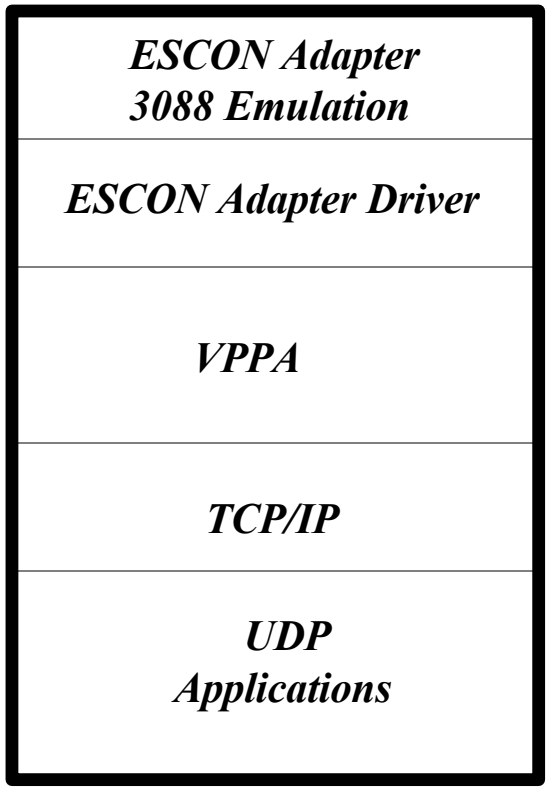
- NDIS Driver
- Point-to-Point TCP/IP connection between Mainframe TCP/IP stack and Windows NT TCP/IP
- FTP File Transfer from Mainframe to Server

Netfinity

High-Speed Access Services (MPC+)







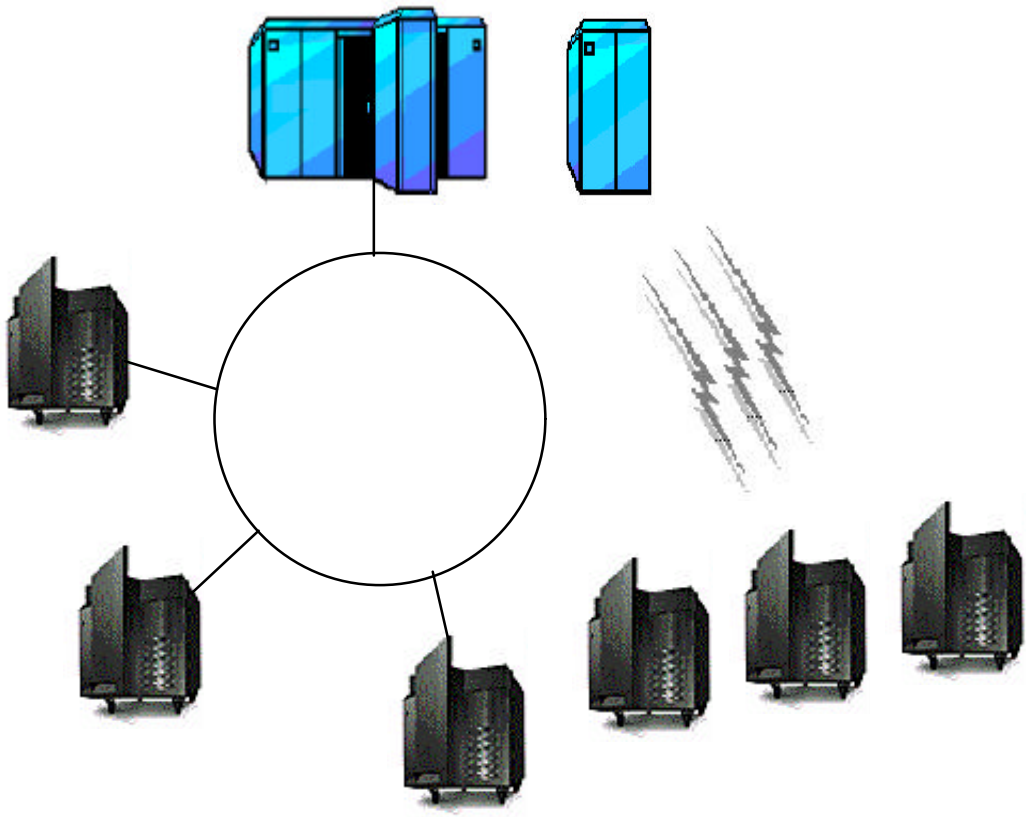
- MPC Reduces Mainframe CPU Cycles
- Uses HSAS on Comm. Server / 390
- IBM Strategic Channel Protocol
- Technology Licensed

Netfinity

Customer Solutions

Netfinity

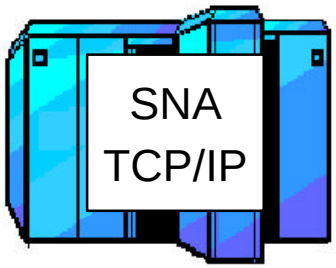
Server Consolidation



- S/390 Shop
- IP Backbone network
- Multiple remote gateways installed (OS/2 Comm. Server, MS SNA Server or NetWare for SAA)
- 500+ LAN-Attached PC Users
- Looking to implement browser-based 3270 access (home banking, on-line stock trading, etc.)

Netfinity

Server Consolidation



SNA Gateway/
TCP/IP Passthrough

SNA, APPN,
TCP/IP, AnyNet

3270 Emulators (PCOM)
TN3270
FTP, etc.
Web Browser

- **Centralized management, service and control**
  Simple to add new users and locations
  Improved support for remote users
  Unified network architecture

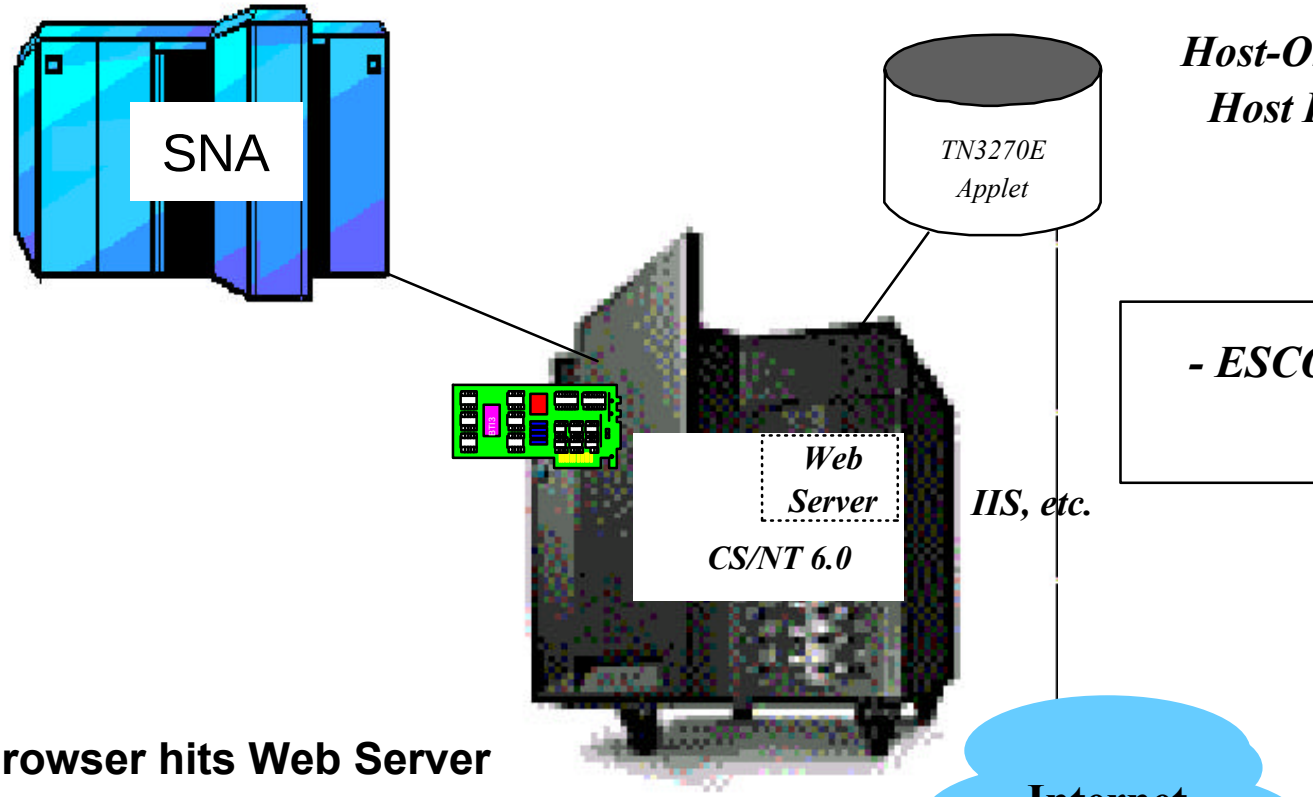
- **Eliminates the need for complex SNA gateway knowledge in field offices**

- **Centralized security and access control by IT professionals**

- **Improved server utilization**
  Typical branch office gateways are running at 20% CPU utilization. A centralized gateway would typically run at 80% utilization

Netfinity

Web Access



Host-On-Demand
Host Publisher

- ESCON improves performance and session counts

- **Browser hits Web Server**
- **Web Server sends TN3270 Applet**
- **Applet gets invoked on client to establish connection to Mainframe**

Web Browser

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Business Intelligence Solutions

Information Mining

Decision Support

Data Marts

Data Warehousing

Database Server

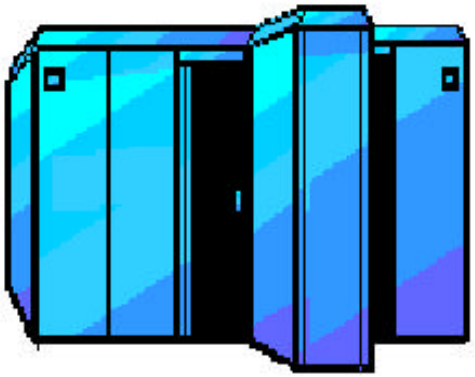
DB2 for OS/390

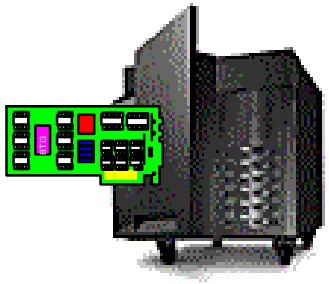
Netfinity

Data Management

Integrated Channel Solution

SNA or TCP/IP





Windows NT Server

SNA Communications

- *IBM s Communications Server for NT*
- *Microsoft s SNA Server*

TCP/IP Communications

- *Windows NT TCP/IP Stack*

Supported Solutions:

IBM. ORACLE Informix Microsoft SYBASE

Advantages of Integrated Channel:

- Lower Cost
- Higher Performance
- Flexible environment

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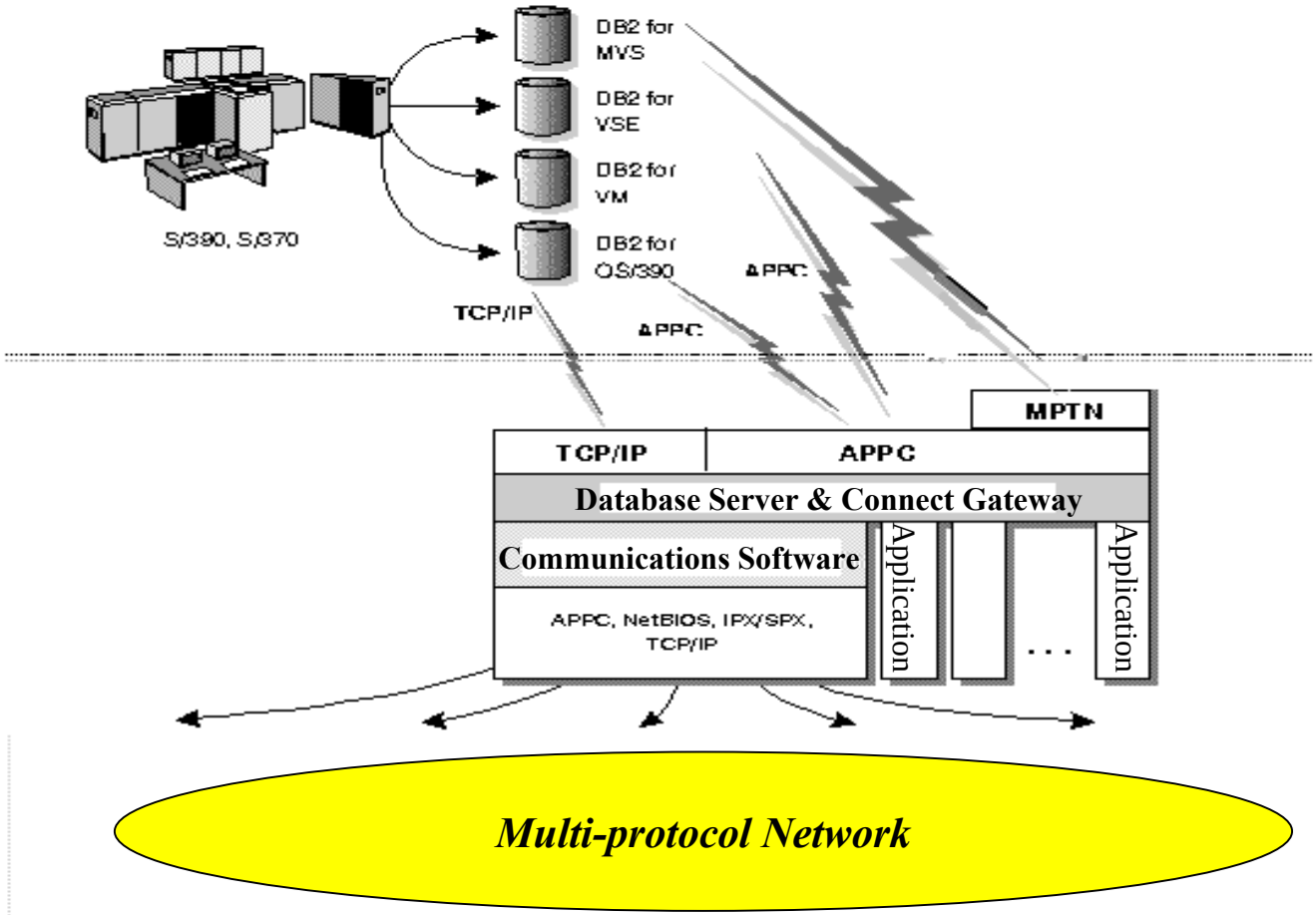
Data Management

S/390 Legacy Data Access



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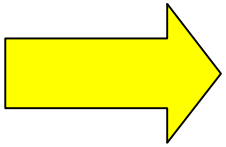
Data Management



ESCON Adapter	
Windows NT TCP/IP Stack	*Communications Server for NT*
DB2 Connect Enterprise Edition	
DB2 Universal Database	
Applications requiring S/390 data access	
Windows NT Operating System	

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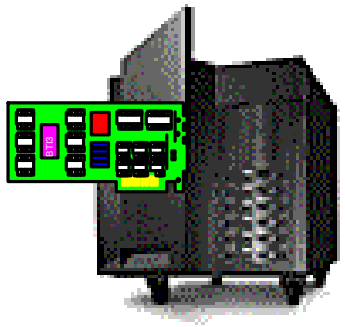
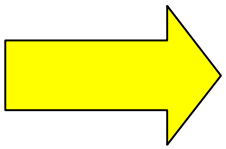
Data Warehousing / Data Marts





ESCON Adapter		
Windows NT TCP/IP Stack	*Communications Server for NT*	
DB2 Connect Enterprise Edition		
DB2 Universal Database		
Visual Warehouse		
Data Joiner	*Arbor Essbase*	*ETI-EXTRACT*

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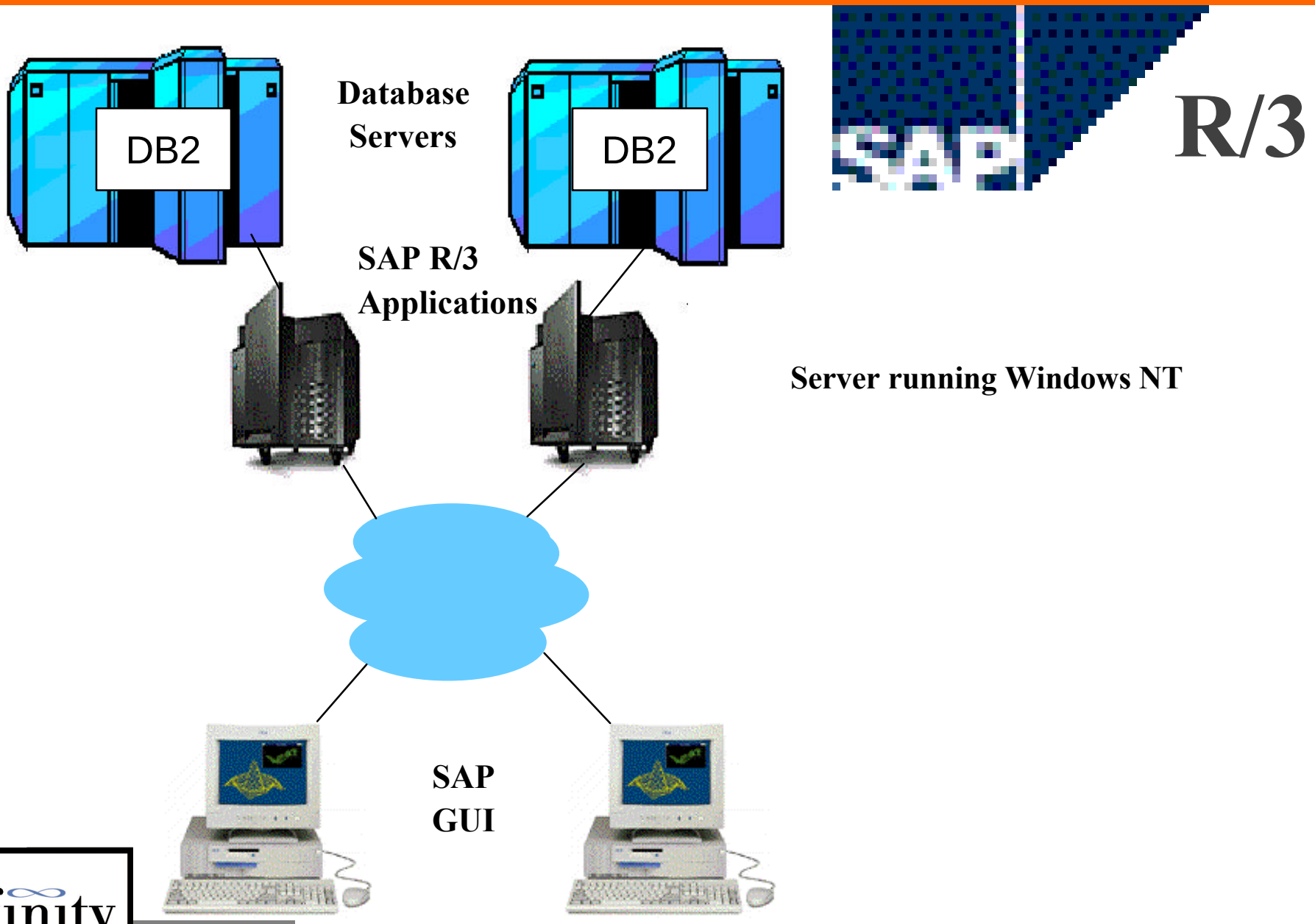
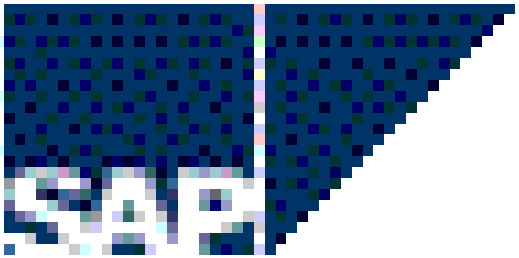
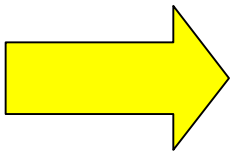
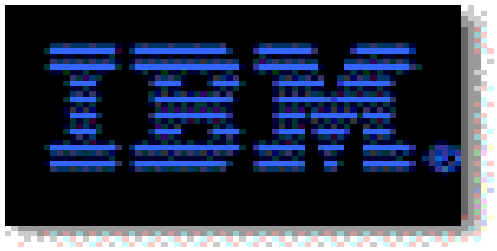
Enterprise Resource Planning



Enterprise Resource Planning







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ESCON Adapter

3088 Channel Emulation

MPC Driver

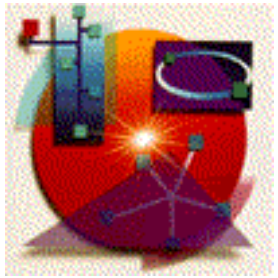
VPPA (NDIS)

Windows NT TCP/IP Stack

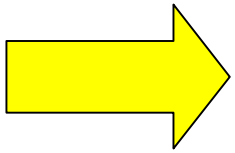
ICLI - Client

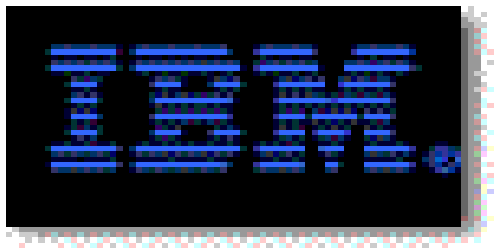
SAP R/3

Backup & Restore



ADSM





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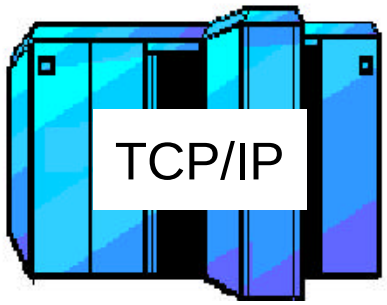
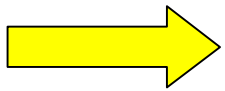
ESCON Adapter
Windows NT TCP/IP Stack
DB2 Connect Enterprise Edition
DB2 Universal Database
ADSTAR Distributed Storage Manager

Future Directions

Netfinity

Networked VPPA





ESCON Adapter 3088 Emulation	
ESCON Adapter Driver	
VPPA	*MPC*
TCP/IP Routing Software	
LAN Adapter(s)	

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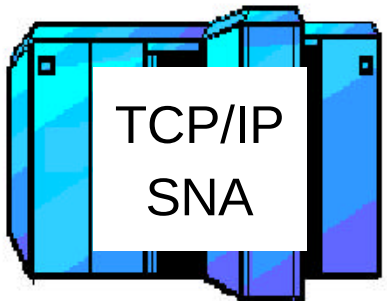
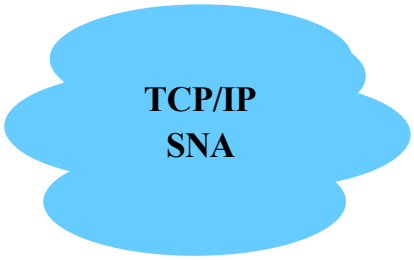
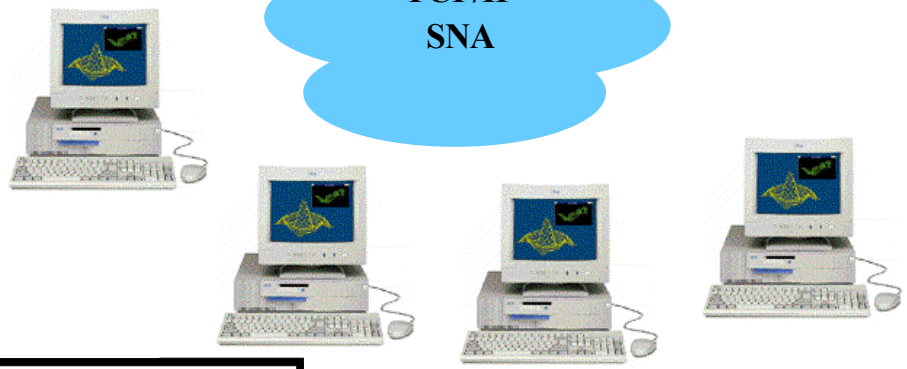
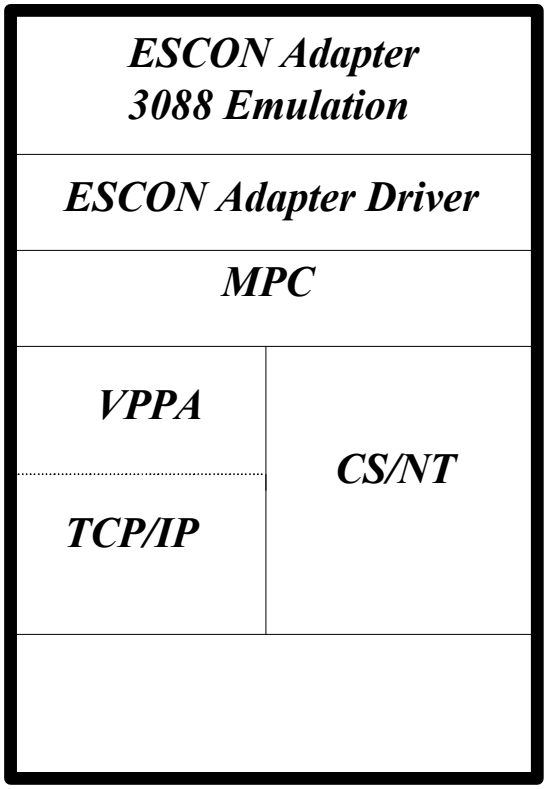
Enhanced MPC









- SNA Network Support
- Enhanced TCP/IP Support (DCE, NFS, etc.)

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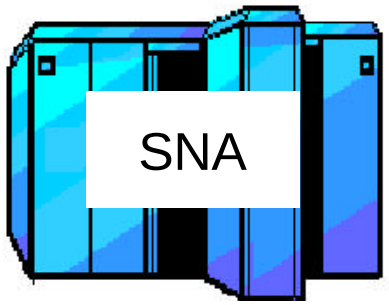
Comm. Server for Unixware



Communications Server
for
Unixware 7

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