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HP 3000 Middleware

Alvina Nishimoto
HP CSY
R&D Program Manager

Middleware Drivers

- Deployment of distributed applications
- Customers want choices in their deployment options. Options include:
 - **OS**
 - **DBMS**
 - **Application packages**

Middleware is key to building and integrating distributed application independent of underlying technologies.

Job of Middleware

"...make the complex world of distributed processing simpler by using middleware as the consistent intermediary rather than by building distributed programs that must natively communicate with nuts and bolts of all the unique requirements of each distributed resource"

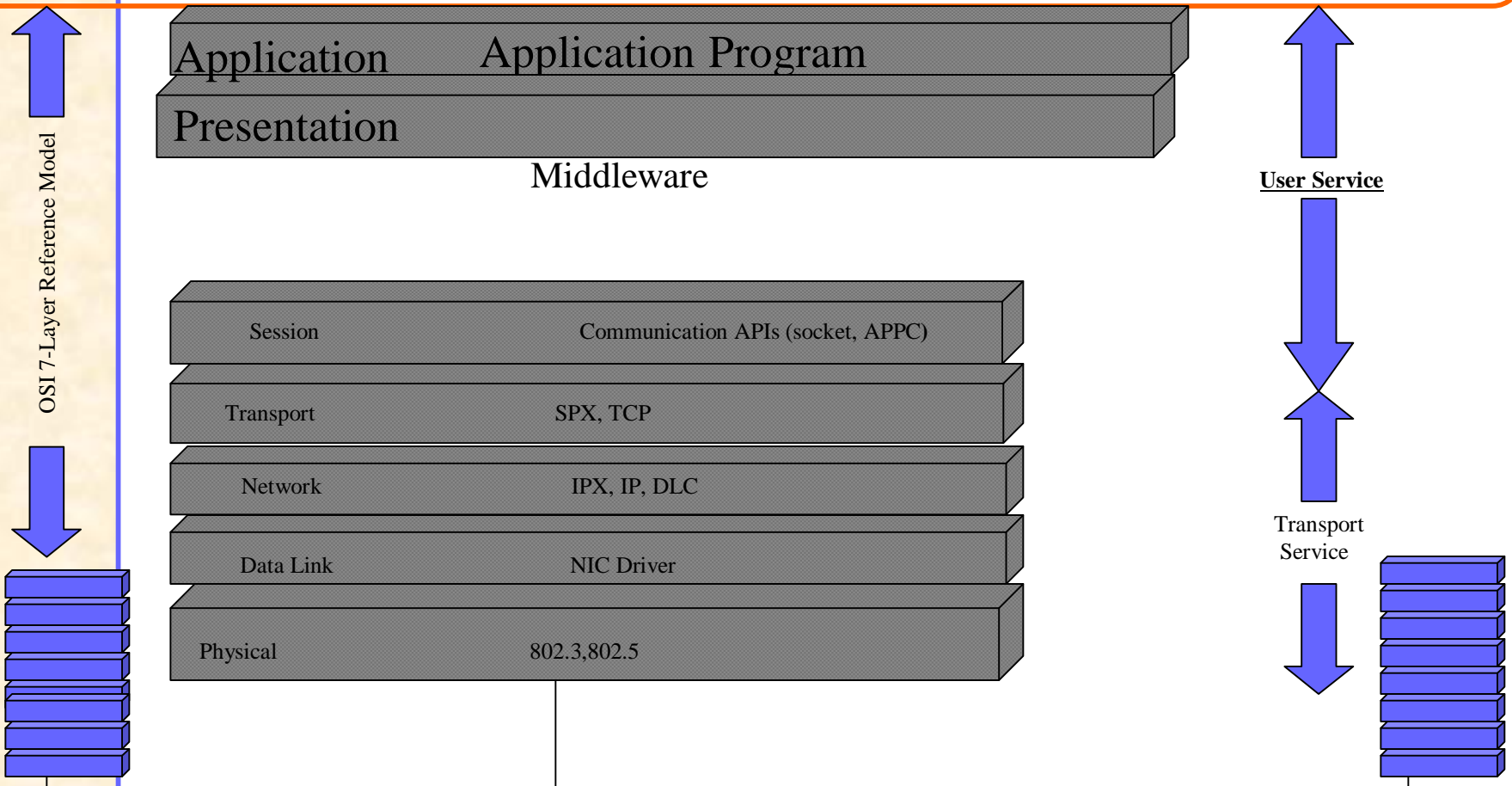
IDC

Why HP 3000 Customers Need Middleware?

- Makes the development of distributed applications easier
- Addresses the IS labor shortage
- Exploits the power of the Internet
 - **GUI front end access**
 - **Easier access to backend computing resources**
- Facilitate ability for distributed applications to scale up
- Allows HP 3000 to participate in this network computing environment

Middleware's Position within the Distributed System

Communication Building Block Layers



Evolution in Software Development and the Internet/Intranet

Application Re-architecting

The I-Way infrastructure (Internet, on-line services, media servers, content tools, billing services) will mature to accommodate business-critical applications, including electronic commerce. (1999-2001)

Application Migration

WWW browsers, ORBs and Java-like OO4GLs will evolve to include full-fledged application frameworks and application management for internal collaborative applications and extra-enterprise transactions. (1997-1998)

Application "Face Lift"

Application development toolkits will shift to support both Internet and Intranet business-strength applications via incorporation of WWW browsers, ORBs and Java-like OO4GLs. (1996-1997)

Source: META Group Inc.,
Feb/April 1996



New Uses for the Internet

Distributed Applications - Typical Transition Approach

- Establish new interface architecture
- Wrap existing applications
- Procure and/or build inventory of components
- Integrate and implement new components
- Replace wrapped components

Types of Middleware

- Desktop Access
- Data Access
 - **ODBC**
 - **JDBC**
 - **Gateways**
- Remote Procedure Call
- Message-Oriented
- Object
- LDAP

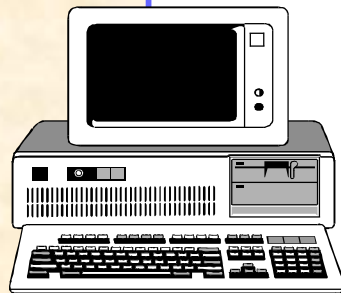
Desktop Access Middleware

- Interoperability between client graphical user interfaces and existing applications
- Allows new user interface to be added to an existing application with little or no code changes
- First step into distributed systems
- Means to leverage backend applications with GUIs and internet front-ends
- Means to provide better customer service through improved access to backend data

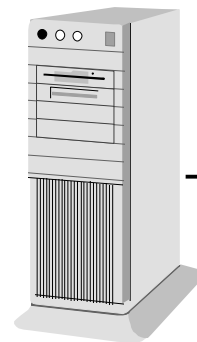
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HP 3000 Desktop Access Middleware

HP 3000



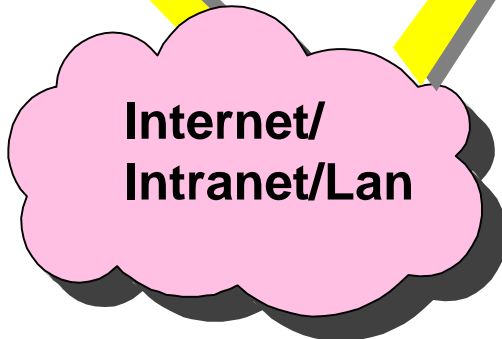
Web/Visual
Basic/Other
Interfaces



Web Server/
Application Server

VPLUS

Business
App



Internet/
Intranet/Lan

Advanced Network Systems
Bradmark
LegacyJ
Minisoft
Walldata

Data Access Middleware

- Application to data source synchronous interoperability model
- Provides data-oriented API to make requests to read or update data from server-based data sources
- Uses either SQL syntax or proprietary database gateway API
- Need to build applications that are database independent

HP 3000 Data Access Middleware

Client/ Application

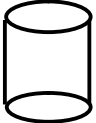
Web/Visual Basic
LotusNotes/
Exchange
Interface

Middleware

Casahl

ODBC
JDBC

HP 3000

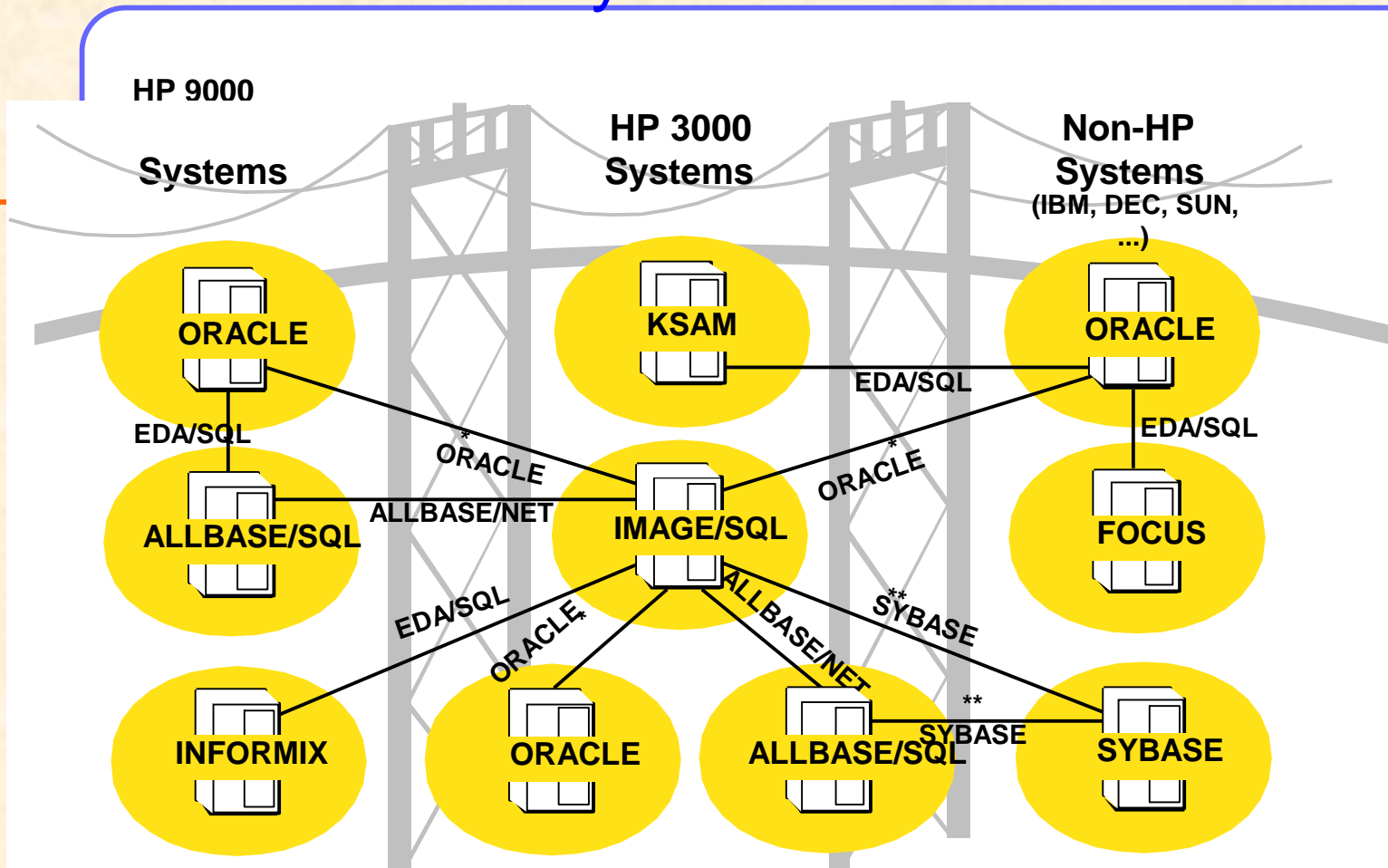

Image/SQL

**Business
App**

Internet/
Intranet/Lan

Microsoft Excel
Lotus 1-2-3
Crystal Reports
Microsoft Interdev, etc.

Gateways Illustration



*Oracle Transparent Gateway for IMAGE/SQL Server/OmpiAccess-SQL **Sybase Open Client/Open

Database connectivity via various gateways

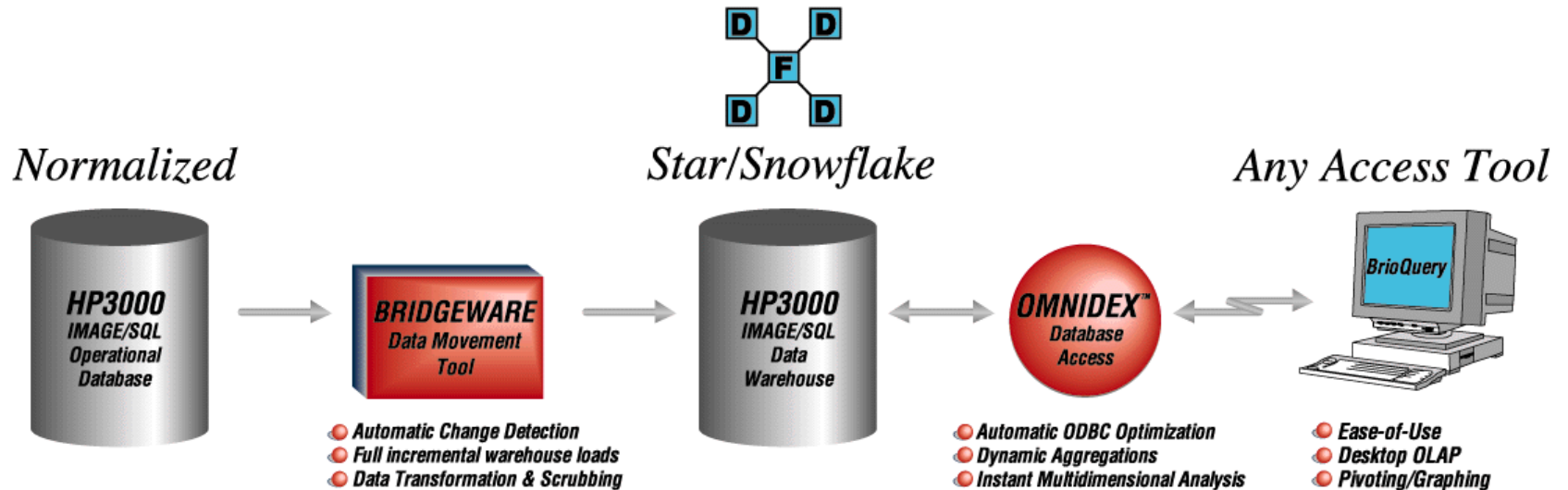
Extraction/Transformation/ Transport Middleware

- Used for decision support systems (DSS) and integration
- Does reformatting, syntax conversion, and has prebuilt transformations
- Content-based, rules-based driven transformation
- Real-time or bulk load API

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Data Warehousing for the HP3000

Made EASY by the Companies you trust!



Remote Procedure Call Middleware

- Application to application synchronous interoperability for procedural languages
- Applications ship a direct call for the execution of a procedure within a remote application
- Widely associated with DCE
- Trend to bundle RPC with OSs
- RPC included in Java as part of RMI

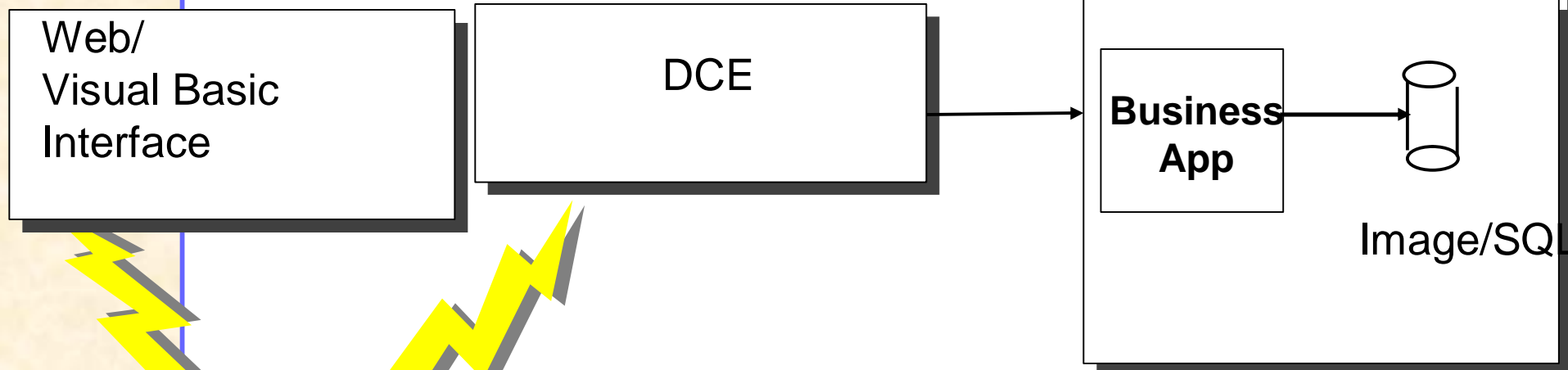
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HP 3000 RPC Middleware

**Client/
Application**

Middleware

HP 3000



**Internet/
Intranet/Lan**

Speedware Autobahn,
Visual Speedware

Message-Oriented Middleware

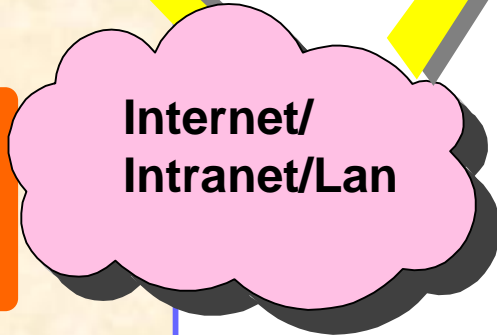
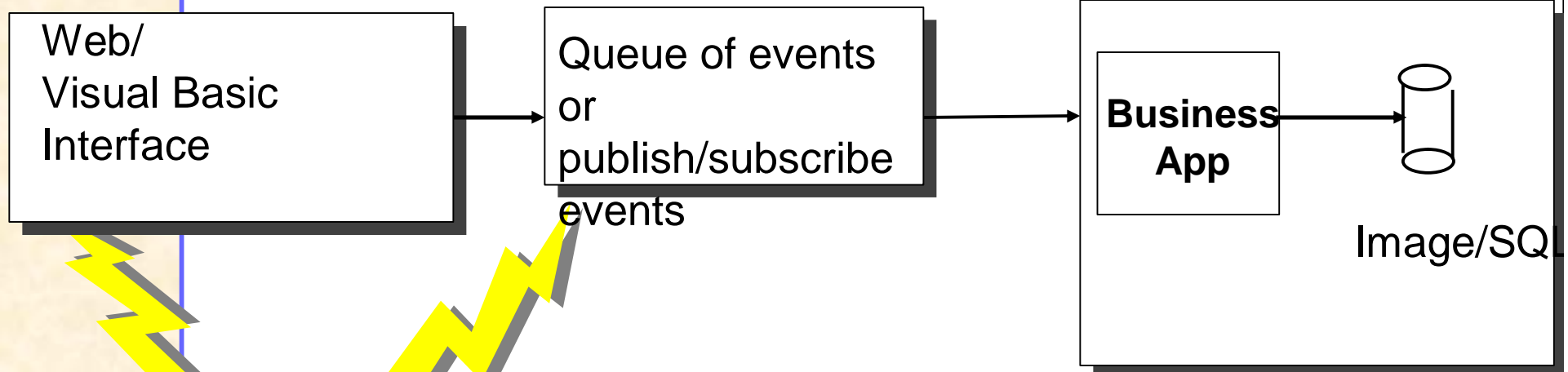
- Application to middleware synchronous or asynchronous interoperability
- Applications make requests by passing messages directly to the middleware
- Messages are records calling for action and supplying the input needed by that action
- Event-driven mode of processing, middleware waits for message to invoke the action

HP 3000 Message-Oriented Middleware (MOM)

**Client/
Application**

MOM

HP 3000



Active Software's ActiveWeb
IBM's MQ Series
Level 8's Geneva MQ



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Willow Technology

Willow Technology and MQSeries

- Leading independent producer of fully compliant MQSeries client and server products.
- Developed under license from IBM
- Sales & support of IBM and Willow MQSeries products
- MQSeries systems integration, custom development, proof of concept, consulting
- More Information
 - **web: www.willowtech.com; email: info@willowtech.com**
 - **phone: +1.408.377.7292; fax: +1.408.377.7293**



**HEWLETT
PACKARD**

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Willow Technology

MQSeries on MPE/ix

- MQSeries Client for MPE
 - V2 Client
 - Posix Client in Beta
 - Native Mode Client Beta 09/99
 - V5.x Client (1Q00)
- C, COBOL interfaces
- TCP/IP interface
- Requires MPE/ix 5.5 or later
- Fully supported replacement for IBM Posix client

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Willow Technology

MQSeries Services

- Advanced MQSeries lab
 - Proof of Concept testing
 - Prototyping and performance measurement
 - MQSeries network design
- Custom Development
 - MQSeries Client and Server porting
 - Application porting to MQSeries
 - MQSeries integration with other products

Messaging Experts

- Level 8 personnel developed the original version of IBM MQSeries
- Worked with Microsoft on MSMQ and and MSMQ interoperability products:
 - **GenevaMQ Bridge for MQSeries**
 - **GenevaMQ Client**

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Microsoft Alliance

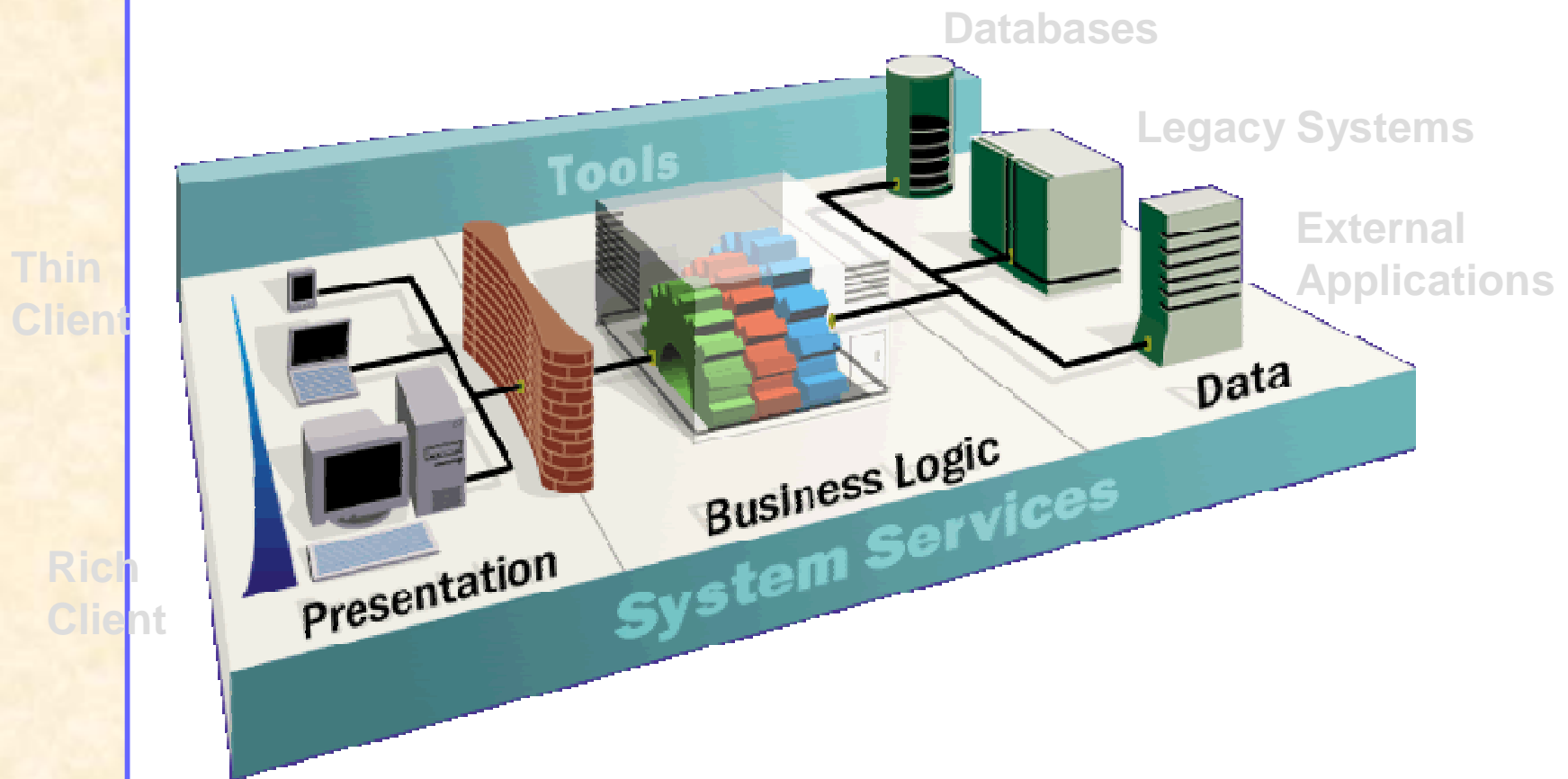
- Announced – October 1998
 - Microsoft Licenses MSMQ - MQSeries Bridge
 - NT Component of GenevaMQ to ship with Windows 2000
 - Microsoft to provide 1st and 2nd level support for GenevaMQ Server



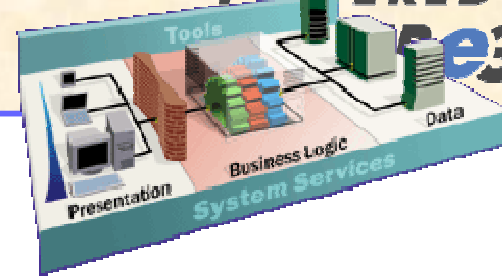
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Windows DNA

The development model for Windows

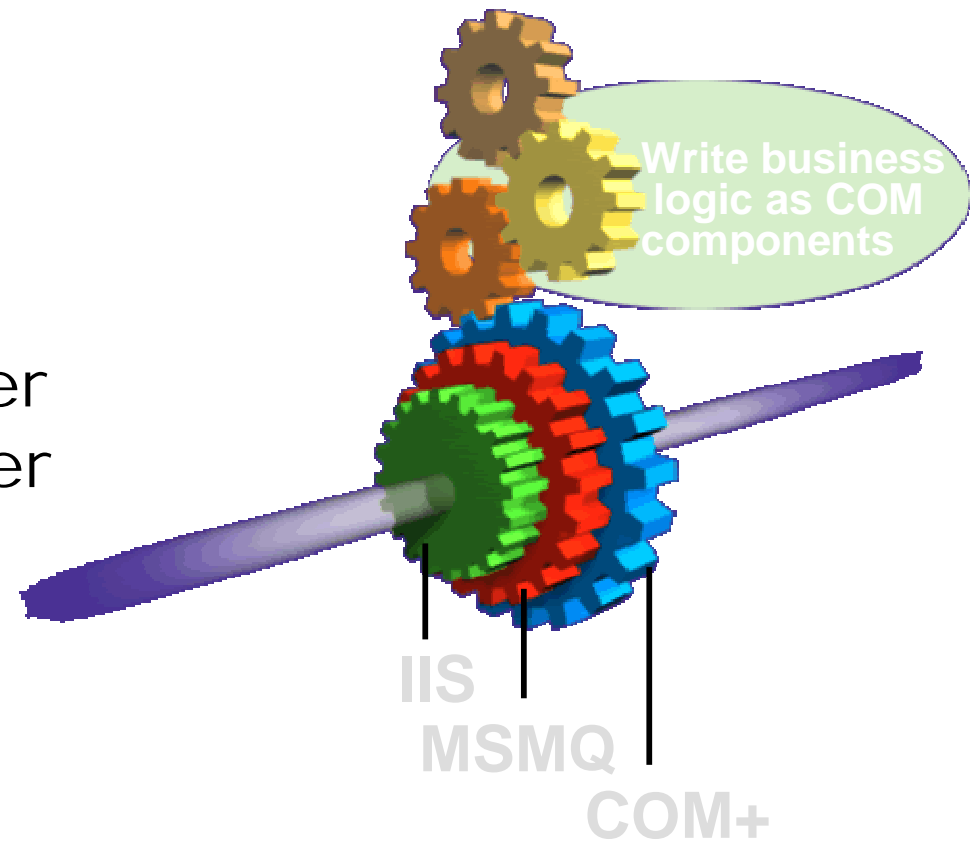


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Windows DNA Business Logic

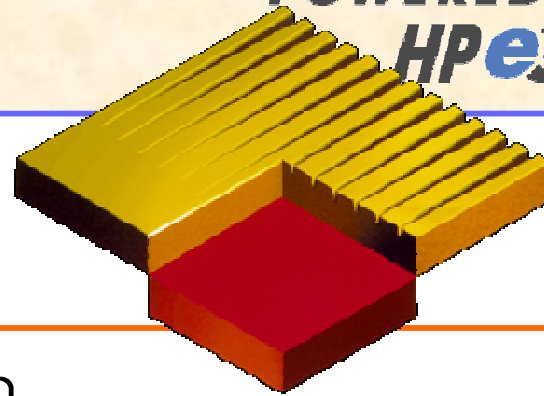
- Web
- Transaction
- Message Queuing
- Directory
- Security
- Build on each other
- Integrated together



MSMQ

- Key technology component of Windows DNA
- Microsoft's implementation of the message queuing paradigm for the Windows NT operating system
- Windows only!!!!

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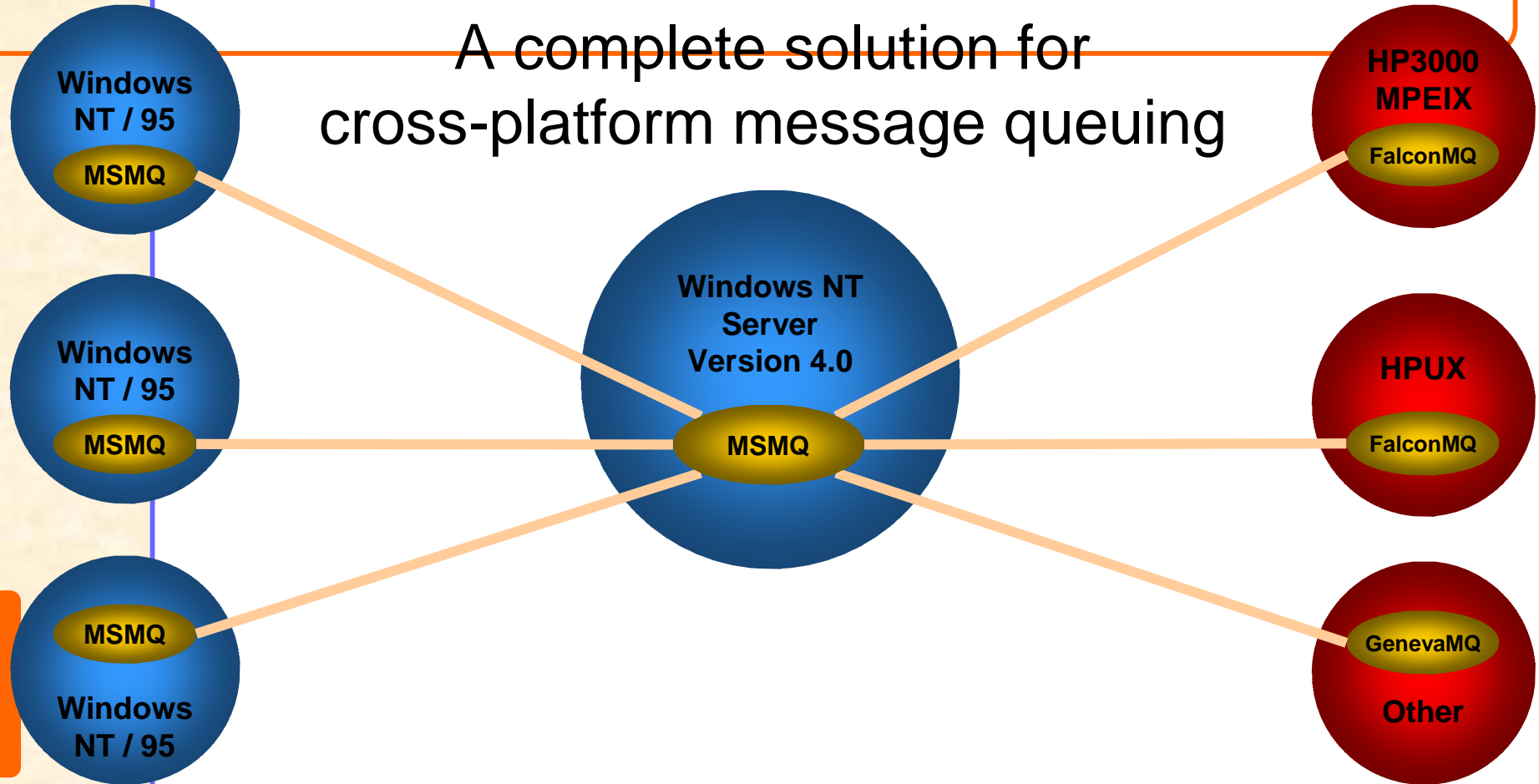
GenevaMQ

- An enterprise platform for building cross-platform message queuing solutions based on MSMQ
- Available on MPE/iX, UNIX, MVS, AS/400, VMS, Unisys and over 12 other enterprise platforms

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GenevaMQ & MSMQ

A complete solution for
cross-platform message queuing

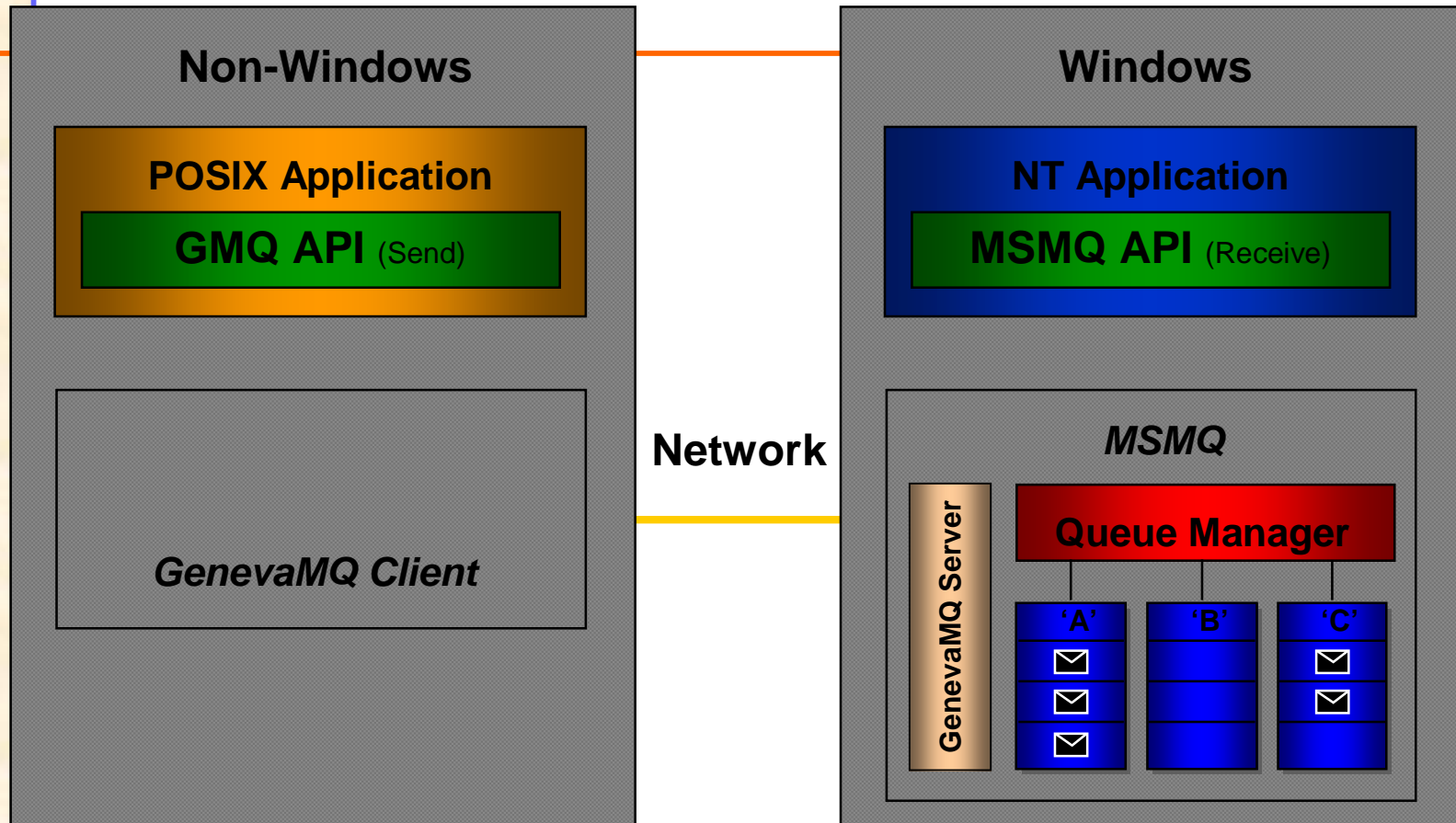


New Release

- GenevaMQ for HP3000 MPE/iX (independent and dependent client)
- Provides fundamental Windows to MPE connectivity
- API implemented in both C or COBOL 85

Architecture

Dependent Client

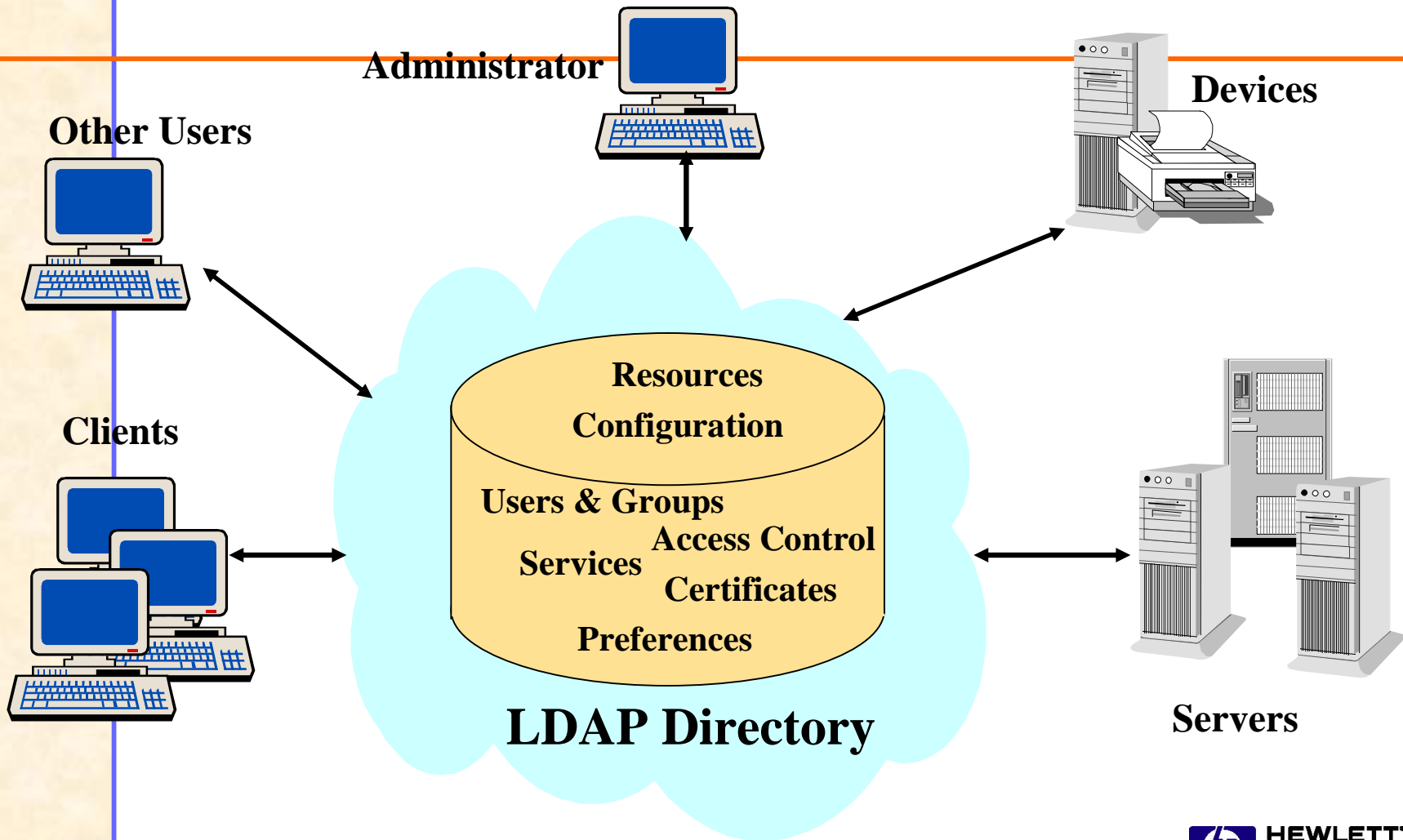


What can you do with LDAP?

- A directory web in much the same way that http & html are used to define implement the global hypertext web.
- Any LDAP client may peruse the global directory just as they can use a web browser to peruse the global Web
- Provides one central source for searching, updating, and authenticating access to data

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LDAP - the Big Picture



XML

- Smith-Gardner has XML processing as part of the MACS application
- Different from HTML in that it separates content from presentation
- Allows data to be interpreted without knowing a specific format beforehand
- Built in many application servers that use ODBC or JDBC to get to the data

RSA's BSAFE SSL-C

- Core cryptographic services — Crypto-C and PKI service — Cert-C.
- Security simplified: one trusted vendor for both the secure protocol and the underlying cryptography
- Dramatic time to market benefits in the development of SSL-enabled applications
- SSLv2, v3 and TLS v1 specification support provides quick and interoperable functionality between SSL clients and servers
- Full-strength, supported product available in many countries

Middleware Types and Corresponding Products

Synchronous RPC	SQL-Oriented Data Access	Object Request Broker	Message Oriented	Publish/Subscribe	Asynchronous RPC
<ul style="list-style-type: none"> • Microsoft MTS • NCR TOP END • IBM Encina • BEA Tuxedo • IBM CICS 	<ul style="list-style-type: none"> • JDBC • Intersolv DataDirect • Oracle Connect • IBI EDA/SQL 	<ul style="list-style-type: none"> • Visigenic VisiBroker • BEA ObjectBroker • Iona Orbix • TIBCO TIB/ObjectBus 	<ul style="list-style-type: none"> • Momentum XIPC • Microsoft MSMQ • BEA MessageQ • IBM MQSeries • NEON NEONet 	<ul style="list-style-type: none"> • Active ActiveWeb • Talarian SmartSockets • TIBCO TIB/Rendezvous 	<ul style="list-style-type: none"> • HTTP • NobleNet RPC

Source: DBMS

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	Webify Apps	E-commerce Apps	Enterprise Solutions	E-services Solutions
Who	Independent single app. shops	E-commerce vendors	Enterprise customers	Future masses Transaction-based e-services
Needs	Connect existing apps to Internet with little or no effort Easy development environment Leverage MS	Rapid development environment Scalability Performance	Fit apps into enterprise environment Internet connectivity Follow industry trends & standards Scalability Performance	Reduce IT costs Build & deploy unique strategic applications Apps on Tap Brokering Next generation portals
Tools	CGI, Servlets ODBC, JDBC FE development tools	4GL & GUI integrated packaged tools ODBC, JDBC	DCE LDAP SSL, X.509, PKI ODBC, JDBC MQSeries MSMQ etc.	CGI, Servlets FE tools Integrated packaged tools LDAP SSL, X.509, PKI ODBC, JDBC E"speak

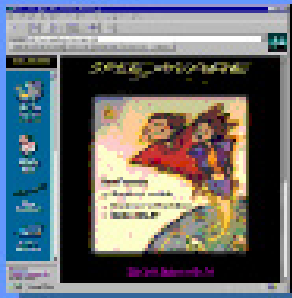
Speedware Autobahn

- A Web Application Server architecture for the HP 3000
 - **Complete, integrated tool-set for developing mission-critical Web Applications**
- Easily Web-enables existing HP 3000 applications, leveraging:
 - **Databases, 3GL legacy applications (COBOL, C), Batch processing, Access to OS commands, and hardware investments**
- Speedware and HP partner for solutions integration in e-services

Speedware Autobahn Technology

Internet Client

Web Browser



Client Side
Server Side

WWW Domain

Web Server

CGI
NS-API
ISAPI

Autobahn Interface

Speedware Domain

Speedware Resource Manager

Application Server

Application Process

Sessions



Databases

Internet communication
(HTTP / SSL / SHTTP)

Process launching
DCE RPC communication

Network/Firewall

Speedware Autobahn

- COBOL and Autobahn - Success Stories
 - **AMISYS/HBOC - NetManager**
 - Web-enablement of the Amisys healthcare system
 - Gives healthcare Providers secured access to patient information
 - Allows providers to request and obtain 24 X 7 authorization for patient treatments over the web.
 - Many reporting, authentication, and security routines are COBOL programs working alongside and called from Autobahn applications.
 - **NetManager users include:**
 - Blue Cross Blue Shield (NH), Health Central, Inc. (PA), Integris Health (OK), Mcare, Inc. (MI), Monarch Health Systems (CA), Priority Health Services (CA), San Mateo Health Plan (CA), The Wellness Plan (MI), Ucare (MN)

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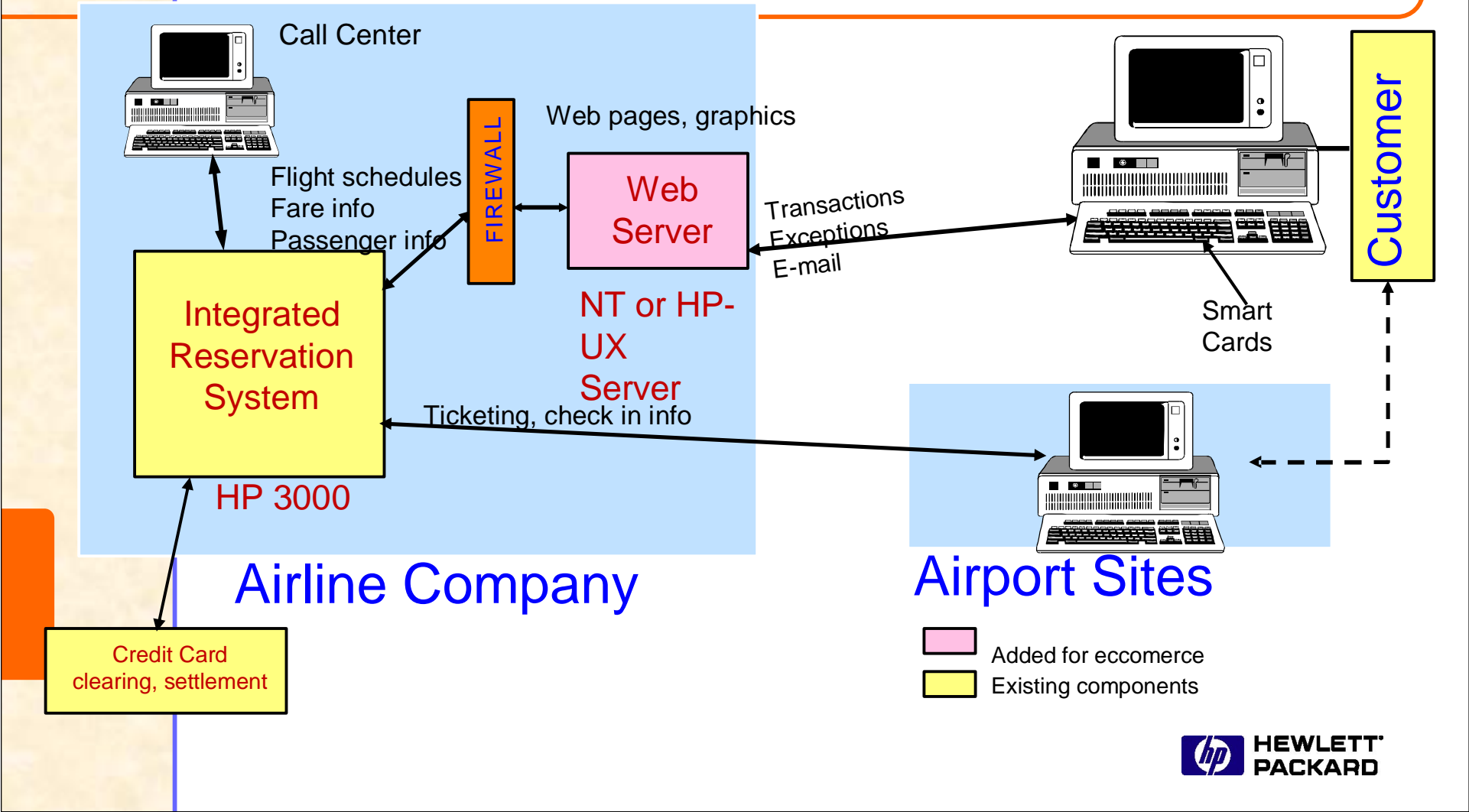
Santa Rosa Junior College

HPe3000

- "Putting a New Face on the HP 3000"
 - **Visual Basic on the HP3000 using Speedware**
 - **Success Story: Santa Rosa Junior College (CA)**
 - COBOL programs calling Speedware applications
 - Speedware calling COBOL programs
 - COBOL to Speedware migration nets productivity gains in development time and leverages existing investment in HP 3000 hardware

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Open Skies Example





Info: SLC - LAX Out Aug. 21-23 (cheapest), Return Aug. 28-29 (cheapest)

RESERVATION RECORD

Reservation Number: ABC123

Original Caller: Thomas

Current Caller: Tom Cruise

Itinerary Status: Confirmed - Address

Original Date: 12 Aug 1997

Last Modified Date: 12 Aug 1997

Flight Information

1. ZZ 3120 We 21Aug SLC-LAX 8:00a 11:10a T\$ 258.75 3 Passengers
2. ZZ 2846 We 28Aug LAX-CLE 8:00a 11:10a T\$ 311.25 3 Passengers
ZZ 2846 We 28Aug CLE-LAX 12:30p 2:05p

3 Passengers

Cruise, Thomas *Adult* \$190.00

Kidman, Nicole *Adult* \$190.00

Bullock, Sandra *Adult* \$190.00

Mailing Address and Phone

Tom Cruise Estates
14752 North Maple Avenue
Suite 134
Los Angeles, CA 90021-0123 USA
8012221234

Payment

VI \$200.00 12 Aug 97

MC \$250.00 12 Aug 97

AX \$120.00 12 Aug 97

Comments

Check-in one hour prior to flight.

Availability - Round Trip

◀ May 2000							June 2000							July 2000 ▶						
Su	M	T	W	Th	F	Sa	Su	M	T	W	Th	F	Sa	Su	M	T	W	Th	F	Sa
	1	2	3	4	5	6					1	2	3							1
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29
														30	31					

City Pair

From: Salt Lake City, UT -USA (SLC) ▼

Check all area airports

To: Los Angeles, CA -USA (LAX) ▼

Check all area airports (LGB SNA)

Outbound Flight

Date: 9 Jul 2000 ▼

Sunday

Days out: 1 ▼

Time: 0001 ▼

12 01 AM

Return Flight

Date: 12 Jul 2000 ▼

Wednesday

Days out: 2 ▼

Time: 0001 ▼

12 01 AM

Number of Passengers

0 ▼

Query Details

All Groups ▼

Groups

Currency...

Base: US Dollars

Convert:

Search Options...

Flights: All

Classes: All



Get Flight Info...

Cancel

Clear

Help



Available Flights - Round Trip



US Dollars

Flight: 3120 Sunday, 09 Jul (Salt Lake City, UT -- Los Angeles, CA) 7:00a - 10:00a

S L F

<input type="checkbox"/>		ZZ 3120	Sun, 09Jul	SLC-LAX	7:00a-10:00a	0	St +1	T\$86
<input type="checkbox"/>		ZZ 2983	Sun, 09Jul	SLC-LAX	8:05a-11:05a	1	St +7	T\$95
<input type="checkbox"/>		ZZ 2846/2742	Sun, 09Jul	SLC-CLE-LAX	9:10a-12:10p	1	St +4	T\$103
<input type="checkbox"/>		**ZZ 2709	Sun, 09Jul	SLC-LAX	10:15a- 1:15p	0	St +1	T\$112
<input type="checkbox"/>		ZZ 2572	Sun, 09Jul	SLC-LAX	11:20a- 2:20p	1	St +8	T\$121
<input type="checkbox"/>		ZZ 2435/2175	Sun, 09Jul	SLC-CLE-LAX	12:25p- 3:25p	1	St +0	



OK

Cancel

Help

Currency...

S L F

<input type="checkbox"/>		ZZ 3120	Wed, 12Jul	LAX-SLC	7:00a-10:00a	0	St +1	T\$86
<input type="checkbox"/>		ZZ 2983	Wed, 12Jul	LAX-SLC	8:05a-11:05a	1	St +7	T\$95
<input type="checkbox"/>		ZZ 2846/2742	Wed, 12Jul	LAX-CLE-SLC	9:10a-12:10p	1	St +4	T\$103
<input type="checkbox"/>		**ZZ 2709	Wed, 12Jul	LAX-SLC	10:15a- 1:15p	0	St +1	T\$112
<input type="checkbox"/>		ZZ 2572	Wed, 12Jul	LAX-SLC	11:20a- 2:20p	1	St +8	T\$121
<input type="checkbox"/>		ZZ 2435/2175	Wed, 12Jul	LAX-CLE-SLC	12:25p- 3:25p	1	St +0	

Price per Person

ADT :	\$86
CHD :	\$76
YTH :	\$71
SCR :	\$66

One Passenger

\$0.00

All Passengers

\$0.00

Summary

Total Cost: **\$0.00 USD** Amount Due: **\$0.00 USD**



References 1

Tool	Tool Type	Contact Info
SAMBA	NT file and print sharing	www.hp.com/go/3000
Bradmark MPE Command Center	GUI front-end	www.bradmark.com
Computer Network Technology Enterprise/Access	GUI front-end	www.cnt.com
Minisoft Frontman	GUI front-end	www.minisoft.com
OmniSolutions GUI 3000	GUI front-end	www.omnisolutions.com
WRQ Reflection 1, version 6.0	Active document support	www.wrq.com
MB Foster ODBCLink	ODBC driver	www.mbfoster.com
Minisoft ODBC/32	ODBC driver	www.minisoft.com
Crystal Reports	ODBC spreadsheet	www.img.seagate.com
Lotus 1-2-3	ODBC spreadsheet	www.lotus.com
Microsoft Excel	ODBC spreadsheet	www.microsoft.com
Casahl Replic-Action	ODBC tool (Lotus Notes and Microsoft Exchange)	www.casahl.com
Haht Hahtsite	ODBC tool	www.haht.com
Macromedia Backstage	ODBC tool	www.macromedia.com
Microsoft Access	ODBC tool	www.microsoft.com
Microsoft dbWeb	ODBC tool	www.microsoft.com

References 2

Microsoft FrontPage	ODBC tool	www.microsoft.com
Microsoft Visual Interdev	ODBC tool	www.microsoft.com
Microsoft Word	ODBC tool	www.microsoft.com
NetObjects Fusion	ODBC tool	www.netobjects.com
Information Builders EDA	Gateway	www.ibi.com
Oracle Transparent Gateway for IMAGE/SQL	Gateway	www.oracle.com
Sybase Open Client/Open Server	Gateway	
Speedware Autobahn	Middleware	www.speedware.com
Bradmark StarVision	Middleware	www.bradmark.com
DCE	Middleware	www.hp.com
DISC OMNIDEX for the Web	Middleware	www.disc.com/index.html
Minisoft Middleman	Middleware	www.minisoft.com
Premier Software OSCAR (Open Services Catalog & Application Registry)	Middleware	www.premiersoft.com
Taurus Bridgeware	Middleware (database to database extraction)	www.taurus.com
Level 8 Software	Middleware	www.level8.com
Willow Technology	Middleware	www.willow.com

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Address: <http://www.businessservers.hp.com/>

HP Home Enterprise Computing HP 3000

HP HEWLETT PACKARD

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Solutions
Industry Successes
Assistance
Site Tools

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The Future of Worry-Free, Business Critical Computing

Education
Europe
Freeware
Interest Groups

HP 3000 Roadmap for Success (click for story)

New Services to Help ISVs Build IA-64 Foundation (click for story)

Trade-In, Trade-Up-- Hardware & Software License Rebates

HP Announces IA-64 Support

FREE Online Seminar on MPE/iX Windows NT® Integration

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HP 3000 Advisor: Focus on HP 3000 Strategies in the 21st Century (click for story)

HP Year 2000 Program (click for story)

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Questions

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- Phone: (408) 447-5649