

Making PLM Hum – Mastering the IT Infrastructure

Milan Hanson

Hewlett-Packard Company

milan.hanson@hp.com

(970) 898-2603

Premium Partners:



Microsoft

Abstract and bio

Session title: Making PLM hum - mastering the IT infrastructure

- Session abstract: Robust PLM depends on a robust IT infrastructure -- networks, systems, databases, file servers, supporting applications, and the PLM software itself. Monitoring a few key "pulse points" can make a big difference in minimizing downtime and maximizing performance. HP is working with UGS and key customers to create an IT management solution specifically for PLM. Come and see what's in the works and share your own experiences, good and bad!
- Milan is a 23-year veteran with HP specializing in the IT management capabilities of HP OpenView: network management, applications management, IT service management, and business service management. He has recently turned his attention to applying the HP OpenView portfolio to manufacturing industries and the monitoring and management of PLM.

Market and Vendor trends to PLM omnipresence

- “UGS' vision is to enable a world where organizations and their partners collaborate through global innovation networks to deliver world-class products and services, allowing them to deal swiftly with emerging risks and opportunities.”
 - **www.ugs.com**
- “Manufacturers need to invest in developing lifecycle management strategies that integrate all phases of the vehicle life cycle...”
 - **IDC Manufacturing Insights' “Automotive Manufacturing Industry Update, 1Q06”**
- “Across the lifecycle there is a need to carry out and manage all sorts of activities related to the product, such as product screening, specification, product design, sourcing, costing, development, managing changes, monitoring progress, analyzing problems, customer service, manufacturing engineering, testing, test engineering, product management program management, software development, industrial design, quality engineering, logistics, production planning, plant operations, inventory management, manufacturing, purchasing, vendor quality review, supplier management, operations, opportunity management, order management, safety engineering, sales and marketing support, product support, deployment, maintenance, use, refurbishment, service, decommissioning, dismantling, recycling, elimination marketing communications process management, program management, human resources management, safety, technical support, financial service, publication, etc”
 - **John Stark Associates, “Making Progress With PLM in 2005: Q&As, Vision, Achieving The Next Level John Stark Associates**

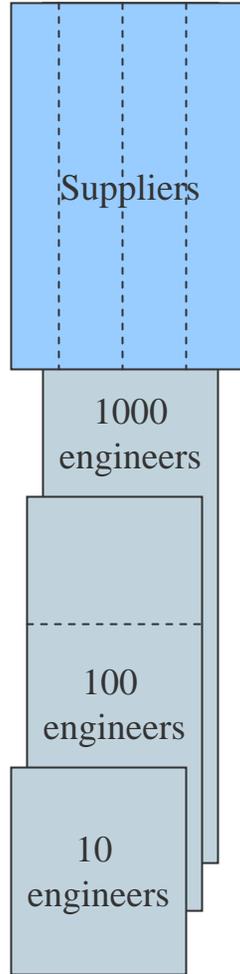
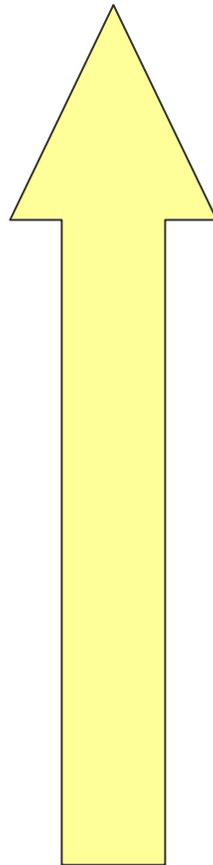
Market trends

- **New Collaborative Partnerships are the Future of Supply Chain Management**
- PR Newswire Europe, 30 Mar 2006
-
- **PLM Market Seen Reaching \$12 Billion in 2006**
- CMP TechWeb, 17 Mar 2006

Factors influencing PLM expansion

- CAD, CAM, CAE, PDM (of course)
- Time to market (of course)
- Supply Chain management
- Warranty Management
- Environmental Regulatory Compliance
Business Practices Regulatory Compliance
- Business Intelligence Analytics
- PLM as a multi-level web app architecture

Growing PLM – design, reaching beyond your company into suppliers

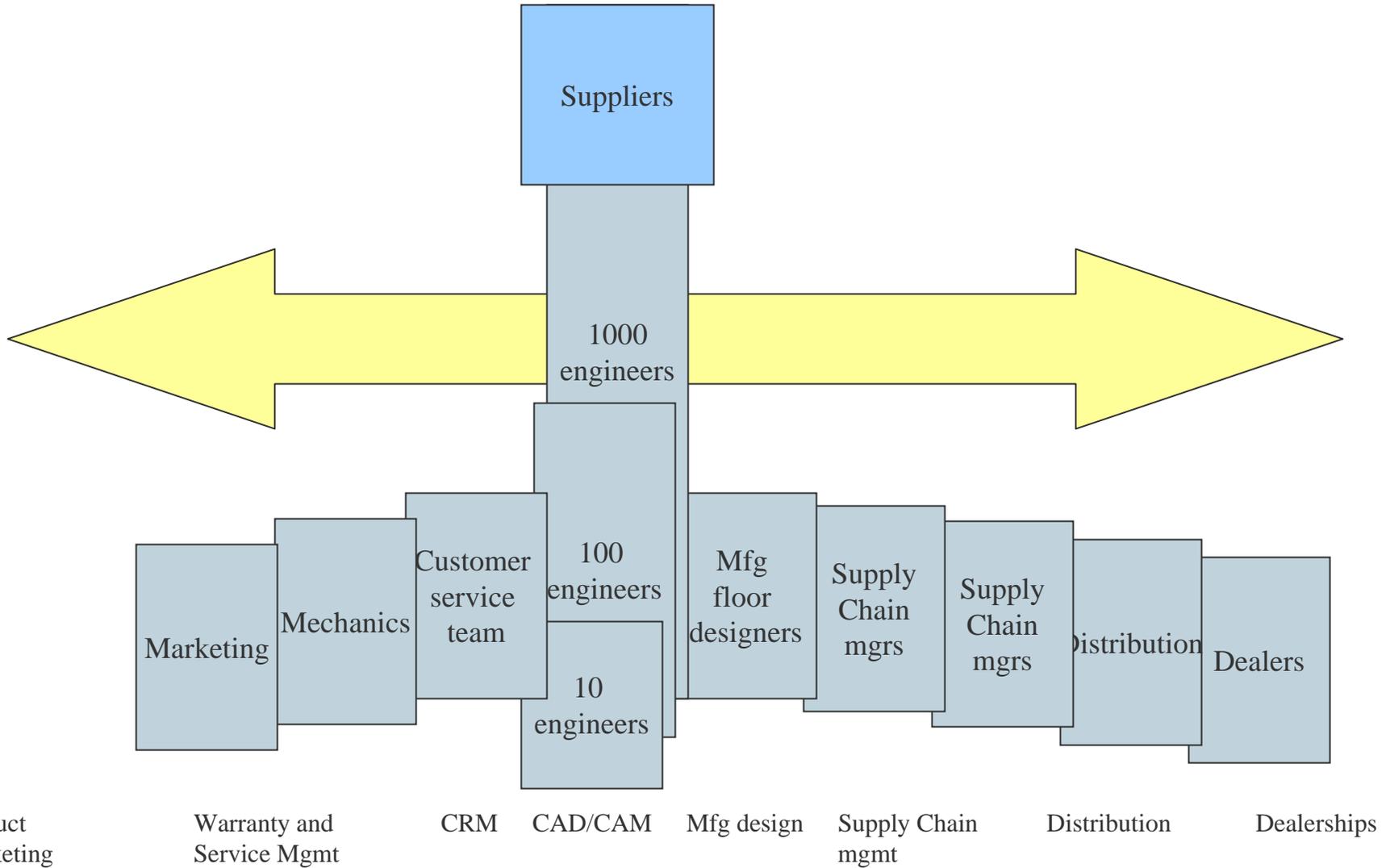


- Data Translation
- Authentication/Authorization
- Identity Management
- Security
- Access Control

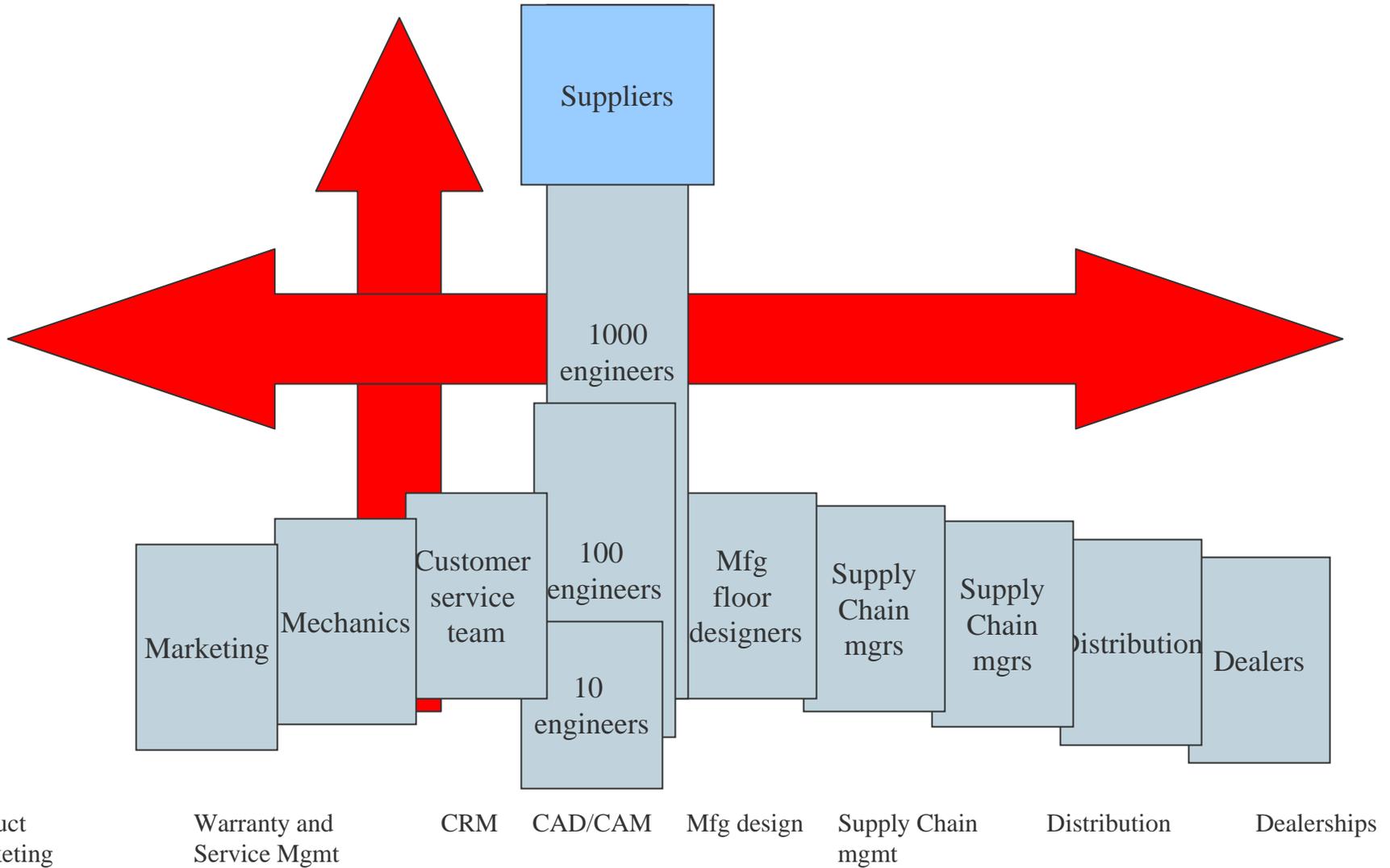
- Collaboration complexity
- More network traffic
- Data synchronization
- More copies of the software
- More computers

Product Marketing Warranty and Service Mgmt CRM CAD/CAM Mfg design Supply Chain mgmt Distribution Dealerships

Growing PLM – across all departments of your business



Growing PLM – the effect of downtime



The Lifecycle of PLM

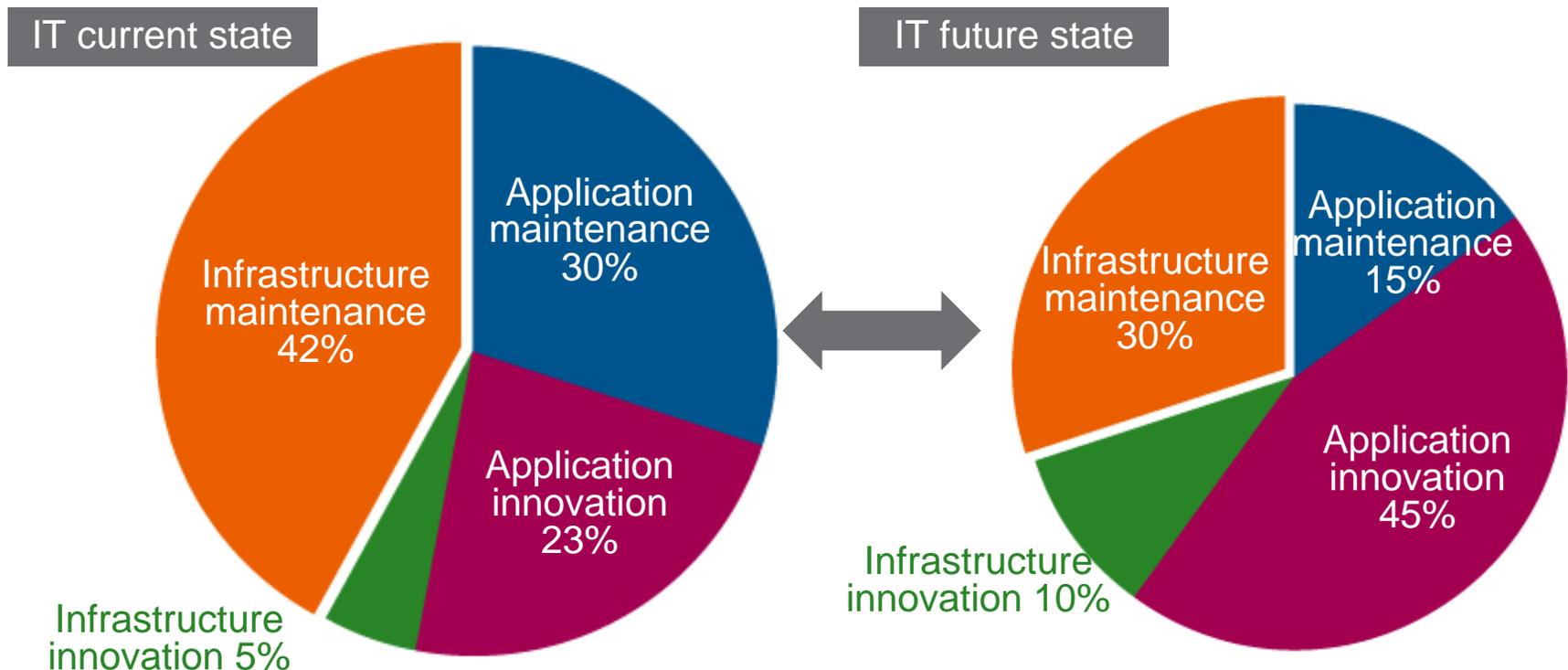
- Planning for PLM
- Preparing, purchasing – boxes and pipes
- Deploying PLM – Getting there is half the fun
- Maintaining PLM
- Adjusting, and knowing when to

Planning for PLM

- Have a high-level executive sponsor – PLM crosses organizational boundaries
- Use service providers who will share risk/reward
- Focus on processes
- Overcommunicate – use dashboards for executives and employees
- Know the people, know the processes, know the business drivers

PLM TCO Reduction Assessment: What can be achieved

- Focus on PLM support structures
- Reduce support costs by 30-50 %
- Free up resources to expand PLM business value



Laying the groundwork

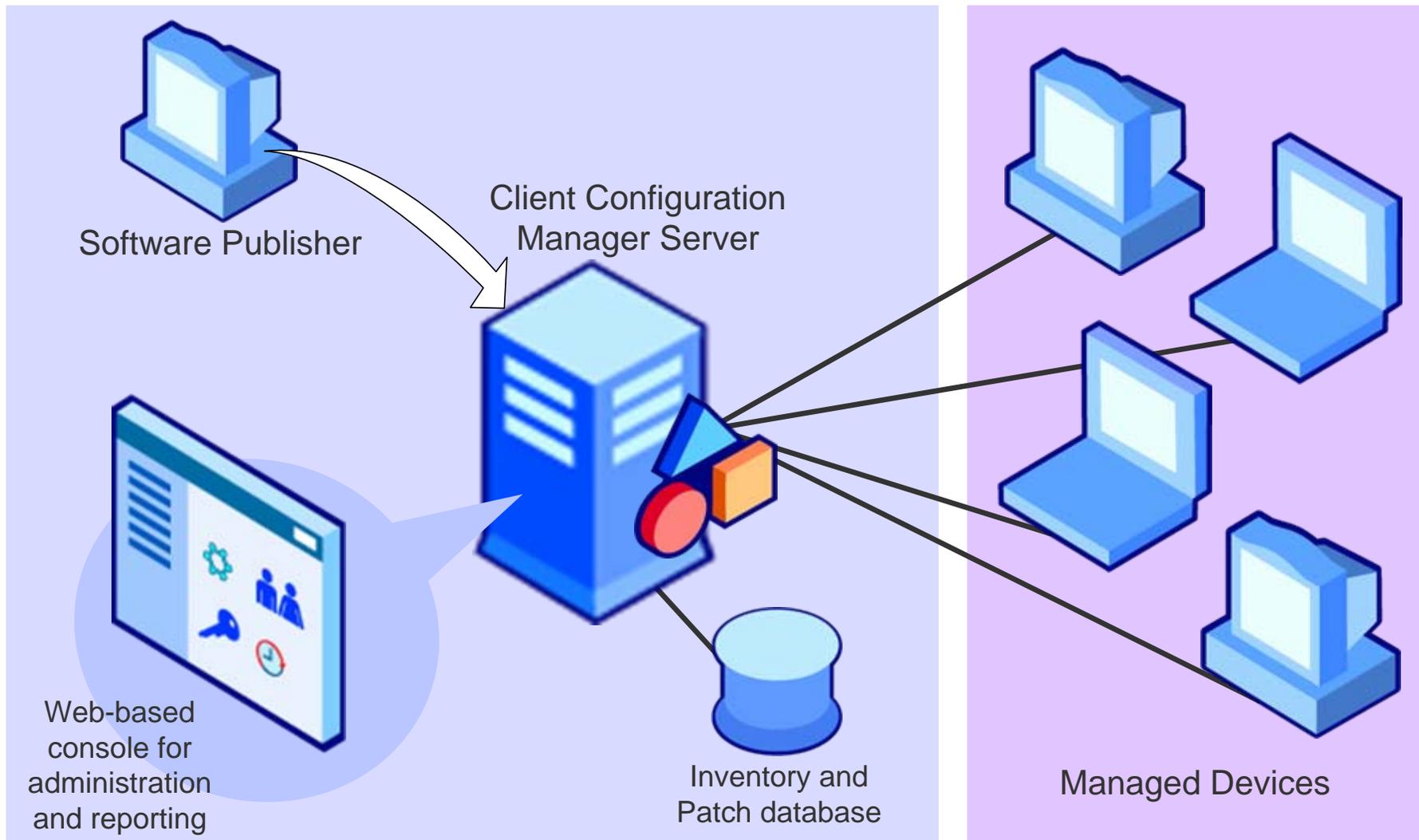
- Preparing, purchasing – boxes and pipes
- What hardware do you need? Plan for expansion
- Gigabyte file transfers across the network will take a while – is your network ready?

- 1/3 of UGS development work done on HP equipment
- Of 41,000 UGS customers, 40% are on HP equipment
- HP is the single largest hardware platform for UGS software
- 17-year partnership between HP and UGS
- HP Performance Tuning Framework, Hypertune for UGS, boosts graphics performance by up to 20%
- Sizing guide for HP computers running UGS software
- The HP/UGS appliance

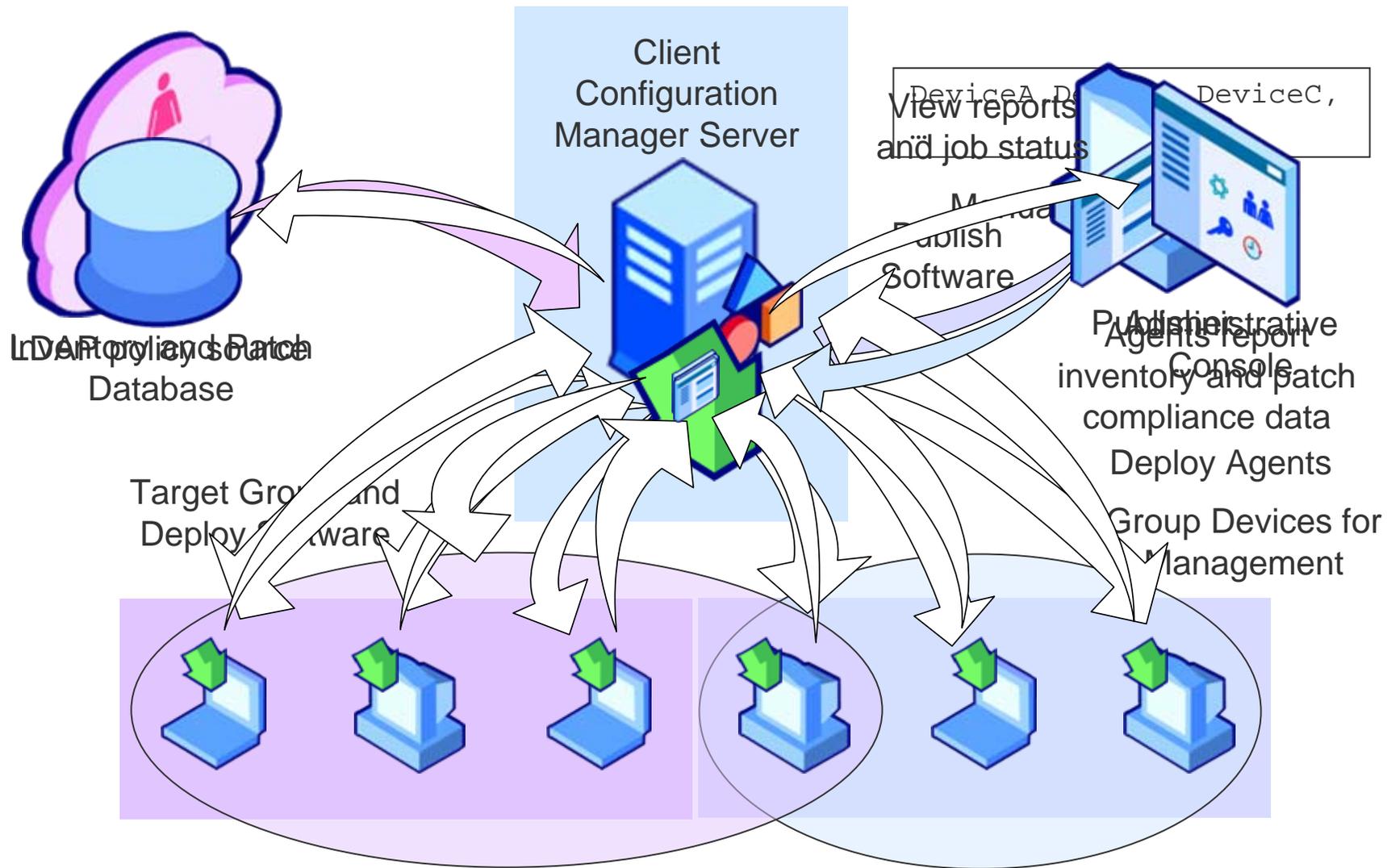
Deploying PLM

- Rapid PLM deployment and configuration
- Maintaining desired state

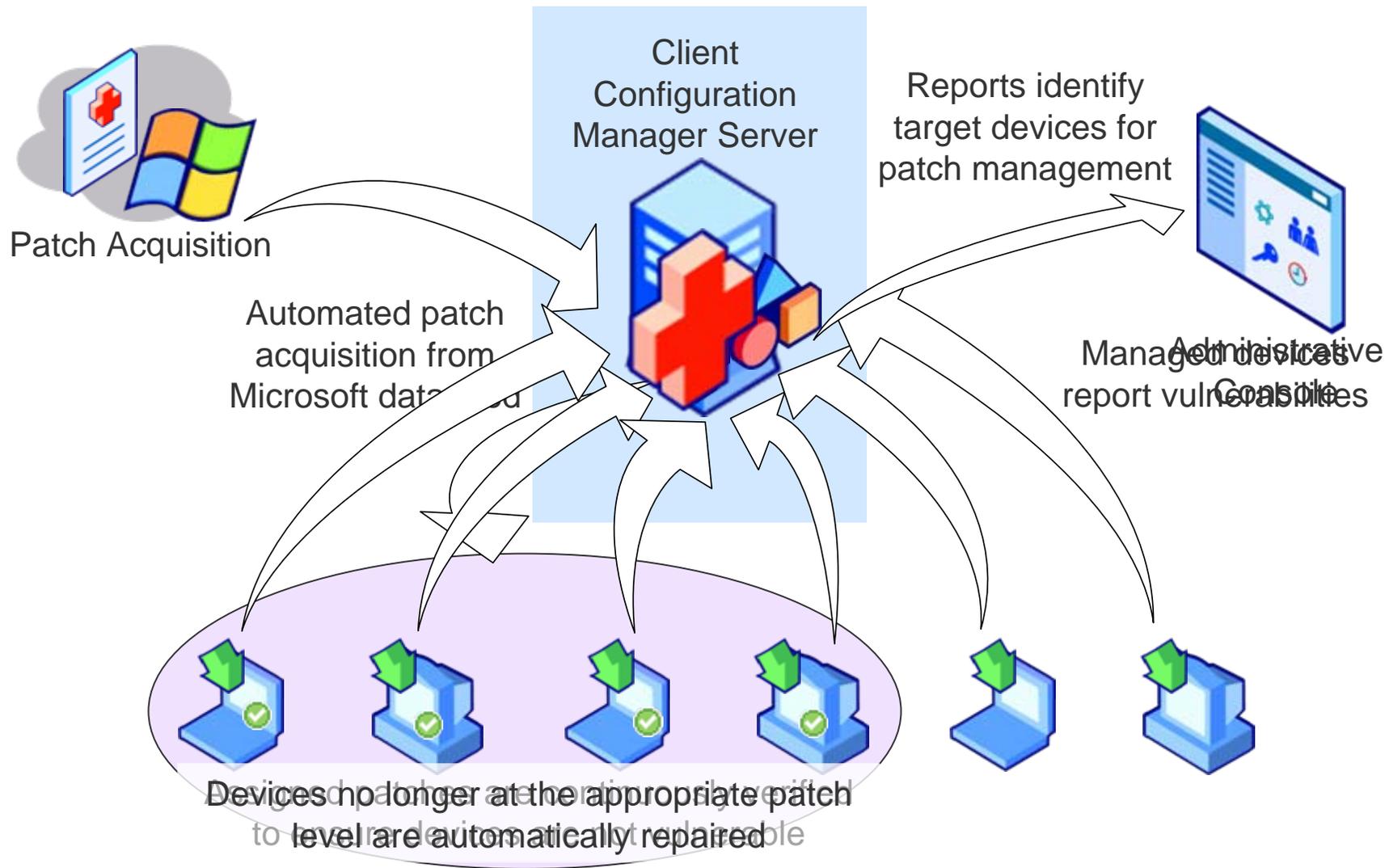
OpenView Client Configuration Manager Architecture



OpenView Client Configuration Manager Process Overview



OpenView Client Configuration Manager Patch Management Process



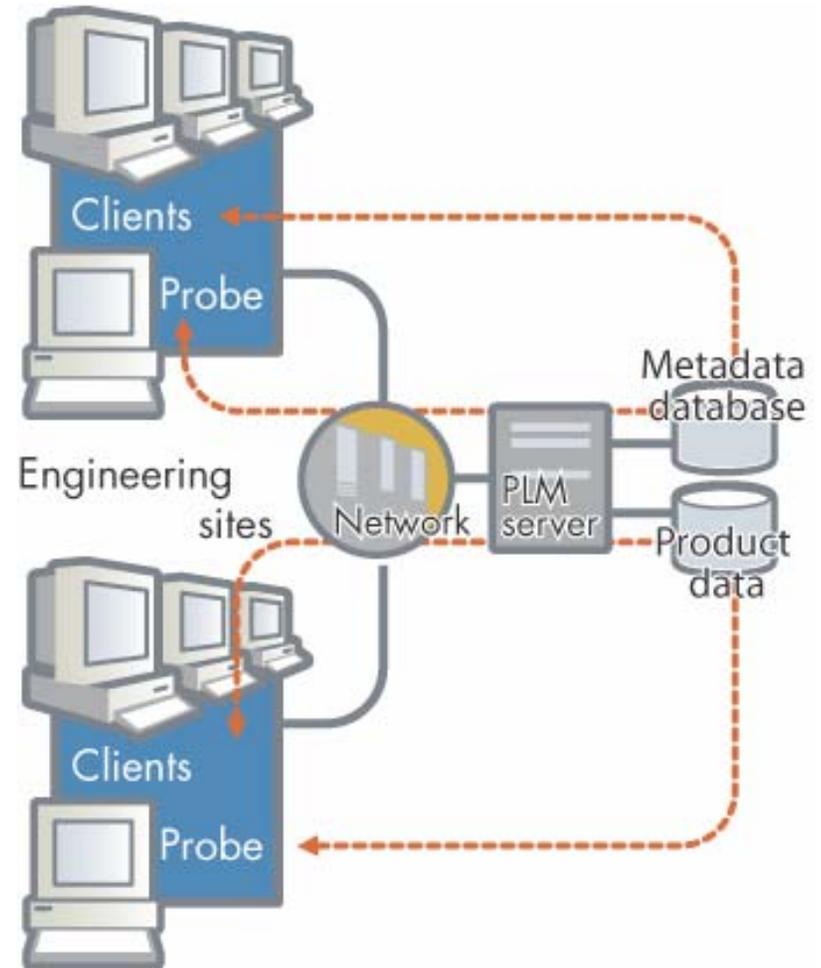
Managing PLM day-to-day

- Managing PLM
- The PLM Mgmt solution
- The Smart Plug-In
- User simulation, subsystem probes, instrumentation, integrated diagnostic and fix tools



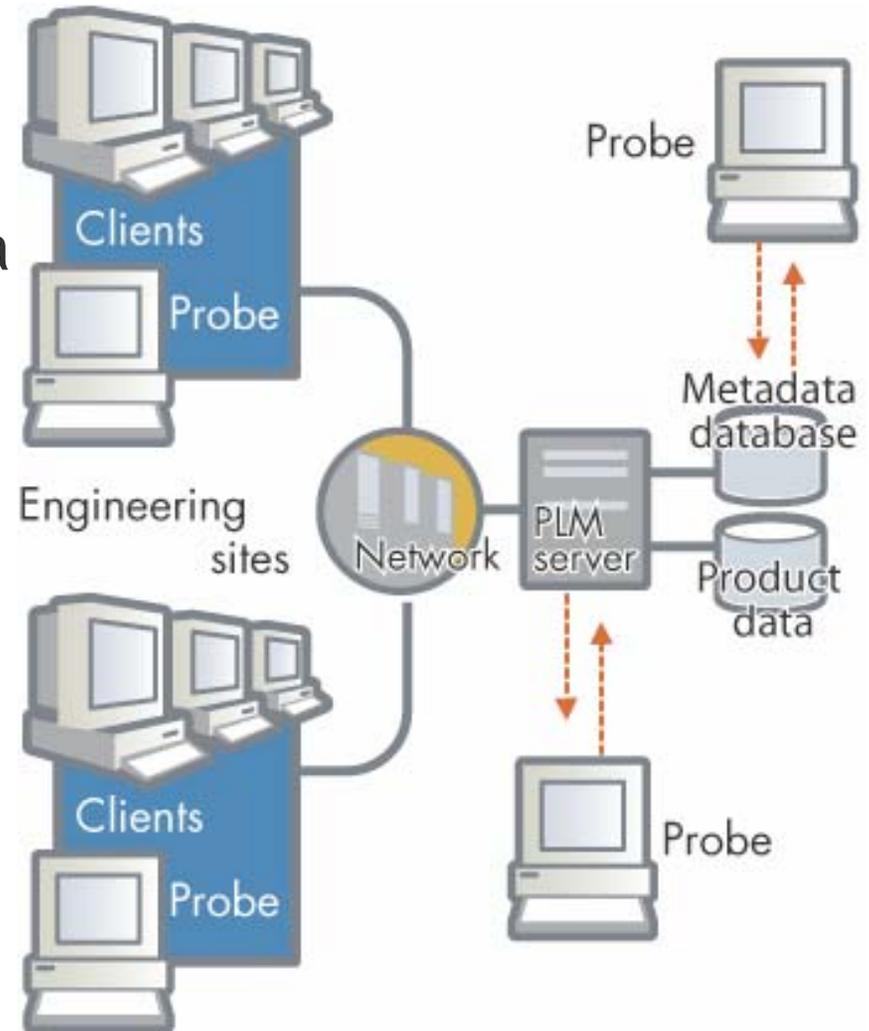
User experience: end-user transaction response time

- Anticipate and prevent end-user problems
- Simulated or actual testing
- Accurately measure PLM response with minimal resource impact



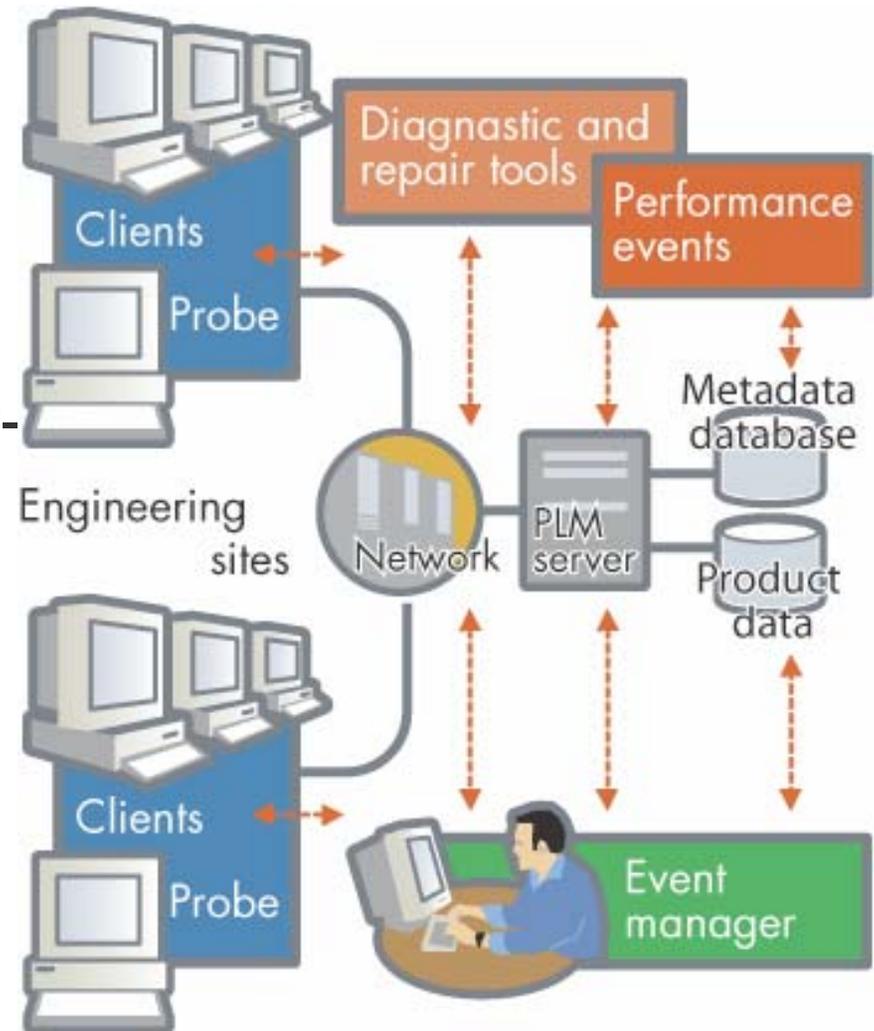
Triage: isolate the cause into one of a few areas

- Identify problematic subsystem
- Collect key metrics via probes
- Monitor from end-to-end

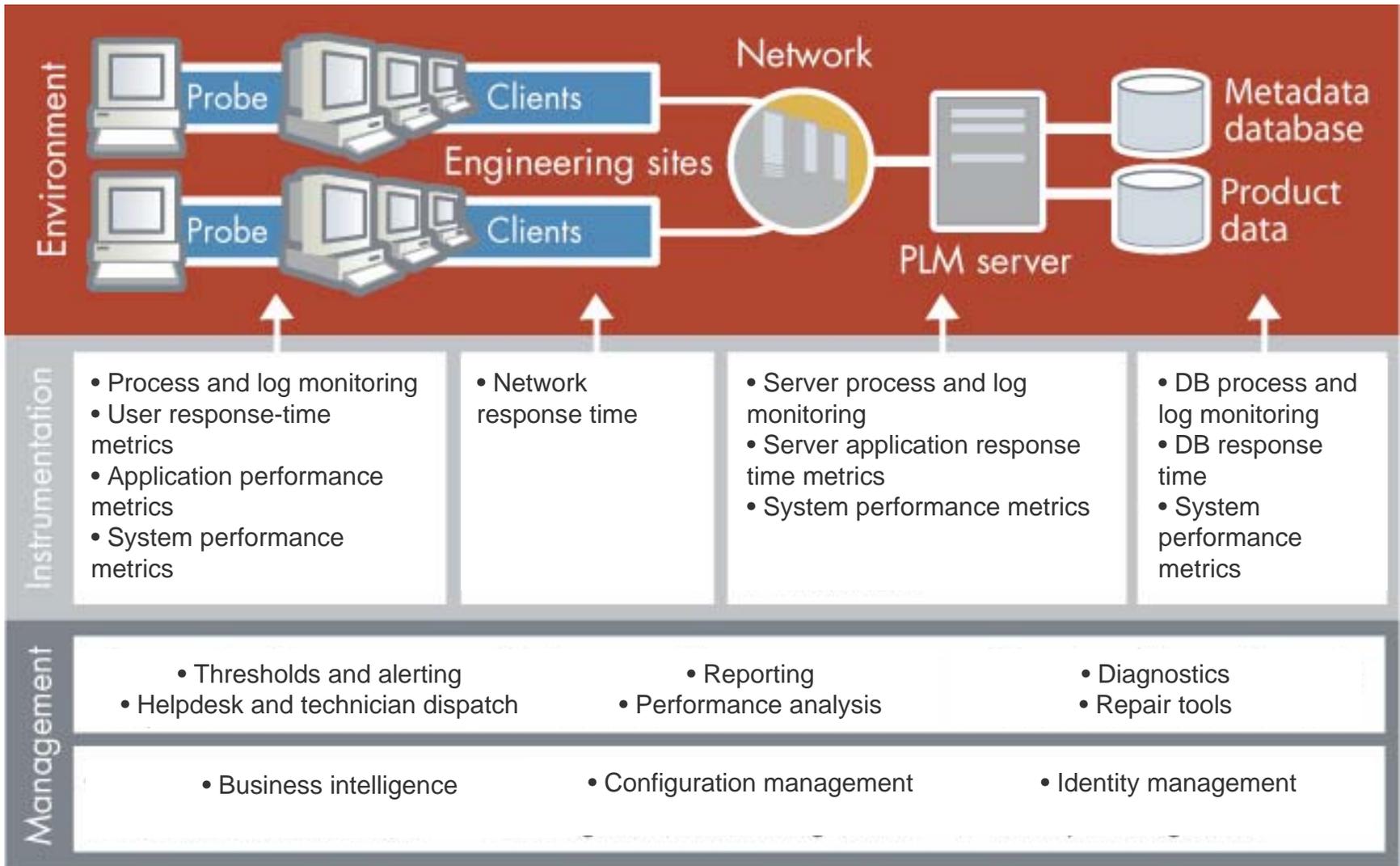


Detailed analysis: finding and fixing the root cause

- Drill down to lower levels of detail
- Collect metrics for analysis and tools
- Relate to environment-wide events



Management solution architecture



The operations console

The screenshot displays the HP OpenView Operations console. The top window, titled "1:HP OpenView\Operations Manager : OVSCWINH1\Services", shows a "Services" view in "Map - Contains or Uses" mode. A central "Services" node is connected to several other nodes: "Web Service", "Systems Infrastructure", "Network Infrastructure", "E-Mail Service", "Database Service", and "Applications".

The bottom window, titled "2:HP OpenView\Operations Manager : OVSCWINH1\Nodes", shows a "Nodes" view in "Message Browser - Active Messages" mode. It contains a table of active messages:

Severity	S	U	I	A	O	N	Received	Service	Node	Applicatio	Object	Text
Critical	-	X	-	-	-	-	7/10/2003 2:23:04 PM	Primary ...	OVSCWINH1 (M...	DNS	ATL_DNS...	DNS server is not responding
Minor	-	X	-	-	-	-	7/10/2003 2:23:10 PM	Seconda...	OVSCWINH1 (M...	DNS	ATL_DNS...	DNS server is responding > 2 se
Warning	-	-	-	S	X	X	7/10/2003 2:23:53 PM	Availability	OVSCWINH2	IIS 5.0	W3SVC	The service 'W3SVC' has the sta
Critical	-	-	X	-	-	C	7/10/2003 2:26:56 PM	Availability	OVSCWINH1 (M...	OVIS	HTTP	HTTP Service for ovscwinh2.sal.
Warning	-	-	X	-	-	-	7/10/2003 2:44:33 PM	Network ...	OVSCWINH1 (M...	SNMPTraps	15.2.112...	Seg marginal

At the bottom of the message browser, there is a summary bar showing counts for various severity levels: 2 Critical, 1 Minor, 1 Warning, 6 Informational, 0 Error, 0 Fatal, 0 Debug, 0 Audit, and a total of 50000 messages.

Instant Intelligence: Smart Plug-Ins

<p>Business application</p>	
<p>Database</p>	
<p>Internet infrastructure/ middleware</p>	
<p>Operating system</p>	
<p>Network devices</p>	

Application Tool Box –Monitoring Status

The screenshot displays the HP OpenView Operations for Unix interface. The main window shows a service graph with nodes for Bangalore and Chennai. Under Bangalore, there are Server Components and Portal Client. Server Components includes nt22990.asiapacific.hpq... and plm.india.hp.com. Under nt22990.asiapacific.hpq..., there are IDSM, IMANFS, and ODS. IMANFS and ODS are further divided into AVAILABILITY and FAULT states.

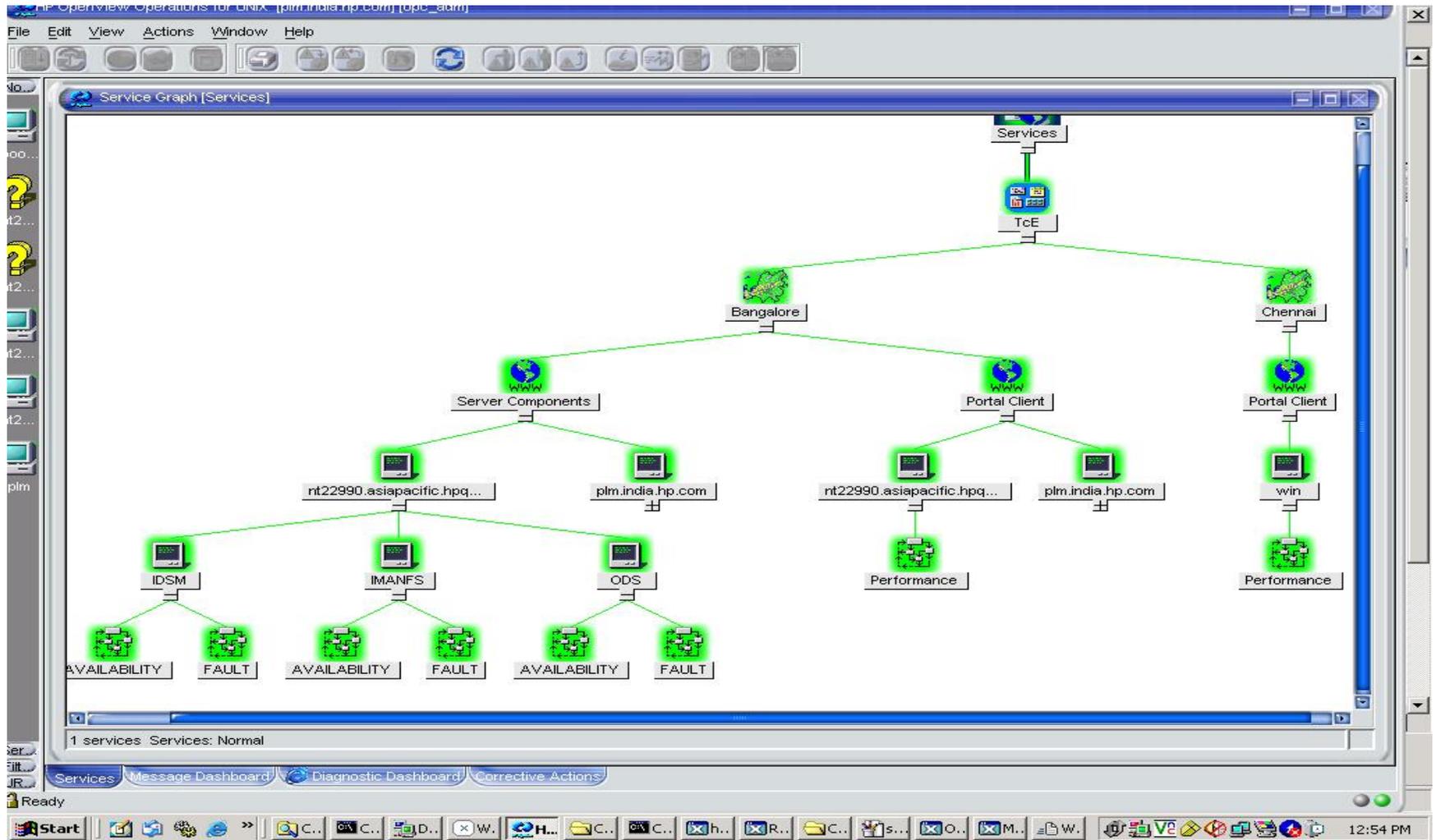
The TcE SPI Toolbox menu is open, showing the following options:

- Filter Active Messages
- Filter History Messages
- Start
- Start Customized...
- Modify Shortcut
- Remove Shortcut
- Certificate Tools
- Distr NNM Admin Tools
- NT Tools
- NetWare Tools
- TcE-SPI
- Tools
- UNIX Tools
- X-OVw
- Broadcast
- OVO Status

The TcE SPI Toolbox also includes a sub-menu for Admin, with options for Enable/Disable Mon and Performance. The Monitor Status option is highlighted, showing a progress bar with 0 of 0 and a Lock button.

The interface also shows a Message Dashboard, Diagnostic Dashboard, and Corrective Actions. The system is ready, and the browser displays max 50 messages. The time is 12:32 PM.

Service View – TcE Services: TcE Service View !



Process Monitoring – IDSM availability

The screenshot displays the HP OpenView Operations for UNIX interface. The main window shows a Service Graph for 'Services' with a tree structure:

- Bangalore
 - Server Components
 - nt22990.asiapacific.hpq...
 - IDSM
 - AVAILABILITY
 - FAULT
 - IMANFS
 - ODS
 - plm.india.hp.com
 - Portal Client
- Chennai

On the left, the 'Nodes' pane shows a tree structure with 'Admin' expanded to 'Idsm start', 'Idsm stop', 'Imanfs start', and 'Imanfs stop'. A context menu is open over the 'Idsm stop' option, listing various tools and actions. A callout bubble points to the 'Idsm stop' option with the text: "Application toolbox Stop IDSM Process".

At the bottom, the 'Services' pane shows a status bar with a red bar and the text "0 of 0". The taskbar at the bottom shows the system time as 12:12 PM.

Process Monitoring - IDSM availability

The screenshot displays the HP Openview Operations for UNIX interface. The main window shows a Service Graph for IDSM availability monitoring. The graph is structured as follows:

- Bangalore (Root Node)
- Chennai (Root Node)
- Server Components (Child of Bangalore)
- Portal Client (Child of Chennai)
- nt22990.asiapacific.hpq... (Child of Server Components)
- plm.india.hp.com (Child of Portal Client)
- IDSM (Child of nt22990.asiapacific.hpq...)
- IMANFS (Child of nt22990.asiapacific.hpq...)
- ODS (Child of plm.india.hp.com)
- AVAILABILITY (Child of IMANFS)
- FAULT (Child of IMANFS)

A 'Non Availability Notification' is shown for the IDSM node. An 'Application toolbox' is open, showing the following options:

- Certificate Tools
- Distr NNM Admin Tools
- NT Tools
- NetWare Tools
- ToE-SPI
- Tools
- UN*X Tools
- X-OVw
- Broadcast
- OVO Status

The 'Tools' menu is expanded, showing the following options:

- Unix
- Win
- Admin
- Enable Disable Mon
- Performance

The 'Admin' menu is expanded, showing the following options:

- CopyConf
- Idsm start
- Idsm stop
- Imanfs start
- Imanfs stop
- Monitor Status
- ODS start
- ODS stop

The 'Idsm start' option is selected. A message window is open, showing the following message:

Message Text
Process is not running

The status bar at the bottom of the window shows '1 of 1' and '0 0 0 0'. The system tray at the bottom right shows the time '12:24 PM'.

Process Monitoring - IDSM availability

The screenshot displays the HP Operations Center interface. On the left, a 'Nodes' pane lists various servers including boomerang, nt228183, nt228251, nt229220 - Sa..., nt22990, and plm. The main area shows a 'Service Graph (Services)' with a tree structure: Bangalore and Chennai at the top, branching into Server Components and Portal Client. Server Components further branches into nt22990.asiapacific.hp.com and plm.india.hp.com. Under nt22990.asiapacific.hp.com, there is an IDSM node, which branches into AVAILABILITY and FAULT nodes. A status bar at the bottom of the graph indicates '1 services Services: Normal'. A terminal window titled 'Idsm start Output' is open, showing the following text:

```
Application started, please wait

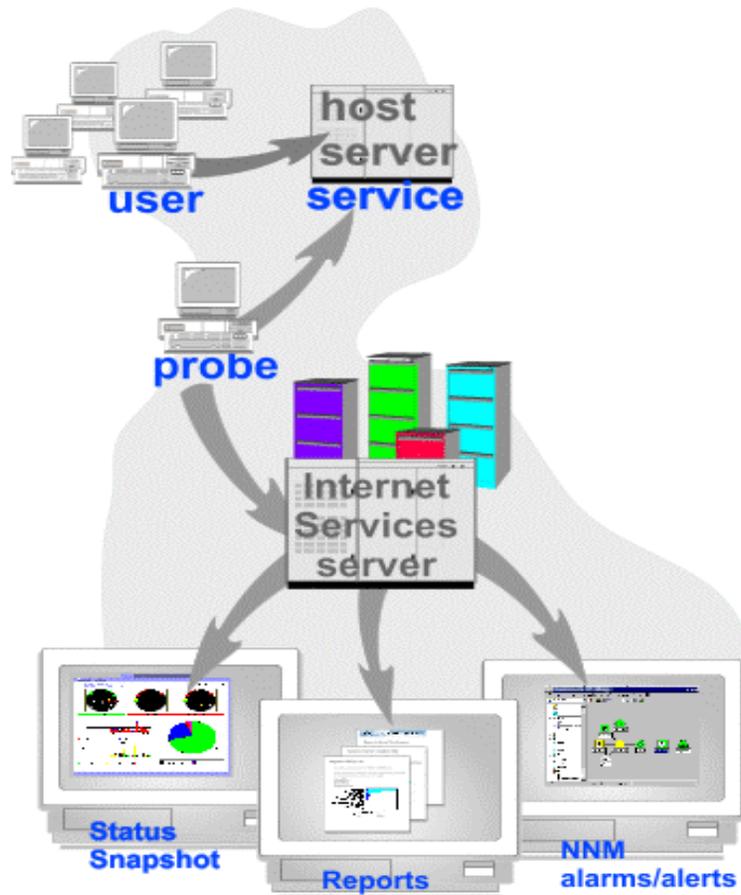
Command Output                               No. 1 of 1
                                                Node: nt22990.india.hp.com
                                                Time: 01/05/06 07:38:43

The TcEng Multisite Collaboration IDSM Service service is starting.
The TcEng Multisite Collaboration IDSM Service service was started
successfully.
```

An orange oval highlights the 'Time Received' column in the 'Filtered Active Messages' table below the graph. A text overlay on the left reads 'Non Availability Notification Auto acknowledged !' with an arrow pointing to the 'Time Received' column.

At the bottom of the interface, there is a status bar with a progress indicator showing '0 of 0' and a 'Lock' button. The Windows taskbar at the very bottom shows the time as 12:25 PM.

Probing service response time



- **What does it do?**

- Measures availability, response time and service levels for a wide variety of internet services as well as specific applications

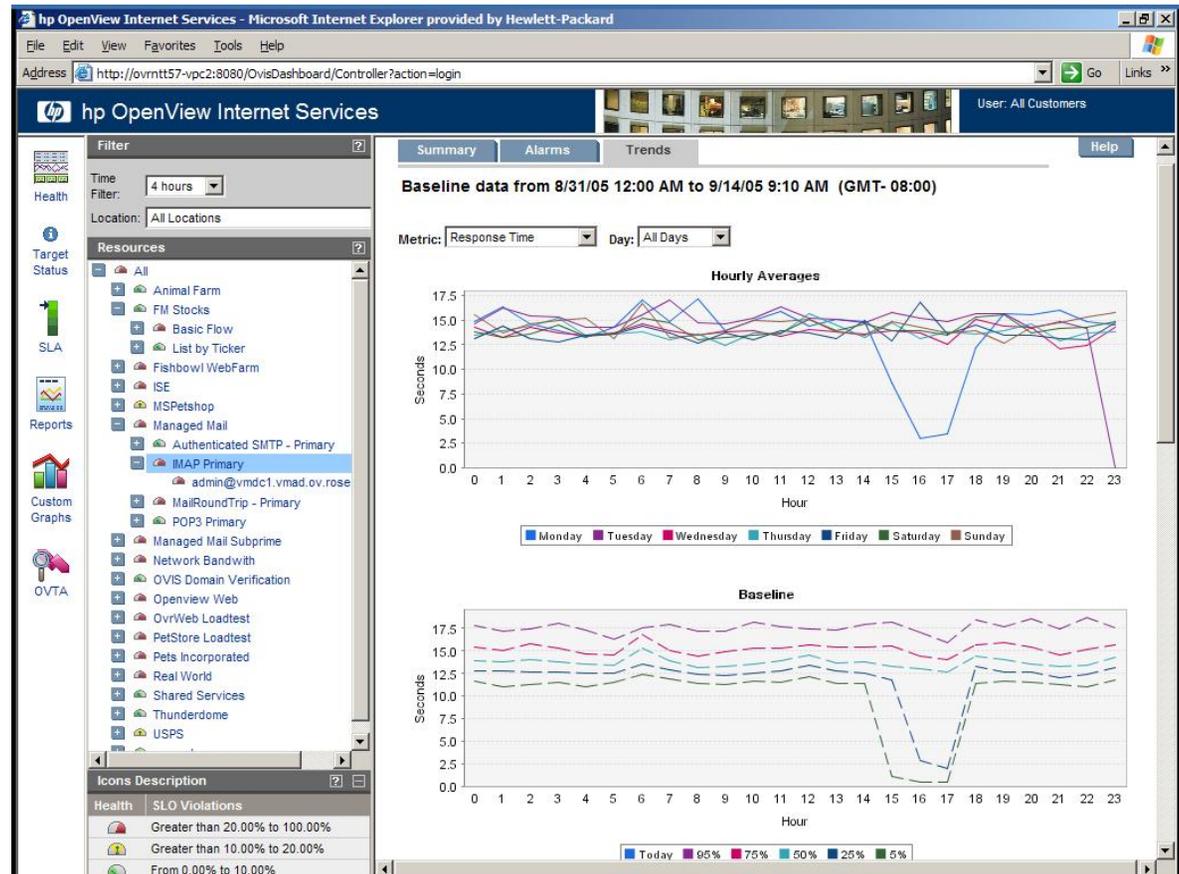
- **Features**

- Actively monitors business critical applications such as SAP and Exchange
- Actively monitors common Internet services and protocols through simulation, such as SMTP, HTTP, SMS and FTP.
- Easy-to-use custom probe builder

Presenting response time results

Benefits

- For companies that provide business-critical applications and/or Internet services
- Measure, monitor and report against service level agreements
- Provide service assurance that Internet and network services are performing



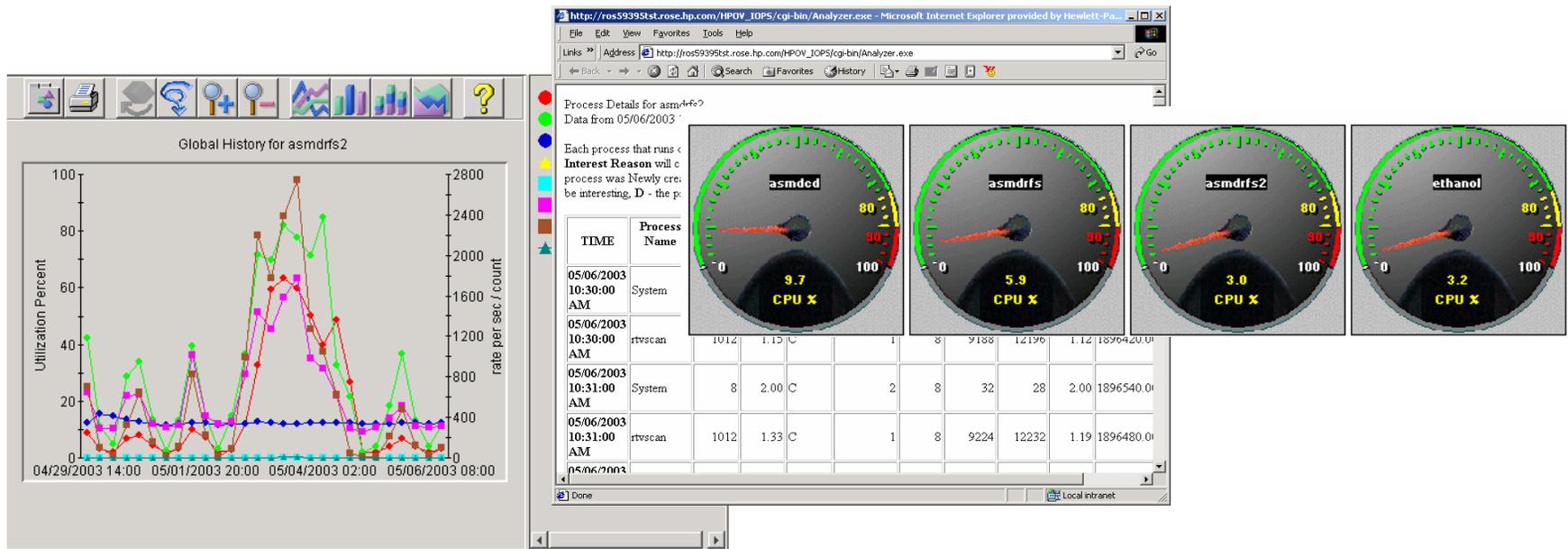
This product is not just for the Internet!

Services to monitor

- Monitoring of a Wide Variety of Common Services and Protocols
 - **Basic Services:**
 - DHCP (Dynamic Host Config.)
 - DNS (Name Resolution)
 - ICMP (Network Response Time)
 - LDAP (Lightw. Directory Access)
 - NTP (Network Time)
 - ODBC (Open Database C...)
 - TCP (user-defined port)
 - **Email:**
 - IMAP4 (Internet Message Access)
 - Mail Roundtrip
 - POP3 (Post Office Protocol)
 - SMTP (Simple Mail Transfer)
 - **Web:**
 - FTP (File Transfer)
 - HTTP (Web Servers)
 - HTTPS (Secure Web Servers)
 - HTTP_TRANS (Web Trans.)
 - NNTP (News Service)
 - STREAM_MEDIA (Real or Win)
 - **Remote Access & Other:**
 - DIALUP (Dial Up)
 - Radius (Authentication)
 - SAP
 - SMS (Short Messaging Service)
 - WAP (Wireless Data)
 - X_SLAM (Cisco SMS) :
 - **DNS, HTTP, ICMP, TCP,UDP,VOIP**

Adjusting, and knowing when

- Adjusting, and knowing when
 - Ongoing metrics collection
 - Reading the trends
 - Circles back to “Planning for PLM”



Summary: Making PLM hum

- Planning – people, process, and technology
- Equipping – allow time and expansion space
- Deploying – once and forever
- Monitoring, managing – multi-level, continuous
- Planning ahead

Making PLM Hum – Mastering the IT Infrastructure

For more information:

www.managementsoftware.hp.com/solutions/auto

...or go to www.hp.com and search for “UGS”

Premium Partners:



Microsoft