

Managing Total Cost of Ownership (TCO) With HP Midrange Servers

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Agenda

1. Definition of TCO
2. Review of TCO cost components
3. Analysis of HW/SW cost components
4. General strategies for reducing TCO
5. HP strategies for improving TCO with midrange servers
6. How to start a TCO management program
7. Conclusions

What Is TCO?

- Sum of all direct expenses, indirect expenses & opportunity costs associated with the complete lifecycle of an IT infrastructure
- Includes costs associated with HW, SW, people & facilities

More Efficient Use of Assets Results in Lower TCO:

- Staff--manage fewer, standardized resources
- Computing resources--can be dynamically reallocated to meet peak loads
- Software licenses--fewer servers means fewer licenses
- Real estate--reduced server and storage sprawl cuts down the number of square feet required

All of which leads to a better bottom line!

Components of TCO

End User

Administrative

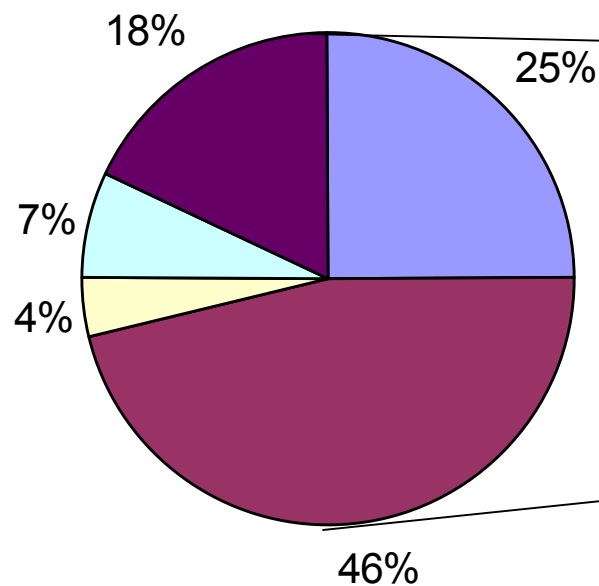
Downtime

Operational

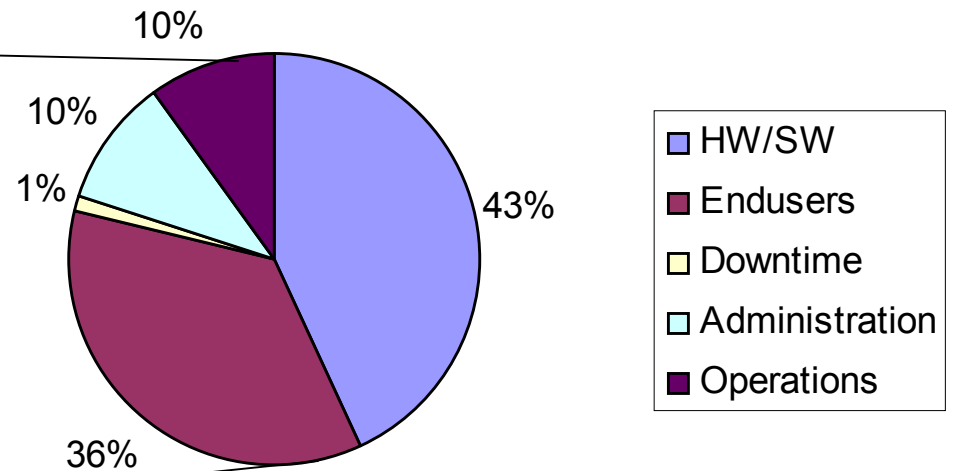
HW/SW

Cost Relationships-Typical and Best Practices

Typical Practices



Best Practices



Source: Compaq TCO Model

Components of TCO

End User

Administrative

Downtime

Operational

HW/SW

Types of HW/SW Costs

- Expensed, depreciated or leased HW
- Upgrades
- Spares & supplies
- Business and engineering software
- Database, management and development tools
- Messaging and groupware
- Network, systems, storage and asset management software
- Service desk management software

Reasons for Inefficiencies

- Inadequate platform design
- Inadequate procurement process
- No hardware and/or software standards
- Clients or servers not configured for business requirements
- No asset management
- Heterogeneous environment (Unix - NT - OVMS - MVS...)
- Multi-tier client/server environment increasing complexity and diversity

Ways to Reduce TCO Via HW/SW Improvements

- Consolidation of servers, storage, operating environments, and middleware onto fewer and easier to manage platforms
- Re-hosting of applications from aging infrastructures to updated, cost effective environments

Ways to Reduce TCO

Cont...

- Utilization of proven architectures that can be rapidly deployed with minimal effort
- Ensuring infrastructure availability throughout the application lifecycle to prevent opportunity loss

Strategies for Reducing TCO with HP Midrange Servers

Investment Protection

Technology Improvement

Manageability Improvement

Strategies for Reducing TCO with HP Midrange Servers

Investment Protection

Technology Improvement

Manageability Improvement

Investment Protection Lowers Costs And Adds Value By...

- Extending the lifetime value of infrastructure components
- Matching IT purchases to balance sheet needs
- Ensuring that your IT infrastructure can grow with your business

Best practice savings 0-11%

Source: Compaq TCO Model

HP WORLD 2002
Conference & Expo

Investment Protection in the Midrange

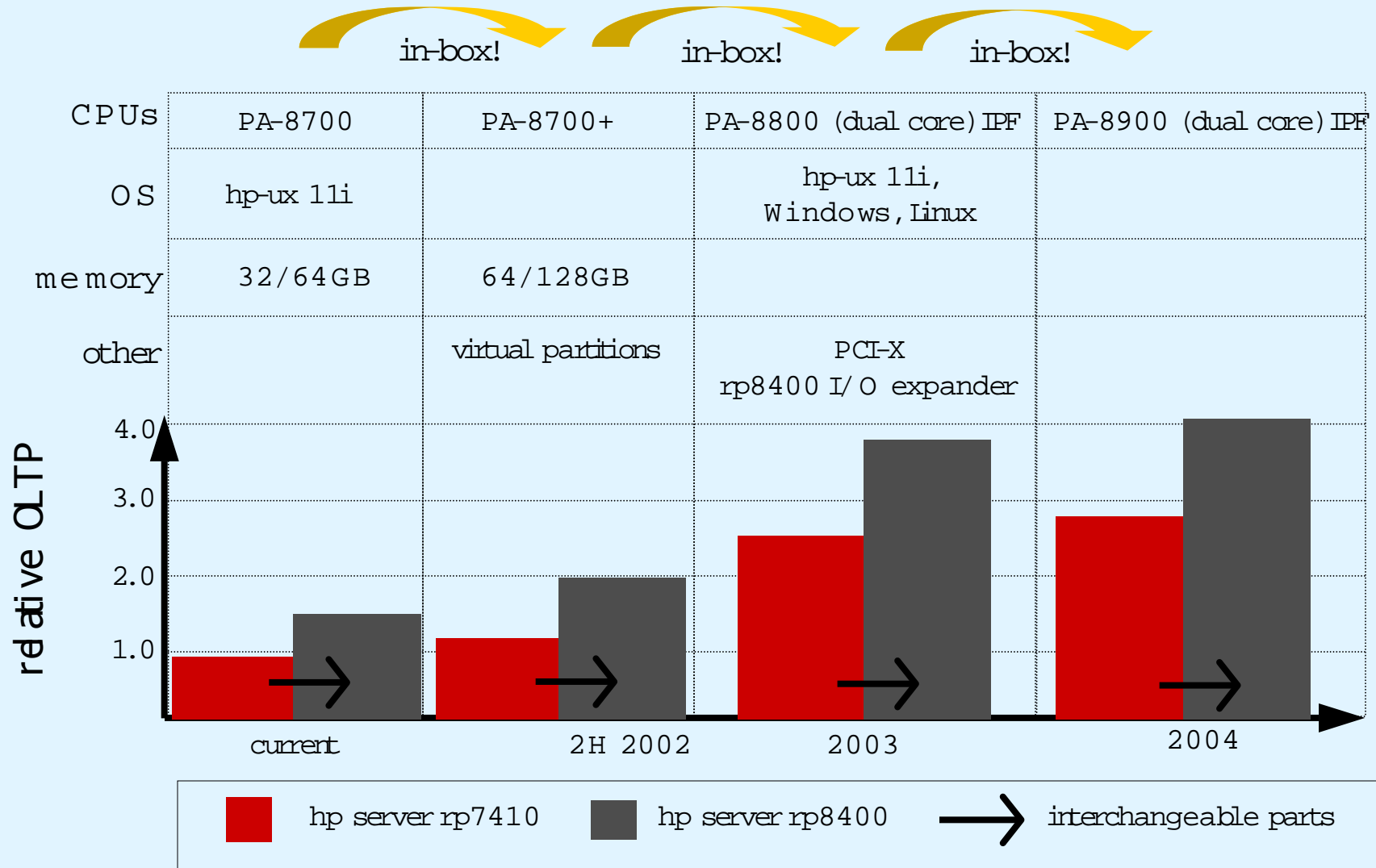
- *In-box upgrades*
- *Trade in/trade up programs*
- *Financial matching*

Investment Protection

In-box Upgrades

- Capacity on demand (iCOD)
- Processor upgrades
- Shared components

In-Box Scalability



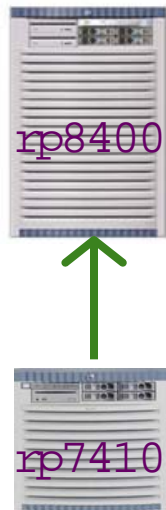
Investment Protection

Trade In/Trade Up

- Tradeup 2002--industry leading programs
- Installed base programs
 - to PA-RISC
 - to IPF

Unsurpassed Multi-dimensional Investment Protection

midrange upgrade



- midrange upgrade to 16-way rp8400 program
- share the same cell boards, peripherals and I/O cards

installed base programs

PA-RISC



IPF



to PA-RISC: trade-up prog.

- cost effective path to rp7410 from hp and competitive servers

to IPF: IPF prog.

- upgrade from rp7400 to IPF based rp7410 @ in-box upgrade cost

Investment Protection

Financial Matching

- Competitive pricing schedule
- Flexible lease options
- Promotional financing
- Utility pricing
 - Pay per use
 - Pay per forecast

Programs to Address Today's Economic Environment

- 0% apr financing plan★
- hp services promotion!
 - three months free when you purchase a three-year support plan

★ also includes software, storage and services

unmatched cost savings
throughout
the value chain!

- utility pricing
 - pay-per-use
 - midrange promotion! buy with pay-per-use, and pay no usage fees for the first 6 months
 - iCOD
 - new! temporary capacity on demand
 - pay-per-forecast

Strategies for Reducing TCO with HP Midrange Servers

Investment Protection

Technology Improvement

Manageability Improvement

Technology Improvements Lower Costs And Add Value By...

- Decreasing IT downtime
- Reducing operational complexities
- Minimizing environmental costs
- Matching performance needs to business cycles

Best practice savings 0-20%

Source: Compaq TCO Model

Technology Improvements in the Midrange

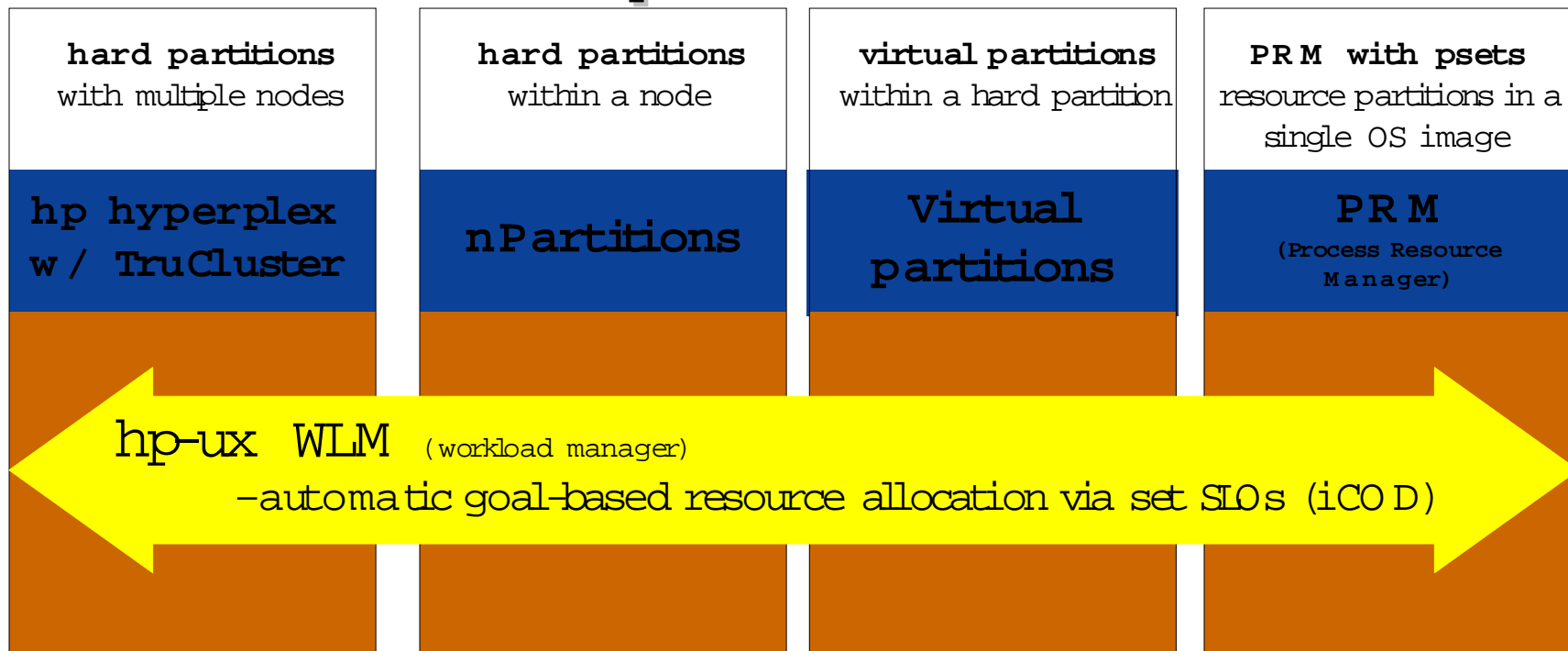
- *Scalability*
- *Availability*
- *Design*

Technology Improvement

Scalability

- Partitions to support multiple functionality
- Clustering to aggregate server resources
- Consolidation to improve manageability

Broadest Partitioning Capabilities



isolation

flexibility

for maximum flexibility and consolidation

Technology Improvement *Availability*

- Built-in HA features
 - Redundant data paths
 - Multibit error correction
 - Full error correction code (ECC)
- Hot-swappable components/peripherals

Leading High Availability You Can Trust

	chip/system technologies	server availability/management		application high-availability
		capacity on demand	partitions	
hp rp7410 rp8400	<ul style="list-style-type: none"> • chip-spare (chip-kill) • full ecc • address parity detection 	<ul style="list-style-type: none"> • instant turn-on of iCOD processors • automatic iCOD "hot" spare • integration with workload management 	<ul style="list-style-type: none"> • hard partitions with full electrical isolation • dynamic virtual partitions available 2h02 	<ul style="list-style-type: none"> • mc /serviceguard (multi-OS) • campus & metro cluster • continental cluster • SAP somersault solution

Technology Improvement *Design*

- Minimization of floor space
- Easy, tool free access
- Low operating costs

Midrange Environmental Cost Savings



	<u>4 servers</u>			<u>2 servers</u>		
	8-way			16-way		
	IBM			IBM		
	SUN			SUN		
	rp7410	p660-6M1	4800	rp8400	p670	6800
# servers (total CPUs)	4 (32)	4 (32)	4 (48)	2 (32)	2 (32)	2 (48)
acquisition costs	\$1,061,000	\$1,085,000	\$1,560,000	\$1,055,000	\$1,011,000	\$1,688,000
3 year floor space	\$39,600	\$79,200	\$158,400	\$39,600	\$79,200	\$79,200
electrical power	20 amp	20 amp	20 amp	20 amp	30 amp	30 amp
3 year power	\$73,296	\$73,296	\$73,296	\$36,432	\$54,648	\$54,648
3 year 24x7 support	\$191,032	\$228,148	\$356,792	\$239,024	\$270,940	\$356,860
total cost	\$1,364,928	\$1,465,644	\$2,148,488	\$1,370,056	\$1,415,788	\$2,178,708
		7% more	57% more		3% more	59% more

Strategies for Reducing TCO with HP Midrange Servers

Investment Protection

Technology Improvement

Manageability Improvement

Manageability Improvements Lower Costs And Add Value By...

- Simplifying administration complexity
- Increasing system uptime
- Extending future functionality
- Reducing deployment and maintenance time

Best practice savings 0-18%

Source: Compaq TCO Model

Manageability Improvements in the Midrange

- *HP-UX11i*
- *Systems management software*
- *Clustering software*

Manageability Improvement

HP-UX11i

- Incorporates high levels of support for Internet enterprise, mission-critical, and technical computing
- When layered with middleware gives customers the ability to update server functionality over time
- Binary compatibility to ensure application longevity

"Clearly reflecting hp's increased investment in its Unix product line, hp-ux moves to the head of the class for UNIX operating systems functions. hp-ux occupies the top spot in every studied category, with a particularly strong lead in internet and web application services, and an impressive surge forward in the intensely competitive RAS category"



May 2002



Manageability Improvement

Systems Management Software

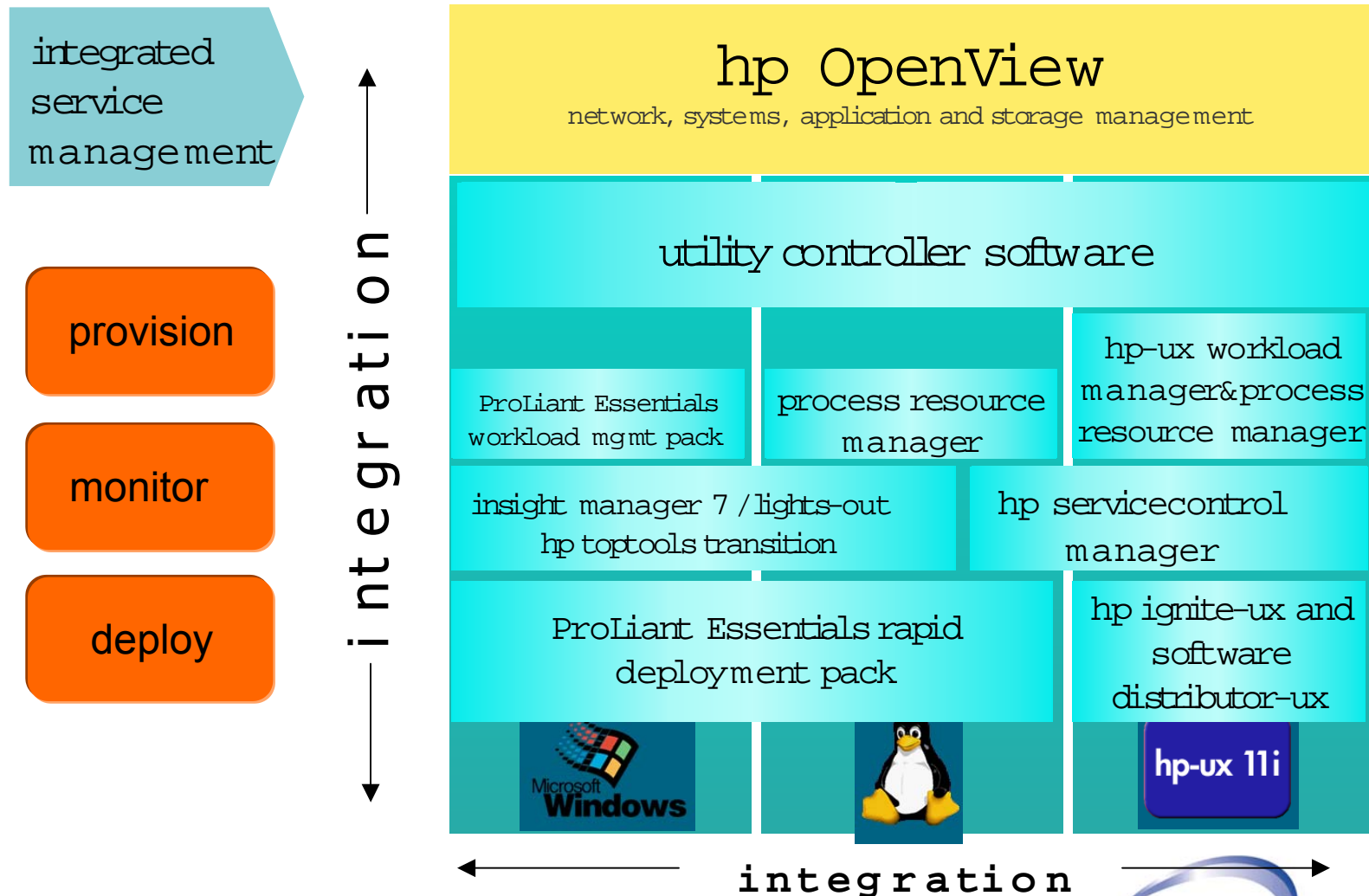
- Workload Manager (WLM)--reassigns workloads between partitions
- Process Resource Manager (PRM)--allocates resources to different tasks

Manageability Improvement

Clustering Software

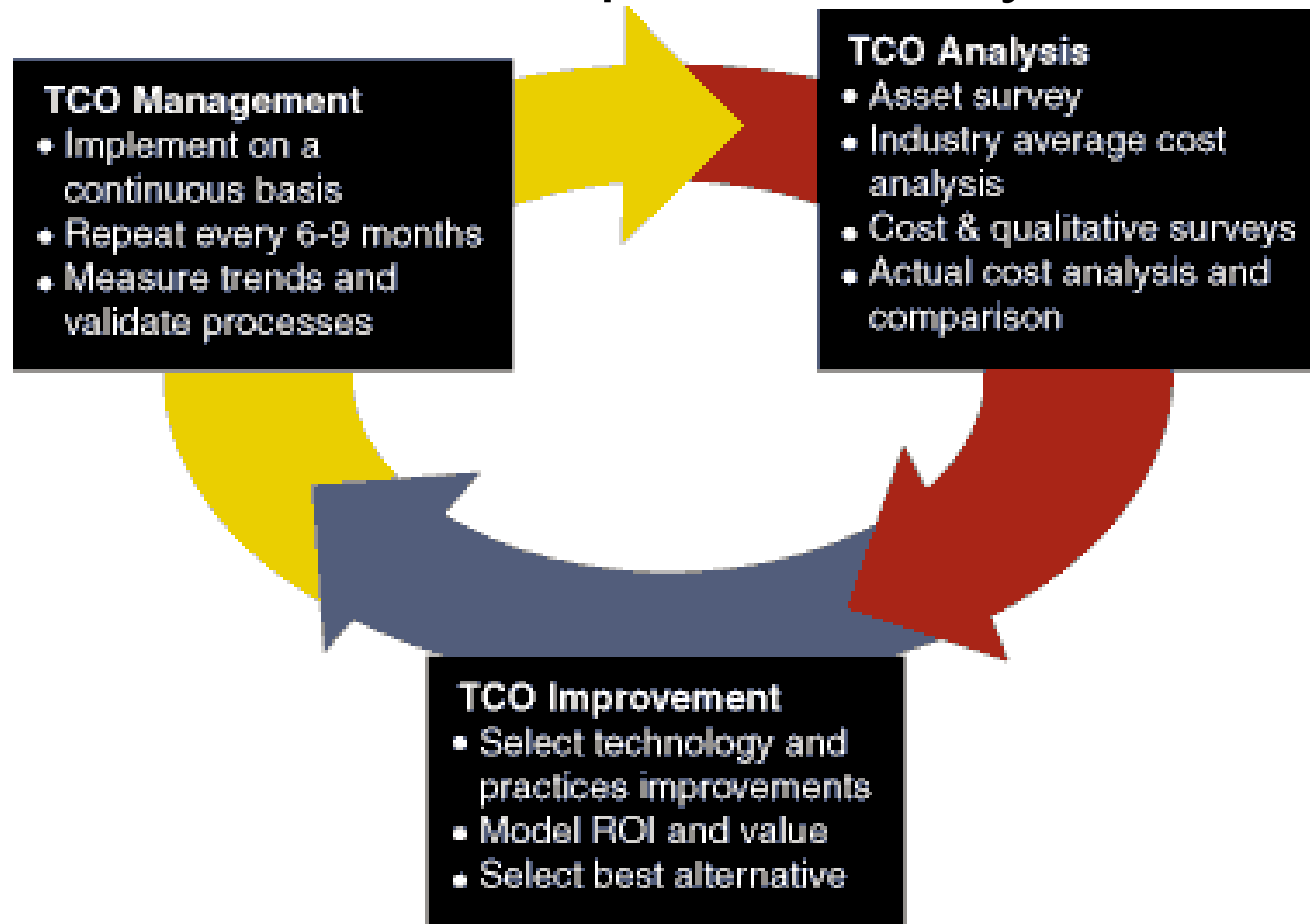
- MC/Serviceguard
 - high availability clustering software
 - Preconfigured for minimal setup and installation time

HP Manageability Solutions



How to Start A TCO Management Program

Gartner Group TCO Lifecycle



Conclusions

- Managing TCO requires understanding the costs associated with an IT infrastructure
- Improvements in hardware and software components can lead to substantial reductions in TCO
- Because of their versatility, midrange solutions offer compelling ways to reduce all components of TCO
- Controlling TCO is a continual process

Questions?