



Linux & HP



Dr. Sebastian Hausmann
Technical Presales Consultant
HP
Hamburg

Die Linux-Strategie von HP



Warum Linux?

Was macht HP?

Beispiele aus der Praxis

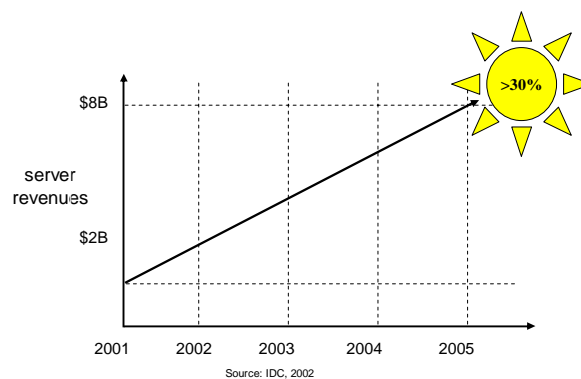


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Linux Markttrends



- Linux wächst stark: Jährliches Wachstum > 30%
- 33% aller Webserver laufen unter Linux
- Wachsende Unterstützung durch ISVs, z. B. Oracle and SAP

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“The question for us isn’t,
‘Will Linux dominate the
 world?’ ,

but

‘What part
 of the world will Linux
 dominate?’ ”

Carly Fiorina
 CEO, Hewlett Packard Company
 Linuxworld 2002



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Open-Source in Deutschland



Betriebe mit mehr als 100 Mitarbeitern, die Linux im Einsatz haben:

Deutschland:	44 %
Großbritannien:	32 %
Schweden:	18 %

Einsatzgebiete von Open-Source-Produkten:

Server-Betriebssysteme:	16 %
Datenbanken:	11 %
Web-Servern:	10 %
Desktop:	12 %

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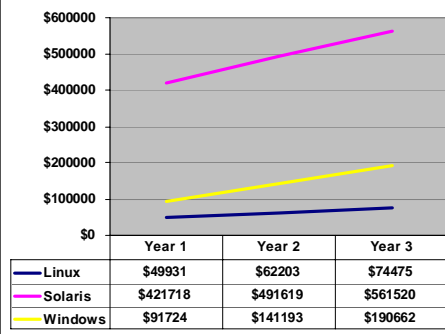
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Linux spart Kosten



Studie der Robert Frances Group am Beispiel Web-Server (Apache bzw. IIS)

TCO



Solaris:
Extreme Hardwarekosten
Hohe Servicekosten

Windows:
Hoher Verwaltungsaufwand
für Sicherheitsupdates

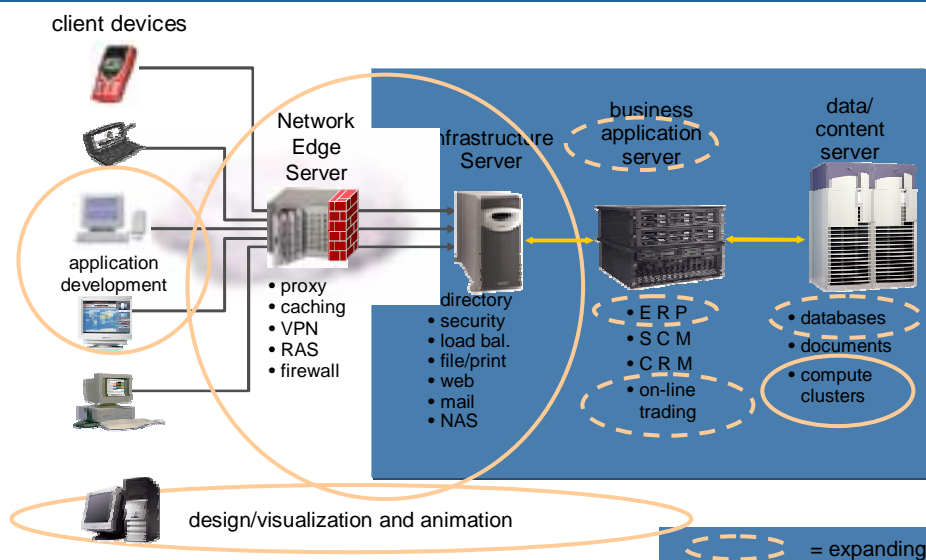
Quellen:
<http://www.heise.de/ct/02/17/033/>
<http://www.rfgonline.com>

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Einsatzgebiete von Linux





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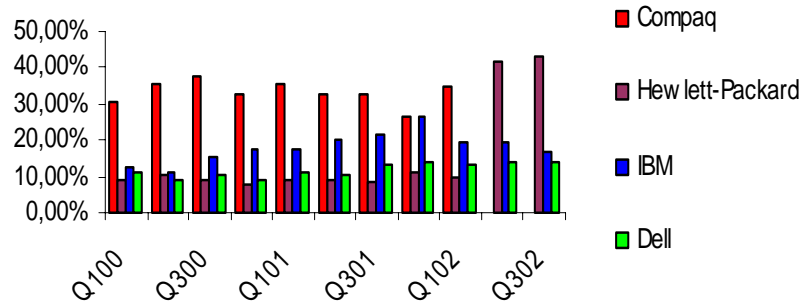
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	<h2 style="text-align: center;">Warum ist Linux so großartig?</h2> <div style="text-align: right;">  </div> <p>Multi-</p> <ul style="list-style-type: none"> • User • Tasking • CPU • Architektur (plattformunabhängig) <p>Relativ kleiner, modularer Kernel</p> <p>Treiber nachladbar</p> <p>Posix-orientiert</p> <p>Open Source weltweit</p> <ul style="list-style-type: none"> • über 50000 Projekte • über 1 Mio. Entwickler <p>Preis-Leistungs-Verhältnis</p> <p>Auf 3-5 Windows-Bugs kommen 1-2 Linux-Bugs.</p>
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 	<h2 style="text-align: center;">Was macht HP?</h2> <p style="text-align: center;"> Server Workstation Desktop Itanium Hochverfügbarkeit Storage Drucker Software </p>
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Linux-Markt West-Europa



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hp Linux wins!



Linux is approaching a \$2B business for HP

With Linux, hp is:

- #1 in ww server revenue¹
- #1 in ww Itanium market share >80%¹
- #1 in Oracle 9iRAC installations⁴ (70% share)
- #1 in SAP installations⁴ (50% in '02; 2x nearest competitor)

Winning performance:

- 1st Linux tpm-C benchmark by any vendor @ 138,300^{2, 3}
- 1st single system tpm-C by any vendor 80,494 @ \$5.30/tpmC with Itanium³
- world records for SPECfp @ 1431 with Itanium⁵
- hp offers 50% better Sendmail performance than SUN at 40% of the price⁶

¹ Market data source: IDC 3Q Server tracker, 3Q02 Storage tracker

² 8, 4-way ProLiant DL580 systems with Oracle, Red Hat Advanced Server

³ www.tpc.org

⁴ source: vendor data

⁵ www.specbench.org, hp rx5670

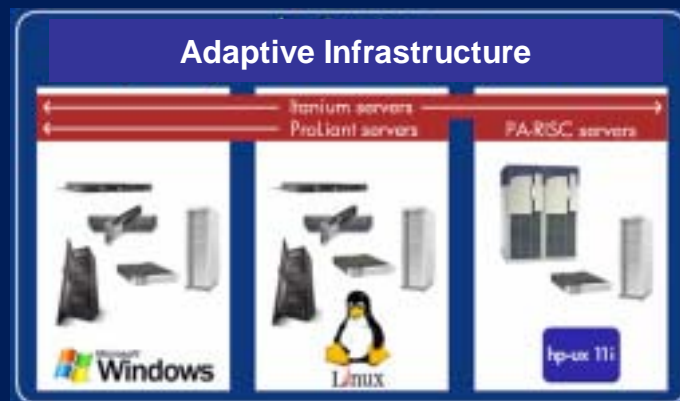
⁶ ProLiant vs. Sun/SPARC, see backup slides platform section

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hp 'Platform of Choice' strategy



HP is the only Enterprise Server Vendor with a balanced Operating System Strategy across Windows, HP-UX and Linux responding to heterogeneous customer environments

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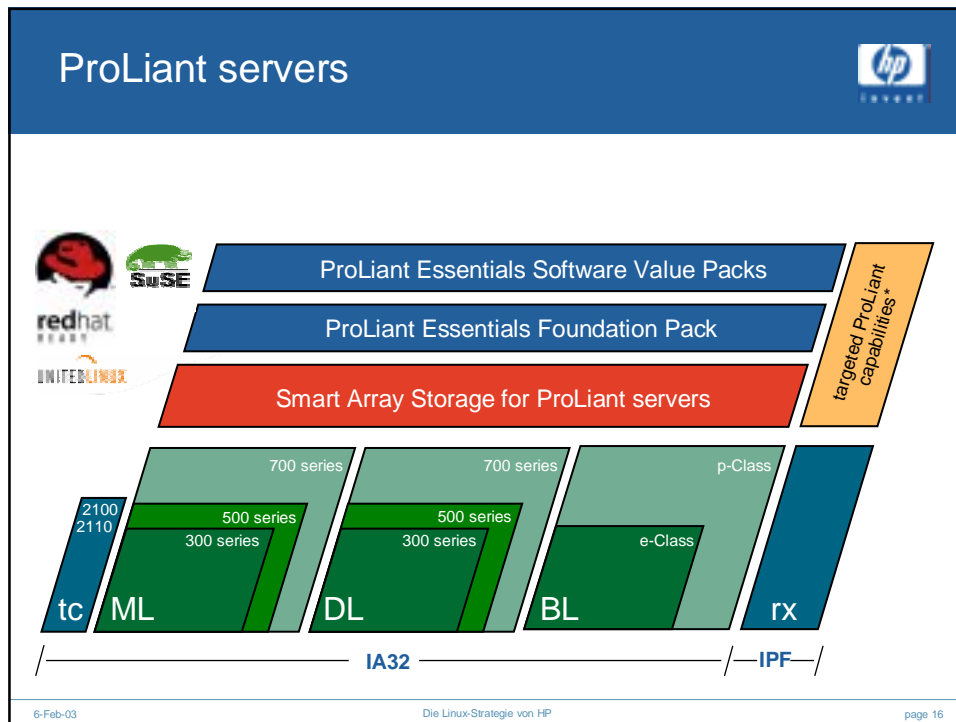
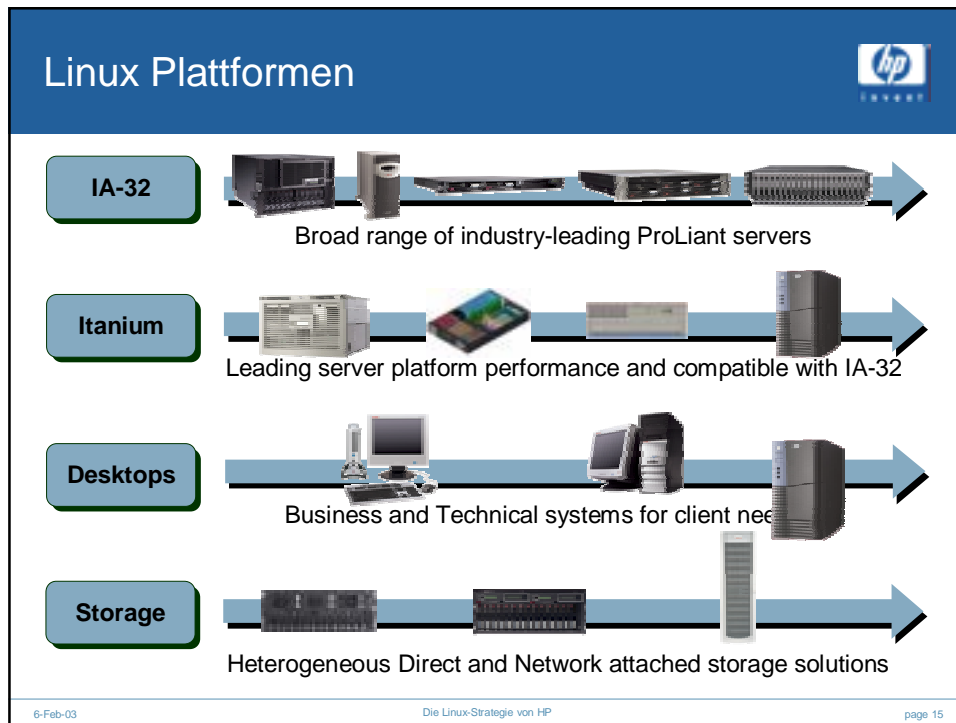
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HPs Beitrag zur "Open Source"- Gemeinschaft



- Itanium-Linux-Kernel
- PA-RISC / Unix
- Druckertreiber mit SourceForge
- Beiträge zu:
 - SAMBA
 - Apache
 - Gnome und KDE
 - Open SSI Cluster
 - ...



market leading benchmarks with Linux

hp ProLiant servers

- ✓ 1st TPC-C benchmark by any vendor @ 138,300;
done with Oracle and Red Hat Advanced Server
- ✓ best price/performance \$5/BBOP EC Perf J2EE benchmark

hp ProLiant vs. Sun – Oracle application benchmark

	ProLiant dl580	Sun v880
response time (ms)	.79	1.90
users/DB proc.	518	427
MB RAM/USER	7.90	9.59
approximate system cost	\$250,000	\$630,000

Oracle.com/apps_benchmark

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Linux on Itanium

- booted first in HP labs
- led the port to Linux in Feb '98,
evolved into open source consortium
- HP maintains the Linux IA-64 kernel
- SDK released with Intel - June '00
- commitment to Itanium-based Linux
workstations and servers
- HP first to boot Linux on McKinley
- Jan '01



www.gelato.org

Gelato is a worldwide consortium focused on enabling open source Linux-based Itanium computing solutions for academic, government and industrial research.

#1 Benchmarks



Benchmark	System	OS	Result	Rank
SPECfp_base/peak 1 CPU	rx5670	Linux	1,431	#1
SPECfp_rate_base/peak 4 CPUs 2 CPUs 1 CPU	rx5670	Linux	49.3 30.7 16.6	#1
SPECfp_base 1 CPU	rx2600	Linux	1,427	#1
SPECfp_rate 1 CPU	rx2600	Linux	16.6	#1

tested with 1GHz Itanium 2 processors

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hp linux printing and imaging hp leads with the most printers supporting Linux in the world



deskjet printers

- Over 40 drivers released and supported
- Over 60 printer models supported
- www.hp.com/united-states/linux/deskjet_printers.html



laserjet printers

- All HP LaserJet business printer families are fully functional in Linux environments
- www.hp.com/united-states/linux/laserjet_printers.html



Print server appliances and officejet printers

- Linux support available on most officejet printers
- hp print server appliance 4200 - 128 MB (std mem) & 6 GB spooling capacity

hp and open source printing projects

- HP co-leads open source printing project
- Many HP drivers with source code are open source & downloadable
- 4 of top 5 Samba developers work at HP
- www.hp.com/united-states/linux/drivers.html



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HP und RedHat



- CTO Executive und Marketing relationship
- HP ist OEM für Red Hat Linux
- Global Services Agreement
- TAM Agreement für Alpha und ProLiant-Server
- HP Ingenieure bei Redhat
- Über 1000 Mannstunden Server-Tests
- TPC-Benchmark-Test: Oracle/Red Hat/HP
- Erstes Oracle-TPC-Benchmark unter Linux!

HP und SuSE



- CTO Executive und Marketing relationship
- HP im "Board of Directors"
- HP ist OEM für SuSE Linux
- Global Services Agreement
- TAM Agreement für Alpha und ProLiant-Server
- Benchmark-Test: Oracle/SuSE/HP

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<http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert-dl.html>

HP.com - Linux for ProLiant - DL servers - Microsoft Internet Explorer provided by HotBot - Download of HotBot

Address: <http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert-dl.html>

server certification matrix

ProLiant DL servers

Click on the server name for details.
If the server or version of Linux is not located on this matrix, please refer to the "archive" tab below.

☒ certified
☒ supported

Red Hat enterprise servers
CyberC downloads
hp opensource

	Red Hat Linux				United Linux - SuSE Linux	
DL server	RH AS 2.1	RH 8.0	RH 7.3	RH 7.2	UL 1.0	SLES 7
DL320 ATX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL320 SC01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL320 G2 416	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL320 G2 SC01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL360	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL360 G2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL360 G3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL380	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL380 G2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL380 G3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL390	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL390 G2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL390 G3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL560	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DL580	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Done



HP Linux Solutions

- ProLiant Security Server - Check Point Model
- ProLiant content delivery server web caching edition
- High Availability Clustering MC/ServiceGuard, Lifekeeper
- Sendmail – Mail & Messaging
- Covalent – Web Serving
- Ensim – Web hosting
- Oracle 9i RAC
- Oracle E-Business Solution
- Mitel SMB/Enterprise – Network Infrastructure
- Real Networks RealSystem iQ– Media Streaming



HP ProLiant Security Server – Check Point Model

A pre-configured firewall/VPN appliance using:

ProLiant DL320, DL360, DL380 G2 and DL580 servers

Check Point's VPN-1/FireWall-1® NG FP1 software

Rainfinity's RainWall-S high availability software now bundled standard feature

WireX Management GUI

Security hardened version of Linux

HP CarePak installation, implementation and support services

Ordered with 1 part number direct and through Ingram Micro

OPSEC certified

Hochverfügbarkeit mit Linux



Steeleye LifeKeeper

- active/active
- SuSE und Redhat



MC/ServiceGuard

- active/active
- aus HP-UX
- Process-Resource-Manager

Single System Image

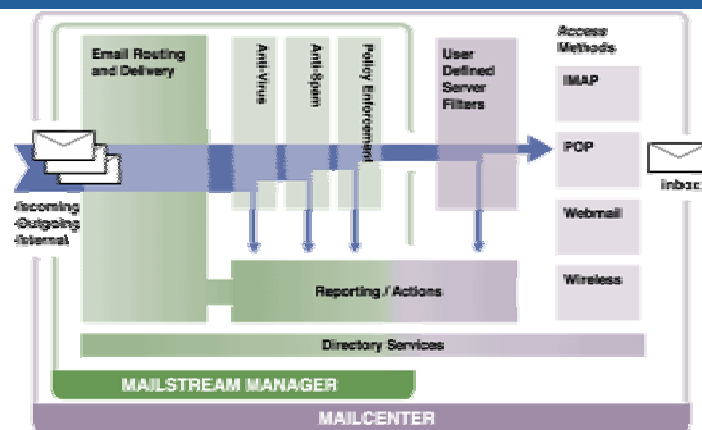
- Open Source
- Cluster wirkt wie ein System
- Entwicklung läuft (Compaq/HP)

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Sendmail








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ProLiant & Linux burns Sun



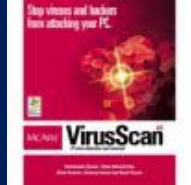
	 Sun Fire 280R	 ProLiant DL380 G3	
	\$16,490	\$6,463	
	 SENDMAIL	 SENDMAIL	
<div style="writing-mode: vertical-rl; transform: rotate(180deg);">performance</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">cost</div>	19 messages / second	30 messages / second	<div style="writing-mode: vertical-rl; transform: rotate(180deg);">cost</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">performance</div>

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Sendmail Mailstream Manager on ProLiant



- Enhanced security and control for Microsoft Exchange, Lotus Domino, Netware Groupwise and other email systems
- Product :
 - Virus scanning with McAfee
 - Content filters
 - Spam
 - Archiving
 - Message Appending
 - Crypto technology
 - Redundancy and load balancing
 - LDAP directory services (optional)



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Sendmail Integrated Mail Suite™ on ProLiant



Complete turnkey, standards-based email solution

- High Availability ProLiant Cluster
- Outlook IMAP/POP mailbox access
- Web and wireless email access
- LDAP server and administration tools
- High Scalability
- MailStream Manager
 - Virus Scanning
 - Content Filters
 - Crypto Technology
 - Redundancy and Load Balancing
 - LDAP Directory Services

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What other Oracle Certified Configurations for Linux do we offer?



Oracle9i Database

- Single Instance DB
- DL580 or ML570

Includes:

- SuSE SLES 7, Red Hat 7.1 OS, or W2K Adv. Server,
- Up to 4ea 700/900 Mhz cpus
- Up to 4 GB Memory
- Base Price \$14-20K



Oracle9i Real Application Clusters

- 2-4 Node DL-580 Cluster

Includes:

- ProLiant DL580 Servers
- SuSE SLES 7 with Red Hat 7.2 Advanced Server (Q3)
- Oracle9i/RAC Preinstalled
- Base Price \$80-250K+



Oracle E-Business Suite

- ProLiant DL360, DL580
- Oracle E-Business Suite Preinstalled
- SuSE Linux (Red Hat Q3)
- Base Price \$21K-40K



Oracle 9iAS

- ProLiant DL360
- Oracle9i/AS Preinstalled
- SuSE Linux (Red Hat Q3)
- Portal, OC4J or WebCache
- Base Price \$3.5K to \$6.5K

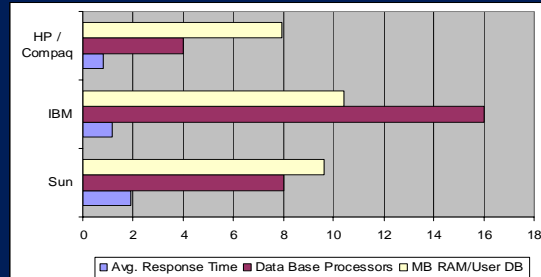
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Oracle 9i RAC Database Clusters



New Oracle Applications Standard Benchmark on Linux!

ORACLE



March 19, 2002, Compaq Computer Corporation (NYSE: CPQ) The Compaq *ProLiant* DL580, using 4 CPUs and 16GB memory on a single-node database once again demonstrated the power and scalability of *ProLiant* platforms by setting a new record on Linux platforms on the Oracle® Applications Standard Benchmark. Compaq achieved **2,072 concurrent users, with an average response time of 0.79 seconds with Oracle Applications Release 11.5.3 and Oracle9i™**. Compaq used 4 *ProLiant* DL580 middle tier servers and 1 DL580 database server. The storage system used was Compaq's Raid Array RA4314R and Smart Array Cluster Storage. With Compaq's proven ability to scale up, Compaq continues to prove that *ProLiant* servers perform in demanding applications in today's Ebusiness economy.

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Pre-installed Oracle PDC for Linux Mid-range to Enterprise

- SuSE SLES 7 and Red Hat 7.2 Advanced Server (Q3)
- Oracle 9.0.1 Today (9.2 in Q3)
- Servers – DL580
 - 2 to 4 servers in cluster
 - Min 2, max 4 cpus per server
 - Memory - min 1Gb, max 4Gb
- External Storage
 - RAID Array 4100 and MSA1000 w/Secure Path (Q3)
 - 12 port AL Switch (not cascaded – not redundant)
- Dedicated Ethernet Interconnect



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HPTC Linux “Beowulf” Services



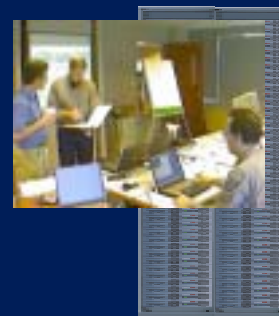
Value Proposition

Quicker integration of technology into customers computing environment, greater systems reliability, efficient application migration, optimal application performance, and knowledge transfer to customer staff resulting in lower total cost of ownership



HPTC services include:

- Systems Architecture
- On-Site Systems Consulting
- On-Site Applications Consulting
- Customer Education
- Program Management
- Alpha and Intel

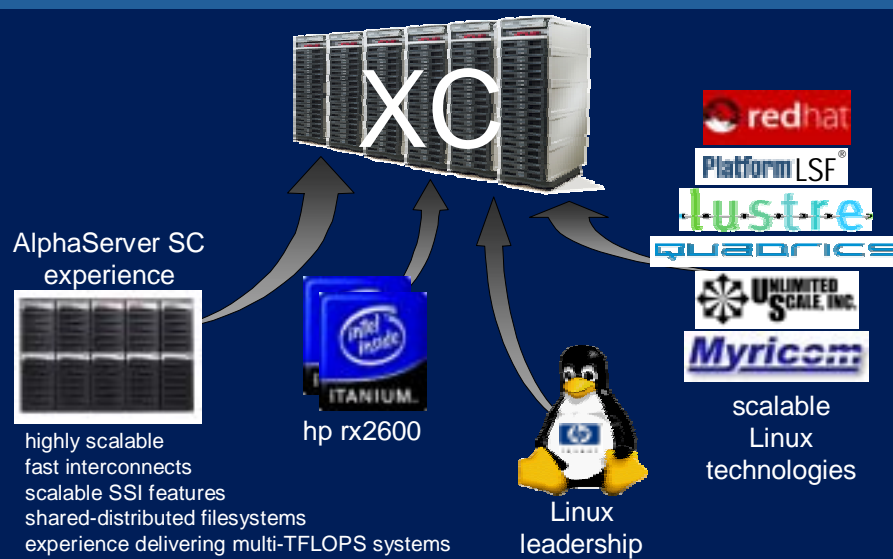


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XC: hp HPTC strengths combined

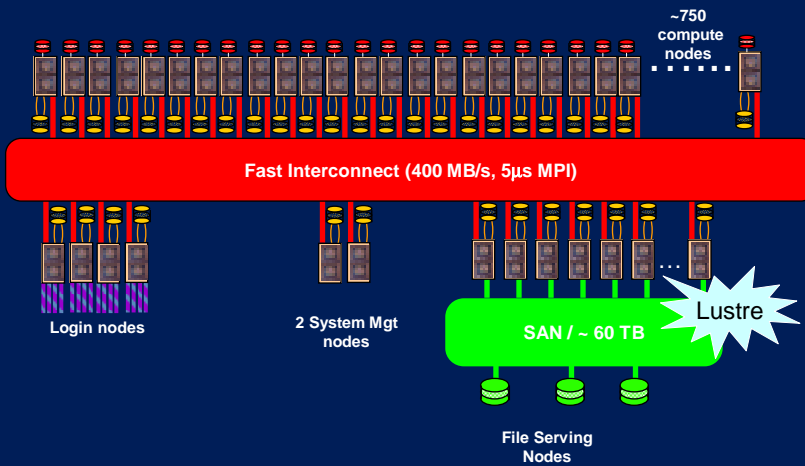


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High Performance Cluster an example configuration (like PNNL)



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QsNet



• Performance Overview

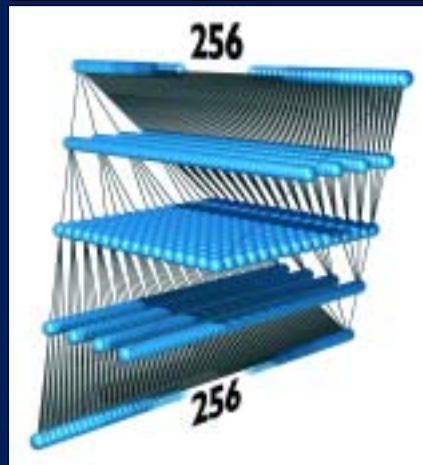
• Latency

- MPI send / receive 5 µsec
- Shmem put / get 2 µsec
- Pipelined put / get 1 µsec

• Bandwidth

- MPI & Shmem 325 MB/sec
- Bidirectional 400 MB/sec


Configuration for 1024 nodes




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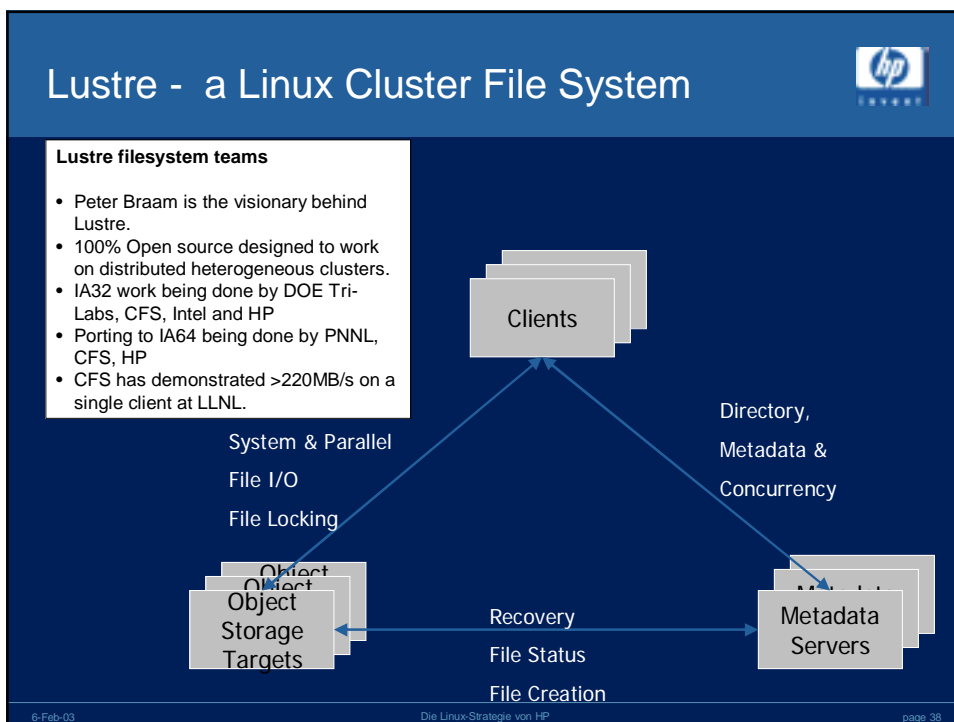




Filesystem

Open Source filesystem funded by
ASCI Path Forward (the National
Laboratories: Livermore, Los
Alamos, Sandia)

- single sharable image
 - single name space
 - parallel-coherent access
- high bandwidth transports
 - GbETN, Quadrics, ...
- very highly scalable
 - scalable bandwidth
 - multiple data servers
 - parallel filesystems
- scalable storage
 - petabytes of disks
- scalable metadata access



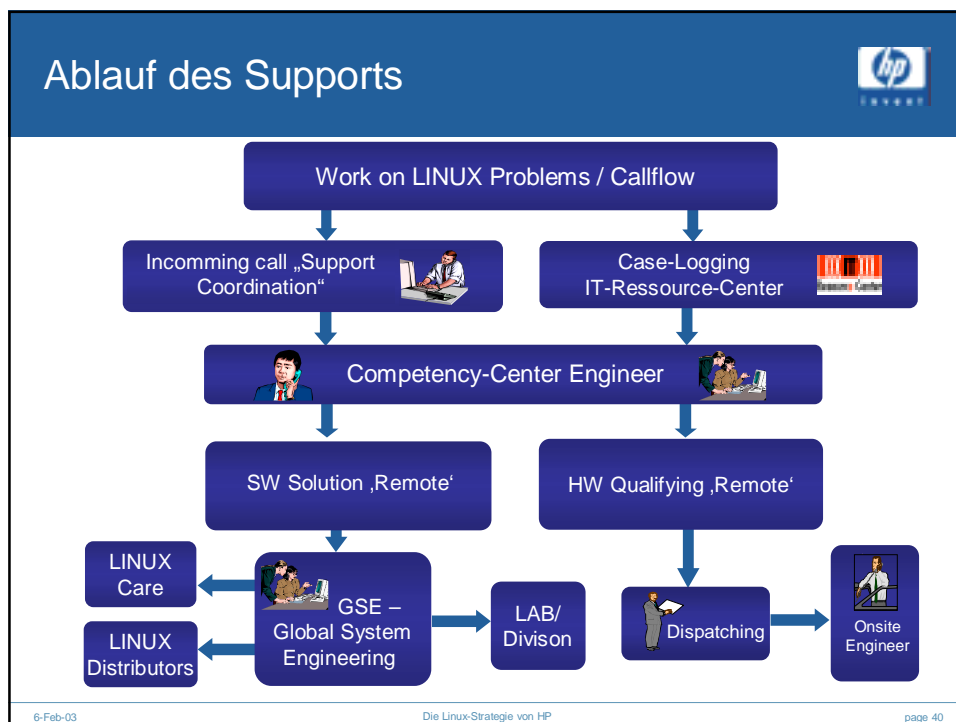
HP Linux Support

- Work on SW/HW Problems 24 hours and 365 day's
- Callback < 15 min or Direct Connect
- Individual Customer Support
- Proactive Support
- HW remote diagnostic
- Technical Support of Customer Engineers

- SuSE
- RedHat
- Debian
- Other distributions can be negotiated

- PIA - Phone In Assistant
- PSS - Personal System Support
- CSS - Critical System Support
- Software delivery

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Was wird unterstützt?



LINUX Core	Network Services	Graphics	Language	Applications
<ul style="list-style-type: none"> • Installation/ Configuration • HW- Support • Kernel • Commands • Filesystem • LVM • Printing • Driver • ServiceGuard 	<ul style="list-style-type: none"> ▪ Installation/ Configuration ▪ ARP/ Berkeley ▪ NFS, NIS, DNS ▪ LDAP ▪ S/N-Security ▪ IPX, IP-Filter ▪ Firewall ▪ Fileservice – Samba 	<ul style="list-style-type: none"> ▪ Installation/ Configuration ▪ 3D Visualize ▪ 2D Graphics ▪ Charactersets ▪ X-Server ▪ Fonts ▪ Desktops – KDE, GNOME ▪ Adapter/Driver 	<ul style="list-style-type: none"> ▪ Compiler ▪ Linker ▪ Shell ▪ Programming ▪ Java ▪ Core-Dump Analyses 	Installation and Configuration

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end-to-end linux solutions



- hp hardware
- hp software
- 3rd party application
- hp service and support

➔

- Oracle Application Server & 9i RAC
- Oracle E-Business – solution suite
- BEA Weblogic – application server
- SteelEye – high availability clustering
- Sendmail – mail & messaging
- Volution Messaging – smb mail & messaging
- InterScan/Immunix – security
- Covalent – web serving
- Ensim – web hosting
- VMware – server consolidation
- SAP R3 – ERP, CRM
- Mitel SMB/Enterprise – network infrastructure
- Veritas Foundation Suite – volume manger, file system
- Check Point edition – security
- “Beowulf” high performance technical computing (HPTC)

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Linux Links



- **Linux und HP**
www.hp.com/linux
- **Linux for ProLiant**
<http://h18000.www1.hp.com/products/servers/linux/>
- **Software Services for Linux**
http://h18005.www1.hp.com/services/software/ss_linux.html
- **Workstations Linux**
<http://www.hp.com/workstations/products/linux/index.html>
- **Printing and imaging**
<http://www.hp.com/united-states/linux/drivers>



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Beispiele aus der Praxis



Amazon
Bertelsmann
U.S. Department of Energy
Dreamworks
Schering

...



Linux based supercomputer

U.S. Department of Energy's
Pacific Northwest National Laboratory

Powerful Computing

HP to provide U.S. Department of Energy one of the world's fastest supercomputers

Hewlett-Packard has announced that the U.S. Department of Energy's Pacific Northwest National Laboratory (PNNL) has ordered a \$24.5 million (US) HP super-computer that will allow researchers to apply computational science to address key scientific challenges. Once fully operational in early 2003, the supercomputer will be one of the fastest and most powerful Linux-based super-computers in the world.

Consisting of **1,400** of the next generation of **Intel Itanium Family Processors**, the new HP supercomputer will have an expected total peak performance of more than **8.3 teraflops** — roughly 8,300 times faster than a current personal computer. Calculations that currently take a month to complete could be done in one day on the new system.

www.hp.com/hpinfo/newsroom/press/16apr02a.htm



Linux based supercomputer

Rice University's Computer and Information
Technology Institute (CITI)

Fastest Supercomputer

HP to help Rice University build terascale cluster

HP and Rice University's Computer and Information Technology Institute (CITI) will build Texas' fastest academic supercomputer, the Rice Terascale Cluster (RTC). Scheduled to come online early next year, RTC will be built based on HP's Intel Itanium 2-based workstations and servers. RTC is expected to be the first computer at a Texas university with a peak performance of **1 teraflops**. More than 30 researchers from fields as diverse as biochemistry, political science, physics and computational engineering have already booked time on RTC.

- 132 HP Workstations zx6000
- 4 HP Servers rx5670
- Red Hat Linux AW and AS
- Myricom Myrinet high-speed interconnect
- HP VA7400 disk array
- HP DS2405 storage devices.

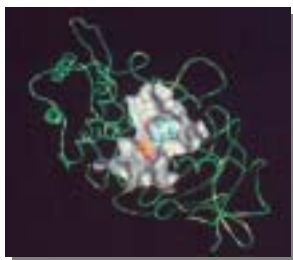
<http://hpnow.corp.hp.com/news/03q1/021119m2.htm>



Ticketverkauf für Sportveranstaltungen: z. B. Bundesliga HSV

Webserverfarm unter Linux
(Redhat)
8 Knoten ProLiant DL380
(demnächst Blade BL10e)

Datenbankserver unter Linux
2 Cluster ProLiant ML530




Schering AG

Chemische Simulation (FLEXX)
32 LP1000r, 64 CPUs PIII
redundant ausgelegt.



DreamWorks



Business Needs

- increased rendering capabilities for improved time to market
- stabilize costs
- maximum flexibility from HW & OS to push state of the art in 3D animation
- Timely, responsive support

Solution

- hp 3D graphics workstations for design
- hp racked Linux servers for rendering
- fully integration hp StorageWorks
- hp pro-active support services 24/7

Benefits



- 15x rendering increase helps deliver films on time
- lowered IT costs provide ability to upgrade every 18 months vs. 5 years
- color calibrated graphics card ensure colors are true on all systems
- Industry leading expert services available 24/7 Price/performance
- ability to migrate to more powerful systems, even in the midst of film's production

“Our industry constantly demands improvements and innovations. With HP's Linux solutions, we fulfill those needs while meeting our aggressive budgeting and scheduling goals”

Ed Leonard
Technology Director

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Reuters

Business Needs

- lower cost of delivering financial services information
- porting, testing and optimization of RMDS for industry standard architecture running Linux
- partner with a proven leader to deliver Linux migration services

Solution

- hp services for Linux migration expertise
- hp ProLiant servers
- go to market partnership for integration, deployment and support
- \$200 million potential for hp over 3 to 5 years

Benefits

- lower costs to RMDS customers
- improved flexibility and performance
- ability to expand seamlessly with customers needs

“We are pleased to bring the Linux version of RMDS to market first on the HP, Intel and Red Hat platform. Working with these industry leaders will ensure that RMDS on Linux provides the stability, performance and integrity that our customers have come to expect from us”

-- Mike Sayers
Chief Technology Officer
Reuters

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Amazon



Business Needs

- reduce computing costs while maintaining a very highly available e-commerce capability
- migration of extensive software to Linux

Solution

- Linux web and application servers
- hp migration, software architecture and deployment services
- proactive on-site hp support team

Benefits

- \$17 Million saved by moving to HP and Linux ... based on SEC filing
- structured software for improved software reliability and maintenance
- Data warehouse platform meets needs today and will scale for future requirements




We team with HP partly because of its great variety of first-tier products, but also because HP has so been so proactive in addressing any challenge that's arisen, from small glitches to major logistical obstacles.

It's onsite team of Linux experts responds immediately to solve any problem in the area they're responsible for."

Jacob Levanon,
Director of Systems
Engineering
Amazon.com

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Why hp & Linux




Linux is approaching a \$2B business for HP

With Linux, HP is:

- #1 in server revenue¹
- #1 in IA32 server market share¹
- #1 in Itanium market share (>80%)¹
- #1 in blades market share¹
- #1 in storage revenue¹
- #1 in SAN installations¹
- #1 in Oracle 9iRAC installations (70% share)
- #1 in SAP installations (50% in 02; 2x nearest competitor)

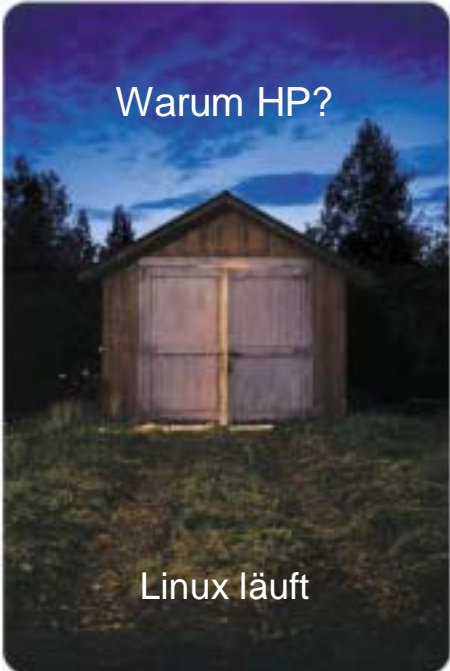
Winning performance

- 1st Linux tpm-C benchmark by any vendor @ 138,300^{2, 6}
- Best 4-way price/performance tpm-C benchmark on Itanium – 80,494 @ \$5.30/tpmC⁶
- Best price/performance at \$5/BBOP EC Perf, J2EE benchmark⁴
- World records for SPECfp and SPECweb99_SSL – Itanium⁵
- HP offers 50% better Sendmail performance than SUN at 40% of the price³




¹ Market data source: IDC 3Q Server tracker, 2Q02 Storage tracker
² 8 4-way ProLiant DL580 systems with Oracle, Red Hat Advanced Server
³ ProLiant vs. Sun/SPARC, see backup slides platform section
⁴ www.theserverside.com/ecperf
⁵ www.specbench.org
⁶ www.tpc.org


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- Klare Aussage zu Open-Source, Linux und Industrie-Standards.
- Produktvielfalt für Linux – Plattformen, Sicherheit, Management, Hochverfügbarkeit, ...
- Beste Linux-Partnerschaften
- Zusammenarbeit von Linux- und UNIX-Bereichen
- Viele Komplettpakete
- Großes Serviceangebot: Design, Implementierung, Optimierung und Support
- Führender und erfahrener Anbieter von End-to-End-Linux-Lösungen

Vorteil von MS Office





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www.hp.com/linux