Capitalize On The Power
Of An IBM Solution

Smarter Collaboration With Lotus Leads To
Better Business Decisions

Smart Collaboration Supports Dispersed Virtual Teams

- No boundaries
- Open standards based

- Lotus Notes and Domino
  - ► Email, calendar and more
- Lotus Symphony
  - ► Productivity applications
- Lotus Sametime
  - ► Instant Messaging with Unified Communications
- Lotus Quickr
  - ► Shared team places
- Lotus Connections
  - ► Expertise and knowledge discovery

Virtual Team

How Can We Make Collaboration Support Smarter?

- ■ Collaborate with anyone at anytime
  - − Different locations
  - − Employees, customers and partners
  - − Share information in standard formats
  - − Minimum client prerequisites (browser only)
- ■ Collaborate in a more effective way
  - − Find right people at the right time
  - − Leverage employee knowledge for the task at hand
  - − Use tools designed for effective collaboration
- ■ Deliver at a lower cost on a dynamic infrastructure

Domino On Power Systems Is The Foundation For Smarter Collaboration

Lotus Symphony

Lotus Notes

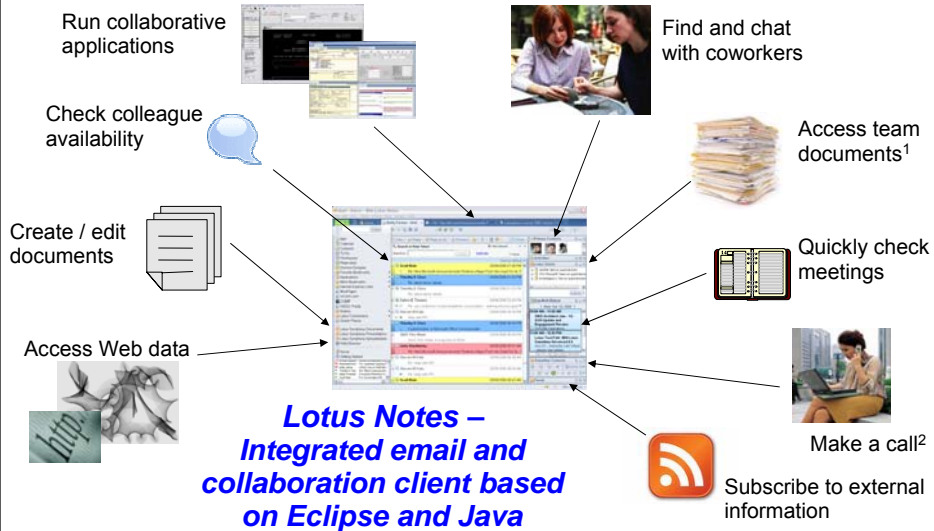*Notes and Symphony support Windows, Linux, and Mac OS*

Lotus Domino

Lotus Notes:
- Extensible rich client for Domino
- Built on open standards (Eclipse RCP, Java)
- Includes Lotus Symphony productivity tools

Lotus Domino:
- Server platform for email, calendar, contacts, and collaborative applications
- Top down enterprise security
- Extensive domain monitoring included
- Supports active/active failover for reduced hardware

Lotus Notes Is Configurable To Meet User Requirements

Run collaborative applications

Check colleague availability

Create / edit documents

Access Web data

Find and chat with coworkers

Access team documents[1]

Quickly check meetings

Make a call[2]

Subscribe to external information

Lotus Notes – Integrated email and collaboration client based on Eclipse and Java
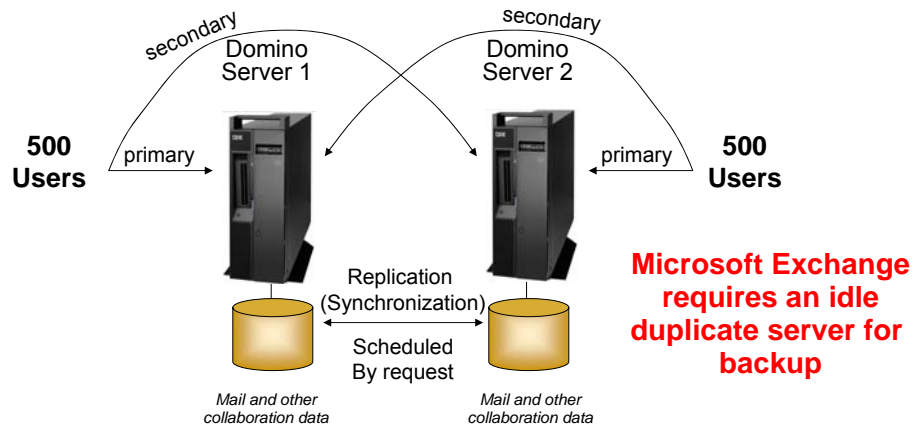
[1]Requires Lotus Quickr
[2]Requires Lotus Sametime Standard Edition license

Domino Clustering For Failover

- Domino clusters share workload (not a cold standby)
- "Active/active" failover

secondary
Domino
Server 1

secondary
Domino
Server 2

500 Users → primary

primary ← **500 Users**

Replication (Synchronization)

Scheduled
By request

Mail and other collaboration data

Mail and other collaboration data

Microsoft Exchange requires an idle duplicate server for backup

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1,000 Users Supported On 2 IBM Power Systems
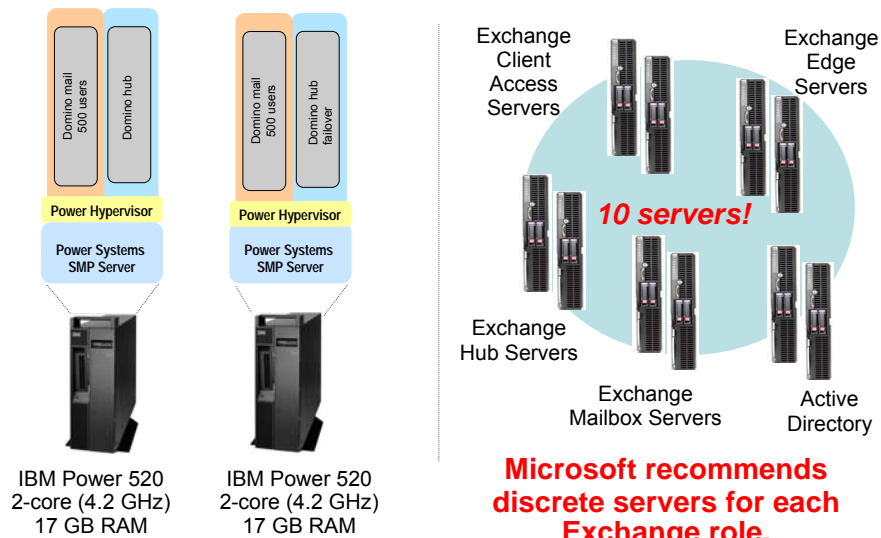
Domino mail 500 users | Domino hub

Power Hypervisor

Power Systems SMP Server

Domino mail 500 users | Domino hub failover

Power Hypervisor

Power Systems SMP Server

IBM Power 520
2-core (4.2 GHz)
17 GB RAM

IBM Power 520
2-core (4.2 GHz)
17 GB RAM

Exchange Client Access Servers

Exchange Edge Servers

10 servers!

Exchange Hub Servers

Exchange Mailbox Servers

Active Directory

Microsoft recommends discrete servers for each Exchange role.

Domino On Power Systems Costs Less Than Exchange On Intel
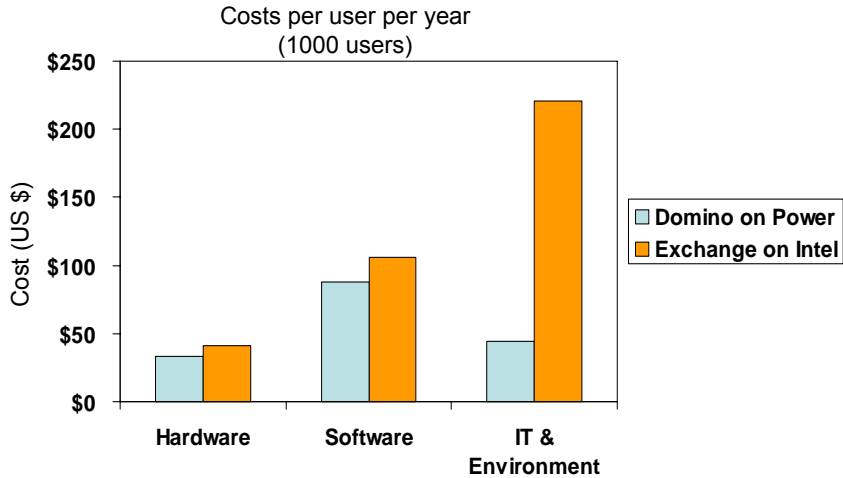
Costs per user per year
(1000 users)

Legend:
- Domino on Power
- Exchange on Intel

Domino On Power Systems Has Lower Total Cost Of Ownership

Three Year TCO Comparison (1,000 Users)

	Lotus Notes and Domino	Microsoft Outlook and Exchange
Server Hardware	$ 97,978 2 IBM Power 520	$ 120,583 10 Intel x86 Servers
Server Software	$ 29,353 Domino Enterprise Server	$ 45,792 Exchange 2007 Enterprise Edition
System Administration, Power, Floor Space*	$ 132,462	$ 662,310
Total Server Costs	**$ 259,793**	**$ 828,685**
Client Costs	$235,500 Lotus Notes	$271,000 Microsoft Outlook, Exchange Standard Ed. Client Access License, Exchange Enterprise Ed. Client Access License
Total	**$ 495,293**	**$ 1,099,685**
Total per user per year	**$ 165**	**$ 367**

* Source IBM internal consolidation project.

Domino Is Designed To Leverage Power Systems Scalability

IBM Collaboration

Microsoft Collaboration

Result: Lower cost per user

IBM Power 520

HP Blade servers

IBM Collaboration takes advantage of Power Systems flexibility and scalability

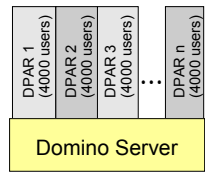***Microsoft Collaboration only runs on Windows and x86 architecture***

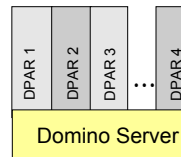## Domino Partitions Support More Users On A Single Power System Server

DPAR 1 (4000 users) DPAR 2 (4000 users) DPAR 3 (4000 users) … DPAR n (4000 users)

Domino Server

Additional Flexibility

Support more users on a single server

If one Domino partition (DPAR) shuts down, the others will continue to operate

DPAR 1 DPAR 2 DPAR 3 … DPAR 4

Domino Server

Support more than one domain on a single server

"A" "B" "C" … "X"

Domino Server
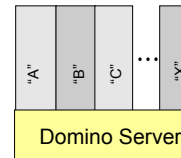
Isolate certain functions on the network for better performance, availability

Mailbox Applications Repl Hub … Work group

Domino Server
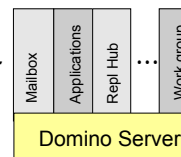
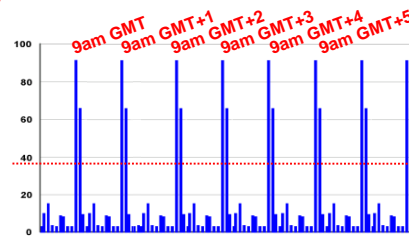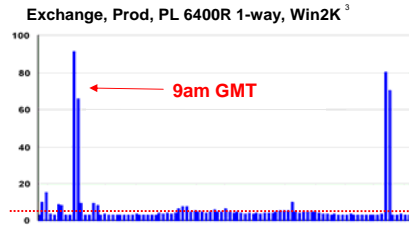## Virtualization Of Email Can Improve System Utilization

- Typical scenario:
  - Case 1 – No virtualization of mailbox servers
    - Result – Heavy load at isolated times; average utilization less than 5%

Exchange supports virtualization, but limitations exist for mailbox servers.[1]
Burton Group recommends mailbox servers be placed on separate physical hardware.[2]

  - Case 2 – Virtualized mailbox servers
   - Result – Utilization rates can increase dramatically

Domino takes full advantage of Power Systems virtualization for greater system utilization.

[1] http://technet.microsoft.com/en-us/library/cc794548.aspx
[2] http://ccsblog.burtongroup.com/collaboration_and_content/2008/08/virtualizing-ex.html
[3] Source: IBM CPO, Case Study

Exchange, Prod, PL 6400R 1-way, Win2K [3]

9am GMT

9am GMT   9am GMT+1   9am GMT+2   9am GMT+3   9am GMT+4   9am GMT+5

Simulated results showing geographically-dispersed email users

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Mail Servers Benefit From The High I/O Bandwidth Of Power Systems

- Email is an I/O-intensive enterprise application
  - ▶ More than database but less than file server

- Power Systems have higher I/O bandwidth than Intel
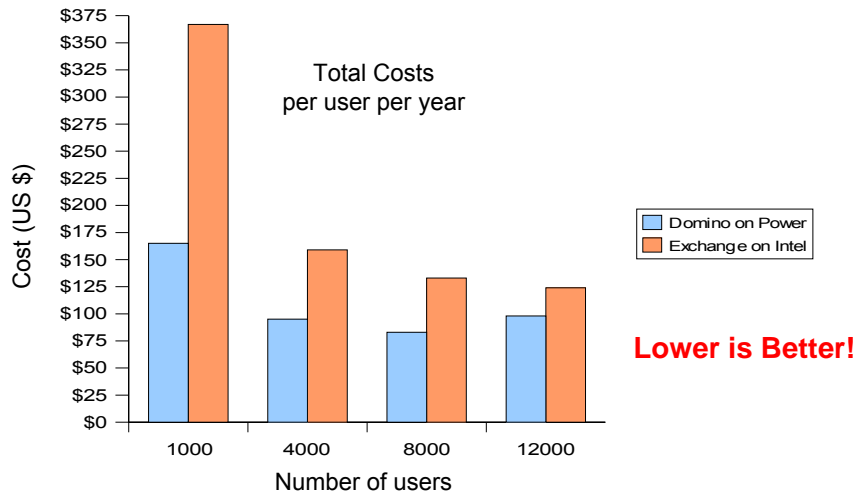 - ▶ Running email on Power Systems is more efficient

IO GB/sec

Intel   P550   P570   P595

Domino supports both Power Systems and Intel servers.
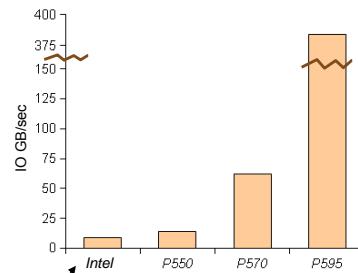
Exchange is limited to running on Intel only.

Source: IBM, HP, Microsoft

Domino On Power Also Costs Less Than Exchange On Intel For Larger Populations

Total Costs
per user per year

Cost (US $)

Legend:
- Domino on Power
- Exchange on Intel

Lower is Better!

Number of users

Lotus Symphony – A *Free* Alternative To Microsoft Office

- Packaged set of editing tools included with Lotus Notes
  - ▶ Also available as standalone product
- Eclipse- and Java-based
- Runs on Windows, Linux, Mac
- Natively supports the OpenDocument Format (ODF) standard
  - ▶ Supports Office 97, 2000, XP, 2003, 2007 (v1.3)
- Includes most common editing features to satisfy majority of business users

Microsoft Office 2007 = $338/user*

Presentation Editor

Document Editor
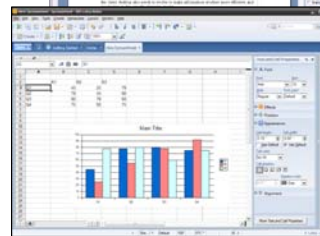
Spreadsheet Editor

* Open pricing, license only

Lotus Sametime Removes Latency And Accelerates Team Reaction Time

Lotus Sametime –
IM, Awareness, Web Conferencing, Audio, Video, Telephony, Community Skill Tap, Chat Rooms

- Instant messaging supports team interaction
  - ▶ Geographically dispersed
- Unified communications enhances with audio, video and telephony
- Extensible, secure and scalable for the enterprise
- Open standards based
  - ▶ Eclipse, Java, SIP

IM Community Gateway

Unified Telephony[1]

Microsoft solution has limited extensibility, promotes 'rip & replace', and costs more.

04 - Smarter Collaboration With Lotus Leads To Better Business Decisions v1.5   [1]Available mid year 2009   17

Lotus Quickr Gives Teams A Place To Work

Seamless document access from common desktop applications

Lotus Quickr

- Share and manage team documents in Quickr team places
- Teams collaborate using documents, lists, calendars, forums, blogs, and wikis
- Standards-based
  - Incorporates REST APIs and RSS/ATOM services
- Scalable for the enterprise

Full place access from Browser

REST   RSS/Atom

Quickr Team and Content Services
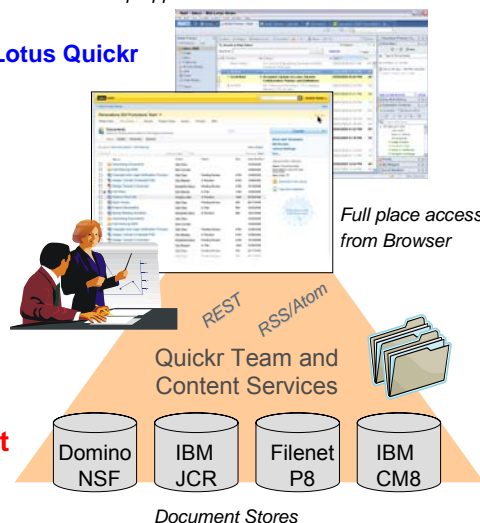
Microsoft Windows SharePoint Services designed for departments only

| Domino NSF | IBM JCR | Filenet P8 | IBM CM8 |

Document Stores

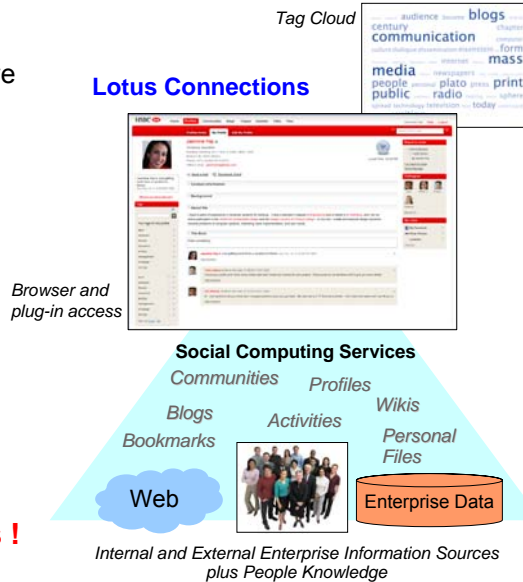04 - Smarter Collaboration With Lotus Leads To Better Business Decisions v1.5   18
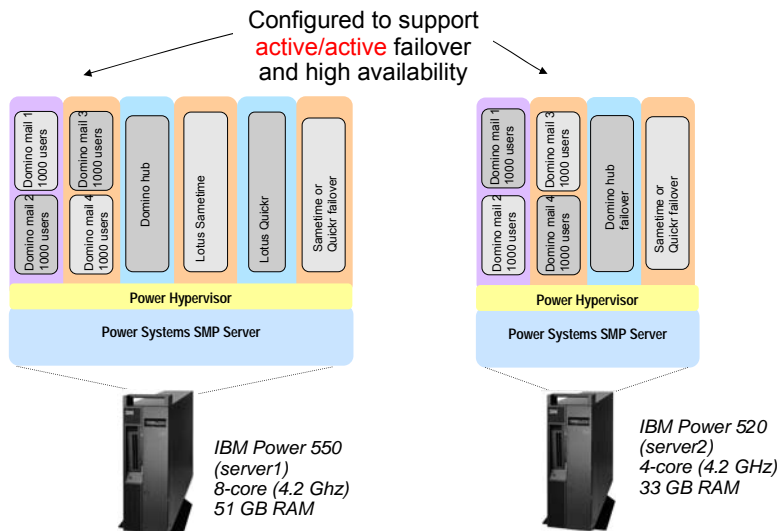
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Lotus Connections Pushes Collaboration To The Next Level

- Enterprise social software to collaborate in a more effective way
  - ▶ Collaborate with the right people at the right time
- Discover expertise in the organization
- Leverage employee knowledge for the task at hand
  - ▶ Tagged data
  - ▶ Wikis, blogs, bookmarks, etc.

Microsoft doesn't have this !

Tag Cloud

Lotus Connections

Browser and plug-in access

Social Computing Services

Communities   *Profiles*

Blogs   *Wikis*

Bookmarks   *Activities*   *Personal Files*

Web   Enterprise Data

Internal and External Enterprise Information Sources plus People Knowledge

Two Entry-level Power Systems Easily Support 8000 IBM Collaboration Users

Configured to support
active/active failover
and high availability

Domino mail 1 1000 users
Domino mail 2 1000 users
Domino mail 3 1000 users
Domino mail 4 1000 users
Domino hub
Lotus Sametime
Lotus Quickr
Sametime or Quickr failover

Power Hypervisor

Power Systems SMP Server

Domino mail 1 1000 users
Domino mail 2 1000 users
Domino mail 3 1000 users
Domino mail 4 1000 users
Domino hub failover
Sametime or Quickr failover

Power Hypervisor

Power Systems SMP Server

IBM Power 550 (server1) 8-core (4.2 Ghz) 51 GB RAM

IBM Power 520 (server2) 4-core (4.2 GHz) 33 GB RAM

Source: IBM SWG CPO

Microsoft Needs 20 Servers To Support The Same Number Of Users

OCS 2007 EE Servers +
SQL Servers

Exchange Client
Access Services
(3 GHz, 4 GB RAM)

SharePoint 2007 Servers
+ SQL Servers

**Microsoft
Collaboration on HP
x86 Servers**

Passive

Exchange Hub
Services
(3 GHz, 4 GB
RAM)

Active

Active
Directory

Exchange Edge Services
(3 GHz, 4 GB RAM)

Exchange Mailbox Services
(3 GHz, 25 GB RAM)

**Active / Passive Failover
(each pair) means 10
servers are idle during
normal operation…**

Source: HP, Microsoft

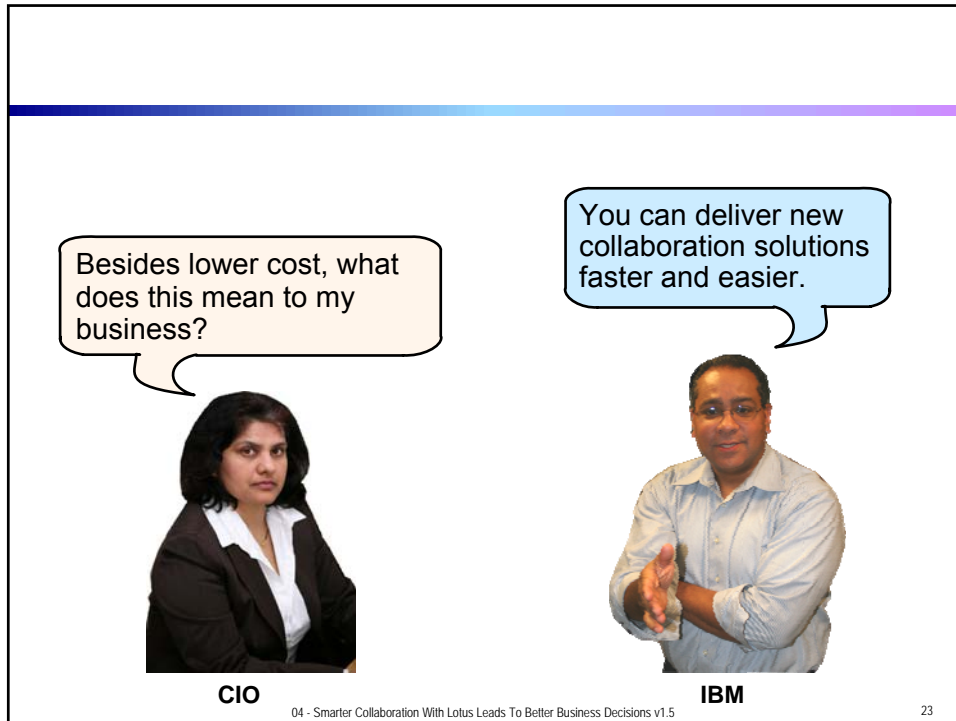## Lotus Collaboration On IBM Power Systems Is A Lower Cost Alternative For The Data Center

Three Year TCO Comparison (8,000 Users)

	Lotus Domino + Lotus Sametime + Lotus Quickr	Microsoft Exchange + Office Communications Server (OCS) + SharePoint Server
Server Hardware	$ 413,128 1 IBM Power 550 1 IBM Power 520	$ 562,512 20 Intel x86 Servers
Server Software	$ 53,384 Domino Enterprise Server	$ 75,522 Exchange 2007 Enterprise Edition Office Communications Server EE Office SharePoint Server 2007SE SQL Server 2005 SE
System Administration, Power, Floor Space*	$ 132,462	$ 1,324,620
Total Server Costs	**$ 598,974**	**$ 1,962,654**
Client Costs	$ 3,154,560 Notes, Symphony, Sametime Advanced, Quickr	$ 4,680,000 Office, Communicator, Exchange Standard + Ent CAL, OCS Std + Ent CAL, MOSS Std CAL
Total	**$ 3,753,534**	**$ 6,642,654**
Total per user per year	**$ 156**	**$ 277**

* Source IBM internal consolidation project.

Besides lower cost, what does this mean to my business?

You can deliver new collaboration solutions faster and easier.

CIO

IBM

Service Oriented Finance Plans A New Product For It's Customers

We are running a beta program for a new product.

Our customers and our planners need to collaborate on this.

Service Oriented Finance Marketing

- Requirements
  - ► Employees will deliver update notices, documentation and gather suggestions and feedback
  - ► Customers will provide feedback and suggestions, and discuss the product with other participants
- Challenges
  - ► Documents must be stored and managed centrally and accessible by all
  - ► Instant communication needed for timely discussions
  - ► Cannot compromise security of internal systems
  - ► Costs for new infrastructure and software must be minimized

Demo: Using The Beta Program Team Place

- Secure access for customers
- Shared documents
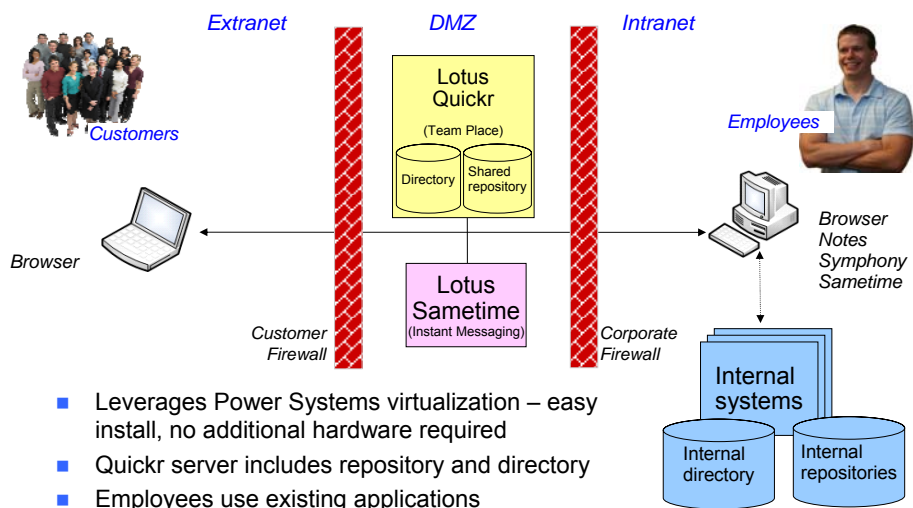- Instant Messaging for real-time Q&A
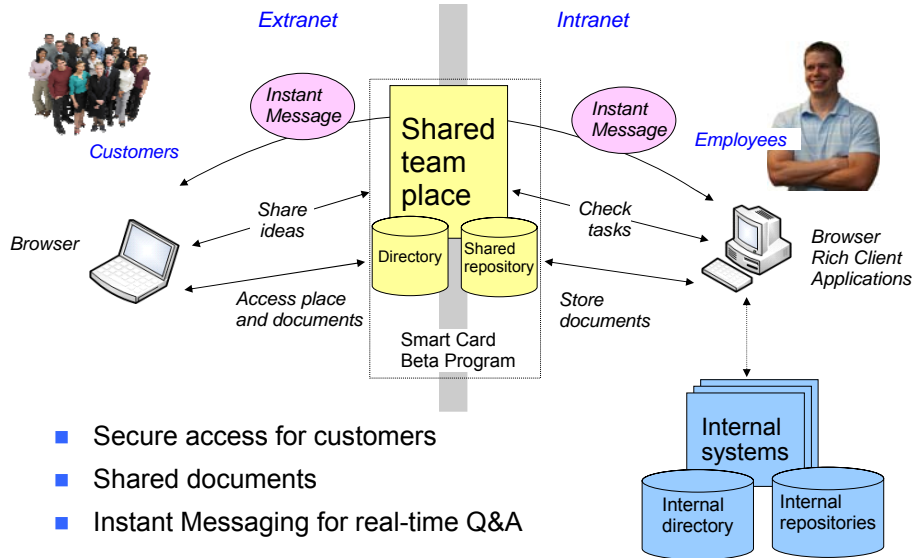
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Creating The Team Place With Lotus Quickr And Sametime Is Straightforward

- Leverages Power Systems virtualization – easy install, no additional hardware required
- Quickr server includes repository and directory
- Employees use existing applications
- Easy customer access via browser

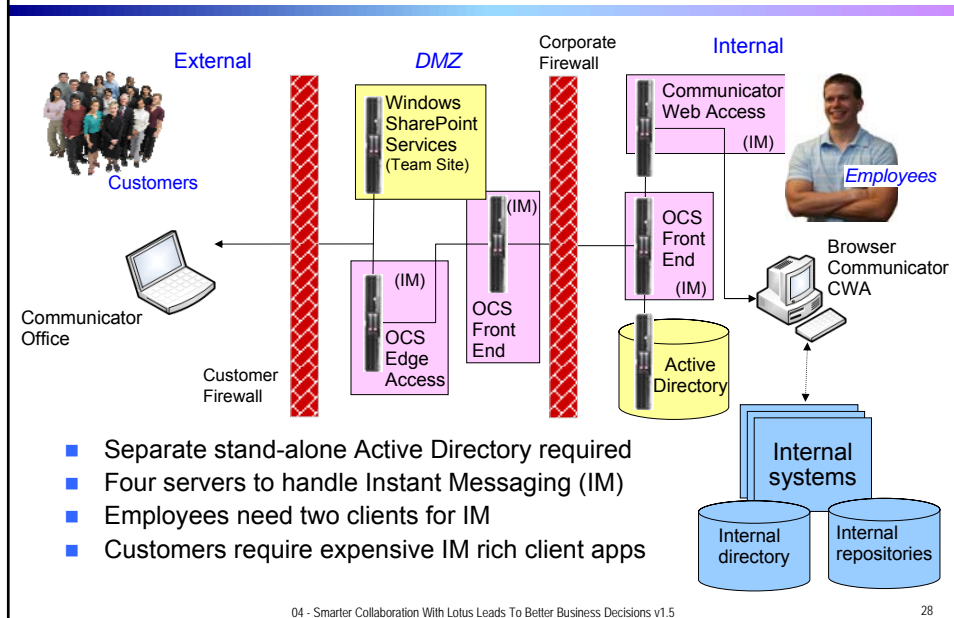04 - Smarter Collaboration With Lotus Leads To Better Business Decisions v1.5

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Leverage Power Systems Partitions To Quickly Deploy

Customers | Extranet | Customer Firewall | VIOS DMZ | DMZ Partition | Corporate Firewall | Intranet Partition | VIOS Intranet | Employees

VNET Packet Router | VNET Packet Router

Power Hypervisor

Power Systems SMP Server

Network Interface Card — DMZ

Network Interface Card — Intranet

No additional hardware is required for this small incremental workload.
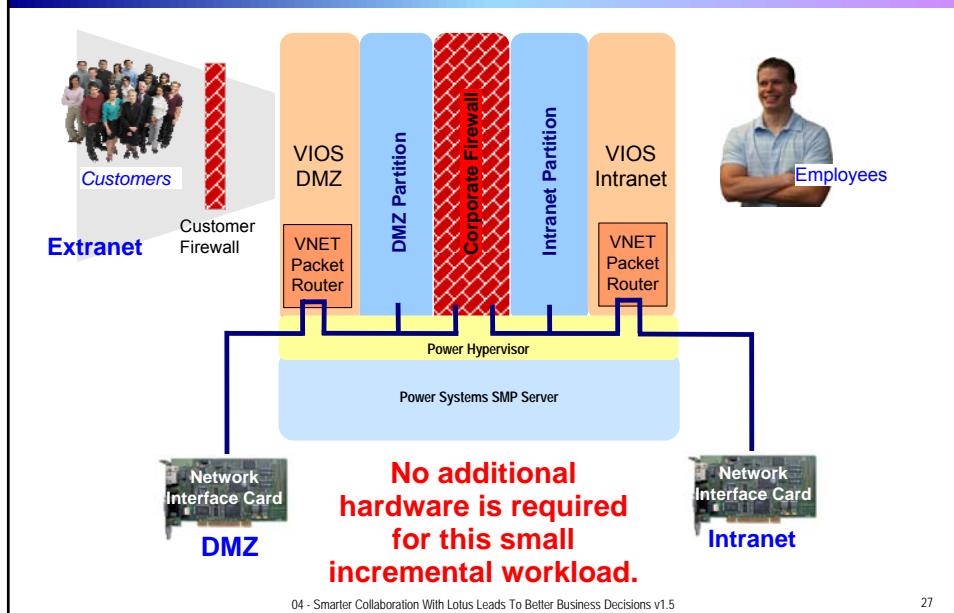
A Microsoft Configuration Would Require At Least 6 Additional x86 Servers

External | DMZ | Corporate Firewall | Internal

Customers | Communicator Web Access (IM) | Employees

Windows SharePoint Services (Team Site)

(IM)

Communicator Office

(IM)

OCS Edge Access

OCS Front End

OCS Front End (IM)

Active Directory

Browser Communicator CWA

Customer Firewall

Internal systems

Internal directory | Internal repositories

- Separate stand-alone Active Directory required
- Four servers to handle Instant Messaging (IM)
- Employees need two clients for IM
- Customers require expensive IM rich client apps

Connect To Customers Faster And Easier Using Lotus Collaboration And Power Systems

- ■ IBM servers installed on existing Power Systems machines
  - ▶ Microsoft required 6 additional servers

- ■ Easy and straightforward installation of 3 simple discrete IBM software packages
  - ▶ Microsoft required 3 times more software installations and took twice as long to complete

- ■ With IBM, employees used existing client software to communicate with customers
  - ▶ With Microsoft, employees needed separate application to communicate with customers

- ■ With IBM, customers have quick and seamless access via browser
  - ▶ With Microsoft, customers required expensive applications to access site and communicate with employees

How Does IBM Smart Collaboration Compare?

Capability	IBM Software Power Systems	ORACLE hp	Microsoft (intel)
Costs less	Yes	No Solution	No
Easy to add new collaboration solution	Yes	No Solution	No
Reliability of Power Systems hardware	Yes	No Solution	No
Enterprise social software	Yes	No Solution	No

Metropolitan Life Insurance Simplified Their IT Infrastructure With Domino And Power Systems

MetLife

By migrating all of MetLife's Domino and Exchange users to a consolidated e-mail infrastructure, they reduced the number of servers by over 50%. The time and expense required to manage the new, environment is expected to decrease substantially.

MetLife is one of the largest insurance and financial services providers in the U.S.

<u>Challenge:</u>
- Multiple e-mail infrastructures meant costs were spiralling out of control

<u>Solution:</u>
- Merged and simplified its messaging architecture on Notes and Domino
- Standardized its messaging infrastructure with a scalable, easy-to-manage server platform – IBM Power Systems servers running AIX