

Lotusphere Comes To You 2010

Lotus knows.

Smarter software for a Smarter Planet.



Deployment and Adoption of Lotus Connections

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Agenda

- Deployment
 - Sizing Considerations
 - Picking the Right Deployment
 - Scaling Limits
 - Deployment Considerations
- Adoption
 - Identify Business Goals
 - Select Pilot Audience
 - Define/Execute an Adoption Plan for the Larger Community
 - Overcome Common Hurdles for Internal Deployments

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How many users does IBM® Lotus® Connections™ need to support?

- Users will drive what sort of deployment is needed to run Connections
- Registered vs Active users
 - Will all users actually use connections every day?
- Will your users be using
 - IBM® Lotus® Notes™ integration?
 - IBM® Lotus® Sametime™ plugins?
 - Other connectors?
 - Feeds in other applications?

What will these users do with Lotus Connections?

- Some things to consider
 - Will Homepage be the entry point?
 - Will Profiles be your corporate white pages?
 - Is Connections replacing one or more existing services?
 - File shares
 - Blogs
 - Wikis
 - Do you have worldwide users who will access Connections 24/7?

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Lotus Connections Functional Topology

Lotus Connections Service

IBM® WebSphere® Application Server 6.1 Network Deployment (including IBM HTTP Server) running on Red Hat® Enterprise Linux ES v4®, Windows® 2003 Server® (Standard or Enterprise), SUSE® Linux Enterprise Server 10®, IBM AIX™ 5.3.0.4 and later

Corporate LDAP Directory

IBM® Tivoli® Directory Server 6, IBM® Lotus® Domino 7.0.2 + Microsoft® Active Directory 2003, Sun® Java™ System Directory Server 5.2®, Novell™ eDirectory 8.8



Browser

Microsoft® Internet Explorer, Mozilla® Firefox, IBM WebSphere Portal

Rich Clients

IBM® Lotus® Notes™, IBM® Lotus® Sametime™, Microsoft® Office™ plug-ins, Microsoft® Sharepoint™

Feed support

Atom based Readers

Custom Applications

Web and Rich Clients



One or more services...

Homepage, Activities, Profiles, Dogear, Blogs, Communities, Wiki, Files



RDMS

IBM DB2 9.1/9, Oracle 10g®, MS SQL Server 2005 Enterprise Edition®



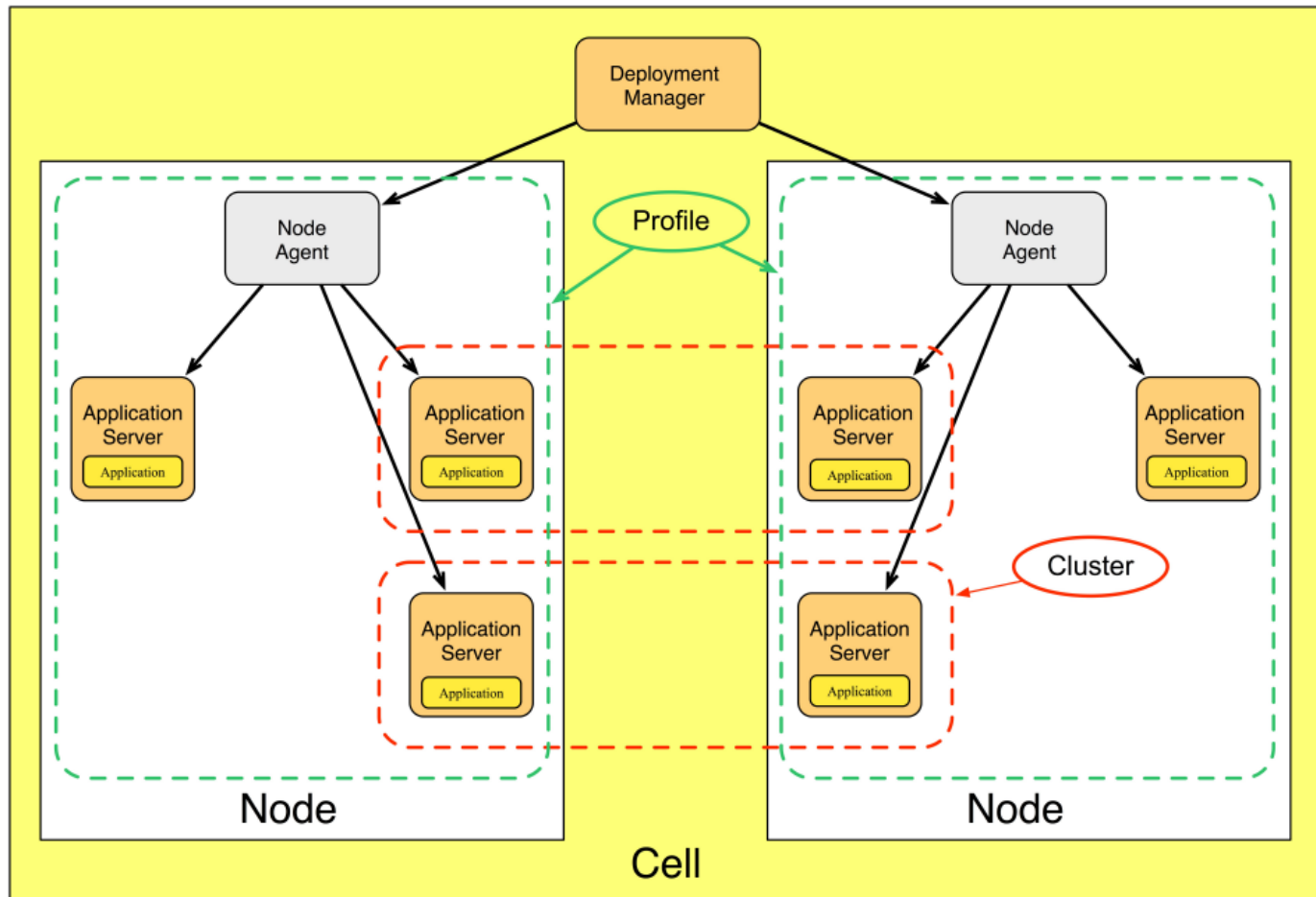
A brief overview of IBM® WebSphere™ & Lotus Connections terminology

- Node – an individual system, either physical or virtual
- Profile – a WebSphere entity similar to a Node
- Application Server – a Java Virtual Machine process
- Application – a Java server application
- Cluster – a group of Servers, all running the same applications
- Cell – an administrative domain of one or more Servers
- Deployment Manager (DM) – the administration Application for a Cell

A brief overview of IBM® WebSphere™ & Lotus Connections terminology

- “Multiple Nodes in a Cell run Servers that contain Applications”
- Lotus Connections is composed of multiple components
 - Activities, Blogs, Profiles, etc are each a component
 - Components are WebSphere Applications

WebSphere & Connections terminology



Which install type to choose?

- Options available in the Lotus Connections installer
 - Standalone
 - Should only be used for single machine / Pilot and POC deployments
 - Advanced Standalone
 - Provided for very specialized install scenarios that are not very common
 - Requires manual configuration to enable all features
 - Network Deployment
 - Recommended for the majority of deployments
 - Deployment Manager significantly eases administration of larger scalable architectures

Which install type to choose?

- Use IBM WebSphere Application Server Network Deployment Edition
 - Regardless of chosen install type
 - Lotus Connections 2.5 depends on key features from Network Deployment Edition, the alternative is a complex set of manual steps to enable integration between Homepage and other features
 - Network Deployment Edition provides centralized administration capabilities and high availability through clustering

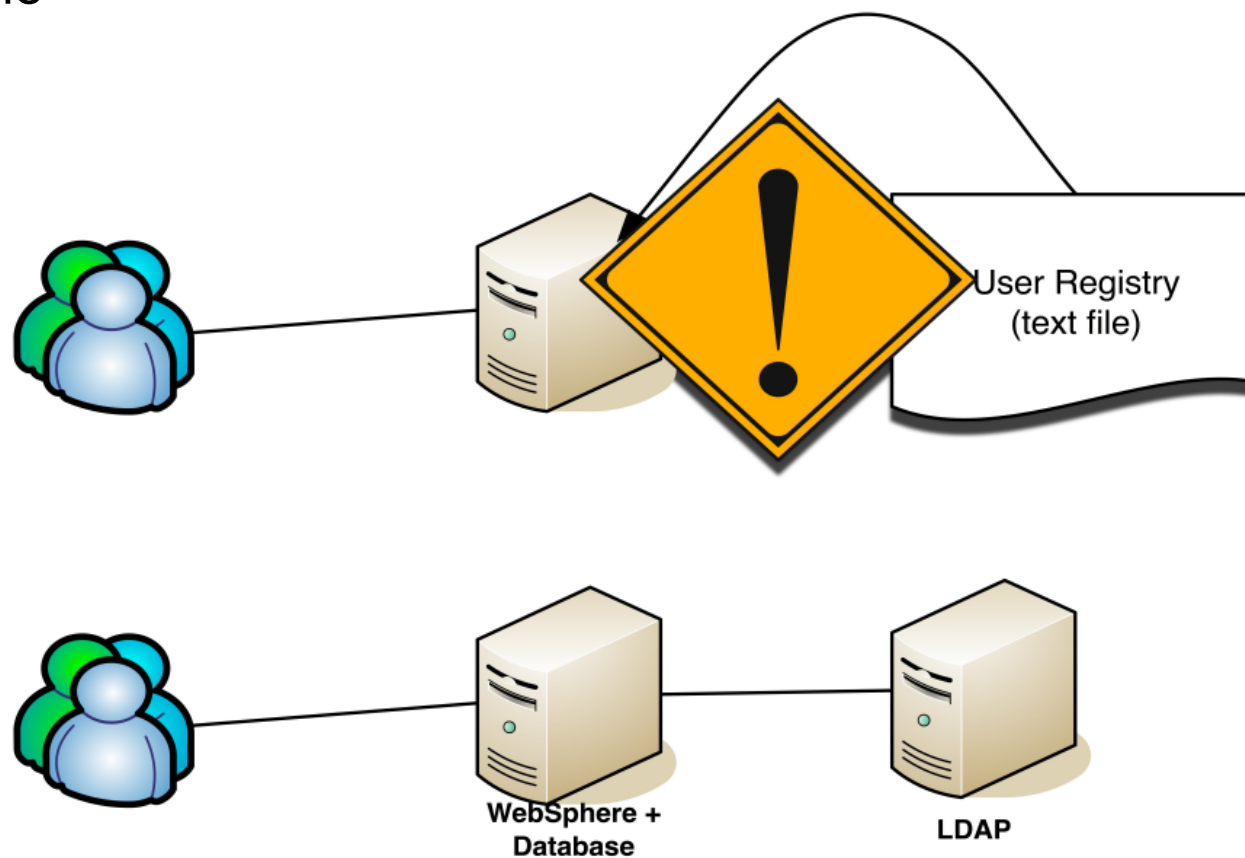
Picking the Right Deployment

- 1,000 users – single machine
- 10,000 users – 1 WebSphere node, 1 database server, reverse proxy cache
- 100,000 users – 1 WebSphere node (multiple servers), 1 database server (multiple instances), reverse proxy cache
- More users? – multiple WebSphere nodes, multiple database servers / larger single database server, reverse proxy cache

Picking the Right Deployment

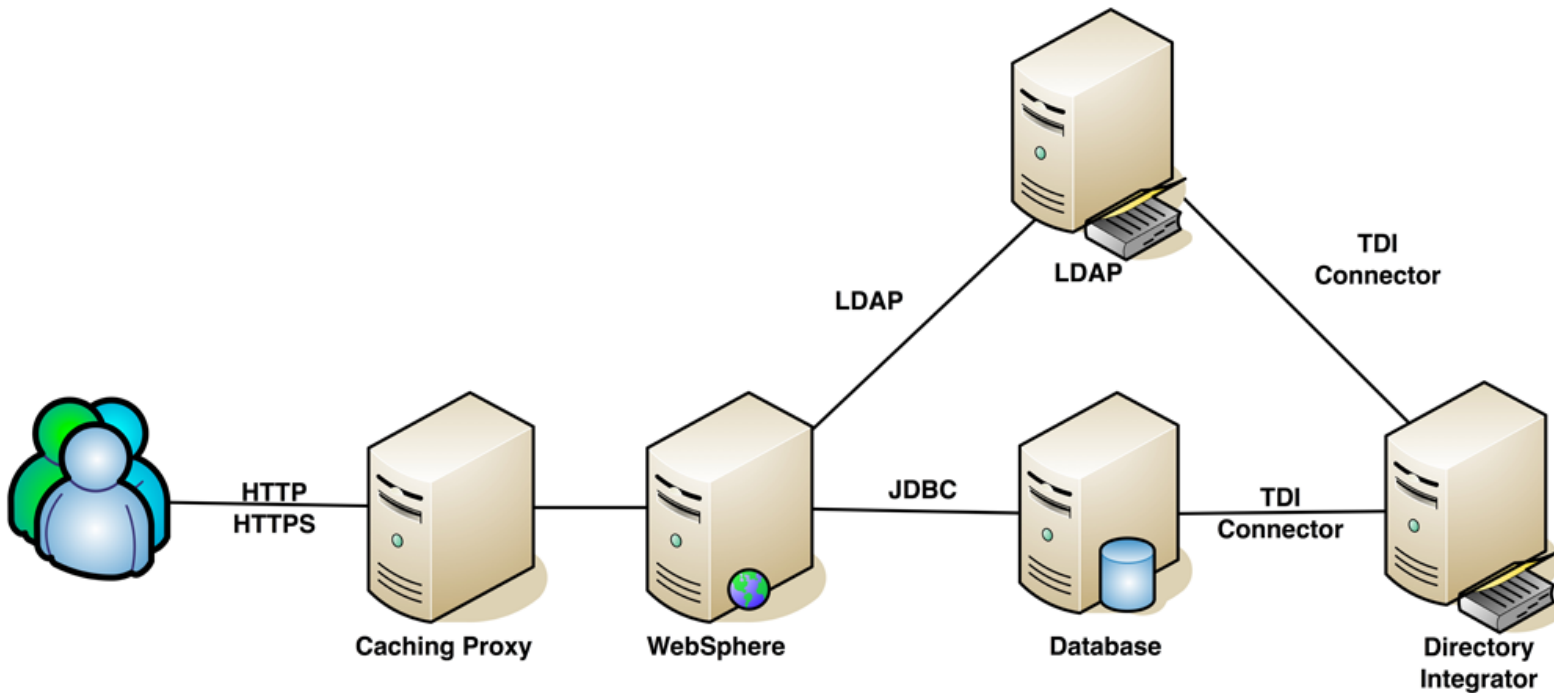
1,000 Users

- single machine



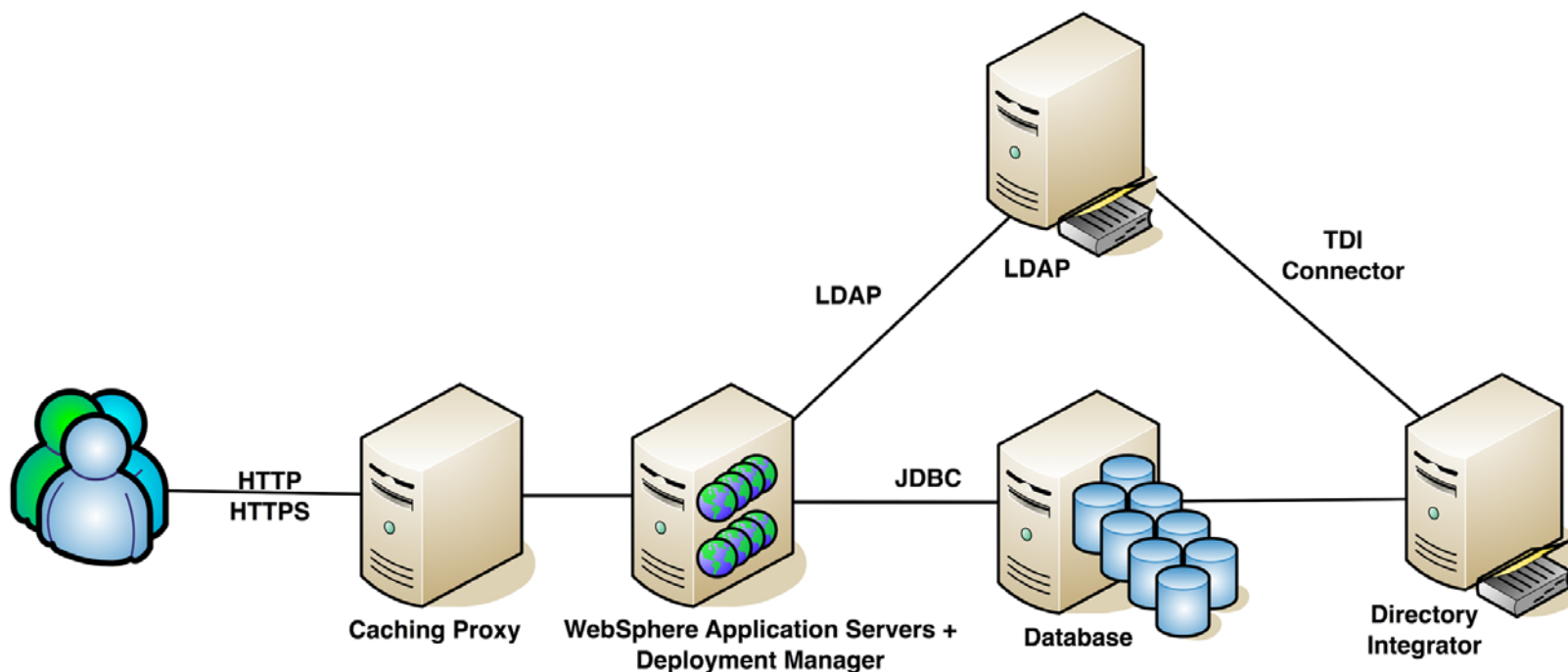
Picking the Right Deployment 10,000 Users

- 1 WebSphere node, 1 database server, caching proxy



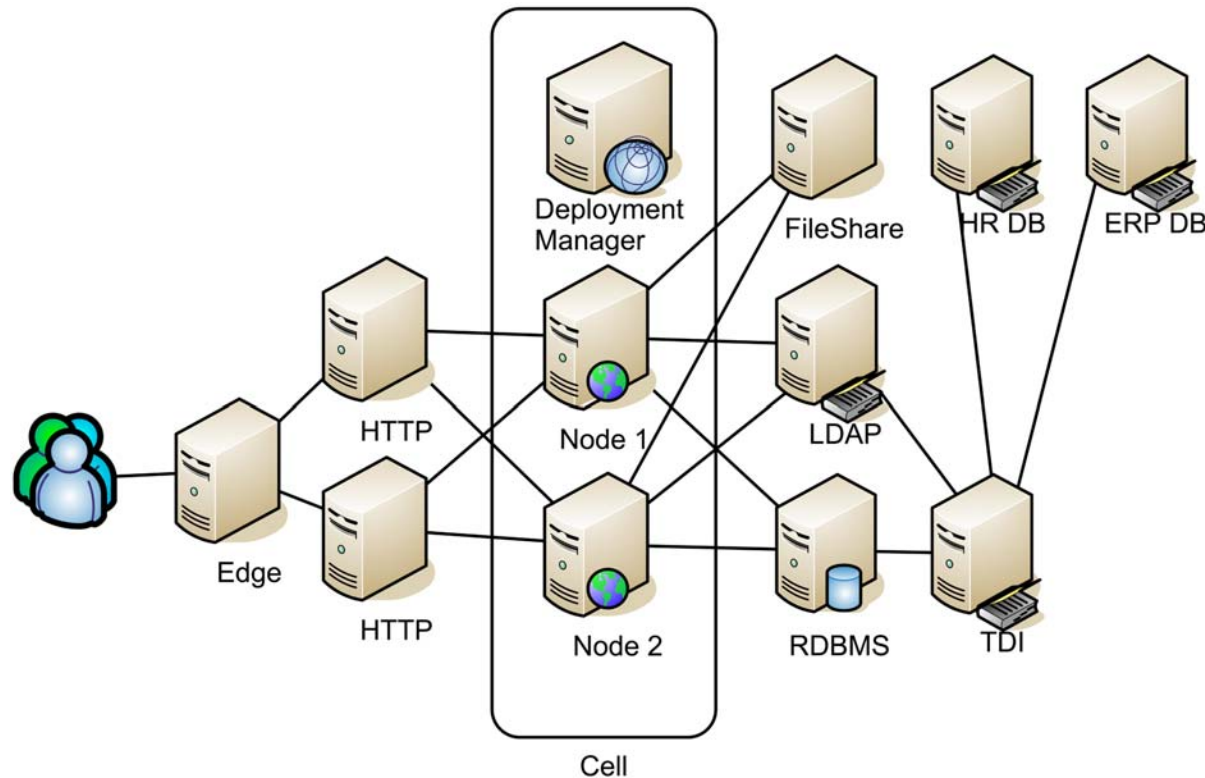
Picking the Right Deployment 100,000 Users

- 1 WebSphere node (multiple servers), 1 database server (multiple instances), caching proxy



Picking the Right Deployment More Than 100,000 Users

- multiple WebSphere nodes, multiple database servers / larger single database server, caching proxy



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What limits sizing? (roughly in order)

- Single JVM memory (32 bit)
- Single database instance memory (32 bit)
- Total system memory
- Disk IO
- Network bandwidth

32 bit JVM Limits

- 32 bit JVM can support a heap size of 1.5GB
 - Single component benchmarks show that 1GB is usually sufficient to use all CPU resources and drive enough DB load to saturate disks
- Multiple components can run in a single JVM, but it is not recommended for non-pilot deployments.
 - What component on what JVM?
 - Easier to just run each in a separate JVM
- Running multiple nodes is required for failover, but is not necessary for capacity except in deployments with more than 100,000 users.

Multiple Servers per Node

- The limit to running multiple WebSphere servers per node will be system memory.
- Always make sure you have enough physical memory to run all JVMs at their maximum size. Avoid paging!
 - 8 GB will be usable, 12 GB or more is better
- Beware virtual machines – make sure your WebSphere nodes pin the memory and CPU of the host.

32 bit Database Instances

- Same rules as WebSphere servers
 - Limited to 2 GB of memory per instance
- Cannot scale with all components in a single instance
 - Most optimal to run an instance per component rather than allocate all components into 2 or 3 instances.
- 8 GB will be usable, 12 GB or more is better
- Running multiple DB servers is probably not necessary except in very large deployments.
 - Database high availability / failover is supported if it is transparent to JDBC

Beware data replication lag time

Disk IO

- Connections is database driven
 - There can be significant disk activity on the DB
- Connections is file driven
 - Activities, Wikis, Files and Bookmarks all store data on the file system
 - All components use disk based full text indexing
- Always use at least a multi-disk RAID array
- Consider NAS / SAN for deployments larger than 10,000 users or 100 GB
 - Separate arrays / LUNs for DB and file store

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Shared File Systems

- Don't forget that the file repositories and full text index need to be accessible to all WebSphere nodes.
- Network share will be a requirement if using WebSphere clustering.
 - NFS v4 for Linux / Unix; Windows Networking for Windows
 - Make sure that bandwidth to this share is sufficient
 - Consider a dedicated file server for deployments larger than 100,000 users
- High Availability
 - Connections can run without file repository but searches, downloads, updates with file content will fail
 - Consider shared filesystems (e.g. GPFS)

Reverse Proxy Cache

- For all deployments larger than 10,000 users, a reverse proxy cache is recommended.
 - Removes load from WebSphere and database servers by serving some content from the cache
 - Internal benchmarks show ~30% cache hit rates
 - Smaller machine than WebSphere systems so it is cheaper than adding another WebSphere node
- Note this is deployed locally to WebSphere, database, etc.
 - This proxy cache server is not at the edge of the network

Reverse Proxy Caching at the Edge

- Consider reverse proxy caches at the edge of the network for worldwide deployments.
 - Proxy server deployed closer to end users, separate from proxy server deployed close to the Connections WebSphere and DB servers
- Not to remove load from the back end, but to speed up end user access.
 - Javascript, CSS, UI images are often the largest page components – serve locally, serve faster
- Does not obviate the need to keep a caching proxy local to the WebSphere and database servers.

Network bandwidth

- Don't forget to plan for increased network bandwidth.
- Especially consider the usage of Files.
 - Do you have email attachment limits to limit network usage?

Other deployment considerations

- HTTP Server
 - Remote or on the WAS Server?
 - For load balancing to multiple WebSphere nodes run remote HTTP server or separate load balancer

- Deployment Manager
 - Separate server?
 - Don't forget security implications

64 Bit

- Official support statement is “tolerate” for 64 bit Windows 2008 / AIX 5.3.
 - They are supported but Connections itself does not exploit of 64 bit. All 64 bit support comes from underlying WebSphere and database infrastructure.
- Performance benchmarks show a 10 – 15% reduction in throughput with 64 bit WebSphere and database servers.
 - Single Websphere application server (JVM) with 6 GB heap rather than multiple 32 bit JVMs using 8GB or more
 - Single database instance with access to all system memory rather than multiple 32 bit instances each with access to only 2 GB of memory
 - Throughput reductions may be offset by the management benefit of only needing one app server / db instance.
Are you running your systems at capacity?

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Identify Business Goals

- Like a trip with a map and destination
 - Where are you going?
 - Which path will you use to get there?
 - How will you know when you have arrived?

- Goals should be business goals, not just usage goals
 - Specific business advantages for Lotus Connections adoption
 - Driven by business needs and culture
 - Goal setting can be iterative
 - With pilot participant group for goal setting

Business Goal – Example

- Facilitate increased communication across teams, business units, and geographies to reduce duplication of effort
- Customer issues
 - Employees weren't talking/knowing to each other
 - Duplication of efforts in different areas
 - Disconnection between the employees in the United States and Asia
- How Lotus Connections met the goal
 - Profiles and Blogs to bridge the gap between groups that weren't communicating with one another
 - Profiles to lookup expertise and make direct connections
 - Blogs to share expertise and knowledge, project in progress
 - Reuse existing knowledge in the business

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Select Pilot Audience

- Who are the right pilot audience?
 - Active and Enthusiastic!
 - Reader : Active Participants : Early Adopters/Evangelists = 90 : 9 : 1
 - Get the “Connectors” involved
- Volunteered groups approached IT with a clear business need for social software
 - LOB leaders or department heads more quickly realize the business value!
- Selected groups with a need to create deeper working relationships and knowledge sharing
 - R&D
 - Sales community
 - Geographically dispersed engineering labs
 - Marketing with product development

Show People Easy Entry Points

- Dogear – share their own bookmarks to others
- Activities – get engaged in collaborative projects
- Profiles – update information and status
- Blogs – post comments of others and then create their own
 - Blogs on their first-use experiences
 - Blogs of Executives/Managers

Advocates' Involvement

- Pre-populate content and promote social experience in your organizational culture
 - People follow examples
- Coach and assist new users
- Envision the target social environment
- “Train the Advocates” sessions
- Podcast series

Conduct Pre-Assessment

- Measure the effects of the new tools on business goals
 - Baseline before and after pilot
 - Find information about people (such as title, reporting structure, contact information)
 - Find people based on skills, background or area of interest
 - Find information related to a topic
 - Find others with a common interest or practice
 - Keep up with a person or topic area
 - Develop new relationships with others within the organization
 - Improve personal productivity or knowledge
 - Share experience with others

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The Next Adoption Plan

- Expand and Advertise
 - Advocates
 - Viral marketing (Word of Mouth)
 - Traditional mass-marketing
 - E-mail announcement
 - A feature story in Intranet homepage

- Track the Usage and Value of Lotus Connections
 - Lotus Connection Components
 - Survey
 - Integration with existing collaboration tools

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Common Hurdles

- Effects on productivity
- Legal issues
- Appropriateness and control
- Adoption Recipe

Effects on Productivity

- Myths:
 - Employees will suddenly abandon their responsibilities and become power bloggers
 - Employees will spend their days adding new colleagues to their networks
- In reality...
 - Lotus Connections enabled employees to become more productive
 - Improved customer service and speed up orientation of new vendors or employees
 - Activities template created for repetitive tasks and common processes
 - Virtually mentoring the more junior person

Legal Issues

- Myths:
 - Purging system in which all socially generated content would be removed within 30 days
 - Limit liability exposure in the event of a lawsuit
- In reality...
 - Main objectives with social software
 - Capture the knowledge of their aging workforce in the form of blogs and social bookmarks
 - Encourage reuse of existing knowledge
 - Purging content frequently would defeat the purpose of the system
 - Apply use policy and code of compliance that used in email

Appropriateness and Control

- Myths:
 - No required approval cycle or controls to restrict content
- In reality...
 - Nothing is anonymous
 - Requires authentication to post content
 - Social computing policies
 - Flagging of inappropriate content by participants and consumers (no corporate watchdog)

Adoption Recipes

- Publicize Lotus Connections
 - Marketing plan
 - Combine population session with corporate events attended by most of the employees
- Give your users a helping hand
 - Short podcasts “How-To”
 - Brief guide to Lotus Connections as quick reference for getting started
 - Don't let users feel stuck, lost, frustrated
- Get sticky to Lotus Connections
 - Allowing employees to share both work and nonwork topics grows strong bonds
 - Strengthen existing relationships and discover new contacts
 - Draw new users in and keeps them coming back to Lotus Connections

Thank You



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Smarter software for a Smarter Planet.