Spencer Harbar

Mythbusters

Debunking Common SharePoint Farm Misconceptions

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About the speaker…

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  - Microsoft Certified Master | SharePoint 2007
  - Microsoft Certified Master | SharePoint Instructor & Author
  - Most Valuable Professional | SharePoint Server
  - SharePoint Patterns & Practices Advisory Board Member
  - 15 years in Enterprise IT
  - ISPA Board Member
  - Enterprise Architect working with Microsoft's largest customers deploying Office SharePoint Server 2007.

Microsoft CERTIFIED Master

SDN SOFTWARE DEVELOPMENT NETWORK

MVP Microsoft Most Valuable Professional

Agenda

- Common SharePoint Myths
  - Farm Topologies
  - Shared Service Providers
  - Authentication
  - Global Deployments
  - High Availability
  - Agile Farms
- SharePoint “Magic Numbers”

FARM TOPOLOGIES

Farm Topologies (Roles)

- "Web Front End" (WFE)
  - Terminology hangover from previous version
  - WSS Web Application Service
  - Here to stay (unfortunately!)
- Functional Decomposition of:
  - WSS (Help) Search
  - Search Index & Search Query
  - Excel Services
  - InfoPath Forms Services
  - Document Conversions
  - Content Deployment

Farm Topologies

- "No Topology Restrictions"
  - No enforced restrictions
  - Plenty of real world restrictions, for example
    - Number of "WFE"s
    - Number of Web Applications
    - Topology Models remain appropriate
- "Load balancing" of:
  - Search Query Servers
  - Excel Calculation Services

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Farm Topologies (Search)

- "Make the Index Server a 'Crawl Front End'"
  - Not always a smart idea!
  - Dedicated Crawl Front Ends are a good idea
  - Indexer resources can easily become saturated

- "Always host Search Query on the WFEs"
  - Each WFE == propagated indexes
  - Depends on usage patterns

Functional Decomposition

DEMONSTRATION

SHARED SERVICES

Shared Service Providers (SSPs)

- "SSPs are implemented as Web Applications"
  - Many elements make up a SSP
  - Web Application is for administration only
- "SSP Admin can be provisioned on dedicated servers"
  - It's a Web Application!
  - Therefore deployed to every "WFE"

Shared Service Providers (SSPs)

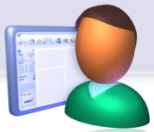
Office Server
Web Services (IIS)

SSP DB

SSP Search DB

SharedServices1 (Web App)

Content DB



My Site Host (Web App)

Search Index

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Shared Service Provider Components.

DEMONSTRATION

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AUTHENTICATION

Authentication

- "Kerberos makes SharePoint faster"
  - It avoids Secure Channel (NTLM) bottlenecks
  - Kerberos is more scalable
  - Performance benefit generally for long user sessions
  - And multi-domain environments
  - Environment Specific
- "One DC for every three WFEs"
  - Old wives tale, from Exchange!
  - It depends upon your authentication scenario
  - Placement of DCs is far more important

GLOBAL DEPLOYMENTS & HIGH AVAILABILITY

Global Deployments

- "SharePoint can't do geo-distribution"
  - Plenty of options
  - Consider carefully why you may need them
  - SharePoint Online
- "SharePoint doesn't work over the WAN"
  - A slow WAN link problem is a slow WAN link problem!
  - Not a SharePoint problem

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High Availability

- "Web Gardens give you better performance"
  - Don't use them (yet!)
  - BLOB Cache & other managed resources
- "A single Farm can host 100s of Web Apps"
  - ~20 Web Applications per Farm is reasonable
  - SharePoint loves RAM
  - Request Routing or DNS increases operational service burden considerably

High Availability

- "Web Apps can be deployed to specific servers in a Farm"
  - Request Routing or DNS increases operational service burden considerably
  - There is nothing wrong with multiple farms

AGILE FARMS

Your Farm Topology is NOT done!

- SharePoint Deployments need to be agile
- Your day one topology…
  - May not be suitable in the future
  - Adoption patterns
  - Feature implementation
  - Usage patterns
- Plan for an agile farm
  - Assume your topology will change over lifespan
  - Seriously consider virtualisation

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Agile Farms

- Consider future versions
- Operations Management
  - Patching, Reporting etc
- Don’t get stuck with a single Farm
  - “Empty” Parent insulates you
- The “hidden cost” of SharePoint
  - Anti-Virus, Backup & Restore, Systems Management, Usage Anaylsis

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SCALABILITY

“SharePoint can’t scale”

- average daily load throughput of:
  - ~5 million TIFF images
  - ~1.9 million Microsoft Office documents.
- 40+ million content items were loaded into SharePoint in only 13 days
- Average content database size of:
  - 200.65 GB for Divisional Site Collections
  - 137.60 GB for departmental site collections
  - 539 GB for the search database
- Over 5TB content storage with capacity for double

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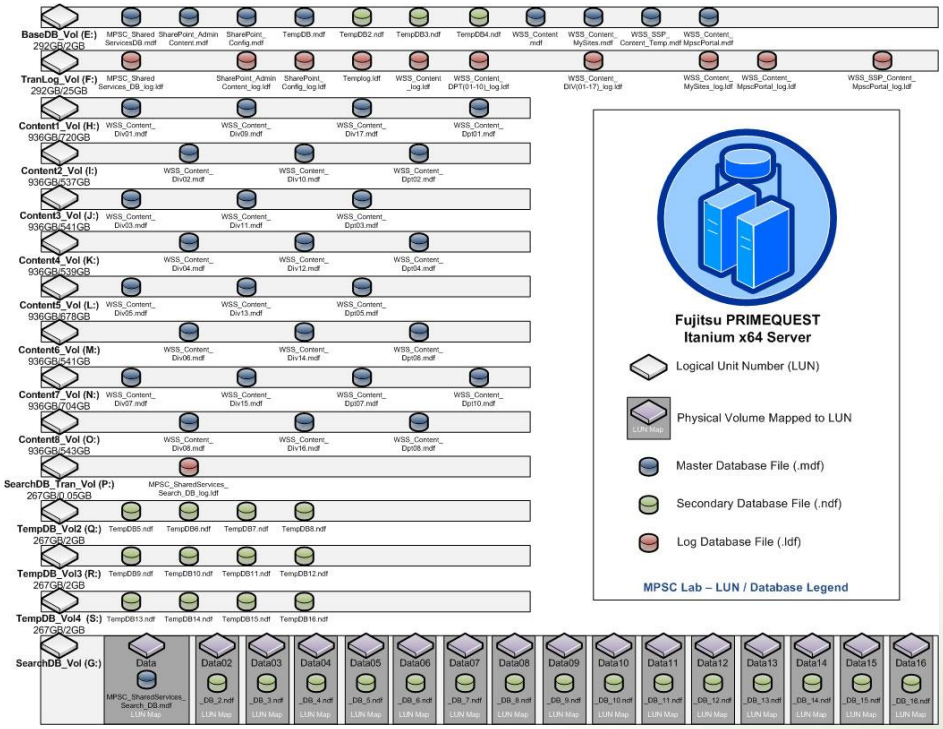
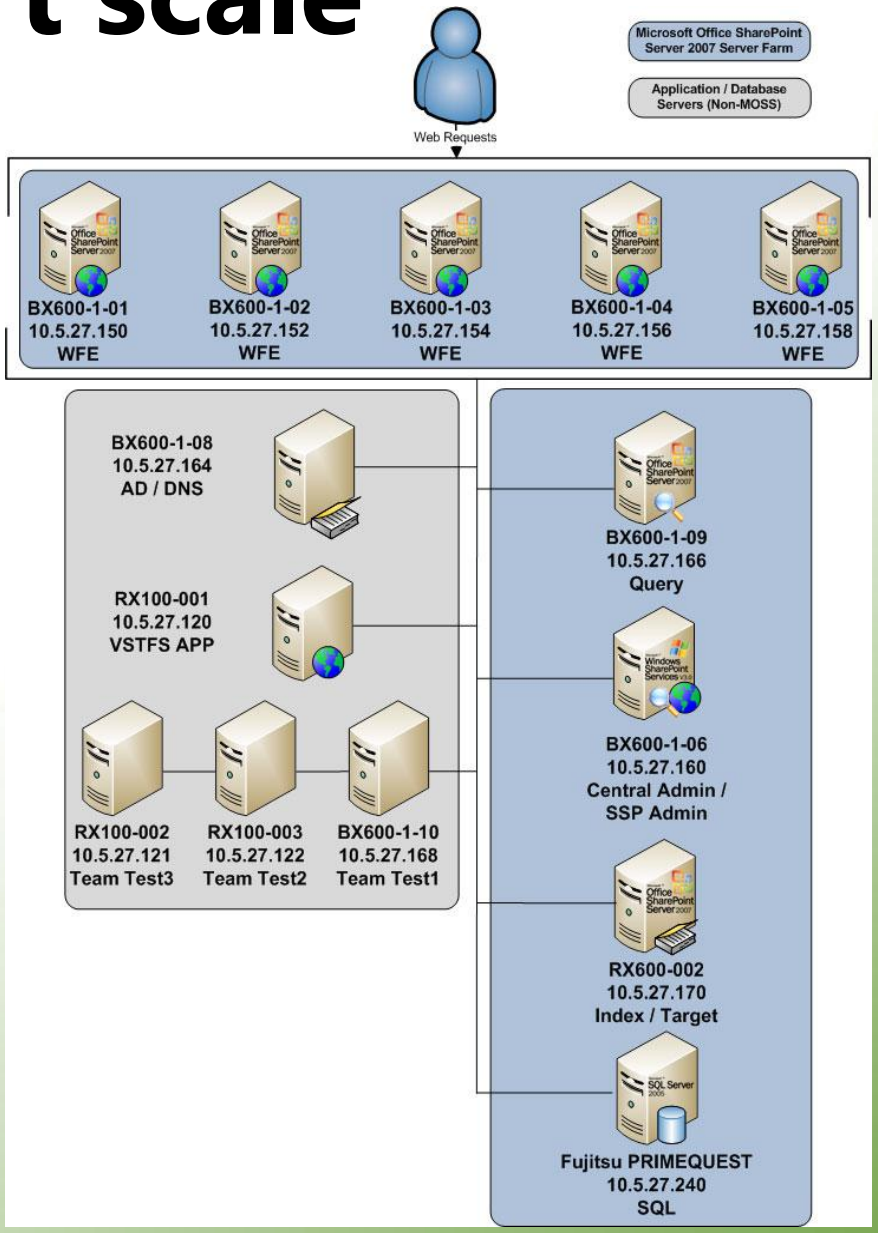
“SharePoint can’t scale”





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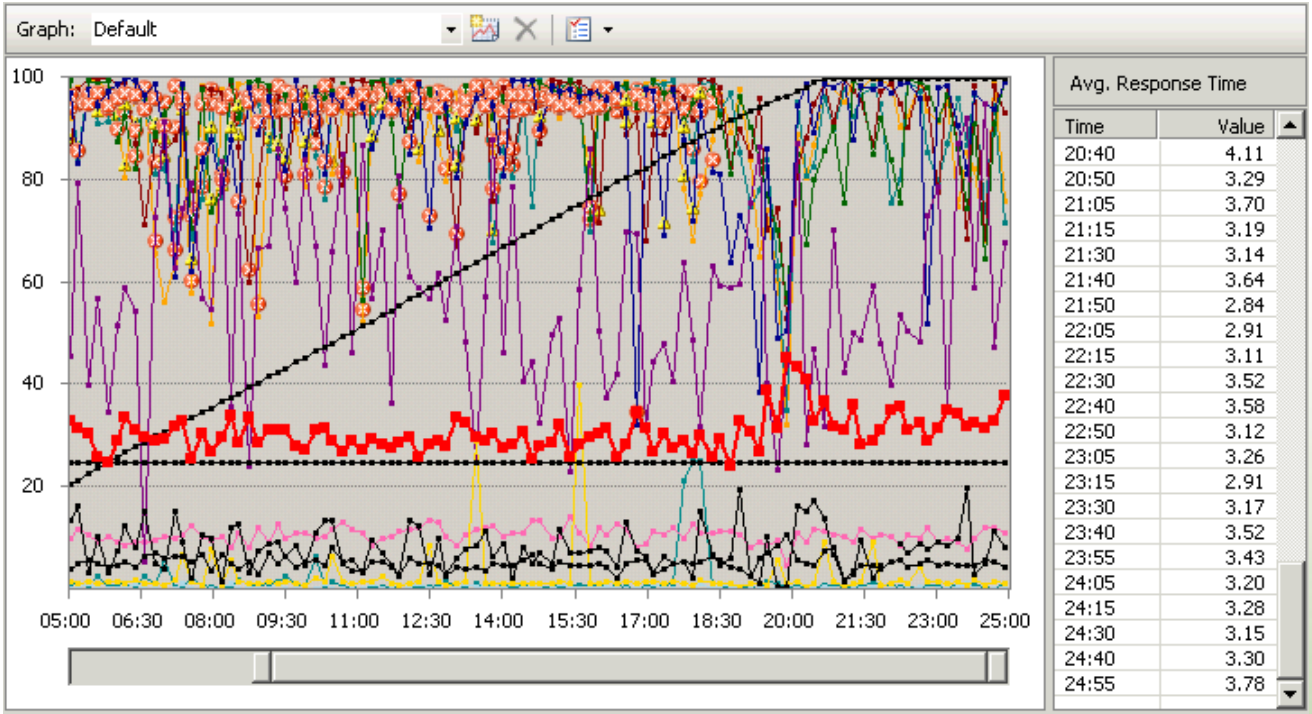
“SharePoint can’t scale”



Counter	Instance	Category	Computer	Color	Range	Min	Max	Avg	Last
Avg. Response Time	_Total	LoadTe...	FCS-RX100-001		10	2.38	5.14	3.08	3.78
% Processor Time	_Total	Processor	FCS-BX600-1-01		100	32	100	90	76
% Processor Time	_Total	Processor	FCS-BX600-1-02		100	35	100	90	72
% Processor Time	_Total	Processor	FCS-BX600-1-03		100	52	100	91	93
% Processor Time	_Total	Processor	FCS-BX600-1-04		100	41	100	92	100
% Processor Time	_Total	Processor	FCS-BX600-1-05		100	20	100	89	100
% Processor Time	_Total	Processor	FCS-BX600-1-09		100	0.1	25.4	1.5	1.1
% Processor Time	_Total	Processor	FCS-BX600-1-06		100	0.00	1.41	0.23	0.08
% Processor Time	_Total	Processor	FCS-BX600-1-08		100	4.7	15.0	10.6	11.2
% Processor Time	_Total	Processor	SAP_WIN		100	5.5	95.3	57.5	67.9
Avg. Disk Queue Length	_Total	Physica...	SAP_WIN		100	0.4	40.2	2.5	1.2
User Load	Phase2Load	LoadTe...	FCS-RX100-001		10000	1,750	2,500	2,496	2,500
Total Requests	_Total	LoadTe...	FCS-RX100-001		100...	206,387	1,180,...	705,797	1,176,781
Avg. Response Time	results-a...	LoadTe...	FCS-RX100-001		100	1.9	16.3	5.3	4.2
Avg. Response Time	modify-a...	LoadTe...	FCS-RX100-001		100	0.5	36.9	8.7	8.5

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technet.microsoft.com/en-us/library/cc262067.aspx

SHAREPOINT “MAGIC NUMBERS”

SharePoint “Magic Numbers”

- “How many XXXX can I have in my SharePoint?”

- Plan for Software Boundaries (TechNet)
  - technet.microsoft.com/en-us/library/cc262787.aspx

SharePoint “Magic Numbers”

- There are only **guidelines** for acceptable performance

- Such guidelines are based upon test scenarios
  - 1 thru 1 Database Server
  - 1 thru 8 Web Servers
    - Team Sites (55%), Doc Workspace (20%), Meeting Workspace (10%), Blog (10%), Wiki (5%)
  - Other scenarios coming soon
  - Often refined based on customer deployments

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Logical Architecture "Magic Numbers"

Logical architecture object	Guidelines for acceptable performance
Shared Services Provider (SSP)	3 per farm (20 per farm maximum)
Zone	5* per farm
Web application	99 per SSP
Internet Information Services (IIS) application pool	8 per Web server
Site collection	50,000 per Web application
Content database	100 per Web application
Site collection	50,000 per database
Content Sources (SSP)	500
Start Addresses (Content Source)	500

Example "Magic Numbers"

Site object	Guidelines for acceptable performance	Scope of impact when performance degrades
Site collection	50,000 per content database	Farm
Site collection	150,000 per Web application	Farm
Web site	250,000 per site collection	Site collection
Subsite	2,000 per Web site	Site view
Document	5 million per library	Library
Item	2,000 per view	List view
Document file size	50MB (2GB max*)	Library, file save performance
List	2,000 per Web site	List view
Field type	256 per list	List view
Column	2,000 per document library 4,096 per list	Library and list view
Web Part	50 per page	Page
Managed path	20 per Web application	Web application

There are NO magic numbers!

- Successful Solutions Architecture is basically two things:
  - Compromise
  - Reduction of Complexity

- Evaluate solution holistically ensuring adequate compromises.
- Test and monitor as you build and deploy your solution.
- Re-design the solution to ensure that you do not exceed capacity guidelines.

- Test, test, test!

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Q&A / Discussion

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Thank You!

Please complete your evaluations

It makes us better next time!

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