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Midwest Lotus User Group Conference 2011
Expanding Your Community Through Social Collaboration

Got Problems? Let's Do a Health Check!

Session: IA104

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About Luis Guirigay

Engagement Manager at PSC Group, LLC – Based in Schaumburg, IL but supporting customers everywhere.. Even Africa

12+ Years of Experience working with IBM Software performing Health Checks, Upgrades, Security Audits, Deployments, Web and Client Development, etc...

Published Author - IBM Redbooks

Implementing IBM Lotus Domino 7 for i5/OS

Preparing for and Tuning the SQL Query Engine on DB2 for i5/OS

Deploying IBM Workplace Collaboration Services on the IBM System i5 Platform

IBM Certified Developer

Lotus Notes and Domino 5, 6, 7, 8, 8.5

Lotus Workflow 3

IBM Certified Administrator

IBM Lotus Quickr 8.5 (Domino)

IBM Sametime 7.5, 8 and 8.5

IBM Connections 2.0 and 2.5

IBM WebSphere Portal 6.0, 6.1 and 7.0

IBM Lotus Notes and Domino 5, 6, 7, 8 and 8.5



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About Kim Greene

- Owner of Kim Greene Consulting, Inc.
- Extensive iSeries background
- Services offered include:
 - System and application performance optimization
 - Administration
 - Upgrades
 - Troubleshooting
 - Health, performance, security, etc. checks
 - Migrations
 - Enterprise integration
- Technical writer for Systems Magazine, System i Edition
- Blog
 - www.bleedyellow.com/blogs/dominodiva
- Twitter
 - [iSeriesDomino](#)



Quick Poll !

- Who's using...
 - Lotus Notes and Domino
 - Lotus Traveler
 - Sametime
 - Lotus Quickr
 - Connections
 - WebSphere Portal



Agenda

- Why a Health Check is important ?
- When to perform a Health Check ?
- Tools to perform a Health Check
- Things you should take a look at
 - Messaging
 - Clusters
 - DAOS
 - TXN
 - And more.....



Why is a Health Check important ?

- Do you get a physical every year or wait until something hurts ?
- In IT.... a health check will save your servers, and sometimes even your job
- A Health Check will help you to...
 - prevent issues
 - resolve issues
 - improve performance
 - enhance security
 - make your work & life easier



When to Perform a Health Check?

- Started a new job
- You think your servers could perform better
- You think you have problems
- You don't understand your Domino infrastructure
- After a crash or hung (just check what's related to the issue)
- On a regular basis
 - Some items can be reviewed weekly, some others every month. You decide !



Tools you can use



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Domino Domain Monitoring - DDM

- Means to quickly monitor and determine health of an entire domain
 - From a single UI location
 - Reduces TCO
- Available since Domino release 7
 - Enabled in Monitoring Configuration database (events4.nsf)
 - Feature-oriented view of domain status in DDM.nsf
- Provides for quick problem resolution



DDM

DDM

My Events

- By Severity
- By Date
- By Type
- By Server
- By Assignment
- Open Configuration

Hide Administrators

notil4/pscldm

- Andrew J Lauter
- Anthony F Fremarek
- Bruce L Bellak
- EIS Access
- EIS Manager
- Ken Lamey
- Lotus Connections
- Luis Guirigay
- Matthew Brasch
- Michelle B Lauter
- NOTIL4
- PSC LDAPUser
- PSCListens
- Ross Bellak

ddm.nsf on NOTIL4

Open Events Recent Events All Events

Open and closed events from the past week only, sorted by severity

Refresh Add Comments...

View Unread Legend...

#	Date	Server	Recent Events By Severity	Assigned To
145			Open	
50			Failure	
36			Warning (High)	
5			Database	
2			Security	
	Thu 07/21	Mobile/PSCDM	User CN=John Bigenwald/O=PSCDM on device Android_22a0000015d3c390 is in violation of their Lotus Traveler device security policy.	
	Wed 07/20	Mobile/PSCDM	User CN=Mark Scherer/O=PSCDM on device Android_22a0000015b88f4b is in violation of their Lotus Traveler device security policy.	
3			Security: Access	
3			Server	
23			Server: Monitoring	
59			Warning (Low)	
2			Closed	

Event Preview

Open Event

(This event is not assigned to anyone)

Generated by: mobile/pscldm
in Domain: PSCDM
Event class: Enhanced

For server: Mobile/PSCDM
Database: -
Agent: -
User: John Bigenwald/PSCDM

Most Recent Event Prior Events

Warning High

Today, 8:06:25 AM (4998 occurrences, first seen at Thursday, October 14, 2010 - 11:09:04 AM)

User CN=John Bigenwald/O=PSCDM on device Android_22a0000015d3c390 is in violation of their Lotus Traveler device security policy.

Explanation

- Reported by: ntraveler
- Severity and type: Warning High in Security
- Probable cause: User has disabled the device password.
- Possible solution: Modify the Lotus Traveler policy Violation Action value to Enforce for this user.

Event Change History:

10/14/2010 11:09 AM : Mobile/PSCDM - changed state to Open



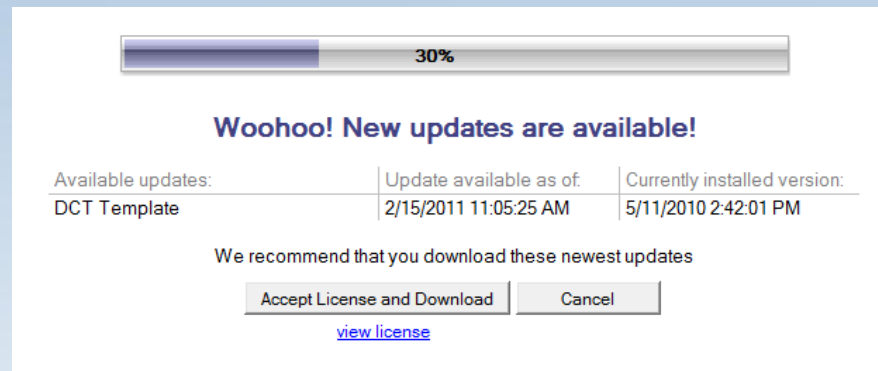
Quick DDM Demo



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Domino Configuration Tuner - DCT

- It's like your personal consultant – for free
- DCT evaluates server settings according to a growing catalog of best practices
 - Rules get updated on a regular basis



- Still running Domino 7 ?
 - Get NTF from IBM Technote #4019358



DCT

- One more thing....the recommended setting will not always apply to your environment

The screenshot displays the Lotus Domino Configuration Tuner interface. At the top, it shows 'Lotus Domino Configuration Tuner' and 'DCT.NSF is on Local (Rule Definitions: 02/15/2011)'. There are buttons for 'Run New Scan' and 'View Results'. On the right, there are icons for 'Check for Updates', 'Preferences', and 'Help'. The main area shows a 'Current Report' for 'Unnamed report run at 07/21/2011 09:21:51 AM CDT'. The report is filtered by 'Server' and shows 'Show reports for all servers'. The report content is categorized by severity: Critical, Warning (High), and Warning (Low). A specific warning is highlighted: 'notes.ini LOG_MAILROUTING specifies how much logging detail the mail router sends to the server console and log file'. The severity is 'Warning (High)'. The explanation states: 'Log sensitivity for mail routing can be adjusted via the Configurations Settings document under Router/SMTP, Advanced, Controls, Logging level. This setting specifies how much logging detail the mail router and SMTP task will send to the server console and log file. Value thresholds are as follows: 'Minimal (10)' to log Fatal and Error messages, 'Normal (20)' to also log some informational messages, 'Informational (30)' to also log plenty of informational messages, 'Verbose (40)' for extremely verbose logging. Default: This value is initially set to 'Normal (20)'. Recommendations: It is recommended that the Configuration Settings document 'Logging level' setting be set to a value of 'Minimal (10)'. Links & References: [Technote 1085105: Minimum Logging Configured on Domino Server but Logging Still Occurs \(on Console and in Log\)](#) (Source: IBM/Lotus Technote)



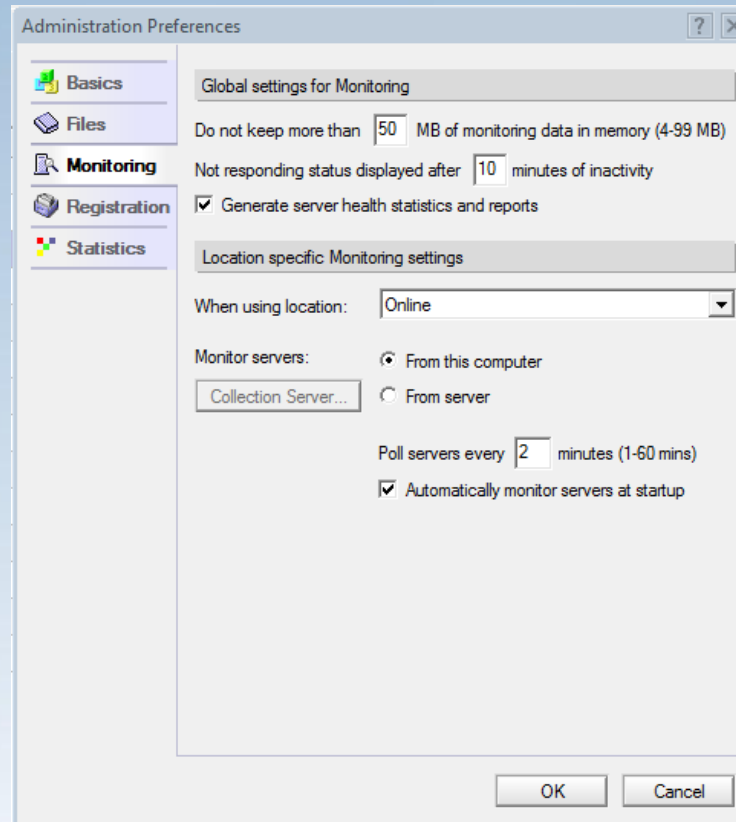
Quick DCT Demo



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Health Monitor

- Enabled via the Administrator Client Preferences



Health Monitor

- Watch all your servers on a single screen
- Look for specific Tasks in trouble

People & Groups Files Server... Messaging... Replication Configuration																
Status Analysis Monitoring Statistics Performance																
By State <input type="checkbox"/> Show me past error states only																
Monitoring profiles: PSCDM Domain <input type="button" value="Stop"/>																
Hea	09:54:26 AM - 09:58:17 AM	Adm	Age	Dat	Eve	Ind	Rep	Rou	Sta		Users	Dead	Hold	Waiting	AvailabilityIndex	ElapsedTime
	DEMOIL01/PSCDM								-		0	0	0	0	100	72 days 01:03:13
	Mobile/PSCDM								-		3	0	0	1	0	64 days 18:36:25
	NOTIL2/PSCDM								-		1	150	0	0	100	6 days 01:48:31
	NOTIL3/PSCDM								-		0	0	0	0	100	7 days 06:56:21
	NOTIL4/PSCDM								-		32	26	0	0	50	44 days 14:44:43
	NOTIL6/PSCDM								-		0	19	0	0	100	225 days 08:51:36
	NOTILBES01/PSCDM								-		1	0	0	0	100	83 days 01:31:05
	QuickPlace/PSCDM								-		1	412	0	0	100	14 days 23:10:18
	Sametime/PSCDM								-		1	0	0	0	99	66 days 01:05:28



Health Monitor Database

- Configure Thresholds

Health Monitoring		Refresh View				
	Server ^	Index	Rating	Value	Comments	
<ul style="list-style-type: none"> Health Reports <ul style="list-style-type: none"> Current Reports Historical Reports Configuration <ul style="list-style-type: none"> Server Components Index Thresholds 	NOTIL4/PSCDM	Overall Health	Critical	99	The "LDAP Server" task is loaded but not responding.	
	Mobile/PSCDM	Overall Health	Critical	97	The "HTTP Response" component is reporting critically poor performance.	
		CPU Utilization	Healthy	1		
		Disk Utilization	Healthy	1		
		HTTP Response	Critical	97		
		Mail Delivery Latency	Healthy	1		
		Memory Utilization	Healthy	6		
		Network Utilization	Healthy	1		
		NRPC Name Lookup	Healthy	1		
		Server Response	Healthy	6		
		NOTIL3/PSCDM	Overall Health	Healthy	12 !	
		Sametime/PSCDM	Overall Health	Healthy	9 !	
		QuickPlace/PSCDM	Overall Health	Healthy	4 !	
		NOTIL2/PSCDM	Overall Health	Healthy	2	
		NOTIL6/PSCDM	Overall Health	Healthy	2 !	
	NOTILBES01/PSCDM	Overall Health	Healthy	2		
	DEMOIL01/PSCDM	Overall Health	Healthy	1 !		



Quick Health Monitor Demo



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Domino Diagnostic Probe (New in 8.5.2)

- Monitors slow or unresponsive servers

- Do not leave it running forever

```
jvm\bin\java -jar dbopen.jar -d mail\test.nsf -t 60 -p 60 -nsdoptions "-nomemcheck"  
-outfile C:\Domino\data\IBM_TECHNICAL_SUPPORT\DomPerfMon.txt
```

- It will try to open test.nsf and will generate a NSD with no MEMCHECK if Database takes more than 60 seconds to open

IBM Technote:

<http://www-01.ibm.com/support/docview.wss?uid=swg21429892>



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Things you should take a look at



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Messaging

- User 3rd Party Tools for SPAM and AV
 - Postini, MX Logic, Message Labs, etc...
 - Hardware appliances also do a pretty good job
- SmartHosts
 - DNS Lookups need resources
- Message Tracking can save the day



Messaging

- Still using one Mail.box ?
 - Never appropriate on any server
 - When to add another mail.box
 - IF
$$(\text{Mail.Mailbox.AccessConflicts} / \text{Mail.Mailbox.Accesses}) \times 100 > 2$$
 - THEN
You need to add a mail.box

Mail Statistic	Original	After Tuning
Mail.Mailbox.AccessConflicts	1151	8
Mail.Mailbox.Accesses	3877	3023
Mail.Mailbox.MaxConcurrentAccesses	6	5
Server.MailBoxes	2	4



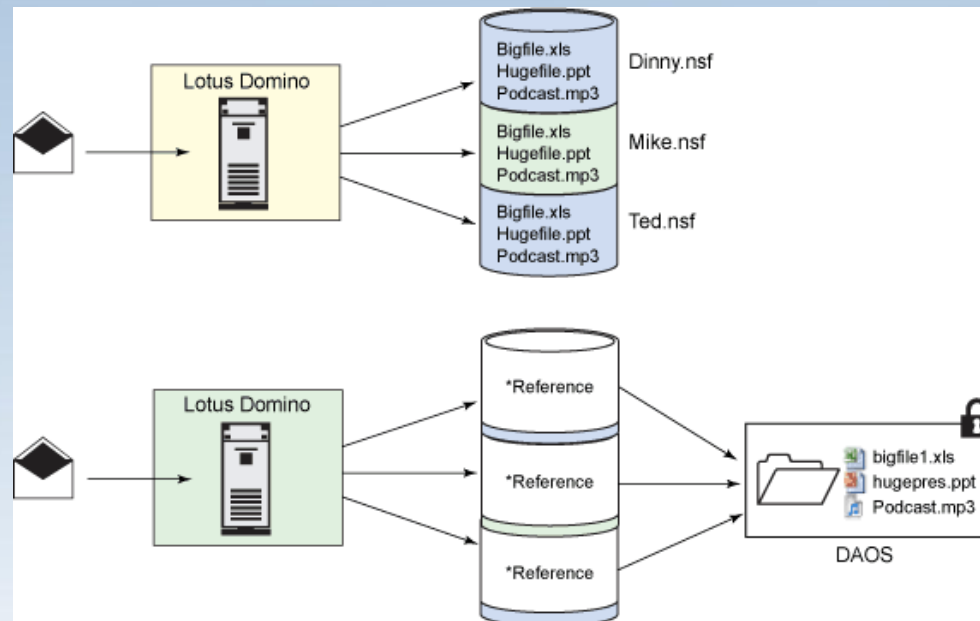
Messaging – Out of Office

Service	Agent
Instant response	Every 6 hours (default)
Supports failover	Does not support failover
Auto disables	Manually turn off
Supports delegation, minimum level Editor	Supports delegation, minimum level Editor + rights to sign agents on behalf of others
Minimum length 1 hour	Minimum length 1 day



DAOS

- DAOS folder should be located outside of the domino data directory
- Order matters if backup is performed while server is online



DAOS

- DO NOT play around with the NLO/DAOS Folder unless instructed by IBM. DAOS is not a toy.
- Set AV to not scan/act on DAOS folder and NLO files
- Setting DAOS to remove 4 kb attachments is not a good idea (Use DAOS Estimator)

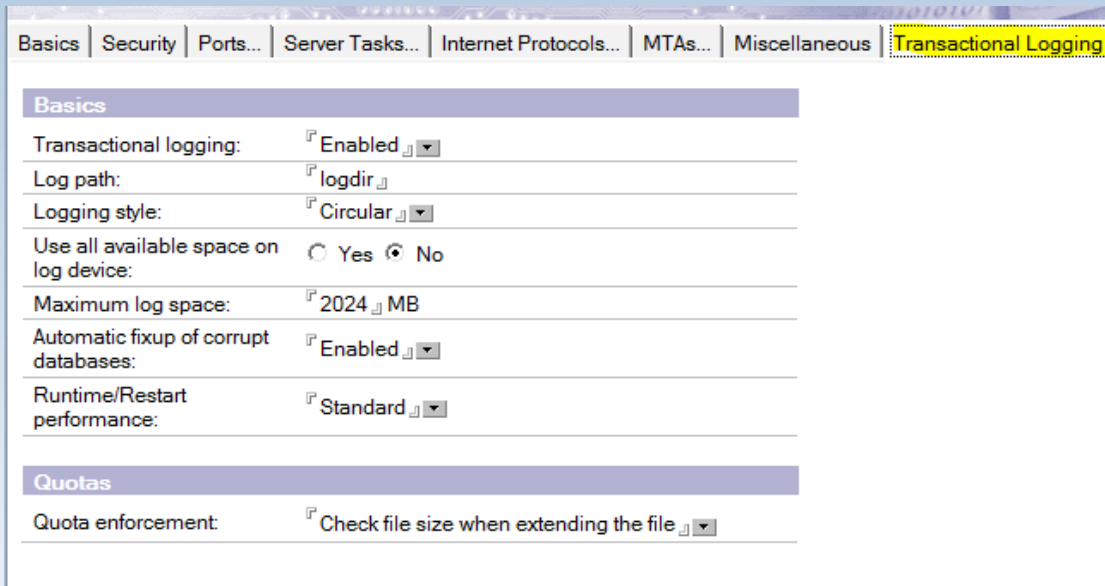
DAOS Minimum Size versus number of NLO's and Disk Space:

0.0 KB	will result in	429864	.nlo files using	120.7 GB
4.0 KB	will result in	363502	.nlo files using	120.6 GB
8.0 KB	will result in	343758	.nlo files using	120.5 GB
16.0 KB	will result in	310129	.nlo files using	120.2 GB
32.0 KB	will result in	274818	.nlo files using	119.4 GB
64.0 KB	will result in	113402	.nlo files using	110.4 GB
1.0 MB	will result in	22456	.nlo files using	85.8 GB
5.0 MB	will result in	3906	.nlo files using	47.9 GB
20.0 MB	will result in	448	.nlo files using	17.6 GB
100.0 MB	will result in	22	.nlo files using	3.8 GB



Transaction Logging

- DAOS requires TXN
- Make sure you use a separate disk or equivalent if using SAN or large drives (iSeries and zSeries)
- Keeps a sequential record of every operation that occurs to data
- With the right Backup tool, you can have incremental backups



Basics	
Transactional logging:	<input type="checkbox"/> Disabled <input checked="" type="checkbox"/> Enabled
Log path:	logdir
Logging style:	Circular
Use all available space on log device:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Maximum log space:	2024 MB
Automatic fixup of corrupt databases:	<input type="checkbox"/> Disabled <input checked="" type="checkbox"/> Enabled
Runtime/Restart performance:	Standard

Quotas	
Quota enforcement:	<input type="checkbox"/> Do not check file size <input checked="" type="checkbox"/> Check file size when extending the file



ODS

- Always be at the latest ODS Version.
Period.
 - Create_R85_Databases=1 (Servers and Clients)
- For the Clients (New in 8.5.2)
 - Desktop Policies
 - “Enable upgrade of all local NSF’s to latest ODS version”
 - Notes.ini
 - NSF_UpdateODS=1



ODS

ODS 41 (R5)

Database

Unread Mark Options

Don't maintain unread marks

Advanced Options

Optimize document table map

Don't overwrite free space

Maintain LastAccessed property

Disable transaction logging

Don't support specialized response hierarchy

Don't allow headline monitoring

Allow more fields in database

Support Response Thread History

Don't allow simple search

Compress database design

Compress document data

Disable automatic updating of views

Disable export of view data

Allow soft deletions

Permanently delete documents after 48 hours

Limit entries in \$UpdatedBy fields 0

Limit entries in \$Revisions fields 0

ODS 43 (R6/R7)

Database

Unread Mark Options

Don't maintain unread marks

Replicate unread marks:

Never Clustered servers only All servers

Advanced Options

Optimize document table map

Don't overwrite free space

Maintain LastAccessed property

Disable transaction logging

Don't support specialized response hierarchy

Use LZ1 compression for attachments

Don't allow headline monitoring

Allow more fields in database

Support Response Thread History

Don't allow simple search

Compress database design

Compress document data

Disable automatic updating of views

Disable export of view data

Allow soft deletions

Permanently delete documents after 48 hours

Limit entries in \$UpdatedBy fields 0

Limit entries in \$Revisions fields 0

ODS 51 (R8.5)

Database

Unread Mark Options

Don't maintain unread marks

Replicate unread marks:

Never Clustered servers only All servers

Advanced Options

Optimize document table map

Don't overwrite free space

Maintain LastAccessed property

Disable transaction logging

Don't support specialized response hierarchy

Use LZ1 compression for attachments

Use Domino Attachment and Object Service

Don't allow headline monitoring

Allow more fields in database

Support Response Thread History

Don't allow simple search

Compress database design

Compress document data

Disable automatic updating of views

Disable export of view data

Allow soft deletions

Permanently delete documents after 48 hours

Limit entries in \$UpdatedBy fields 1

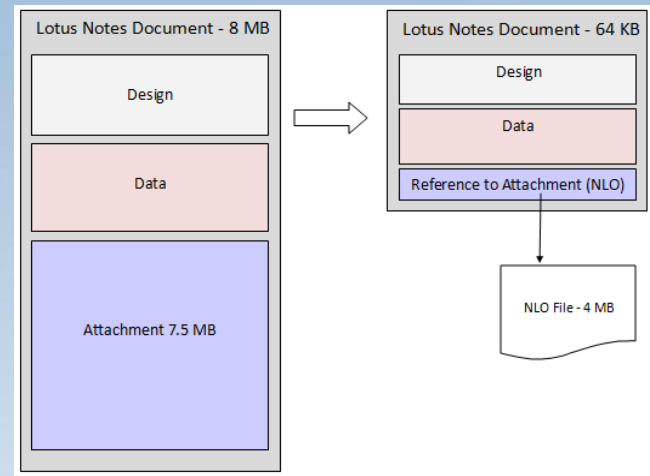
Limit entries in \$Revisions fields 0



Compression

- Some Organizations are not aware of all the space they can save by using:

- Design Compression
- Data Compression
- LZ1 Compression + DAOS

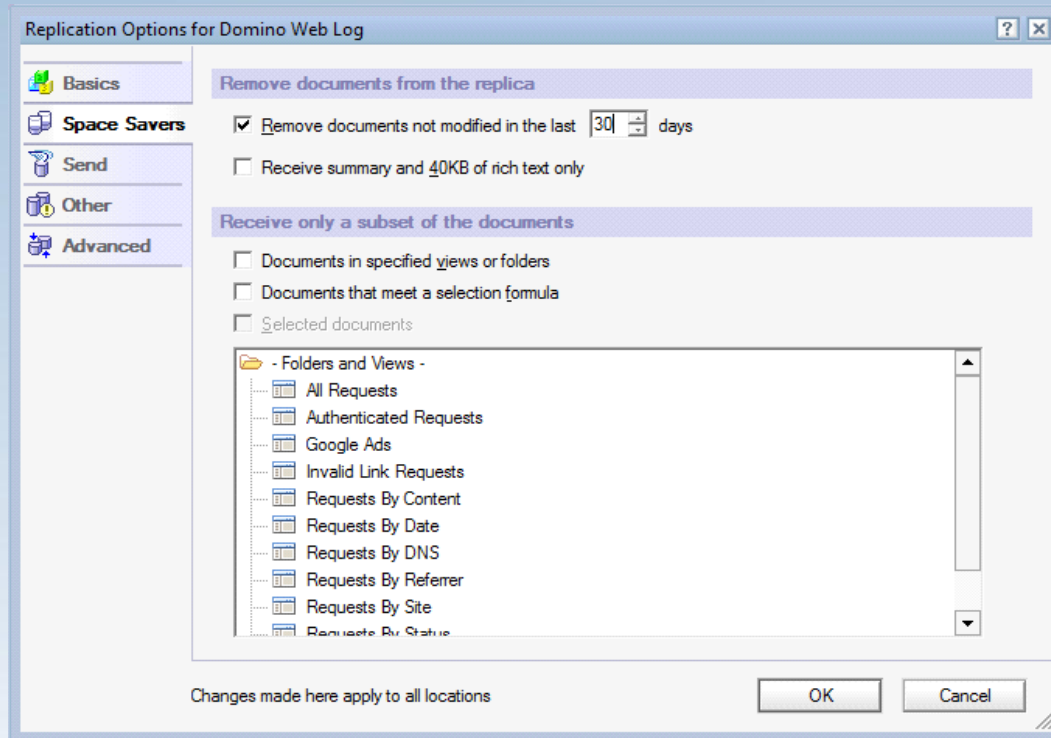


- Multiply this by thousands of documents by hundreds of databases



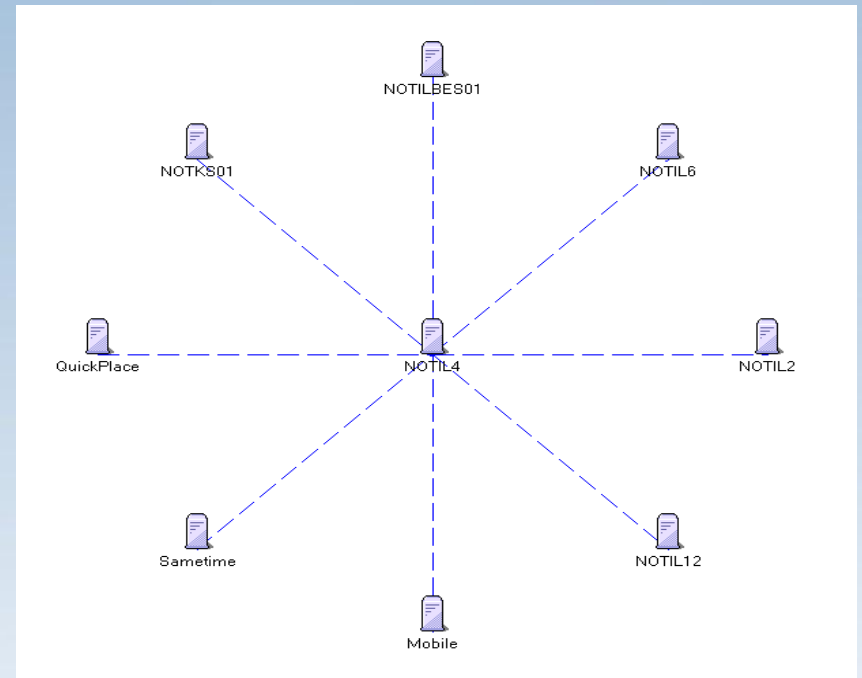
Log Files

- Use Notes.ini or Space Savers setting to control size
Log=logfilename, log_option, not_used, days, size



Replication

- Enough said



Notes.ini

- Keep it clean
 - Remove debug variables when no longer needed
- IBM recommends keeping these
 - `CONSOLE_LOG_ENABLED=1`
Captures server console data and logs to console.log file
 - `DEBUG_THREADID=1`
Stamps server threads and logs to console.log file
 - `CONSOLE_LOG_MAX_KBYTES=204800`
Restricts the console Log size to 200MB and then overwrites oldest entries
 - `DEBUG_CAPTURE_TIMEOUT=1`
Captures semaphore time stamp and logs to the semdebug.txt
 - `DEBUG_SHOW_TIMEOUT=1`
Captures semaphore information and logs to the semdebug.txt



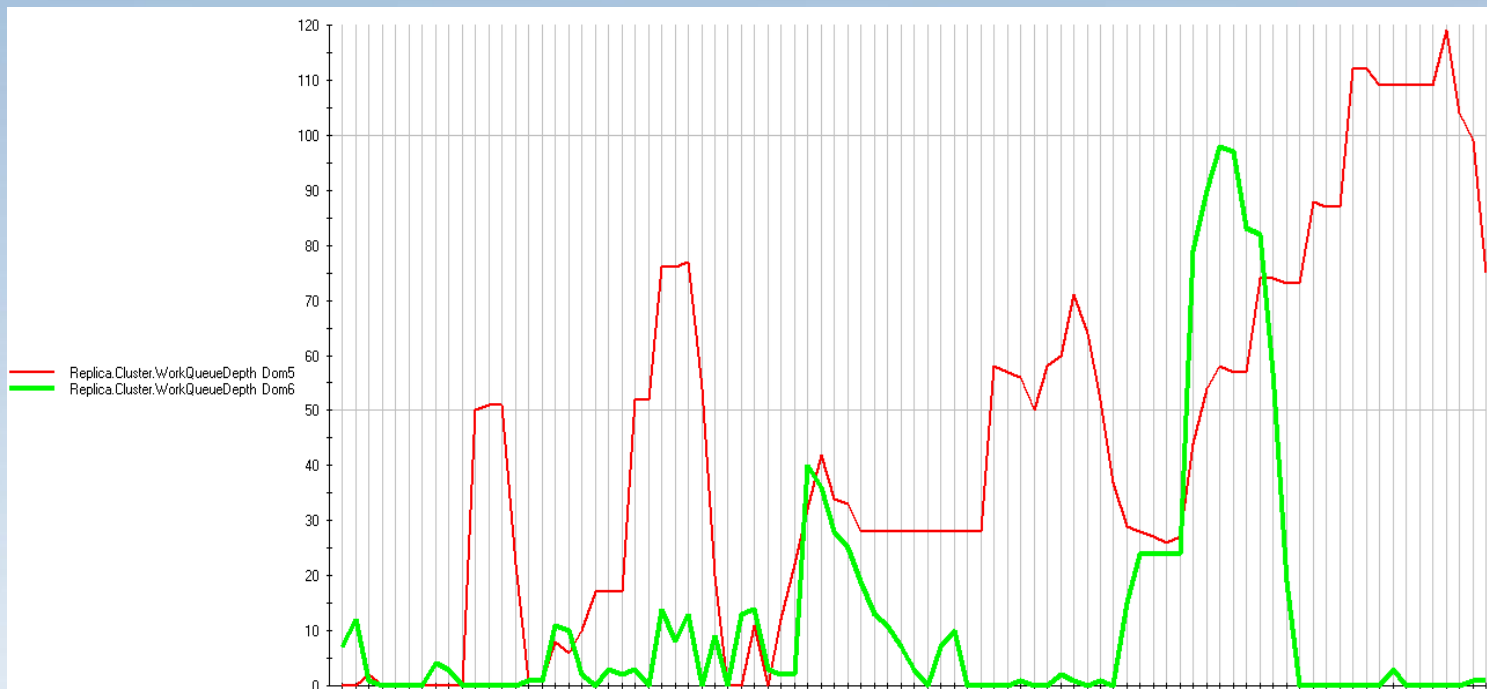
Server Settings

- Server Tasks
 - Do you need them all ?
- Ports
- Default settings
 - Security
 - AdminP Threads (Too many requests? Default is 60 mins & 3 threads)
 - HTTP (Timeouts, Caching, Logging, Bind to Host Name)



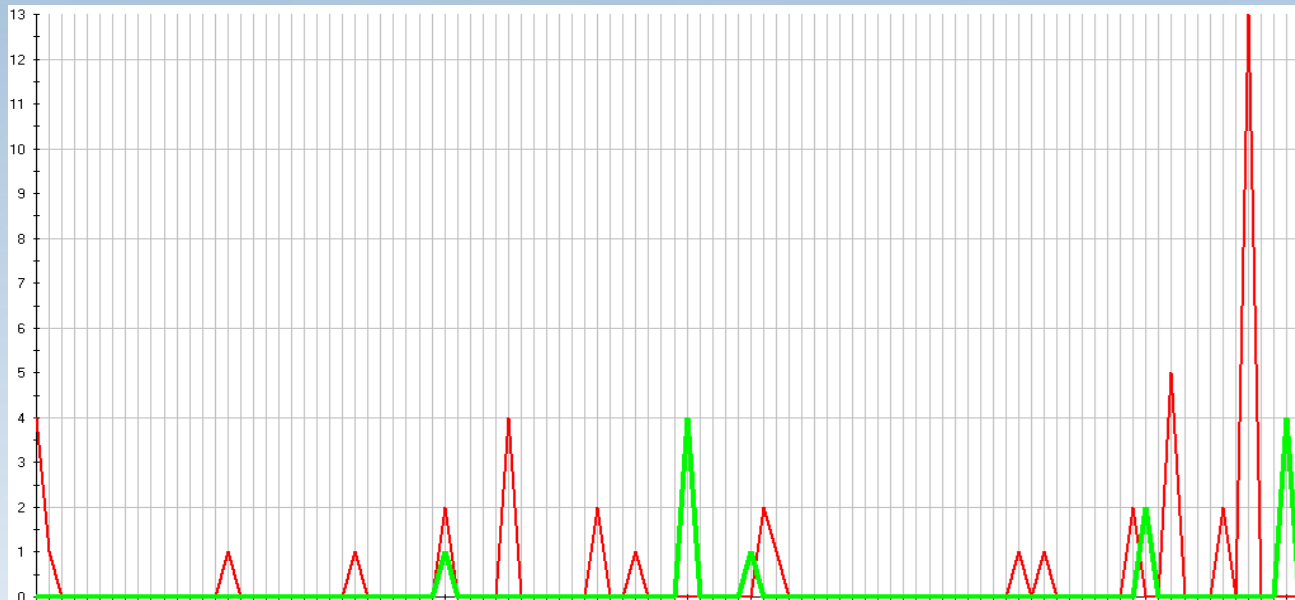
Clusters

- Cluster replicator queue depth



Clusters

- After increasing number of Cluster Replicators



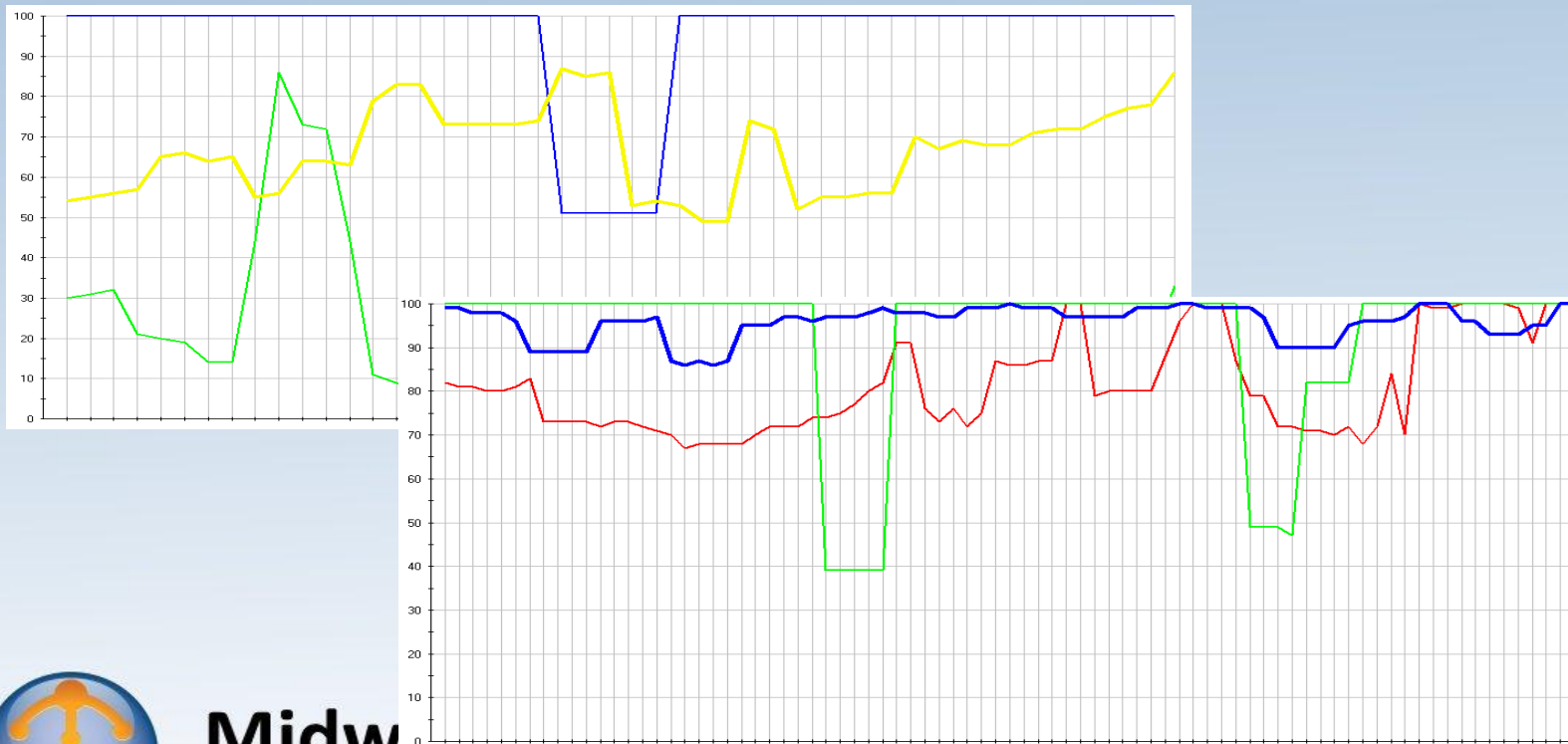
Clusters - Server Availability Index (SAI)

- Equal to the percentage of the total server capacity that is still available
- Use SERVER_TRANSINFO_RANGE to improve your SAI
 - Use SH AI to determine the right value
 - Use SH AI when servers are experiencing a heavy load
 - It is like you need to tell Domino how fast your server/hardware is.
- Very useful when looking to control Load Balancing in Clustered environments
 - Server_Availability_Threshold will indicate when to send the request to the other server in the cluster
- It can also be used on non-clustered servers to understand health of the server



Clusters - SAI

- Customer complained about users being redirected to other servers too often.
 - Before and after setting `SERVER_TRANSINFO_RANGE = 18`



Maintenance Tips

- Schedule monthly server restarts.
- compact, fixup, updall on names.nsf, admin4.nsf, events4.nsf, log.nsf, cldbdir.nsf while the server is down.
- Schedule the following tasks on a weekly schedule: FIXUP, UPDALL and COMPACT of all databases while the Domino server is offline.
 - A DB with 99% Used Space is not necessarily good
 - **Fixup is not really required if TXN is enabled with AutoFixup**
- Perform tape backup restoration tests to ensure valid recovery data.
- Review monthly server statistics for performance and availability issues.
- Run a Cluster Analysis
- “Administrator Guide for Domino Server maintenance”
 - IBM Technote #7006573



Local and Managed Replicas

- Considering Server Consolidation ? Go Local !
- Will reduce Server and Bandwidth/Network Utilization
- Improved load time.
- Offline access
- The real 24/7 !
- Read: *“IBM Lotus Notes and Domino 8.x local mail replicas: Advantages, considerations, and best practices”*

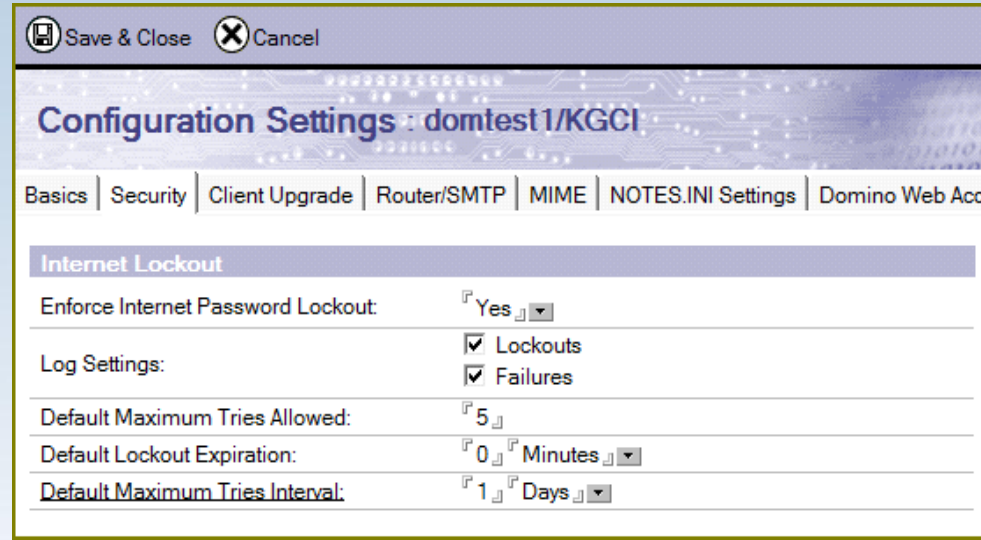
<http://www->

[10.lotus.com/ldd/dominowiki.nsf/dx/IBM_Lotus_Notes_and_Domino_8.x_local_mail_replicas_Advantages_considerations_and_best_practices](http://www-10.lotus.com/ldd/dominowiki.nsf/dx/IBM_Lotus_Notes_and_Domino_8.x_local_mail_replicas_Advantages_considerations_and_best_practices)



Features you should be using

- ID Vault
 - Password Sync
 - Certificate rollouts
- Internet Password Lockouts
 - Security



Features you should be using

Automatic Server Recovery

Automatic Server Recovery	
Run This Script After Server Fault/Crash:	<input type="checkbox"/> (This script must not run NSD)
Run NSD To Collect Diagnostic Information:	<input checked="" type="checkbox"/> Enabled
Automatically Restart Server After Fault/Crash:	<input checked="" type="checkbox"/> Enabled
Cleanup Script / NSD Maximum Execution Time:	<input type="text" value="300"/> seconds
Server Shutdown Timeout:	<input type="text" value="300"/> seconds
Maximum Fault Limits:	<input type="text" value="3"/> faults within <input type="text" value="5"/> minutes
Mail Fault Notification to:	<input type="text" value="LotusAdmins"/> <input type="button" value="v"/>



Features you should be using

Diagnostic Collections and Fault Analyzer

Introduced in R7

Automatic reporting and analysis of server crashes

Automatic cleanup of server crash files

Enabled in configuration document -> Diagnostics tab

Diagnostic Collection Options	
Mail-in Database for diagnostic reports:	<input type="text" value="Lotus Notes/Domino Fault Reports"/>
Maximum size of diagnostic message including attachments (in MB):	<input type="text" value="20"/>
Maximum size of NSD output to attach (in MB):	<input type="text" value="10"/>
Maximum amount of console output file to attach (in KB):	<input type="text" value="10240"/>
Diagnostic file patterns:	<input type="text" value=""/>
Remove diagnostic files after a specified number of days:	<input type="text" value="Yes"/>
Number of days to keep diagnostic files:	<input type="text" value="365"/>

Fault Analyzer	
Run FaultAnalyzer on Fault DBs on this server:	<input type="text" value="Yes"/>
Run Fault Analyzer on:	<input type="text" value="Specific mail-in databases"/>
Databases to run fault analyzer against:	<input type="text" value="Indtf.nsf"/>
Remove attachments from duplicate faults:	<input type="text" value="No"/>



Features you should be using

- Policies
 - Desktop, Security, Mail, etc....
- Session Authentication
 - Use LTPA Token (Cookie)
- Network Compression
 - Useful when bandwidth is limited
- Run Web agents concurrently
 - Agents don't need to wait in line. Domino is not the DMV



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Some additional tips for....



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Quickr

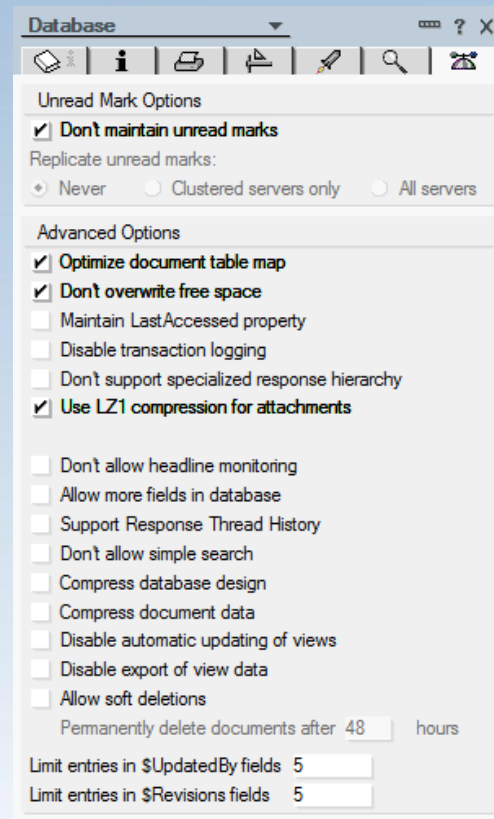
- ServerTasks=HTTP, Router
- Use Qpconfig.xml
- Connectors
 - Disable checking if clients has Connectors installed

```
<connectors>  
<roundTripEdit enabled="never" />  
</connectors>
```
- It is heavy on Disk....2000 Places = 6000 Databases
 - SAN or Disk Array Device with more spindle capacity



Quickr

- PlaceCatalog.nsf
 - load_balance_places_view enabled=“true”
(New in 8.5)
 - Set right properties



Questions?



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