Domino Administration: Things Lurking You May Not Be Aware of and How to Fix Them

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Kim Greene - Introduction

- Owner of an IT consulting company
 - Kim Greene Consulting, Inc.
 - www.kimgreene.com
- Started my career at IBM, left and launched my own business in 2000
- Focus areas:

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- HCL collaboration software portfolio
- Customers are worldwide and in multiple industries
- Blog: www.dominodiva.com
- Twitter: iSeriesDomino







Michelle Smith - Introduction

- Owner of an IT consulting company
 - M.E.Smith Consulting
- Started fixing IT issues during University work terms and learned I loved solving the 'puzzles'
- First exposure to Lotus Notes and Domino was migrating a non-Y2K compliant email environment to Domino... wow that was a while ago!
- Focus areas:

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- HCL collaboration software portfolio
- Work with Kim to support a group of amazing clients!



Agenda

Security

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- Performance
- FTI Health
- Traveler Health
- Database Health
- Schedules
- Crashes

- Notes.ini
- Clusters and Failover

- Replication
- Unread Marks
- Often Overlooked 'Necessities'
- Q&A

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ACLs

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- Are they really controlling access properly?
- When was the last time you checked??
- Ensure Domino databases are locked down appropriately
 - Which databases have:
 - Default = Manager
 - OtherDomainServers = Manager
 - Anonymous = Manager
 - Anonymous missing



Manager Access

Anonymous, Default and OtherDomainServers as Manager

HCL Domino

Not a good idea

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- Check, you'll be surprised at how many databases this applies to!
 - Check HCL supplied templates too
- Customer example:
 - (Data compliments of Ytria aclEZ)

	Apps1	Dev2	Mail1	Mail2	Sametime	Traveler
Anonymous Missing	855	202	346	44	58	18
Anonymous Manager	3	4	2	1	3	1
Default Manager	27	27	54	10	14	9
OtherDomainServers Manager	141	107	31	19	6	5



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- Should web users be able to view the database??
- Set "Anonymous" to "No Access" for all databases except public databases

HCL Domino

Access Control L	ist to: Michelle Smith's Log)				? ×
🛃 Basics	Access Control List			Attribute	is	
Roles	People, Servers, Groups	Show All	~	User type	Unspecified	~
	-Default-			Access	No Access	~
Advanced Ro	Anonymous LocalDomainAdmins			Create	documents	

 Without this anyone can see public calendar entries within your mail files!!

Anonymous Missing

If not present, same level of access as '-Default-'

• Customer example:

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• (Data compliments of Ytria aclEZ)

	Apps1	Dev2	Mail1	Mail2	Sametime	Traveler
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OtherDomainServers Manager	141	107	31	19	6	5

Enforce Consistent ACL is Key

- Ensures ACL stays consistent across all replicas
 - Protects DBs if pulled at file system level!

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Basics	Administration s	erver			
Roles	None Server				
1 Log	Antica	-			
Advanced	d Action	Do not modify Names	i fields	~	
	This database's	Access Control List will	not be updated by	the Administration Process	s.
	Enforce a con	sistent Access Control	List across all replic	:85	
	Enabling Enforce	e a consistent Access lotes database replicas	List across all replic	all replicas' will ensure that	an ACL remains
	Enabling 'Enforce identical on all N	e a consistent Access lotes database replicas	Control List across	all replicas' will ensure that	an ACL remains
	Enabling 'Enforce identical on all N Maximum Internet	e a consistent Access lotes database replicas name and password Look Up	Editor	all replicas' will ensure that	an ACL remains
	Enabling 'Enforce a con Enabling 'Enforce identical on all N Maximum Internet Pressing this but listed as an 'Uns etc.) will be set in	e a consistent Access lotes database replicas name and password Look Up ton will perform a Domi peofied user type. If the n the ACL.	Editor Discrete Control List across Editor Discr Types for "Uno Directory lookup he name is found, t	all replicas' will ensure that	an ACL remains ss Control List who



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- Who has Manager or Designer access?
 - Common carry-over from OOO agent days
 - Manager access, users can delete their mail file
 - Change to Editor access



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Review ACLs Regularly

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Domain Catalog – Access Control
 Ytria aclEZ
 Lists -> by Name

pplication Catalog	? н	elp	
	N	lame	Title
Oomain Search	/	-Default-	
Access Control Lists	*	1.1	Manager
By Application	*	2. [Designer
By Level	*	▶ 3. E	Editor
🔟 By Name	*	► 4.7 ► 5.E	Author Reader
Content	*	▶ 7.1	No Access

Name Title	
Anonymous	
1. Manager	
3. Editor	
4. Author	
5. Reader	
6. Depositor	
7. No Access	
 4. Author 5. Reader 6. Depositor 7. No Access 	

Name Access
🔒 Status Database Title
🖃 [Entitlement DBs - Managers] (1)
🛨 6-Manager (1)
[Entitlement DBs - Readers] (1)
🗄 2-Reader (1)
🛨 [LocalDomainAdmins] (59)
[LocalDomainCatalogServers] (2)
🛨 6-Manager (2)
[LocalDomainServers] (83)
🛨 0-No Access (2)
🛨 1-Depositor (1)
\pm 2-Reader (2)
🛨 4-Editor (2)
🛨 6-Manager (76)
[OtherDomainServers] (74)
🛨 0-No Access (64)
🛨 1-Depositor (1)
\pm 2-Reader (9)

Examine Agents

Analyze agent signers

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- You'll be surprised by what you find, guaranteed!!
- Cross-analyze with Domino server security settings
 - Is the signer in the NAB?
- Which servers are agents set to run on?

Agent Signers

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 Over time it's easy to lose track of the quantity of agent signers

OpenNTF example before cleanup was done

(Data compliments of Ytria agentEZ)

```
Anil Vartak/NotesOSS (2)
Bruce Elgort/Sharepoint (5)
Christian Guedemann/WGC/CH (5)
Domino Template Development/Domino (9)
Enterprise Agentmgr/Atlanta/IBM (1)
Lotus Notes Template Development/Lotus Notes (4)
Martin Rolph/Oval (1)
Niklas Heidloff/Germany/IBM (12)
NotesOSS1/NotesOSS (4)
NotesOSS2/NotesOSS (5)
Oliver Busse/DEV-We4IT (1)
Per Henrik Lausten/PHL Consult (2)
Reading Error: The Address Book does not contain a cross certificate capable of validating the public key. (5975) (2)
Roberto Boccadoro/ELDENG/IT (1)
Serdar Basegmez/developi (2)
Steve Castledine/UK/IBM (3)
Vince Schuurman/NDT (16)
```

Agents – Server Set to Run On

 As servers are spun up, replaced, consolidated – it creates an interesting mix

Another OpenNTF example

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• (Data compliments of Ytria agentEZ)

```
* (10)
Andre Guirard/USA/PNPHCL (9)
Atlas/Redshift (1)
D02DBS79/02/A/IBM (1)
Dev1/OvalDevAF(1)
George Demetriou/Westford/IBM (1)
HERMES/Intec (1)
hobbes/gtzar.com (1)
Masterlock/Server/Templates (1)
MLWNSS03/footlocker (4)
NotesOSS1/NotesOSS (9)
NotesOSS2/NotesOSS (32)
PDX1/Sharepoint (1)
Pretorian/INET (1)
Server1/XPageDeveloper.com (1)
Storm/IBM/US (1)
Ulrich Krause/midpoints/de (1)
```



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- Functions as template for workstation ECLs
- Always check -Default- and -No Signature- settings
- Often many outdated entries exist





Administration ECL

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Actions -> Edit Administration ECL

	s Address Book - People - HCL Notes
	<u>File Edit View Create Actions Tools W</u> indow <u>H</u> elp
	Open 🔻 🗹 🛱 🚦
-OR-	☐ Home × Bi Edit Directory Profile
	: * 🕂 👻 🖶 💐 Edit Administration ECL

• Edit through security settings document

Security Setting	S :
Basics Password Manager	ment Execution Control List Keys and Certificates
ECL	
Admin ECL:	-Default- Edit Manage
Update Mode:	^r Refresh ▼
Update Frequency:	^ℤ When Admin ECL Changes 』 ▼



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• Warning, be careful when working with the Admin ECL



- ALWAYS use an ID that is already in the ECL!!
 - Even just viewing the Admin ECL can cause your ID to be put in the ECL

Protected Groups

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- Prevents accidental deletion of designated "critical" groups
- Configured in Directory Profile of the Domino Directory
 - Tip: You must edit and save once to become operational



Protected Groups

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Prevent deletion of these groups

- Defaults to LocalDomainAdmins, LocalDomainServers, and OtherDomainServers
- Add others critical to your environment

Domino Directory Profile	Ser C
Basics	
Domino Directory Configuration Profile	
Domain defined by this Domino Directory:	
Note: This setting is obsolete as of Domino 8.5.1. It is used for compatibility with prior versions only: Condensed server directory catalog for domain:	۲ ا
Sort all new groups by default:	^r Yes 』▼
Auto-populated group Members update interval:	ິ 30 ຼ minutes
Use more secure Internet Passwords:	িYes - Password verification compatible with Notes/Domino release 8.01 or greater ্রা ়া
Allow the creation of Alternate Language Information documents:	^r Yes▼
List of administrators who are allowed to create Cross Domain Configuration documents in the Administration Process Requests database:	
Prevent deletion of these groups:	[©] LocalDomainAdmins, LocalDomainServers, OtherDomainServers <u></u>
Comments:	

Examine/Update HTTP Password Hash

- Common to have non-secure HTTP password hashes in use
- Upgrade HTTP password hash to more secure option
- Step 1: Edit Directory Profile

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Actions -> Edit Directory Profile

Domino Directory Profile	Car C
Basics	
Domino Directory Configuration Profile	
Domain defined by this Domino Directory:	°
Note: This setting is obsolete as of Domino 8.5.1. It is used for compatibility with prior versions only: Condensed server directory catalog for domain:	с _
Sort all new groups by default:	^r Yes▼
Auto-populated group Members update interval:	ິ 30 ຼ minutes
Use more secure Internet Passwords:	『Yes - Password verification compatible with Notes/Domino release 8.01 or greater 』 ▼

Examine/Update HTTP Password Hash

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 Step 2: Upgrade person documents to use 'more secure internet password'

Actions Tools Window Help	
Add NotesMail	
Edit Directory Profile	
Edit Administration ECL	
ProcessDocWebAction	
Set Secure Internet Password	
Remove Directory Profile	Set Secure Internet Password Format
UpdateAutoDialerSchedule	
Recettify Selected People	Internet Password Options
Add Internet Cert to Selected Reonle	C Mag. Browned wifesting compatible with Neter/Demine release 8.01 or constant
	Yes - Password verification compatible with Notes/Domino release 8.01 or greater
Kename Selected People	C Tes - Password verification compatible with Notes/Domino release 4.0 or greater
Upgrade to More Secure Internet Password	C No
Edit Document	Select the level of secure internet password.
Forward	
Move To Folder	OK Cancel
Remove From Folder	On Cancer
Chat	>
View Options	>
Preview in Web Browser	>
Open selected document(s) in scanEZ	

Web Administration Database

- Has been deprecated, but may still be "lurking"
 - Support withdrawn due to cross-site request forgery attack vulnerability
 - Webadmin.nsf allows administrators to administer Domino via a browser
- Recommendations:

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- Remove both webadmin.nsf and webadmin.ntf
 - Tip: Set DominoNoWebAdmin=1 in the notes.ini to ensure the DB cannot be recreated if the template still exists on a server
- IF still using webadmin.nsf, ensure Anonymous = No Access

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- Q&A

Memory – Critical for Optimal Performance

- Examine the hosting server/VM
 - High paging and faulting can dramatically impact performance of Domino
 - IBM i example

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Drilling down further we see memory pool involved is where all of Domino servers are running



Memory

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1

Impact on CPU with optimal memory allocation



Network Impact on Notes Clients

- Notes client performance can be heavily impacted by network issues
 - Packet loss is of significant importance
 - Packet loss over 4% will have noticeable impact
 - Ping with large packet size is your friend ^(C)
 - Ex: ping -n 100 -l 8192 <servername or FQIHN>

Customer example:

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Ping statistics for xxx.xxx.xxx.xx:

Packets: Sent = 100, Received = 79, Lost = 21 (21% loss),

Approximate round trip times in milli-seconds:

Minimum = 6ms, Maximum = 7ms, Average = 6ms





Examine Views

- Views
 - Limit the number of sortable columns
 - Are ALL of the sort options are needed ??



- Use hidden views sorted by a single column for look ups
- Use Manual refresh setting in view where feasible





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• Size of inbox impacts both CPU and end user response time



 Tip: Check the Inbox size in the Log.nsf under Usage -> by Size and open the document to see details



Control Inbox Size

Configure in server document

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• Server Tasks -> Administration Process tab

Mail Inbox Maintenance	
Start executing Inbox Maintenance agent on:	^ℂ Sat _ ∎ day(s)
Start executing Inbox Maintenance agent at:	[©] 03:30 AM _
 Maintain inboxes for only these selected users on this home serve Maintain inboxes based on policies 	
Selected users:	r
Remove documents older than [X] days from Inbox:	۳ 90 _
Maximum number of documents to remove per cleanup:	ິ 500 ຼ
Do not remove unread documents from Inbox:	Yes

- Or via Policy using Mail Settings Document
 - Mail -> Basics tab

Mail Inbox Maintenance	
Enable mail Inbox maintenance:	Ves
Remove documents older than [X] days from Inbox:	۲ <mark>90</mark> _
Maximum number of documents to remove per cleanup:	[『] 500』
Do not remove unread documents from Inbox:	🗌 Yes

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Have You Tuned Full Text Indexes?

- By default, view updates and full text indexing are driven by the same thread
- Prevent long full text indexing operations from delaying view updates
 - Spawn full-text indexing off to own thread
 - Update_Fulltext_Thread=1

Review key FTI statistics:

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FT.Index.Count	FT.Index.Search	FT.Search.Total.Results
56,150	27,652	1,002,317



Customer FTI Example

Semaphore timeouts happening

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Semaphore Timeout	# of times occurring	Description
3A05	793	SEM_HTTP_AGENT
0266	20	NSF per-database full-text semaphore
0244	15	NSF per-database semaphore
0931	8	Task sync semaphore
03A8	2	DBCONT page zero semaphore

 Enabling Update_Fulltext_Thread=1 eliminated semaphore timeouts

Are You Preventing FTI Issues?

- Rebuild FTIs periodically with Updall –x option
 - Run regularly, can prevent FTI issues
 - Remedies corruption

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- Reduces the size of the FTI
- Example: On a DB with 77k documents and 1.5 GB, here is the before and after of the Updall –x:





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Checking Traveler Health

- How often do you check the health of your Traveler servers?
 - Let's be honest 🙂

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- tell traveler status is your friend
 - Green : No issues
 - Yellow : Possible issue that should be investigated
 - Red : Critical issues that should be addressed
 - The problem information for Yellow and Red status is incorporated in the command output
Traveler Tips

• tell traveler status

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Example Yellow status

Traveler: The Traveler task has been running since Thu May 02 16:13:19 CDT 2024.

Traveler: The Traveler availability index is currently 98 while servicing 331 users.

Traveler: Database Connection URL: jdbc:as400://10.1.1.1/LNT.

Traveler: Database Connection Properties: user=TRAVELER, clientUser=TRAVELER, currentLockTimeout=60, loginTimeout=null.

Traveler: The last successful device sync was on Tue Aug 13 13:24:19 CDT 2024.

Traveler: Yellow Status Messages

Traveler: The peak number of HTTP connections is 515 percent of the 437 available HTTP threads. Traveler: The overall status of Traveler is Yellow.

Does Traveler Have Enough Memory?

• tell traveler mem

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Traveler: CPU and Memory (MB) Usage History Traveler: Date CPU Pct Java Mem C Mem Avl Indx # Users # Errors # DB Conn 3139 Traveler: 2024-08-12 13:02:48 CDT 1.60 917 99 330 30326 1 Traveler: 2024-08-12 13:17:48 CDT 2.17 967 3134 330 30326 98 1

Traveler: Current Memory Usage

Traveler: Java Memory Usage

Traveler: Max Total 2048 MB

Traveler: Current Total Allocated 1912 MB

Traveler: Available 812 MB (40 percent of Max Total)

Traveler: Used 1236 MB (60 percent of Max Total)

Traveler: C Memory Usage

Traveler: Allocated 3253 MB (20 percent of Total Physical)

Traveler: Current Usage

Traveler: Java 1236 MB

Traveler: C 3253 MB

Monitoring Traveler Performance

- Easy to check once and forget
- Threads

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- HTTP threads = # of devices X 1.2
 - True for Derby and HA implementations
- Traveler thread pools
 - Check GetThreadDelayTime
 - Want majority in 0-2 second range
 - Monitor device synchronization return codes
 - 503 Server busy, indicates insufficient synchronization threads







Monitor Traveler Performance

HTTP threads

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- CAREFUL
 - Allocating too many active HTTP threads will result in unnecessary server memory consumption
 - Ensure system has sufficient resources to handle increased threads
 - HTTP thread consumes
 - ~ 1 MB of memory on 32-bit system
 - ~4 MB of memory on 64-bit system



Defrag Traveler Database

- Over time Traveler performance can deteriorate
 - Defrag the database to restore performance

- Use DBMAINT to defrag traveler database
 - Tell traveler dbmaint set interval 7 **

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- 11/19/2017 09:37:02 Traveler: DB maintenance will be performed every 7 days.
- Tell traveler dbmaint set time 23:00
 - 11/19/2017 09:39:58 Traveler: Time of day for DB maintenance has been set to 23:00
- Tell traveler dbmaint set day Sunday
 - 11/19/2017 09:51:40 Traveler: Day is now configured to Sunday.
- Tell traveler dbmaint set auto on **
 - 11/19/2017 10:12:27 Traveler: Automatic maintenance of your database has been set.
 - 11/19/2017 10:12:27 Traveler: The next maintenance is scheduled for 2017-11-22 23:00.
 - 11/19/2017 10:12:27 Traveler: Maintenance will be performed every 7 days at 23:00.
- ****** Only options available for Derby database





Can You Wipe the Device?

- Being able to remove data or "wipe" a device is critical
 - Lost or stolen device
 - Employee resignation or termination
- Wipe options

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- Full or Traveler only
- User or server initiated



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HCL Notes Traveler Access		
Access server:	users listed in all trusted directories	
	and [©] Mobile Directory Users 』 💌	
Not access server:	^ℂ Terminations ACCESS DENIED 』▼	
Remote user commands:	🕫 Disabled 🗉 💌	
User managed security:	^r Enabled	

User can only initiate a wipe if enabled in the server document, **Notes Traveler** tab

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Deletion Stubs

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- Domino's way of tracking the life cycle of a document
- Eventually deleted when "purge interval" is reached
- Many deletion stubs can impact performance to end user
 - Searches read deletion stubs and include them in response returned
 - Search count only shows count of full documents, which is what user sees
- Use 'show database dbname.nsf' to get live and deleted document

count	Document Type	Live	Deleted
	Documents	21,292	1,174

- Important to purge deletion stubs on regular basis
 - Purge happens upon DB open in Notes client or DBMT runs

Monitor Size of Logging Databases

- Common for agents to write to logging databases as they process data
- Keep logging databases small

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- Semaphore timeout issues and HTTP thread locking issues with large logging databases
- Recommend archiving / purging documents out of logging databases on regular basis

Control Log File Sizes

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- How large are log.nsf, domlog.nsf and custom log DBs?
 - Select to replicate out documents over X days old

Replication Option	for Domino Web Server Log (8.5)
🛃 Basics	Remove documents from the replica
Space Savers Send Send Other Advanced	 Remove documents not modified in the last (days) Enable Purge Interval Replication Control Prevent modified documents and deletions before [2024-08-05 03:51:21 PM] from replicating into database. Receive summary and 40KB of rich text only Receive only a subset of the documents Documents in specified views or folders Documents that meet a selection formula Selected documents
	- Folders and Views - All Requests Google Ads Invalid Link Requests Requests By Content Changes made here apply to all locations OK Cancel

Corrupt NSFs and NLOs

 Server crashes and other events can cause corruption of NSFs and NLOs



- Are you proactively managing these?
 - **DBCapture Tool** for non-clustered environments
 - File named to .cor and moved to IBM_TECHNICAL_SUPPORT folder
 - Enable via notes.ini DATABASE_CAPTURE_ENABLED=1
 - **Repair** utility if using cluster symmetry
 - Upon database open event, if corruption is detected runs fixup
 - IF fixup is unsuccessful:

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- Replace with "good" replica
 - Rename to dbfilename.pd_bad_YYYYMMDDHHMMSSSS
- Tip 1: Ensure AutoRepair and RprCleanup (or RepairCleanup depending on Domino release) are added to SERVERTASKS=
- Tip 2: Schedule database cleanup and repair in Program documents

Still Using Old Compact Switches?

Important to check

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- -b and -B were recommended for years
 - -b (recover unused space)
 - -B (recover unused space & reduce file size)
- Most recent recommend is to use DBMT or compact with option -C
- Compact -C
 - Equivalent to a Windows or relational DB "Defragment"
 - Rearrange database or reduce file size
 - Tip: No longer need debug_enable_compact_8_5=1 to run with multiple threads

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Know Your Schedules

- Have you examined Program document schedules in relation to backups and other work running on the server?
 - i.e. agents, compacts, ...

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- What is scheduled in Program Documents?
 - Are scheduled tasks ending before others kick off?
 - Should schedules be adjusted to accommodate backup and agent schedules?
 - Do scheduled tasks conflict with each other?
- What are ServerTasksxx= set to?

Know Your Schedules

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• 'show sched' lists all scheduled tasks

DomAp Replication 08/13/2024 14:16:27 DomAp Mail Routing 08/13/2024 14:15:00 Domino Replication 08/13/2024 14:09:54 Domino Mail Routing 08/13/2024 14:10:00 Domino Mail Routing 08/13/2024 14:10:04 Domino Replication 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:22 COMPACT Run Program 08/13/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Scheduled	Type	Next schedule	
DomAp Mail Routing 08/13/2024 14:15:00 Domino Replication 08/13/2024 14:09:54 Domino Mail Routing 08/13/2024 14:00 Domino Mail Routing 08/13/2024 14:10:00 Domino Replication 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:15 Domino Replication 08/13/2024 14:10:15 Domino Replication 08/13/2024 14:10:22 Domino Mail Routing 08/13/2024 14:10:22 Commo Replication 08/13/2024 14:10:22 COMPACT Run Program 08/13/2024 14:14:36 Event Monitor Event Monitor 08/13/2024 14:14:36	DomAp		Replication	08/13/2024 14:16:27
Domino Replication 08/13/2024 14:09:54 Domino Mail Routing 08/13/2024 14:10:00 Domino Replication 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:05 Domino Replication 08/13/2024 14:10:15 Domino Replication 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:22 Commo Replication 08/13/2024 14:10:22 COMPACT Run Program 08/13/2024 14:14:36	DomAp		Mail Routing	08/13/2024 14:15:00
Domino Mail Routing 08/13/2024 14:10:00 Domino Replication 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:15:00 Domino Replication 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:15:00 STComm Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino		Replication	08/13/2024 14:09:54
Domino Replication 08/13/2024 14:10:04 Domino Mail Routing 08/13/2024 14:15:00 Domino Replication 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:22 STComr Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino		Mail Routing	08/13/2024 14:10:00
Domino Mail Routing 08/13/2024 14:15:00 Domino Replication 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:10:15 Domino Mail Routing 08/13/2024 14:15:00 STComr Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino		Replication	08/13/2024 14:10:04
Domino. Replication 08/13/2024 14:10:15 Domino. Mail Routing 08/13/2024 14:15:00 STCom Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino		Mail Routing	08/13/2024 14:15:00
Domino. Mail Routing 08/13/2024 14:15:00 STComr Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino.		Replication	08/13/2024 14:10:15
STComr Replication 08/13/2024 14:10:22 COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	Domino.		Mail Routing	08/13/2024 14:15:00
COMPACT Run Program 08/14/2024 09:30:00 Event Monitor Event Monitor 08/13/2024 14:14:36	STCom		Replication	08/13/2024 14:10:22
Event Monitor Event Monitor 08/13/2024 14:14:36	COMPAC	Т	Run Program	08/14/2024 09:30:00
	Event Mor	uitor	Event Monitor	08/13/2024 14:14:36

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Know Your Schedules

 'tell amgr sched' lists agent schedules, with limited granularity

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> tell amgr sched
S S 09:52 AM Today
S S 09:52 AM Today
S S 09:57 AM Today
S S 10:16 AM Today
S S 12:28 PM Today
S S 12:50 PM Today
S S 10:00 PM Today
S S 10:00 PM Today
S S 11:00 PM Today



Ytria agentEZ

Enable	Schedu	le Type	dule 🔺		
Status	Is Agent	Database Title	Database Path	Database Fil	D Name
False (37))				
True (21)					
🖃 Daily	(10)				
🛨 At	10:00:00 P	M (2)			
🛨 At	11:00:00 P	M (1)			
🕀 🕀	12:15:00 A	M (1)			
🛨 At	12:30:00 A	M (1)			
🛨 At	1:00:00 AN	1 (2)			
🛨 At	1:32:00 PM	l (1)			
🛨 At	3:00:00 AN	1 (2)			
More	than once a	a day (9)			
\pm Ev	ery 10' (1)				
🖃 Ev	ery 10h and	1 5' (1)			
	$\overline{\mathcal{A}}$		M A	nsf	😪 Conflict Killer
🖃 Ev	ery 1h (2)				
	$\overline{\mathcal{A}}$		\ s\	nsf	😪 NewDocNotification
	$\overline{\mathcal{A}}$	Monitoring Configuration	X	events4.nsf	😪 Reset Monitor Number
🛨 Ev	ery 4h (2)				
🛨 Ev	ery 5' (2)				
\pm Ev	ery 6h and	30' (1)			
Neve	r (1)				
🛨 Ne	ever (1)				
🖃 Week	dy (1)				

Agenda

Security

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- Performance
- FTI Health
- Traveler Health
- Database Health
- Schedules
- Crashes

- Notes.ini
- Clusters and Failover

- Replication
- Unread Marks
- Often Overlooked 'Necessities'
- Q&A

Automatic Diagnostic Collection

- Are you collecting crash reports and running fault analyzer?
 - Not enabled by default

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Configuration document → Diagnostics tab

Mail-in Database for diagnostic reports:	Lotus Notes Domino Fault Report
Maximum size of diagnostic message including attachments (in MB):	ິ 20 _
Maximum size of NSD output to attach (in MB):	ິ 10 _
Maximum amount of console output file to attach (in KB):	^e 10240 _
Diagnostic file patterns:	[®] logasio*.log
	NSD_DTRACE*.out
	memcheck*.log _
Remove diagnostic files after a specified number of days:	[™] Yes▼
Number of days to keep diagnostic files:	° 90 _
Fault Analyzer	
Run FaultAnalyzer on Fault DBs on this server:	[™] Yes ▼
Run Fault Analyzer on:	P All mail-in databases on this server a
Remove attachments from duplicate faults:	[™] No ▼

Crash Notification Rollup

- Set desktop policy to collect fault reports
- Tip: Set prompt to NO

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Otherwise security-minded people will cancel

Desktop Settings : D	efault Desktop Setting			no se	120	
Smart Upgrade Applications Wi	dgets Dial-up Connections Acco	ounts	Name Servers TLS Applet Se	curity Proxies Mail	Preferences Comments	Diagnostics
Diagnostic Collection Options		Но	w to apply this setting:	Inherit from parent policy:	Enforce in child policies:	
Mail-in Database for diagnostic reports:	Lotus Notes Domino Fault Repor		Don't set value	Inherit	Enforce	
Prompt user to send diagnostic report:	No		Don't set value	🗌 Inherit	Enforce	
Prompt user for comments:	No		Don't set value	Inherit	Enforce	
Maximum size of diagnostic message including attachments (in MB):	5		Don't set value	Inherit	Enforce	
Maximum size of NSD output to attach (in MB):	2		Don't set value	🗌 Inherit	Enforce	
Maximum amount of console output file to attach (in KB):	10240		Don't set value	Inherit	Enforce	
Diagnostic file patterns:			Don't set value	Inherit	Enforce	
Remove diagnostic files after a specified number of days:	Yes		Don't set value	🗌 Inherit	Enforce	
Number of days to keep diagnostic files:	30		Don't set value	Inherit	Enforce	

Auto Restart After Failure

- Do your servers have enough time to properly shutdown?
 - Some servers need longer than 300 seconds to shutdown
 - Adjust based on your environment
- Are you getting notified when crashes happen?
 - Set on Basics tab of the Server document
 - Enable 'Mail Notifications'

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• (shh.. Don't include your Boss on it)

Recovery	-
Run This Script After Server Fault/Crash:	「『」(This script must not run NSD)
Run NSD To Collect Diagnostic Information:	Enabled
Automatically Restart Server After Fault/Crash:	Enabled
Cleanup Script / NSD Maximum Execution Time:	^ℂ 600 _ seconds
Server Shutdown Timeout:	^Г 300 <u></u> seconds
Maximum Fault Limits:	[©] 3 ⊿ faults within [©] 5 ⊿ minutes

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Review Server Tasks

- Are critical tasks running?
 - Check! Some may be missing
- Not all servers need all tasks
 - Calendar Connector
 - Message Tracking Collector
 - Rooms & Resource Manager
 - Schedule manager
 - LDAP

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- DECS
- Collect

Is RNRMGR Needed?

Is it needed?

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- RNRMGR task (Rooms & Resource Manager)
 - Processes all Rooms and Resources activities
 - Meeting invitations
 - Reschedules or cancellations
 - Updates Busytime or Clusterbusy database accordingly
- If used, has the design been updated?
 - Make sure you update the design of your Resources database when upgrading your Domino server

Old Debug Still Lurking

Is there lurking debug still enabled?

• Did you really check??

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Consumes valuable resources

• Make sure your notes.ini doesn't look like this

Debug_Enable_Update_Fix=8191 Debug_Disable_DDM=1 NSD_RUN_MEMCHECK=1 debug_sem_timeout=1000 DEBUG_PRIVATE_POOLS=1 DEBUG_SHARED_POOLS=1 NSF_DocCache_Thread=1 debug_nif=0 debug_nif_update=1 NSF_DocCache_Thread=1 FT_LIMIT_HIGHLIGHT_FILTER=1 LDAPDEBUG=1 SMTPDebug=3



Notes.ini

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• Don't forget about the configuration document!!

Basics Security Client Upgrade Router/SMTP MIME NOTES.INI Settings NOTES.INI Settings Current parameters:HTTPJVMMaxHeapSize=1024M HTTPJVMMaxHeapSizeSet=1 FTG_USE_SYS_MEMORY=1 UPDATE_FULLText_Thread=1 CLUSTER_ADMIN_ON =1 CLUSTER_REPLICATORS=2 debug_threadid=1 debug_capture_timeout=1 SERVER_TRANSINFO_RANGE=12 debug_show_timeout=1 Create_R9_DATABASES=1



Review for Unsupported Variables

- Determine if any unsupported notes.ini variables are in use
 - Partial list here:

https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0 032795

• Examples:

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- DEBUG_NAMELOOKUP_MISSES
- DONT_CACHE_MONITOR_FORMULAS
- LSMODULE_TRACE
- PercentAvailSysResources (not listed in the KB article, but has been deprecated)

Do You Have These Variables Set?

- Recommended to be enabled at all times:
 - CONSOLE_LOG_ENABLED=1

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- Captures server console data 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 semdebug.txt
- DEBUG_SHOW_TIMEOUT=1
 - Captures semaphore information and logs to semdebug.txt
- DEBUG_THREADID=1
 - Stamps server threads and logs to console.log file

Prevent Updates to ServerTasksAt

- Tired of losing your ServerTasksAt customizations when upgrading?
- SetupLeaveServerTasks to the rescue

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- Add SetupLeaveServerTasks=1 to server's notes.ini
- Disables automatic updating of the ServerTasks= and ServerTasksAtXX= lines during a Domino Server upgrade

Ensure Proper Event Pool Size

- Especially important if actively debugging a problem
 - Message below indicates Event Pool is set too small
 - Warning: Cannot record event cannot keep up with event occurrence rate!
- Increase the event pool size if necessary
 - Default size is 10,485,760 bytes. Maximum size is 104,857,600 bytes.
 - Add notes.ini EVENT_POOL_SIZE=xxx to notes.ini
 - Requires a server restart

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Is Silent Failover Setup?

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- Check your desktop policy settings
 - Desktop Settings Document -> Mail tab

Client Settings	How to apply this setting:
Auto-retrieve document setting: ^C Disable	Don't set value
Enable server to poll for new mail ^P Enable P and trigger replication on notification of new mail:	Don't set value
Enable silent failover when a [°] Enable server goes down:	Don't set value
Enable upgrade of all local NSFs ¹⁷ Disable <u>1</u>	Don't set value

Is Mail Cluster Failover Configured?

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Configuration Settings : CFG	G_Mail	in the second	
Basics Security Client Upgrade Router/SM		Settings HCL iNotes IMA	P SNMP Activity Logging Diac
Basics Restrictions and Controls Message Journaling Commands and Extensions Cor	Disclaimers Message T	Tracking Message Recall	Advanced
Miscellaneous Controls		Additional Controls (D	elivery and Transfer)
Logging level: Rormal .		Restrict name lookups to primary directory only:	^r Disabled 』▼
Out-of-Office Select Keywords	×	Cluster failover:	^ℂ Enabled for last hop only
Advanced Keywords	ОК	Failure Messages	
Ignore mess Disabled Enabled for last hop only Enabled for all transfers in this dor	Cancel	Failure messages for the conditions below are specified by:	● Text file C Text
Dynamic co: interval:		Transfor failure:	۹
Undelivera		Delivery failure:	۲
Hold undeliv	-	Message expiration:	r _
Automaticall dead mail:		Domain failure:	۲
		Server failure:	r _
		Username failure:	۲ <u>ــــــــــــــــــــــــــــــــــــ</u>
		Size failure:	۲ <u>۲</u>

Directory Assistance Failover

- Will directory assistance work during a failover?
 - Not if an application link is in use!

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B	Basics Naming Contexts (Rules) Domino					
h	Replicas					
ľ	Application	links:	A CR			
		Server Name	Domino Directory Filename	Enabled		
	Replica1:	*	outsidenames.nsf	Yes		
	Replica2:			No		
	Replica3:			No		
	Replica4:			No		
	Replica5:			No		

- Replace with * for Server Name and specify the filename
- Tip: Can't have both for failover to work, the application link will be used over the servername / filename

RNRMGR

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- RNRMGR supports clustering, but be aware
 - Only <u>one</u> other server in cluster will be allowed to process requests
 - If the home server (administration server in ACL) is down when RNRMGR starts it will not process any requests to protect cases where the database is out of date from the primary server

https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB 0088332

- After 30 minutes of down-time, RNRMGR server updates to "first non-home server in line" in the server cluster
 - Check who owns RNRMGR with this command
 - tell rnrmgr whoowns <resourceDBname>.nsf

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Cluster Symmetry

- Is your configuration optimal?
 - Should NOT use on:
 - \IBM_ID_VAULT
 - \MTDATA

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- Does it do what you expect?
 - Copy at file system level
 - Only folders below the data directory
 - No templates
 - Folder names and filename need to match, including case sensitivity!

Agenda

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- Q&A
Are You Automatically Creating Replicas?

Use a registration policy!

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Registration Settings : Default Regist	tration Settings
Basics Mail ID/Certifier Miscellaneous Comments A	dministration
Mail User Registration Options	How to apply this
Choose the mail system:	
Lotus Notes POP IMAP	🗌 Don't set value
Choose the mail server: tiomserver2/akh	Don't set value
Mail Template: mail85.ntf	Don't set value
 Create mail file now Create mail file in background 	🗍 Don't set value
Internet Address Options	How to apply this
Internet Domain: domtest.idevcloud.com	Don't set value
Choose an internet address format: FirstName LastName FirstName MI LastName FI LastName FI MI LastName	🗌 Don't set value
Choose an internet address separator: Underscore Dot Equal Percent	🗌 Don't set value
Advanced Mail Options	How to apply this :
Create mail replica's on: ☑ All mail server cluster mates	Don't set value

Careful with Database Properties

• Quotas and PIRC settings don't replicate!



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Quotas

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- Quotas are unique to a given server
 - Will only get set on cluster when replica is first created
 - Changes do not replicate
- You must set the quota on the cluster server to match quota of file on primary server

-OR-

Remove quotas on secondary servers

Careful with Database Properties

PIRC (Purge Interval Replication Control)

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- Prevents old deleted documents from being recreated/resurrected
- Enable via database property or with compact command

Replication Options	for NWF's Address Book ? 🗙
Basics	Remove documents from the replica
Space Savers	Remove documents not modified in the last (days)
P Send	Enable Purge Interval Replication Control
Till. Other	Prevent modified documents and deletions before [2024-05-15 04:47:58 PM] from replicating into database.

load compact dbname –pirc on

Especially important to have enabled on names.nsf

Missing and Duplicate Replicas

Missing replicas

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- Very common on non-mail servers
- MISSING

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- Duplicate replicas
 - Very common on mail servers

DUPLICATE

- How to identify:
 - Look at cluster directory database
 - Write your own application to detect
 - Ytria replicationEZ
 - Cluster symmetry

Missing and Duplicate Replicas

- Have you looked? You will be surprised!!
 - cldbdir.nsf

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Missing and Duplicate Replicas

Ytria replicationEZ

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Common Info			Domino		Dom0F						
B S	Replica ID	ls Duplic	Do Not	Number	Database Full Path	Database Title		Database	Full Pat	h	Database Title
🖃 Du	plicates (14)										
	862584BE:007A972E			Duplicates	mail\nsf			mail\	.nsf		
	862584BE:007A972E	V		Duplicates	mail\h.nsf	n					
	86258A5C:0060D17B	V		Duplicates	mail\T.nsf	1	·				
	86258A5C:0060D17B	V		Duplicates	[.nsf						
	0000000:00000000	V		Duplicates				mail\			
	0000000:0000000	V		Duplicates				mail\	9	sf	
	0000000:00000000	V		Duplicates				mail\			
	0000000:00000000	\checkmark		Duplicates				mail\			
	0000000:00000000			Duplicates				mail\			
	0000000:00000000	V		Duplicates				mail\		nsf	
	0000000:00000000	V		Duplicates				mail\			
	0000000:0000000	V		Duplicates				mail\;			
	0000000:00000000	V		Duplicates				mail\;			
	0000000:00000000	V		Duplicates				mail\;	;	f	
1 (2	273)										
	86258A31:0058D08B			1	gr	n in the second s	gn				
	86258A34:00617C3D			1	ns	f	202				
	8625795A:006FD056			1	ult	t.					
	86258A71:005B1D0A			1	st.	r					
	86258A63:0060C94C			1	l.n	5					
	84258A63:006A0227			1	ib.	I Contraction of the second					
	86258A4C:005F7209			1	ns	f					
	86258A53:005F6299			1		f					



Is Design Ping-Pong Happening?



Preventing Design Ping-Pong

- Replicating templates between servers
 - Most templates share same replica ID across servers
 - Latest design gets replicated

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- Stops ping-pong chain of events
- Limiting Design task execution
 - Runs by default at 1:00 AM along with Catalog task
 - ServerTasksAt1=Catalog, Design
 - Remove 'Design' from this variable
 - set config ServerTasksAt1=Catalog
 - Or edit notes.ini file directly
 - Until all servers are at same code level

Preventing Design Ping-Pong

Selective replication

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Choose to not replicate design elements

Replication Options	for NWF's Address Book Case	? ×
Basics Space Savers Send Scher	Receive only a subset of information from other replicas When computer	
	Selected documents Folders and Views - Receive these elements from other replicas Access control list Agents Celetions Replication formula Fields Define OK Ca	ancel

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- Unread Marks
- Often Overlooked 'Necessities'
- Q&A

Unread Marks

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- Are unread marks in sync across replicas?
 - Have you actually checked??
- Customer example



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Unread mark counters of mail files on primary and secondary servers

(Data compliments of Ytria replicationEZ)

Unread Counts In Sync	Unread Counts Out of Sync	No Unread Table on Secondary Server
955	690	286
49%	36%	15%





Unread Marks

- Key to ensure they are properly replicated
 - Review Database properties



Unread Marks - Creating Replicas

Key to exchange unread marks during replica creation

Create Replica		? ×
Use this tool to c automatically in t Selected: 6 Databases, 13	reate database replicas on multiple servers ne background via the Administration Process. 2 MB bytes	OK Cancel
domtest5/akh Other	Add Destination database and server Add Image: Destination server Remove Image: Destination server Image: Destination server Image: Destination server Image: Destination server Image: Destination server Add Image: Destination server Image: Destination server Image: Destination serv	Destination file mail\dadm ^ mail\juser. mail\juser. mail\mail. mail\uone
Show me only cluster me for cluster: Mail Cluster	mbers	

- Set ADMINP_EXCHANGE_ALL_UNREAD_MARKS=1 prior to creating replicas
 - Set on the "source" server

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Pay Attention to Console Errors!!

Console errors can't be ignored

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- admin4.nsf has not replicated (PUSH) with ANY server since MM/DD/YYYY HH:MM:SS (1681 hours ago)
- admin4.nsf has not replicated (PULL) with ANY server since MM/DD/YYYY HH:MM:SS (1681 hours ago)
- Error validating execution rights for agent 'Notify' in database 'subdir/dbname.nsf'. Agent signer 'XXX01/YYY', effective user 'XXX01/YYY'. Agent signer.
- RnRMgr: The design of Rooms.nsf is not one supportable by RnRMgr. Autoprocessing is being disabled for this DB.
- Directory Cataloger finished processing DirectoryCatalog.nsf: File does not exist
- Agent Manager: Full text operations on database 'mail/myfile.nsf' which is not full text indexed. This is extremely inefficient.

Recertifying Users

Recertify users BEFORE they expire

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 Use the Certification Expiration view in the Domino Directory to see which users are due to expire

Domino Directory	Ø	Edit Person 🐽 Delete Person	Recertify Selected Peop	le 🔘 Rename Selected People
Domino11 • names.nsf	¢	Certificate Issuer <	Expiration Date 🗠	Name
Admin Server: Domino 11		✓ Expired		
		/PNI	2008-12-31	Robinson , Douglas P.
		/PNI	2021-03-15	Robinson , Hannah
So by Organization		Expires after prore than 120 dates	ys	
····· 💷 by Client Version ····· 🎯 Alternate Languages		/WF	2025-12-02	Arthur , Tre
		MMF=	2025-12-02	Casarru , Jo
Certificate Expiration		/WF	2025-12-02	Eastwood , Dan

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Then select users, and click 'Recertify Selected People'

Admin4.nsf – Keep it Clean

- Do not make Test or Development servers part of your production Domain
- Keep it small. Remove old documents
 - Up to 21 days is OK

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- File -> Properties -> Replication Settings -> Space Savers
 - -> Remove documents not modified in the last # days



All replicas must have the same setting

Admin4.nsf – Keep it Clean

- Approve workflow requests
 - Renames

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- Delete Mailfiles
- Review documents pending Administrator approval
- Select 'Approve Selected Requests' or edit document to reject

Administration Requests	Approve Selected Requests ?Help							
Administrative Attention Required	¢		Sched. Type	Action	Requester	Action performed on		
Pending Administrator Approval		▼ Ap	proval requ					
Pending by Age		-	Domino 11	WF				
E Pending by Server			21	Approve Mail File Deletion	Nick Mad//WF	Marx Escobar/WF		
All Activity by Server Errors		Approval request pended within the last 7 days						
All Errors by Date		-	Dom/11_B/	WF				
All Errors by Server			21	Approve Mail File Deletion	Jeremy Mad//WF	Chris Wilson/WF		
Requests	Approval request pended within the last 14 days							
All Requests by Name		-	Dom/11_B/	WF				
All Requests by Server			21	Approve Mail File Deletion	Jeremy Mad//WF	Ram Kaur/WF		
All Requests by Originating Author All Requests by Time Initiated			2/	Approve Mail File Deletion	Jeremy Mad//WF	Michael John/WF		

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Questions?







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