Ready, Aim, Fire: Mastering the Latest in the Administrator's Arsenal

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AdminCamp2014
September 29- October 1 Gelsenkirchen, Germany

Introducing Kim Greene

- Owner of Kim Greene Consulting, Inc.
- Over 15+ years of experience with IBM Domino and
  20+ years of experience with IBM i (AS/400, iSeries)
- Services include system and application performance
  optimization, administration, debug and problem determination,
  upgrades, health/performance/security reviews, migrations,
  Sametime and Connections implementations, custom development, enterprise integration
- Blog: www.bleedyellow.com/blogs/dominodiva
- Twitter: @iSeriesDomino

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Introducing Ben Menesi

- Chief Product Officer at Ytria
- IBM Notes Administration and Development for various enterprise IBM customers
- Certified Advanced Developer IBM Notes v8-9, Advanced Security Professional Domino 7
- Wearing both Admin and Dev hats
- Speaker at Lotusphere / IBM Connect plus numerous LUG conferences such as the MWLUG, ICON UK, AUSLUG, etc…
- IBM Champion 2014 for Collaboration Solutions
- Twitter: @BenMenesi

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Introduction

- There has been an incredible amount of improvements and new features in Domino 8.5.x – 9.x

- We're all very busy coping with daily tasks and often end up sticking to our old ways instead of taking the learning curve

I have time for my job

I lose time by NOT using the latest, more efficient technologies

Learn about ALL the new stuff?

NO

YES

Time investment

The ROI on this learning curve allows me to be more efficient at my job

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Agenda

- Underutilized features

- Competition resiliency

- Server resiliency

- Upgrade tips

- Performance tips

- Notes.ini settings

- Securing your servers

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Underutilized Features

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DataBase Maintenance Tool (DBMT)

- New DBMT task streamlines database maintenance
  - New Domino Server Add-In Task (**n**)**dbmt** process
    - New in Domino 9

- What does it do?
  - Runs copy-style compact operations
  - Purges deletion stubs
  - Expires soft deleted entries
  - Incremental view indexing
  - Full text index updates and rebuilds
  - Reorganizes folders
  - Merges full-text indexes
  - Updates unread lists
  - Ensures critical views are created for failover
  - Fixes corruption

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DataBase Maintenance Tool (DBMT)

- What impact does this have on your servers?

- Replaces need for running **Compact** on Non-System databases
  - Revisit your current compact strategy and modify appropriately

- Replaces need for running **Updall**
  - If DBMT scheduled daily, suggest removing Updall from ServerTasksAt2= in notes.ini
    - TIP: Also might want SetupLeaveServerTasks=1 so any future upgrade will not put it back

- Eliminates awkward long pauses that may occur for in-line operations
  - Database is opened for first time e.g. "**Releasing unused storage for....**"

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DataBase Maintenance Tool (DBMT)

- Tips:
  - If compact time of a given database exceeds DBMT time limit, DBMT adds database to **dbmt_compact_filter.ind** file
    - Prevents compact from getting stuck on same database each day
  - Reviews CLDIBDIR.nsf to ensure a replica is available at all times for clustered environments
  - If second instance of DBMT started on all databases while first one still progressing, second instance prevented from running
  - Monitor DBMT statistics via '**sh stat dbmt**'
  - DBMT Updall and Compact work with DAOS-enabled databases, except for the gotcha below

- Gotcha:
  - 'Compact –c **–daos on**' option not available through DBMT

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DataBase Maintenance Tool (DBMT)

- Tip:
  - View indexes in mail files on failover server kept up-to-date
    - Prevents performance issue of slow response times when users fail over and view indexes on replica have to be built

- Gotcha:
  - View indexes only kept up-to-date for these templates:
    - StdR7Mail, StdR8Mail, StdR85Mail, StdR9Mail
  - and these views:
    - ($Inbox), ($Drafts), ($Sent), ($All), ($RepeatLookup), ($ToDo), ($Calendar), (Haiku_TOC), ($Alarms), (iNotes), ($Users), (iNotes_Contacts)

- Remedy:
  - Use notes.ini variables:
    - DBMT_MailTemplate=
    - DBMT_TemplateName=

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DataBase Maintenance Tool (DBMT)

- Tips:
  - To allow DBMT compact to complete work on a given database when a DBMT time limit is encountered
    - **MailFileDisableCompactAbort=1**
  - To allow DBMT compact to complete work on a given mail file even when new mail is ready for delivery to the file
    - Use DBMT **–noCompactLimit** switch

- Gotcha:
  - Beware, above two Tips may have unintended consequences for large mail files

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DataBase Maintenance Tool (DBMT)

- Schedule execution through program document

Program: **dbmt**

Basics | Administration

Basics			Schedule	
Program name:	dbmt		Enabled/disabled:	Enabled
Command line:	-timeLimit 300		Run at times:	12:30 PM each day
Server to run on:	⬛		Repeat interval of:	0 minutes
Comments:	Program document to get databases to new ODS 52 level		Days of week:	Sun

- Monitor execution through server tasks

DBMT Compact	Compacting WorkFlo\AddDesign.nsf (Additional Design), -timeLimit 300
DBMT Manager	Processing -timeLimit 300
DBMT Updall	Idle -timeLimit 300

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DataBase Maintenance Tool (DBMT)

- Increase number of threads for faster execution as appropriate

Program: **dbmt**		
Basics	Administration	

Basics		**Schedule**	
Program name:	dbmt	Enabled/disabled:	Enabled
Command line:	-compactThreads 4 -timeLimit 120 -force 1	Run at times:	10:30 PM each day
Server to run on:	⬛⬛⬛⬛	Repeat interval of:	0 minutes
Comments:	Program document to get databases to new ODS 52 level	Days of week:	Sun

- Monitor execution through server tasks

🐛	DBMT Compact	Compacting mail\dretherf.nsf (Dean Retherford), -compactThreads 4 -timeLimit 120 -force 1
🐛	DBMT Compact	Compacting mail\drehn 2.nsf (Dave Rehn), -compactThreads 4 -timeLimit 120 -force 1
🐛	DBMT Compact	Compacting mail\drolli.nsf (Dave Rolli), -compactThreads 4 -timeLimit 120 -force 1
🐛	DBMT Compact	Compacting mail\kcoppeja.nsf (Kathy Coppejans), -compactThreads 4 -timeLimit 120 -force 1
🐛	DBMT Manager	Processing -compactThreads 4 -timeLimit 120 -force 1
🐛	DBMT Updall	Idle -compactThreads 4 -timeLimit 120 -force 1

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DataBase Maintenance Tool (DBMT)

- Monitor statistics to analyze need to execution changes

- sh stat dbmt

```
DBMT.Compact.BackLog = 0
DBMT.Compact.Began = 08/24/2014 12:30:43 CDT
DBMT.Compact.Finished = 08/24/2014 14:48:57 CDT
DBMT.Compact.Fixup = 0
DBMT.Compact.Successful = 665
DBMT.Compact.Unsuccessful = 19
DBMT.Compact.Unsuccessful.InUse = 19
DBMT.Compact.Unsuccessful.TimeLimit = 0
DBMT.Updall.Began = 08/24/2014 12:30:43 CDT
DBMT.Updall.Finished = 08/24/2014 14:48:57 CDT
DBMT.Updall.Processed = 697
```

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Domino <u>Q</u>uality <u>o</u>f <u>S</u>ervice (QoS)

Domino
9.0

- Monitor Server Health & Performance

- Add-on to the Java Console and a probe task on server
    – Java console add-on contacts probe task to check server health

- If probe task does not respond promptly, or reports a problem, then NSD, sending mail to Admin, and or kill & restart domino server happens
    – Configured by administrator

- To enable
    – Run 'nserver –jc' and 'nserver –jc –q –y' to create initial dcontroller.ini file in data dir
    – Add QOS_ENABLE=1 to dcontroller.ini
    – Add QOS_ENABLE=1 to the Domino notes.ini file
    – Run server using "(n)server –jc"

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Domino **Q**uality **o**f **S**ervice (QoS)

Domino
9.0

- Configure Mail to:
  - *QOS_MAIL_TO= serverAdmin1 @renovations.com,serverAdmin2 @renovations.com*
  - *QOS_MAIL_SMTP_SERVER= 192.168.1.19*
  - *QOS_MAIL_ATTACH_LOGS=1*

- Configure no kill:
  - *QOS_NOKILL=1*

- Restart limitations
  - *QOS_RESTART_LIMIT_ENABLE=1*
  - *QOS_RESTART_LIMIT_MAXIMUM=3*
  - *QOS_RESTART_LIMIT_PERIOD=720*

- Read more: http://www-10.lotus.com/ldd/dominowiki.nsf/dx/IBM_Domino_Quality_of_Service_lprQoSrpr_Deployment_Guide

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Program Document Enhancements

Domino 9.0

- Program documents now support server groups in the "**Server to run on**" field
  - A "**Group Name"** where group contains list of servers to run on
    - "Asia Servers"
      - Tip: **Group type:** must be **"Servers only"** (not a multi-purpose group)
  - A **pattern-matching question mark (?)** character or characters. Question mark **(?)** allows you to include all servers where one or more subsequent characters in server name vary
    - Euro**??**/KGCI
      - Includes Euro01/KGCI, Euro02/KGCI, …
  - An **asterisk (*)** anywhere within a name; no longer limited to leftmost component of hierarchical name
    - Euro*/KGCI
      - Includes Euro001/KGCI, Euro002/KGCI, …
- New in Domino 9

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Program Document Enhancements

- Benefits
  - Program document can be applied to servers group name
  - Migrated or new R9 servers can be added to the group and Program Documents applied right away!

- Tip
  - Use DBMT via the same Program document for multiple servers!

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Compact Replication

Domino 9.0

- Use to remedy "**Insufficient memory**" or "**Unable to extend an ID table – insufficient memory**" errors caused by frequent additions and deletions in a database

- Internally reorganizes IDs in new replica
    - Avoids ID table fragmentation leading to above errors
    - Preventative maintenance to avoid fragmentation causing database to become inaccessible

- New **–REPLICA** switch on Compact command
    - Creates replica of database under the covers while source database remains accessible

- Maintains Views and Unread Marks between old and new replica

- New in Domino 9

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Compact Replication

- Additional switches:
  - REN_WAIT: Specifies wait time before renaming replica
  - RESTART: If automatic renaming of replica does not succeed, restarts server automatically and renames replica on server startup
  - IDS_FULL: Perform compaction only if n percentage of IDs is reached in the application

- Tip:
  - Syntax of '-IDS_FULL' parameters not documented correctly
    - Incorrect syntax:
      - '–IDS_FULL=80'
    - Correct syntax:
      - '–IDS_FULL 80'

- Gotcha:
  - Does not maintain NoteIDs

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Purge Interval Replication Control
Customer Example

- Enterprise IBM customer with hundreds of servers around the globe

- Numerous heavily used applications (CRM, ERP, etc…) used for over 10 years and near or approaching 60 GB in size
  - Note ID tables limit hit
  - Gotcha: Deletion stubs! (kept for over 90 days)
  - "If we reduce deletion stub lifetime, resurrected documents are starting to come back!"
  - OH and we're running Domino 8.5.2 and management isn't sure about upgrading to 8.5.3 or 9…

- Call it justified: PIRC

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Purge Interval Replication Control
A word about ghosts / zombies

- Resurrected documents / notes coming back from the dead

- A common enemy of Notes Admins and responsible for a LOT of white hair

Initial doc. Creation

(?) DB Creation Date

doc. Created in this file

Time it took to replicate document

Is this time > than the deletion lifetime?

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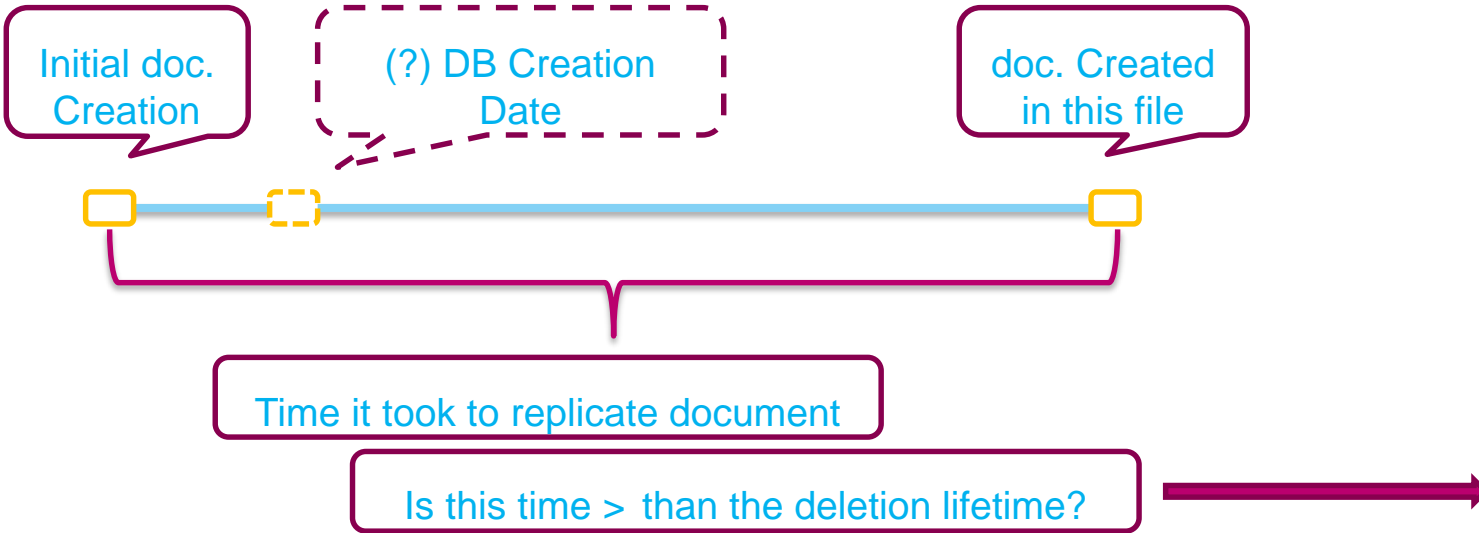
Purge Interval Replication Control

- How does it work?

PIRC

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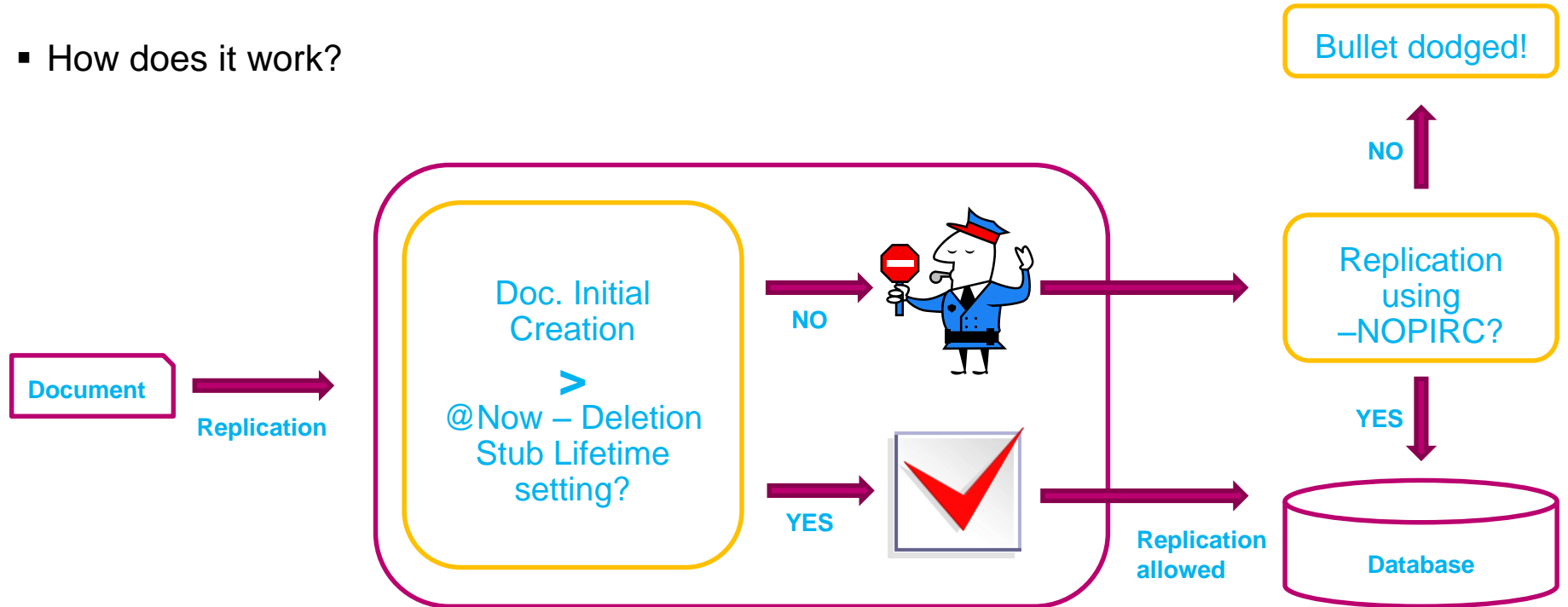
Purge Interval Replication Control

Domino
8.5.3

- New feature in IBM Domino 8.5.3

- Prevents documents older than deletion stub lifetime from replicating into the DB
    - Tip
        - If have docs older than deletion stub lifetime, replicate them first and then enable PIRC
        - Optionally: use replicator with **–NOPIRC** switch to include documents that PIRC wouldn't let replicate

- You WANT to use PIRC!

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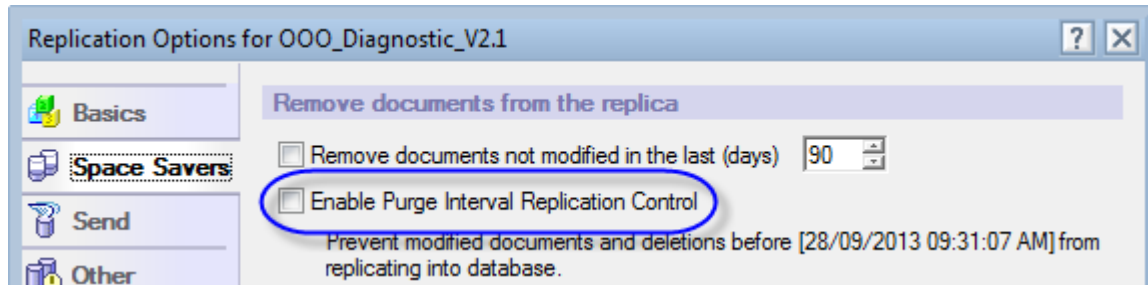
<u>P</u>urge <u>I</u>nterval <u>R</u>eplication <u>C</u>ontrol
Customer Example

- User reported in early May thousands (34,000+) documents deleted months prior reappeared

- Application resided on 3 clustered servers and had been PIRC enabled

- Primary server moved to new box
  - New replicas created via AdminP

- Gotcha: PIRC database setting doesn't carry forward when creating new replicas!

- Tip: Remember to PIRC enable **<u>ALL</u>** replicas of a database!!

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Purge Interval Replication Control

- Some other properties that do not carry forward:
  - List in Database Catalog
  - Disable background agents for this database
  - Include in multi-database indexing
  - Don't overwrite free space
  - Disable transaction logging
  - Don't allow headline monitoring
  - Don't allow simple search

- PIRC Debug Tips
  - **DEBUG_REPL_PIRC**=1
    - Display PIRC date and summary information for documents not allowed to replicate

  - **DEBUG_REPL_PIRC**=2 or greater
    - Provides details about the documents being blocked by PIRC

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OOO Service

Domino 8.0

- Available since version 8, yet not utilized by many

- To set: Domino Server Configuration document, **Router / SMTP** tab > **Advanced** > **Controls** > **Out of office** type field
  - Tip:
    - Restart Domino server to take effect (restarting router only isn't enough!)

- Benefits:
  - supports failover (while the OOA doesn't)
  - mail notifications are immediate (instead of every 6 hours)
  - supports minimum absence of 1 hour (instead 1 day with OOA)

Leaving:	Today	16	☑ Specify hours	10:00 AM ◔
Returning:	Today	16		03:00 PM ◔
☑ I am unavailable for meetings				

  - automatically disabled upon return
  - performance improvement, running a service is more efficient than running agents
  - "From" field populated using the OOO Profile's Owner field (and not the agent signer!)

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OOO Service

- Gotchas:
  - All elements (client, server, template) must be 8.x or above (otherwise defaults to OOA)
  - Failover support: only if ALL servers are 8.x or above
  - OOS must be enabled in ALL Mail configuration documents in the domain
  - Profile data (OOO Profile) is heavily cached and isn't refreshed automatically

- Debug: use Debug_OOS=1

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OOO Service
Customer Example

- Replies to emails sent by employees being delivered to the Notes Administrator account
  - Only handful of employees affected
  - Only some emails being sent by these employees affected

- Analysis:
  - Impacted employees had their OOO agent enabled
  - The affected contacts had been added to their Address Book by the Notes Administrator account

- Remedy options:
  - Edit contacts so now owned by the mail file owner
  - Enable OOO service to prevent situation in future

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Directory Assistance Replica

- New option in 8.5.2 to create replica of Directory Assistance when configuring a new server
  - Gotcha: 8.5.2 failed to create replica
    - Working correctly in 8.5.3 and beyond

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Directory Assistance Follow-On

- TIP:
  - When setting up directory assistance, do not use an application link, rather specify the filename of the "local" replica

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Competition Resiliency

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Domino Migration Utility

- Refresh of DUS / NUS tools to migrate from Exchange to Domino
  - Previous tools outdated, supporting Exchange 2003 only
  - End user driven, not robust

- New utility with server and client component
  - Server component to handle server based mail migration
  - Client component to handle local mail migration (PST files)

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Domino Migration Utility

Domino
9.0

- Renamed to Domino On-Boarding Manager in 9.0.1

- Migrate email, calendar, contacts into Domino

- Active Directory migration to automatically create users and groups in Domino directory

- Supports:
  - Exchange/Outlook 2007 and Outlook Express in 9.0
    - Exchange 2003/2007/2010 supported in 9.0.1
  - Active Directory 2003 and 2008

- Requires Notes 9 and Domino 9

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Domino Configuration Tuner

Domino 8.5

- We've heard about it in many-many presentations since 8.5
  - Do you use it?

- Proceed with caution
  - Recommendations are generic
  - Need to review your server environment to see which recommendations make sense for your configuration
    - See customer examples on next slide

- Tip: you can disable 'rules' that you do not want to check your server against under Preferences!

Manage Rule Execution

| Enable Rules | Disable Rules | Select All | Deselect All |

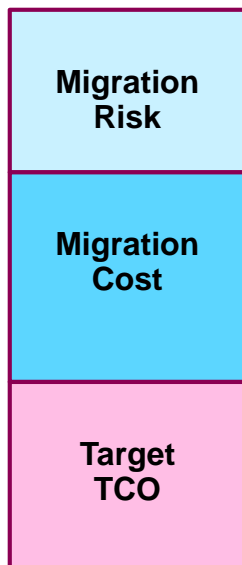|	Description
✓	notes.ini ENABLE_LZ1_ENCRYPTED_NOTES avoids unnecessary conversion
✓	notes.ini FTG_USE_SYS_MEMORY can cause Domino to crash (pre 6.5.4)
✗	notes.ini FTG_USE_SYS_MEMORY reduces memory fragmentation related to fu
✓	notes.ini FT_FLY_INDEX_OFF=1 will prevent on-the-fly full text index creation there

Domino Configuration Tuner

Domino 8.5

- Customer examples – when the advice is 'good'
  - SetupLeaveServerTasks=1
    - Excellent, many customers don't know about this gem!
  - ADMIN_CLIENT_SKIP_DOMINO=1
    - Another gem not well known that prevents unnecessary scanning of files under the /Domino subdirectory

- Customer examples - when not to 'listen' to the advice
  - FTG_USE_SYS_MEMORY
    - NEVER set on an IBM i server, can cause server crashes
  - NSF_BACKUP_MEMORY_CONSTRAINED
    - Need to review how your backups are done as many times not applicable
  - IOCP_Async_Notification_Poll_Time
    - Only needed on servers with heavy CPU utilization
  - Update_No_Fulltext=1
    - Prevents ALL full text search, beware!

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Domino Double Check (powered by Trust Factory)

- **<u>Free</u>** engagement offered by IBM to IBM Notes / Domino customers
  - Also offered so business partners can leverage for their customers
  - Proven method against competitive attacks: over 200 customers and over 4M seats in the past 4 years

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Domino Double Check (powered by Trust Factory)

- How does it work?

Baseline	→	**Optimize**	→	**Evaluate**

Measure end user demand Characteristics as the basis of compare

Determine if the current environment can be optimized to reduce overall cost

Compare "Future State" TCO with Alternatives

- User Profiling
- Document I/O
- Session Currency
- Network Traffic
- Session Duration
- DB Transactions

- Server Consolidation
- Storage Reduction
- Network Utilization
- End User Patterns
- Domino Platform
- Licensing Optimization

- Cloud vs. On-premises
- Competitive alternatives including migration costs

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Domino Double Check (powered by Trust Factory)

- How can you benefit from this engagement?
  - Reach out to your local Client Technical Professional and ask for the regional double check coordinator (there is one in every region)

DBCapture Tool
a.k.a: Automatic Corrupt Database Collection Tool

- New in 8.5.2
  - Automatic identification and collection (i.e. taking them off-line) of corrupt databases without bringing down Domino server
    - Files renamed to .cor and moved to IBM_Technical_Support folder
      - Can still run fixup / compact / updall on them!
  - Enable using server notes.ini: **DATABASE_CAPTURE_ENABLED=1**
  - Tips:
    - Can invoke manually; ignores Status but respects Capture and Size limits
      - **load dbcapture dbnames.nsf**
    - **DATABASE_CAPTURE_SIZE_LIMIT** (in mbs) sets size of all collected databases
      - Default: 100 / set to 0 for no limit
    - **DATABASE_CAPTURE_LIMIT** sets maximum # corrupt DBs to be collected
      - Default: 10 / set to 0 for no limit
  - Gotcha
    - **DATABASE_CAPTURE_ENABLED** value resets every time capture is done, and is enabled again when server is restarted! (i.e. does not run continuously)

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Domino Domain Monitoring is Underutilized

- Means to quickly monitor and determine health of an entire domain
    - Available since Domino 7

Monitoring & Configuration
(events4.nsf)

Domino Domain Monitor
(ddm.nsf)
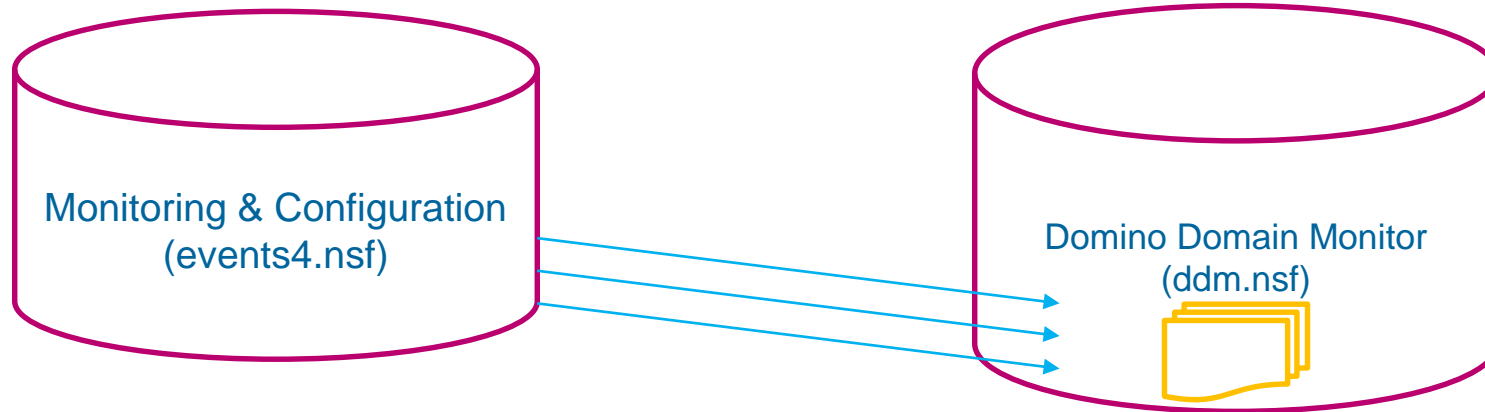
- Used for all domino domain monitoring configuration

- Domino domain monitoring probes generate Event report documents that get consolidated and reported into the DDM database

Domino Domain Monitoring Reports

▪ How do I know if a DAOS resync is needed?

Open Event

(This event is not assigned to anyone)

Generated by:	dominosvr/lab
in Domain:	Lab
Event class:	Enhanced

For server:	-
Database:	/dominosvr/data/mail/dtest2.rst
Agent:	-
User:	-

Most Recent Event

? Warning Low

Tuesday, January 27, 2009 - 2:14:46 PM   (4 occurrences, first seen at 10:57:44 AM that day)

Informational - The database /dominosvr/data/mail/dtest2.rst has caused the DAOS catalog to become out of sync. Deletions will be postponed. Please run 'tell daosmgr resync' at the next convenient opportunity to re-synchronize.

Explanation

- **Reported by:** Server

- **Severity and type:** ? Warning Low in Database 📄

- **Probable cause:** The specified database contained DAOS information that did not match what DAOS had for it in the DAOS catalog. As a result, DAOS cannot safely trust that it knows about all the tickets that the database may have so to prevent possible data loss all NLO deletions are suspended until DAOS is in sync with all the databases on the server again.

- **Possible solution:** 1. The Admin restored a different copy of the database from either a backup copy or by making an OS level copy from another server over the database that DAOS knew about. The DAOS related information in the database's header was inconsistent with what DAOS already has in its catalog. DAOS considers itself to be out of sync with the actual state of DAOS tickets and NLOs on the server. To correct this simply use the DAOSMgr resync command to have DAOS get back in sync. This command will cause DAOS to scan for all the existing NLO files and then scan the databases for any DAOS tickets they hold. Depending on the size of the server and the number of NLO files, this may take some time to complete. It is recommended that a resync be performed when there is little use of the server to reduce the likelihood of any adverse
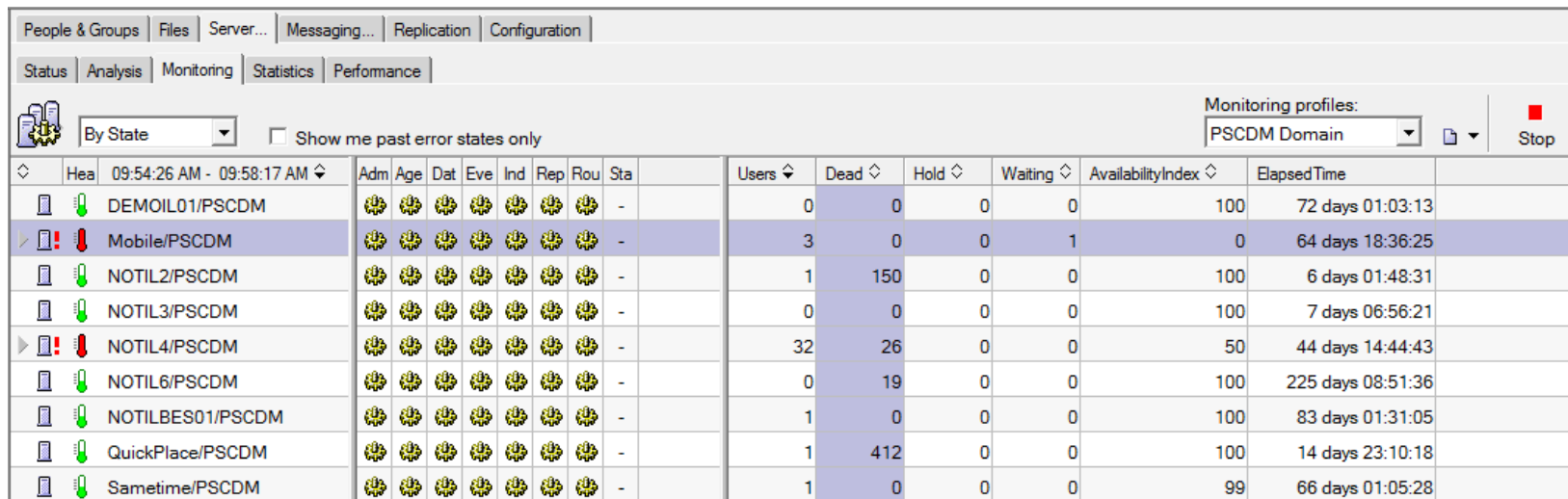
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Health Monitor – Another Under Utilized Tool

- Easy to use and provides 24/7 monitoring
- Enabled via Administration Preferences
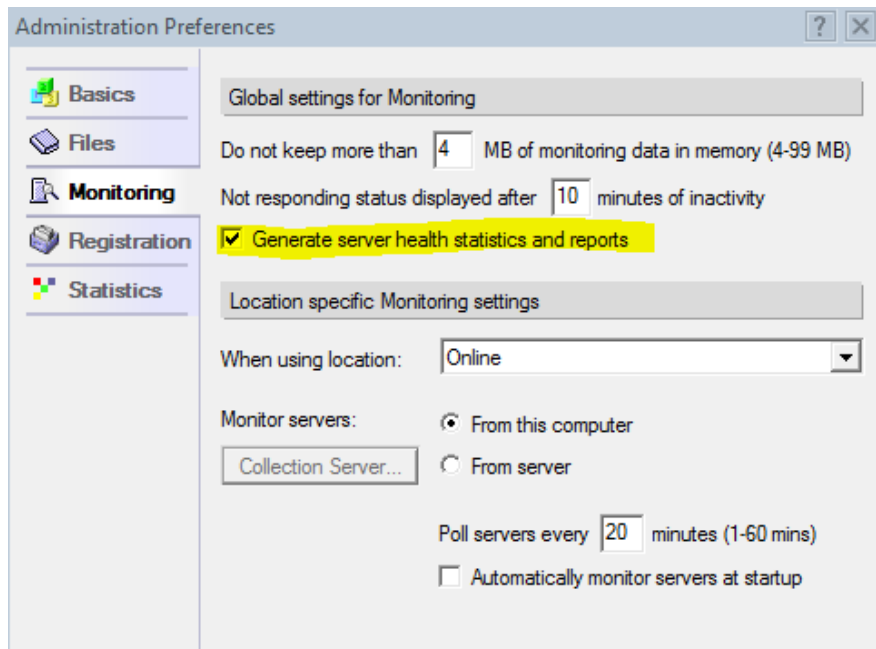
Health Monitor – Another Under Utilized Tool

- Watch servers on single screen

- Monitor servers and/or tasks needing attention

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Upgrade Tips

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On Disk Structure

- Don't forget to upgrade databases to latest ODS level when upgrading servers
  - What is the ODS about?
    - Newest internal structure enables database to benefit from newest features

- Few examples of benefits
  - R5.0 (ODS41) = participate in transaction logging
  - R6.0 (ODS43) = LZ1 compression and shared templates
  - R8.0 (ODS48) = design and document compression
  - R8.5 (ODS51) = DAOS
  - R9.0.1 (ODS52) = Performance improvements, better handling of huge (2GB+) attachments

- Fun fact: as of ODS48, more details are captured when recording user activity:

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On Disk Structure

- ODS 43 user activity:

Date/Time	Reads	Writes	User
01/16/2014 01:58:54 PM	0	2	Acme01/ACME
01/09/2014 12:28:07 PM	0	2	John Admin/ACME
12/16/2013 12:28:51 PM	2	0	John Admin/ACME
12/10/2013 08:34:16 AM	2	0	John Admin/ACME
12/03/2013 05:26:24 AM	0	1	John Admin/ACME

Total	Uses	Reads	Writes
Last Day	0	0	0
Last Week	1	0	2
Last Month	2	0	4
Last 638 Days	164	26535	3797

- ODS 48+ user activity:

Date/Time	Reads	Adds	Updates	Deletes	User
01/20/2014 02:22:44 PM	1	0	0	0	Acme01/ACME
01/20/2014 12:41:23 PM	1	0	0	0	Acme01/ACME
01/20/2014 12:40:59 PM	1	0	0	0	Acme01/ACME
01/20/2014 12:38:08 PM	1	0	0	0	Acme01/ACME
01/20/2014 12:20:52 PM	1	0	0	0	Acme01/ACME

Total	Uses	Reads	Adds	Updates	Deletes
Last Day	10	10	0	0	0
Last Week	14	14	0	0	0
Last Month	26	27	0	0	0
Last 644 Days	591	589	2	5	2

On Disk Structure

Domino 8.5.2

- How to upgrade?

- Use policies to update local ODS levels
  - Push to clients via dynamic policies / or organizational policies
    - Desktop Settings policy document: Mail tab > "Enable upgrade for all local NSFs to latest ODS version"
      - Gotcha: requires the 8.5.2 Domino Directory on server
  - CREATE_R(85/R9)_DATABASES=1
  - Even better: **NSF_UpdateODS=1** (Will keep updating ODS levels as new versions are released)
    - Tip: Although it's said to be both server & client side, it only works on the client side!

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On Disk Structure

Domino
8.5.2

- Tip: Upgrading system database ODSs that are being constantly used
  - No need to bring down server anymore
  - Use Compact Replication!

- Customer example
  - Some mail files with different number of documents across replicas
  - Analysis found difference in ODS levels for affected mail files
    - Server A = ODS 43
    - Server B = ODS 51

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Notes Install Cleanup Executable Tool

- Tool to clean up failed install, uninstall or upgrade
  - Available for Notes 6.x and up
  - Version 9.0.1 out recently
  - Removes files and settings including registry, program files, and user data files

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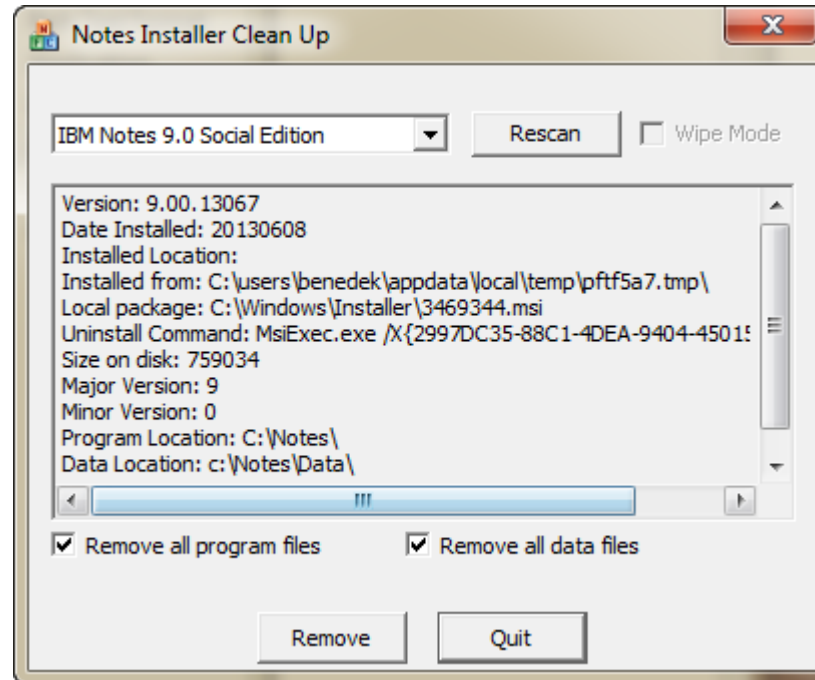
Notes Install Cleanup Executable Tool

- NICE can also be run in silent mode via command line using the following variables:

-h | -?	Show recommended usage options
-rp	Remove Program Files
-rd	Remove Data files (only in Single-user mode!)
-wipe	Notes registry cleanup
/q	Will launch NICE in silent mode
/qb+	Silent mode showing limited progress bar
/qn	Completely silent mode with no progress bar
/qn+	Completely silent mode but with dialog at the end of completion

- Download: http://www-01.ibm.com/support/docview.wss?uid=swg21459714

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Domino OSGi Tasklet Service

Domino
9.0

- DOTS: Next generation of agents for Domino
  - Ships as a server task with IBM Domino 9
  - Needs the Social Edition add-on
  - Prior to Domino 9 releases can use the OpenNTF edition of DOTS
    - Tip:
      - This needs to be uninstalled <u>before</u> upgrading to Domino 9!

- What are the benefits?
  - MUCH faster
    - DOTS tasklets are way more efficient than JAVA agents (about 3x as fast according to our testing)
  - More flexible scheduling
  - Runs server-wide instead of depending on databases
  - Programmatic control over scheduling
  - Disadvantage: Needs rewrite of Java agents

Domino Domain Monitoring to Find "Heavy" Agents

- Use probes to monitor performance of servers
  - Probe type = **Application Code**
  - Probe subtypes
    - Agents behind schedule
    - Agents evaluated by CPU usage
    - Agents evaluated by memory usage
    - Long running agents
  - Processes to probe = **AMGR** or **HTTP**

Client Clock Debug

- Client clock debug is key to understanding why Notes client applications are slow
  - Shows NRPC transactions in detail
  - Dumps call stacks conditionally for context
  - 1 mouse click or 1 LS/Java call = several NRPC transactions

- Enable via:
  - client_clock=1 or 31
    - Tip: Setting to 31 collects call stacks
  - console_log_enabled=1
  - console_log_max_kbytes=262144
  - debug_threadid=1

Client Clock Debug

- Mining the output
  - Locate transactions and transaction types that are:
    - The most common
    - Taking the longest to complete
    - Sending the most total bytes across the network
    - Sample output:

Transaction Type (Transaction context/parameters)   duration   [out+in=total bytes]
READ_ENTRIES(REP48257987:00273955-NT000006AE): 40 ms.   [76+232=308]

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NRPC Parser
OpenNTF Project

- Thanks to Andrew Magerman

- Helpful for analyzing client clock debug data

NRPC Parser
1.0.13
on Local
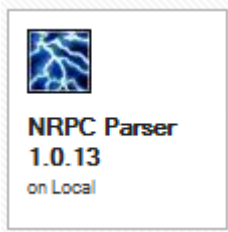
- Allows quick client clocking enablement

- Allows to parse log file, and shows data in Notes views
  - Views allow you to sort and categorize, therefore make your data much easier to oversee.
  - Tip: use it to find NRPC calls resulting in large data transfers

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NRPC Parser
OpenNTF Project

- Download from openNTF:
  http://www.openntf.org/main.nsf/project.xsp?r=project/Notes%20RPC%20Parser/releases/20DC5AEACB66893C86257BFC004EFEF4

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Client Clock Debug Analyzer
OpenNTF Project

- Running it:

  E:\ClientClock>**java** -jar ClientLoad.jar -f "E:\ClientClock\console.log" -xt "E:\ClientClock\nrpctrans.xml" -xs "E:\ClientClock\StackClue.xml" -ni "E:\ClientClock\output.txt"

  Execution took 54 miliseconds.
  Processing E:\ClientClock\console.log
  Execution took 0.054 seconds.
  Time found = 11/21/2013 11:43:59 from line [10F8:0002-0C1C] (9-4 [35])
  GET_DB_MODIFIED_NOTES_INFO_RQST(REP852577AE:005A6DA0,Since:11/21/2013 11:43:59 AM):
  1 ms.
   [28+32=60] (No documents have been modified since specified time.)
  ....
  Wrote 24571 lines of notes import format to file E:\ClientClock\output.txt

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Domino Attachment & Object Service (DAOS)

Domino
8.5

- Tips:
  - Modify DAOS "buckets" to get better attachment analysis
    - **DAOSEST_BUCKETS=16,32,64,128,256,512,1024,2048,3072,4096**
  - Modify percent of databases analyzed using the –p % parameter
    - **load daosest –o filename.txt –p xx**
  - Use as workaround for 64GB Limit: using DAOS you can go beyond 64GB in logical size as long as the physical size remains under 64GB
  - Disable encryption via **DAOS_ENCRYPT_NLO=0**
  - Use '**show stat DAOS**' to determine encryption level

    ```
    DAOS.Engine.Catalog = Synchronized
    DAOS.Engine.Encryption = Disabled
    DAOS.Engine.Status = Enabled
    ```

- Gotchas:
  - Can't restore .NLO files to another server with attachment encryption enabled
  - Can't disable encryption mid-stream
    - Sorry, start over!

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Don't Forget to DAOS Enable Mail.Box!

- Mail.box <u>not</u> DAOS enabled
  - On mail submission
    1. Deposited in mail.box
  - On delivery to Ben
    2. Read from mail.box
    3. Written to DAOS & saved
    4. Ticket written to ben.nsf
  - On delivery to Kim
    5. Read from mail.box
    6. Written to DAOS & discarded
    7. Ticket written to kim.nsf

mail.box

ben.nsf

DAOS

kim.nsf

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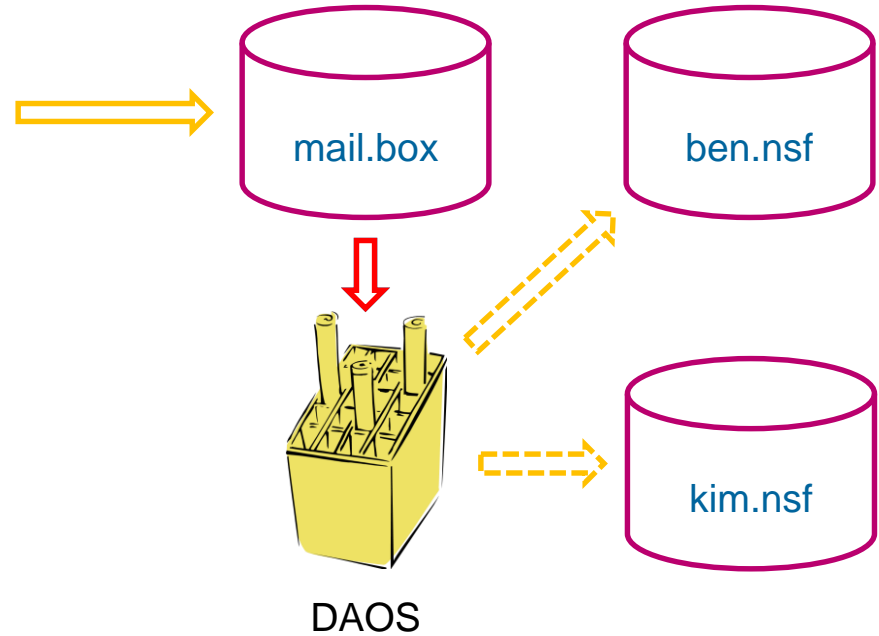
Don't Forget to DAOS Enable Mail.Box!

- Mail.box DAOS enabled
  - On mail submission
    1. Written to DAOS and saved
    2. Ticket written to mail.box
  - On delivery to Ben
    3. Ticket written to ben.nsf
  - On delivery to Kim
    4. Ticket written to kim.nsf

mail.box

ben.nsf

kim.nsf

DAOS
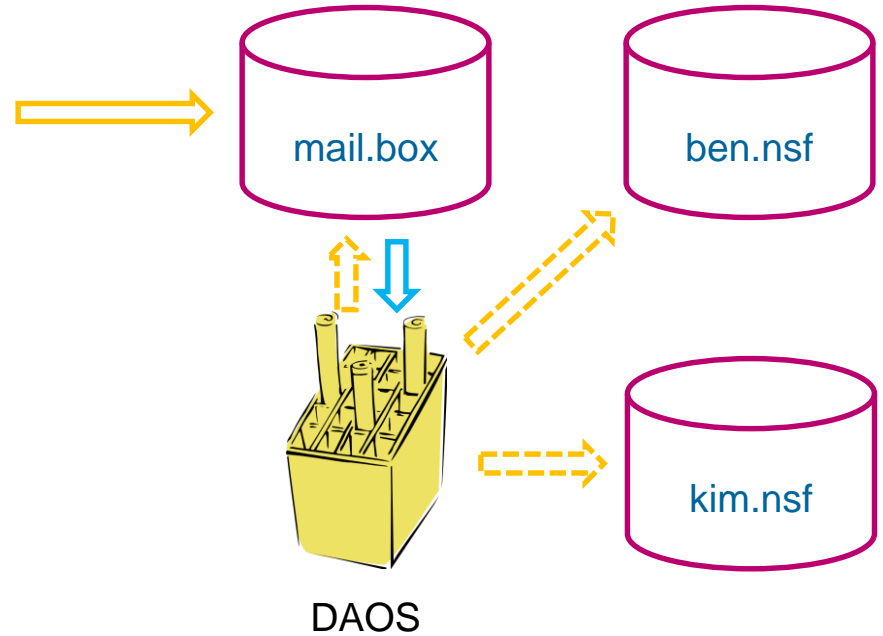
Checking Traveler Status

- **tell traveler status**
  - Example <mark>Yellow</mark> status

```
tell traveler status
[0458:004B-05BC] 08/06/2012 11:03:10 AM  Remote console command issued by Kim Greene            : tell traveler status
[0458:0006-029C] tell traveler status
[08C8:390E-070C] The Lotus Notes Traveler task has been running since Sun Aug 05 23:55:42 CDT 2012.
[08C8:390E-070C] The last successful device sync was on Mon Aug 06 11:03:06 CDT 2012.
[08C8:390E-070C] Yellow Status Messages
[08C8:390E-070C]  The response times for opening databases on mail server CN=Traveler/O=            are above the acceptable threshold.
[08C8:390E-070C]  There have been 259 device sync failures for reasons other than the server is too busy.
[08C8:390E-070C]  The current native memory usage is 94 percent of the total available memory.
[08C8:390E-070C] The overall status of Lotus Notes Traveler is Yellow.
```

  - Example <mark>Green</mark> status

```
tell traveler status
[0484:0006-08D4] tell traveler status
[0484:0049-09D0] 08/07/2012 10:42:57 AM  Remote console command issued by Kim Greene/           tell traveler status
[0A68:2A8C-0C74] The Lotus Notes Traveler task has been running since Mon Aug 06 22:54:47 CDT 2012.
[0A68:2A8C-0C74] The last successful device sync was on Tue Aug 07 10:42:18 CDT 2012.
[0A68:2A8C-0C74] The overall status of Lotus Notes Traveler is Green.
```

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Traveler Performance

- Tips:
  - If not using Traveler HA implementation, defrag the Derby database
    - Customer example:
      - Very sluggish performance reported
      - Defragged Derby database
        - » Recovered 93% space
        - » Performance improved dramatically
  - Ensure have proper # of HTTP threads
    - 1.2 * # of devices
  - Move to DB2 if need:
    - HA solution
    - To support large number of concurrent devices

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Adverse Affect of Obsolete Tuning Parameters

- Important to remove obsolete tuning parameters such as …
  - ConstrainedSHMSizeMB
  - ConstrainedSHM
  - PercentAvailSysResources

- Tip:
  - Remove obsolete tuning parameters prior to upgrading the server, otherwise can have adverse affect on server performance

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Adverse Affect of Obsolete Tuning Parameters
Customer Example

- **Scenario**
  - Recent upgrade of operating system (V5R4 -> V6R1)
  - Recent upgrade of Domino (7.0.3 -> 8.5.2)
  - Core application slow
  - End users complaining about response times

- **Detective steps**
  - Analyzed server performance (CPU, memory, disk)
    - No bottlenecks found
  - Analyzed notes.ini file
    - Found 'PercentAvailSysResources' set on server
      - Obsolete in Domino 8.x

- **Steps taken**
  - Removed 'PercentAvailSysResources'
  - Restarted Domino sever
    - Performance improves quite dramatically, Domino is utilizing memory much better

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Notes.ini Settings

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Mail File Delivery Failover

Domino 9.0

- Starting in 9.0, Router can deliver mail to a replica in a cluster when original replica is unavailable due to:
    - Copy style compact
    - Fixup of mail file
    - Missing mail file

- Enable via **MailFileEnableDeliveryFailover=1**

- Tips:
    - **$MailClusterFailover** item is appended to note with value of the Domino server name of the server where the note was actually delivered to
    - DBMT uses listing in CLDBDIR.nsf to determine if should compact mail file on cluster mate to make sure all cluster mates are not compacting same replica on same day

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Clustering and Notes Client Failover Tips

- Since we're talking about clustering …
  - **FailoverSilent=1**
    - Avoids prompts when server goes down and user is switched to cluster mate
    - Tip: Requires an 8.5.2 or later client
      - Use HidePromptFailoverInc=1 prior to 8.5.2
        - » Introduced in 8.0.1
    - Also automatically fails users back to "primary" server once it is available again
    - Can also be set via a Dekstop Policy (**Desktop Settings** -> **Mail** -> **Client Settings**)
      - Tip: It's set to 'disabled' by default

Client Settings	
Auto-retrieve document setting:	Disable
Enable server to poll for new mail and trigger replication on notification of new mail:	Disable
Enable silent failover when a server goes down:	Enable
Enable upgrade of all local NSFs to latest ODS version:	Disable

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Securing Your Servers

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ID Vault

Domino 8.5

- Use it!!!
  - Customer scenarios:
    - Lost ID because PC crashed, had to go back to original ID on network drive, which was created under different certifier than current certifier
    - Forgotten passwords
    - Setting up new users / existing users get new PCs/laptops
      - Notes client setup simply pulls ID from vault, no manual handling of ID file

  - Tip: Resetting passwords only works through the Admin Client
    - Result: PW Resets handled by Admin team
    - Remedy: Write an agent using the Notessession.ResetUserPassword() method
      - Advantage: Helpdesk personnel can now reset IDVault passwords

Protected Groups

Domino 9.0

- 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

- Requires Domino directory to have 9 design

- Defaults to LocalDomainAdmins, LocalDomainServers, and OtherDomainServers

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Protected Groups

- Open Domino **Directory→Actions→Edit Directory Profile**

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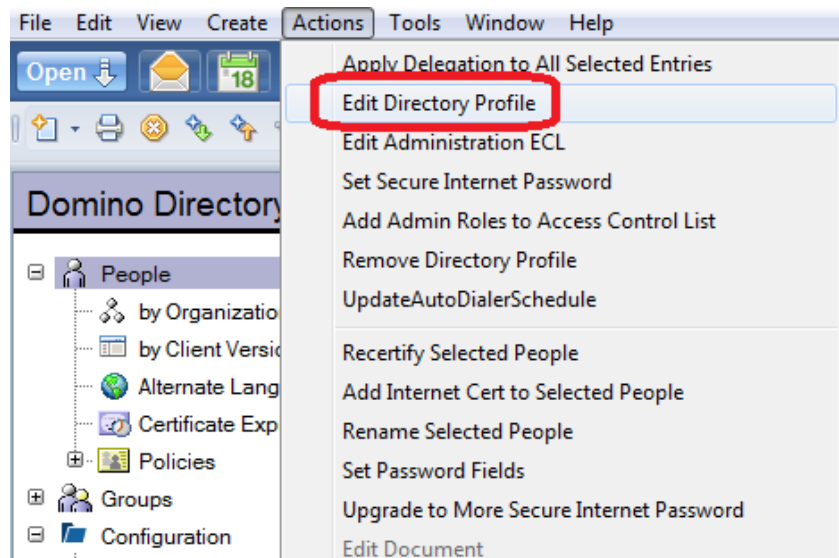
Protected Groups

- Prevent deletion of these groups

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Thank You!

Your feedback is important!

Slides are available online at: http://www.slideshare.net/BenedekMenesi/bp103

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