



Domino 10

#dnug45

HCL Collaborative Workflow Platforms

June 21, 2018

HCL

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Domino 10 Goals

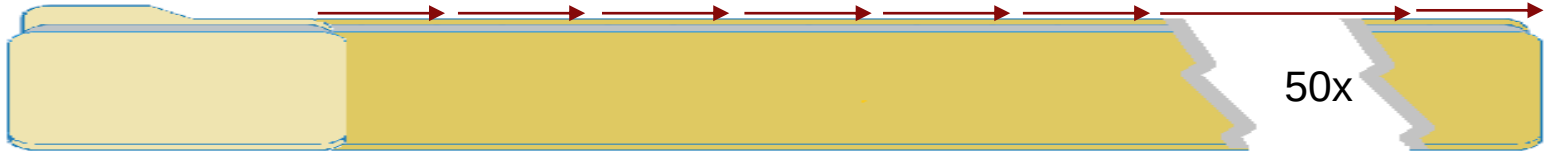
- ▶ Reduce and simplify Domino administrator workload
- ▶ Improve Domino visibility and serviceability
- ▶ Improve Domino clusters for both administrators and end users
- ▶ Remove (many) long-standing NSF limits
- ▶ Make Notes upgrades much easier

Breaking NSF Boundaries

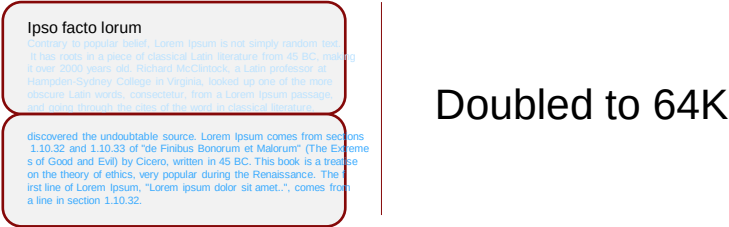
Maximum database size



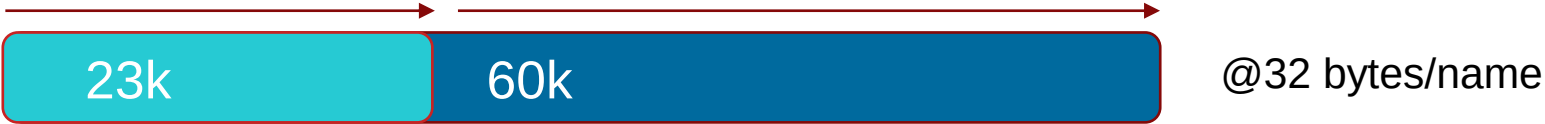
Large Folders



Summary Data



More Field Names



ID Tables



Automated Dead Mail Processing Option

- ▶ Mail router will periodically retry delivery/transfer to account for cases where configuration or other environmental issues caused the mail to fail
- ▶ Configurable retry count and retry interval
 - After retries are exhausted, dead mail will be deleted from mail.box
- ▶ Server Configuration document: Router/SMTP > Advanced > Controls > Undeliverable Mail

Undeliverable Mail	
Hold undeliverable mail:	Disabled
Automatically retry dead mail:	Enabled
Dead mail delivery retry attempts allowed:	12
Time between dead mail delivery attempts:	360 minutes
Internal Internet domains:	east.acme.com west.acme.com

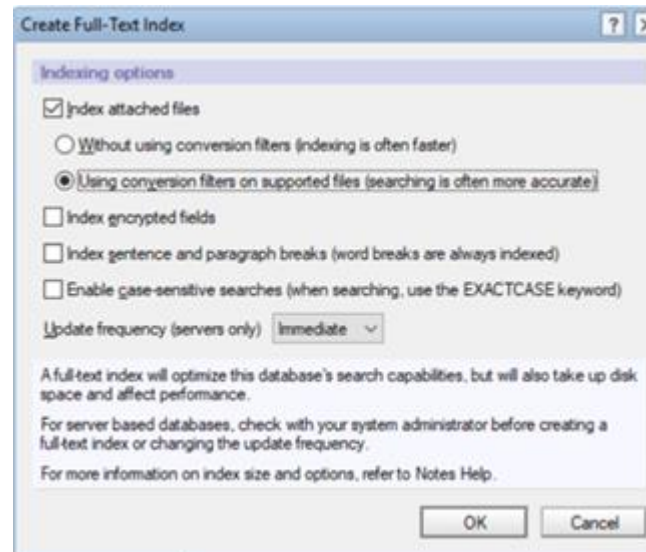
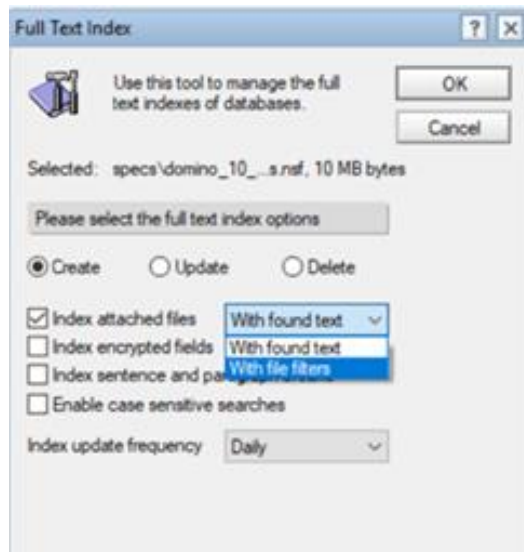
Scheduled Mail

- ▶ Delivery date/time can be provided on any email submitted to a Domino 10 server
 - \$SendAt item can be added by agent, custom template, etc.
 - Some policies applied immediately – e.g., maximum message size
 - Server Configuration document: Router/SMTP > Restrictions and Controls > Transfer Controls
- ▶ Notes 10 client will support scheduled mail – policy controlled

Transfer Controls	
Maximum transfer threads:	
Maximum concurrent transfer threads:	
Maximum hop count:	25
Low priority mail routing time range:	12:00 AM - 06:00 AM
Low priority delay notification:	Disabled
Initial transfer retry interval:	1 minutes
Expired message purge interval:	15 minutes
Transfer and delivery delay notifications:	Disabled
Delay notification intervals:	
High priority mail:	4 hours
Normal priority mail:	4 hours
Low priority mail:	4 hours
Allow users to schedule a delivery time for messages:	Enabled

Full Text Search Improvements

- ▶ Update index on search
 - (Almost) Always get up to date search results – will index up to 200 documents before doing search
 - If > 200 documents to index, will queue update request for immediate action
- ▶ Improved attachment indexing
 - Replace KeyView filters with Apache Tika for more accurate text extraction - document types, efficacy, language handling – but you have to choose it!



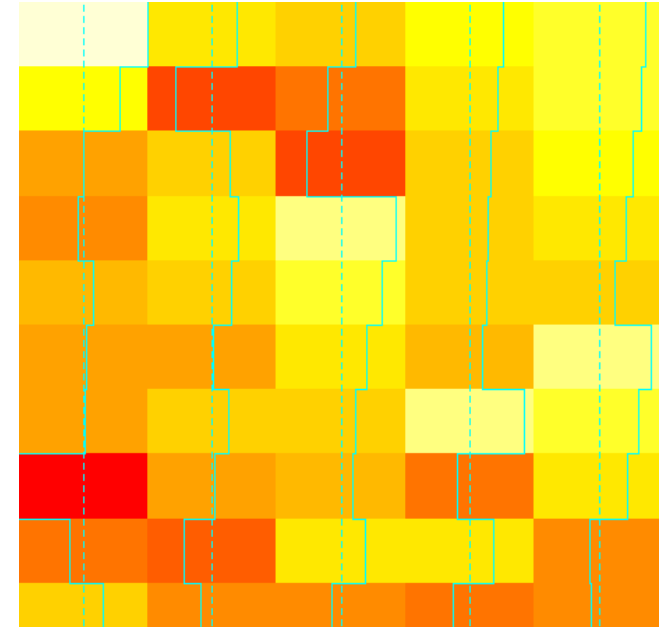
Full Text Index Resiliency Improvements

- ▶ Automatic index recreation on corruption
 - If corruption is detected while indexing or searching, Domino will automatically rebuild the index
- ▶ Repeat crash prevention
 - Domino will be resilient to FT search or update related crashes
 - Document causing repeat crashes will be isolated and avoided



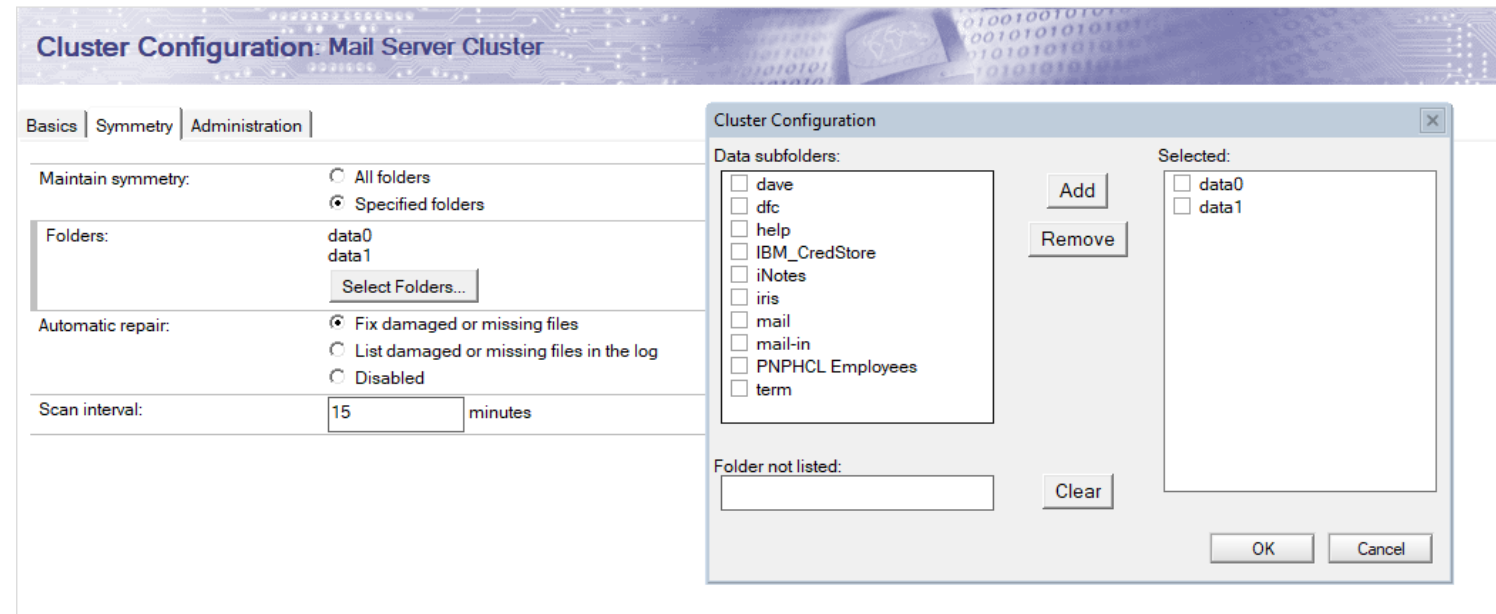
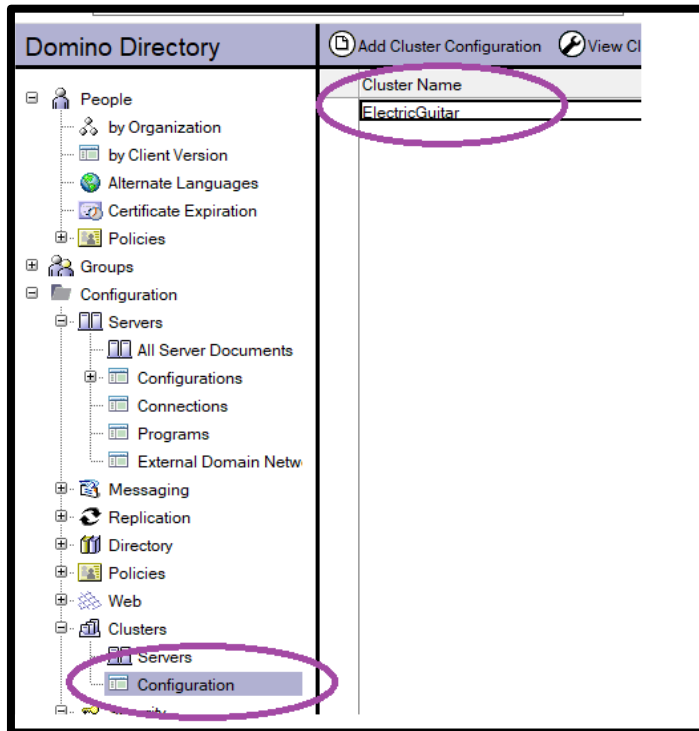
Automatic Hot View Updating

- ▶ Before Domino 10
 - Update task – queued requests processed in order
 - End users and applications might see out of date views or have to wait for view updates before being able to access them
 - Inline View Indexing/Dedicated View Threads features assisted very knowledgeable administrators
- ▶ With Domino 10
 - Domino tracks view updates and reads in real time
 - “Hot” views are updated in real time without administrator’s having to guess or track



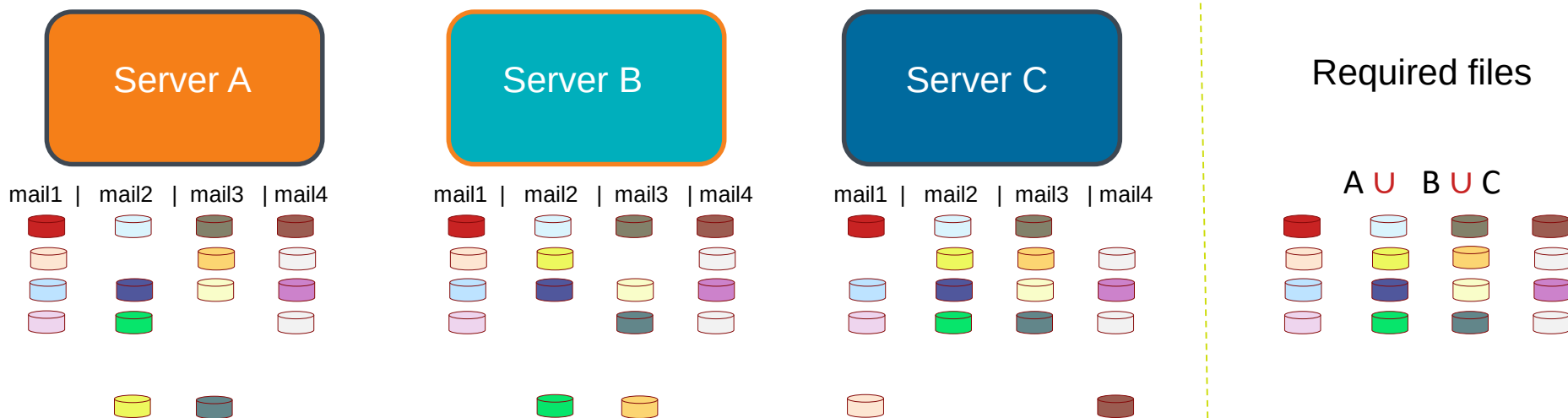
Symmetric Domino Servers

- Symmetrical Cluster configuration to enable for specific folders



Symmetric Domino Servers

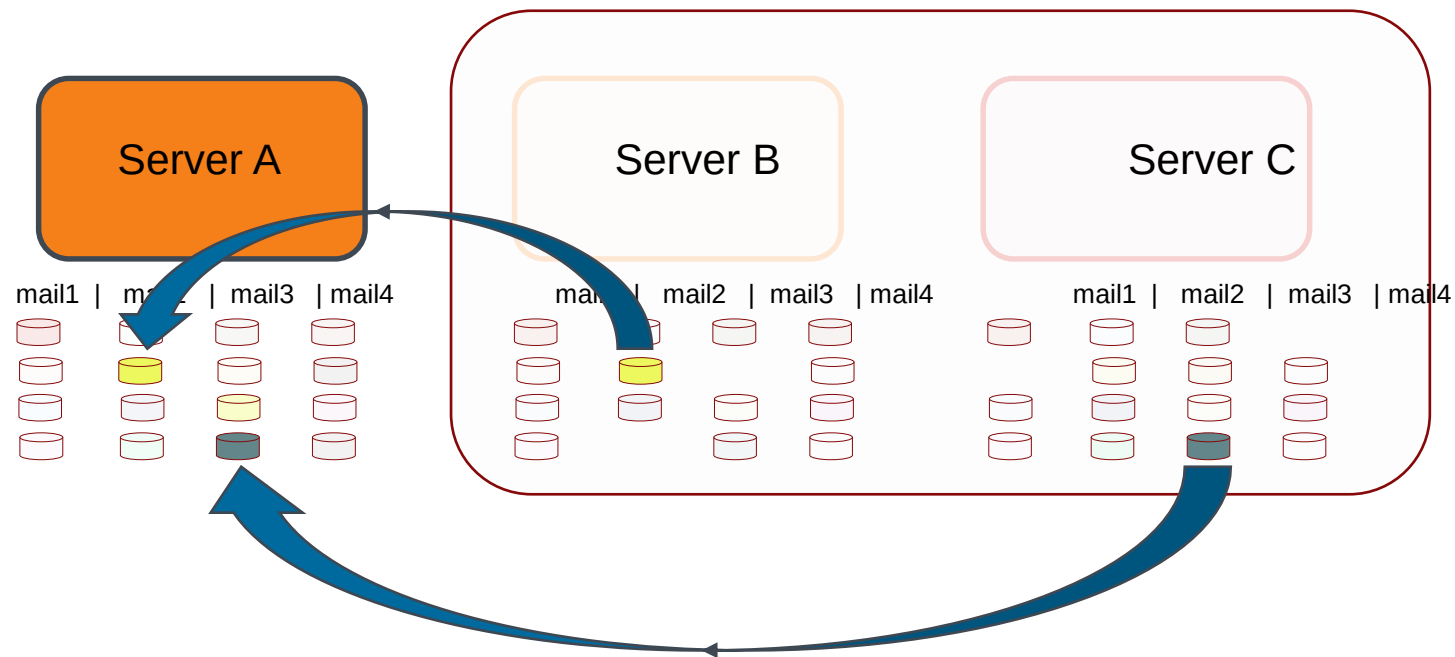
- ▶ One or more data directory folders are declared to be symmetrical
 - Any Notes database which exists on any server in the cluster must exist on every server in the cluster.
 - Domino 10 “repair engine” will detect any missing databases and repair them automatically



Symmetric clusters enable several enhanced capabilities to improve resiliency....

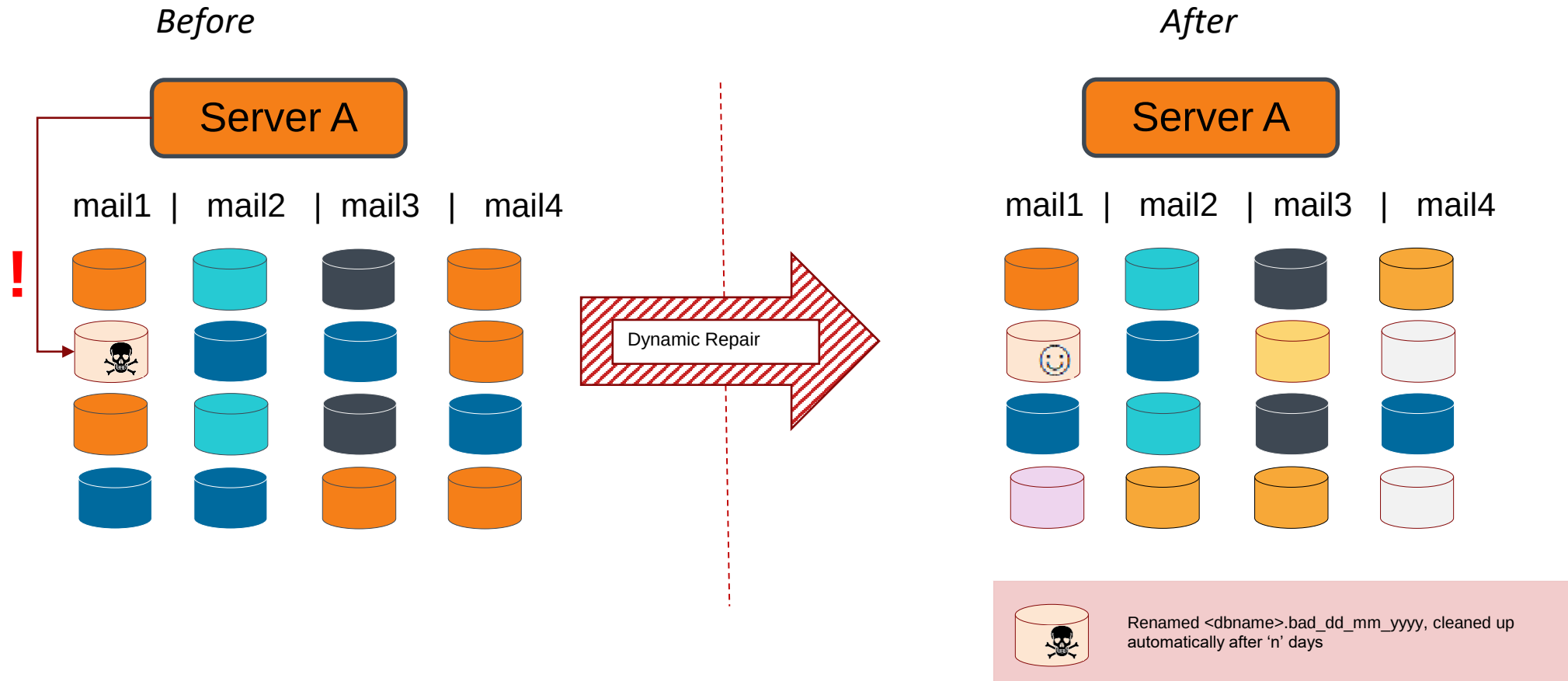
Automatic Database Repair

- ▶ Repair will periodically check for missing databases and repair them automatically
 - High speed transfer of file(s) between servers
 - Any required DAOS objects are repaired automatically
 - Replication histories are adjusted to correctly reflect replication currency
 - Full Text indexes are rebuilt if necessary



Automatic Database Repair

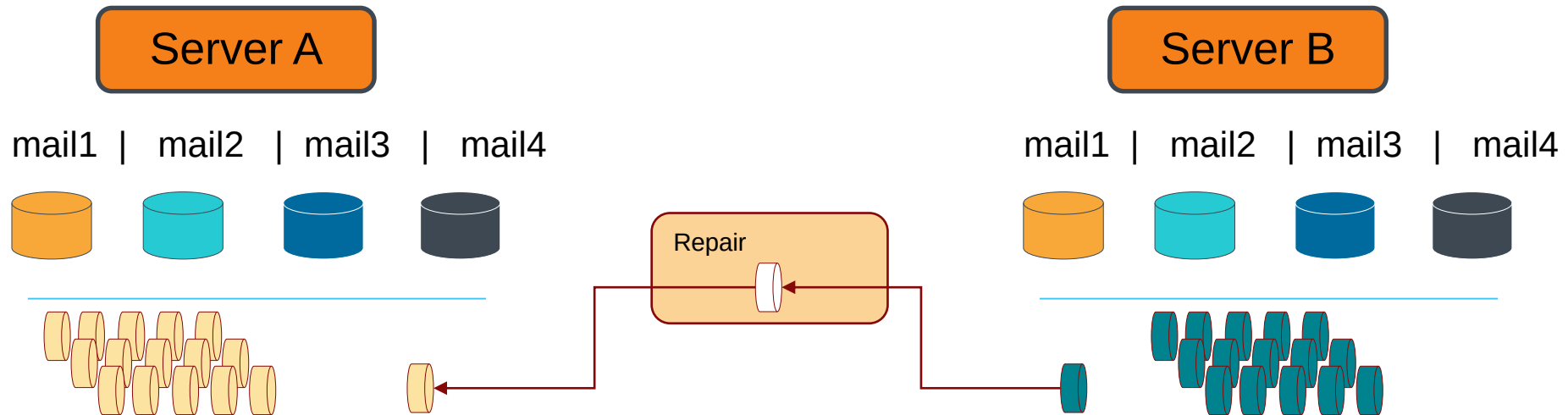
- ▶ Corrupt databases detected on open
 - DbFixup attempted, Repair executed if needed



DAOS Repair

Database repair is just one use of a broader DAOS repair capability

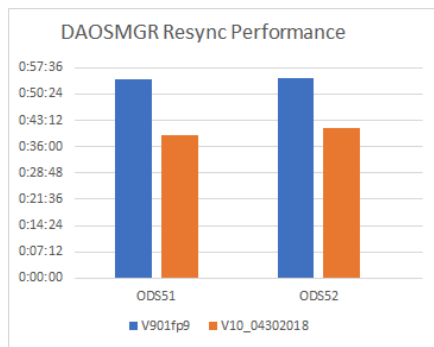
- ▶ DAOS resync will repair any missing NLO's
 - Not limited to symmetric databases, works for ALL DAOS objects
- ▶ DAOS will detect corrupted NLO's on open and dynamically repair the file
 - This works even if DAOS encryption is enabled – properly decrypts -> streams -> re-encrypts !



DAOS repair makes the DAOS repository “self healing”

DAOS Resynchronization Improvements

- ▶ Significantly improve resync performance
 - ODS53 enhancements reduce I/O when scanning databases for DAOS references
 - Improved concurrency to reduce contention during resync
 - 25% faster so far



- ▶ Improved monitoring and metrics
 - Resync progress indicators
 - Counters for number of objects, number of references and sharing (refs/object)

Manual Repair via Domino Console

► Console commands are also available

- Repair list [all | missing]
- Repair file <dbname>
- Repair DAOS <dbname>
- Repair start

> repair list missing

Repair files available for server CN=ServerA/O=MyTest

mail1\swagner.nsf, 85258272:0048A2AB [Missing]

> repair file mail1\swagner.nsf

REPAIR: Job-00001.1 - Repairing mail1\swagner.nsf from server CN=Gibson/O=Guitars

REPAIR: Job-00001.2 - Successfully repaired file mail1\swagner.nsf



Cluster Replication Improvement

- ▶ Before Domino 10
 - SCR is engaged only after source and destination are known to be in sync via regular replication
 - Can cause significant and unpredictable replication delays after startup
- ▶ With Domino 10
 - SCR state checkpointed to disk frequently
 - If databases are unchanged from last SCR checkpoint, SCR will be used immediately
 - SCR will hold content in queue waiting for destination server to restart
 - Will be much more tolerant of cluster mate restarts



Additional New Replication Capabilities

▶ Replica Synchronization Tool

- Performs a background resync of database without clearing the replication history
- Database remains responsive to SCR and all other access

▶ Replication Currency Monitoring

- Compares replication on all cluster servers and lists currency of the replicas (e.g. “all copies current within 2 minutes)
- Servers with databases which exceed a configurable currency interval can alert



Domino Cluster Content Coherence

- ▶ Before Domino 10
 - Users accessing a newly restarted server may “lose” content until it is brought up to date
- ▶ With Domino 10
 - Missing or corrupt databases will be repaired
 - Streaming Cluster Replicator improvements will allow clustered servers to be up to date quickly
 - Users will see current data



Note Deletion Logging

- ▶ No more need to guess “who/what” deleted that document
 - Enable deletion logging using Compact utility
 - e.g. load compact mail -deletionLogging on "SendTo,From,PostedDate,\$TITLE"
- ▶ Every NoteDelete will generate a log entry including
 - Date and time the document was deleted
 - Database from which the document was deleted.
 - Replica ID of the database
 - Process that performed the deletion (server, dbmt, replica, etc.)
 - Identity that performed the deletion
 - Type of document deletion (SOFT, HARD, RESTORE)
 - Note class (numeric)
 - Document UNID
 - Additional note item(s) specified when enabled



Example:

12/27/2018 06:27:10 PM, branney.nsf, 052581F8:005CB5E7, server, CN=Mail2/O=Renovations, SOFT, 0001, B1A644C2:EAC0720905258203:0080D2BC,From:Samantha Daryn

Domino Statistics Publishing

- ▶ Publish Domino server statistics via HTTP Post for real time monitoring
- ▶ Publishing to New Relic built in (See [New Relic Plugins](#) for overview)
 - Default New Relic Plugin dashboard for viewing sample metrics
 - Customization of URI and data format to allow publishing to other consumers
- ▶ All *numeric* Domino statistics posted once per minute
- ▶ **Bonus!** Domino will automatically calculate and send rate metrics for common counters
 - E.g. Mail.TotalRouted → Delta/Mail.TotalRouted for mails routed per minute



Domino Statistics – New Relic DominoStats Plugin

The screenshot displays the New Relic DominoStats plugin interface. The top navigation bar includes 'PLUGINS', 'Maps', 'Alerts New', 'Tools', 'Help', and a user profile for 'HCL Technologies_82'. The main content area is titled 'Domino Statistics' and shows '4 instances' in a table. To the right, there is a section for 'Recent DominoStats events' with buttons for 'In progress', 'Event log', and 'Filter'. Below this, a green smiley face icon and the text 'There are no recent events.' are displayed. The footer contains links to 'newrelic.com', 'Get support', 'Privacy', 'Terms', 'Site status', and social media icons, along with a copyright notice for 2018 New Relic, Inc.

Name	Notes Sessions	Mail Waiting	Mail Routed	Domino Statistics	Uptime (days)	
CentOSAdmin/SamAdams	4.01	0	3.23k	1.18k	0.146	...
Nightrunner/PNPCL	0	0	567	1.65k	14.4	...
SVTMailServer1/SamAdams	6.99	0	3	1.45k	0.542	...
SVTMailServer2/SamAdams	5	0	10.3k	1.21k	0.542	...

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Recent DominoStats events

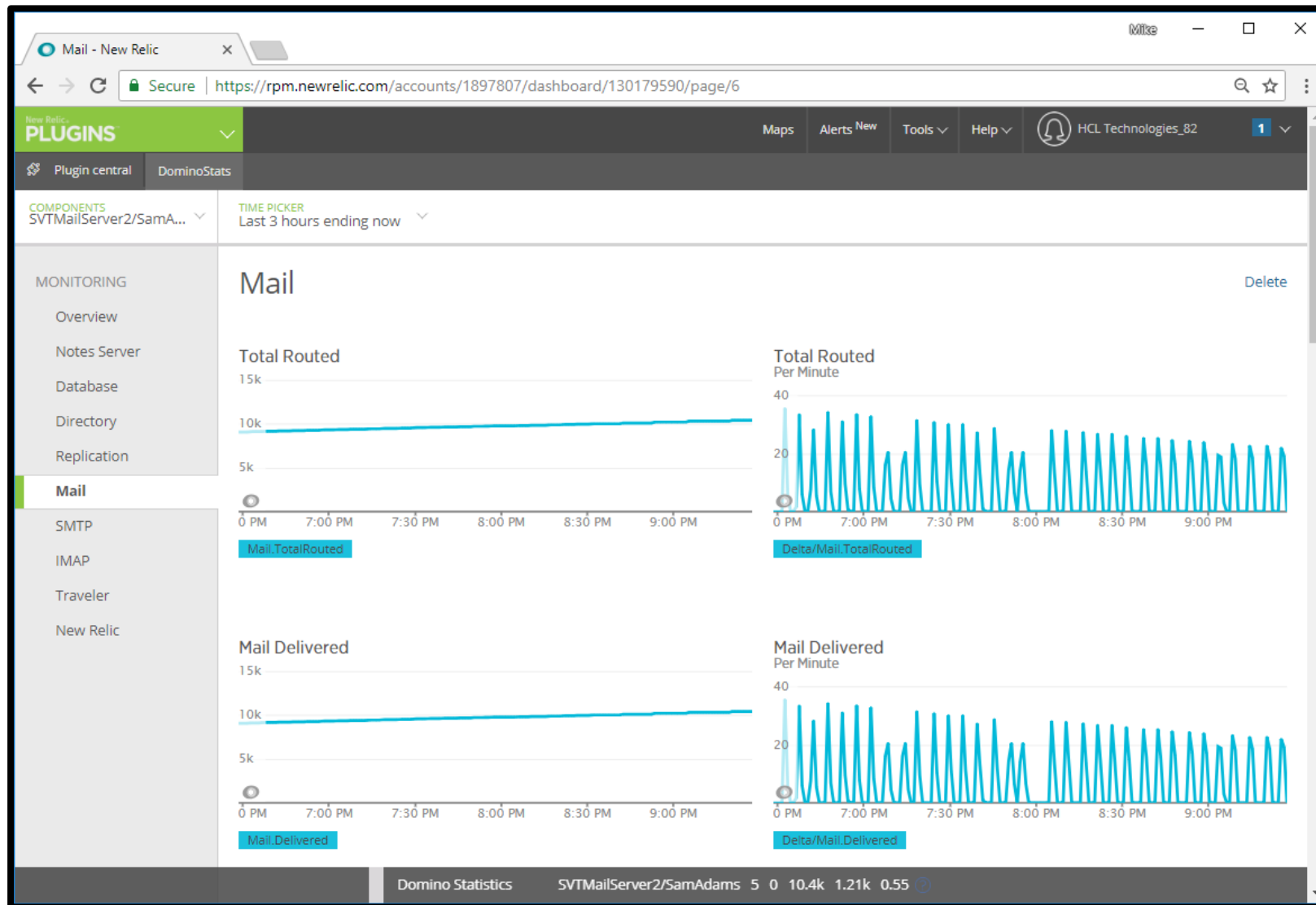
[In progress](#) [Event log](#) [Filter](#)

There are no recent events.

[Kiosk mode](#) [Permalink](#)

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Domino Statistics – New Relic DominoStats Plugin



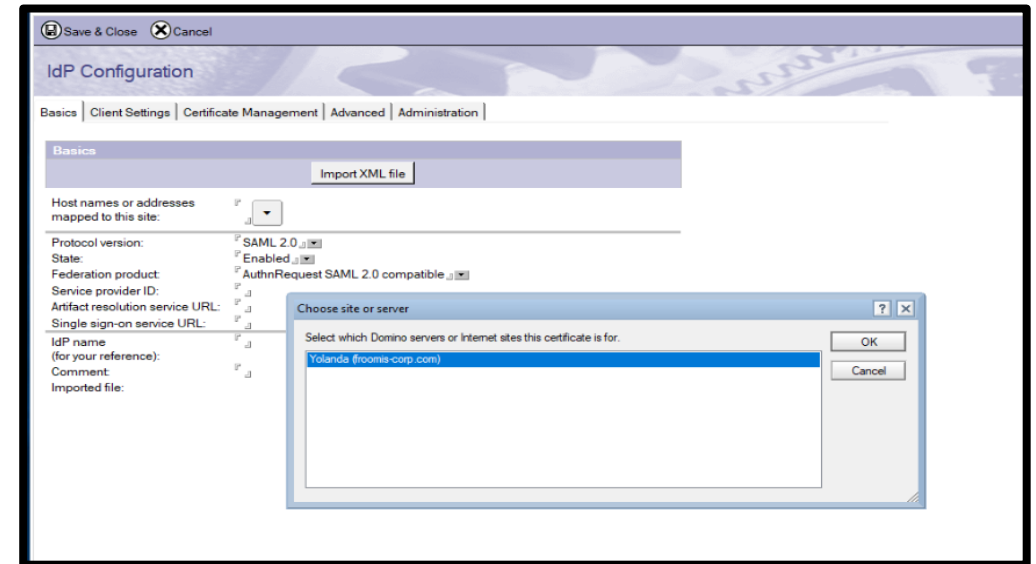
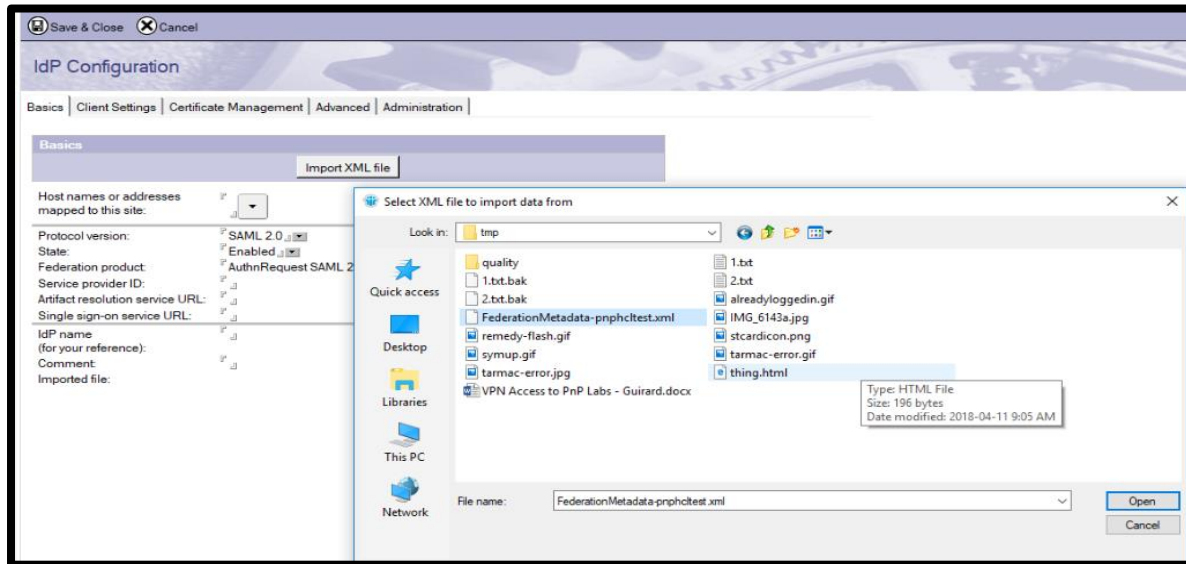
SAML Improvements

- ▶ Before Domino 10
 - Domino supports ADFS 2.0/3.0, TFIM SAML 1.1/2.0
 - Does not support Service Provider initiated authentication flows
- ▶ With Domino 10
 - ADFS 4.0 will be fully supported
 - Supports Service Provider initiated flows
 - Domino 10 will work with any SAML 2.0 compliant IDP – we will be adding others to support list



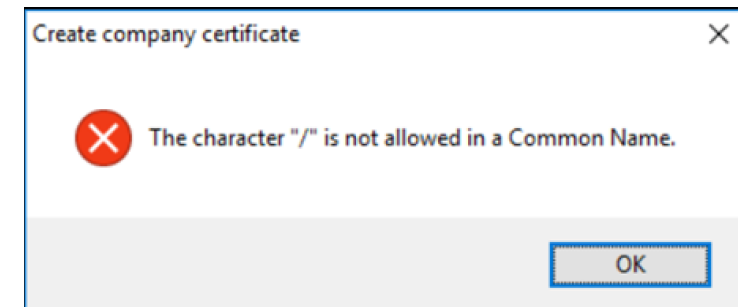
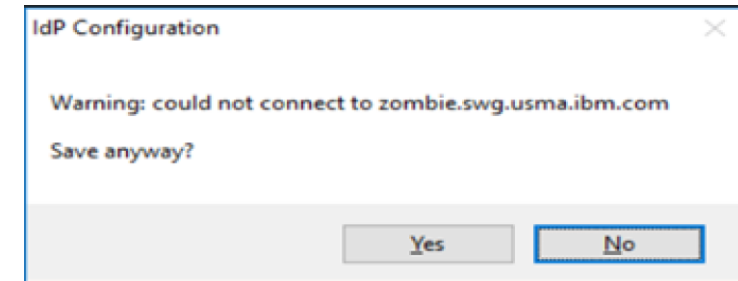
SAML Configuration Simplification

- ▶ Improve usability of SAML IDP/SP setup in ND10 IDP Catalog database
 - Various fields are automatically populated from IDP Federation metadata
 - Protocol version, Federation Product, IDP URL, Encryption and Signing certificates
 - Service Provider URL – drop down with server FQDN/Internet site documents to choose from



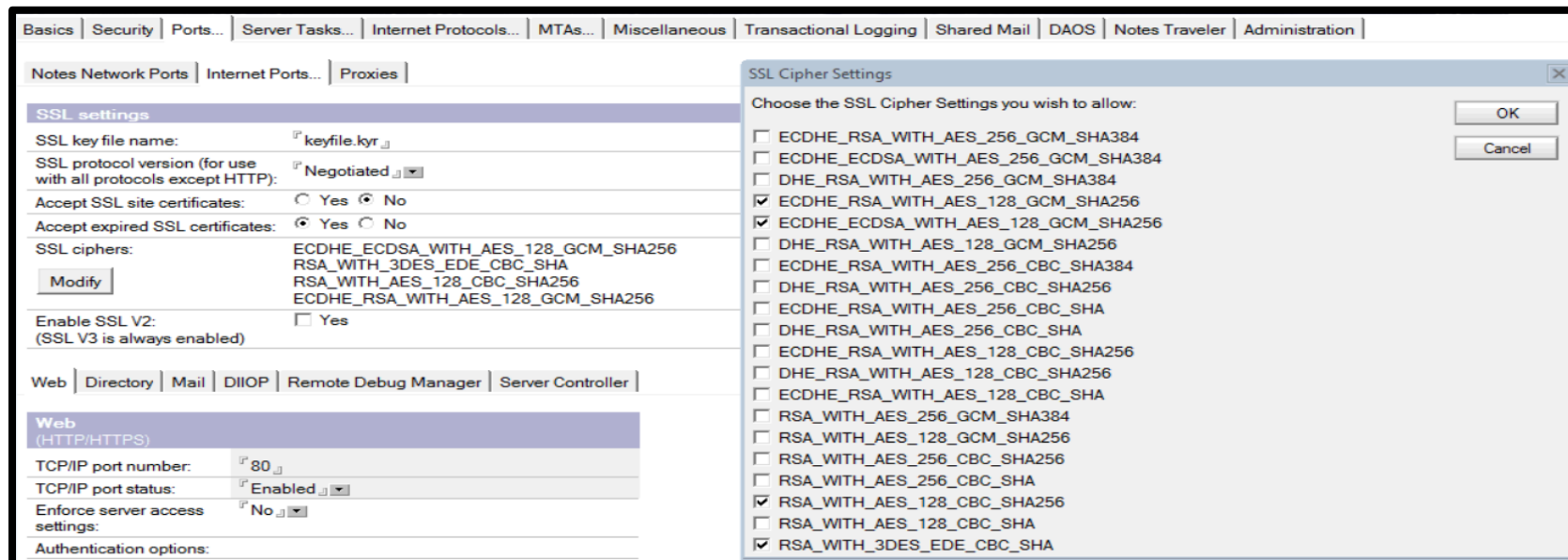
SAML Configuration Simplification

- ▶ IDP URL Connectivity Validation from Domino SP
- ▶ Company Name input for certificate creation validated to avoid later failures



TLS Cipher selection in Server Document

- ▶ Before Domino 10
 - TLS 1.2 ciphers were not selectable in UI – notes.ini was used to enable
- ▶ With Domino 10:
 - All supported ciphers now in UI
 - Enabled ciphers specified in notes.ini are pulled in during upgrade



Notes-ID Vault Synchronization

- ▶ Before Domino 10
 - If a user used an old ID file with an old password, ID vault synching would stop
- ▶ With Domino 10:
 - After 7 days in this state, the ID in the Vault will be archived (renamed) and the current ID in use will be harvested into the vault - synching restarts
 - Administrator can reset password on “archived” ID vault entry to recover it for user



ID Vault Serviceability

- ▶ Console log messages for Auto Detection and Resolution of mismatched password sync failure
 - First bad password ID Vault sync failure

```
[003168:000002-00000000000017D4] 05/15/2018 12:44:48 PM LDAP Server: Started  
[004064:000002-0000000000002E34] 05/15/2018 12:44:50 PM XSP Command Manager initialized  
[004064:000002-0000000000002E34] 05/15/2018 12:44:51 PM HTTP Server: Started  
IDVBADPWD: First vault sync failure due to mismatched passwords for CN=reset2 holmes/O=sherlock  
> _
```

- If bad password ID Vault sync failure continues after 7 days , users' vault document is archived with a preceding ~

```
>  
>  
>  
IDVBADPWD: User archived to name ~CN=reset2 holmes/O=sherlock  
>
```

- Next ID Vault sync from the user will re-harvest the id file into the ID Vault, allowing sync

ID Vault Serviceability

- ▶ qvault tool scans ID Vault(s) and updates Person Doc for each vaulted user with VaultName and last sync time for vaulted users
 - To query and update Vault Info for all the users in all the ID Vaults, run "load qvault"
 - Will scan all the Vaults found on the server under the IBM_ID_VAULT directory.

```
> load qvault
[003F08:000006-00000000000045EC] 05/11/2018 08:50:44 AM OSLoadProgram(): Child pid 17996(x464C), Parent pid 16136(x3F08), Child name C:\Domino3\qvault.EXE
[00464C:000002-00000000000009EC] arg 1, consumed 1
> WARNING (0): Sym file (C:\Domino3\npntapi.sym) is version 2. The supported sym file format version for this release is 3. This sym file will be ignored. For improved diagnostics, consider using the PDB files instead.

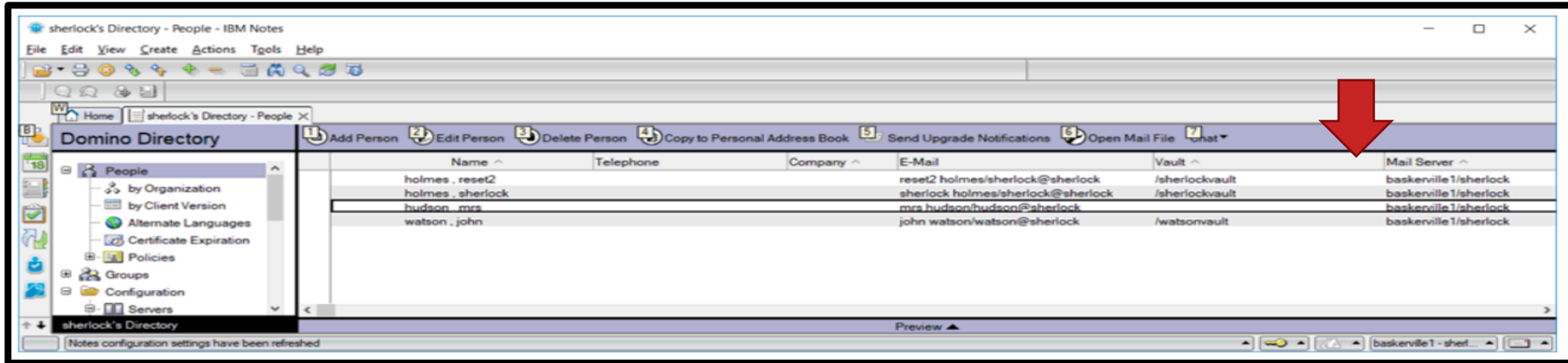
WARNING (0): Sym file (C:\Domino3\nxpch.sym) is version 2. The supported sym file format version for this release is 3. This sym file will be ignored. For improved diagnostics, consider using the PDB files instead.

[00464C:000002-00000000000009EC] QVR - Vault 0=hudsonvault
[00464C:000002-00000000000009EC] QVR - Vault 0=sherlockvault
[00464C:000002-00000000000009EC] QVR:      Skipped - CN=reset2 holmes/O=sherlock
[00464C:000002-00000000000009EC] QVR:      Skipped - CN=sherlock holmes/O=sherlock
[00464C:000002-00000000000009EC] QVR - Vault 0=watsonvault
[00464C:000002-00000000000009EC] QVR:      Skipped - CN=john watson/O=watson
>
```

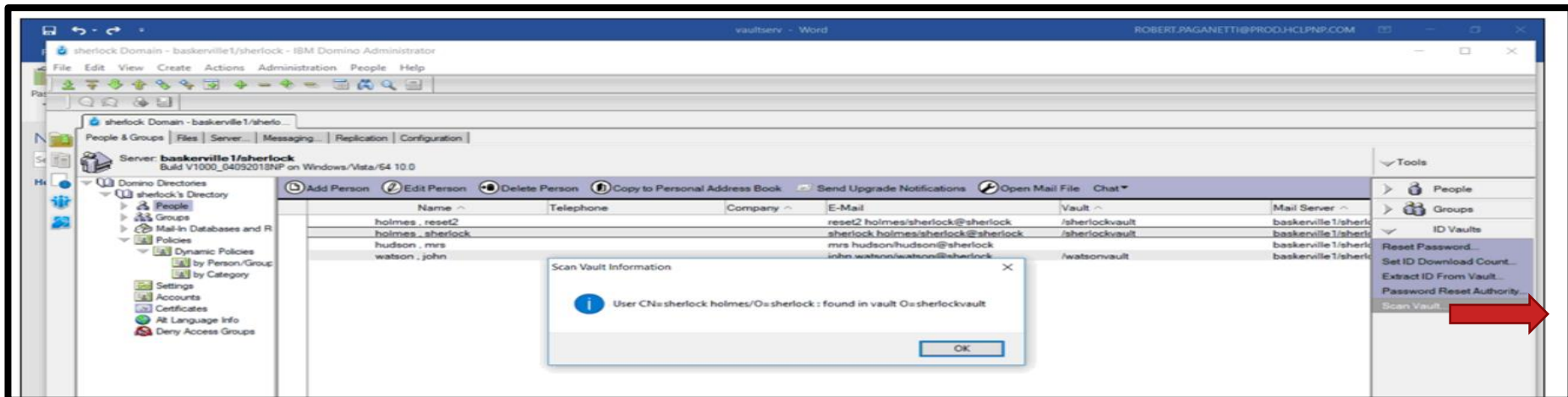
- Additional arguments can be used to scan/update a specific vault or user

ID Vault Serviceability

- ▶ People view shows the IDVault name column updated after the qvault tool ran



- ▶ Admin Client can refresh the IDVault info via UI also from People view



Domino Docker

- ▶ With Domino 10, some basic Docker containers will be provided in the Docker Store
 - Containers for SLES, RHEL and CentOS
 - Domino-Core container will contain installation for Domino 10
 - Domino-Run container built from Domino-core and for running Domino
- ▶ Documentation will include Dockerfiles
- ▶ Additional containers will follow ...



Notes Auto Update

- ▶ Domino 10 will provide Automatic Update Tool service (AUT) capability for Notes client updates
- ▶ Server Configuration Document in Domino Directory
 - Specify server(s) that provide AUT service for clients to check for and download updates
- ▶ AUT Desktop Policy settings
 - Specify users and rules for upgrade



AUT Catalog

- ▶ AUT enabled server contains a database to store the upgrade rules and references to kits.
 - Each product catalog document define pairs of current and upgrade versions
 - Current Notes Client version(the “From” version) can be regex like "10.0.1\?.?0?" or blank

AUT Product Record

Client ID:	IBM Notes
Application ID:	{430FD4D0-B729-4F61-AA34-91526481799D}
Upgrade from version:	10.0.2
To version:	10.0.3
URL:	.../notes/10.0.3/...
Installer Files:	Add all Select... Upload...
Actions:	☐ * No actions defined. *

Upload Installer

Look in: Downloads

Quick access

Desktop

Libraries

This PC

Network

admin4.ntf

anyconnect-win-...

authy-installer.exe

notes-100003.msi

File name: notes-100003.msi

Open

Cancel

A Peek at Domino 11

- ▶ Active Directory integration made simpler
- ▶ Move or archive attachments to cloud storage
- ▶ Domino Event Publisher
- ▶ Full text engine replacement
- ▶ Calendar publishing



Thank you!