# Domino 10

# #dnug45

HCL Collaborative Workflow Platforms

**June 21, 2018**

Copyright © 2018 HCL Products & Platforms | www.hcltech.com

# Domino 10 Goals

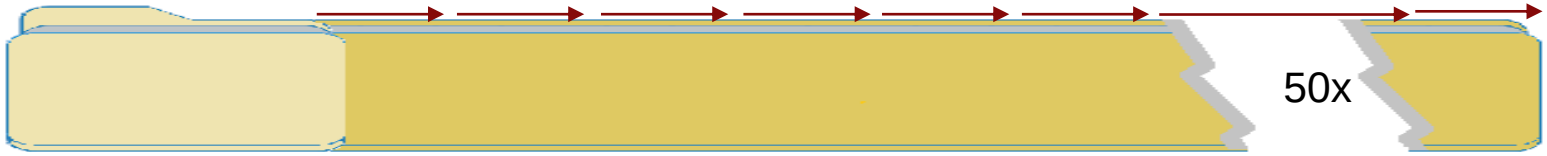
- Reduce and simplify Domino administrator workload
- Improve Domino visibility and serviceability
- Improve Domino clusters for both administrators and end users
- Remove (many) long-standing NSF limits
- Make Notes upgrades much easier


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

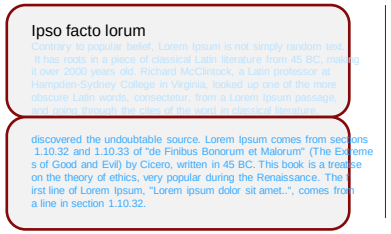
# Breaking NSF Boundaries

Maximum database size

Large Folders




Summary Data

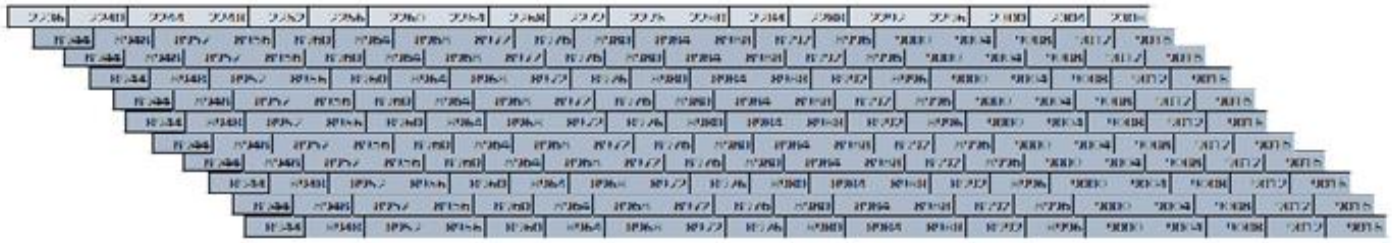



Doubled to 64K

More Field Names

@32 bytes/name

ID Tables



10x

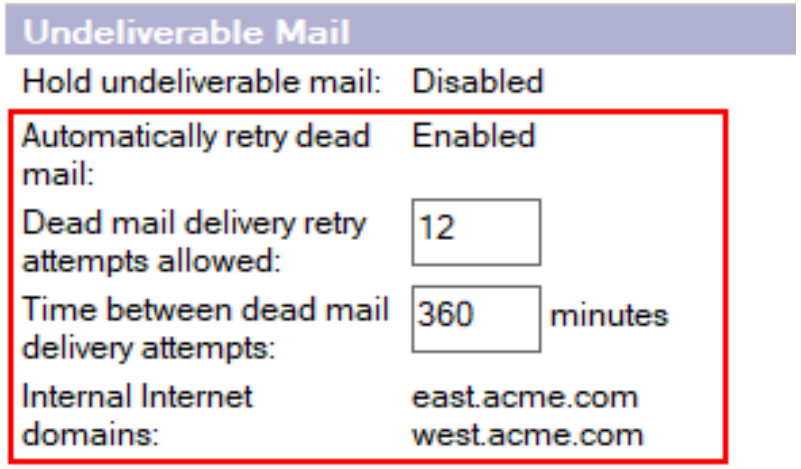

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

PRODUCTS & PLATFORMS by HCL Technologies

HCL

# 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





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Scheduled Mail

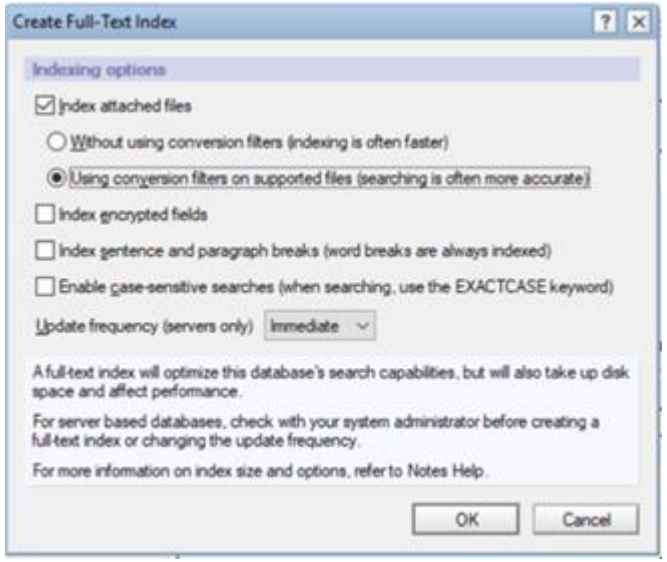
- Delivery date/time can be provided on any email submitted to a Domino 10 server
  - $SendAt item can be added by agent, custom template, etc.
  - Some policies applied immediately – e.g., maximum message size
  - Server Configuration document: Router/SMTP > Restrictions and Controls > Transfer Controls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


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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!





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

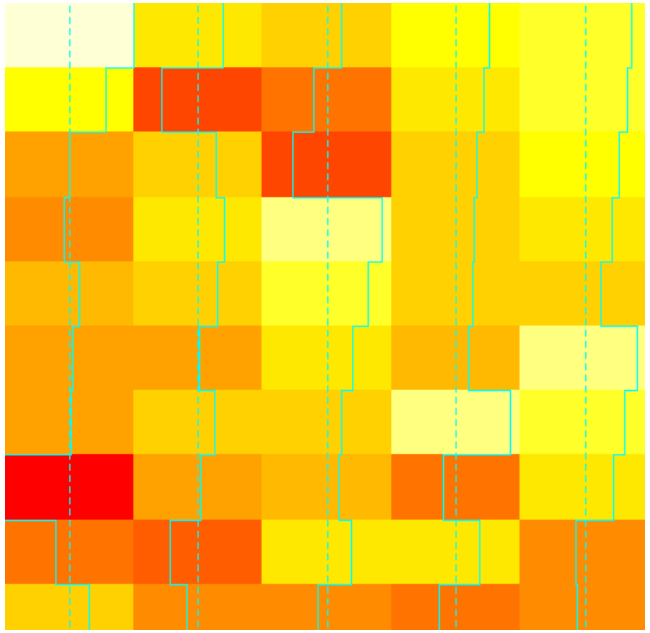
# Full Text Index Resiliency Improvements

- 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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Automatic Hot View Updating

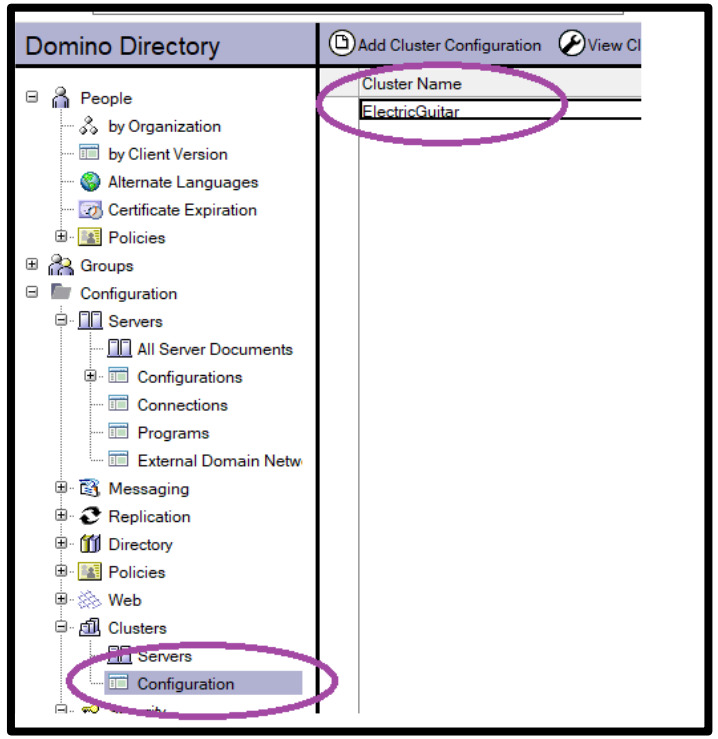
- Before Domino 10
  - Update task – queued requests processed in order
  - End users and applications might see out of date views or have to wait for view updates before being able to access them
  - Inline View Indexing/Dedicated View Threads features assisted very knowledgeable administrators
- With 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

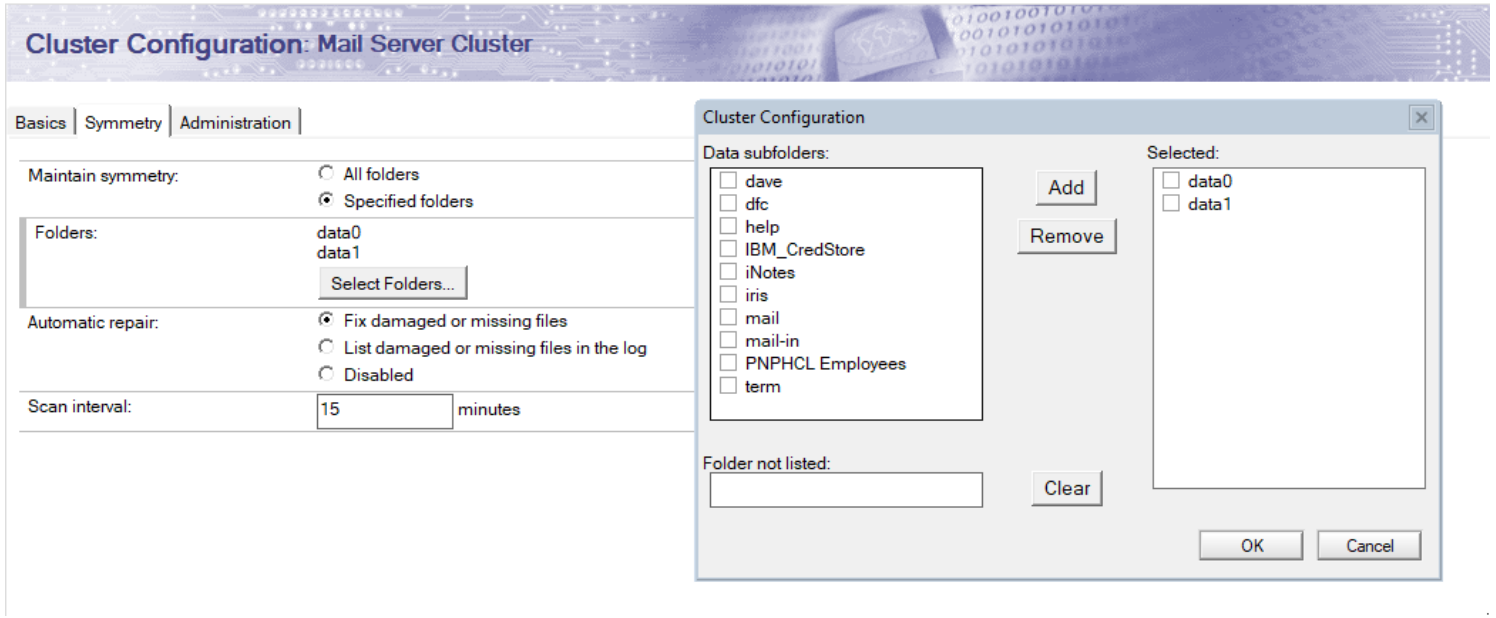



Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Symmetric Domino Servers

- Symmetrical Cluster configuration to enable for specific folders



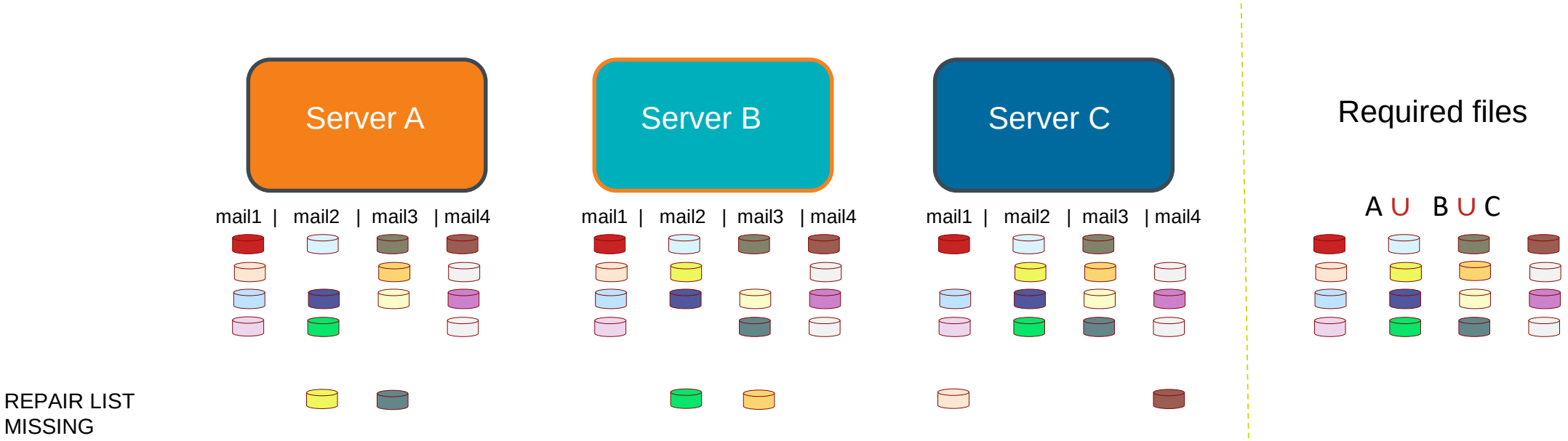





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

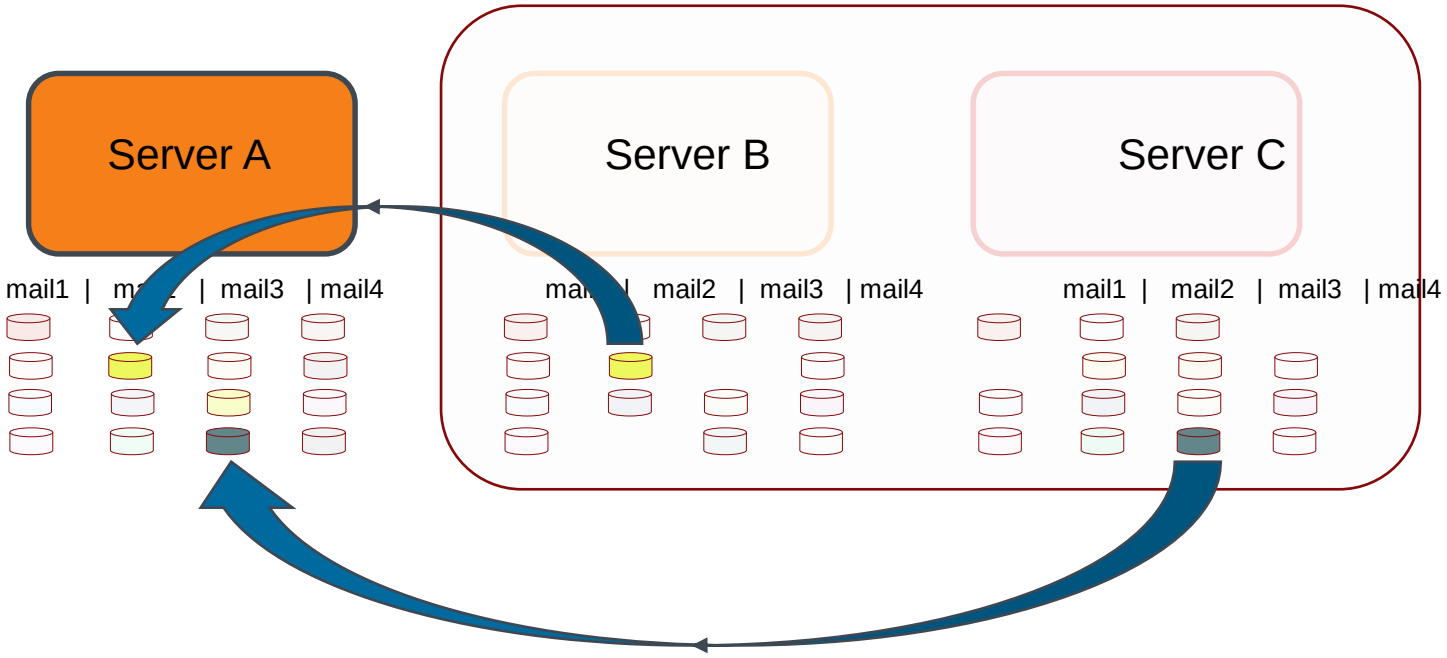



*Symmetric clusters enable several enhanced capabilities to improve resiliency….*


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

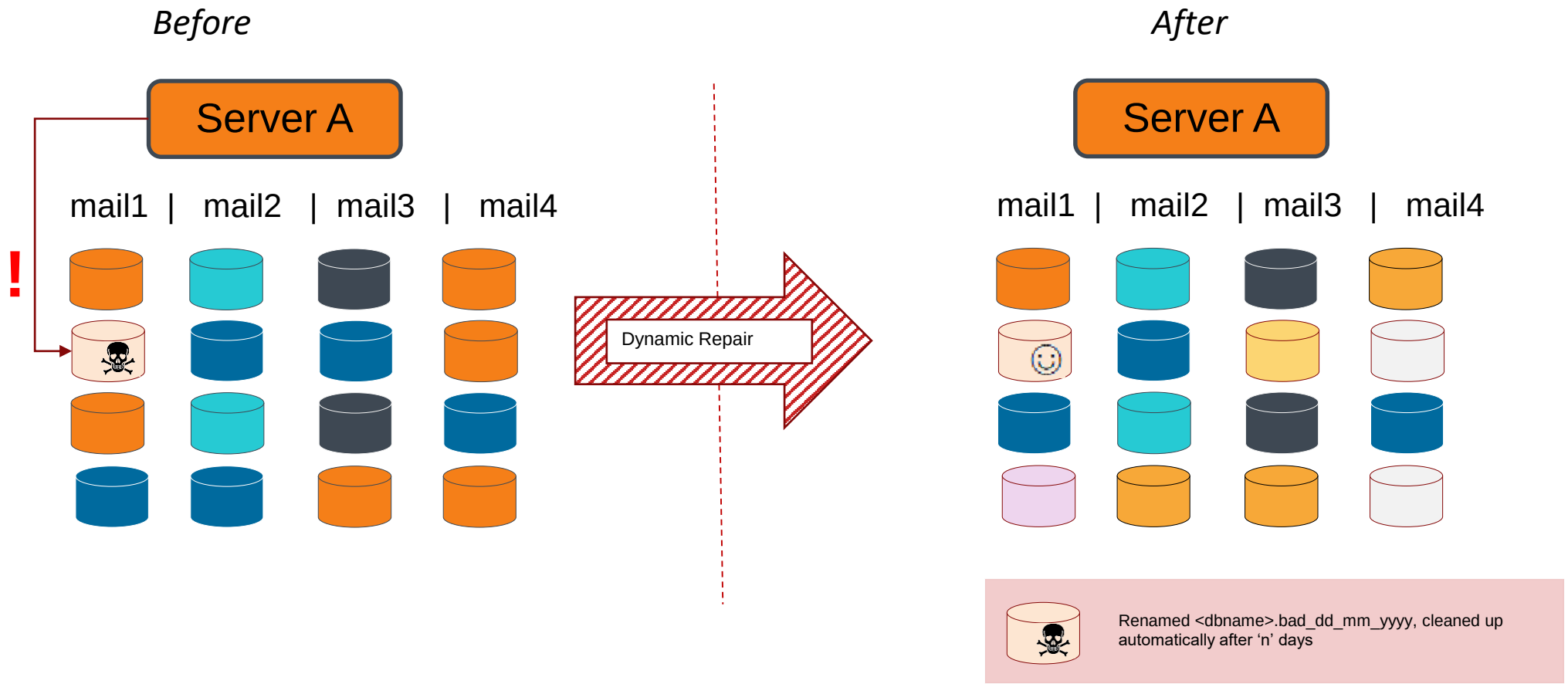




Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Automatic Database Repair

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



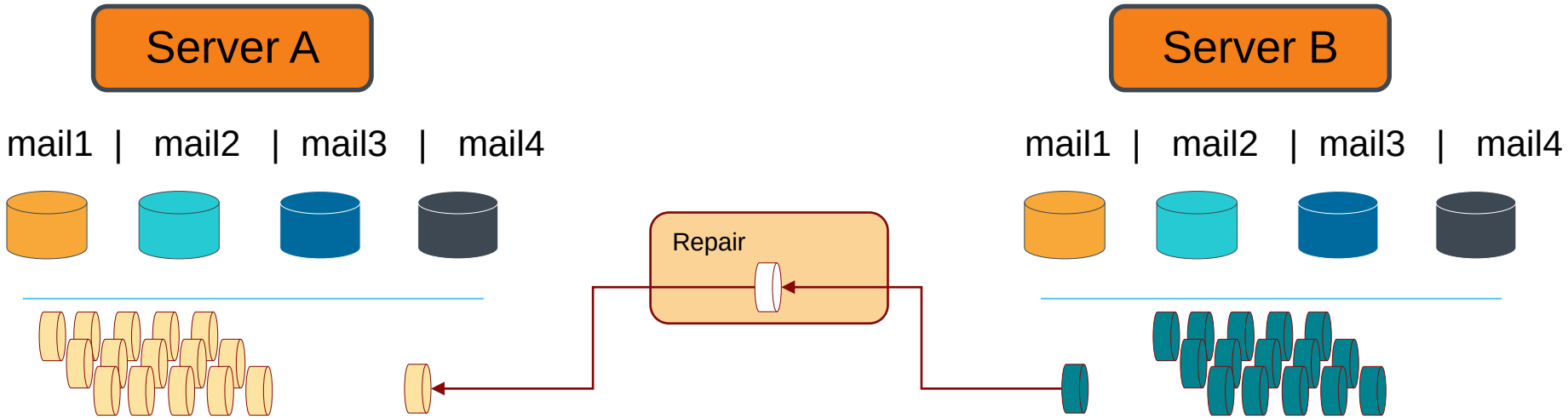


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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 !

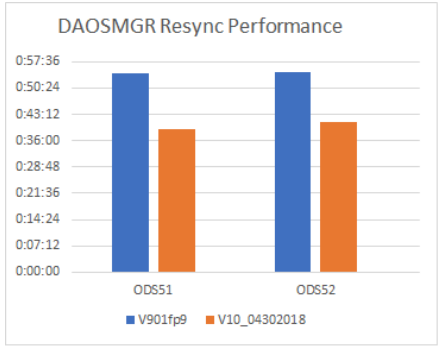



*DAOS repair makes the DAOS repository "self healing"*


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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)


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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**

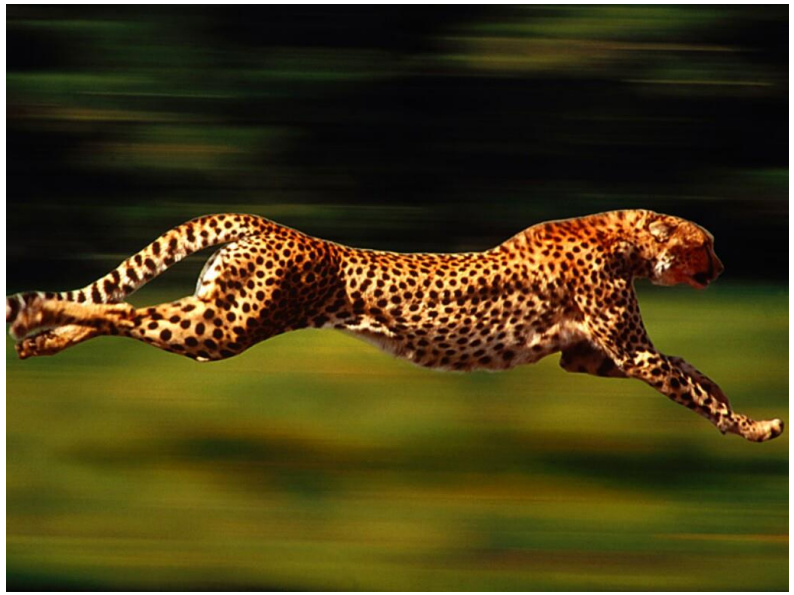
**REPAIR: Job-00001.1 - Repairing mail1\swagner.nsf from server CN=Gibson/O=Guitars**

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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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




Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

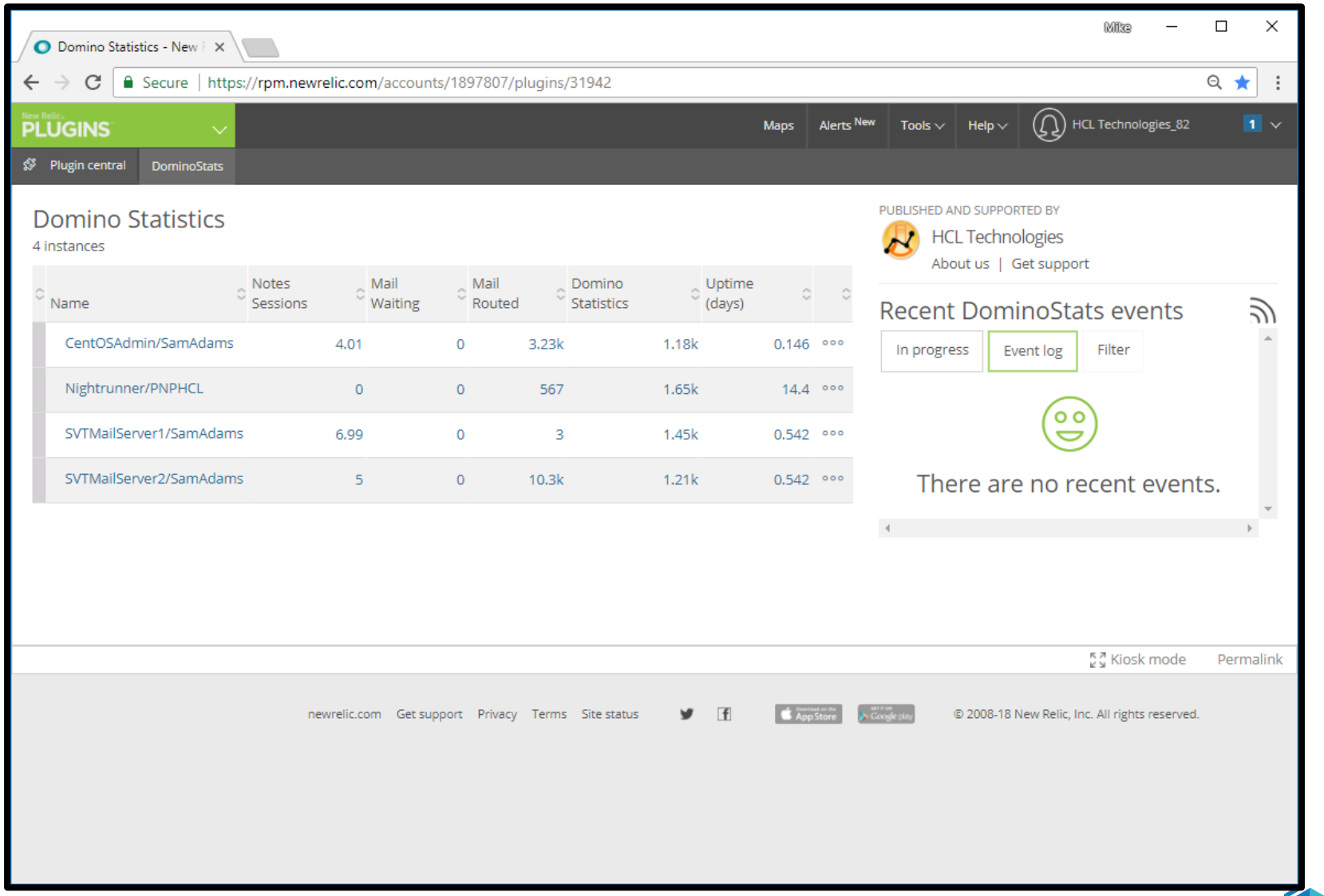

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

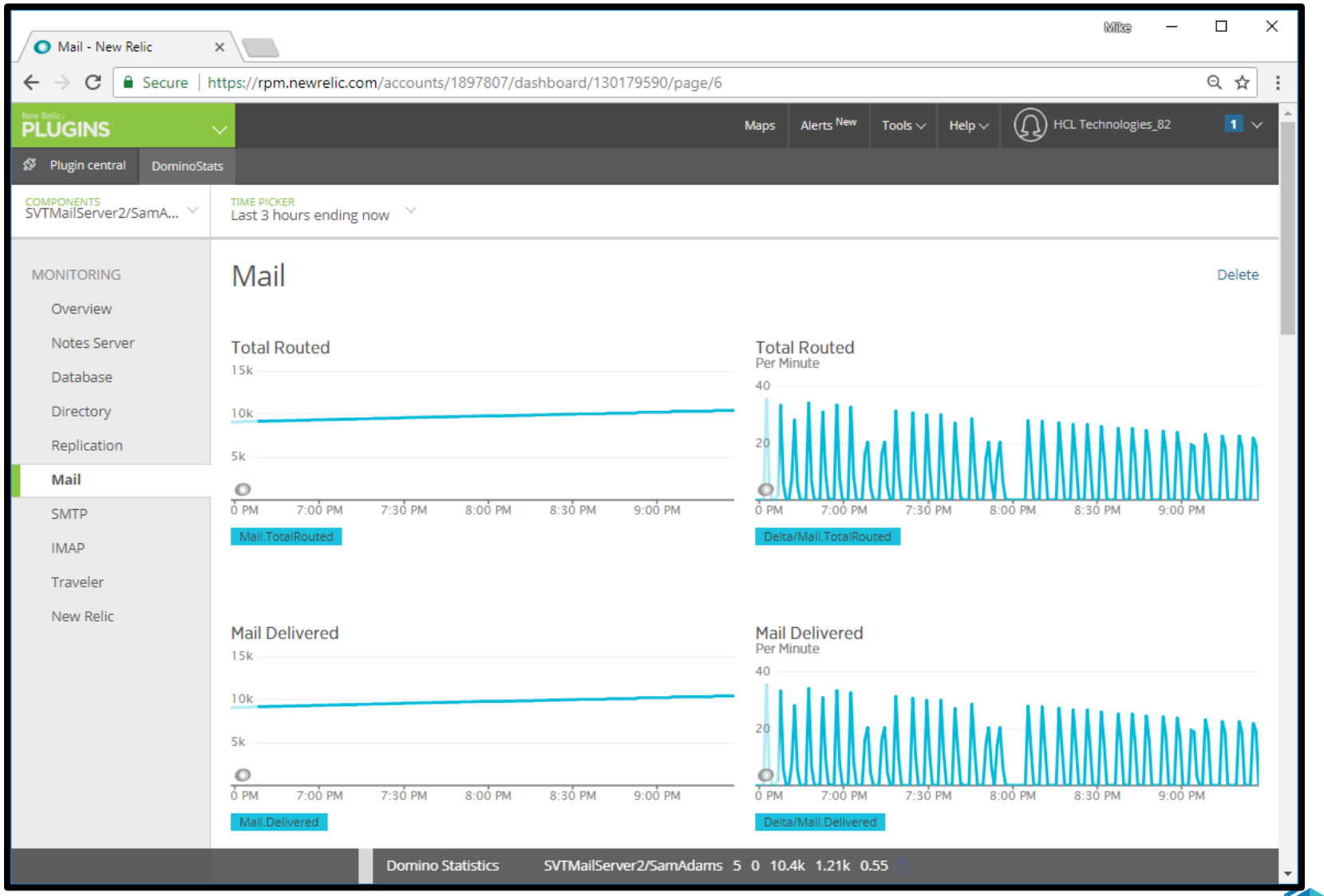
# Domino Statistics – New Relic DominoStats Plugin





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Domino Statistics – New Relic DominoStats Plugin





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

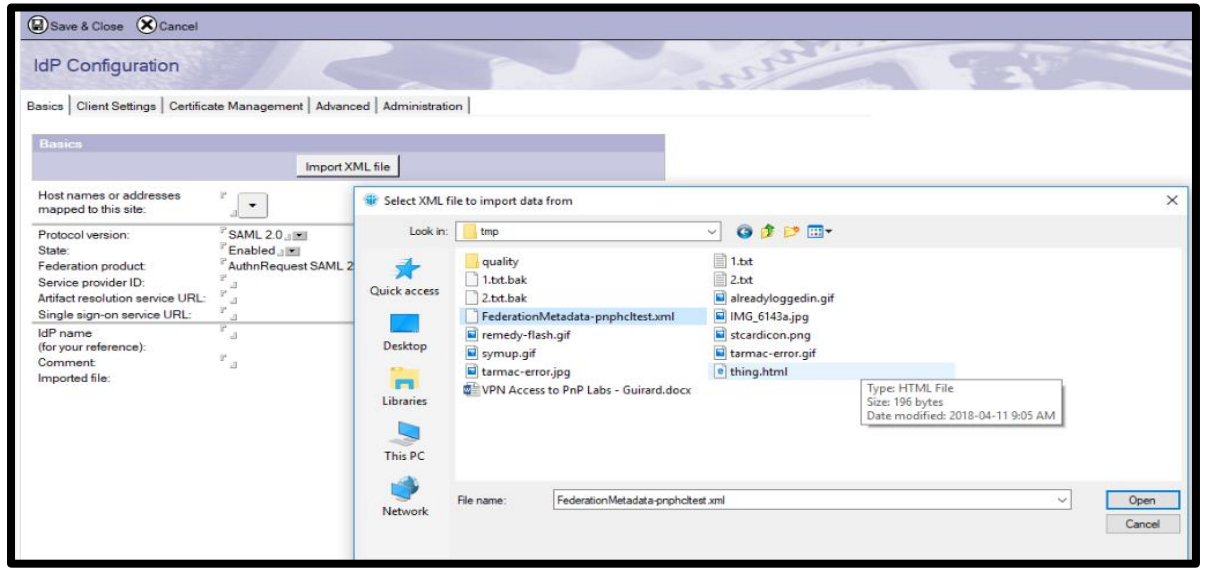
# SAML Improvements

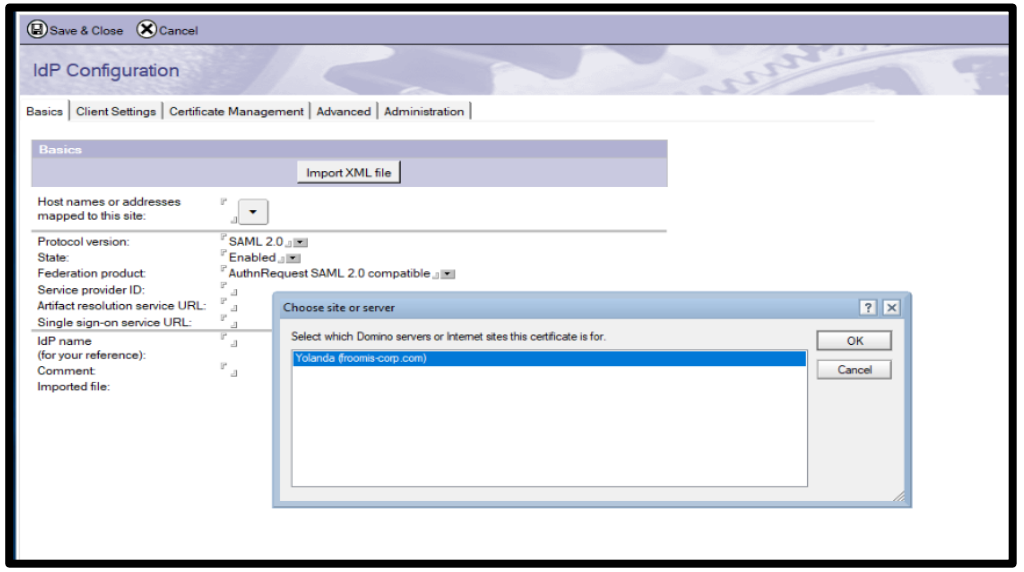
- Before Domino 10
  - Domino supports ADFS 2.0/3.0, TFIM SAML 1.1/2.0
  - Does not support Service Provider initiated authentication flows
- With Domino 10
  - ADFS 4.0 will be fully supported
  - Supports Service Provider initiated flows
  - Domino 10 will work with any SAML 2.0 compliant IDP – we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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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



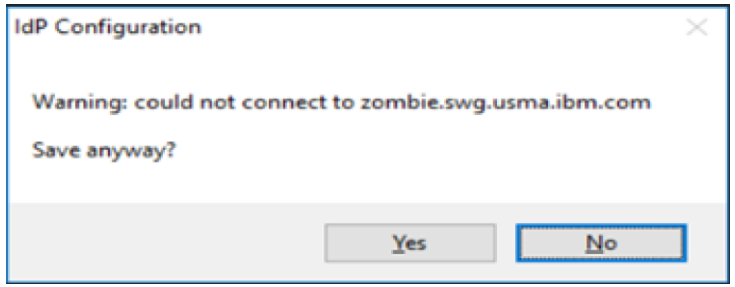





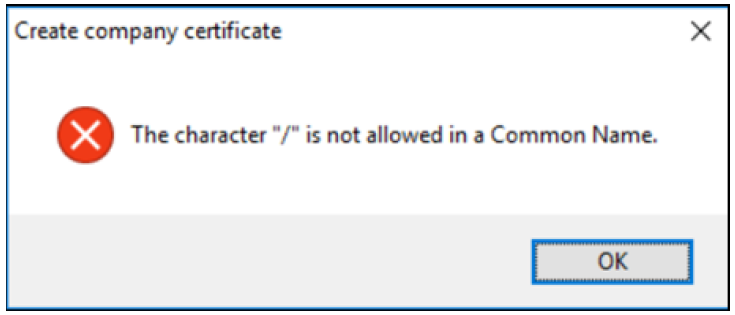
Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# SAML Configuration Simplification

- IDP URL Connectivity Validation from Domino SP




- Company Name input for certificate creation validated to avoid later failures

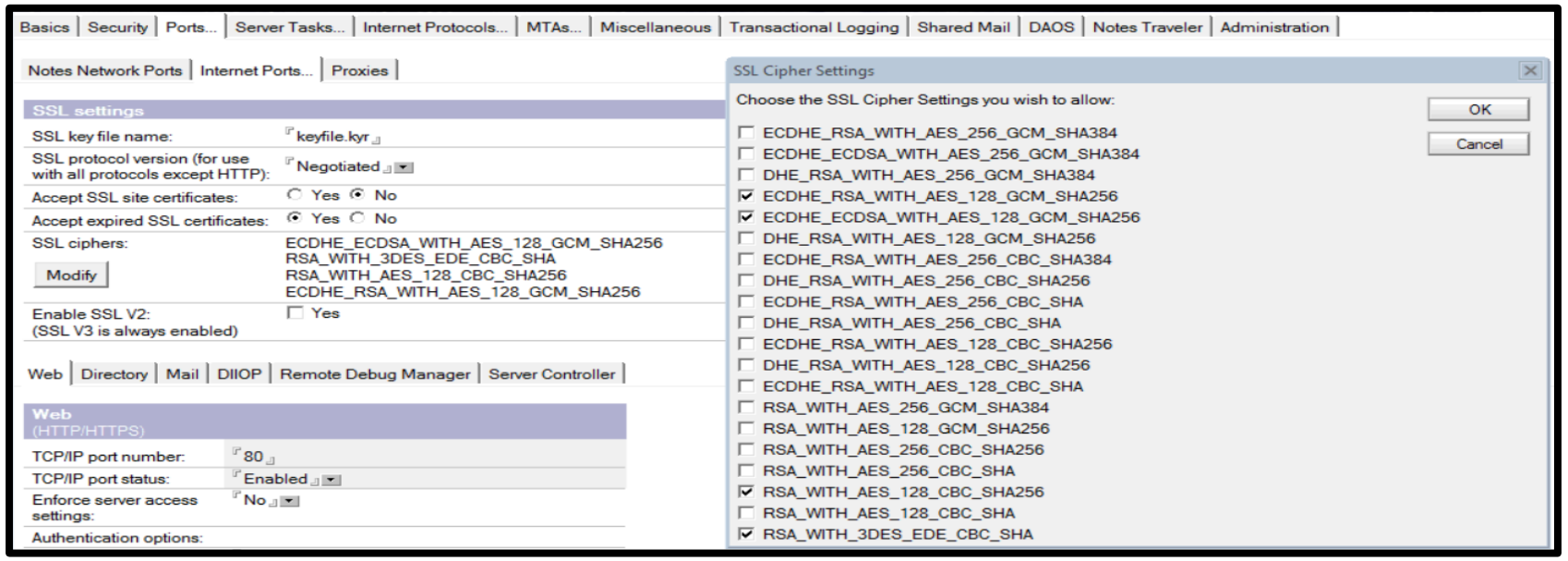




Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

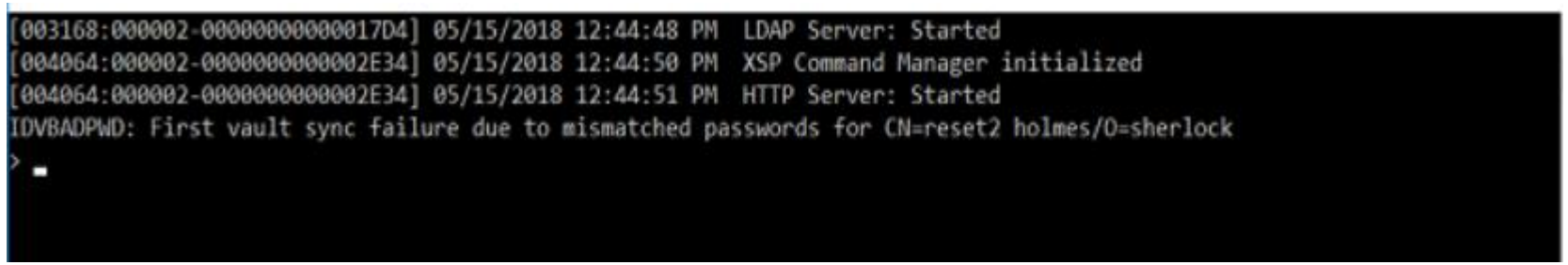
# Notes-ID Vault Synchronization

- 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

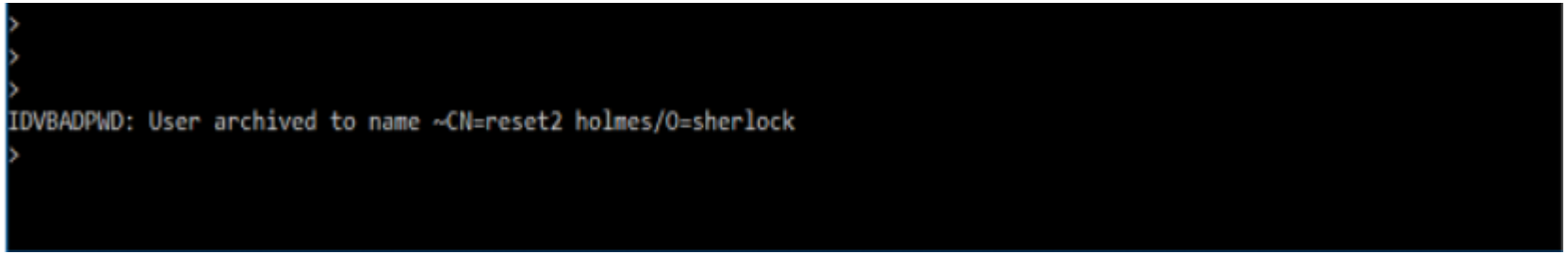
Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# ID Vault Serviceability

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




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




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


Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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.

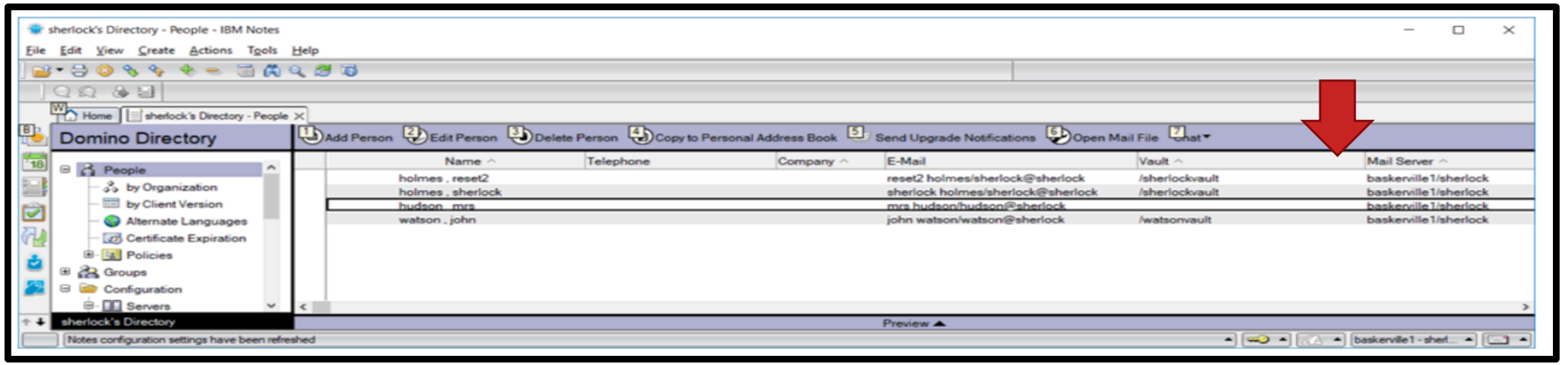
```
> load qvault
[003F08:000006-00000000000045EC] 05/11/2018 08:50:44 AM  OSLoadProgram(): Child pid 17996(x464C), Parent pid 16136(x3F08
), Child name C:\Domino3\qvault.EXE
[00464C:000002-00000000000009EC] arg 1, consumed 1
> WARNING (0): Sym file (C:\Domino3\npntapi.sym) is version 2. The supported 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 O=hudsonvault
[00464C:000002-00000000000009EC] QVR - Vault O=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 O=watsonvault
[00464C:000002-00000000000009EC] QVR:     Skipped - CN=john watson/O=watson
> _
```

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

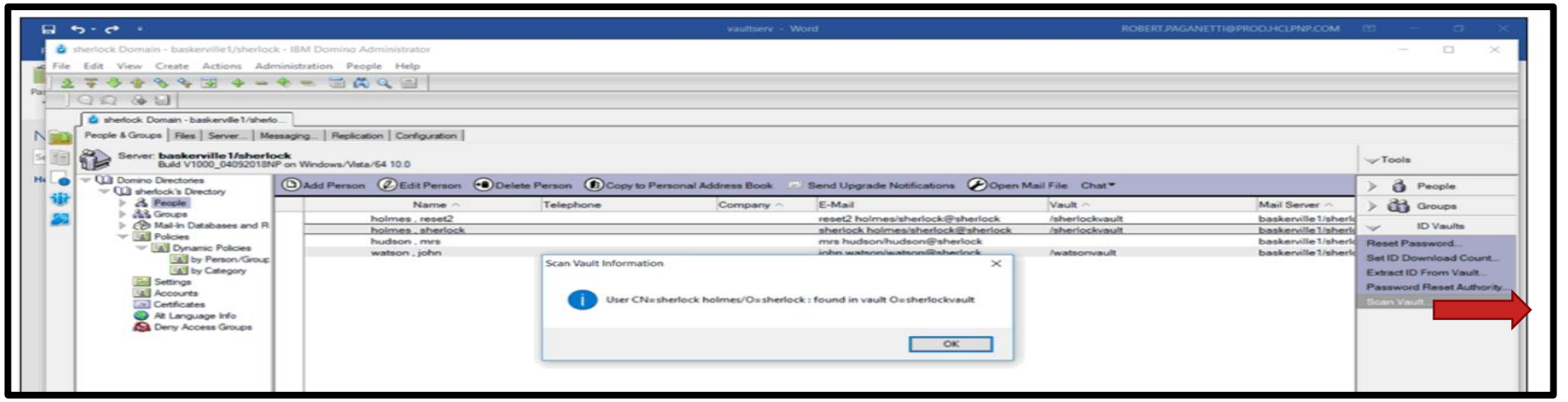

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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 …

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

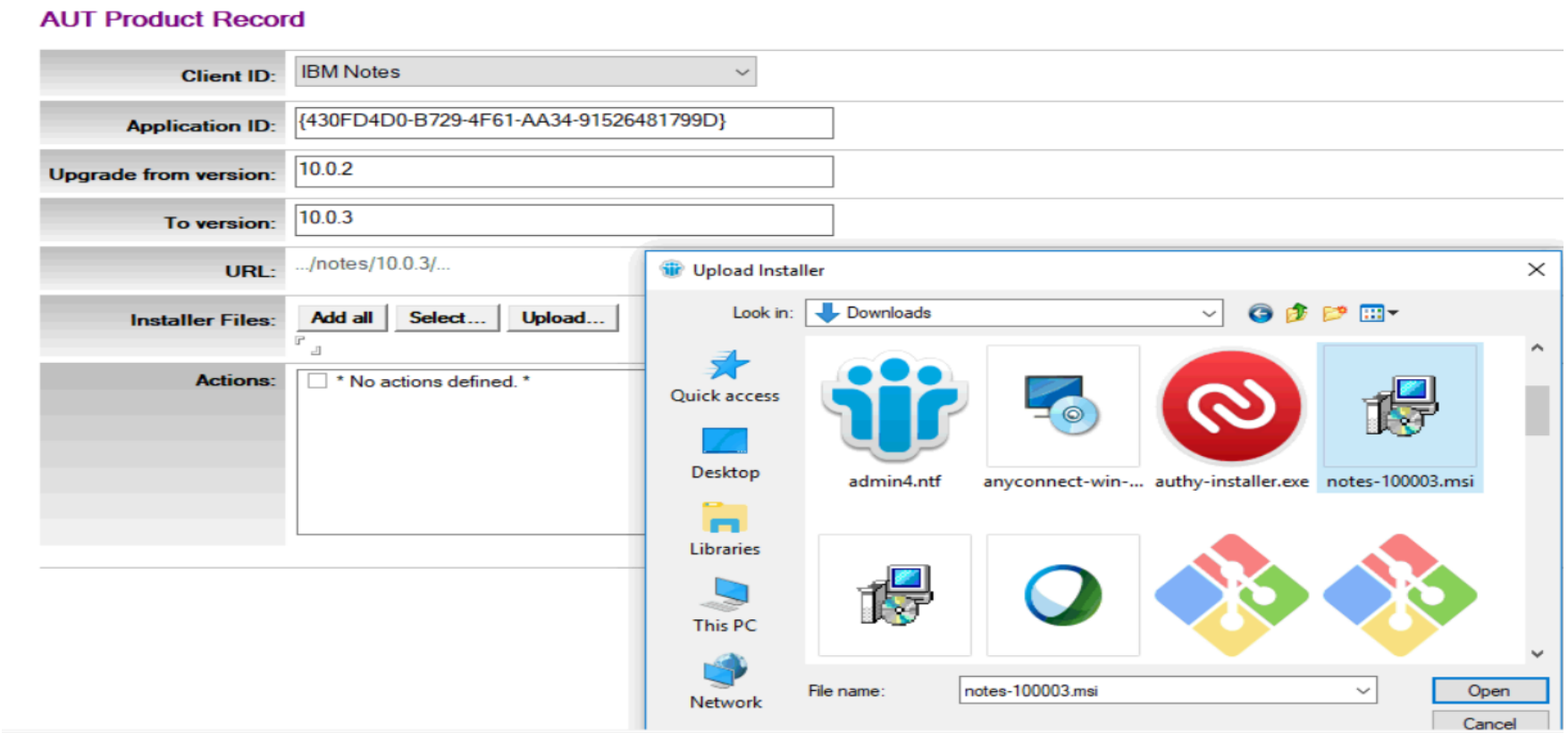
# Notes Auto Update

- 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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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





Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# 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

Copyright © 2018 HCL Technologies Limited | www.hcltech.com

# Thank you!


Copyright © 2018 HCL Technologies Limited | www.hcltech.com