OPENNTF WEBINARS

October, 2022
DQL, Compare DBs Report tool and Document Properties Plugin
AGENDA

• Welcome
• Presentation:
  • Document Properties Plugin – Julian Robichaux
  • Compare DBs Reports Tool – Andre Guirard
  • Create Views from Other DBs – John Curtis
• Q and A - All
THANKS TO THE OPENNTF SPONSORS

• HCL made a contribution to help our organization
  • Funds these webinars!
  • Contests like Hackathons
  • Running the organization

• Prominic donates all IT related services
  • Cloud Hosting for OpenNTF
  • Infrastructure management for HCL Domino and Atlassian Servers
  • System Administration for day-to-day operation
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• Join us and get involved!
• We are all volunteers
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• If your idea is bigger than you can do on your own, we can connect you to a team to work on it
• Test or help or modify an existing project
• Write guides or documentation
• Add reviews on projects / stars on Snippets
NEXT WEBINAR

• November OpenNTF Webinar - Integrate Keycloak with Domino for identity management with Heiko Voigt

• Register at :
  • https://www.openntf.org/webinars
DECEMBER HAPPY HOUR

• Join us in December for a virtual Happy Hour!
ASKING QUESTIONS

• First Question – Will this be recorded?
  • Yes, view on YouTube!!!
  • https://www.youtube.com/user/OpenNTF

• Use the Questions Pane in GoToWebinar
• We will get to your questions at the end of the webinar
• The speakers will respond to your questions verbally
  • (not in the Questions pane)
• Please keep all questions related to the topics that our speakers are discussing!!!
• Unrelated Question => post at:
  • https://openntf.org/discord
PRESENTATIONS

Document Properties Plugin – Julian Robichaux
Compare DBs Reports Tool – Andre Guirard
Create Views from Other DBs – John Curtis
What is the Document Properties Plugin?

• Alternative to the “classic” document properties box

• Many quality of life improvements
  • Resizable
  • Sortable
  • Searchable
  • and so much more!

• Created because we wanted it internally, and...
Other People Wanted It Too
Other People Wanted It Too

Enlarge the document properties window in Notes, or make it resizable.

Viewing field values is restricted to a very small window. Enlarge the window size or allow it to be resizable.
The Basics

Document Properties Plugin
# The Basics: How Do You Open It?

<table>
<thead>
<tr>
<th>Date</th>
<th>#</th>
<th>Starting Time</th>
<th>Ending Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/04/2022</td>
<td></td>
<td>07:46 AM</td>
<td></td>
</tr>
<tr>
<td>10/06/2022</td>
<td>1</td>
<td>02:07 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>02:29 PM</td>
<td></td>
</tr>
<tr>
<td>10/10/2022</td>
<td>1</td>
<td>01:58 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>02:03 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>02:07 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>02:22 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>02:23 PM</td>
<td></td>
</tr>
</tbody>
</table>
The Basics: How Do You Open It?
The Basics: How Do You Open It?
The Basics: How Do You Open It?
The Basics: How Do You Open It?

Ctrl+Alt+L
What Does It Look Like?

Document Properties Plugin
Default Tab: All The Fields

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
<th>Size</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SConflictAction</td>
<td>Text</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>FILE</td>
<td>Attachment</td>
<td>925</td>
<td>extension.xml</td>
</tr>
<tr>
<td>SRevisions</td>
<td>Time\Date List</td>
<td>38</td>
<td>09/02/2015 10:14:52 AM/09/02/2015 10:14:52 AM</td>
</tr>
<tr>
<td>SUpdatedBy</td>
<td>Names</td>
<td>33</td>
<td>CN=Julian Robichaux/O=panagenda</td>
</tr>
<tr>
<td>File2AttachmentOpLink</td>
<td>Text</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ApprovalStatusChange</td>
<td>Names</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ApprovalStatusChange</td>
<td>Text</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ApprovalStatusHistory</td>
<td>Text</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AttachModified</td>
<td>Time\Date</td>
<td>10</td>
<td>09/02/2015 03:11:57 PM</td>
</tr>
<tr>
<td>AttachName</td>
<td>Text</td>
<td>15</td>
<td>extension.xml</td>
</tr>
<tr>
<td>AttachSize</td>
<td>Text</td>
<td>5</td>
<td>925</td>
</tr>
<tr>
<td>Authors</td>
<td>Authors List</td>
<td>47</td>
<td>CN=Julian Robichaux/O=panagenda, admins</td>
</tr>
<tr>
<td>capabilities</td>
<td>Text</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>capabilitiesURL</td>
<td>Text</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Categories</td>
<td>Text</td>
<td>13</td>
<td>CoolPlugins</td>
</tr>
<tr>
<td>Description</td>
<td>Text</td>
<td>27</td>
<td>panagenda Timezone Helper</td>
</tr>
</tbody>
</table>

If the document is open in a tab, you also get computed text.
Info Tab

select, copy, and paste any of this to the clipboard
Attachments Tab
Resizable Window, Panel, and Columns
Playing With Fields

Document Properties Plugin
Sort Columns By Clicking The Header

![Image of a software interface showing columns and sorting options.](image-url)
Search Field Names + Values (even dates)
Easily Copy Field Values

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
<th>Size</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ToolAttach</td>
<td>Rich Text</td>
<td>1,546</td>
<td>- extension.xml</td>
</tr>
<tr>
<td>SFILE</td>
<td>Attachment</td>
<td>925</td>
<td>extension.xml</td>
</tr>
<tr>
<td>ThumbDisplay</td>
<td>Rich Text</td>
<td>164</td>
<td></td>
</tr>
<tr>
<td>Details</td>
<td>Rich Text</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>providerId</td>
<td>Text</td>
<td>55</td>
<td>com.ibm.rcp.toolbox.prov.providereponents</td>
</tr>
<tr>
<td>Authors</td>
<td>Authors List</td>
<td>47</td>
<td>CN=julien robichaux/C=panagendac</td>
</tr>
<tr>
<td>OrgAttachInfo</td>
<td>Text</td>
<td>39</td>
<td>CN=Users/julien/Desktop/extension</td>
</tr>
<tr>
<td>OriginalFileName</td>
<td>Text</td>
<td>39</td>
<td>CN=Users/julien/Desktop/extension</td>
</tr>
<tr>
<td>$Revisions</td>
<td>Time/Date List</td>
<td>38</td>
<td>09/02/2015 10:14:52 AM EDT/09/02/2015 09:14:52 AM EDT</td>
</tr>
<tr>
<td>statisticResponseUn...</td>
<td>Text</td>
<td>34</td>
<td>C075DC1492C01D4085257EB404E30CB</td>
</tr>
<tr>
<td>$1RelatedRv...</td>
<td>Names</td>
<td>33</td>
<td>CN=julien robichaux/C=panagendac</td>
</tr>
</tbody>
</table>

Follow Document Selections

Copy menu options:
- Undo
- Cut
- Copy
- Paste
- Delete
- Select All
- Right to left Reading order
- Show Unicode control characters
- Insert Unicode control character
- Open IME
- Reconversion
Export Some/All Fields As CSV

The image shows a window with multiple columns and rows containing various document properties such as `Field Name`, `Data Type`, `Size`, and `Value`. The `Field Name` column includes entries like `providerId`, `Authors`, `OrgAttachInfo`, and `StatCreationDate`. The `Data Type` column includes `Text`, `Rich Text`, and `Time/Date List`. The `Size` column varies, with some entries having specific sizes.

A pop-up menu is visible with options such as `selected row names`, `selected row values`, and `selected row info`. This indicates that users can export specific information from the document properties as CSV.

The note at the bottom of the page reads: "selected row names, values, and info new in Notes 12.0.2!"
Comparing Documents

Document Properties Plugin
Select Two Documents In A View And...

- Advanced Properties
  - Open in New Window
  - Create Bookmark...
  - Compare Selected Documents
  - Profile Documents
    - Document Properties
    - Ctrl+Alt+L
  - Compare Later
  - Compare With 'Compare Later'
Select Two Documents In A View And...

**green** == field doesn't exist in other document

**yellow** == field is different

**white** == field is the same
Or Select One Doc For ‘Compare Later’…
...Then Choose Another Doc And ‘Compare With’

the two docs can be in different views or databases
Bonus Features

Document Properties Plugin
Multiple Dialogs At Once
Follow Document Selections

Fields and info change when you select a different document.
Administration Options

Document Properties Plugin
# Hide Menus From Users

<table>
<thead>
<tr>
<th>notes.ini value</th>
<th>default value</th>
<th>possible values</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdvProp_MenuVisible</td>
<td>1</td>
<td>0, 1</td>
<td>If this value is 1 (default) the Advanced Properties menu will be visible. Set this to 0 to hide the entire menu and all submenus.</td>
</tr>
<tr>
<td>AdvProp_MenuVisibleInMailView</td>
<td>1</td>
<td>0, 1</td>
<td>If this value is 1 (default) the Advanced Properties menu will be visible in the right-click menu in folders and views in the mail database. Set this to 0 to hide the entire menu and all submenus in this situation. This does not affect the top-level menus, and it only affects right-click behavior in mail views.</td>
</tr>
<tr>
<td>AdvProp_CompareLaterMenuVisible</td>
<td>1</td>
<td>0, 1</td>
<td>If this value is 1 (default) the Compare Later and Compare With 'Compare Later' menus will be visible. Set this to 0 to hide these menus.</td>
</tr>
<tr>
<td>AdvProp_ProfileMenuVisible</td>
<td>1</td>
<td>0, 1</td>
<td>If this value is 1 (default) the Profile Documents menu will be visible. Set this to 0 to hide the Profile Documents menu.</td>
</tr>
</tbody>
</table>
### Profile Document Options

<table>
<thead>
<tr>
<th>notes.ini value</th>
<th>default value</th>
<th>possible values</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdvProp_ProfileAllowDelete</td>
<td>0</td>
<td>0, 1</td>
<td>If this value is 0 (default) the Delete button on the Profile Document list dialog will be hidden. Set this to 1 to display the Delete button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>which allows you to delete a selected profile document in the list.</td>
</tr>
<tr>
<td>AdvProp_ProfileShowAll</td>
<td>0</td>
<td>0, 1</td>
<td>If this value is 0 (default) only public profile documents and profile documents with the current user's name as a key will be available. Set this to 1 to list all profile documents, including documents that are assigned to other users.</td>
</tr>
</tbody>
</table>
## Disable Hotkey

<table>
<thead>
<tr>
<th>notes.ini value</th>
<th>default value</th>
<th>possible values</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdvProp_HotkeyEnabled</td>
<td>1</td>
<td>0, 1</td>
<td><strong>Version 12.0.8 (or Notes 12.0.1 FP1) and higher:</strong> If this value is 1 (default) the CTRL-ALT-L key combination (CMD-ALT-L on MacOS) can be used to launch a Document Properties dialog when a document is the current selection. Setting this to 0 will disable the hotkey.</td>
</tr>
</tbody>
</table>

All these notes.ini entries, and other admin topics are at:

[https://www.panagenda.com/kbase/display/mc/Administration+Options+and+Troubleshooting](https://www.panagenda.com/kbase/display/mc/Administration+Options+and+Troubleshooting)
How Do I Get Me Some Of This?

Document Properties Plugin
Supported Clients

- **Included with Notes 12.0.1** and later (nothing to install!)


- Windows and Mac
  - including Win64 client

- Tested all the way back to **Notes 9.0.1** on Windows
Installing On Older Clients

- Download the zip file from https://info.panagenda.com/en/document-properties

- Do one of the following:
  - Drag-and-drop the zip file to your “My Widgets” panel in the sidebar
  - Extract the zip file and import into a Domino Update Site database

Document Properties PRO

Document Properties Plugin
Document Properties PRO

• When you download the zip file from the panagenda website, it also includes **Document Properties PRO** as an option install

• Installs on Notes 12.0.1+ right next to the built-in Document Properties plugin

• Installs on older clients all by itself
  • no previous Document Properties install required

• What does that give me...?
Edit Fields!

or copy fields from one doc and paste to another
Some Caveats

- This doesn’t bypass Notes ACL
  - If you couldn’t edit a document before, you still can’t
  - $Revisions and $UpdatedBy get updated when you add/change/delete

- No extra privileges in Full Admin Access Mode
  - Sorry, just a limitation of the Notes API

- Only certain field types

- WITH GREAT POWER COMES GREAT RESPONSIBILITY!
Prevent Users From Using PRO

• **Wait, I don’t want my users to have this!**

• `notes.ini` setting: `AdvProp_NoPro=1`
  • even if the plugin is installed, the Edit menu won’t appear

• Also use policies to prevent users from installing plugins as widgets
  • probably a good idea anyway
Questions?

julian.robichaux@panagenda.com

CompareDBs Reports

Andre Guirard
HCL (Retired)
AGENDA

What is CompareDBs Reports?
Modes of operation
DEMO
Integration with SCCS & task trackers
Useful option settings
Q & A
CompareDBs is...

A tool combining design synopsis and design comparison, for use in code reviews.

- Used internally by HCL.
- Outputs DXL (Domino-XML) modified for readability
  - Not re-importable
- Comparison report highlights differences
- Strips useless information
- Stores reports for searching
- Intended for:
  - Code reviews
  - Record of changes
  - Porting template customizations
  - Translation checking
In this example difference report between two versions of an application, the view Sightings by Date has the action bar background color slightly different, and the view Sightings by Species selection formula was changed to select only Sighting documents instead of all documents. The parts that are the same are the full screen width, while the different parts are split left and right. If the two sides aren’t very different, the changed words are also highlighted. Notice the “…” at the end of the first table. The report shows only the parts that are different, with a few lines before and after for context.
Among the information we consider useless for purposes of code review are various timestamps, note ID, who updated it last – anything that doesn’t affect functionality. A code review report, shouldn’t have a lot of differences you don’t care about. We also prettify the XML. This is intended for people to read – it isn’t valid DXL (or even valid XML).
6 CompareDBs Cleaned-up DXL

<table>
<thead>
<tr>
<th>Raw DXL</th>
<th>CompareDBs Synopsis</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;run&gt;&lt;font size='12pt'/&gt;(Tell us about your sightings ...)</code></td>
<td><code>&lt;run font='12pt'&gt;Tell us about your sightings...</code></td>
</tr>
</tbody>
</table>

Modified for compactness (e.g. no font element).

Besides just deleting unwanted information, the tool also reformats some things to make them shorter. For instance, the “font” element is removed and any information in it moved to a containing “run” element.
In rich text, a piece of text that’s formatted all the same can get divided into multiple “runs” behind the scenes. By default, CompareDBs merges these into a single element. Shorter, more readable.

This is an option because sometimes you do care about these breaks – they affect translation using DGW, and can cause unwanted line breaks in the middle of a word, so sometimes you’d want to turn this feature off so your difference report shows you merged the text into a single run.
8 CompareDBs Cleaned-up DXL

<table>
<thead>
<tr>
<th>Raw DXL</th>
<th>CompareDBs Synopsis</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;pardef id='2' spacebefore='1.5'/&gt;</code></td>
<td><code>&lt;par def='2F1C0550'&gt;</code></td>
</tr>
<tr>
<td><code>&lt;par def='2'&gt;&lt;run&gt;&lt;font size='12pt'/&gt;Tell us about your sightings ...&lt;/font&gt;&lt;/run&gt;</code></td>
<td><code>&lt;run font='12pt'&gt;Tell us about your sightings&lt;/run&gt;</code></td>
</tr>
<tr>
<td><code>...</code></td>
<td><code>...</code></td>
</tr>
<tr>
<td><code>&lt;par def='2F1C0550' spacebefore='1.5'/&gt;</code></td>
<td><code>&lt;par def='2F1C0550' spacebefore='1.5'/&gt;</code></td>
</tr>
<tr>
<td><code>...</code></td>
<td><code>...</code></td>
</tr>
</tbody>
</table>

Sequential pardef ID (2) can change when editing rich text.

Hashed ID (2F1C0550) only changes if paragraph attributes change.

When you save rich text, the “pardef” elements that describe such things as line spacing and indentation, are turned into sequentially numbered “pardef” elements. That means if you change the formatting of one paragraph, all the “pardef” elements get new numbers, and each paragraph that uses that formatting refers to it by the new number. So you see dozens of differences to the “par” elements where actually nothing has changed.

To get around this, CompareDBs replaces the sequential numbers with a hash code based on the paragraph options. The “def” value is only different if the formatting has changed.

These are just a few of many changes made to simplify the output and mask irrelevant changes.
Operational Modes

- **Code review** compares versions of an application.
- **Update review** compares your custom template with a new version of the original template.
- **Design synopsis** exports design description to an NSF.
- Add custom reports, e.g., compare not design, but documents that use a specified form.
- You can also customize the default modes.
For my example I’m using a simple Notes application, and I have two versions I want to compare.
- Design reports DB was created from CompareDBs Reports template on Domino server.
- To start running a comparison or a design synopsis, we choose an option in the navigation.
- There’s a view where an administrator can configure these options. The outline on the left is built on the fly based on the documents in this view, so if you add your own, it’ll show up just like the ones that come from the template.
- Let’s run a design synopsis first.
- The forms remember what you last exported.
- You can re-export a synopsis to an existing synopsis NSF.
- The design synopsis output is an NSF with a document for each design element.
- You can export multiple databases to the same synopsis NSF. That’s why the view is categorized by application title.
- The Database note contains a summary of how the design elements were signed – so you can confirm there aren’t ECL issues without looking at every design element.
- For file-type design elements, header information is given – so you can see whether it inherits from a template or whatever. And the file data is also included.
  - Embedded, if CompareDBs can figure out how to display it.
  - Attached, if not
  - Or in some cases, where the data is a BLOB we know can’t be opened, like a JAR file, as a length and hash value so you can at least tell it’s changed.
- Images are displayed twice, on different colored backgrounds to make sure there’s enough contrast to see one of them. These are too small – I’m reporting that as a bug.
- As much as possible we try to make every setting into a human-readable description.
- Back to the Design Reports database.
Let’s look at code reviews next. The database saves a copy of a difference report for each fix in the SCCS. We can search the database for which fix included a particular change.

These aren’t automatically created as part of an SCCS submission – that’s a possible future thing. Currently the developers are required to create them manually.

Really, as a developer you want to look at them before submitting anyway, because it’s an excellent way to find mistakes or changes you made without meaning to. You can view the report without saving, until you’re ready to do your submission and save the final version.

This report shows differences associated with a past submission.
- There’s a link to view the fix record in your default web browser (e.g. in GIT).
- These’s also links to view the bug reports or tasks the fix was intended to address. This works for bug tracking systems that are Notes client applications, or anything with a web-based UI, such as JIRA.
- Configuring SCCS integration is optional; the application is still useful without that.

Direct integration with SCCS wasn’t possible for the first release of this application. We couldn’t get GIT to use our tool to run a report comparing two arbitrary versions of an NTF in its repository.

However there’s a web-based UI for Design Reports. At HCL, we required developers to get the URL of the relevant design report and paste it into the GIT fix record associated with the submission.

Let’s see how to create the report.

I click Code Review and tell it what to compare. I can compose a report like the one we were looking at, or export the DXL files to temporary folders and use my preferred file system compare tool to view their differences. Let’s do that.

Here I’m using Beyond Compare. Individual users can choose which tool to use. There’s a file for each design element, and the two NSFs were exported into two different folders so we can compare those folders recursively.

Looking at the database settings, we can see the new version is set to launch in a frameset, among other things.

In the Profile form, some text was set to indent a quarter inch.

And so on.

I can instead create a report of the differences. I don’t have to save it, but if I do, I can specify the task ID and fix ID of the submission.

To configure the integration with outside systems, an administrator uses Configuration – Application.

In HCL’s case we had change requests coming from two different sources – a Notes-based bug reporting system and JIRA, so we had a formula to look at the task ID and decide which one to open. This example just uses JIRA.

For mapping records to an SCCS, you can define a list of projects and associated URLs, plugging in the fix identifier as part of the URL.

Again, you don’t have to configure this, and you don’t have to put all your projects in one database. Use the template to create as many as you need for different teams.
Useful options

- Merge text runs or not (as mentioned earlier)
- Flag all strings in source code and static text (to highlight possible translation issues)
- Export documents
  - Specify which documents via formula or view.
  - Handy because sometimes documents are part of a template design.
  - Specify how to construct a unique document ID for matching purposes (in case the UNIDs don’t match).
- Have reports show new design elements inline, vs as attachments, vs just listing the design element names (for cases where the report is excessively long)
- Ignore case differences
- Compare UNIDs (for versions of a template, so a changed UNID doesn’t create duplicate design elements during replication)
- The default options are good for nearly all cases – don’t mess unless there’s a problem,
- Create new custom compare configurations for specific exceptions in your environment
There's more to this…

- Read the Help Using document.
Scavenge for useful code

- CompareDBs has LotusScript libraries for many advanced functions:
  - Find differences between strings
  - Extract file data from a design element (e.g. the JPG file in an Image design element)
  - Compose a nice rich text report
  - Manage temporary folders
  - In-memory data structures (queues, massive arrays, …)
  - Call C API functions on all supported client OS
  - Parse rich text CD records
  - Fancy XML processing
  - Parse LotusScript code to identify module names, variable names…
  - Examples of MVC implementation for Notes forms
  - UI operations such as “don’t show this message again” checkboxes

- I of course don’t suggest you swipe copyrighted code, but it may be instructive to see how these things are done.

- Several of these are available in the OpenNTF project “LotusScript Gold Collection”
What’s new in Domino Core Application Development

... where Application Development Features Never Stop!

John Curtis
Software architect
HCL Digital Solutions
Agenda

• Domino Query Language
• Query Results Processing
• Core Domino improvements
• Backend (Lotusscript, Java) features
DQL in v12.0x

• Embedded formula language
• Named document sets
• Design document queries
• Embedded full text search query syntax
DQL Embedded Formula Language

- v12.01
- Syntax
  - @FL or @formula (case insensitive)
  - Embedded syntax enclosed in single quotes

@fl('@length') > 2430
@FORMULA('(@left(fld1;3) = "abl" or @left(fld2;2) = "ab"')

- Provides
  - Intra-document terms (between different fields)
  - Full expression support
  - HUGE library of existing functionality
DQL Embedded Formula Language

▪ Combines with ANY other syntactic element

@fl(@length’) > 2430 or ‘my view’.column1 = ‘Juliet’ and contains (‘Capulet’)’

▪ 2 modes –

@fl(@length’) > ?val1 → allows for ?substitution
@fl(@length>2430’) → allows for multiple terms in formula language

▪ Always uses NSF scanning (not views or full text)
▪ 256 byte max per term
▪ Further completes search options in DQL

▪ Should I be using DQL? → burning question
DQL Named result sets

- v12.01
- DQL in clause – uses collected sets of documents in views and/or folders (these have always been results!!!)
- Expanded to use custom-created, named DQL results

In all (‘myset’, ‘Important View’, ‘Less important folder’)
In (‘myset’) or @ModifiedInThisFile < @dt(‘2014-01-01’)  

where ‘myset’ could be created from a long-running query, like
@ModifiedInThisFile >= @dt(‘2014-01-01’) or Lastname = ‘Jones’ and city in (‘Albuquerque’, ‘Hoboken’) and shoesize >= 10

(No need for views of FT indexes – filtered nsf scanning)
Using Named result sets

- Gain in performance – 100x to 1000x faster
- Usage details
  - Use cases – reporting, daily/hourly documents searched for constantly
  - Static sets – do NOT refresh automatically (yet)
  - They do NOT replicate (yet)
  - Database limits (500 per database, 50MB in total stored size) – can be overridden
  - They expire – discarded automatically by updall – but settable (8760 is one year)
How to create named result sets

- New (v12.01) Java and LotusScript (Notes) DominoQuery execute method arguments

```java
DocumentCollection execute(String query, String resultname, boolean replace)
throws NotesException
DocumentCollection execute(String query, String resultname, boolean replace, int expirehours)
throws NotesException
```

`resultname` - unique name for this document set – for use in DQL “in”

`replace` – replaces the current document set saved with that name

`expirehours` – how many hours until the document set is discarded (default 24)
Managing named result sets

- Using updall -j

`updall <dbpath> -j <opt>` manages named document sets, with options:

- `deleteOne <name>` deletes one named document set
- `deleteAll` deletes all named document sets
- `deleteOld` deletes old, expired named document sets
- `report` generates a report of named document sets

- `deleteOne` overrides expiration date
- `deleteAll` destroys all named document sets in a database – powerful, use carefully

- More controls using backend classes:
  - `(Notes)Database .RemoveAllQueryNamedResults`
DQL Design Document Queries

- v12.03
- Query-level setting (either data or design documents)
- Allows for internal $field access – where values are strings, numbers or timedates

```
@fl('@matches($flags; "$F*")') → finds all folders
$title = 'new view' → matches view name or foldername
```

- Only nsf scan terms allowed (no views or FT searching)
DQL Embedded Full Text Search

- v12.03
- Use FTSearch syntax *you already have*
- Full support of the GTR syntax, optimized execution

```
@ftsearch('[name] = Jones* and [date_of_birth] is present')
@fts('field delivery_date > 1/1/2022 and field area_code = 2?233?')
```

- FORCES full text index to be used
- Integrates existing searches with full DQL Boolean functionality
- CONTAINS operator is unchanged
DQL Formula Language and Named Results Demo
QueryResultsProcessor (QRP)

- **DQL**
  - As a Domino search service, finds documents from a single database
  - Allows traversal using DocumentCollection
  - Does NOT
    - Fetch viewable/presentable data from the database
    - Sort data by anything other than NoteID
    - Get results from multiple databases
    - Do that all on the fly, with discardable results

- **So .. The QRP was built**
  - Delivered in multiple parts across v12 and point releases
How to think about QRP views

- Consider how you create views in Designer, you need
  - Selection criteria
  - Columns to compute view data, sort it, etc.

- Same with QRP views but they allow separate
  - Selection criteria for each set of documents
  - Computed column rules for each set of documents

- QRP views are different in that
  - Their data spans databases and sets of documents
  - Query results, not refreshable or replicable design elements
  - Created to expire, be programmatically rebuilt and populated
QRP view copy

- V12.03
- Will allow for QRP views with custom design
  - All graphics and rich text attributes retained
- Additive and modified input data, you can:
  - Add columns (always to the right)
  - Override column titles
  - Change column sort, categorization and hidden attributes
QueryResultsProcessor Flow

Input (Notes)DocumentCollections

doccol 1
DQL1
ftdoccol
Dbsearch
doccol
DQL2

Combine

Quick fetch including DQL executes (uses formula overrides)

Optional join/lookup (TBD)

Fetch

Sort

Domino sort service

View

Input View design

Specified output

json

v12.0.0

v12.0.x

v12.0.3

Quick fetch including DQL executes (uses formula overrides)
QRP reading materials

https://help.hcltechsw.com/dom_designer/12.0.0/basic/H_NOTESQUERYRESULTSPROCESSOR_CLASS.html
https://help.hcltechsw.com/dom_designer/12.0.0/basic/H_QUERYRESULTSPROCESSOR_CLASS_JAVA.html
https://jdcurtis.blog/2021/11/30/the-query-results-processor-part-two/
https://jdcurtis.blog/2021/12/02/the-queryresultsprocessor-part-three/
https://frostillic.us/blog/posts/2022/1/13/dql-queryresultsprocessor-and-jnosql
QRP Copy View Demo
Core Domino Improvements

Classic view refresh logjam

- T1(refresh)
- T2 (read)
- T3 (read)
- T4(refresh)
- T5 (read)
- T6 (read)
- T7 (read)
- T8(refresh)
- T9 (read)
- T10 (read)
- T11 (read)
- T12 (read)

more threads ➔ v12.01 and prior. Refresh threads do NOT lose their place in the queue. (read threads wait behind refresh threads) (!)


- = Database last modified (update time) when the user/thread placed into the queue

- = Database last modified (update time) of changes the user/thread with which the thread updated the view

- Tx (read) = Thread waiting to read the view

- Ty (refresh) = Thread waiting to refresh (update) the view
Core Domino Improvements

View refresh logjam relief!!

- Many, MANY more refreshes can happen in a given timeframe
- MAJOR
  - response time improvement
  - throughput increase

v12.02 - Each thread only applies the updates it needs to

More threads →

T1 (refresh)
T2 (read)
T3 (read)
T4 (refresh)
T5 (read)
T6 (read)
T7 (read)
T8 (refresh)
T9 (read)
T10 (read)
T11 (read)
T12 (read)
Core Domino Improvements

- 100K+ view opens versus relentless 20+ doc updates/second
Core Domino Improvements

- 12.03 (or later)
- NSF sharding
  - To improve compact, backup, etc
- Optimized Reader Lists
  - Greatly improved scanning and traversal of documents and views when access is sparse
Lotusscript/Java Large Summaries Support

- To enable, per database

Create_R12_Databases=1 (notes.ini)
Compact <dbname> -ls on -c

- Turns on large summaries and moves db to ODS 55
- New limit in document summary data:
  - 16MB total document summary and that’s it!
    (cumulative maximum size of all summary fields)
Lotusscript/Java Large Summaries Support

- **What you get**
  - Read and write large text fields and long field lists
    - Lists still have a max of 64k ENTRIES but total list data size is only bounded by maximum summary size
  - Works with Summary and Non-summary fields
  - All (Notes)Item methods “just work” seamlessly
  - Overall size also supported by
    - Dynamic array type (Lotusscript)
    - Vector (Java)
Lotusscript/Java Large Summaries Support

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Database Encrypt/Decrypt methods

- Database encrypt and decrypt:
  ```
  db.encrypt(strength, deferred)
  db.decrypt(deferred)
  ```
- If deferred (most common and useful) – next time it’s opened, compact run enqueued
- If “while you wait” it will take time
- Local databases only
- Encryption strength is same as 
  ```
  db.(get)EncryptionStrength()
  ```
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QUESTIONS?

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Please keep all questions related to the topics that our speakers are discussing!!!

Unrelated Question => post at:  
https://openntf.org/discord