



IBM Notes V10

Performance Boost

Christoph Adler - panagenda

Christoph Adler - Senior Consultant at panagenda



17 years of IBM (Lotus) solutions experience

Focused on

- IBM Notes Client Management
- Analysis and Optimization of ICS infrastructures
- Cloud onboarding
- Application Modernization

Good to know

- From Germany 🇩🇪
- Frequent traveler ✈️
- Geek 🧐
- Don't give energy drinks → squirrel mode 🐿️

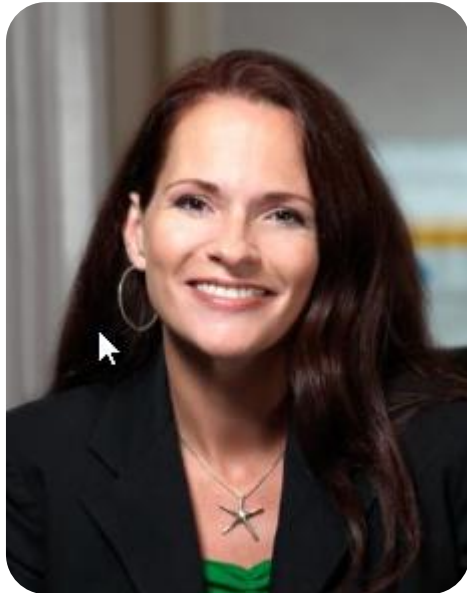
IBM CHAMPION 



4 things before we start ...



Thank you!



Francie Tanner

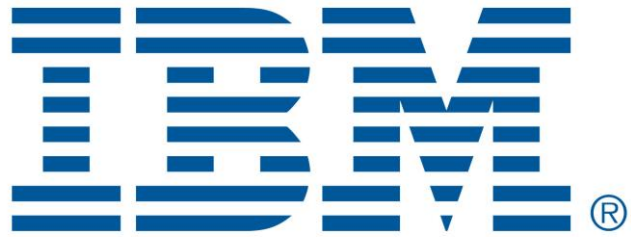


Florian Vogler



Daniel Reimann

Thank you!



IBM Notes/Domino V10 will be released < 30 Days

- IBM Domino V10 World Premiere in Frankfurt / Germany
October 9th 2018

Save your seat here

<https://www.fairorg.de/IBM/Event/nomi.cfm/domino18/?token=ibmde>

Livestream - 10:15am – 12:45pm CEST

<https://www.facebook.com/events/640962392971330/>

- Destination Domino
<https://www.ibm.com/collaboration/ibm-domino>
<https://www.ibm.com/de-de/collaboration/ibm-domino>
- Domino Product Ideas Lab
<https://domino.ideas.aha.io/>

NOTES IS **NOT** DEAD

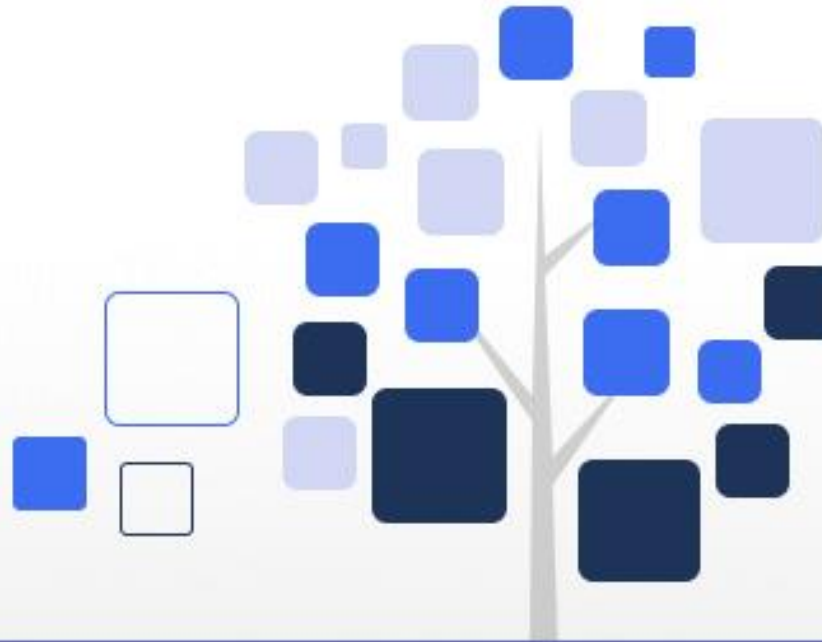


Let's start with some numbers

IBM Notes 9.0.1 Feature Pack 10 Interim Fix 4

~35.000 files (Notes 6/7 | 8/9 Basic used to have ~550)

- 28.600 files in Notes Program\framework in 2.700 subdirectories
 - 11.200 (largely undocumented) .properties files
 - 1.200 .jar files
 - 1.300 .html files
- 600 files in Notes Data\workspace in 250 subdirectories
 - 40 (largely undocumented) XML files
 - 40 (largely undocumented) .properties files
- Which is
 - 35.000 files in 2.950 subdirectories
 - 11.280 largely undocumented files
 - ... and >30 NSF/NTF/NDKs
 - ... and the good old notes.ini file

The IBM logo, consisting of the letters "IBM" in a bold, sans-serif font with a registered trademark symbol (®) to the right.

Notes® 10

L-GHUS-B2KJGB

Licensed Materials - Property of IBM Corp. and/or HCL. © Copyright International Business Machines Corporation 1985, 2017. © Copyright HCL Technologies Limited 2018. All rights reserved. IBM, the IBM logo, Lotus and Notes are trademarks of IBM Corporation, registered in many jurisdictions worldwide. Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates. Built on Eclipse is a trademark of Eclipse Foundation, Inc. This Program is licensed under the terms of the license agreement accompanying the Program. This license agreement may be either located in a Program directory folder or library identified as "License" or "Non_IBM_License", if applicable, or provided as a printed license agreement. Please read this agreement carefully before using the program. By using the Program, you agree to these terms.



Loading... Please wait.

BUILT ON
eclipse



IBM Notes 10 Beta-2

- 22.800 files in Notes Program\framework in 1.900 subdirectories
 - 9.000 (largely undocumented) .properties files
 - 1.000 .jar files
 - 1.200 .html files
- 250 files in Notes Data\workspace in 160 subdirectories
 - 40 (largely undocumented) XML files
 - 40 (largely undocumented) .properties files
- Which is
 - 26.000 files in 2.700 subdirectories
 - 9.000 largely undocumented files
 - ... and >30 NSF/NTF/NDKs
 - ... and the good old notes.ini file

IBM Notes 10 Beta-2 (cont.)



Add over 60 preference/dialog boxes

- Each dialog has ~15 settings at average

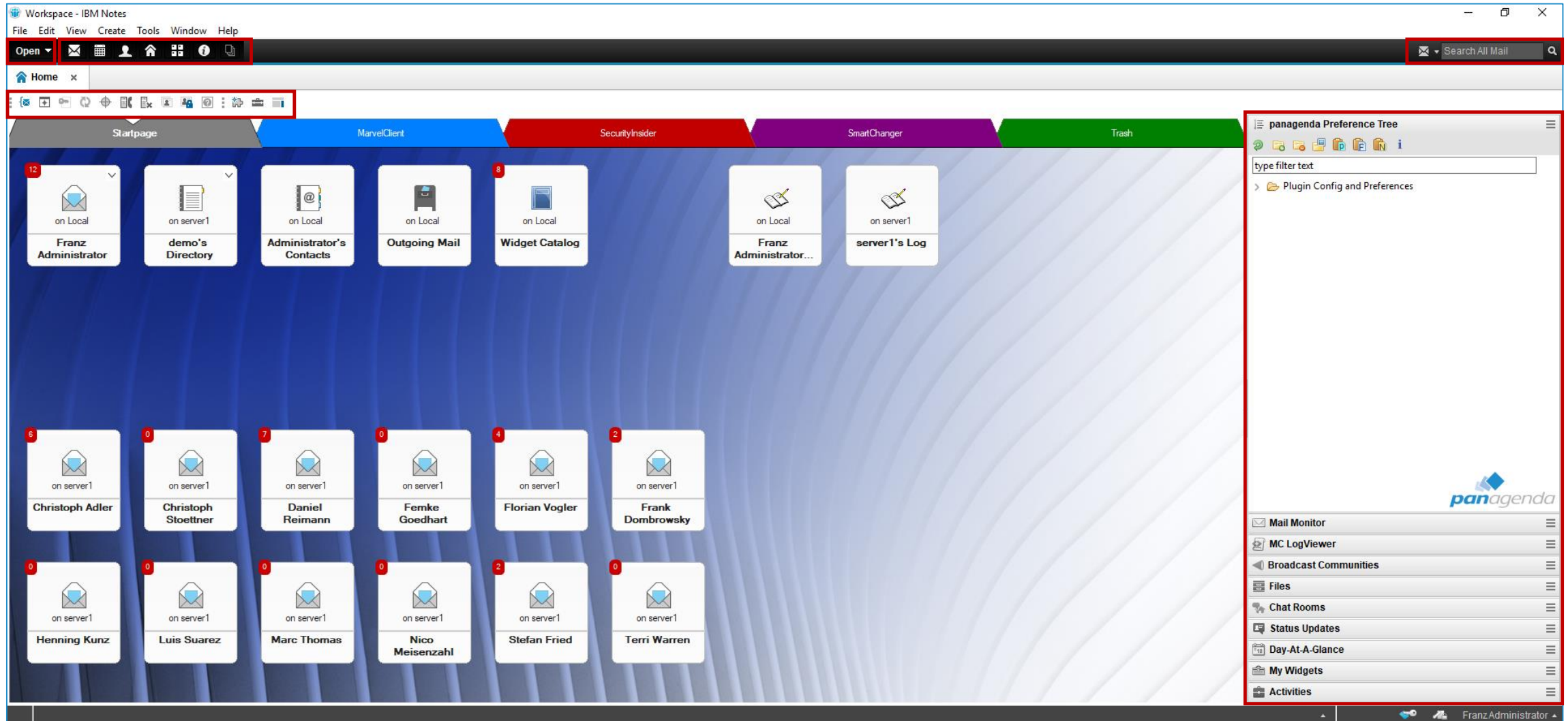
For a total of 900+ settings sprayed across

- names.nsf (very few)
- notes.ini (few)
- and XML files (lots)

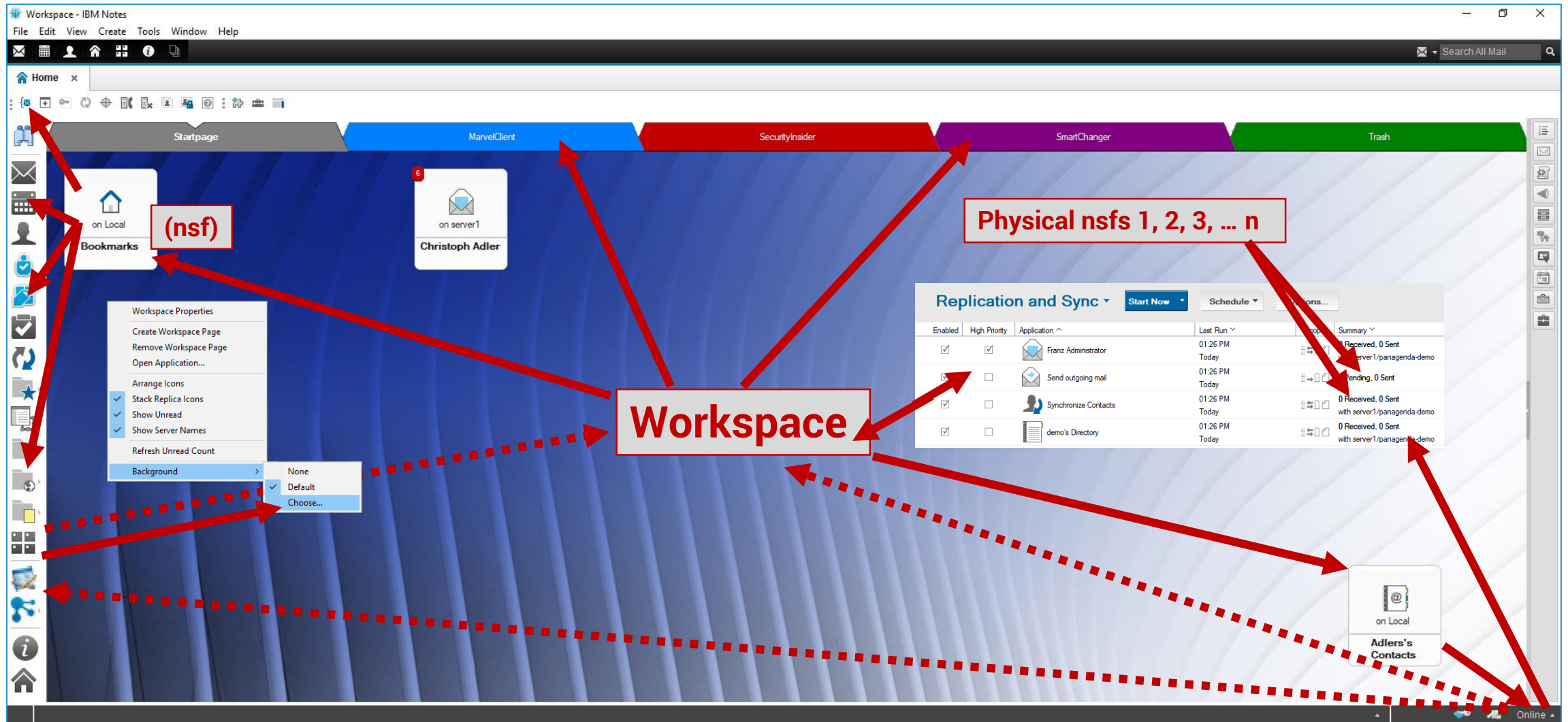
Plus any plugins, widgets, add-ons, etc. “you” or the user may have added to the Notes client install.

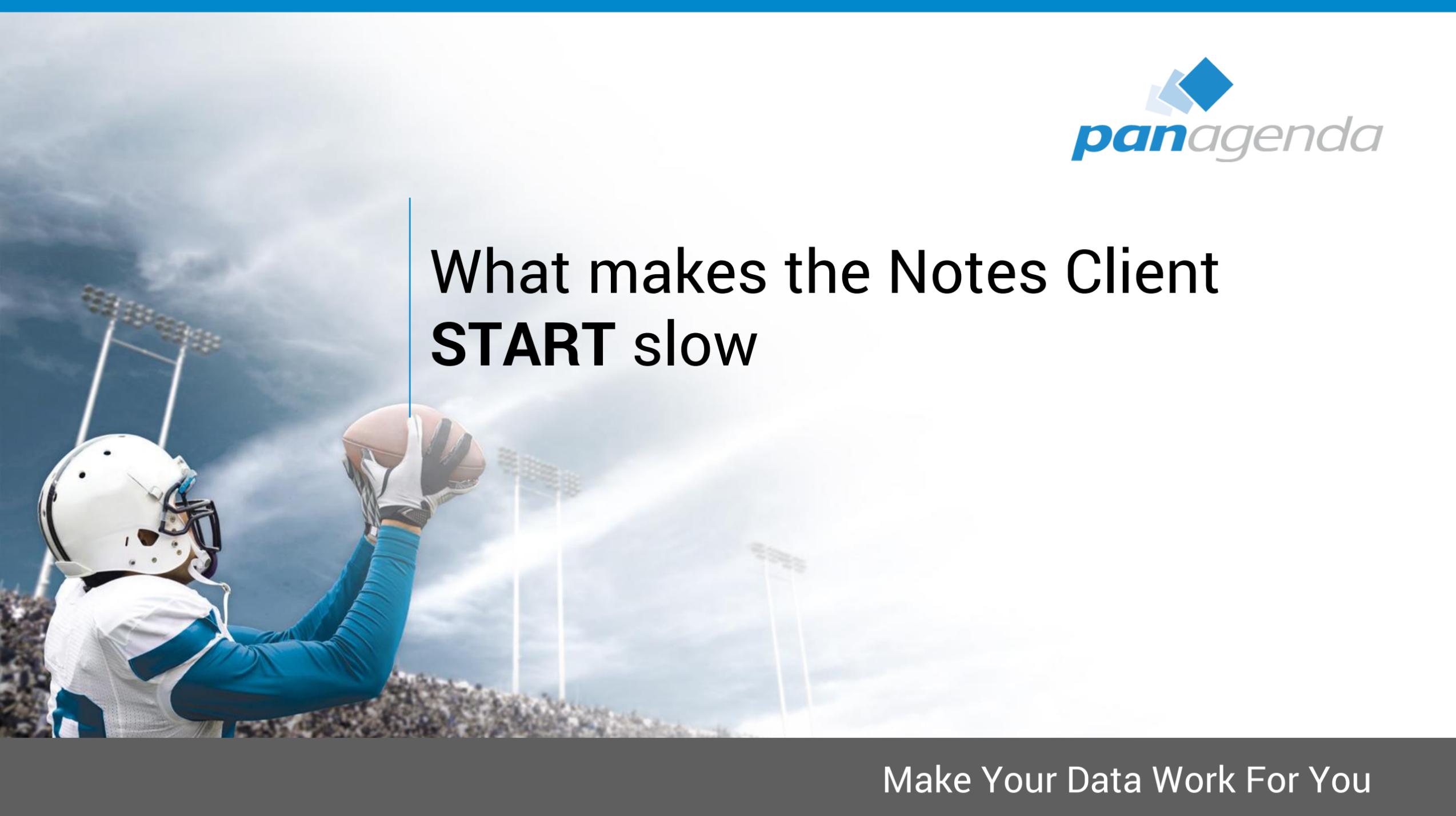
- ▼ Accounts
 - Trusted Sites
 - Basic Notes Client Configuration
- ▼ Calendar and To Do
 - Access and Delegation
 - Regional Settings
 - Contacts
 - Fonts, Colors and Themes
 - Live Text
 - Locations
 - Log Settings
- ▼ Mail
 - Access and Delegation
 - Internet
 - Sending and Receiving
 - Notes Ports
- ▼ Regional Settings
 - Bidirectional
- ▼ Replication and Sync
 - Default
- ▼ Sametime
 - Accessibility
 - ▼ Auto-Status Changes
 - Calendar Service
 - Chat Window and Transcript
 - Contact List
 - Notifications
 - ▼ Server Communities
 - <https://www.panagenda.com>
 - Spell Checking
 - Status Messages
- ▼ Sametime Meeting Rooms
 - Meeting Room Invitations
 - Meeting Room Servers
- ▼ Search
 - Search List
 - Spell Check
- ▼ Toolbar
 - Customize
 - Toolbars
 - Widgets
 - Windows
 - XPages Performance

IBM Notes 10 Beta-2 (cont.)



The screenshot displays the IBM Notes 10 Beta-2 workspace titled "Workspace - IBM Notes". The interface includes a menu bar (File, Edit, View, Create, Tools, Window, Help) and a toolbar with icons for Open, Mail, Calendar, Address Book, Home, Workspace, Information, and Print. A search bar labeled "Search All Mail" is located in the top right corner. Below the toolbar, a horizontal navigation bar shows tabs for Startpage, MarvelClient, SecurityInsider, SmartChanger, and Trash. The main workspace area contains a grid of mail icons, each with a red notification badge and a label indicating its location (e.g., "on Local", "on server1"). The icons are labeled with names: Franz Administrator, demo's Directory, Administrator's Contacts, Outgoing Mail, Widget Catalog, Franz Administrator..., server1's Log, Christoph Adler, Christoph Stoettner, Daniel Reimann, Femke Goedhart, Florian Vogler, Frank Dombrowsky, Henning Kunz, Luis Suarez, Marc Thomas, Nico Meisenzahl, Stefan Fried, and Terri Warren. On the right side, a sidebar titled "panagenda Preference Tree" is visible, containing a search filter and a list of items: Mail Monitor, MC LogViewer, Broadcast Communities, Files, Chat Rooms, Status Updates, Day-At-A-Glance, My Widgets, and Activities. The panagenda logo is also present in the bottom right corner of the sidebar. The status bar at the bottom indicates the user is "Franz Administrator".





What makes the Notes Client
START slow

IBM Notes release

If you're not on at least 9.0.1 yet → 9.0.1 FP10 IF4 is a significant improvement

Again, IBM Notes V10 arrives <30 days

Software lifecycle of IBM Collaboration Solutions

<http://www-01.ibm.com/software/support/collaboration/lifecycle/>

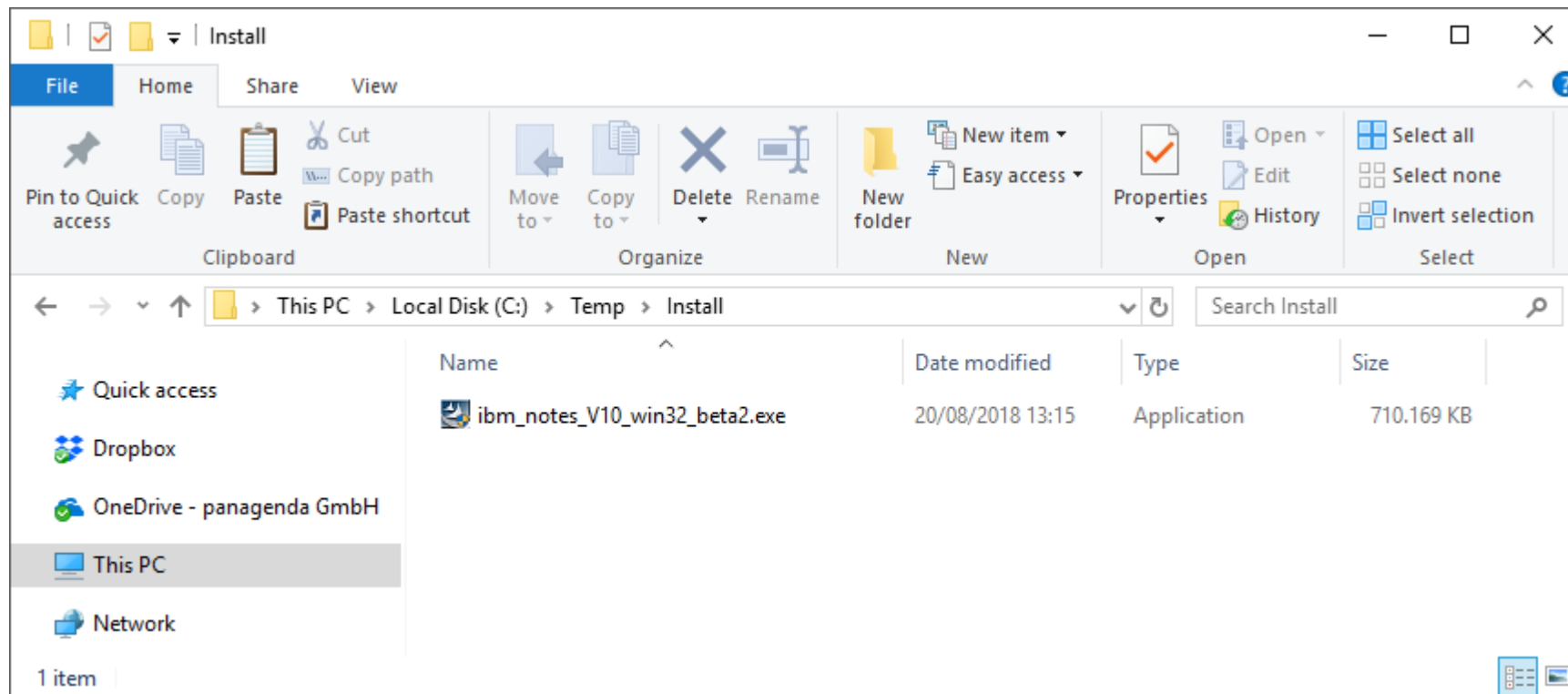
▲ View	◆ Product name (** indicates comments/exception)	◆ Version Rel./Mod.	◆ Policy type	◆ Product ID	◆ General availability	◆ End of Support
<input type="checkbox"/>	IBM Notes	9.0.X	E	5724-Z14	2013-04-12	
<input type="checkbox"/>	Lotus Notes	8.5.X	E	5724-E62	2009-01-23	2018-09-30
<input type="checkbox"/>	Lotus Notes	8.0.X	S	5724-E62	2007-09-21	2015-04-30
<input type="checkbox"/>	Lotus Notes	7.0.X	S	5724-E62	2005-10-07	2011-04-30
<input type="checkbox"/>	Lotus Notes	6.5.X	S	5724-E70	2003-11-07	2010-04-30
<input type="checkbox"/>	Lotus Notes	6.0.X	S	5724-E70	2002-09-30	2007-04-30
<input type="checkbox"/>	Lotus Notes	5.0.x	S	LOT0-050	1999-03-30	2005-09-30

IBM Notes release (cont.)

How-to install IBM Notes V10 Beta-2

1. Run the following command:

"c:\temp\Install\ibm_notes_V10_win32_beta2.exe" -s -a /s /v"SETMULTIUSER=1 /qb+ /lime " c:\temp\Install \msiinst_NotesV10-Beta2.log"

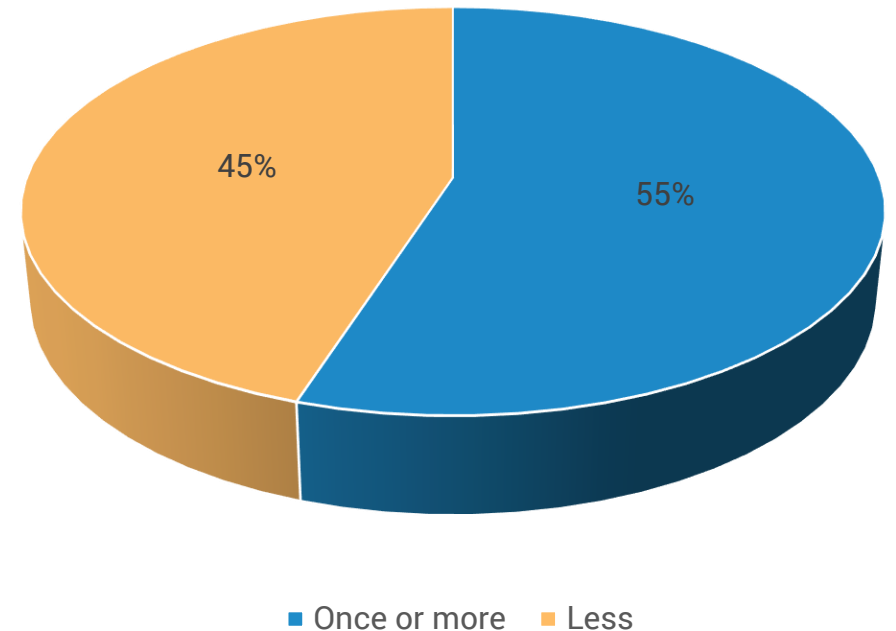


Antivirus realtime scanning in Data directory

~55% of the entire data volume in the Data directory changes on a DAILY basis in most setups

- 5 - 10% in Data\workspace (up to 300 files)
- DISABLE Antivirus scanning for at least
 - *.ns*
 - *.ndk
 - *.xml
 - *.properties
 - *.jarin Data Directory.

Data directory:
File changes per day



What makes the Notes Client START slow (cont.)

Client crashes/database fixups

- Especially bad for network based data directories clients

Outdated Hardware

- You need >4 GB memory if you want to use Notes AND something else
- Old fixed disks with fragmentation
- Fun Exercise: Buy a Solid State Disk and make Notes start off of that ;-)

Tons of startup programs/scripts launching during the “boot storm”

- If the disk is unable to keep up, it's not Notes' fault

What makes the Notes Client START slow (cont.)

Outdated Data directories

- Virtually 100% of all NTFs (Laptops: 90%) can be removed by
- Cleaning up old Notes 4+5+6/7 templates
- using ini:SharedDataDirectory= (also with Single User install!)

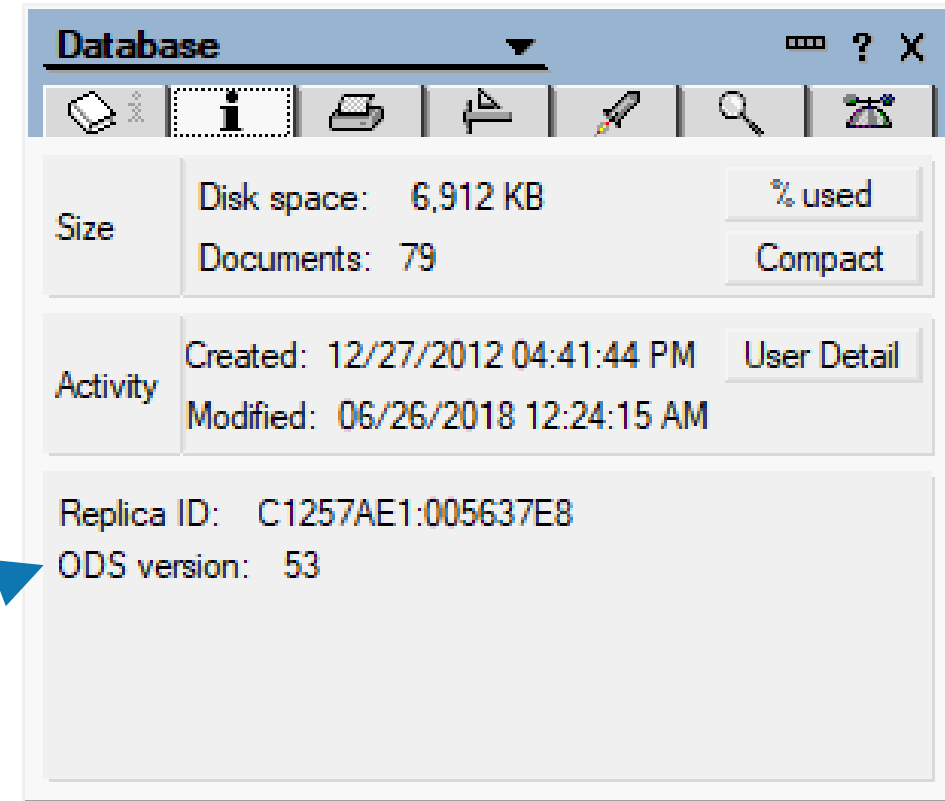
Operating System

- Windows 8.1 boots ~20% faster than Windows 7
- Windows 10 ~15% faster than 8.1
 - “Meltdown” and “Spectre” and upcoming “Spectre-NextGeneration” patches may have a negative performance impact

ODS of local databases

ODS = On Disk Structure

- ODS 16 = Notes 2
- ODS 17 = Notes 3
- ODS 20 = Notes 4
- ODS 41 = Notes 5
- ODS 43 = Notes 6 & 7
- ODS 48 = Notes 8
- ODS 51 = Notes 8.5 & 9
- ODS 52 = Notes 9.0.1
- **ODS 53 = Notes 10**



The difference between ODS 43 and 53 = up to 80% LESS FILE I/O

This helps with ANY client AND server hardware

ODS of local databases (cont.)



CAUTION: The ODS is **not** automatically updated when upgrading clients

- ODS 52 requires Notes >= 9.0.1 and CREATE_R9_DATABASES=1 in notes.ini for NEW db's
- ODS 53 requires Notes >= 10 and CREATE_R10_DATABASES=1 in notes.ini for NEW db's

Good News for Notes (since 8.5)

- Use NSF_UpdateODS=1 with CREATE_R85/9/10_DATABASES=1 for a one-time upgrade of most local databases
 - NOTE: USE WITH EXTREME CARE IF YOUR DATA DIRECTORIES ARE ON A NETWORK DRIVE!
 - NOTE: End users can't access databases during compact OR databases will be ignored if in use

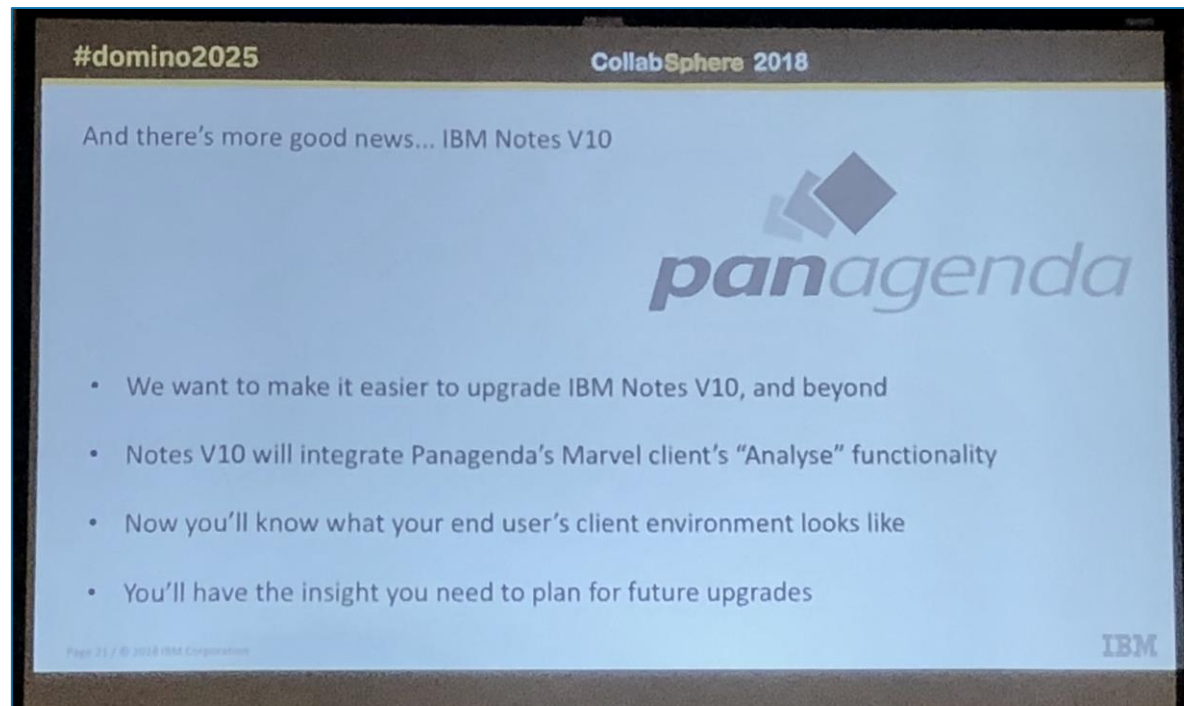
Manually upgrade ODS of local databases/templates

- Run the following command line:
`ncompact.exe -C -ODS -* -Client -UpdateIndexes`

ODS of local databases (cont.)

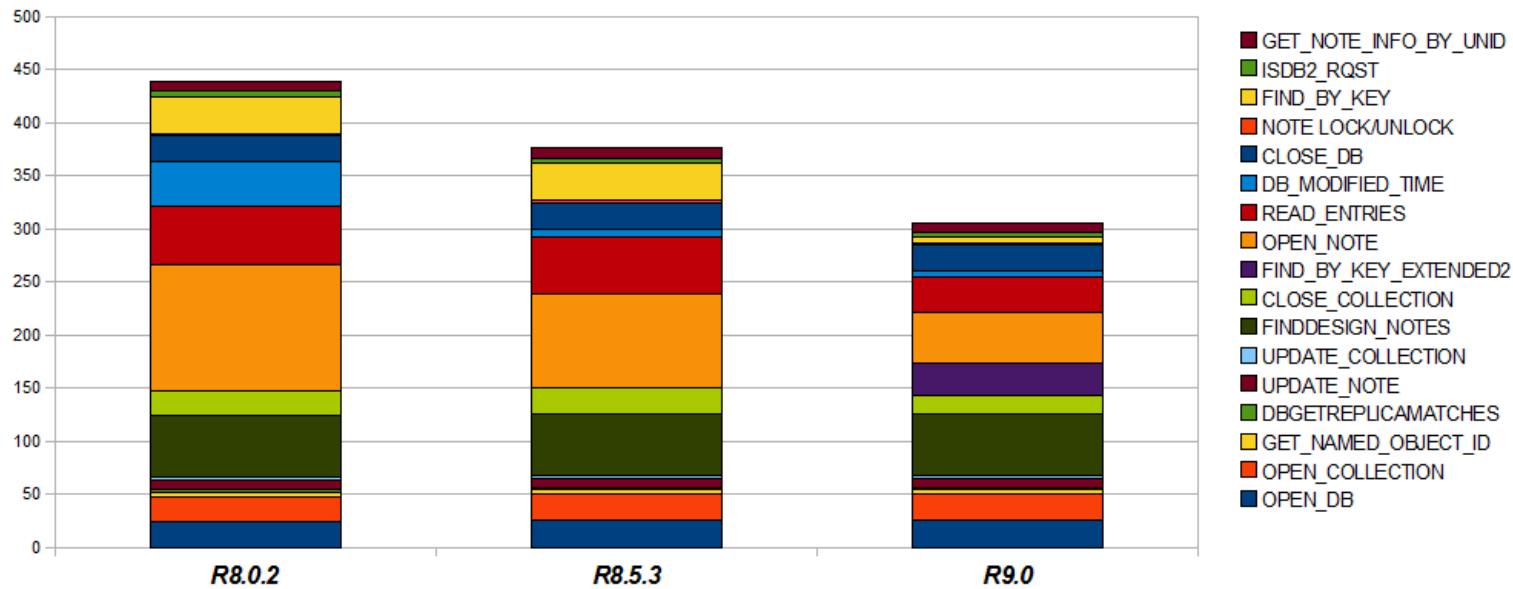
Impact examples

- Startup time of a Notes 10 client with 3 ODS20 databases in Notes data = 43 seconds
 - After ODS upgrade: 14 seconds
- Reduced File I/O of your disks/SAN/NAS after ODS43 to 53 upgrade by ~65%
- Removing 70% of all old files in Data directories on SAN/NAS = ~45% less managed storage (backup)
AND much faster start

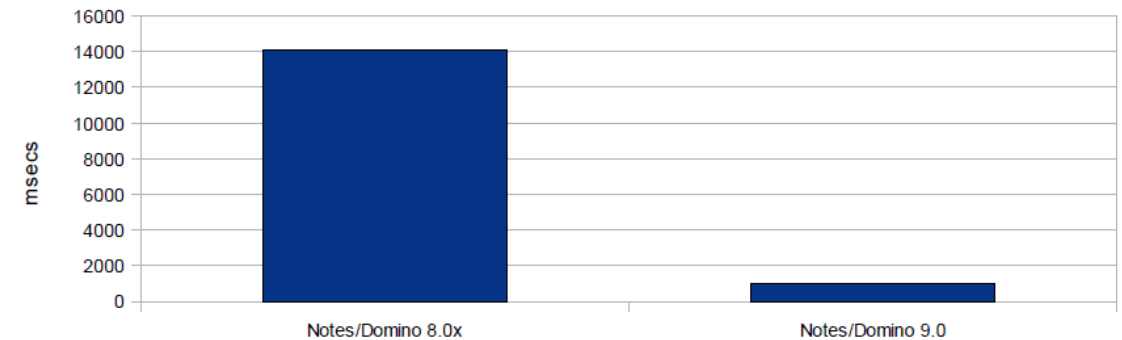



IBM / HCL helps!

Comparative Transaction Count



Transaction Times 8.0x to 9.0





What makes the Notes Client **START** (super) fast

Eclipse Workspace improvement



- Every IBM Notes Client start in a virtual environment (Citrix, vmware, etc.) is a first (setup) start and takes at least 23 sec on average
- ~65% - 70% of time during first starts is used to build the workspace folder (at least 15 sec)
- A typical new workspace folder (IBM Notes V10 Beta-2) consists of
 - ≥ 250 files
 - ≥ 160 folders
 - >85 MB (including 64MB *xpdplat_.jvm_G35 file → search for “**NotesShareClasses improvement**”)

Building/Updating the workspace folder causes lots of file I/O

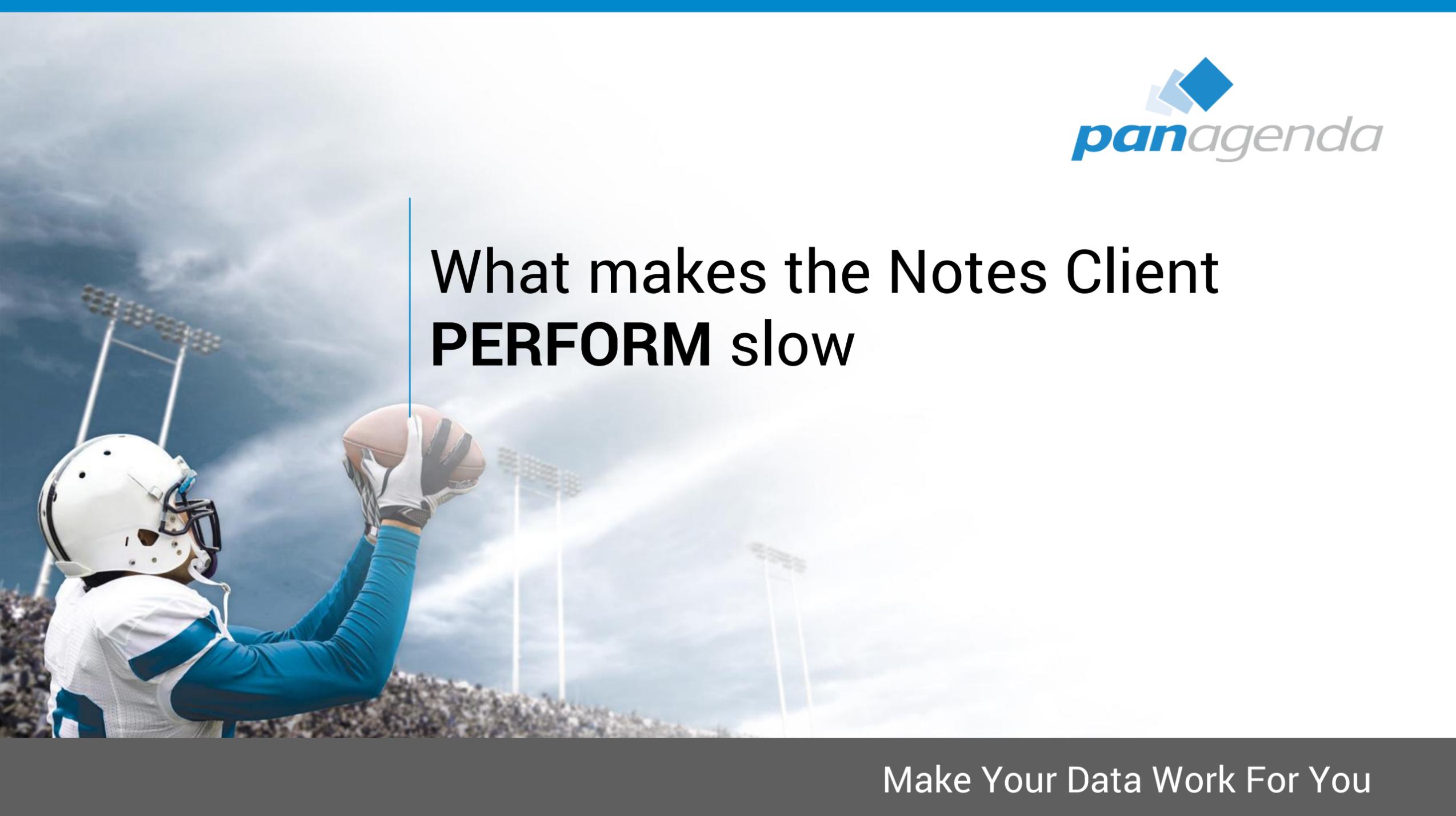
Eclipse Workspace improvement (cont.)

Accelerate the IBM Notes Client start to be >65% faster (with less file I/O)

1. With a non-admin user (Windows + IBM Notes) run an initial setup of IBM Notes
2. Start IBM Notes and wait for 2-3minutes
3. Exit IBM Notes
4. Start IBM Notes again and wait for 2-3minutes
5. Exit IBM Notes
6. Create the following folder → %ProgramData%\IBM\Notes\Data\Common
7. Copy the workspace folder from %LocalAppData%\IBM\Notes\Data to %ProgramData%\IBM\Notes\Data\Common

Eclipse Workspace improvement (cont.)

8. Delete the following files & folders in
%ProgramData%\IBM\Notes\Data\Common\workspace
 - a. UDM
 - b. Logs → all but .prov2install
 - c. .metadata\plugins\com.ibm.collaboration.*
 - d. .metadata\plugins\com.ibm.rcp.personality.framework
 - e. .metadata\plugins\com.ibm.rcp.security.auth
 - f. .metadata\plugins\com.ibm.rcp.managedsettings



What makes the Notes Client
PERFORM slow

What makes the Notes Client **PERFORM** slow

Again

- ODS of local databases
- Hardware

Notes.ini

- EXTMGR_ADDINS = (not just) local virus scanners
- Disable Notes “plugins” like virus scanners etc.
 - They increase Network traffic by up to 200 – 250%!

Data directory on the network vs. fixed disk

- Disk performance is the #1 bottleneck
 - think SSD vs. normal HDD ; 7.200rpm vs. 5.400rpm ; network drive vs. local fixed disk

Port settings

Port settings are included in the notes.ini

- Type / Active / Encryption / Compression / Timeout

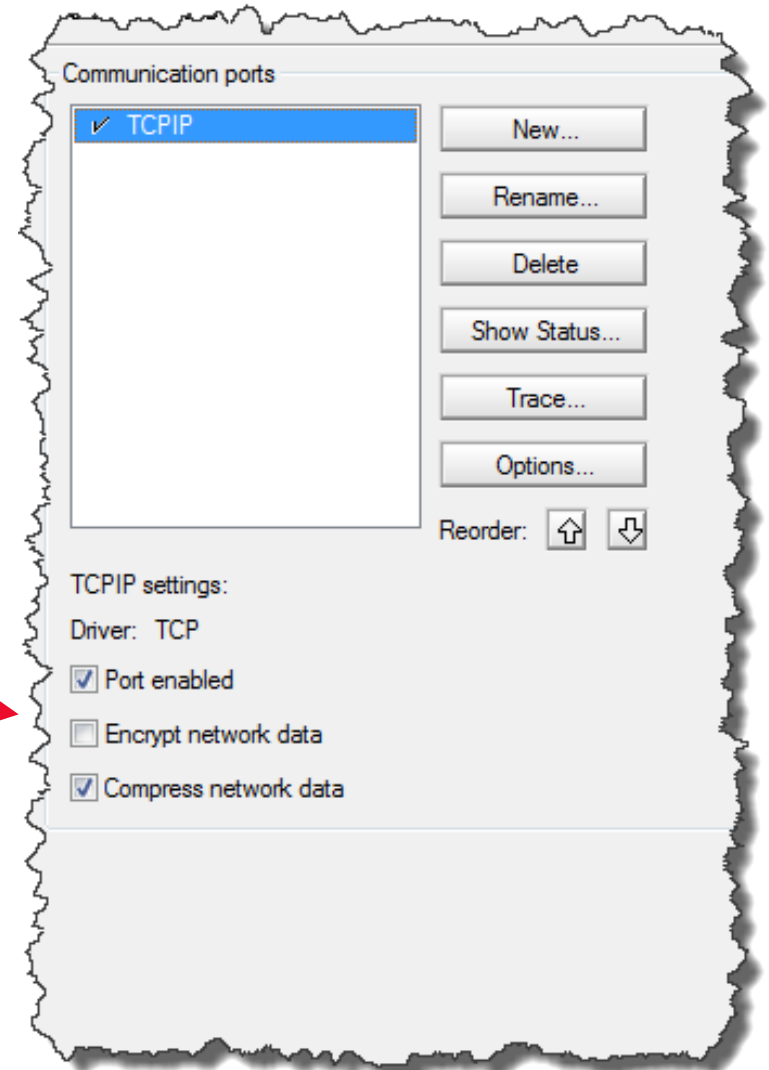
Legacy

- LAN0 / COMx / DisabledPorts → should be removed

Good idea

- Use TCPIP according to the client type
- PORTS = TCPIP
- TCPIP = TCP,0,15,0,,12320, → Desktops
- TCPIP = TCP,0,15,0,,45088, → Laptops
- TCPIP = TCP,0,15,0,,12288, → Citrix / VDI
- Hardware compression (e. g. Riverbed)?

Don't forget the **Domino** servers!



Port settings (cont.)

Legacy/Default port encryption for Notes/Domino

- RC4 128Bit (Rivest Cipher 4)

Best practice settings for port encryption on Domino server >= 9.0.1 Fix Pack 7

- AES-GCM 128Bit (Advanced Encryption Standard)
- notes.ini
 - PORT_ENC_ADV=84

See the following Technote for details and **read** before you use the parameter:

- <http://www-01.ibm.com/support/docview.wss?uid=swg21990283>

To speed up the IBM Notes JVM it's useful to optimize memory settings

Open %ProgramFiles(x86)%\IBM\Notes\framework\rcp\deploy\jvm.properties

- Modify vmarg.Xmx from “-Xmx256m” to “-Xmx1024m”
- Modify vmarg.Xms from “-Xms64m” to “-Xms256m”

The implicit rules

- Do not change vmarg.Xmx to more than -Xmx1024m regardless of how much memory you have
- vmarg.Xms should always be ¼ of what you changed Xmx to

Note

- The above defaults have been changed by IBM over the last couple of Notes releases. You might find other values than Xmx256m and Xms64m in your setups.

What makes the Notes Client **PERFORM** slow (cont.)



Install types: Basic vs. Standard

- Basic client starts up fast, Standard client, well ... not so fast

IBM Roaming Users

- Try replicating 80MB each time you logon to Notes before use!

Connection documents

- Pointing to outdated server names or IP addresses
- Low priority connection documents, which can cause connectivity failures

Location documents

- IP addresses for mailserver → breaks Policies
- Outdated mail and home server information
- Outdated mail file path
- Catalog server (think db links, doc links, new bookmarks)

Why is the Catalog important?



Ever wondered what exactly happens when you click on db links / doc links / view links

1. Notes checks whether you already have a workspace icon pointing to the replica ID in the link. If yes, the top most icon on the stack decides on which server the db will open
2. If there's no icon on the workspace, Notes asks the catalog server in your currently selected location document where the db is to be found. So, make sure your catalog is up to date! No catalog server? Notes will ask your home mail server!
3. Are you replicating your catalog.nsf across all servers? Bad news: If 2.) applies, Notes will open the database on the server it finds first in the catalog – which is sorted alphabetically. In global infrastructures that might be a server far far away, e. g. in Asia

Make sure to use an appropriate catalog server in your location documents!



PERFORMANCE Tips and Tricks

Make Your Data Work For You

Performance Measuring with Client Clocking



NOTE:

All of this should only be done on “ONE” client – slows down client, creates huge log files!

Use the following to see and measure client performance

- CLIENT_CLOCK=1
- CONSOLE_LOG_ENABLED=1
- Debug_Outfile=c:\debug.txt
- Debug_Console=1
- DEBUG_TCP_ALL=1 (use only if needed)

Fileserver or local disk Performance Debugging is virtually impossible

- If on >= 8.5 try adding DEBUGGINGWCTENABLED=16386 in Notes

Performance Measuring with Client Clocking (cont.)



Client_Clock=1 leads to a debug file of the following format:

```
[AD10:0002-7828] (1-7 [1]) NAME_LOOKUP32(CN=christoph adler/O=panagenda,00000200): (Connect to mail01/panagenda: 0 ms) (Exch names: 0 ms) (Authenticate: 0 ms.)
[AD10:0002-7828] (OPEN_SESSION: 33 ms)
[CSA0:0002-1E00] 06.02.2017 00:34:03 Dynamic Client Configuration started
[AD10:0002-7828] 32 ms. [204+292=496]
[CSA0:0002-1E00] 06.02.2017 00:34:03 Initializing Dynamic Client Configuration
[AD10:0002-7828] (2-7 [2]) OPEN_DB(CN=mail01/O=panagenda!mail\cadler.nsf): [CSA0:0002-1E00] (1-7 [3]) NAME_LOOKUP(CN=christoph adler/O=panagenda,00000102): (Opened: REPC1257A84:003EC752) 33 ms. [138+294=432]
[AD10:0002-7828] (3-7 [3]) DB_REPLINFO_GET(REPC1257A84:003EC752): 30 ms. [18+36=54]
(Connect to mail01/panagenda: 134 ms) (Exch names: 0 ms) (Authenticate: 0 ms.)
[CSA0:0002-1E00] (OPEN_SESSION: 33 ms)
[CSA0:0002-1E00] 32 ms. [260+88=348]
[CSA0:0002-1E00] (2-7 [5]) NAME_LOOKUP(CN=christoph adler/O=panagenda,00000100): 33 ms. [356+198=554]
[CSA0:0002-1E00] 06.02.2017 00:34:03 Dynamic Client Configuration updating policy information
[CSA0:0002-1E00] (3-7 [6]) SERVER_AVAILABLE_LITE(CN=mail01/O=panagenda): 31 ms. [30+104=134]
[CSA0:0002-1E00] (4-7 [7]) SV_INFO_GET_RQST: 31 ms. [18+52=70]
[CSA0:0002-1E00] (5-7 [8]) OPEN_DB(CN=mail01/O=panagenda!names.nsf): (Opened: REPC12572D7:004CB9E3) 33 ms. [138+294=432]
[CSA0:0002-1E00] (6-7 [9]) GET_DBINFO(REPC12572D7:004CB9E3): 31 ms. [18+20=38]
[CSA0:0002-1E00] (7-7 [10]) FINDDESIGN_NOTES(REPC12572D7:004CB9E3): 31 ms. [48+20=68]
[CSA0:0002-1E00] (8-7 [11]) ISDB2_RQST(REPC12572D7:004CB9E3): 29 ms. [18+20=38]
[CSA0:0002-1E00] (9-7 [12]) OPEN_COLLECTION(REPC12572D7:004CB9E3-NT00000882,0000,0000): 32 ms. [46+38=84]
[CSA0:0002-1E00] (10-7 [13]) UPDATE_COLLECTION(REPC12572D7:004CB9E3-NT00000882): 30 ms. [28+16=44]
[CSA0:0002-1E00] (11-7 [14]) READ_ENTRIES(REPC12572D7:004CB9E3-NT00000882): 33 ms. [80+866=946]
[CSA0:0002-1E00] (12-8 [15]) CLOSE_COLLECTION(REPC12572D7:004CB9E3-NT00000882): 0 ms. [16+0=16]
[CSA0:0002-1E00] (13-8 [16]) SV_INFO_GET_RQST: 35 ms. [18+52=70]
[CSA0:0002-1E00] (14-8 [17]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 32 ms. [1050+28=1078]
[CSA0:0002-1E00] (15-8 [18]) SV_INFO_GET_RQST: 30 ms. [18+52=70]
[CSA0:0002-1E00] (16-8 [19]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 34 ms. [1050+28=1078]
[CSA0:0002-1E00] (17-8 [20]) SV_INFO_GET_RQST: 34 ms. [18+52=70]
[CSA0:0002-1E00] (18-8 [21]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 33 ms. [1050+28=1078]
[CSA0:0002-1E00] (19-8 [22]) SV_INFO_GET_RQST: 38 ms. [18+52=70]
[CSA0:0002-1E00] (20-8 [23]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 34 ms. [1050+28=1078]
[CSA0:0002-1E00] (21-8 [24]) SV_INFO_GET_RQST: 31 ms. [18+52=70]
[CSA0:0002-1E00] (22-8 [25]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 35 ms. [1050+3364=4414]
[CSA0:0002-1E00] (23-8 [26]) SV_INFO_GET_RQST: 32 ms. [18+52=70]
[CSA0:0002-1E00] (24-8 [27]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 39 ms. [1050+28=1078]
[CSA0:0002-1E00] (25-8 [28]) SV_INFO_GET_RQST: 31 ms. [18+52=70]
[CSA0:0002-1E00] (26-8 [29]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 32 ms. [1050+28=1078]
[CSA0:0002-1E00] (27-8 [30]) SV_INFO_GET_RQST: 30 ms. [18+52=70]
[CSA0:0002-1E00] (28-8 [31]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 33 ms. [1050+28=1078]
[CSA0:0002-1E00] (29-8 [32]) SV_INFO_GET_RQST: 31 ms. [18+52=70]
[CSA0:0002-1E00] (30-8 [33]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 33 ms. [1050+28=1078]
[CSA0:0002-1E00] (31-8 [34]) SV_INFO_GET_RQST: 31 ms. [18+52=70]
[CSA0:0002-1E00] (32-8 [35]) GET_POLICY_RQST(REPC12572D7:004CB9E3): 32 ms. [1050+28=1078]
[CSA0:0002-1E00] 32 ms. [1050+28=1078] (Session Closed)
[CSA0:0002-1E00] 06.02.2017 00:34:04 Dynamic Client Configuration updating location information
[CSA0:0002-1E00] 06.02.2017 00:34:04 Dynamic Client Configuration shutdown
```

Performance Measuring with Client Clocking (cont.)



OpenNTF – NRPC Parser

Link:

<http://www.openntf.org/internal/home.nsf/project.xsp?action=openDocument&name=Notes%20RPC%20Parser>

Last Update:

v1.0.14 – Nov 10, 2016

Developed by:


Jamie Magee, MartinScott Consulting LLC, US

Andrew Magerman, Magerman Collaborative Software GmbH, Switzerland

Performance Measuring with Client Clocking (cont.)

OpenNTF – NRPC Parser



NRPC Parser



[Most recent](#)
[History](#)
[Configuration](#)

Usage

- ☒ Enable RPC in notes.ini
Restart Notes Client
- Test your application
- ☒ Disable RPC in notes.ini
Restart Notes Client
- ☒ Parse NRPC file!
optionally, clear the cache



[About NRPC Parser](#)

☒ Enable RPC in notes.ini ☒ Disable RPC in notes.ini ☒ Close Notes Client ☒ Parse NRPC file! ☒ Jump to slow entries (unread marks) ☒ Export view to Excel ☒ Clear Cache.ndk (optional)

	Thread	Line	Server Name	Database Title	Note Type	Note Title	Command	ms	Rec'd	Sent	original line
★	30							8.210	4K	682K	
	13							190	1K	1K	
		138					Opens database	0	OK	OK	[0094:0007-D24C:wrepl] (1-36 [91]) OPEN_DB(CN=mail01/O=panagenda!):
		142						0	OK	OK	[0094:0007-D24C:wrepl] (OPEN_SESSION: 33 ms)
		144						32	1K	1K	[0094:0007-D24C:wrepl] (Opened: REP00000000:00000000) 32 ms. [138+294=432]
		145					Scan the server for databases to replicate	30	1K	1K	[0094:0007-D24C:wrepl] (2-36 [94]) DBGETREPLICAMATCHES(REP00000000:00000000): 3
		146	mail01				Opens database	35	1K	1K	[0094:0007-D24C:wrepl] (3-36 [95]) OPEN_DB(CN=mail01/O=panagenda!mail\cadler.nsf):
		147	mail01				close database	0	1K	OK	[0094:0007-D24C:wrepl] (4-37 [96]) CLOSE_DB(REPC1257A84:003EC752): 0 ms. [138+294=432]
		148					close server session	0	1K	OK	[0094:0007-D24C:wrepl] (5-37 [97]) CLOSE_DB(REP00000000:00000000): 0 ms. [138+294=432]
		154					Opens database	31	1K	1K	[0094:0007-D24C:wrepl] (6-37 [98]) OPEN_DB(CN=mail01/O=panagenda!): (Opened: REP00000000:00000000) 31 ms. [138+294=432]
		155					Scan the server for databases to replicate	30	1K	1K	[0094:0007-D24C:wrepl] (7-37 [99]) DBGETREPLICAMATCHES(REP00000000:00000000): 3
		156	mail01				Opens database	32	1K	1K	[0094:0007-D24C:wrepl] (8-37 [100]) OPEN_DB(CN=mail01/O=panagenda!mail\cadler.nsf):
		157	mail01				close database	0	1K	OK	[0094:0007-D24C:wrepl] (9-37 [101]) CLOSE_DB(REPC1257A84:003EC752): 0 ms. [138+294=432]
		158					close server session	0	1K	OK	[0094:0007-D24C:wrepl] (10-37 [102]) CLOSE_DB(REP00000000:00000000): 0 ms. [138+294=432]
		229						0	1K	OK	[0094:0007-D24C:wrepl] 0 ms. [138+294=432] (Session Closed)
	23							443	1K	14K	
	1							0	OK	OK	
	2							0	OK	OK	
	4							0	OK	OK	
	2							0	1K	1K	
	147							5.596	385K	831K	
	4							47	1K	11K	
	40							1.007	13K	6K	
	5							0	OK	OK	
	12							48	1K	5K	
		0						0	OK	OK	in_debug_CADLER-T540P_2017_02_06@00_33_54.txt
		9						0	OK	OK	(Connect to mail01/panagenda: 134 ms) (Exch names: 0 ms)(Authenticate: 0 ms.)
		81					Opens database	48	1K	1K	(29-29 [62]) OPEN_DB(CN=mail01/O=panagenda!mail\cadler.nsf): 48 ms. [138+294=432]
		107						0	OK	OK	(30+28=58) (No documents have been modified since specified time.)
		140						0	OK	OK	(Connect to mail01/panagenda: 234 ms) (Exch names: 0 ms)(Authenticate: 0 ms.)
		143						0	1K	5K	39 ms. [52+4772=4824]
		160						0	OK	OK	(12-39 [103]) GET_SERVER_NAMES: (Connect to mail01/panagenda: 95 ms) (OPEN_SESSION: 30 ms)
		175						0	OK	OK	[78+68=146] (Special database object cannot be located)
		179						0	OK	OK	[20+20=40] (Special database object cannot be located)
		186						0	OK	OK	[38+54=92] (Folders in database are up to date)
		205						0	OK	OK	[72+68=140] (Cache entry not found)
		214						0	OK	OK	[0+0=0] (Remote system no longer responding)

Performance Tuning – Understanding cache.ndk



We've all been “advised to”/guilty of deleting the cache.ndk in an effort to cure Notes performance problems/symptoms

- Some companies even delete cache.ndk on a scheduled basis

HOWEVER, let us explain the impact of that on Notes performance ...

- Increases traffic between client and server by 4,000% (forty times more traffic, yes) (10,000+% if the data directory is on a network drive)
- The more databases end users use, the worse it gets
- There is always a root cause – deleting cache.ndk only fixes symptoms
- Let's look at some detailed traffic analysis for just ONE application (the mail file) of ONE user ...

Performance Tuning – Understanding cache.ndk (cont.)



After deleting cache.ndk

MS

2,723

SENT

5,998

RECEIVED

1,553,446

Keeping / NOT deleting cache.ndk

MS

111

SENT

1,510

RECEIVED

38,214

100 users =

150 MB vs. 3,7 MB

1000 users =

1.5 GB vs. 37 MB

Excluding Fileservers!

Summary

Update/clean out your ODS, databases and templates and hardware

Standardize whenever and however possible

- This will save you hugely on support time/cost

Keep your users version, fix/feature packs current (if stable)

- Each release brings performance improvements but also resource demands

Work around your inability to see clients

- Write an inventory agent, login script, get a 3rd party tool

Any challenge can be overcome with Knowledge and Tools

- All client issues are solvable



Q & A



Vielen Dank !