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ENERGIZING LIFE'S WORK

ID104: Best Practices for Upgrading IBM Notes® and Domino® to 9.0.x

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Abstract

■ Why release 9.0.x? Get a head start on your upgrade plans by listening to the development team share their experiences upgrading IBM Notes Clients and Domino Servers to Release 9.0.x in their production domains. We'll cover general recommended best practices and also discuss enablement of some of the new exciting features in release 9.0.x that you'll want to take advantage of right away. We'll riddle the presentation with FAQs about upgrading, new features and lessons learned with release 9.0.x. You'll walk away with information helping you expedite your own 9.0.x production deployment.



Lotusphere/Connect Presentations

- 2008 ID108 Best Practices for Deploying IBM Lotus Notes ® & Domino ® 8
- 2009 ID202 Release the Power Again! Best Practices Deploying New Features in Notes/Domino ® 8.5
- 2010 ID615 Best Practices for Upgrading IBM Lotus Notes ® and Domino ® Servers to 8.5.1
- 2011 ID102 Best Practices for Upgrading IBM Lotus Notes® and Domino® Servers to 8.5.x Real World Analysis
- 2012 ID106 Release the Power Again! Best Practices Utilizing New Features in Notes®/Domino® Release 8.5.3
- 2013 ID107 Deploying IBM Lotus Domino® 9.0 in Your Production Environment

2014 - IDxxx Best Practices for Upgrading IBM Notes® and Domino® to 9.0.x





■ The "Upgrading to IBM Notes and Domino 9.0.x" cookbook is in progress

Upgrade Cookbook: Upgrading to Lotus Notes and Domino 8.5.1

Notes/Domino 8.5.1

The upgrade cookbook linked below provides recommended approaches for upgrading to Lotus Notes and Domino 8.5.1. Within the cookbook you'll find best practices, lessons learned, key information and instructions, and links to more detailed information in other familiar resources including Technotes, Domino Administrator Guide topics, and Notes/Domino wiki articles.

Upgrading to Lotus Notes and Domino 8.5.1

- · Page 1: Planning the Domino 8.5.1 deployment
- Page 2: Deploying Domino 8.5.1 servers
- Page 3: Deploying Notes 8.5.1 clients
- Page 4: Upgrading Notes/Domino applications to 8.5.1
- Page 5: Index of upgrade topics & resources

http://www-10.lotus.com/ldd/dominowiki.nsf/dx/UC1_TableofContents.htm



Evaluate what's new in Notes and Domino 9.0.1

Welcome to the IBM Notes and Domino Wiki



Notes and Domino 9.0.1 documentation

There are great new features to deliver social capabilities, help accelerate business operations, and enhance productivity. Use these links to see what's new in Notes, as well as iNotes, Traveler, and Domino:

- . What's New in IBM Notes 9.0.1 Social Edition
- What's New in IBM iNotes 9.0.1 Social Edition
- · What's New in IBM Notes Traveler 9.0.1
- · What's New in IBM Domino 9.0.1 Social Edition
- IBM Notes 9.0.1 Browser Plugin

http://www-10.lotus.com/ldd/dominowiki.nsf



Evaluate system requirements for 9.0.1

Index of system requirements for Notes, Domino, Domino Administrator, Domino Designer & Notes Traveler

Product documentation

Abstract

This document contains an index listing of detailed system requirements for the following supported releases of IBM Notes, IBM Domino, IBM Domino Administrator, IBM Domino Designer, and IBM Notes Traveler.

http://www-01.ibm.com/support/docview.wss?uid=swg27007909



Index of system requirements for Notes, Domino, Domino Administrator, Domino Designer & Notes Traveler

8.5.3	8.0.2	7.0.4
8.5.2	8.0.1	7.0.3
8.5.1	8.0	Z.0.2
8.5		7.x
8.5.3	8.0.2	Z.Q.4
o Designer		
8.5.2	8.0.1	7.0.3
8.5.1	8.0	7.0.2
8.5		Zx
	8.5.2 8.5.1 8.5 o Designer 8.5.3 8.5.2 8.5.1	8.5.2 8.0.1 8.5.1 8.0 8.5.5 Designer 8.5.3 8.0.2 8.5.2 8.0.1 8.5.1 8.0

8.0.1

7.0.3

7.0.2 7.x



8.5.2

8.5.1

Domino 9.0.1 System Requirements

By type (High-level)	By platform (Detail)	Related requirements
 → Operating Systems → Software → Hardware 	 → AIX → IBM i → Linux → Mobile OS → Windows 	→ Other information

http://www-01.ibm.com/support/docview.wss?uid=swg27039945



Domino 9.0.1 System Requirements - Windows®

Operating System	Hardware	Bitness 0	Server	Operating System (i) Minimum	Product Minimum 0	Notes?	Details
Windows Server 2008 R2 Enterprise Edition	x86-64	32, 64-Exploit	•	Base	9.0.1 Social Edition	Yes	View
Windows Server 2008 R2 Standard Edition	x86-64	32, 64-Exploit	•	Base	9.0.1 Social Edition	Yes	■ View
Windows Server 2012 Datacenter Edition	x86-64	64-Exploit	•	Base	9.0.1 Social Edition	Yes	■ View
Windows Server 2012 R2 Datacenter Edition	x86-64	64-Exploit	•	Base	9.0.1 Social Edition	No	View
Windows Server 2012 Standard Edition	x86-64	64-Exploit	•	Base	9.0.1 Social Edition	Yes	View
Windows Server 2012 R2 Standard Edition	x86-64	64-Exploit	•	Base	9.0.1 Social Edition	No	L View

Upgrade order

- Domino Servers
- Notes Clients



Major Components of a Domino Upgrade

- Upgrading Domino Directory Design
- Upgrading Domino Server Version
- Upgrading Design of Mail Files
- Upgrading Database On-Disk-Structure



Domino Directory Design

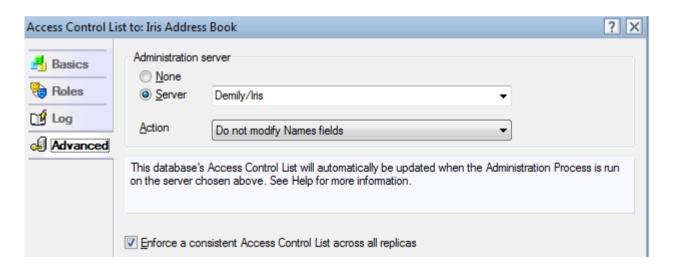
- Update design on Administration Server of Domino Directory
 - "Refresh design on admin server only"





Domino Directory Design (continued)

- Administration server of Domino Directory
 - "Manager" access in ACL to push ACL and Design changes to other servers
 - "Editor" maximum access for other servers in ACL
 - "Enforce a consistent Access Control List across all replicas"





Domino Directory Design (continued)

- Replacing design of Domino Directory from one major release to another results in design changes for some views causing them to be rebuilt from scratch when first opened
- Two critical views accessed when a Notes Client or another Domino Server attempts to open a session and thus authenticate with this server are the (\$Users) and (\$ServerAccess) views
- Authentication attempts will be blocked from completing until these two views are completely brought up to date potentially resulting in a variety of undesirable end user experiences



Domino Directory Design (continued)

- You can optionally upgrade the Domino Directory Design to 9.0.1 before upgrading a single Domino Server to 9.0.1 in your Domain
- Retrieve a copy of the Domino Directory 9.0.1 Template PUBNAMES.NTF by installing Domino 9.0.1 on a test machine
- If you customize your Domino Directory Design, inherit all Design Elements from the Domino Directory 9.0.1 Template StdR4PublicAddressBook



Domino Directory Design – Uncontrolled Rollout Small and Medium Businesses

- Some current notes.ini settings on Domino Server depending on release upgrading from
 - Setup=850300
 - ServerSetup=850300
 - TemplateSetup=850300
 - EventSetup=850300
 - DDMSetup=850300
- At off business hours, upgrade Administration Server of Domino Directory to Release 9.0.1
- Start Administration Server of Domino Directory
- Allow normal course of replication to and from the Administration Server of the Domino Directory to propagate the new design to all other Domino Servers.
- As each successive Domino Server receives the designs changes, the one-time view rebuilds will occur

Domino Directory Design – Uncontrolled Rollout Small and Medium Businesses (continued)

- Verify SERVER_UPGRADE_NO_DIRECTORY_REDESIGN=0 or does not exist in notes.ini
- Note current notes.ini settings depending on Domino Release upgrading from
 - Setup=850300
 - ServerSetup=850300
 - TemplateSetup=850300
 - EventSetup=850300
 - DDMSetup=850300
- At off business hours, run Release 9.0.1 Domino Installer on Administration Server of Domino Directory
 - Leave installed templates (.ntf) on server for now



Domino Directory Design – Uncontrolled Rollout Small and Medium Businesses (continued)

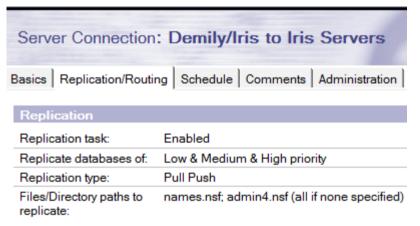
- Start Administration Server of Domino Directory
- One time Server Setup will be executed to upgrade System Database designs

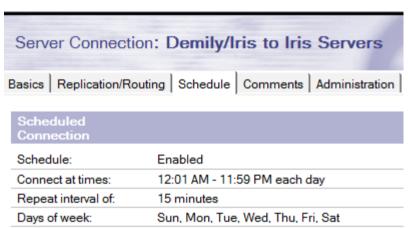
- Monitor following notes.ini values until
 - Setup=900000
 - ServerSetup=900000
 - TemplateSetup=900000
 - EventSetup=900000
 - DDMSetup=900000
- Removing templates (.ntf)? OK to now quit Domino Server and remove templates



Domino Directory Design – Uncontrolled Rollout Small and Medium Businesses (continued)

• Allow normal course of replication from Administration Server of the Domino Directory to propagate the new design to all other Domino Servers.





 As each successive Domino Server receives the designs changes, the one-time view rebuilds will occur

- First, prevent "Design elements" in names.nsf from replicating to other Domino Servers until
 you are ready
- Requires edit to names.nsf on Domino Servers you want to control
- "File->Replication->Options for the Application"
- Advanced Tab
- Receive these Elements from other replicas
- Uncheck Design Elements





- Following controlled rollout assumes Domino Directory is not encrypted
 - Can still be done if encrypted but with a few more steps
- Starting with Administration Server of the Domino Directory
- Shutdown the Domino Server
- Install Domino Release 9.0.1



- Start Administration Server of Domino Directory
- One time Server Setup will be executed to upgrade System Database designs

- Monitor following notes.ini values until
 - Setup=900000
 - ServerSetup=900000
 - TemplateSetup=900000
 - EventSetup=900000
 - DDMSetup=900000
- Quit the Administration Server



- Set CREATE_R9_DATABASES=1 on notes.ini
- Run DBMT process against names.nsf
 - Compacts names.nsf to ODS52
 - Rebuilds existing Views in Domino Directory whose Design has changed
 - (n)dbmt names.nsf
- Once DBMT process runs to completion
 - Copy updated Directory off to a network share
- Restart the Domino Server



- Proceed to next Domino Server
- Shutdown the Domino Server
- Install Domino Release 9.0.1
- Optionally CREATE_R9_DATABASES=1 in notes.ini
- Copy Domino Directory saved off on Network Share to data directory
- Restart the Domino Server



Upgrading Design of Mail Files

- Bring Domino Server Mail Server down
- Install Domino Release 9.0.1
- Run CONVERT process to build indirect (.ind) file containing mail file names for users whom this is their home server in person record in Domino Directory
- (n)convert -l mailfiles.ind
- Make sure all filenames in mailfiles.ind end in .nsf



Upgrading Design of Mail Files (continued)

- Run CONVERT processes against (.ind) file to upgrade to mail9.ntf
 - Optionally use -s to override prohibit design replace or refresh on folders
 - Optionally use -u to upgrade all folders with mail9.ntf \$InBox design
- Run multiple CONVERT processes at a time for concurrency
 - CONVERT process is single threaded
 - Take **mailfiles.ind** and break it up into multiple indirect (.ind)
 - (n)convert -s -u -f mailfiles1.ind * mail9.ntf
 - (n)convert -s -u -f mailfiles2.ind * mail9.ntf



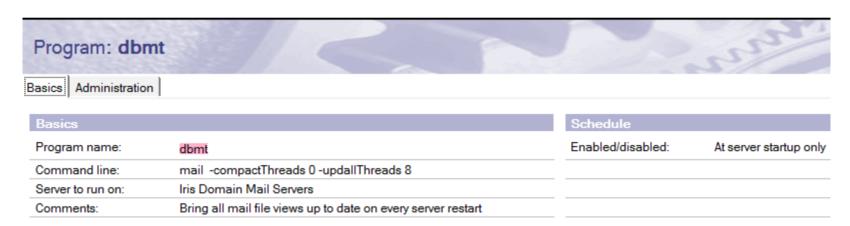
Upgrading Design of Mail Files (continued)

- Run DBMT against indirect (.ind) file to rebuild all existing Views whose design changed or "critical views" not built yet so they don't get rebuilt on first user access
- e.g. (n)dbmt mailfiles.ind –updallThreads 8 –compactThreads 0
 - Number of updallThreads recommended is number of CPUs
- Restart Domino Server



Bringing critical views in mail files up to date on server startup

- Release 9.0
 - Database Maintenance Tool DBMT
 - Group Usage in Program Records





New On-Disk Structure ODS52 is optionally available

- Notes Client or Domino Server must be Release 9.0.1 or greater
- Set CREATE_R9_DATABASES=1 in notes.ini
- New databases or replicas created will be ODS52
- Next copy style compact of existing databases will be ODS52

ne 🗘	Physical Path ♦	File Format ♦	Last Compact ♦	Logical Size ♀	DAOS Size ≎	Physical Size 🗘	Space Used ≎
en.nsf	d:\notefile\mail\rholde	R9 (52:0)	12/27/2013 11:12:03 PM	39,476,365,539	27,422,460,131 (69%)	12,053,905,408	99.2%
non.nsf	d:\notefile\mail\mgag	R9 (52:0)	12/26/2013 11:03:14 PM	37,590,855,348	22,750,621,364 (61%)	14,840,233,984	99.5%
net.nsf	d:\notefile\mail\czimn	R9 (52:0)	12/27/2013 11:25:17 PM	29,101,120,699	11,879,570,619 (41%)	17,221,550,080	99.6%
net.nsf	d:\notefile\mail\jpaga	R9 (52:0)	12/24/2013 09:56:28 PM	26,162,396,589	19,202,997,677 (73%)	6,959,398,912	99.6%
en.nsf	d:\notefile\mail\mobri	R9 (52:0)	12/28/2013 11:30:59 AM	23,013,542,383	13,070,420,463 (57%)	9,943,121,920	92.5%
to.nsf	d:\notefile\mail\drosa	R9 (52:0)	12/27/2013 10:01:03 PM	12,841,342,338	9,012,204,930 (70%)	3,829,137,408	99.6%
ıga.nsf	d:\notefile\mail\tsouth	R9 (52:0)	12/26/2013 09:39:08 PM	12,359,566,816	8,738,309,600 (71%)	3,621,257,216	99.4%
she.nsf	d:\notefile\mail\jkada:	R9 (52:0)	12/26/2013 09:39:34 PM	11,965,809,141	7,582,499,317 (63%)	4,383,309,824	99.5%
rog.nsf	d:\notefile\mail\wjam	R9 (52:0)	12/26/2013 10:09:54 PM	11,817,831,168	5,569,628,928 (47%)	6,248,202,240	99.6%
.nsf	d:\notefile\mail\jcurtis	R9 (52:0)	12/26/2013 09:58:15 PM	11,738,124,181	5,833,592,725 (50%)	5,904,531,456	99.6%



Issue 1: Medium and Strong Encrypted Databases

- Problem Rare note corruption when updating a note, only occurs with Medium or Strong encrypted databases
 - Has existed since Notes/Domino began using Medium and Strong encryption
 - Not noticed because vast majority of databases have replicas and fixup would discard the corrupted note and next replication the note would come back in just fine
- **Resolution** Best way to maintain backward compatibility and interoperability was to address with a change to the on-disk-structure (ODS)

but wait there is more.....



Issue 2: Medium Encrypted Databases

- Problem Rare note corruption when updating a note, only occurs with Medium encrypted databases
 - Has existed since Notes/Domino began using Medium encryption
 - Not noticed because vast majority of databases have replicas and fixup would discard the corrupted note and next replication the note would come back in just fine
- Resolution The fix for this issue would affect the vast majority of the data and hence there
 were security concerns it could potentially weaken the current Medium encryption strength.
 As a work around, Security team recommends customers go to ODS52 and upgrade
 existing Medium Encrypted databases to Strong



Caution: Upgrading Medium encrypted to Strong

- NRPC run of Win2008 R2 Server 64-Bit @ 4000 Users, mail9 template

	Encryption None		Encryption Strong	
CPU Busy %	35%	39%	48%	

- Medium to Strong adds ~23% CPU.



Identify Encrypted databases and Encryption levels

- Administrators may now easily identify which databases are currently encrypted and the encryption level, by setting the following notes.ini variable
- SHOW_ENCRYPTED_DATABASES=
- Utilizes a Bit Mask
 - 1 is "Show Simple"
 - -2 is "Show Medium"
 - 4 is "Show Strong"
- To see all Encrypted Databases
 - Simple, Medium and Strong (1+2+4=7)
 - Set SHOW_ENCRYPTED_DATABASES = 7 in notes.ini



Identify Encrypted databases and Encryption levels (continued)

When encrypted databases are opened for the first time - 0 to 1 transition, one of the following messages will be logged

```
"Current encryption strength: SIMPLE - < absolute file path >"
"Current encryption strength: MEDIUM - < absolute file path >"
"Current encryption strength: STRONG - < absolute file path >"
```

 Note: As long as running Release 9.0.1, SHOW_ENCRYPTED_DATABASES works for all database ODS levels



Easily upgrade Medium encrypted databases to Strong encryption

- If you have enough CPU Band Width to upgrade all existing Medium encrypted databases to Strong encryption, set the following notes.ini variable
- COMPACT_UPGRADE_MEDIUM_ENCRYPTION_TO_STRONG=1
- Next copy style compaction will additionally upgrade Medium encrypted databases to Strong encryption
- To do this manually
 - Disable Medium encryption
 - Copy style compact
 - Enable Strong encryption
 - Copy style compact



Enhancements in IBM Notes/Domino Release 9.0.1

Upgrade Medium encrypted databases to Strong encryption

- Concerned increased CPU might max out machine capacity?
- Build manageable set of indirect (.ind) files for Medium encrypted databases
 - Identify Medium encrypted utilizing SHOW_ENCRYPTED_DATABASES=2
- Bring Domino Server down
- Set COMPACT_UPGRADE_MEDIUM_ENCRYPTION_TO_STRONG=1 in notes.ini
- Use DBMT process to copy style compact one of the indirect (.ind) files
 - e.g. (n)DBMT xxxx.ind -compactThreads 8 -updallThreads 0
- Set COMPACT_UPGRADE_MEDIUM_ENCRYPTION_TO_STRONG=0 in notes.ini
- Restart Domino Server
- Monitor CPU utilization for a few days
 - If OK rinse and repeat with next indirect (.ind) file



Enhancements in IBM Notes/Domino Release 9.0.1

Upgrade Medium encrypted databases to Medium Encryption with Fix

- Upgrading from Medium encryption to Strong not an option because of increased CPU?
- Willing to accept New Medium encryption strength may be lessened?
- CREATE_R9_DATABASES=1 and ENABLE_MEDIUM_ENCRYPTION_FIX=FFFFFFB
- Next copy style compact of existing Medium Encrypted databases will be ODS52 with new Medium Encryption which has fix applied
- SHOW_ENCRYPTED_DATABASES=2
 - Legacy Medium encrypted database
 - "Current encryption strength: MEDIUM < absolute file path >"
 - New Medium encrypted database with fix (+)
 - "Current encryption strength: MEDIUM+ < absolute file path >"



Upgrading Database On-Disk-Structure on Domino Server

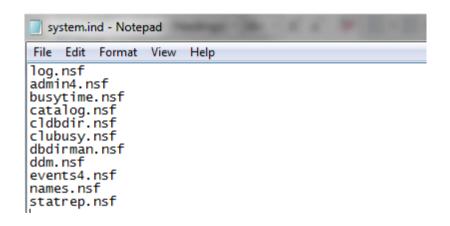
- After Upgrading Domino Server to Release 9.0.1
- Set CREATE_R9_DATABASES=1
- Existing Program Record created for Release 9.0 will convert non-System databases





Upgrading Database On-Disk-Structure on Domino Server (continued)

Create an indirect file (.ind) containing system databases





Upgrading Database On-Disk-Structure on Domino Server (continued)

- Domino Server down in Maintenance Window
 - Run DBMT process against indirect file containing system databases
 - (n)dbmt system.ind -updallThreads 0 -compactThreads 8

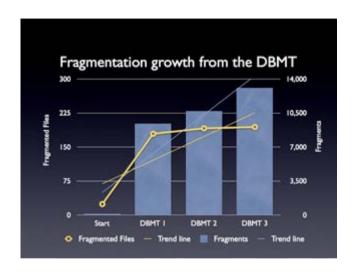
alternatively

- Domino Server up
 - Use Compact Replication process against indirect file containing system databases
 - (n)compact system.ind -# 4 –REPLICA –RESTART
- To catch stragglers or as double check once you think everything is ODS52
 - Do Compact Replication only on databases with older ODS version
 - (n)compact –ODS –REPLICA –RESTART



IBM Domino Release 9.0

DBMT has a nasty little side-effect on Domino Server



■ From http://ab1osborne.blogspot.com/2013/05/dbmt-has-nasty-little-side-effect.html



IBM Domino Release 9.0.1

DBMT will preformat .TMP files to prevent fragmentation

Defrag your Domino Data Directories at least once after upgrading to Release 9.0.1





Enhancements in IBM Domino Release 9.0.1

Preventing repeated Router, SMTP and IMAP crashes caused by problem messages

 Processing a problem message repeatedly can cause a server crash. If a message being processed at the time of a Router, SMTP, or IMAP crash remains in the mail.box database or mail file, processing the message again when the server is restarted can cause another server crash

In IBM® Domino® 9.0.1 Social Edition 9.0.1, at the time of the crash, Domino now uses an exception handler to save the information identifying the message that caused the crash to the file system. Upon server restart, Domino uses the information to find the message and quarantine it

http://www-10.lotus.com/ldd/dominowiki.nsf/dx/Preventing_repeated_Routercom_SMTP_and_IMAP_crashes_caused_by_problem_messages



Upgrading Database On-Disk-Structure on Notes Client

- Exit Notes Client and install IBM Notes Client Release 9.0.1
- Set following in notes.ini on Notes Client
 - NSF_UpdateODS=1
 - CREATE R9 DATABASES=1
 - COMPACT_UPGRADE_MEDIUM_ENCRYPTION_TO_STRONG=1
 - Start Notes Client and House Keeping Daemon will execute
 - (n)compact -C -ODS -Quiet -Client -UpdateIndexes
- Not supported yet, but if you want to try out so local databases available while compacting additionally set following in notes.ini
 - NSF_UpdateCompactReplica=1
 - Start Notes Client and House Keeping Daemon will execute
 - (n)compact -REPLICA -ODS -Quiet -Client -UpdateIndexes



Upgrading Database On-Disk-Structure on Notes Client (continued)

- Push the notes.ini settings via Desktop Settings Policy
 - NSF_UpdateODS=1,Enforce
 - CREATE_R9_DATABASES=1,Enforce
 - COMPACT_UPGRADE_MEDIUM_ENCRYPTION_TO_STRONG=1,Enforce
 - NSF_UpdatedToODS=43,SetOnce
 - Optionally NSF_UpdateCompactReplica=1,Enforce



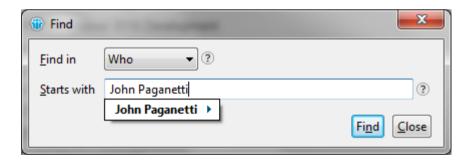
Favorites feedback

Shortcut Buttons





- Not having to sort Mail View "Who" before searching
 - Start typing name and automatically sorts itself

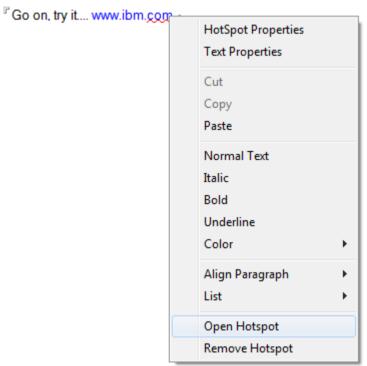




Favorites feedback (continued)

- Open Hotspot in edit mode
 - Right Mouse Click

Subject: "Right mouse click - Open Hotspot, in edit mode! __





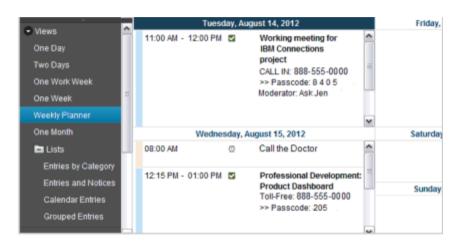
Favorites feedback (continued)

"Weekly Planner" calendar view

New Weekly Planner view

The Weekly Planner shows the days of the week in a two-column format. You can scroll within a day to see more entries.

 You can also click Show > Show Available Times to see the times when no events are scheduled.



Note: This feature requires the most current mail template.

- Scroll by week within the Monthly calendar view (aka "Rolling Month")
 - Subject: I *love* the Rolling Month feature. <>



Favorites feedback (continued)

- Open link in edit mode (Ctrl+Click)
 - Use this frequently
 - <Like>

Subject: New and notable calendar stuff added in 9.0 a

Color code calendar entries by Category http://www-10.lotus.com/ldd/dominowiki.nsf/dx/Organize_your_calendar_with_category_colors

- Paste as Plain Text (Ctrl+Shift+V)
 - Use it all the time!
 - Oh yes... I use this CONSTANTLY
 - ^^^ what he said. +10
 - Me too!!



Favorites feedback (continued)

- Image Attachment Thumbnails
 - Preview Image Attachments without the need to open every attachment
 - 1 attachment

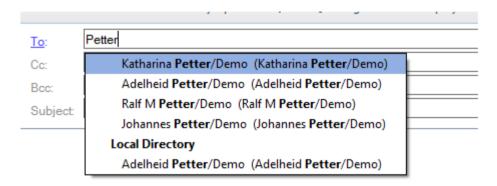


5-final.jpg



Favorites feedback (continued)

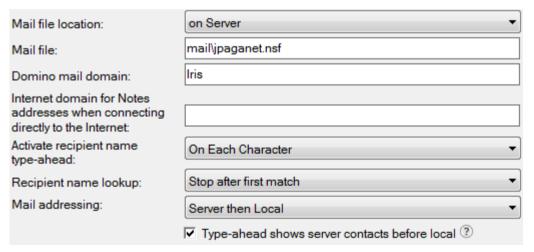
- Type-ahead
 - Show addresses from Server Directory first, then Local Directory
 - TypeaheadShowServerFirst=1
 - TypeaheadShowServerFirstDefault=1





Favorites feedback (continued)

- Type-ahead (continued)
 - Allow to be seen when "Mail file location: on Server"
 - \$ServerMailAddressing=1



Admins can push the notes.ini settings via Desktop Settings Policy



Favorites feedback (continued)

- Add, remove, or modify online meeting information in an existing calendar entry
- Conferences, meetings, or seminars with people spread across different geographies has now become very easy and quick, with the Online Meeting solution.
- Notes users have often experienced the need to add Online Meeting information to a previously-sent invitation, or the need to modify or delete Online Meeting details in an existing calendar entry.
- Nice when used in conjunction with "Automatically process meeting updates and apply changes to meetings"
- http://www-10.lotus.com/ldd/dominowiki.nsf/dx/Addcom_removecom_or_modify_online_meeting_information_in_an_existing_calendar_entry



Thank You!

Your feedback is important!

- Access Connect Online to complete your session surveys using any:
 - Web or mobile browser
 - Connect Online kiosk onsite



Questions & Answers

- Meet the Developers Lab
- jpaganet@us.ibm.com
- Thanks Again!





Engage Online

- SocialBiz User Group <u>socialbizug.org</u>
 - Join the epicenter of Notes and Collaboration user groups
- Follow us on Twitter
 - @IBMConnect and @IBMSocialBiz
- LinkedIn http://bit.ly/SBComm
 - Participate in the IBM Social Business group on LinkedIn:
- Facebook https://www.facebook.com/IBMSocialBiz
 - Like IBM Social Business on Facebook
- Social Business Insights blog <u>ibm.com/blogs/socialbusiness</u>
 - Read and engage with our bloggers



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