Migration Methodology
Desktop Manager™ 2.6 to 2.7

COOPERTEAM

Content

Audience

This document is intended for Administrators of larger scale Notes/Domino environments where Desktop Manager is already deployed, and the basic upgrade procedure described in the product documentation is inappropriate, due to a highly consolidated server environment or poor bandwidth.   Desktop Manager Administrators are advised to read both procedures and discuss the deployment with their network/server teams to decide which is best suited to the needs of their environment.

Introduction

Version 2.7 of Desktop Manager brings and important evolution to the client-server architecture of the product. In the previous versions, when Desktop Manager on the user workstations ran, it needed to access the Desktop Manager database on the server (DskMgr.nsf). In version 2.7, when the application runs on a workstation, it uses only the local database (DskMgrStart.nsf). The exchange of data between the local database and the server (reception of settings and sending of audit results) happens in the background, at the end of the running of the visible part of the application (Tasks and Profile).

This new architecture has several important advantages:

- Users are no longer blocked at the start-up of their client by network constraints (low bandwidth, response time of the Domino server hosting the Desktop Manager database, physical distance of the user's workstation from the server).

- The background execution of both the configuration audit and the synchronisation of data between the local and server databases, allows the application to give control back quickly to the user. The user is not impacted by the background execution and the application seems thus to execute more rapidly for the user (we have reduced the blocking elements to a minimum).

- If the user is not connected to the network when the workstation starts up, Desktop Manager executes normally on the workstation. The data is synchronised later, when a connection becomes available between the workstation and the server.

- The settings for the Desktop Manager server database (Setup, Profile, Template, Task, Preferences, Binary...) or those from the NAB (Person document) are synchronised with the local database (DskMgrStart.nsf) throughout the day (typically every 2 hours). This helps to spread out network utilisation, and to avoid morning 'peaks'.

Limitations

As with all upgrades, upgrading to 2.7 from an earlier version of Desktop Manager (2.4, 2.5, 2.6...) requires the update of some elements present on the local workstation:

- The Desktop Manager Start database (**DskMgrStart.nsf**)

- The application dynamic link library files (**DskMgr.dll** and **nDskMgrHook.dll**)

- The application executable files (**DskMgr.exe** and **DskMgrTask.exe**)

The standard upgrade procedure for the application consists of replacing the design Desktop Manager server database (DskMgr.nsf) with the design of the new 2.7 database, and the update of the binaries (Start database, DLL, Exe). In this way during the next execution of the Desktop Manager on the client workstations, the new binaries are automatically downloaded from the server database and installed on the client.

The above method works correctly, but has a certain number of limitations:

- It is not possible to upgrade users to 2.7 by groups (regional, organisational or server...). Everybody gets migrated at the same time.

- The network load on the first morning can become heavy (each workstation has to download the new components).

- Desktop Manager's run time will be longer for the same reason.

- It is impossible to run a pilot with a targeted group of users.

- It is difficult to perform a rollback if this becomes necessary.

The above limitations can place a significant drag on deployments in situations where users are very distant from the servers (the download time is too long) or in a situation where the user population is very large (network congestion, too much demand on the server hosting the Desktop Manager database).

Because Desktop Manager uses the local database (DskMgrStart.nsf) as the core of the application on the client workstation, the size of this database has grown. The size of the data to download (local database + binaries) is now nearly 10 MB.

The server and workstation upgrade procedure to Desktop Manager 2.7 that we outline below allows us to take into account all of the previously mentioned issues.

Server Architecture

A Desktop Manager 2.6 architecture in a geographically multi-site organisation will appear thus:

There is one Desktop Manager database (DskMgr.nsf), replicated onto several servers and a collection of independent Desktop Manager User databases (DskMgrUser.nsf).

The first step in the migration to version 2.7 consists of installing the Desktop Manager 2.7 databases next to the Desktop Manager 2.6 databases, in the same directory. If the Desktop Manager 2.6 databases are named DskMgr.nsf, this can be done by naming the Desktop Manager 2.7 databases DskMgr27.nsf. This action results in a situation where the Desktop Manager 2.6 databases replicate amongst themselves, and the Desktop Manager 2.7 databases do likewise:

There is no need to do anything with the Desktop Manager User databases. We keep the same files in the new 2.7 architecture.

Now the users can be moved little by little from the 2.6 databases to the new 2.7 databases and the 2.6 databases can finally be retired, as they have no further use. We end up with a server architecture similar to that present before the migration:

Step 1: Installation of the Desktop Manager 2.7 database

The first step consists of installing and configuring the Desktop Manager 2.7 databases onto the servers which currently host the Desktop Manager 2.6 databases. The procedure to follow is described in detail in the Desktop Manager database documentation. In this instance we will simply cover the main steps:

- Copy the Desktop Manager 2.7 database (DskMgr.nsf) onto the server, naming it **DskMgr27.nsf** so as not to overwrite the existing Desktop Manager 2.6 database.

- Copy the ACL of the 2.6 database to the 2.7 database

- Sign the Desktop Manager 2.7 database with the same ID as the 2.6 database

- Transfer any Design elements added into the 2.6 database (new views, resources, images) into the 2.7 database.

- Extract the DskMgrStart.nsf database from the 2.7 "Install Files" view, sign it, and then replace the unsigned version in the same document. If you have modified the images displayed during a Full Mode run, you should also replace these in the DskMgrStart.nsf prior to replacing it.

- Copy into the 2.7 database all the configuration documents from the 2.6 database:

    - Setup documents, Database Documents, Desktop Manager User

    - Profile, Template, Preference, ECL, Hook, Recurring tasks

    - Export Setup Document, Clean-Up actions

    - Agents, Additional LotusScript Libraries (remember to re-register them)

- Update the Setup and Profile documents using the and buttons.

- Update the Reference Document

Once the Desktop Manager 2.7 database is installed on the first server, replicas must be created on all the servers hosting a Desktop Manager 2.6 database. Then Database Desktop Manager Documents for all the 2.7 databases (DskMgr27.nsf) need to be created, and configured to use the same Desktop Manager User 2.7 databases that the Desktop Manager 2.6 documents point to:

The two Desktop Manager Server databases (2.6 and 2.7) point thus to the same Desktop Manager User database.

Then the Design of the Desktop Manager User databases needs to be replaced with the 2.7 Design. For this, a Template of the User database must be created using the button from the **Product Installation / Install Files** view of the Desktop Manager 2.7 database. The design of the User databases (which do not replicate amongst themselves) must ALL be replaced. There is no problem with temporarily having Desktop Manager 2.6 accessing information stored in Desktop Manager User 2.7 databases. The design change does not cause any incompatibility.

Following this there are parallel Desktop Manager 2.7 and 2.6 architectures:
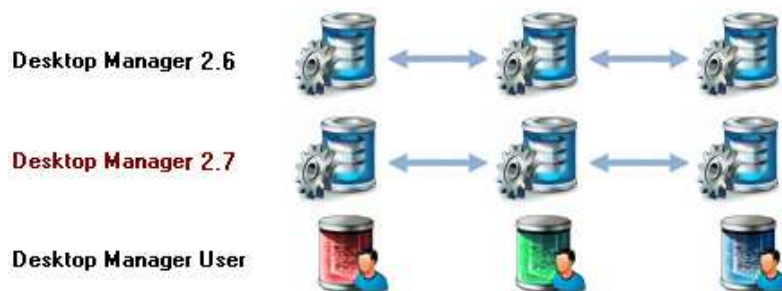
Step 2: Test the Desktop Manager 2.7 database with client workstations

Before moving users onto the new Desktop Manager 2.7 architecture, the Desktop Manager 2.7 database should be tested to ensure all is correct (ACL, Signature, links to User Database...) and that the running on user workstations does not pose any problems. This allows validation that the agents work correctly, that the Setup and Profile Documents are correctly applied.

For this, it is wise to use workstations which have never had Desktop Manager installed and to open the Desktop Manager 2.7 database on one of the servers. This will trigger an installation of the Desktop Manager 2.7 components onto the local workstation. The network cost of this operation is approximately 7MB, but will be limited to just the few workstations selected for testing.

The audit results should be tested in the Desktop Manager 2.7 database on the server in order to be sure that no error messages were logged into the User Documents. It is equally necessary to validate, that after several restarts of the Notes client, that Desktop Manager 2.7 is triggered correctly on the installed workstations. The Execution Logs in the TEMP directory of the user (in the directory %TEMP%\DskMgr\ DskMgr*.txt) should also be checked.

If the tests are conclusive, a Pilot phase can be deemed unnecessary.

Step 3: Deployment of the DskMgrStart.nsf file onto the workstations

The largest with deploying 2.7 onto the client workstations is the volume of data (10 MB) to transfer. With Domino servers ever further from their client workstations as a consequence of consolidation projects, it becomes preferable not to transfer this data from the Domino server.

It is possible to avoid the network impact described above by updating the components from within the Desktop Manager database by deploying the new binaries via a file distribution system (such as an SMS package or deployment onto a network disk...) performed by the Windows IT/Desktop teams. The file is normally approximately **10 MB** in size. This consists of the Desktop Manager Start database (**DskMgrStart.nsf**) which contains all of the elements necessary to run Desktop Manager 2.7 on the user workstation (binaries, configuration documents and agents...). The file remains the same, no matter which Desktop Manager database the users connect to.

If each geographic region is given the same file to copy onto the workstations, the copy can be done without impact to the WAN. It is only necessary to find a common path that can be used by all workstations (c:\TEMP\, c:\Program Files\Desktop Manager\...) and that user can access the file deployed, in read-only mode. If several users share the same workstation, they will all use the same file. In addition, it is possible to deploy the file piece-meal fashion, at times when the network is little used. The most important thing is that each workstation can receive it, and that it be fully available after several days. If the local network share option is used, the Migration Agent described below can be customised to retrieve the file.

To prepare a file to deploy onto the workstations, the action button should be used from the **Product Installation / Install Files** view of the newly installed Desktop Manager 2.7 database. The file that it generates (DskMgrStart.nsf) can then be given to the IT Windows deployment team.

Step 4: Creation of the Migration Profile in the Desktop Manager 2.6 database

Once the server architecture of the 2.7 version of the Desktop Manager database is ready (databases installed, replicas, configured and tested) and the local Desktop Manager Start database has been deployed to the User workstations, it is possible to switch the users to version 2.7 of Desktop Manager.

For this, an agent will be used (declared in a Profile document), which will replace the local Desktop Manager Start 2.6 database with the new Desktop Manager Start 2.7 database and which will redirect the user of the 2.6 Desktop Manager database to the new Desktop Manager 2.7 database. On the next start-up of the Notes client, the local database used will be version 2.7 and the server database with which Desktop Manager synchronises will be equally version 2.7.

Since users are still opening the Desktop Manager 2.6 database, it's there that a Profile document named **MIGRATION DSKMGR 2.7** and it is necessary to copy in the **Install DskMgr 2.7** agent. Remember to refresh the **Reference** document make the agent accessible from the Profile document form. Next, the **Install DskMgr 2.7** agent should be declared in the **MIGRATION DSKMGR 2.7** Profile document. If you do not have the **Install DskMgr 2.7** agent, contact Cooperteam Support (support@cooperteam.com) in order to obtain a copy.

This agent should execute every day on the user workstation, but will only activate the Desktop Manager if the following criteria are met:

- The workstation has not been upgraded to 2.7

- The DskMgrStart.nsf 2.7 file is already fully present on the workstation

The upgrade of the workstation from 2.6 to 2.7 happens as consequence of the actions of the agent:

- Copying the DskMgrStart.nsf 2.7 file into the Notes Data directory of the user, under the name of DskMgrStartNew.nsf.

- Opening the DskMgrStart.nsf (2.6) database and copying into the DskMgrStartNew.nsf (2.7) database all the DskMgrUser documents existing in the DskMgrStart.nsf (2.6) database.

- Modifying all the DskMgrUser documents copied into the new DskMgrStartNew.nsf (2.7) database in order to point them towards then new Desktop Manager 2.7

database on the server (**DskMgrDatabase** field = path of the DskMgr27.nsf database on the server).

- Modifying the line **$DskMgrDatabase** in the **Notes.ini** file to point it towards the new Desktop Manager 2.7 database on the server.

- Development of a new "Post-Action" to replace the local DskMgrStart.nsf (2.6) database with the new DskMgrStartNew.nsf (2.7) database at the end of the Notes session. In the end, The DskMgrStartNew.nsf database will be renamed DskMgrStart.nsf.

- Development of a new "Post-Action" to clean-up the workspace and remove the icons pointing to the Desktop Manager 2.6 server database.

- Development of "Post-Actions" to delete the binary files from Desktop Manager (.dlls and .exes) from Desktop Manager to force an immediate full upgrade.

These operations are achieved quickly (allow 1 or 2 seconds) and will not penalise the user unduly. Some of the actions will happen at the end of the Notes session (Post-Actions), because these 'clean-up' operations need to access files to which access is blocked by the Notes client when it is active. At the next start-up of the Notes client, the execution of the new local DskMgrStart.nsf (2.7) database will install the executable components (.dlls and .exes), and the audit results will be sent to Desktop Manager User database and the parameters synchronised with those from the Desk Manager.nsf 2.7 database.

The only elements to configure in the agent are:

- The path to the new Desktop Manager 2.7 database on the server (relative to the Notes Data directory).

- The path to the DskMgrStart.nsf 2.7 database deployed on the users' workstations (absolute path).

The user should not be aware that they have been migrated to version 2.7. They should simply notice an improvement in the time taken to run Desktop Manager every morning.

Once switched to the new Desktop Manager 2.7 database, **MIGRATION DSKMGR 2.7** profile and the **Install DskMgr 2.7** agent no longer execute on the users' workstations because these elements do not exist in the new Desktop Manager 2.7 database.

Step 5: Pilot with a group of users

In order to test the migration agent on several pilot users, it is necessary to assign them the **MIGRATION DSKMGR 2.7** profile and be sure that the DskMgrStart.nsf file has actually been onto the workstations. If the deployment has not yet happened, the file must be manually copied to the designated location.

The application of the profile to the user workstation should cause the migration agent to execute. The Desktop Manager log file (%TEMP%\DskMgrLog.txt) will clearly indicate the actions performed by the agent. It is also possible to manually verify whether the DskMgrStartNew.nsf file is in fact present in the root of the data directory, and that the Notes.ini lines ($DskMgrDatabase and $DskMgrServer) do actually point to the Desktop Manager 2.7 database on the server.

Closing the Notes client triggers the deletion of the binary files (.dll and .exe) and the replacement of the DskMgrStart.nsf 2.6 database with the design form the 2.7 version.

On restarting the Notes client, the local Desktop Manager Start 2.7 database triggers for the first time, and deploys the binary databases of the payload (.dll and .exe) and synchronizes itself with the Desktop Manager 2.7 database of these servers.

In order to achieve a representative pilot, is users should be selected with as broad a range of configurations as possible, with all the potential possible configuration profiles (desktop, laptop, Citrix...).

Step 6: Deployment into Production

Deployment into production of version 2.7 onto all of the user workstations happens with the Migration Agent. This agent can be added to the Profiles already applied to users, or into a dedicated Migration Profile which is then applied to the users.

Once the agent has executed, the users will have migrated to version 2.7, with Desktop Manager in local execution mode (background audit and synchronisation). It will be necessary to wait for the next execution of Desktop Manager (e.g. the next start-up of the Notes client) for the audit results to appear in Desktop Manager databases (visible in both the 2.6 and 2.7 versions) and indicate that the users have switched to the Desktop Manager 2.7 database and the version of the components on local is actually 2.7.

Since all the necessary components are already stored in the Desktop Manager Start database deployed to the workstations, the synchronisation between the data in the local database (DskMgrStart.nsf) and the Desktop Manager 2.7 database on the server will be limited to just the audit results. The volume to be expected is equivalent to that of a Full Mode execution.

As there will be no network peak to be expected with this type of upgrade, you can migrate large groups of users at one time with this method.

Conclusion

The installation of the Desktop Manager 2.7 database on the servers which are already home to the Desktop Manager 2.6 databases allows the testing of the new version of the database on several workstations, without impacting the entire population. In case of errors, it remains possible to correct the installation errors with the new 2.7 database and if necessary, prolong testing, notably if complex LotusScript agents are in use via Profiles documents. Since the Desktop Manager databases only contain configuration elements (the result of the audits are stored in the User databases), the space required for the installation of these new databases on the servers is limited (typically around 50 MB per server).

The deployment onto client workstations of a file containing the components of the 2.7 version avoids impacting the WAN network with a large volume of updates. By deploying this file in advance, the network impact (10 MB/user) is spread out, and a network peak on the morning after the migration is avoided.

Because the switch to 2.7 on the client workstations is controlled by the combination of couple Profile and Migration Agent, it is possible to choose precisely who will get migrated (and also to define a pilot population) and also the schedule used. By doing so, a full migration of the entire population at one time is avoided. As all the new components are already present on the local workstations, this migration is without impact for the users (no additional wait time during the execution of Desktop Manager on the day of migration).

The solution proposed here responds to the list of potential limitations raised at the beginning of this document. The migration agent is also by definition 'open' (the code is visible and modifiable), can serve as a starting point, and may be modified according to the needs of each environment.

COOPERTEAM