MIGRATING TO RDN SYNCHRONIZATION MODE

SOLUTIONS GUIDE

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Mitel®

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Migrating to RDN Synchronization Mode
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Chapter 1

INTRODUCTION

Introduction

Prior to MCD Release 4.0, the Classic model was used. The system data was shared between nodes, or network elements, of a network using an external application, OPS Manager. At MCD Release 4.0, with the introduction of RDN Synchronization Mode, this data sharing is now integrated into MCD (now MiVoice Business).

RDN Synchronization Mode supports System Data Synchronization (SDS) between MiVoice Business controllers, as before, and it also allows you to configure device resiliency from the System Administration Tool.

The RDN Synchronization Mode was introduced in MCD Release 4.0 (you may see this shown as Release 10.0 in some documents, as the numbering scheme changed around that release). RDN Synchronization Mode is sometimes known as Common Data Distribution, so you may also see these terms in the documentation and in the System Administration Tool forms.

Migrating to RDN Synchronization Mode does not delete data. The migration reorganizes the database data by creating four new tables, and copying the existing data into the new tables.

A distinct upgrade step is required when migrating through MCD Release 4.0 from earlier releases. MCD Release 4.0 and higher already comply with the RDN Sync requirements, and use SDS to share information. The RDN Sync Model stores the data differently on the MCDs, and the new data model is not compatible with the Classic data model, so you must perform a migration to the RDN Sync model from your MCD Release 4.0 installation.

This guide describes how to make the change from pre-Release 4.0 MCD and OPS Manager—the Classic Model—to the RDN Synchronization Model in MCD Release 4.0 SP4. You must migrate to RDN Synchronization Mode while you are at MCD Release 4.0; if you do not, you will not be able to upgrade to MCD Release 4.1, 4.2, and future releases.

MCD Release 4.0 is a transition release, in that it supports OPS Manager and the Classic database model, while also supporting the RDN Synchronization Mode. This allows you to make the transition while all of your controllers are at MCD Release 4.0.

After migration to RDN Synchronization Mode, OPS Manager is no longer available to manage your telephone directory or configure device resiliency, although you can still do your backups and alarm monitoring using OPS Manager, if desired. After migration, you cannot do adds, moves, and changes in OPS Manager. Instead, you use SDS to manage the telephone directory, remote directory numbers (RDN), and resiliency configuration.

Note: When installing MCD Release 4.0 or starting the System Administration Tool for the first time, you can select **Telephone Directory Synchronization via SDS** to go directly to RDN Sync Mode. If you do that, you do not need to follow the migration steps in this guide.

Glossary

Table 1 defines some of the terms used in this guide.

Table 1: Glossary

TERM	DEFINITION
3300 ICP	The 3300 ICP is the proprietary Mitel hardware platform on which the MiVoice Business controller software (formerly called MCD) is run. Note that the MiVoice Business software also runs on industry standard servers, and on VMware virtual machines (MiVoice Business Virtual).
Administrative Group	Administrative groupings are the management-level grouping of network elements. All members of an administrative group can be managed from one network element using the Reach-Through feature. Use of administrative groups is optional.
Cluster	In cluster groupings, all users can dial all other users in the cluster as if they are local. You can have administrative groups inside clusters. Use of clusters in the network is optional.
Cluster Element	A network node that is a member of a cluster of nodes.
Cluster Element ID (CEID)	The ID of a cluster element.
Form data	Networking configuration and programming is done through forms in the System Administration Tool. The data in the forms is referred to as form data.
GDM	Global Data Model This is a name sometimes used internally at Mitel to talk about the RDN Synchronization Mode,
MCD	Mitel Communications Director (now called MiVoice Business) In this guide, MCD is used to mean a controller. In the software sense, this is synonymous with 3300 ICP.
MiVoice Business	In this guide, MiVoice Business (formerly MCD) is used to mean a controller. In the software sense, this is synonymous with 3300 ICP.
RDN	Remote Directory Number
RDN Sync Mode	RDN Synchronization Mode Sometimes called Common Data Distribution.
Resilient Pairs	Devices (IP phones and IP consoles) can be configured to have a primary controller and a secondary controller, with the secondary controller available to immediately take over if the primary controller fails. The primary and secondary controllers are also referred to as a resilient pair. SDS allows you to keep these two controllers synchronized so that the devices can be moved seamlessly from primary to secondary in the event of a controller failure.
SDS	System Data Synchronization - The means by which data is automatically shared between MiVoice Business controllers across the network, to keep all of the controllers synchronized with each other.
Sharing Scope	The data shared among network elements using SDS can be shared across the whole network, within the cluster or administrative group, or by resilient pairs. These are some of the choices for the sharing scope.

Table 1: Glossary

TERM	DEFINITION
Sync synchronization	In a network, SDS allows you to make the network elements form data the same on each network element. When the form data matches across elements in the network, they are said to be in synchronization. To synchronize the network, you click the Sync button on the Network Element Assignment form.

Chapter 2

MIGRATING TO RDN SYNC MODE

Overview

You can migrate a network of 3300 ICPs (MiVoice Business controllers) to support the synchronization of remote telephone directory entries across all the element databases. If you migrate a network to support the RDN Synchronization Mode, any telephone directory entries that you add, modify, or delete at an element though the System Administration Tool are automatically distributed to the other elements using System Data Synchronization (SDS). After migration, you can also configure device resiliency from the System Administration Tool.

After you migrate the network, you cannot use OPS Manager to:

- manage the telephone directory entries
- configure device resiliency

You can still use OPS Manager for other network management functions, such as alarm monitoring and database backups, but you cannot use it to perform telephone directory management, including moves, adds, and changes. Instead, the telephone directory numbers and users will be synchronized using System Data Synchronization, and managed through the **User and Devices Configuration** form. (In MiVoice Business 7.0, this form name has changed to **User and Services Configuration**.)

A checklist for use in completing the migration is available in the System Administration Tool, in a form present only in MCD Release 4.0 SP4—the **Checklist for Migration to RDN Synchronization** form. When you decide to migrate your network to RDN Sync Mode, you access this form and follow the steps described there, which are explained in detail in this guide.

Note: It is assumed that the starting point for migration is a network managed by OPS Manager, and that OPS Manager is used to keep Telephone Directory and RDN data in synchronization across the network.

Use the following sections to perform the migration to the RDN Sync Mode:

- “What happens during migration to RDN Sync Mode?” on page 12
- “Pre-migration conditions” on page 13
- “Migrating your network to RDN Sync Mode” on page 14
- “Post-Migration steps” on page 24
- “Post-migration differences” on page 27
- “Migrating a very large network” on page 28

And, to add a Classic network element to your migrated network:

- “Adding a Classic network element to a migrated network” on page 33

What happens during migration to RDN Sync Mode?

MCD Releases 4.0 and later include a new set of database tables—introduced for System Data Synchronization—that help make sharing of user and service information easier and more efficient than it is using OPS Manager.

The migration operation adds four new database tables, and copies the relevant data into them. The new tables are automatically shared across the network:

- System Service: This table contains the system services, including the hunt groups. It also contains the service alias, service type, service host, and secondary service host. The ID associated with the service is globally unique.
- User Service: This table contains all phones associated with the user. It includes the DN (the service alias), the service type, the user ID, the service host, and the service secondary host. The user ID is globally unique.
- User: This table contains the user ID, first name, last name, department, and location for each user.
- Mapping: This table maps the Users to the User Services.

Migration reads through the DNs in call control and creates data in the four tables mentioned above. and adds the user ID into the Telephone Directory. Do not do anything to the RDN; the **User and Device Configuration** assembles this data.

- **Telephone Directory**
- **Remote Directory Numbers**
- **User and Device Configuration**

Note: NO DATA IS DELETED.

Pre-migration conditions

Before starting to migrate a network or cluster to support RDN Synchronization:

- All the 3300 ICPs in the network or cluster must have MCD Release 4.0 software installed. Release 4.0 SP4 (or the highest SP level available) is highly recommended.
- All routes in the network must be configured correctly.
- Before beginning the migration, the network must be free of errors caused by restoring a foreign database. They are much more difficult to fix after migration. It is also recommended that you remove DN conflicts before migration—DN conflicts generate many SDS errors.
- If you are migrating a very large network, see “Migrating a very large network” on page 28 before planning and scheduling the migration.

Note: When installing MCD Release 4.0 or starting the System Administration Tool for the first time, you can select **Telephone Directory Synchronization via SDS** to go directly to RDN Sync Mode. If you do that, you do not need to follow the migration steps in this guide.

CAUTION: Reverting to a non-migrated network is not recommended or supported, so you should ensure that the network is fully prepared for migration before executing the procedures that follow.

Migrating your network to RDN Sync Mode

While migration to RDN Sync Mode is not difficult, it is important to have your network databases in the correct state before beginning, and to follow the migration steps in the right order to minimize the time it will take to complete the migration successfully. Also, performing the database backups at the points shown in the steps below will ensure that you can easily recover from any difficulties that might arise.

Note: In an existing SDS sharing network, you must migrate all the member elements in a single operation. You cannot migrate each element sequentially.

Note: You must complete each of the following steps and track their completion by clicking the check boxes on the **Checklist for Migration to RDN Synchronization** form in the System Administration Tool. When all of the items are checked off, you will be able to click the **Migrate to RDN Synchronization Model** button.

To migrate your network to the Global Distribution Model, you must follow these general steps:

1. Review the documentation

Before starting to make any changes to your network, you must review the documentation. It is very important for you to have an overview of the process before you start, so that you can avoid actions that could make subsequent steps more difficult to complete.

- Read through the step descriptions in this guide, or in the System Administration Tool Online Help, in the topic called **Migrate Existing Network to RDN Synchronization Model**.
- Print this guide so that you have it available as you perform the pre-migration and post-migration tasks.
- If you need additional information about System Data Synchronization (SDS) as you are synchronizing the controllers in the network, refer to the *Using System Data Synchronization Solutions Guide*, available on Mitel OnLine.

2. Stop most data changes to the network

Note: This step is not necessary on stand-alone systems.

To avoid changes happening in the network as you perform the migration:

- Do not make changes to the telephone directory and the **User Authorization Profile** form from the System Administration Tool.
- Disable OPS Manager scheduled synchronizations.
- Disable Property Management Systems (PMS) support. Access the **Hotel Options Assignment** form and set the **Property Management System Installed** option to **No**.
  - If Clustered Hospitality is configured, disable PMS at the gateway element.
  - If standalone Hospitality systems are configured on elements in the cluster, disable PMS at each element connected to a PMS.
- Disable automatic database management system checking. Refer to the System Administration Tool Online Help for the **DBMS CHECK** command for more information.

Make sure that the network is configured for the best migration results by doing the following:

1. Configure the SNMP IP addresses for all the systems to line up the entry numbers with the Administrative Group members. For example, set up SNMP Entry #1 (in the **SNMP Configuration** form) with the first network element in the list in the **Admin Group Assignment** form, and so on.
2. Check the **MultiNode Management Alarms** form. The nodes should all show **Clear**.
   - If any of the nodes show an alarm, **Minor** or **Major**, for example, log into the node to review the alarm status. If the alarm state also shows on the node, fix the problem causing the alarm.
   - If the node is not showing any alarms, and the status does not match the status you saw on the master node, then **disable** the alarms on the **Admin Group Management** form. Wait 30 seconds for SDS to propagate this action to all the other nodes. Then **enable** the alarms on the **Admin Group Management** form. Disabling and re-enabling the alarms will re-synchronize the nodes so that the alarm status is consistent throughout the network.
3. Check the sharing scopes for the forms; open the **Shared Forms Configuration** form, and make sure that the forms that should be sharing at the network level are configured for the **All Network Elements** scope. For more information about sharing scopes, see the *Using System Data Synchronization Solutions Guide* on Mitel Online.
4. Make sure that the Admin Groups contain only 3300 ICPs.

Note: It is not necessary or desirable to have Hot Desk users log out of their phones.

For more information and detailed instructions for completing these items, see the System Administration Tool Online Help.

3. Synchronize Telephone Directory and RDN data

Note: For very large systems, read through the following sections for the details, but follow the instructions in "Migrating a very large network" on page 28.

Note: This step is not necessary on stand-alone systems.

Synchronize the Telephone Directory and RDN data.

1. In OPS Manager, click **Configuration > Directory Management > Synchronize With > Network Elements**.

   If you are not using OPS Manager, you must synchronize the Telephone Directory and RDN manually. You can do this by exporting the data and comparing the resulting export files.

2. Ensure that every directory number (DN) in OPS Manager telephone directory has an associated name.
   a. Perform a **Full Propagation** from OPS manager to each element in the cluster.
   b. Export the **Remote Directory Number** form data from each element.
   c. Check the exported data for any directory numbers that have no associated name.
   d. If the directories contain numbers without names, either delete them or add valid names to the numbers in OPS Manager telephone directory.
3. Synchronize the network elements again before leaving this step.

CAUTION: Make all required repairs and changes to the RDN tables before leaving this step. After migrating to RDN Sync Mode, the RDN information will be read-only.

For more information and detailed instructions, see the System Administration Tool Online Help.

4. Back up all databases

Back up the database at each node element using the System Administration Tool, or use OPS Manager to perform all of the backups.

For details and conditions, see the **Back Up System Information** help topic in the System Administration Tool Online Help.

5. Make sure all 3300 ICP-type network elements are running MCD Release 4.0

At least one network element must be running MCD Release 4.0 SP4, because the RDN Sync Mode Migration checklist form is available only from this release. If you are not already running MCD Release 4.0 SP4, upgrade the fastest and most lightly-loaded node to MCD Release 4.0 SP4 before beginning. You will use this node as your master for the purposes of the migration.

In the **Network Element Assignment** form, verify that the **Version** column for each 3300 ICP/MiVoice Business network element shows at least MCD Release 4.0.

Upgrade any network element not running the latest MCD Release 4.0 software. All of the other 3300 ICP/MiVoice Business network elements must be running at least MCD Release 4.0.

For upgrade instructions, see the Release Notes and the *Mitel Communications Director Installation and Administration Guide* for MCD Release 4.0.

6. Make sure all 3300 ICP-type network elements are using SDS and are in sync

Note: This step is not necessary on stand-alone systems.

Ensure that all of the 3300 ICP/MiVoice Business network elements are sharing data using SDS:

1. In the **Network Element Assignment** form, verify that the **Data Sharing** column for each 3300 ICP/MiVoice Business network element is set to **Yes**.

   For any network element that does not have **Data Sharing** set to **Yes**, select the network element, and click **Start Sharing**.

2. Make sure that the Administrative Groups contain only 3300 ICP network elements. If there are non-3300 ICP elements, remove them from sharing until after the migration is complete.
3. Select the network elements, and click **Sync**.
4. In the dialog box that appears, leave **Data Migration** selected, and in the **Shared Forms to be Synchronized** section, select only the **User Authorization Profile** form. The **User Definition** section must be selected before you can select the **User Authorization Profile** form.
5. Click **OK**.
   - If the **Sync** operation finishes without errors, continue to “7. Run the MIGRATION PRECHECK command” on page 18.
   - If the **Sync** operation produces errors, resolve the errors. See “Troubleshooting the migration” on page 5 for more information. After the **Sync** operation runs without errors, continue to “7. Run the MIGRATION PRECHECK command” on page 18.

Note: If you are following this procedure to migrate a Classic element to be able to add it to a RDN Sync Mode network, you will not be able to run the Sync command successfully. You will see an error message telling you that you cannot synchronize with the new element until you migrate it to RDN Sync Mode.
See “Adding a Classic network element to a migrated network” on page 33.

For more information about SDS data sharing, see the System Administration Tool Help topic called **System Data Synchronization**, and the *Using System Data Synchronization Solutions Guide*, available on Mitel OnLine.

7. Run the MIGRATION PRECHECK command

The **MIGRATION PRECHECK** Maintenance Command checks for readiness to migrate by checking for database consistency and local-only entries.

During the migration, local-only entries (entries that have a number, but no name) will be moved to the new **Local-only Directory Number List**. Local-only entries cannot be reached from devices attached to other network elements.

- If this is the desired behavior, you do not need to make any changes to the entries.
- If this is not the desired behavior, you must change the entries before migration. Follow the steps below to convert the local DNs so that they will be copied to the RDN list during migration

Note: It is recommended that you check all the local-only entries before proceeding with the migration, even if you are fairly certain at first that you want these to remain local-only entries.
If you complete the migration with local-only entries, and then decide later that the entries should be remote entries, you cannot convert them. You must delete and then re-create them as RDNs.

Tip: Use the **Form Comparison** form to check for differences between network elements.

Tip: Check the **System Speed Call Assignment** form. Numbers listed as speed calls to the local controller are local-only numbers.

To ensure the MIGRATION PRECHECK command output is clean, and the database is ready for migration, log in to each element in the network and do the following:

1. Access the **Maintenance Commands** form, and enter **MIGRATION PRECHECK**.
2. Copy the command output into a text file, and save it to your PC hard drive. The name of the file should be `<element>.txt`; for example, `Node21.txt`.

If you see any of the error messages shown in Table 2, fix the problem before proceeding with the migration.

CAUTION: Do not proceed until the MIGRATION PRECHECK command runs cleanly.

Table 2: MIGRATION PRECHECK error messages

MIGRATION PRECHECK MESSAGE	CAUSE	STEPS TO RESOLVE
Checking for network element and cluster element database consistency. A database inconsistency was found. This database inconsistency is a result of restoring a database backup taken from a network element with a different IP address than that of the local network element, likely before upgrading to 10.0. DO NOT MIGRATE THIS DATABASE. Instead, you should restore the database to a network element with an IP address that matches the one from the backup, and then run the MIGRATION PRECHECK command again.	The network element has a database inconsistency that was caused by restoring a database with a different IP address.	Before migrating, you must: 1. Restore the database to a network element with an IP address that matches the one from the backup. 2. Run the MIGRATION PRECHECK command again.
The following network elements are not sharing with this local network element. Verify that this is intentional. In general, SDS Sharing should be started with these network elements, and the data should be synchronized before proceeding with the migration. Node505	The network element(s) are not sharing with the current network element.	You should start SDS sharing with any elements shown in this error message, and synchronize the data before you continue with the migration.

Table 2: MIGRATION PRECHECK error messages (continued)

MIGRATION PRECHECK MESSAGE	CAUSE	STEPS TO RESOLVE
DN #### has no Teldir entry and is not resilient or a remote number. If any of these numbers are intended to be local-only DNs (that is, no Telephone Directory or RDN entry), they should be added to the **Local-only Directory Number List** form. If you do not do this, the migration process will create RDN numbers for these DNs.	Local-only directory numbers have been found.	1. Copy the URL provided at the bottom of the maintenance command output. Paste the link into the Address field of your Internet Explorer browser, and press the Enter key. 2. Save the contents of each CSV file to your PC hard drive. Name the CSV file using the element name; for example, `Node21.csv`. 3. For entries that have no telephone directory entry and do not appear in the **Local-only Directory Number List** form, if you decide to make the entry cluster-dialable, add the entry to the Telephone Directory Assignment form and remove it from the corresponding CSV file. **WARNING:** Make sure you check every entry before continuing. After a number is made local-only, it is very difficult to change it back. 4. Import the contents of each CSV file into the **Local-only Directory Number List** form on the master element (the master element is the element that you will use to initiate the migration). To import a CSV file: • In the **Local-only Directory Number List**, click **Import**. The Import dialog box opens. • Click **Browse** and navigate to the CSV file; for example, `PremigrateLocalDNCandidtes.csv`, on your PC hard drive. • Click **Next**, and accept any security warnings that may appear. • Click **Import**. • After the import is complete, click **Finish**. If you add the entry to the Telephone Directory Assignment form, it will be cluster-dialable after the migration. If you leave the entry in the CSV file, it will be a local-only entry. Make sure that the final CSV file contains only local-only entries. After a Directory Number is set as local-only, it can only be made cluster-dialable by deleting the entry and adding it back in as an RDN. **Note:** Retain all of the files you export in pre-migration for reference during the migration and post-migration steps. You can delete them after the migration has been completed successfully.

Table 2: MIGRATION PRECHECK error messages (continued)

MIGRATION PRECHECK MESSAGE	CAUSE	STEPS TO RESOLVE
DN is resilient or remotely hosted, and appears in the Local-only Directory Number List	A DN has been found in both the RDN list and the local-only list:	For entries that have a telephone directory entry and also appear in the **Local-only Directory Number List** form, delete the entry from either the **Telephone Directory Assignment** form or from the **Local-only Directory Number** List form. This is an unusual situation, but if you see this error, you should fix it before starting the migration because it is much more difficult to fix after migration is complete.

8. Re-synchronize network changes made in the previous steps

If you made any telephone directory or RDN changes based on the results of the MIGRATION PRECHECK command, you need to synchronize the network element databases again.

Synchronize the Telephone Directory and RDN data.

- In OPS Manager, click **Configuration > Directory Management > Synchronize With > Network Elements.**

  If you are not using OPS Manager, you must do the Telephone Directory and RDN synchronization manually.

9. Repeat backups if changes were made in the previous steps

Perform a second backup of all of the databases if you made any changes in the previous steps. This is a critical step that will allow you to recover if problems are encountered during migration.

Back up the database at each element using the System Administration Tool, or use OPS Manager to perform all of the backups.

After the backups are completed, shut down OPS Manager.

For details and conditions, see the **Back Up System Information** help topic in the System Administration Tool Online Help.

10. Initiate the Migration

CAUTION: After you migrate to RDN Synchronization, reverting to a non-migrated network is not recommended. To revert back to a network that supports Telephone Directory Management from OPS Manager, you would have to perform a full install and data restore at each node in the network. In addition, you would then have to re-enter any programming updates that were made after the migration.

Note: In an existing SDS sharing cluster or network, you must migrate all the member elements in a single operation. You cannot migrate each element sequentially.

Initiate the migration:

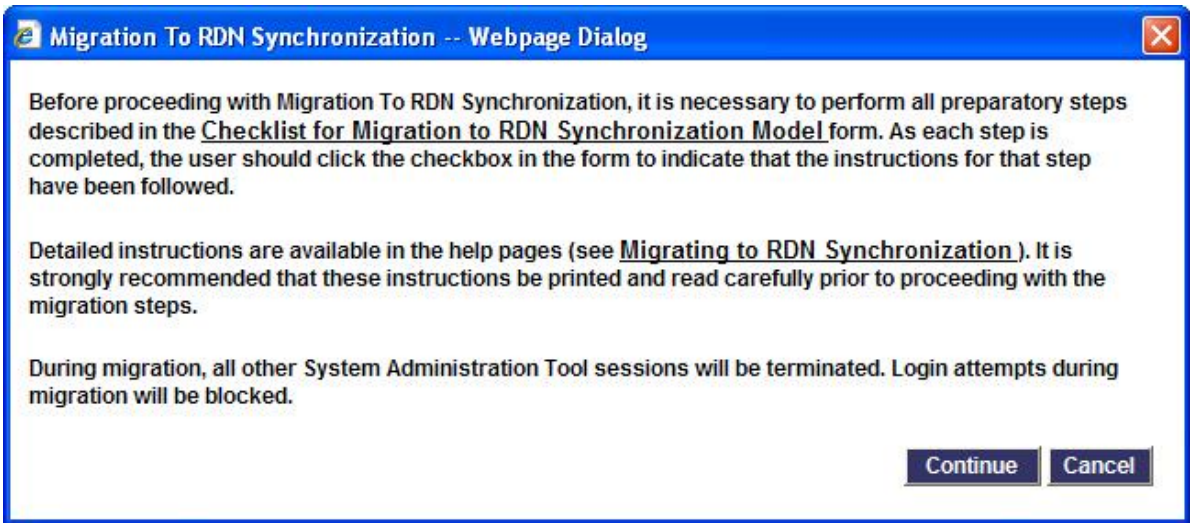
1. Log into the System Administration Tool of the master element (the element that you intend to perform the migration from).

Note: It is strongly recommended that you run the migration from the network element with the lightest load and the fastest performance.

To perform the migration, you must log into the System Administration Tool with a **User Authorization Profile** with Root Administrator privileges.

2. Initiate the migration.
   a. Navigate to the **Checklist for Migration to RDN Synchronization Model** form.
   b. Ensure that all of the items in the checklist are complete and checked off.
   c. Click **Perform Migration to RDN Synchronization Model**.

   The system displays the following dialog box:



3. Click **Continue**.

   Any other System Administration Tool sessions that are in progress are terminated. When the migration begins on each element, a maintenance log is generated that indicates the start time of the migration process:

   Migration of data to GDM model: Start <timestamp>

Note: The time required to complete the migration depends upon the number of elements and the number of directory entries (both telephone directory entries and user profile entries). It takes approximately 25 minutes per 5000 directory entries. For example, in a network with 10000 directory entries, the migration would take approximately 50 minutes to complete.

4. After the migration is complete, the following message is displayed:

   Migration Completed. You must now log out and in again to continue.

5. Click **OK**.

   The system logs you out of your System Administration Tool session.

Note: After the migration is complete, the **Perform Migration to RDN Synchronization Model** button is disabled in the **Checklist for Migration to RDN Synchronization Model** form.
Also, “Synchronizing TD/RDN with SDS” appears at the top of the **Shared Forms Configuration** form to indicate that RDN Synchronization is enabled in the network.

See “Troubleshooting the migration” on page 5 if an error occurs during migration.

Post-Migration steps

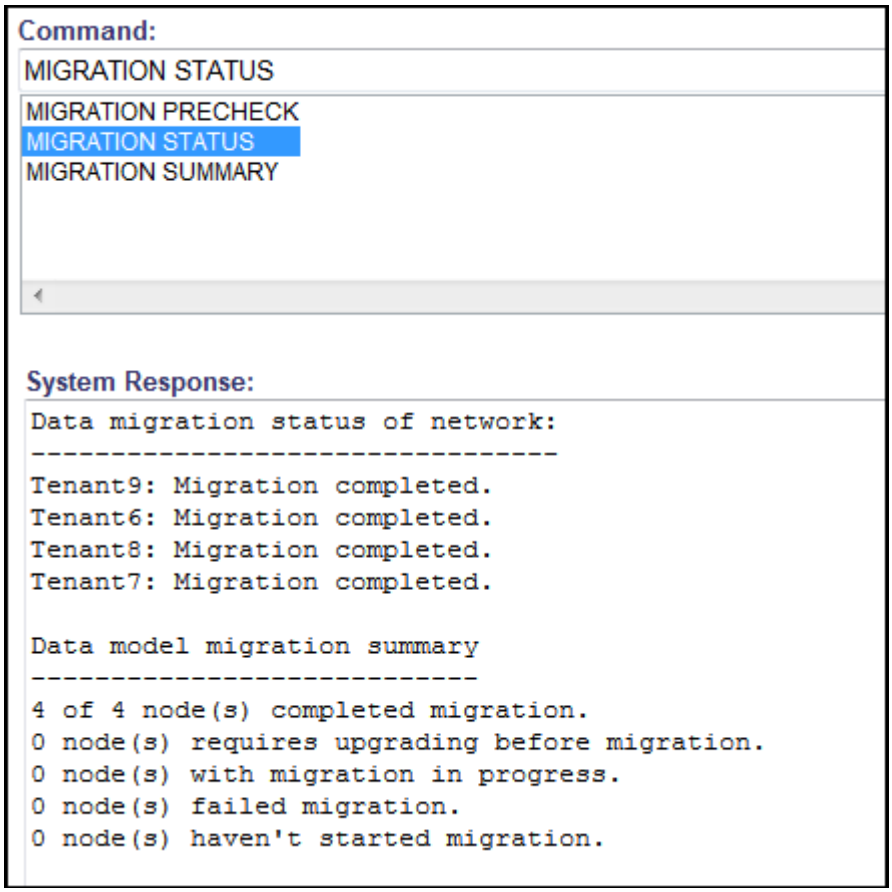
Follow these steps after the migration has been completed successfully:

1. Run the MIGRATION SUMMARY/MIGRATION STATUS command

After the migration to RDN Sync Mode has completed successfully:

1. In the **Maintenance Commands** form, run the MIGRATION STATUS command to ensure that the migration is complete.

   When the migration is complete, the output for both the MIGRATION STATUS and MIGRATION SUMMARY commands should look similar to this:



2. Any errors flagged in the data model migration summary MUST be resolved before continuing to the next step.

   If one or more network elements show errors, see “Troubleshooting the migration” on page 5.

2. CRITICAL STEP: Synchronize the User and Service Hosting data groups

CAUTION: Before performing this step, any errors that appeared in the output of the MIGRATION SUMMARY maintenance command must be resolved.

To synchronize the User and Service Hosting data:

1. From the **Network Element Assignment** form, select all of the 3300 ICP/MiVoice Business network elements.
2. Click **Sync**.
3. In the **Confirm Synchronization** dialog box:
   a. Leave **Data Migration** selected.
   b. In the **Shared Forms to be Synchronized** section, select **User** and **Service Hosting**.
4. Click **OK**.
   - If the **Sync** operation finishes without errors, continue to “4. Restart and re-enable applications and features” on page 25.
   - If the **Sync** operation produces errors, proceed to “3. Resolve any SDS Data Distribution errors” on page 25.

3. Resolve any SDS Data Distribution errors

If the **Sync** operation produced errors, resolve the errors before continuing. See “Troubleshooting the migration” on page 5 for more information.

For more information about SDS data sharing, refer to the System Administration Tool help topic called System Data Synchronization, and the *Using System Data Synchronization Solutions Guide*.

4. Restart and re-enable applications and features

1. Re-enable automatic database management system checking. See the DBMS CHECK maintenance command.
2. Re-enable Property Management Systems (PMS) support:
   a. Access the **Hotel Options Assignment** form and set the **Property Management System Installed** option to **Yes**.
   b. If Clustered Hospitality is configured, enable PMS at the gateway element.

c. If standalone hospitality systems are configured on elements in the cluster, enable it at each element that is connected to a PMS.

CAUTION: DO NOT enable OPS Manager scheduled Syncs, or Moves, Adds, and Changes.

5. Back up all migrated databases

Back up the database at each node element using the System Administration Tool. For network elements in the same administrative group, you can use the Reach-Through feature to perform backups from one node in the administrative group.

For more information about Reach-Through or system backup, refer to the System Administration Tool Online Help.

6. Download new Import and Export spreadsheets, if applicable

After migrating, the import and export spreadsheet formats have changed for some System Administration Tool forms, so if you are using the Import/Export spreadsheets, you may need to export an updated version of the spreadsheet to be able to import the data in the future.

- To export the spreadsheet, refer to the **Exporting Form Data** topic in the System Administration Tool Online Help.
- To import the spreadsheet, refer to the **Obtaining The Spreadsheet** topic in the System Administration Tool Online Help.

Post-migration differences

After migrating to RDN synchronization:

- There are two new restrictions that apply to the **Telephone Directory Assignment** form:
  - If the directory number (DN) for an entry is a device DN, you cannot change it to a non-device DN (ARS string or group feature DN).
  - If the DN for an entry is a non-device DN, you cannot change it to a device DN.
- An **Add** operation that you perform from the **User Configuration** form always creates a new user entity, even if a user already exists with the same name.
- The **Remote Directory Number Assignment** form becomes read-only, and the **Add**, **Change**, and **Delete** buttons are no longer available in this form. **View** is available.
- The **Local-only Number List** form becomes read-only, and the **Add**, **Change**, and **Delete** buttons are no longer available in this form. **View** is available.
- You can configure device resiliency from the **User Configuration** form and IP Console resiliency from the **IP Console Configuration** form of the primary element. After the migration, you cannot use OPS Manager to configure device resiliency.
- After migrating, do not revert to a non-migrated network.

Note: To revert back to a network that supports Telephone Directory Management from OPS Manager, you must perform a full install and data restore at each node in the network. In addition, you must re-enter any programming updates that were made after the migration.

Migrating a very large network

SDS works well for up to 20 nodes. For networks of more than 20 nodes, use the strategies in this section.

Preparation and time estimates

It is crucial to have a “clean” database. Clear as many error conditions as possible before beginning the migration.

On large sites with many nodes and very large databases, it is important to allocate enough time to complete the migration. Table 3 includes estimated times for the steps in migrating a very large network.

Method for synchronizing the nodes by splitting the Sync operation

For very large networks, Mitel Support has developed a special method for synchronizing the nodes. This involves splitting the Sync into a “collect” operation, followed by a “propagate” operation. An example operation is described in Table 3.

Using an external platform to act as a master for the Sync operations

Another recommended strategy for large migrations uses an separate Industry Standard Server (x86 platform) to act as the master for the syncs. There is a significant performance advantage to be gained by using an additional server to perform the Sync operations.

The first step is to deploy MiVoice Business Multi-instance (formerly MICD) system. Create one MiVoice Business (MiVB) Multi-instance for each 20 MCDs to be migrated. To migrate 120 nodes, for example, create six MiVB Multi-instances installations. See also the *MiVoice Business Multi-instance Deployment Solutions Guide*.

Each controller instance must be running MCD 4.0 SP4 (10.0.4.23). This is a special build that includes SDS performance improvements. Call Mitel Support for access to this build.

The MiVB Multi-instances will be added to the existing cluster. These instances will be used to drive parallel concurrent SDS data “collect” operations, followed by parallel SDS data Syncs to the cluster. The end result will be a 100% clean and synchronized SDS cluster. The MiVB Multi-instances will then be removed from the cluster. Then the site can proceed with normal operation and upgrade plans. For information and instructions for upgrading the network as a whole, refer to the *Network Upgrades Solutions Guide*.

Detailed instructions are provided in Table 3. For detailed information about how SDS works, refer to the *Using System Data Synchronization Solutions Guide*.

Table 3: SDS Post-migration plan

STEP	OPERATION	NOTES	ESTIMATED TIME TO COMPLETE
1a	Prepare an MiVB Multi-instance system	• Install MiVB Multi-instance on an Industry Standard Server (includes installing MSL, media server, and adding all the licenses). • Set MiVB Multi-instance instances for GDM mode (first login only). • Create one instance of MiVB Multi-instance for each 20 of the nodes to be upgraded. • Name all MiVB Multi-instance instances, MICD-1, MICD-2, and so on. • Add the system ID to SMDR on each MCD.	
1b	Prepare the site	• Stop all database updates. • Perform backups on all cluster elements. • Disable backup schedules. • Disable reboot schedules. • Turn off DBMS check. • Examine all network traffic, and determine the performance impact (e.g. large backups, firewall syncs, and so on.) Try to coordinate with SDS activity.	
2	Add MiVB Multi-instance instances to network cluster	• Disable SDS sharing for voice mailboxes and multi-level auto-attendant. • Add the new MiVB Multi-instance to the network. • Start SDS sharing. • Perform an SDS Sync of **system speed call**, **user**, and **hosted service** data to the first instance of the MiVB Multi-instance (MICD-1, for example).	25 minutes
		• Perform a full SDS Sync with MICD-1. • Start SDS sharing to all of the other MiVB Multi-instance instances using MICD-1 as the master.	15 minutes • 1st pass - Failures on Teldir and call reroute are expected. • 2nd pass - Sync Teldir entries only.
		• Perform an SDS Sync of **system speed call**, **user**, and **hosted service** data using the MICD-1 as the Master, and all of the other MiVB Multi-instance instances as SDS slaves.	30 minutes
		• Perform a full SDS Sync with MICD-1 as the Master, and all of the other MiVB Multi-instance instances as SDS slaves. • Monitor and resolve any SDS errors.	30 minutes

STEP	OPERATION	NOTES	ESTIMATED TIME TO COMPLETE
3	Perform a Sync Collect of **User** and **Service Hosting** data from the MiVB Multi-instance	• Enable collect-only mode on all MiVB Multi-instance instances by entering the following RTC shell command: toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to the first 20 cluster nodes, perform a Sync of **User** and **Service Hostin**g data. • From MICD-2 to the next 20 cluster nodes, perform a Sync of **User** and **Service Hosting** data. • From MICD-3 to the next 20 cluster nodes, perform a Sync of **User** and **Service Hosting** data. • Repeat until all of the Sync operations are complete. • Disable collect-only mode on all MiVB Multi-instance instances. by entering the following RTC shell command: toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.)	45 minutes for each Sync operation Use MiVB Multi-instance spreadsheet for each MCD
4	Merge all **User** and **Service Hosting** data to all of the MICDs	• Enable collect-only mode on MICD-1 by entering the following RTC shell command:. toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to MICD-2 to MCD-N, perform a Sync of **User** and **Service Hosting** data. • Disable collect-only mode on MICD-1 by entering the following RTC shell command:. toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to MICD-2 to MICD-N, perform a Sync of **User** and **Service Hosting** data. • Monitor and resolve any SDS errors.	30 minutes, plus 20 minutes per MiVB Multi-instance

STEP	OPERATION	NOTES	ESTIMATED TIME TO COMPLETE
5	Perform a Sync Merge operation to move all **Teldir** data to MiVB Multi-instance	• Enable collect-only mode on all MiVB Multi-instance instances. by entering the following RTC shell command: toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to the first 20 cluster nodes, perform a Sync of **Teldir** data. • From MICD-2 to the next 20 cluster nodes, perform a Sync of **Teldir** data. • From MICD-3 to the next 20 cluster nodes, perform a Sync of **Teldir** data. • Repeat until all of the Sync operations are complete. • Disable collect-only mode on all MiVB Multi-instance instances by entering the following RTC shell command:. toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.)	20 minutes, plus 60 minutes for each Sync operation Use each MiVB Multi-instance spreadsheet
6	Merge all **Teldir** data on the MiVB Multi-instance	• Enable collect-only mode on MICD-1 by entering the following RTC shell command:. toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to MICD-2 to MICD-N, perform a Sync of **Teldir** data. • Disable collect-only mode on MICD-1 by entering the following RTC shell command:. toggleMergeOnlySyncOption (Watch the output of the command to make sure the option is disabled or enabled as desired.) • From MICD-1 to MICD-2 to MICD-N, perform a Sync of **Teldir** data. • Monitor and resolve any SDS errors.	40 minutes
7	Perform an SDS Sync of **User** and **Service Hosting** data This step will push the data out to the cluster.	• Ensure that collect-only mode is disabled on all MiVB Multi-instance instances. • From MICD-1 to the first 20 cluster nodes, perform a Sync of **User** and **Service Hostin**g data. • From MICD-2 to the next 20 cluster nodes, perform a Sync of **User** and **Service Hosting** data. • From MICD-3 to the next 20 cluster nodes, perform a Sync of **User** and **Service Hosting** data. • Repeat until all the Sync operations are complete up to MICD-N. • Monitor and resolve any SDS errors.	7 hours for each Sync operation Use each MiVB Multi-instance spreadsheet

STEP	OPERATION	NOTES	ESTIMATED TIME TO COMPLETE
8	Perform an SDS Sync of **Teldir** data This step will push the data out to the cluster.	• Ensure that collect-only mode is disabled on all MiVB Multi-instance instances. • From MICD-1 to the first 20 cluster nodes, perform a Sync of **Teldir** data. • From MICD-2 to the next 20 cluster nodes, perform a Sync of **Teldir** data. • From MICD-3 to the next 20 cluster nodes, perform a Sync of **Teldir** data. • Repeat until all of the Sync operations are complete up to MICD-N.	4 hours for each Sync operation Use each MiVB Multi-instance spreadsheet
9	Perform an SDS Sync of **all** data This step will push the data out to the cluster.	• Ensure that collect-only mode is disabled on all MiVB Multi-instance instances. • From MICD-1 to the first 20 cluster nodes, perform a Full Sync. • From MICD-2 to the next 20 cluster nodes, perform a Full Sync. • From MICD-3 to the next 20 cluster nodes, perform a Full Sync. • Repeat until all of the Sync operations are complete up to MICD-N. • Monitor and resolve any SDS operations.	8 hours for each Sync operation Use each MiVB Multi-instance checklist spreadsheet
10	Remove MiVB Multi-instance from the cluster	• Turn off SDS on each instance of the MiVB Multi-instance. • From one of the non-MiVB Multi-instance cluster nodes, delete all instances of the MiVB Multi-instance. • Monitor and resolve any SDS errors	40 minutes
11	Return to normal operation	• Turn on DBMS check schedule. • Return reboot schedule to normal. • Enable SDS sharing for voice mail boxes and multi-level auto-attendant (if applicable). • Allow resumption of data changes.	

Adding a Classic network element to a migrated network

If you are adding a new network element that is already at MCD 4.0 with RDN Sync Mode, or MCD 4.1 or later, you can add it to your migrated network using the instructions in the *System Data Synchronization Solutions Guide* or the System Administration Tool Online Help.

If you are adding a network element that is still in Classic Mode, use the following procedure.

To add a pre-Release 4.0 network element to a migrated network:

1. Upgrade the network element to MCD Release 4.0 SP4 software.
2. If this is a new network element (no database):
   - After upgrading the element, when you log in to the System Administration Tool for the first time, select **Telephone Directory Synchronization via SDS**, and click **Submit**.
3. If the network element has an existing database:
   a. Back up the database.
   b. On the new node, navigate to the **System Options** form and disable **System Data Synchronization.** Allow at least 30 seconds to pass, and then re-enable **System Data Synchronization** on the new network element.
   c. Run the MIGRATION PRECHECK maintenance command and check all of the local-only numbers found to determine whether they should remain local-only. See Table 2, “MIGRATION PRECHECK error messages,” on page 19 for instructions.
   d. If you made in changes in Step c, back up the database again.
   e. Migrate the database as described in “10. Initiate the Migration” on page 22.
4. Add the new network node to the **Admin Group** on the master node.
5. In the **Network Element Assignment** form, select the new node.
6. To add the new node to the sharing network, click **Start Sharing**.
7. To synchronize the new node with the other nodes in the network, select the new node, and click **Sync**. Start by synchronizing the **User** and **Service Hosting** data.
8. Solve any problems that come up when synchronizing the new node with the network,
9. Back up the new node again.

Appendix A

TROUBLESHOOTING THE MIGRATION

Troubleshooting the migration

Use the information in Table 1 to help solve any issues that may arise during the migration.

Tip: Use the **Form Comparison** form to check for differences between network elements.

Table 1: Troubleshooting symptoms and causes

SYMPTOM	PROBABLE CAUSE	SOLUTION
After you initiate the migration, the following error message appears: "Data migration failed, see error logs. Migration of data to GDM model: End <timestamp>. Result: Fail – check software error logs for failure details."	Migration has failed on the local element.	Investigate the error logs on the failed element, resolve any issues, and then retry the migration from the failed element. To retry the migration, click the **Remigrate Data Distribution** button in the **Shared Forms Configuration** form.
At the end of the migration procedure, you enter the **MIGRATION STATUS** maintenance command. The system response indicates that the migration is still in progress on a remote element.	Communication failure during the migration resulted in the loss of the migration event on the element.	Check for a pending update on the element where you initiated the migration. Retry the pending update. Then synchronize the form data to the newly migrated element. See "SDS Viewing Data Distribution Updates" in the System Administration Tool help help.
When adding a new element to a migrated network, you receive one of the following error messages after you initiate the **Start Sharing** operation: "Synchronization failed. You must migrate this node to the new data model before attempting to join the SDS network." "Synchronization failed. The target for this operation must migrate to the new model first".	You attempted to add a non-migrated element to the migrated network.	Follow the procedure: "Adding a Classic network element to a migrated network" on page 33.
After migrating the network or cluster you are unable to import users from the Import Spreadsheet.	You are attempting to use an old version of the Import Spreadsheet.	Download the latest version of the Import Spreadsheet for the migrated system. See "Obtaining the Import Spreadsheet" in the System Administration Tool help.
The **Telephone Directory Assignment** form is not being updated with entries that are entered at remote elements.	SDS sharing has been disabled for the **Telephone Directory Assignment** form.	In the **Shared Forms Configuration** form, enable sharing for the **Telephone Directory Assignment** form.

SYMPTOM	PROBABLE CAUSE	SOLUTION
At the end of the migration process, you enter the **MIGRATION STATUS** maintenance command. The system response indicates that migration has failed on an element.	A software exception occurred during the migration,. - or - The system (element) reset during the migration.	Retry the migration at the element where the migration failure occurred by clicking the **Remigrate Data Distribution** button in the **Checklist for Migration to RDN Synchronization** form.

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