



# RAIDIX 5.0.1.3 TO RAIDIX 5.1 UPDATE MANUAL

Document version 1.0

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# INTRODUCTION

## Intended Audience

This manual describes the procedure of updating the software RAIDIX 5.0.1.3 to RAIDIX 5.1.


This manual is mandatory for partners of RAIDIX LLC who perform the update of the RAIDIX 5.0.1.3 software.

## Guide Conventions

The Guide uses the typefaces and formatting to specify different names and terms:

Convention	Uses
<b>Bold</b>	GUI controls, option value, minor titles.
<i>Italic</i>	Emphasis, term references, documentation titles, section titles, file paths.
<b>Text color</b>	Instructions below are only for specific situations and configurations.
Monospace	Commands, command utilities, and console-driven text.

Text paragraphs that need your special attention are marked with the following frame:

 *Warning* – binding instructions to guarantee the proper work of the software.

## Contact Us

If you have any comments or suggestions on the improvement of the RAIDIX end-user documentation, send them at [doc.comments@raidix.com](mailto:doc.comments@raidix.com). Specify a document title, a chapter number, and a page. Refer to the specific pages and sections whenever possible.

## REQUIREMENTS AND LIMITATIONS

**!** When updating under workload, after failover, there may be a short interruption to host access. Some services and applications that are using shares may require a restart.

**i** After the update, some drives may get the status Dirty.

**i** After the update, network interfaces with DHCP-assigned IP addresses reset their DHCP flags

To perform the update, follow these requirements and recommendations:

1. Perform the update as the user admin.
2. Perform the update only for the RAIDIX 5.0.1.3.
3. Perform the update in strict accordance with this manual and follow the sequence of the steps.
4. During the update, don't modify any RAIDIX objects.
5. Do not disable the dual-controller mode (DC) until consulting the RAIDIX Support Team.
6. During the update, don't make any changes to the hardware components.
7. The update is not supported for the DC system with manually-enabled Single Mode.
8. In DC system, all RAIDs must have the Online state.
9. The system must have valid license.
10. Both nodes must work correctly.
11. Before the update, make sure that the heartbeat network is up.
12. If you have changed templates in the `/usr/share/raidix/templates/` directory, save them before the update and return them after the update.

## Features


1. The update requires system reinstallation.
2. The update of the DC system is available under the load.
3. The Update can be started from any node.

**i** After the update, the option **Synchronous Writing to Drives** turns on for Generic RAIDs. The option saves data from the RAM write buffer to drives.  
It increases data integrity, but may decrease system performance. You can manually disable the option for your RAIDs if needed (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

# SYSTEM UPDATE THROUGH THE WEB INTERFACE

## System Update in SC

**!** Before you start the update, fulfill the requirements, and review the limitations for the update, which are pointed in the chapter "[Requirements and Limitations](#)".

1. Prepare the system to install the image.
  - 1.1. Save the configuration file `raidixcfg.json`:
    - 1.1.1. Open the **SYSTEM | CONFIGURATION RECOVERY** page.
    - 1.1.2. In the *Current System Configuration* pane, click **Save AS...** and save the current configuration to the system.
    - 1.1.3. In the System Configurations sections, in the line with just saved configuration, click **Download**.
  - 1.2. Save license file(s) from the node:
    - 1.2.1. Open the **SYSTEM | LICENSE** page.
    - 1.2.2. In a line with license, click **:** and select  **Download**.
  - 1.3. If you use QoSmic, save the application signatures:
    - 1.3.1. Open the **HOSTS & INTERFACES | QOSMIC** page.
    - 1.3.2. In the *Application* section, click **Download** for each app.
  - 1.4. If you use Replication, turn it off until the update is complete:

**i** After the update, you should reconfigure Replication. Before turning Replication off, make sure you have info about its configuration settings.


    - 1.4.1. Open the **STORAGE | REPLICATION** page.
    - 1.4.2. In the *Replicated LUN List* section, for each replicated LUN, click **:** and select **Disable Replication**.
    - 1.4.3. In the *Replication Metadata* section, click **Disable Replication Metadata**.
  - 1.5. If you use AD, disconnect the node you are going to update from Active Directory:

**i** After the update, you should reconfigure the connection to Active Directory. Before turning Replication off, make sure you have info about its configuration settings.  
You can see the info on the **NAS | SHARES** page in the **Active Directory** widget.

    - 1.5.1. Open the **NAS | SHARES** page.
    - 1.5.2. Disconnect the node from AD with the **Active Directory** sliding switch.
  - 1.6. Disconnect the drive enclosures from the node.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).
2. Install the system from the `raidix-5.1-*x86_64.iso` image (to learn more, see *RAIDIX 5.1 Software Installation and Configuration Guide*).

After installing the image, log in the system as admin.

 The default password for the user admin in RAIDIX 5.1 is **raidix-era**.

3. Prepare the system to install the migration package.

3.1. Add license file(s) you saved on the step 1.2:

3.1.1. Open the **SYSTEM | LICENSE** page.

3.1.2. Click **Add license file** and select the file you saved at the step 1.2.

3.2. Reconnect the drive enclosures to the node.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).


4. Run the migration:

 Performing the migration may take up to 1 hour.


4.1. Open the **MONITORING | SUPPORT** page.

4.2. In the *Software Version* section, click **Go to the Update Service**.

4.3. In the opened window, select rdx-migrate-5.0.1.3-5.1.rpk.

 *Do not* reboot the system in the process of the system update.


After the update is complete, the system will show the message "Update Completed".

 After the migration package is applied, the password for the admin user will be the same as it was set in RAIDIX 5.0.1.3.

5. If you have disconnected Active Directory, reconnect to it (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

After connecting to AD, reboot the node.

6. Actions after the update.

 If you use SAN, check the visibility of LUNs on the host. If necessary, run Rescan Disks (Disk Management - Action - Rescan Disks) for Windows systems or rescan SCSI host for Linux systems.

6.1. If you have disabled replication, reconfigure it (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

6.2. If you have saved the QoSmic app signatures, re-upload them (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

## System Update in DC

**!** Before you start the update, fulfill the requirements, and review the limitations for the update, which are pointed in the chapter "[Requirements and Limitations](#)".

1. The common preparation of both nodes to install the image.
  - 1.1. Save the configuration file `raidixcfg.json` from the node you are going to update:
    - 1.1.1. Open the **SYSTEM | CONFIGURATION RECOVERY** page.
    - 1.1.2. In the *Current System Configuration* pane, click **Save AS...** and save the current configuration to the system.
    - 1.1.3. In the System Configurations sections, in the line with just saved configuration, click **Download**.
  - 1.2. Save license file(s) from each node:
    - 1.2.1. Open the **SYSTEM | LICENSE** page.
    - 1.2.2. In a line with license, click **:** and select **Download**.
  - 1.3. Make sure each node has actual date and time:

On each node, check out current date and time on the **SYSTEM | TIME SETTINGS** page. If necessary, click **SYNCRONIZE**.
  - 1.4. Make sure the Heartbeat network is up:

On the **SYSTEM | NODES** page, both nodes are shown.
  - 1.5. If you use Replication, turn it off until the update is complete by performing on each node:

**i** After the update, you should reconfigure Replication. Before turning Replication off, make sure you have info about its configuration settings.

- 1.5.1. Open the **STORAGE | REPLICATION** page.
- 1.5.2. In the *Replicated LUN List* section, for each replicated LUN, click **:** and select **Disable Replication**.
- 1.5.3. In the *Replication Metadata* section, click **Disable Replication Metadata**.
- 1.6. If you use Active Directory, you need to memorize your AD connection settings.

You can view the settings through:


- GUI on the **NAS | SHARES** page in the widget **Active Directory**.
- CLI with the command:

```
$ rdcli nas samba show
```


**i** For DC system, after the update, you should reconnect AD obligatory via CLI, so you may find it more convenient to see the settings via CLI.


- 1.7. If you use QoSmic, save the application signatures from the node you are going to update:
  - 1.7.1. Open the **HOSTS & INTERFACES | QOSMIC** page.

- 1.7.2. In the *Application* section, click **Download** for each app.
- 1.8. Turn off target synchronization:

 After the update, you should turn on target synchronization. Before turning the synchronization off, make sure you have info about its configuration settings. You can see the info on the **HOSTS & INTERFACES | ADAPTERS** page by clicking Target Synchronization.


  - 1.8.1. Open **HOSTS & INTERFACES | ADAPTERS**.
  - 1.8.2. Click **Target Synchronization**.
  - 1.8.3. Turn off target synchronization completely.
2. The preparation of the first node to install the image.
  - 2.1. Run manual Failover of all the RAIDs from the node you are going to update:

 If you are updating the node at which all RAIDs are in the “passive” state, Failover for such node isn’t required.


    - 2.1.1. Open the **SYSTEM | NODES** page.
    - 2.1.2. In the line of another node THAT YOU AREN’T UPDATING AT THE MOMENT, click  **Failover**.
  - 2.2. Disconnect the drive enclosures from the node you are going to update.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).
3. Install the system from the `raidix-5.1-*x86_64.iso` image to the node you just have prepared (to learn more, see *RAIDIX 5.1 Software Installation and Configuration Guide*).

After installing the image, log in the system as admin.


 The default password for the user admin in RAIDIX 5.1 is **raidix-era**.
4. Prepare the node you are updating to install the migration package.
  - 4.1. Add license file(s) you saved on the step 1.2:
    - 4.1.1. Open the **SYSTEM | LICENSE** page.
    - 4.1.2. Click **Add license file** and select the file you saved at the step 1.2.
  - 4.2. Reconnect the drive enclosures to the node you are updating.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).
5. Run the migration on the node you are updating:


 Performing the migration may take up to 1 hour.

  - 5.1. Open the **MONITORING | SUPPORT** page.
  - 5.2. In the *Software Version* section, click **Go to the Update Service**.
  - 5.3. In the opened window, select `rdx-migrate-5.0.1.3-5.1.rpk`.




 Do not reboot the system in the process of the system update.

After the update is complete, the system will show the message "Update Completed".

 After the migration package is applied, the password for the admin user will be the same as it was set in RAIDIX 5.0.1.3.

6. Make sure the Heartbeat network is up:

- On the **SYSTEM | NODES** page, both nodes are shown.

 After the first node is updated, RAIDIX web interface might display incorrectly; both **RAID LIST** and **DRIVES** pages might be unavailable.  
Full functionality of the web interface will be restored after updating the second node.

7. If you use AD, connect to AD (use the settings from the step 1.5) через CLI:

```
$ rdcli nas samba modify [--ads {0|1}] [--workgroup  
{<workgroup>|<domain>}] [--realm <domain>] [--user  
<user_that_can_connect>] [--password <user_pass>] [--trusts]  
--force
```

After the connection, reboot the node:

```
$ rdcli system reboot
```

8. If you use SAN, check the visibility of LUNs on the host.

If necessary, run Rescan Disks (Disk Management - Action - Rescan Disks) for Windows systems or rescan SCSI host for Linux systems.

9. Repeat steps 2-8 on the second (non-updated) node.

10. Actions after the both nodes were updated.

10.1. If necessary, perform Failback on any node:

10.1.1. Open the **SYSTEM | NODES** page.

10.1.2. Click **Failback**.

10.2. Enable target synchronization on each node:

10.2.1. Open **HOSTS & INTERFACES | ADAPTERS**.

10.2.2. Click **Target Synchronization**.

10.2.3. Turn on target synchronization.

10.3. If you have disabled replication, reconfigure it on each node (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

10.4. If you have saved the QoSmic app signatures, re-upload them on each node (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

# SYSTEM UPDATE THROUGH THE COMMAND LINE INTERFACE

## System Update in SC

**!** Before you start the update, fulfill the requirements, and review the limitations for the update, which are pointed in the chapter "[Requirements and Limitations](#)".

### 1. Prepare the system to install the image.

#### 1.1. Save the configuration file `raidixcfg.json`:

```
$ scp /var/lib/raidix/raidixcfg.json [<user>@]<host>[:<path>]
```

#### 1.2. Save license file(s) from the node:

You can download the license file(s) through the web interface or the source from which you obtained the licenses for your system.

To download license file(s) through the web interface:

1.2.1. Log in the web interface.

1.2.2. Open the **SYSTEM | LICENSE** page.

1.2.3. In a line with license, click **:** and select  **Download**.

#### 1.3. If you use QoSmic, save the application signatures:

```
$ scp /var/lib/raidix/qosmic/signatures/<app_name>
[<user>@]<host>[:<path>]
```

#### 1.4. If you use Replication, turn it off until the update is complete:

**i** After the update, you should reconfigure Replication. Before turning Replication off, make sure you have info about its configuration settings.

#### 1.4.1. Disable each replicated LUN:

```
$ rdcli replication delete -n <lun_name>
```

#### 1.4.2. Disable a LUN with replication metadata:

```
$ rdcli replication metadata delete -n <meta_lun_name>
```

#### 1.5. If you use AD, disconnect the node you are going to update from Active Directory:

**i** After the update, you should reconfigure the connection to Active Directory. Before turning Replication off, make sure you have info about its configuration settings.

You can see the info by running

```
$ rdcli nas samba show
```

```
$ rdcli nas samba modify -u <adm_user> -p <pass> -a 0
```

1.6. Disconnect the drive enclosures from the node.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).

2. Install the system from the `raidix-5.1-*x86_64.iso` image (to learn more, see *RAIDIX 5.1 Software Installation and Configuration Guide*).

After installing the image, log in the system as admin.

**i** The default password for the user admin in RAIDIX 5.1 is **raidix-era**.

3. Prepare the system to install the migration package.

3.1. Add license file(s) you obtained on the step 1.2:

```
$ scp [<user>@]<host>[:<path_to>]<license> <path>
```

```
$ rdcli system license create --filename <path>
```

3.2. Reconnect the drive enclosures to the node.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).

4. Run the migration:

**i** Performing the migration may take up to 1 hour.

```
$ scp [<user>@]host:[<path>]rdx-migrate-5.0.1.3-5.1.rpk ~/
```

```
$ rdupdate ~/rdx-migrate-5.0.1.3-5.1.rpk
```

**!** *Do not* reboot the system during the update.

After the update is complete, the system will show the message "Update Completed".

**i** After the migration package is applied, the password for the admin user will be the same as it was set in RAIDIX 5.0.1.3.

5. If you have disconnected Active Directory, reconnect to it (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

After connecting to AD, reboot the node.

6. Actions after the update.

**!** If you use SAN, check the visibility of LUNs on the host. If necessary, run Rescan Disks (Disk Management - Action - Rescan Disks) for Windows systems or rescan SCSI host for Linux systems.

- 6.1. If you have disabled replication, reconfigure it (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).
- 6.2. If you have saved the QoSmic app signatures, re-upload them (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

## System Update in DC

**!** Before you start the update, fulfill the requirements, and review the limitations for the update, which are pointed in the chapter "[Requirements and Limitations](#)".

1. The common preparation of both nodes to install the image.

1.1. Save the configuration file `raidixcfg.json` from the node you are going to update:

```
$ scp /var/lib/raidix/raidixcfg.json [<user>@]<host>[:<path>]
```


1.2. Save license file(s) from each node:

You can download the license file(s) through the web interface or the source from which you obtained the licenses for your system.

To download license file(s) through the web interface:

1.2.1. Log in the web interface.

1.2.2. Open the **SYSTEM | LICENSE** page.

1.2.3. In a line with license, click **:** and select  **Download**.

1.3. Make sure each node has actual date and time:

```
$ rdcli param time show
```

1.4. Make sure that the Heartbeat network is up:

```
$ rdcli dc show
```

The *heartbeat* value must be *1*.

1.5. If you use Replication, turn it off until the update is complete on each node:

**i** After the update, you should reconfigure Replication. Before turning Replication off, make sure you have info about its configuration settings.

1.5.1. Disable each replicated LUN:

```
$ rdcli replication delete -n <lun_name>
```

1.5.2. Disable a LUN with replication metadata:

```
$ rdcli replication metadata delete -n <meta_lun_name>
```

1.6. If you use Active Directory, you need to remember your AD connection settings. You can view the settings through the CLI with the command:

```
$ rdcli nas samba show
```

1.7. If you use QoSmic, save the application signatures from the node you are going to update:

```
$ scp /var/lib/raidix/qosmic/signatures/<app_name>
[<user>@]<host>[:<path>]
```

### 1.8. Turn off target synchronization:

**i** After the update, you should turn on target synchronization. Before turning the synchronization off, make sure you have info about its configuration settings.

You can see the info by running

```
$ rdcli dc show
```

```
$ rdcli dc modify -targets ""
```

## 2. The preparation of the first node to install the image.

### 2.1. Run manual Failover of all the RAIDs from the node you are going to update:

**i** If you are updating the node at which all RAIDs are in the "passive" state, Failover for such node isn't required.

If you try to Failover, the system shows the message "There are no RAIDs to failover".

```
$ rdcli dc failover --remote
```

### 2.2. Disconnect the drive enclosures from the node you are going to update.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).

## 3. Install the system from the raidix-5.1-\*x86\_64.iso image to the node you just have prepared (to learn more, see *RAIDIX 5.1 Software Installation and Configuration Guide*).

After installing the image, log in the system as admin.

**i** The default password for the user admin in RAIDIX 5.1 is **raidix-era**.

## 4. Prepare the node you are updating to install the migration package.

### 4.1. Add the license file(s) you obtained on the step 1.2:

```
$ scp [<user>@]<host>[:<path_to>]<license> <path>
```

```
$ rdcli system license create --filename <path>
```

### 4.2. Reconnect the drive enclosures to the node you are updating.

See more in [Appendix A. Disconnecting and returning the drives with RAIDs](#).

## 5. Run the migration on the node you are updating:

**i** Performing the migration may take up to 1 hour.

```
$ scp [<user>@]host:[<path>]rdx-migrate-5.0.1.3-5.1.rpk ~/
```

```
$ rdupdate ~/rdx-migrate-5.0.1.3-5.1.rpk
```



*Do not* reboot the system in the process of the system update.

After the update is complete, the system will show the message “Update Completed”.



After the migration package is applied, the password for the admin user will be the same as it was set in RAIDIX 5.0.1.3.

6. Make sure the Heartbeat network is up:

```
$ rdcli dc show
```

The value of the *heartbeat* parameter must be *1*.

7. If you use AD, connect to AD (use the settings from the step 1.5) через CLI:

```
$ rdcli nas samba modify [--ads {0|1}] [--workgroup  
{<workgroup>|<domain>}] [--realm <domain>] [--user  
<user_that_can_connect>] [--password <user_pass>] [--trusts]  
--force
```

After the connection, reboot the node:

```
$ rdcli system reboot
```

8. If you use SAN, check the visibility of LUNs on the host.

If necessary, run Rescan Disks (Disk Management - Action - Rescan Disks) for Windows systems or rescan SCSI host for Linux systems.

9. Repeat steps 2-8 on the second (non-updated) node.

10. Actions after the update of both nodes.

- 10.1. If necessary, on a required node, perform Failback:

```
$ rdcli dc failback
```

- 10.2. Enable target synchronization by running on each node:

```
$ rdcli dc modify -t <targets> [-a <iscsi_ip>]
```

where <targets> are:

- for iSCSI: **iscsi** (also requires the *-a* parameter with the value of the remote IP address for synchronization);
- for InfiniBand: one or more comma-separated GUID values;
- for SAS: one or more comma-separated SAS address values.

- 10.3. If you have disabled replication, reconfigure it for each node (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).

- 10.4. If you have saved the QoSmic app signatures, re-upload them on each node (to learn more, see the document *RAIDIX 5.1 Administrator's Guide*).



## APPENDIX A. DISCONNECTING AND RETURNING THE DRIVES WITH RAIDS

During the upgrade, before installing from the RAIDIX image, in order to avoid data loss, we recommend leaving only the system drive (or drives in case of mirroring) on the system, disconnecting drive enclosures that have RAIDs.

### Specifics

- There is no need to stop the RAIDIX services or shutdown the node before disconnecting the disks.
- If the drives are connected via cable and/or the enclosure, physically disconnect the cables from the system.
- If disks cannot be physically disconnected, disconnect them programmatically via `managesas`.

The `managesas` utility only works for Broadcom (LSI) HBAs.

### The example of using `managesas`



In this example, the drive enclosure is connected via the SAS2008 target.

1. Run the utility:

```
$ managesas
```

2. Enter the index of the target:

---

```
LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013
```

```
2 MPT Ports found
```

	Port Name	Chip Vendor/Type/Rev	MPT Rev	Firmware Rev	IOC
1.	ioc0	LSI Logic SAS2008 B1	200	04000000	0
2.	ioc1	LSI Logic 00d1 02	206	03000400	0

```
Select a device: [1-2 or 0 to quit] 1
```

---

3. Enter the option **13**:

---

```
Main menu, select an option: [1-99 or e/p/w or 0 to quit] 13
```

---

4. Disabling and enabling of a phy:

- To disable a phy, set the *Link* value to **0** (Disabled) and leave the other values unchanged:

---

SATA Maximum Queue Depth: [0 to 255, default is 32]  
SAS Max Queue Depth, Narrow: [0 to 65535, default is 0]  
SAS Max Queue Depth, Wide: [0 to 65535, default is 0]  
Device Missing Report Delay: [0 to 2047, default is 0]  
Device Missing I/O Delay: [0 to 255, default is 0]

PhyNum	Link	MinRate	MaxRate	Initiator	Target	Port
0	Enabled	1.5	6.0	Enabled	Disabled	Auto
1	Enabled	1.5	6.0	Enabled	Disabled	Auto
2	Enabled	1.5	6.0	Enabled	Disabled	Auto
3	Enabled	1.5	6.0	Enabled	Disabled	Auto
4	Enabled	1.5	6.0	Enabled	Disabled	Auto
5	Enabled	1.5	6.0	Enabled	Disabled	Auto
6	Enabled	1.5	6.0	Enabled	Disabled	Auto
7	Enabled	1.5	6.0	Enabled	Disabled	Auto

Select a Phy: [0-7, 8=AllPhys, RETURN to quit] 5  
Link: [0=Disabled, 1=Enabled, default is 1] 0

---

- To enable a phy, set the *Link* value to **1** (Enable) in the same way as for the disabling.

5. Return to the main menu and reset the target by the option **99**:

---

.  
. .  
. . .  
Select a Phy: [0-7, 8=AllPhys, RETURN to quit]  
  
Main menu, select an option: [1-99 or e/p/w or 0 to quit] 99  
Resetting port...

---