A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000 Assistant/Manager

Appliance Management

Administrator Documentation
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1 Overview

The Appliance Management in OpenScape 4000 Assistant currently provides an interface for the **RISO (Recovery ISO) image** creation. The RISO image is a system level backup and its purpose is to recover the system in case of following events:

- After a **software "disaster"**
- After a **hardware "disaster"** followed by the hardware replacement

RISO can back up every appliance of a given OpenScape 4000 system, including host nodes, Quorum, Standalone/Survivable/Integrated Softgate and AP-Emergency (APE).

The backup creation process can be initiated and controlled centrally from the Appliance Management GUI in OpenScape 4000 Assistant. The process takes place during the normal runtime of the system and does not affect its operation.

The RISO creation can be triggered manually or scheduled and the resultant images are stored on the local hard disk, USB stick or the SFTP server. The image contains a complete OpenScape 4000 software installation, including the patch level and all configuration data that were active at the time of generation of the RISO image.

The recovery process from the RISO image is identical to a fresh installation: it formats the hard disk, reinstalls and configures the whole system.

The RISO procedure can be summarized in following steps (Figure 1):

1) **Backup** of all data and creation of a RISO image locally on the **hard disk** (step 1, Figure 1).

   NOTICE: In case RISO backup on USB is selected, only one USB device should be connected.

   Optional step: Writing the RISO image onto the **USB stick** (step 2, Figure 1).

   Optional step: Transferring the RISO image onto the **SFTP server** (step 3, Figure 1).

2) **Reinstallation** of data from the RISO image on the Hardware appliance with a failure (step 4. Figure 1).

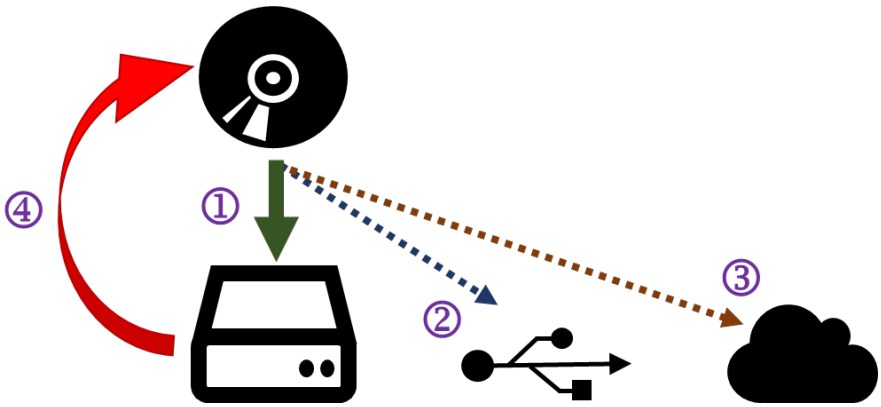


Figure 1: Recovery ISO image feature: Process summary

The Appliance Management GUI requests are handled by a controller located on the Linux Host Platform (PLT). This controller also arranges the RISO image creation scheduling. It is represented by the resource `rsc4k_risocontroller`

and it runs only on an primary Node.

Similarly, there is an Inventory service located on Linux Host Platform. This Inventory is used by the controller and provides the appliances overview (see Appliances tab). It is represented by the resource `rsc4k_inventory`

and it runs only on an primary Node.

1.1 General conditions

The following conditions must be met in order for the RISO image feature to work properly:

General conditions

- **Supported Hardware (including VMware):** All
- **Supported Software versions:** V7R2 and higher
- **Supported OpenScape 4000 deployments:** All
- **Supported Internet browser for GUI:** Internet Explorer 11 and higher

1.2 Functionality

Recovery ISO image **creation**:

- Can be **canceled** in predefined checkpoints of the process in order to arrange a particular housekeeping (see Cancel Recovery ISO image creation).

See also:

Create Recovery ISO image

Cancel Recovery ISO image creation

Recovery ISO image **archiving**:

- The **Hard Disk** archive: only the last successful RISO image is kept. A new image is created in addition to the old one and if the process is successful, the old RISO image is deleted.
- The **SFTP** archive: the number of stored RISO images per appliance can be configured. This can be done via *Maximal number of images per appliance* (see SFTP Archive configuration for more details).

  For example, if there are five appliances on the system and the *Maximal number of images per appliance* is set up to two, there will be ten RISO images in total created on the SFTP archive, two images for every appliance.

  If the deletion of an old ISO image is needed during the transfer, the appliance will only remove its own images. The images of other appliances will remain intact.

See also:

Create a scheduled event for Recovery ISO image creation

Update scheduled event

SFTP Archive configuration

Recovery ISO image **reinstallation**:

is supported on the same Hardware platform where the RISO image was created.

- **Manual:** The user confirms the reinstallation by unplugging or plugging the USB stick during the boot phase.
- **Unattended**: The user starts a RISO restore script which triggers the reinstallation from a USB stick plugged onto the system.

See also:

Reinstallation of an appliance from Recovery ISO image

Recovery ISO image **Log files**:

The log files connected to the Appliance Management and RISO image feature can be downloaded from:

1) Appliance Management Settings window
2) Portal
3) History tab in Appliance Management

See also:

Log files

2 Start up

To start up the Appliance Management GUI, go to

OpenScape 4000 Assistant --> Software Management --> Appliance Management .

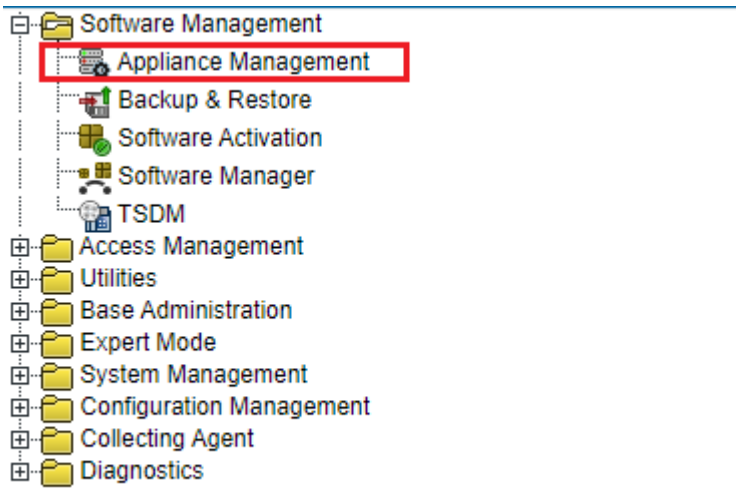


Figure 2: Appliance Management in OpenScape 4000 Assistant

2.1 Appliance Management layout

When the Appliance Management is fully loaded, the toast message **"Page content was successfully loaded"** will appear in the upper right corner (step 1, Figure 3).

Under the toast message, you can see the **connection status** between the web application GUI (browser) and the RISO controller on the PLT (step 2, Figure 3).

Possible status:

- **Online**: the connection is established
- **Connecting...**: the connection is being established
- **Offline**: the connection is not established

The Appliance Mangement GUI consists of the following elements (Figure 3):

1) Tabs (Figure 3, area marked with the orange rectangle):

- Appliances tab
- Schedules tab
- History tab

2) **Tab layout** (Figure 3, area marked with the green rectangle):

   The content shown in the Tab layout depends on the preselected Tab. By default, the Appliances tab and its layout are displayed.

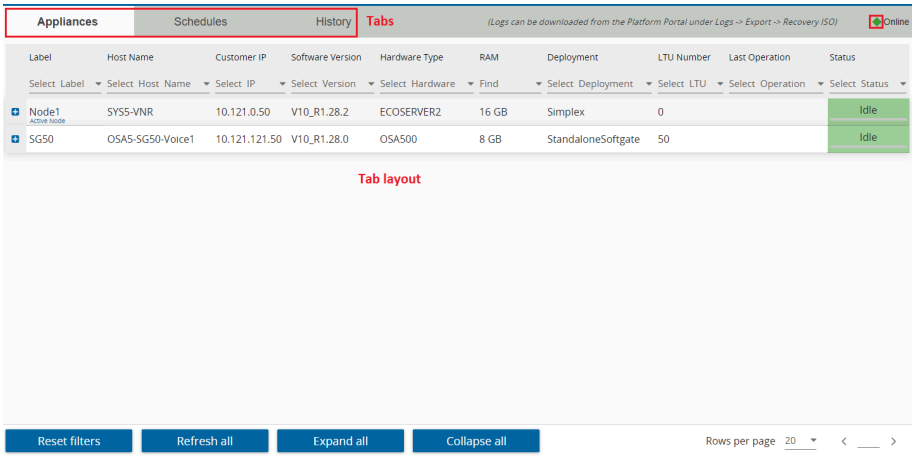


Figure 3: Appliance Management GUI

3) **Functional icons** (details on Figure 4):

- **Settings** (icon 1, Figure 4)

  Left mouse click on this icon allows you to display the Settings window, where you can:

  – Set up the SFTP Archive configuration
  – Download the Appliance Management GUI log files

- **Connection status** **(icon 2, Figure 4)**

- **Show start page** (icon 3, Figure 4)

  Left mouse click on this icon will return you back to the OpenScape 4000 Assistant.

- **Log off** **(icon 4, Figure 4)**

  Left mouse click on this icon will log you off of the session.

Figure 4: Appliance Management GUI: Functional icons

3 Appliances tab

The Appliances tab displays an overview of all appliances that are present on the system.

3.1 Appliances tab layout

The Appliances tab layout consists of four main elements (Figure 5):

1) Filters(Figure 5, area marked with an orange rectangle)
2) List of appliances(Figure 5, area marked with a green rectangle)
3) Functional buttons(Figure 5, area marked with a purple rectangle)
4) Page navigator (Figure 5, area marked with a brown rectangle)

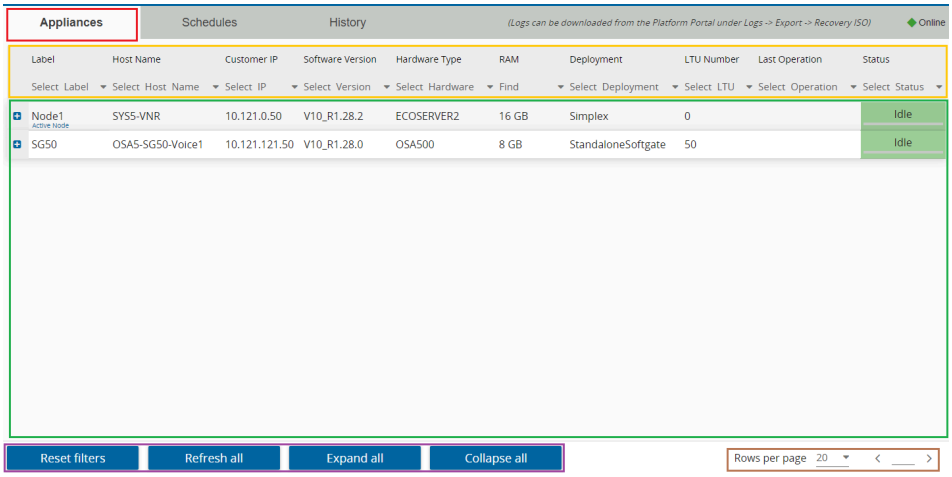


Figure 5: Appliances tab layout

3.1.1 Filters

The list of appliances can be sorted by clicking on headers of the individual columns. The symbol of an arrow next to the selected heading indicates, according to which column are the rows sorted (Figure 6).

The default setting is to sort the appliances according to the **Label**.

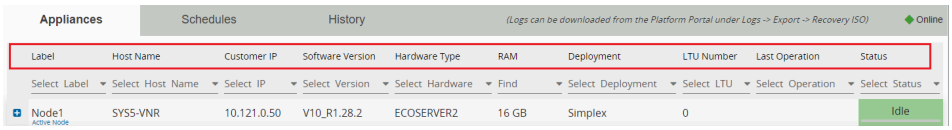


Figure 6: Appliances tab: Filters

There is a second level of filters you can use to restrict your selection (Figure 7). This is useful in cases you are interested solely in certain data, for example you want to display information related to Standalone Softgate only.

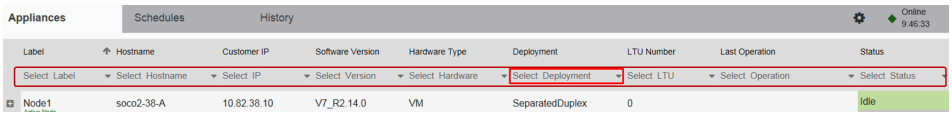


Figure 7: Appliance tab: Restricting Filters

Multiple selection of items is also possible (Figure 8):

1) Hold the **Ctrl key** and select the items of the interest by **left mouse** click.
2) When you release the key, the required information will be filtered out.

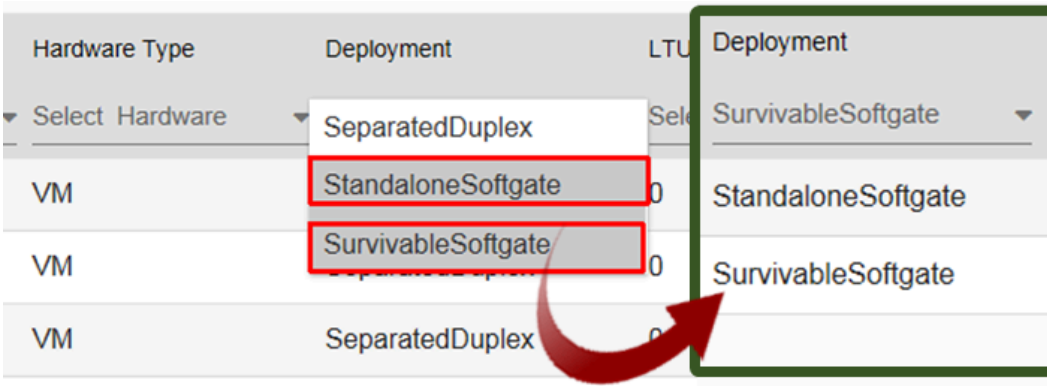


Figure 8: Appliance tab: Multiple filtering

Filtering parameters

For every appliance, the following filtering parameters are available:

- **Label** - a brief identifier of the appliance

  Possible values:

  – Node1
  – Node2
  – Quorum
  – SG<LTU> (Standalone Softgate)
  – SurvSG<LTU> (Survivable Softgate)
  – APE<LTU> (AP-Emergency)

  For Simplex and Quorum also:

  – Integrated Softgate (for example: Node1 + SG<LTU>, Quorum<LTU>
- **Hostname**
- **Customer IP**
- **Software Version**
- **Hardware Type**

  Possible values:

  – OSA500
  – ECOSERVER
  – VM (Virtual Machine)
  – SERVER
  – BRANCH

- **Deployment**

  Possible values:

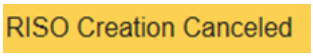
  – Simplex
  – Duplex
  – Separated Duplex
  – Standalone Softgate
  – Survivable Softgate
  – APE
  – RG8350/RG8300
- **LTU Number**
- **Last Operation** - displays the result of the last operation, for example: RISO Creation Successful.

  Possible values:

  – RISO Creation Successful

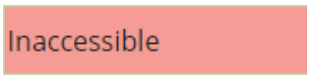
  – RISO Creation Warning

  – RISO Creation Failed

  – RISO Creation Canceled 

- **Status -** combines two kinds of information: Appliance accessibility and Currently running operation. If there is an operation running, the progress bar is displayed in the Status box (see Figure 18, in the middle).

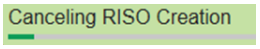
  Possible values:

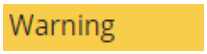
  – Inaccessible (appliance not accessible) 

  – Idle (no operation runs)

  – Starting RISO creation

  – Creating RISO

  – Canceling RISO creation 

  – Warning 

  The explanatory message for the Warning status can be found in the expanded view in the Basic Information box (example on Figure 9):

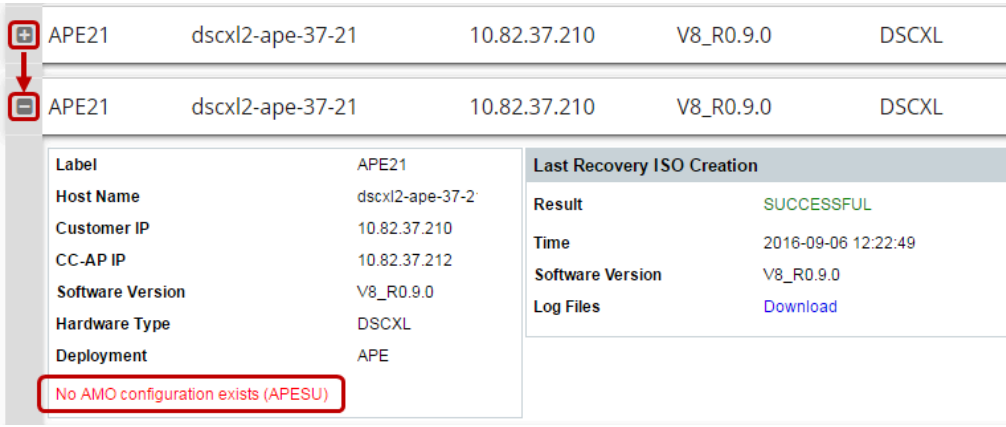


Figure 9: Warning Status: Explanatory message

Possible values:

– No AMO configuration exists (UCSU/APRT)
No AMO configuration exists (UCSU/APRT)

– No AMO configuration exists (APESU)
No AMO configuration exists (APESU)

– No AMO configuration exists (APESU)
No AMO configuration exists (UCSU/APRT)
No AMO configuration exists (APESU)
No AMO configuration exists (UCSU/APRT)

Troubleshooting note:

When encountering the "Warning" status, the user has to complete the configuration on RMX side with required AMOs: UCSU, APRT or APESU.

NOTICE:

For **Standalone Softgate**, **APE** and **Survivable Softgate** deployments, the Warning status prevents starting the Recovery ISO Creation process by making the button "*Create Recovery ISO*" unavailable.

For **Simplex with Integrated Softgate** and **Quorum with Integrated Softgate** deployments, the Recovery ISO Creation is not prevented by Warning status.

3.1.2 List of appliances

The list of appliances is generated from the Inventory server, which is running on Linux Platform of the active Node. Inventory server reads basic overview from RMX DB (this includes only IPDA IPs). Other information (such as Customer IP, Deployment or Hardware Type) are uploaded by appliances themselves when they connect to the Inventory server.

The appliances are listed in rows with Node1, Node2 and Quorum on the top of the list (Figure 10).

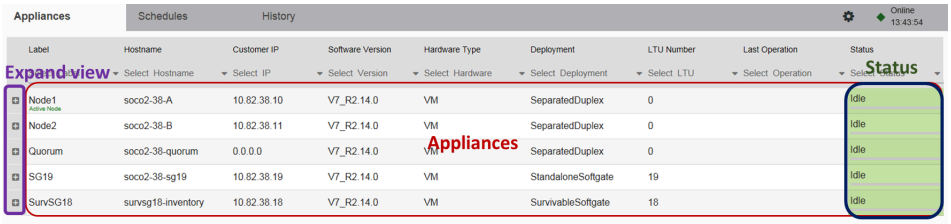


Figure 10: Appliances tab: List of appliances

Expand or collapse the view

Every row can be expanded by clicking on the plus sign at left in order to show the **appliance details**. To hide the details again, click the minus sign (Figure 11).

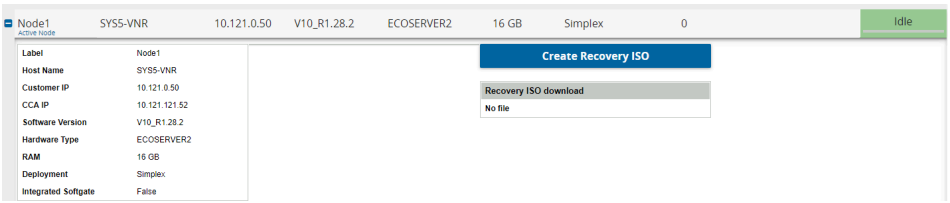


Figure 11: Appliances tab: Expand/collapse an appliance row

Display the appliance details

The detailed information about an appliance can be seen in extended view after expanding the row.

The extended view is divided into four boxes (Figure 12):

1) **Basic Information** (first box from the left):

   Includes details about the selected appliance.

2) **Status information** (second box from the left):

   Provides details about the last operation and a next scheduled event.

3) **Operation buttons** (third box from the left):

   Contains buttons for starting an operation. Currently, there is the Create RISO button only.

4) **Last event information** (fourth box from the left):

   Provides details about an event currently running or just completed. If the Create RISO button is selected then this box offers additional settings for the given operation (see the chapter: Create Recovery ISO image).

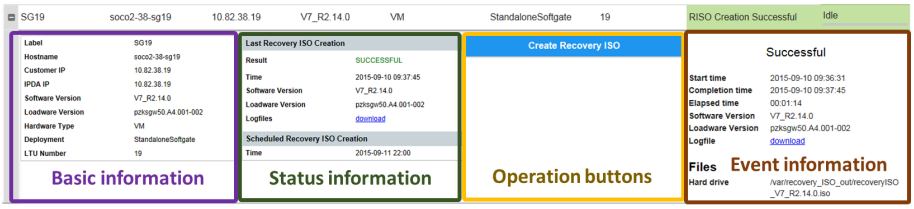


Figure 12: Appliances tab: Appliance displayed details

3.1.3 Functional buttons

There are four functional buttons on the Appliances tab (Figure 13):

- **Reset filters**
- **Refresh all**
- **Expand all**
- **Collapse all**

Figure 13: Appliances tab: Functional buttons

Sorting and filtering can be reset by clicking **Reset filters**.

The appliance list is automatically refreshed every 60 seconds. However, the immediate refresh can be enforced by clicking **Refresh all**.

All rows can be expanded by clicking **Expand all** and collapsed by clicking **Collapse all**.

3.1.4 Page navigator

The Page navigator allows you to display the desired **number of items per page**. The default value is to show **twenty rows** per page.

If you want to **change** the number of items displayed (Figure 14):

- Left mouse click on the **arrow** next to the *Rows per page* number to open a menu.

- Left mouse click to **select the value**. The number of items will be updated according to your selection automatically.

  Possible options:

  – 5
  – 10
  – 20
  – 50
  – 75
  – 100

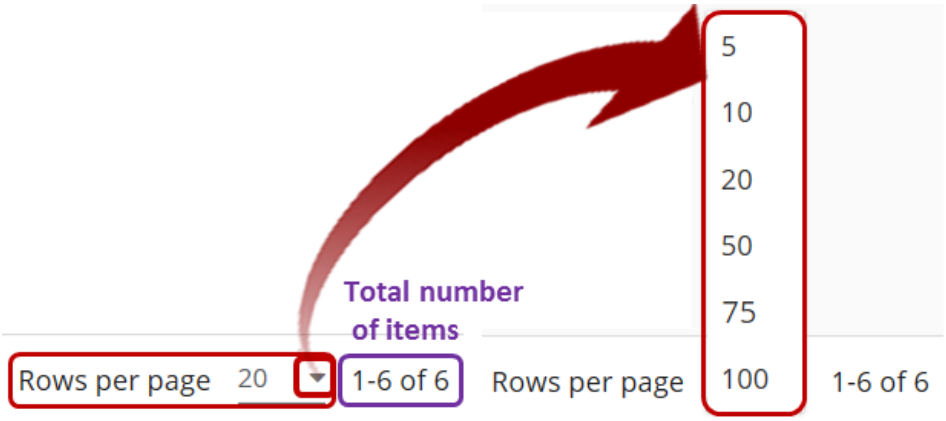


Figure 14: Appliances tab: Page navigator

Alternatively, you can toggle between the pages by typing directly the number of the page you want to display (Figure 15).

NOTICE: This option is available only if the number of items displayed on the page exceeds the *Rows per page* value.

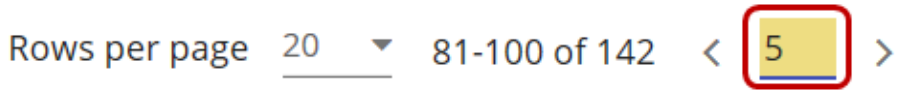


Figure 15: Appliances tab: Page navigator - page number

3.2 Create Recovery ISO image

In order to create a RISO image (Figure 16):

1) **Expand the row** of an appliance where the RISO image will be created (Figure 16; step 1).
2) In the Operation buttons box, click **Create Recovery ISO** (Figure 16; step 2). The Additional archives options will be displayed in the Last event information box.

NOTICE: For Standalone Softgate, APE and Survivable Softgate deployments: If the button "Create Recovery ISO" is **NOT available**, this is caused by Warning status which

prevents starting the Recovery ISO Creation process. For more information about Warning Status, see page 16.

3) Select the relevant archive checkbox(es) to write the RISO image also on (Figure 16; step 3):
   - USB stick
   - SFTP server

   NOTICE: The RISO image is **always** created and stored locally on the Hard disk. For multi-node configurations, (duplex/GSD) RISO backup must be generated for each node.

4) When done, click **Create** (Figure 16; step 4).

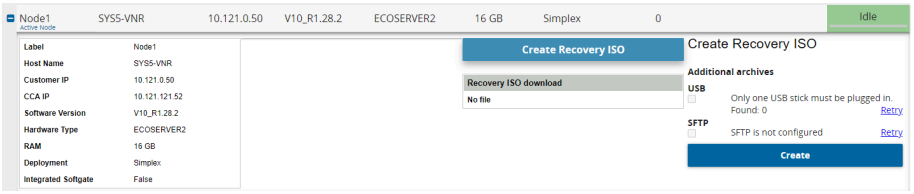


Figure 16: Appliances tab: Create Recovery ISO image

5) The system will ask you to confirm the action. Click **Yes** on the Create RISO popup message (Figure 17).

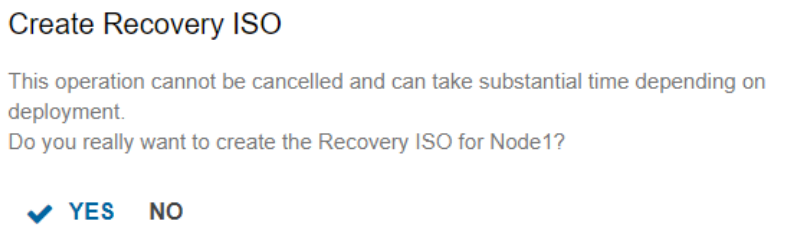


Figure 17: Appliances tab: Create Recovery ISO image: confirm

6) The creation of the RISO image will start. You can watch the progress either in the Last event information box, or in the Status box of the appliance if the Last event information box is collapsed.

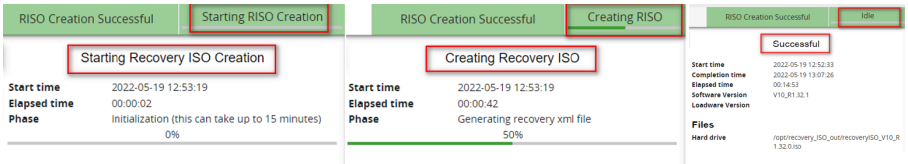


Figure 18: Appliances tab: Create Recovery ISO image: progress

7) The process is finished when the Last event information box displays the message "Successful" and the Status box displays "Idle" (Figure 18).

3.2.1 Additional archives check

Before the RISO image is created, there is a brief check of additional archives availability. This check consists of two steps:

- Detection

- Testing

Procedure:

1) When the *Create Recovery ISO* button is selected, a brief **detection** of both, the USB Stick and SFTP server status is started.
   - For the **USB Stick** the test detects whether there is only one USB stick plugged in the system.
   - For the **SFTP server** the test detects whether a SFTP configuration is available.

   NOTICE: Both checkboxes are disabled by default (greyed out, Figure 19).

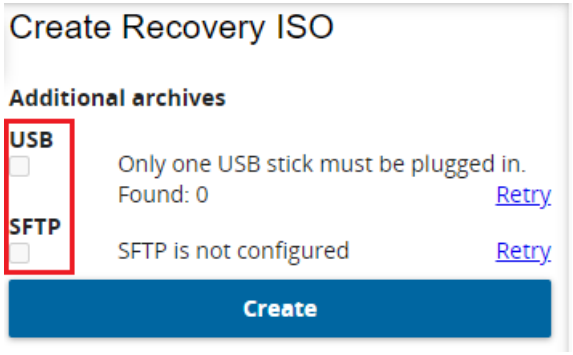


Figure 19: Appliances tab: Additional archives - Default state

If the **result** of the detection is **False**, the relevant checkbox remains disabled and cannot be selected until the cause of the failure is removed (Figure 20). Next to the checkbox of the respective archive, the error message is displayed together with the **Retry** link.

If the result is **True**, the checkbox will be enabled.

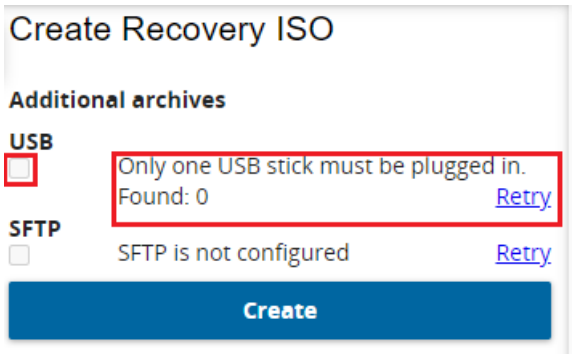


Figure 20: Appliances tab: Additional archives - Detection failed example

2) When the user selects one or both checkboxes, the **test** will start. While the test is running, the spinner is displayed next to each archive.
   - For the **USB Stick** the test checks whether it is possible to write to the USB stick and whether its capacity is sufficient.
   - For the **SFTP server** the test checks the IP address, User name and Password and the given Path where the RISO image should be stored. These settings can be entered in Settings window. Finally, the test also

checks the ability to write the ISO image on the SFTP server by creating and deleting a test file.

If the test **fails**, the error message describing the cause of failure is displayed next to the respective checkbox together with the **Retry** link (Figure 21).

Figure 21: Appliancecs tab: Additional archives - Test failed example

For **USB Stick**:

Possible failure messages:

- USB stick is not writable
- Insufficient capacity of USB stick - at least 8GB needed
- Appliance inaccessible
- No valid test result from appliance
- Aborted due to timeout

For the **SFTP server**:

Possible failure messages:

- No connectivity to SFTP server
- SFTP service unreachable
- Cannot login to SFTP server: wrong user or password
- Directory does not exist on SFTP server
- Cannot write to directory on SFTP server
- Not enough space on SFTP server
- Appliance inaccessible
- No valid test result from appliance
- Aborted due to timeout

3.2.2 RISO Download via Web

To avoid an additional SFTP connection, the RISO images stored on every appliance can be downloaded via Web.

The feature is supported by the Assistant Appliance Management and consists of three parts:

- The possibility to download the RISO image (if it exists).
- The display of checksum (using a Sha256 string).
- Mutual exclusion of the interface between Create Recovery ISO and Download Recovery ISO.

Recovery ISO download

The **Recovery ISO download** area is located under the **Create Recovery ISO** button and it displays information regarding the RISO file (if it exists).

The information displayed within this section can be:

- **No file**: no RISO image exists on the current appliance.

Figure 22: No RISO file

- **RISO file and a Download button**: a RISO image exists on the current appliance and can be downloaded.

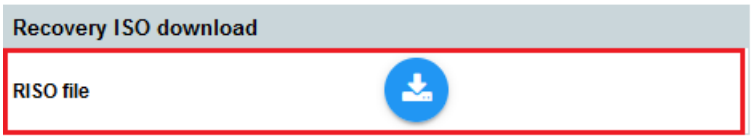


Figure 23: RISO file

By pressing the Download button, the RISO image download begins through a redirection to a new web page, using the native download mechanism of the used browser. The new generated link is temporary and it is available and can be used to initiate and perform the download for approximately two minutes.

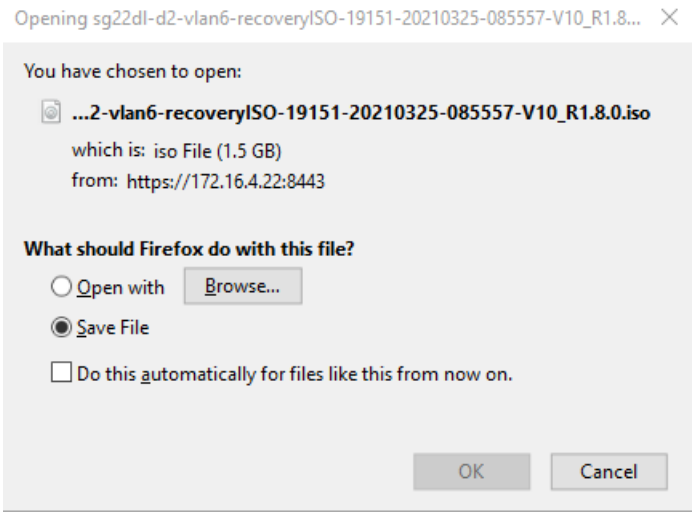


Figure 24: Redirection to a new Web page for RISO image download

- **RISO file and a Download spinner**

  The Download spinner is displayed

  – During the download process.
  – For approximately two minutes once the download is completed, paused, broken, or canceled by user.

  After about two minutes of inactivity, the download link becomes inactive and the Download button is displayed again to start a new download.

Figure 25: Download spinner

Checksum / Sha256

The checksum information is displayed when hovering the mouse cursor over the Download button.

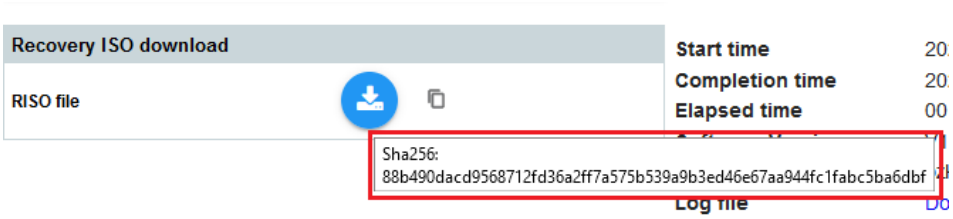


Figure 26: Checksum information

The checksum information can be saved using the **Copy checksum to clipboard** button.

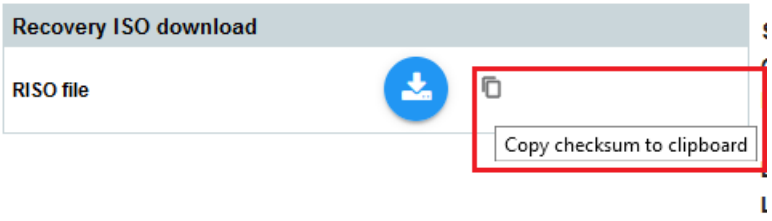


Figure 27: Copy checksum to clipboard

Mutual exclusion mechanism

A mutual exclusion mechanism is applied to the interface to avoid backend collisions.

If the creation of a Recovery ISO file is in progress, there is no possibility to download the Recovery ISO file, even if the RISO file exists on the server for some time.

Also, if a Recovery ISO download is in progress, the user is alerted and it is possible to Create another Recovery ISO file only after the download has finished.

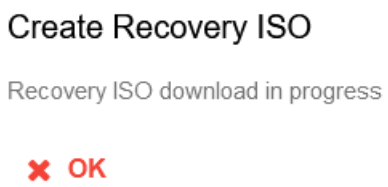


Figure 28: Recovery ISO download is in progress

4 Schedules tab

The Schedules tab allows user to schedule automatic events for the present appliances.

4.1 Schedules tab layout

The Schedules tab layout consists of three main elements (Figure 24):

1) Filters(Figure 24, area marked with an orange rectangle)
2) List of events (Figure 24, area marked with a green rectangle)
3) Functional buttons(Figure 24, area marked with a purple rectangle)
4) Page navigator (Figure 24, area marked with a purple rectangle)

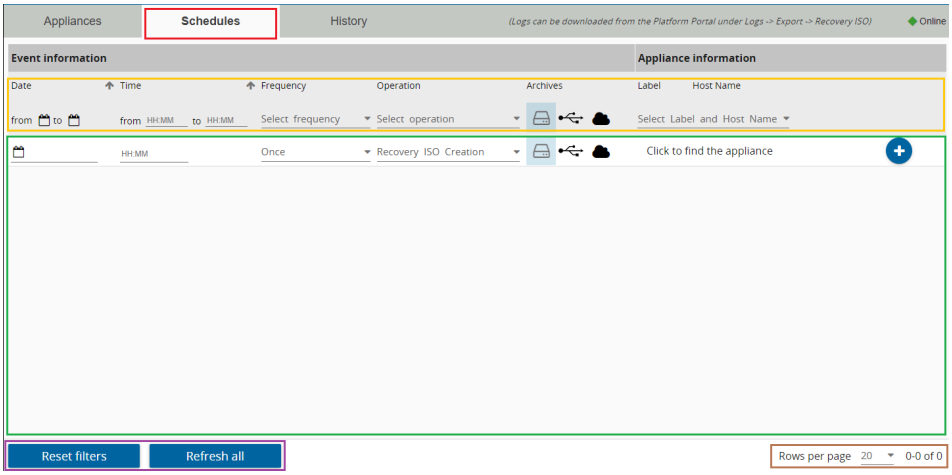


Figure 29: Schedules tab layout

4.1.1 Filters

The list of scheduled events can be sorted by clicking on headers of the individual columns. The symbol of an arrow next to the selected heading indicates, according to which column are the rows sorted (Figure 25).

The default setting is to sort the operations according to the **nearest event occurrence**.

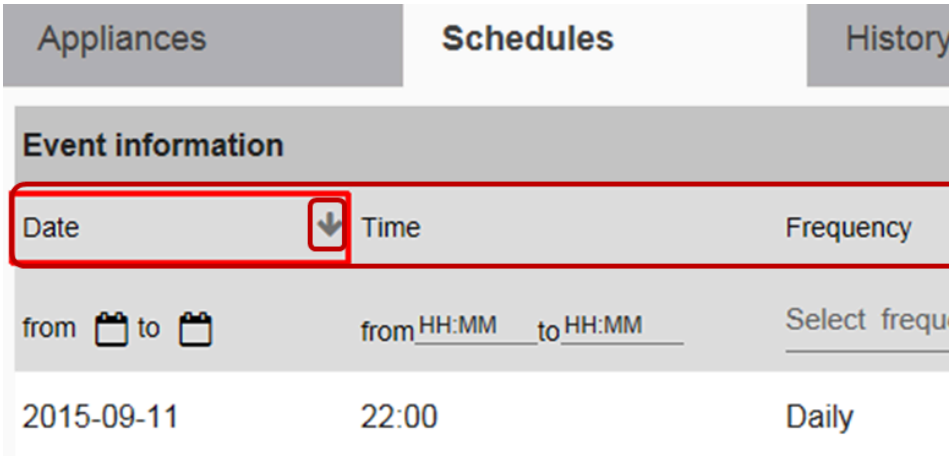


Figure 30: Schedules tab: Filters

There is a second level of the filters you can use to restrict your selection (Figure 26). This is useful in cases you are interested solely in certain data, for example you want to display information related to frequency only.

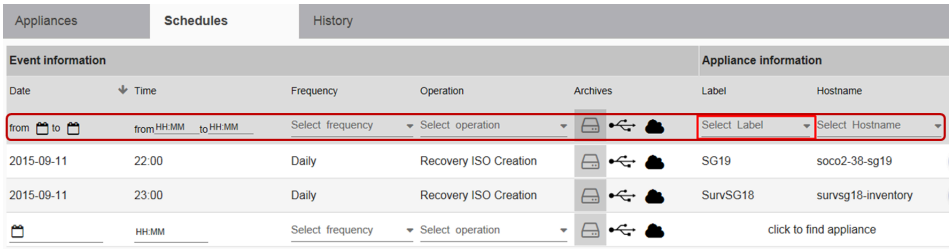


Figure 31: Schedules tab: Restricting Filters

Multiple selection of items is also possible:

1) Hold the **Ctrl key** and select the items of the interest by **left mouse** click.
2) When you release the key, the required information will be filtered out.

Filtering parameters

For every scheduled event, following filtering parameters are available (Figure 27):

- **Date** - shows the date of the nearest event occurrence. You can enter an interval *From - To*.

  For example. on *2015-09-10 (Thursday)*.
- **Time** - displays the time of the nearest event occurrence. You can enter an interval *From - To*.

  For example: at *22:00*.

- **Frequency** - informs how often the event will be executed:
  - `Once`: the event will be executed only once and then it will disappear from the list.

    For example, only on *2015-09-10* and no more.
  - `Daily`: the event will be executed every day.

    For example, on *2015-09-10, 2015-09-11, 2015-09-12...*
  - `Every weekday`: the event will be executed on every Monday, Tuesday, Wednesday, Thursday and Friday.
  - `Weekly`: the event will be executed only on a certain day of every week.

    For example, on every Thursday: *2015-09-10 (Th), 2015-09-17 (Th). 2015-09-24 (Th)...*
  - `Monthly date`: the event will be executed only on a specific date of every month.

    For example, on the tenth day of the month: *2015-09-10, 2015-10-10, 2015-11-10...*
  - `Monthly day`: the event will be executed only on a certain date of the month.

    For example, on the second Thursday of the month: *2015-09-10, 2015-10-08, 2015-11-12...*
  - `Yearly`: the event will be executed only on a designated date every year.

    For example, only on *2015-03-10, 2016-09-10, 2017-09-10...*
- **Operation** - type of operation. Currently, only RISO Creation is possible
- **Archives** - type of archive where the RISO image will be stored

  Possible options:
  - Hard disk (always selected)

  - USB stick

  - SFTP server

- **Label** - a brief identifier of the appliance (see the Label column in the Filtering parameters on the Appliances tab)
- **Hostname**

Figure 32: Schedules tab: Filtering parameters

4.1.2 List of events

The scheduled events are listed in rows with the nearest event occurrence on the top of the list (Figure 28). The bottommost row always serves for adding a

new scheduled event (see Creating a new scheduled event) and therefore, has no parameters filled in.

Figure 33: Schedules tab: List of events

Functional icons

For every scheduled event row, the following functional icons are available (Figure 29):

1) **Upload**: store the edited changes
2) **Cancel changes**: discard the changes
3) **Copy**: clone the event
4) **Remove**: delete the event completely

The bottommost event row has only one functional icon:

5) **Add: add new event**

Figure 34: Schedules tab: Functional icons

4.1.3 Functional buttons

There are two functional buttons on the Schedules tab (Figure 30):

- **Reset filters**
- **Refresh all**

Figure 35: Schedules tab: Functional buttons

Sorting and filtering can be reset by clicking **Reset filters**.

The event list is automatically refreshed only when the view is switched to the Schedules tab. However, the immediate refresh can be enforced by clicking **Refresh all**.

4.1.4 Page navigator

The Page navigator allows you to display the desired **number of items per page**. The default value is to show **twenty rows** per page.

If you want to **change** the number of items displayed (Figure 31):

1) **Left mouse click** on the arrow next to the *Rows per page* number to open a menu.

2) Left mouse click to **select the value**. The number of items will be updated according to your selection automatically.

Possible options:

- 5
- 10
- 20
- 50
- 75
- 100

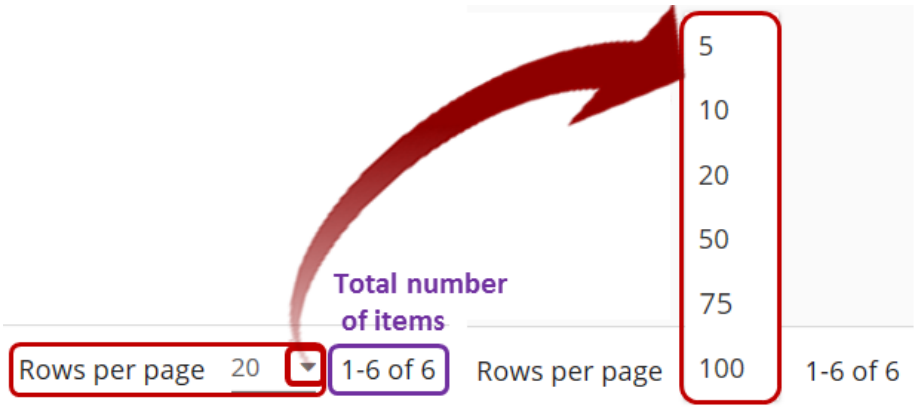


Figure 36: Schedules tab: Page navigator

Alternatively, you can toggle between the pages by typing directly the number of the page you want to display (Figure 32).

NOTICE: This option is available only if the number of items displayed on the page exceeds the *Rows per page* value.

Figure 37: Appliances tab: Page navigator - page number

4.2 Create a scheduled event for Recovery ISO image creation

There are two ways to create a scheduled event:

1) Newly from the beginning
2) By duplicating an existing event

4.2.1 Creating a new scheduled event

1) Select the empty row you want to create an event in by clicking on it.

2) Fill in the **event parameters** (Figure 33, step 1):

- **Date**: Click on the Date field to pick a date from the calendar.
- **Time**: Use only digits without colon.
- **Frequency**: Select an option from the dropdown menu.
- **Operation**: Select an option from the dropdown menu
- **Archive**: Select one of several options of archiving by clicking on following icons
  - USB stick

  - SFTP server

NOTICE: Hard disk option is always preselected (the icon is greyed out) and cannot be unselected.

- Select **Label** and **Hostname**: Select the Label and Host name of the appliance.

3) Click the **Add** icon to create the event (Figure 33, step 2).

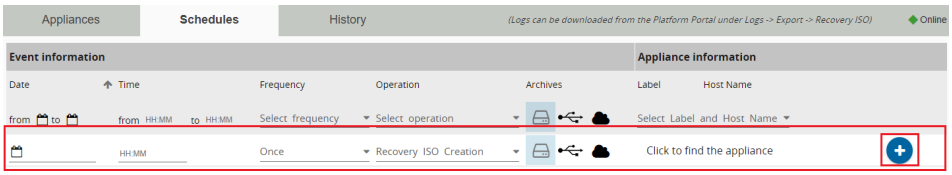


Figure 38: Scheduled tab: Create a new scheduled event

4.2.2 Creating a new scheduled event by duplication

1) **Select the event** you want to duplicate by clicking on it.
2) Click the **Copy** icon to create a copy of this event (Figure 34, step 1).
3) **Edit** the event parameters (Figure 34, step 2):

- Date
- Time
- Frequency
- Operation
- Archives
- Label
- Hostname

4) Click the **Upload** icon to store the event (Figure 34, step 3).

NOTICE: The duplication can be canceled by clicking the **Cancel changes** icon .

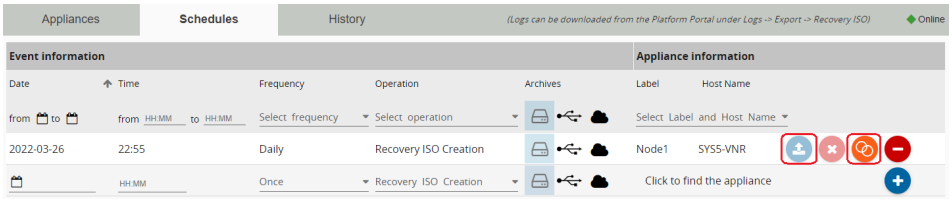


Figure 39: Schedules tab: Duplicate a scheduled event

4.3 Update scheduled event

To update a scheduled event (Figure 35):

1) **Select the event** you want to duplicate by clicking on it.
2) **Edit** the event parameters you want to change (Figure 35, step 1).
3) Click the **Upload** icon to store the changes (Figure 35, step 2).

NOTICE: The edition can be canceled by clicking the **Cancel changes** icon .

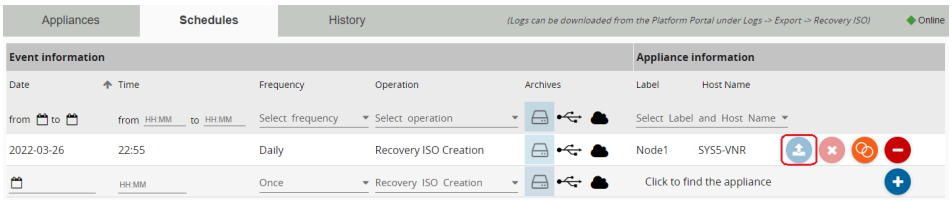


Figure 40: Schedules tab: Update scheduled event

4.4 Delete scheduled event

To delete a scheduled event (Figure 36):

1) Click the **Delete** icon located next to the event you want to remove. The record will be deleted.

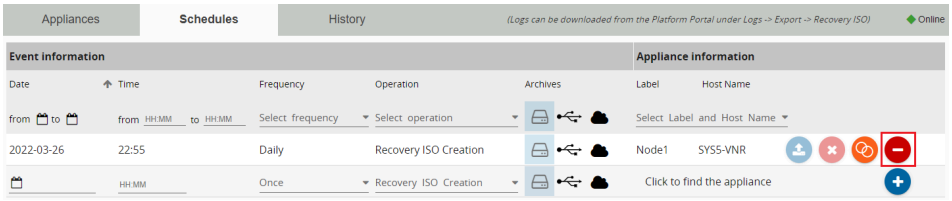


Figure 41: Schedules tab: Delete a scheduled event

5 History tab

The History tab allows you to display an overview of all past and completed operations (for example a RISO Creation).

5.1 History tab layout

The History tab layout consists of three main elements (Figure 37):

1) Filters(Figure 37, area marked with an orange rectangle)
2) List of operations(Figure 37, area marked with a green rectangle)
3) Functional buttons(Figure 37, area marked with a purple rectangle)
4) Page navigator (Figure 37, area marked with a brown rectangle)

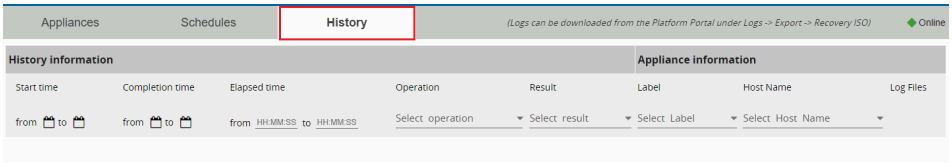


Figure 42: History tab layout

5.1.1 Filters

The list of operations can be sorted by clicking on headers of the individual columns. The symbol of an arrow next to the selected heading indicates, according to which column are the rows sorted (Figure 38).

The default setting is to sort the operations according to the **Start time**.

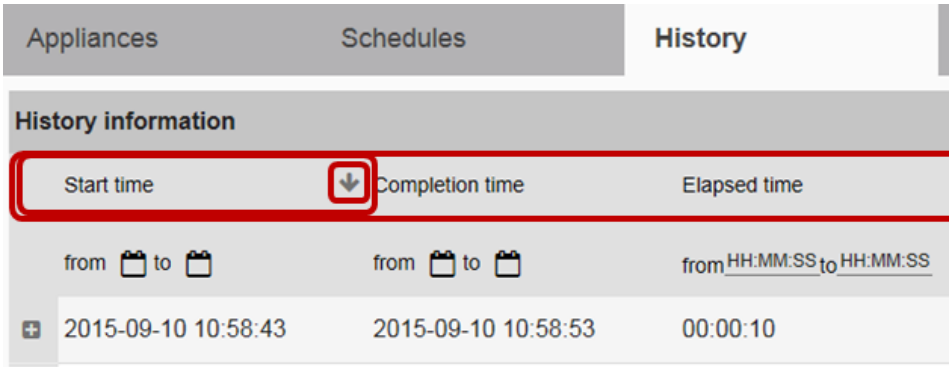


Figure 43: History tab: Filters

There is a second level of the filters you can use to restrict your selection (Figure 39). This is useful in cases you are interested solely in certain data, for example you want to display information related to RISO image creation result only.

Figure 44: History tab: Restricting Filters

Multiple selection of items is also possible:

1) Hold the **Ctrl key** and select the items of the interest by **left mouse** click.
2) When you release the key, the required information will be filtered out.

Filtering parameters

For every record, following filtering parameters are available:

- **Start time**
- **Completion time**
- **Elapsed time**
- **Operation**
- **Result**

  Possible values:

  – Successful
  – Warning
  – Failed
  – Canceled
- **Label**
- **Hostname**
- **Logfiles**

  – Show log file
  – Download log file

5.1.2 List of operations

The operations are listed in rows with the latest record on the top of the list (Figure 40).

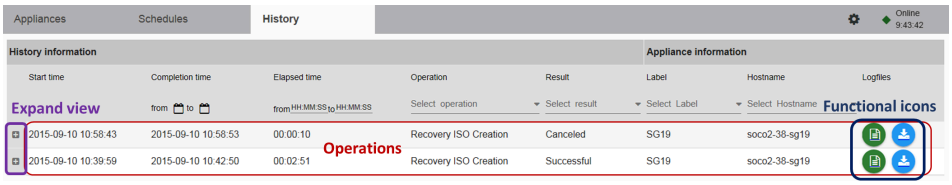


Figure 45: History tab: List of operations

Functional icons

For every operations row, following functional icons are available (Figure 41):

1) **Show log file**
2) **Download log file**

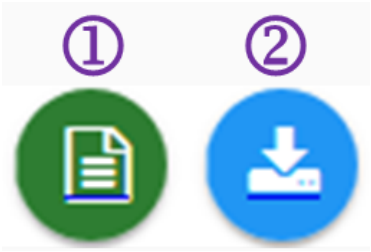


Figure 46: History tab: Functional icons

See also:

Recovery ISO image creation log files

Expand or collapse the view

Every row can be expanded by clicking on the plus sign on the left in order to show the **operation details**. To hide the details again, click the minus sign (Figure 42).

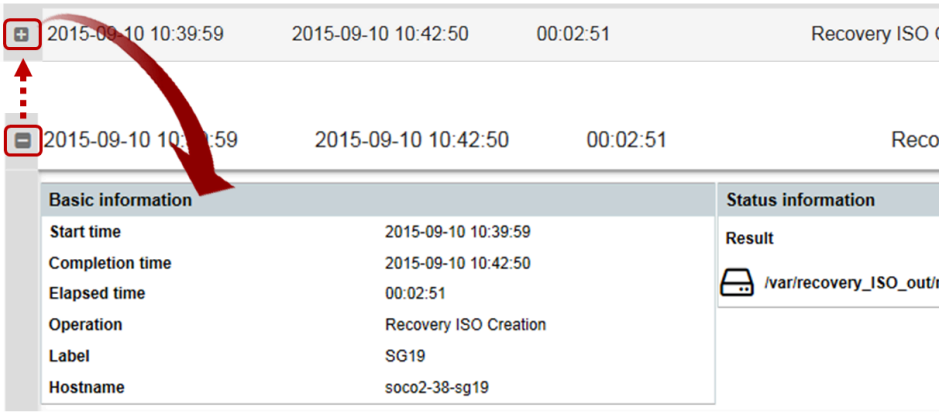


Figure 47: History tab: Expand/collapse an operation row

Display operation details

The detailed information about an operation can be seen in extended view after expanding the row.

The extended view is divided into three boxes (Figure 43):

1) **Basic information** (first box from the left):

   Contains details about the selected operation.

2) **Status information** (second box from the left):

- Result - overall result of the operation

  Possible values:

  – Warning
  – Failed
  – Canceled
- Path to the created ISO image and result status for each archive - it shows whether writing to USB stick or the transfer to SFTP server was successful.

  Possible options:

  – Hard disk

  – USB stick

  – SFTP server

3) **Additional information** (third box from the left):

Provides information included in the ISO image:

- Software Version
- Loadware Version
- Size of the ISO image [Bytes]
- Return code and additional information about eventual failure
- Scheduled/Manual - indicates if the operation was started manually or by the scheduler

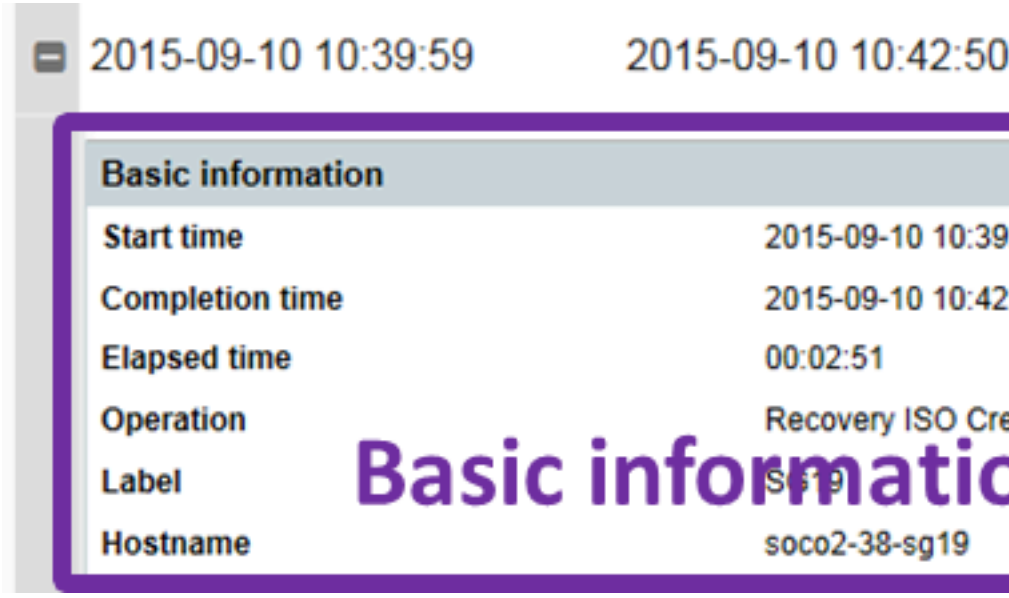


Figure 48: History tab: Operation displayed details

5.1.3 Functional buttons

There are four functional buttons on the History tab:

- **Reset filters**
- **Refresh all**
- **Expand all**
- **Collapse all**

Figure 49: History tab: Functional buttons

Sorting and filtering can be reset by clicking **Reset filters**.

The history list is automatically refreshed only when the view is switched to the History tab. However, the immediate refresh can be enforced by clicking **Refresh all**.

All rows can be expanded by clicking **Expand all** and collapsed by clicking **Collapse all**.

5.1.4 Page navigator

The Page navigator allows you to display the desired **number of items per page**. The default value is to show **twenty rows** per page.

If you want to **change** the number of items displayed (Figure 45):

- **Left mouse click** on the arrow next to the *Rows per page* number to open a menu.
- Left mouse click to **select the value**. The number of items will be updated according to your selection automatically.

  Possible options:

  – 5
  – 10
  – 20
  – 50
  – 75
  – 100

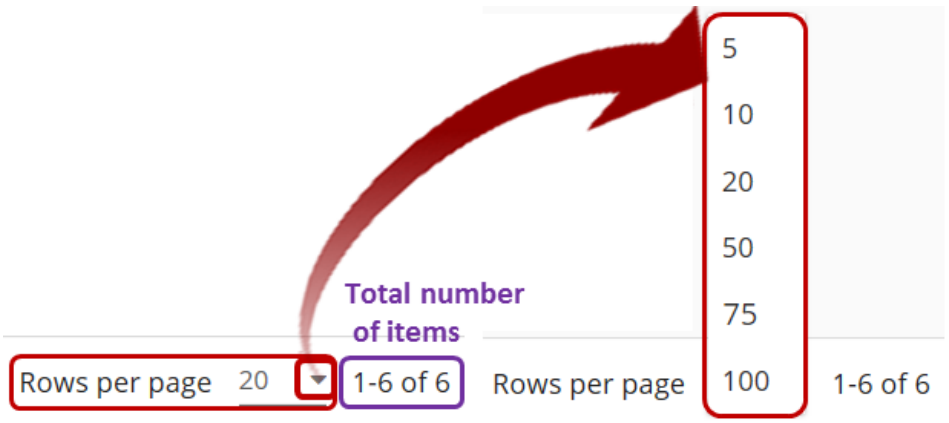


Figure 50: History tab: Page navigator

Alternatively, you can toggle between the pages by typing directly the number of the page you want to display (Figure 46).

NOTICE: This option is available only if the number of items displayed on the page exceeds the *Rows per page* value.

Figure 51: Appliances tab: Page navigator: Page number

6 Settings window

The Settings window layout consists of four main elements:

1) **Options**, area marked with an orange rectangle):

   The Appliance management Settings window enables to:

   - Set up the SFTP Archive configuration
   - Download the Appliance Management GUI log files

2) **SFTP configuration setup**, area marked with a green rectangle)
3) **Connection Test results**, area marked with a brown rectangle)
4) **Functional buttons**, area marked with a purple rectangle):

   - **Save & Test:** Saves the SFTP configuration and runs the Connection test
   - **Delete:** Resets the SFTP configuration setup form
   - **Close**: Closes the Settings window

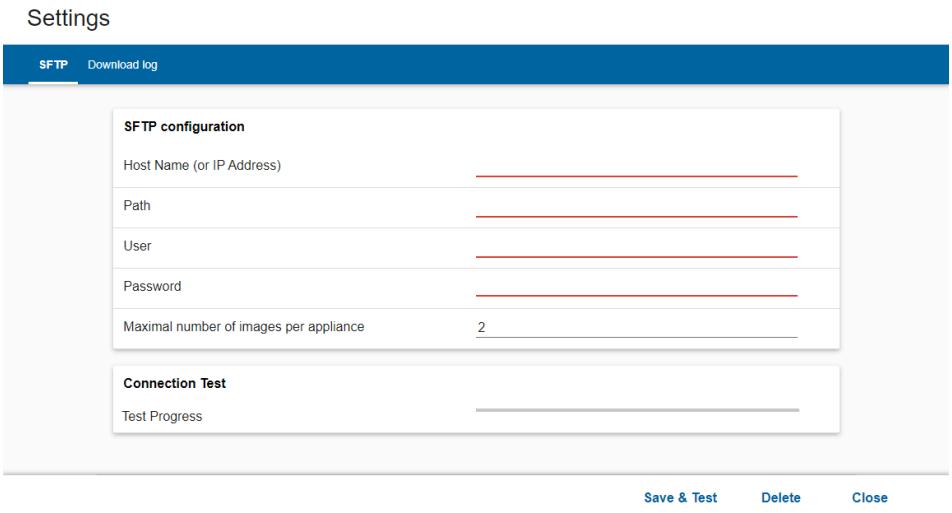


Figure 52: Settings window layout

6.1 SFTP Archive configuration

Important note: Due to the size of the RISO images, it is recommended to use an **external SFTP** server for their storage. Neither the Platform, nor the Assistant SFTP servers should be used for this purpose as their size is limited!

NOTICE: There is one common SFTP server for all appliances.

6.1.1 Set up the SFTP archive configuration and run the Connection test

1) In the Appliance Management GUI, click on the **Settings** icon (, Figure 48).

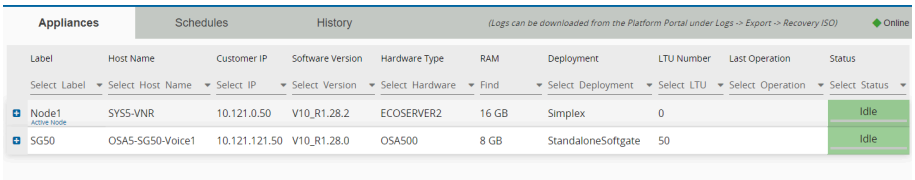


Figure 53: Appliance management: Settings

2) The *Settings* window with the **SFTP configuration** will appear (Figure 49).
3) Enter following parameters (step 1, Figure 49):

- **Host Name** or **IP address** of the SFTP server.
  - The IP address must be reachable from all appliances since the RISO image transfer is done directly from each appliance to the SFTP server.
  - If the Host Name is used, it must be resolvable to the correct IP address on each appliance. Therefore, the FQDN should be used.
- **Port** used to establish the connection to the SFTP server.

  The default port is **22**.
- Directory **Path** on SFTP server where the ISO images will be stored.

  The directory must already exist on the SFTP server and the User (see below) must have a permission to read/write in this directory.
- **User** name used for login to the SFTP server.

  This user must have a permission to read/write in the directory specified by Path (see above).
- **Password** used for login to the SFTP server.
- **Maximal number of images per appliance** that can be stored on the SFTP server. The range of numbers that can be entered is from 1 to 10.

  The default value is two images per appliance.

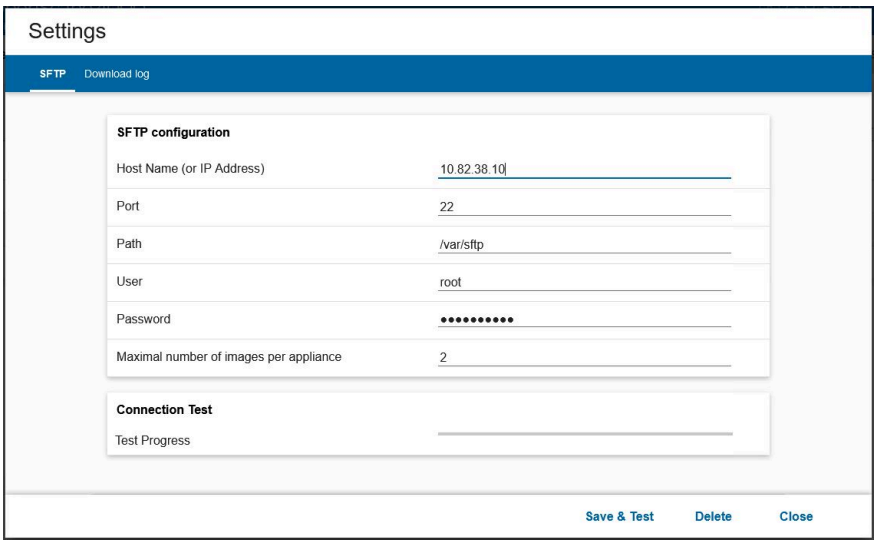


Figure 54: Settings window: SFTP configuration

4) When done, click **Save & Test** (step 2, Figure 49). When the configuration is saved, a toast window displaying the *Save* message will appear in the upper right corner of the *Settings* window.
5) At the same time, the **Connection test** for each appliance will start. This test includes following checks:

   - IP address/Host Name reachability
   - Availability of the SFTP service
   - User and password correctness
   - Existence of the chosen directory and permissions check
   - Space capacity

   You can monitor the progress of the Connection test in the **Test Progress** field (step 3, Figure 49).

   For every appliance there is a spinner displayed while the test is still running. The test result can be:

   - **Successful** (step 4, Figure 49)
   - **No connectivity to SFTP server**
   - **SFTP service unreachable**
   - **Cannot login to SFTP server**: wrong user or password
   - **Directory does not exist on SFTP server** (Figure 50)
   - **Cannot write to directory on SFTP server**
   - **Not enough space on SFTP server**
   - **Appliance inaccessible**
   - **No valid test result from appliance**
   - **Aborted due to timeout**

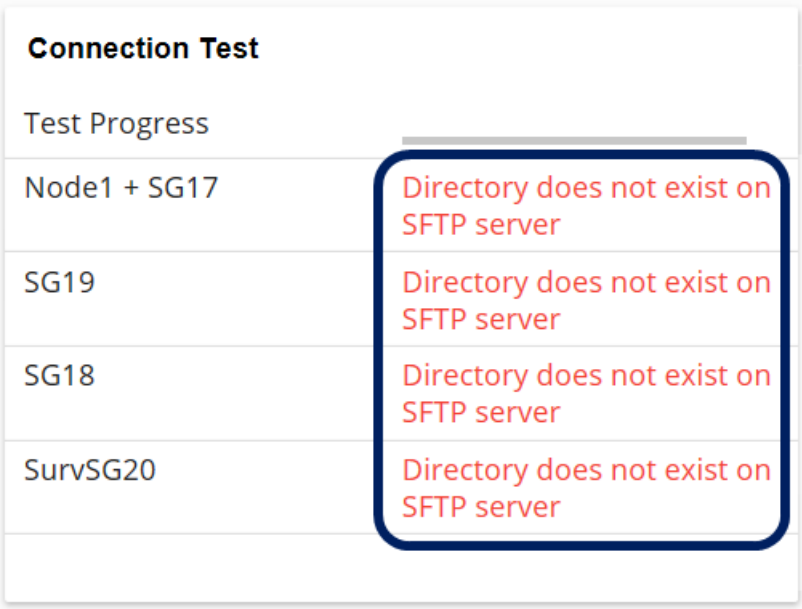


Figure 55: Settings window: Connection test progress result example

6.1.2 Update the SFTP archive configuration

If you want to update the SFTP archive configuration (Figure 51):

1) Go to the *Settings* window.

2) Left mouse click on the **parameter** you want to edit.
3) Delete the old value and type a new one.
4) Store the changes by clicking **Save & Test**.

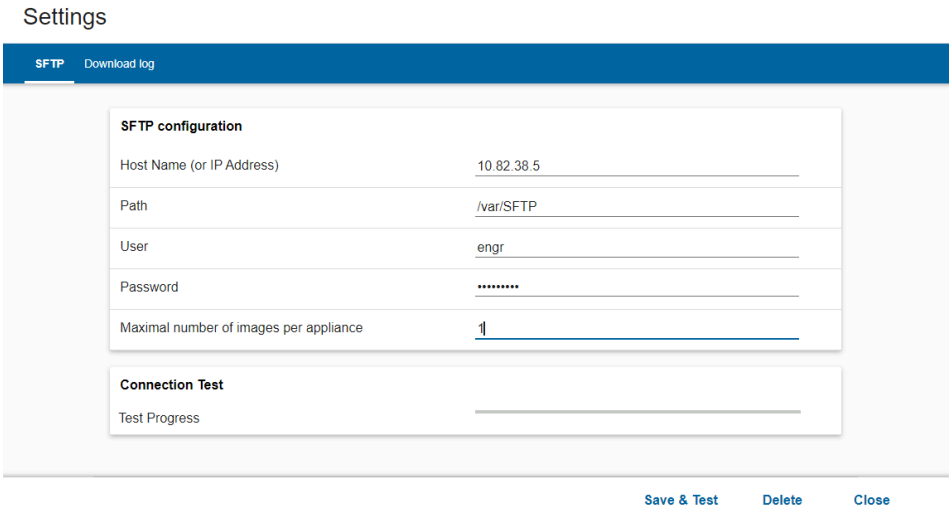


Figure 56: Settings window: Update the SFTP configuration

6.1.3 Delete the SFTP archive configuration

If you want to delete the SFTP archive configuration:

1) Go to the *Settings* window.
2) Click **Delete** (Figure 52).

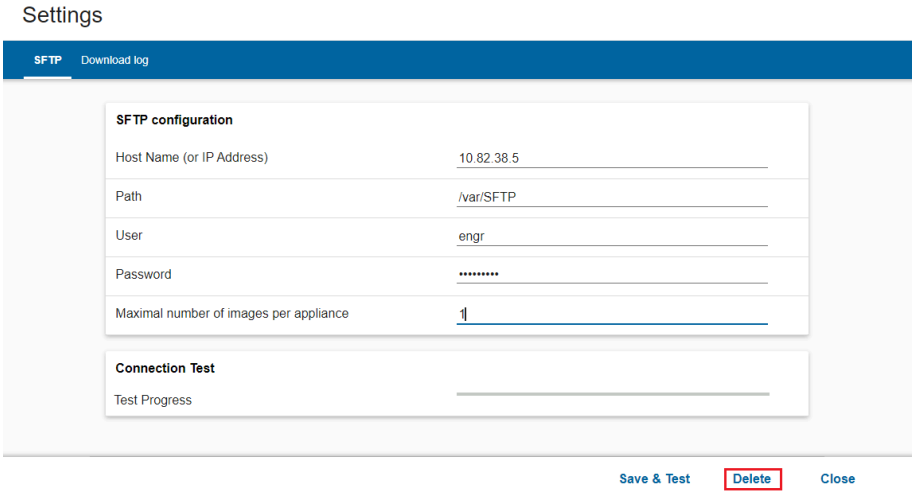


Figure 57: Settings window: Delete the SFTP configuration

3) The system will ask you to confirm the action. Click **Yes** on the Delete SFTP settings message (Figure 53).

Figure 58: Settings window: Delete the SFTP configuration: confirm

4) The SFTP configuration will be deleted and the form will be emptied.

6.2 Log files

The log files connected to the Appliance Management and RISO image feature can be downloaded from three different locations:

1) Appliance Management Settings window (Appliance Management GUI log files)
2) Portal (Platform Controller log files)
3) History tab in Appliance Management (Recovery ISO image creation log files)

6.2.1 Appliance Management GUI log files

The log file containing the Appliance Management **GUI information** can be downloaded from the *Appliance Management Settings* window:

1) In the Appliance Management GUI, click on the **Settings** icon (, Figure 54).

Figure 59: Appliance management: Settings

2) The *Settings* window will appear. Click **Download log**. The log file will be downloaded automatically (Figure 55).

Figure 60: Appliance management: Settings window

6.2.2 Platform Controller log files

The **Platform (PLT) controller** log files can be downloaded via the **Portal** (Figure 56):

1) Log in to the Portal. Click **Maintenance**.
2) In the *Maintenance* menu, open **Logs** and click **Export**.
3) Select the **Recovery ISO** checkbox and click the **Export** button.

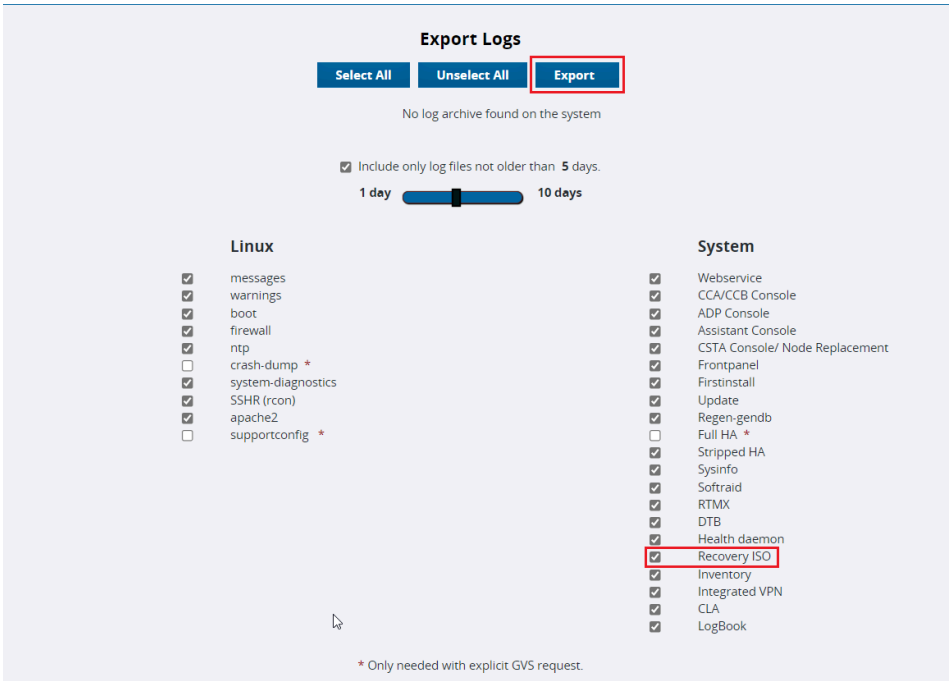


Figure 61: Maintenance window: Export Logs

Log files on Linux Host Platform:

```
/var/log/recoveryISO
/opt/dscxl/share/recoveryISO
```

6.2.3 Recovery ISO image creation log files

The log files of **RISO creation** of individual appliances can be found in the *History tab* (Figure 57).

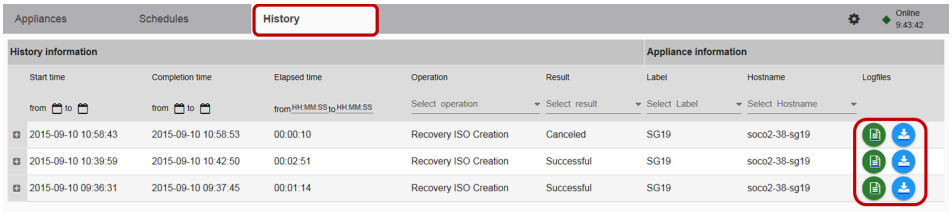


Figure 62: Appliances log files in History tab

The log files can be:

1)

Viewed directly: Click **Show log file** icon(, Figure 58). A popup window with the content of the log file will appear.

2)

Downloaded: Click **Download log file** icon(, Figure 58). The log file in *.gz* **zip** format will be downloaded automatically.

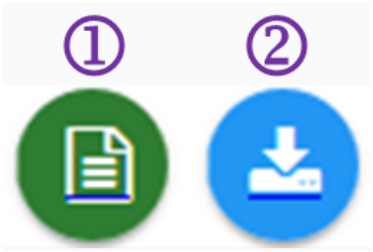


Figure 63: Log files functional icons in History tab

7 Reinstallation of an appliance from Recovery ISO image

Reinstallation from the RISO image is supported on the same Hardware platform where the RISO image was created.

If the RISO restore is started for one appliance, the RISO backup creation should not be attempted for the same appliance.

The reinstallation from the RISO image can be either manual or unattended:

- **Manual**: The user confirms the reinstallation by unplugging or plugging the USB stick during the boot phase.
- **Unattended**: The user starts a RISO restore script which triggers the reinstallation from local hard disk or from USB stick plugged onto the system.

Reinstallation formats the hard disk and reinstalls and configure the whole system. All the former data will be lost. This process is identical to a fresh installation.

7.1 Manual reinstallation

Manual reinstallation of the RISO image requires an assistance of the user.

7.1.1 Reinstallation from the USB Stick

Prerequisites:

A valid recovery ISO image should be available on the USB stick.

If the USB Stick does not contain a RISO image yet, follow the steps in chapter 2.2.2: *Preparing an USB Stick for Installation* in the **Installation, Configuration and Migration** manual to transfer the RISO image from the SFTP server on the USB Stick.

Alternatively, the RISO image can be **written on the USB** Stick using the **OpenScape 4000 appliance** (see Writing a Recovery ISO image on USB Stick via the OpenScape 4000 appliance for more details)

Procedure:

1) EcoServer and Branch remove the HD/SSD before the reset in order to force booting from the USB Stick. Plug in the USB Stick containing a RISO image and power on, reboot or reset the system

   After the system boot from the USB Stick, plug again the HD/SSD.
2) Wait until the ETHs flash. This will take approximately one minute.
   - **ETH6** and **ETH7** for **EcoServer**
   - **ETH0** and **ETH1** (LAN & WAN) for **OSA500 and BRANCH**
3) During this phase, **plug out the USB stick** and then **plug it back in**. This will start up the reinstallation from the RISO image.

NOTICE: Connected USB Stick does NOT mean that in case the system reboots, the creation of RISO images will run in loops automatically.

Remarks:

For the reinstallation of RISO image on DSXCL, OSA500, EcoServer and Branch, every USB port can be used.

For the migration from an old hardware (for example: OSA, etc.) we create an Recovery ISO image.

In the case of Duplex and Geo Separated Duplex it is possible to restore with the same image for node A and B respectively A, B and Q in the case of Geo Separated Duplex. In order to achieve that, we put the RISO image on a stick (bootable stick).

In this case, we make a backup RISO image on any node A or B and the restore can be done on any node (A, B or Q) with the same image made on the stick.

For **Virtual Machines** on ESX:

Option 1: **Reinstallation from local disk**

If the appliances are running as VM on ESX, the reinstallation process will start automatically. Therefore, you have to take care that the RISO image is booted only once and it is NOT configured as a default boot entry in the BIOS.

For the reinstallation procedure, please see Chapter 7.2.1, "Reinstallation from the local Hard disk".

Option 2: **Reinstallation using the RISO image connected to VM**

Appliances running as VM on ESX can also be reinstalled directly with the RISO image connected to the VM (no USB stick is required).

NOTICE: The RISO image can be used to reinstall an existing VM or on a newly created VM (in case a new VM is used, please deploy corresponding OVF template).

NOTICE: It is recommended that the RISO image is copied locally to ESX Datastore before mounting it to the VM.

For **Quorum Node**:

The Quorum Node can be restored with a RISO image created from any node.

For **Node1** and **Node2**:

It is possible to restore all Node1, Node2 and Quorum Nodes of a Duplex/GSD with a RISO image previously created on Node1 or Node2.

NOTICE: It is not possible to restore Node1 and Node2 using a RISO image previously created on Quorum Node.

For **Duplex/GSD deployments**:

The reinstallation follows the default scheme where Node1 will be primary and Node2 will be secondary. If you need a different order, you need to change manually the XML file stored on the USB Stick in the Config directory. Use the

`"node-replacement" = 1` tag option. For more details, please see the chapter 10.3.2.1: *Common Section* in the **Installation, Configuration and Migration.**

If the physical hardware or virtual machine is replaced, to use RISO restore you must update the XML file with the new MAC address.

7.1.1.1 Reinstallation of a Geo Separated Duplex (GSD) system

Prerequisites

Trigger shutdown of all nodes via **Portal --> Maintenance -->Shutdown/ Reboot menu**.

NOTICE: In case Portal is not working, please initiate the nodes shutdown via ssh connection for each node: #shutdown

In case of the full system restore, the reinstallation sequence should be:

- **Node1**

  In order to have telephony up, the standalone operation should be enabled

  #standalone_operation enable
- **Node2**
- **Quorum**

  Wait until the Node1 is fully up and the Assistant installation/Assistant Logical restore have finished
- **Node1**

  Disable the standalone operation mode

  #standalone_operation disable

In this case, we make a backup RISO image on any node A or B and the restore can be done on any node (A, B or Q) with the same image made on the stick.

NOTICE: All cables should be connected while the reinstallation is done

7.1.1.2 Reinstallation of a Duplex system

Prerequisites

Trigger shutdown of all nodes via **Portal -> Maintenance ->Shutdown/Reboot menu**.

NOTICE: In case Portal is not working, please initiate the nodes shutdown via ssh connection for each node: #shutdown

In case of the full system restore, the reinstallation sequence should be:

- **Node1**

  Wait until the Node1 is fully up and the Assistant installation/Assistant Logical restore have finished
- **Node2**

  In this case, we make a backup RISO image on any node A or B and the restore can be done on any node (A, B) with the same image made on the stick.

  NOTICE: You can use the Feature Node Replacement to recover the second Node of the Duplex Setup.

7.1.1.3 Reinstallation of single Node systems

In case of the full system restore, the reinstallation sequence should be:

- **Node1**

  NOTICE: Covered systems: Simplex, Survivable SoftGate, APE and Standalone SoftGate.

7.2 Unattended reinstallation

7.2.1 Reinstallation from the local Hard disk

Prerequisites:

- OpenScape 4000 appliance system is accessible.
- RISO image was created and it is stored on:

  `/tmp/recovery_ISO_out`

Procedure:

1) Start the RISO image reinstallation process by calling the command:
   `/opt/recoveryISO/recoveryISO.sh restore_local`

   Note: If the RISO image is located in a different folder, it can be passed to the script with following command:
   `/opt/recoveryISO/recoveryISO.sh restore_local<path_to_riso_backup_image>`

   NOTICE: In case of Duplex/GSD, please trigger the RISO reinstallation.

Restrictions:

The reinstallation of RISO image will not work:

- If the system was updated with RAR feature from installations having a very old partitioning layout (V6 R1.10 or V6R1.12) where there is no separate `var` partition and logical volume group.
- If a second Hard disk with failure is inserted but it is not active in the RAID.

7.2.2 Remote restore from the locally connected USB Stick

It is possible to connect a USB Stick with the RISO image locally first, and then trigger the reinstallation process remotely without the BIOS boot order changes.

You can initiate the reinstallation via following command:
`/opt/recoveryISO/recoveryISO.sh restore_usb`

NOTICE: The USB Stick can remain connected to the system permanently. You can use it as a medium for regular (scheduled) RISO image creation or when a fast reinstallation is needed without any extra preparation step for the recovery.

7.2.3 Writing a Recovery ISO image on USB stick

IIf the USB Stick does not contain a RISO image yet, follow the steps in chapter 2.2.2: *Preparing an USB Stick for Installation* in the **Installation, Configuration and Migration manual** to transfer the RISO image from the SFTP server on the USB Stick.

The RISO image can be written on the USB Stick using the OpenScape 4000 appliance (see Writing a Recovery ISO image on USB Stick via the OpenScape 4000 appliance for more details).

7.2.3.1 Writing a Recovery ISO image on USB Stick via the OpenScape 4000 appliance

You can write the ISO image manually on the USB stick with command:
`/opt/recoveryISO/recoveryISO writeusb`

NOTICE: If the USB Stick is plugged in during the run of the RISO image creation process, after the successful creation of the ISO image in the local system folder, the system will attempt to write the ISO image to the USB Stick.

NOTICE: In case that the writing process is **interrupted** or **unsuccessful,** the RISO image creation process will end with warning: "*USB stick not written, unusable for recovery purposes*".

NOTICE: It is allowed to have **only one USB Stick** connected to the system while performing this operation.

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