RTCU Deployment Server Manager

Version 6.00

logic IO
The M2M Enabler

1. RTCU Deployment Server Manager 3
1.1 Introduction 4
1.2 Devices and Profiles 5
1.3 Upgrade Strategy 6
1.4 Main Window 7
1.4.1 Connect to the RTCU Deployment Server 9
1.4.2 Import/Export of Devices 10
1.4.3 Hub Status 12
1.5 Working with Profiles 13
1.6 Profile Dialog 14
1.6.1 Application 16
1.6.2 File transfer 18
1.6.3 Directory synchronization 20
1.6.4 Runtime firmware 22
1.6.5 System firmware 24
1.6.6 Monitor firmware 28
1.7 Working with devices 30
1.8 Bookmarks 33
1.9 Device Information dialog 35

RTCU Deployment Server Manager

1 RTCU Deployment Server Manager

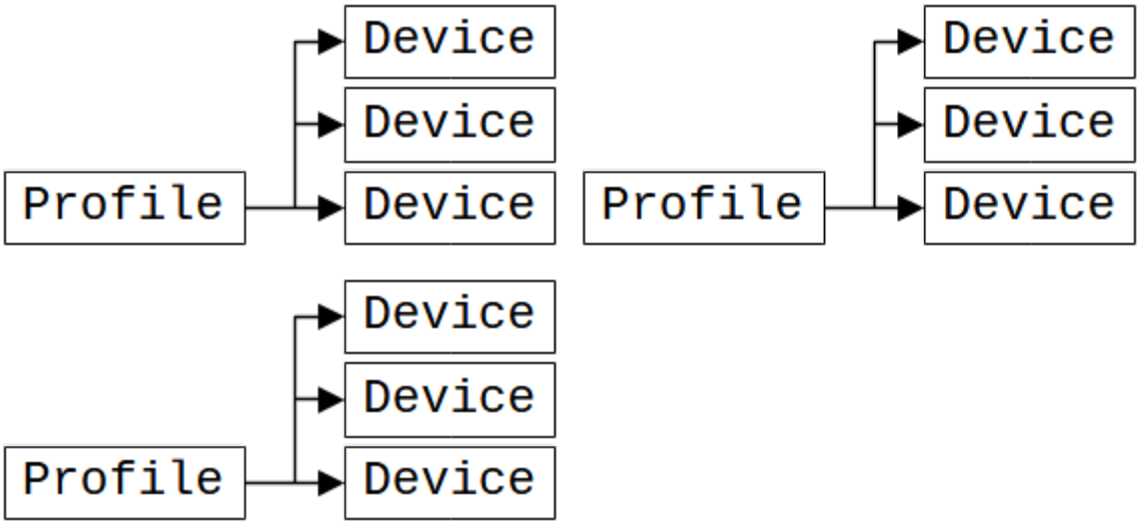
1.1 Introduction

The **RTCU Deployment Server Manager** is used for monitoring and maintenance of the RTCU Deployment Server.

It can be used to create devices and profiles, which are then used to transfer application, firmware and much more to the devices, to keep them up-to-date.

1.2 Devices and Profiles

A profile is a group of devices that share common characteristics, such as RTCU type, firmware version, and application. When a device connects, the RDS compares its attributes with the profile to which the device belongs, and if they are not identical, a new firmware or application is transferred to the RTCU device.



An example of this could be a theoretical company that logs meteorological information and has weather stations scattered around the country, each equipped with an RTCU NX-900 device. Additionally, they have two employees who service the weather stations; each of them has an RTCU LX2 Pro device installed in their service vehicle.
In this case, two profiles are required: one for the RTCU NX-900 and one for the RTCU LX2 Pro devices..

1.3 Upgrade Strategy

The RDS prioritizes transfers as follows: firmware transfers, application transfers, file transfers, and finally, Directory synchronization.

To determine if firmware has to be transferred to the RTCU device, the RDS compares the firmware version in the profile with the version in the RTCU device. If the version numbers differ, the RDS begins transferring the firmware.
If 'Allow downgrade' is not enabled in the profile, the RDS only starts the firmware transfer if the version in the profile is higher than the version in the RTCU device.

The RDS first compares the application name and then the application version to determine if an application has to be transferred to the RTCU device. If either (name or version) is not identical, the RDS starts to transfer the application.
If 'Allow downgrade' is not enabled in the profile, the RDS only starts the application transfer if the version in the profile is higher than the version in the RTCU device. (The transfer will always begin to if the names are different)

Since no version information is embedded in the generic file, the RDS will attempt to transfer the file each time the profile is edited. When the RDS starts the transfer, it checks whether the file is already present on the RTCU device. If the file is present, the transfer is stopped; otherwise, the transfer will continue. The file will be placed on the selected media in the "\RDS" sub-directory.

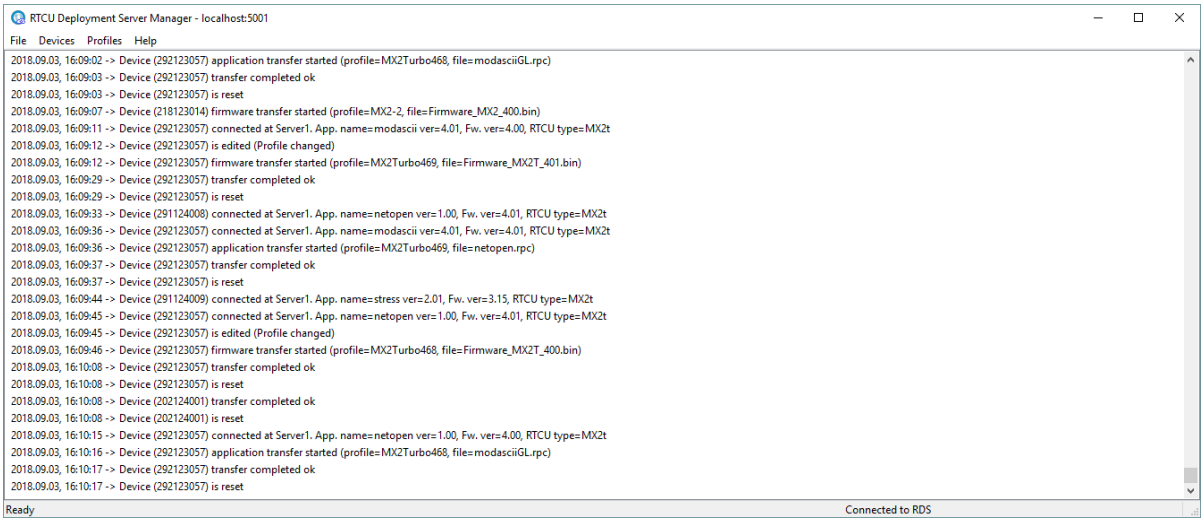
To determine if a directory needs to be synchronized, the RDS monitors the directory for changes to the existing files. When changes are detected, the affected files are collected and prepared for transmission to the RTCU device. Sub-directories are not included.
Note: Only files with valid file names (in the 8.3 format) will be included in the transfer. A maximum of 16MB can be transferred at once. If the total size of the files to be transferred exceeds this limit, they will be split into multiple transfers. Files that are larger than 16MB will not be transferred.
This feature is only available for RTCU devices with the NX32L architecture.

The RDS will check if an upgrade needs to be performed when:
1. The RTCU device connects to the RCH.
2. The update timer* is triggered.
3. The profile the RTCU device belongs to is edited.
4. A refresh of the RTCU device information is requested.

Please note that profiles can be configured to only allow upgrades at a specific time interval.
If this is the case, the RDS will determine that a transfer is needed but will not initiate it until within the profile's time interval.
*) The update timer will be triggered at the frequency selected in the Update frequency parameter in the RDS configuration.

1.4 Main Window

When the manager is opened, the main window can be seen:

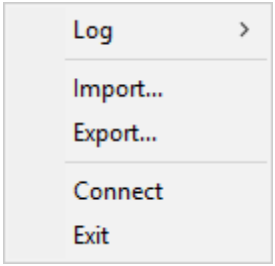


The connection status pane (the bottom line to the right) has the following meanings:

Not connected	Not connected to RCH or RDS.
Connecting to Communication Hub...	Contacting and logging on to Communication Hub.
Connected to Communication Hub	Connected to Communication Hub but not to the RDS.
Connecting to RDS...	Logging on to RDS.
Connected to RDS	Connected to RDS and ready.
RDS not found!	RDS is not connected to the Communication Hub.
Wait… Another client is already connected to RDS.	RDS is busy with another manager client. You may consider increasing the number of allowed clients.
Incorrect RDS login password!	RDS rejected the login password.
RDS server # is not supported!	The version of the RDS is not supported by the manager client.

The menu provides the following:

File:



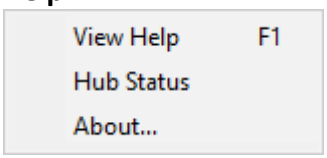
Log	Can be used to clear or save the contents of the log window. Can also be accessed by right-clicking in the log

	window.
Import...	Opens the import dialog.
Export...	Opens the export dialog.
Connect	Opens the connection dialog, to choose the RDS to connect to.
Exit	Closes the RDS manager.

Devices:
Opens the device window.

Profiles:
Opens the profile window.

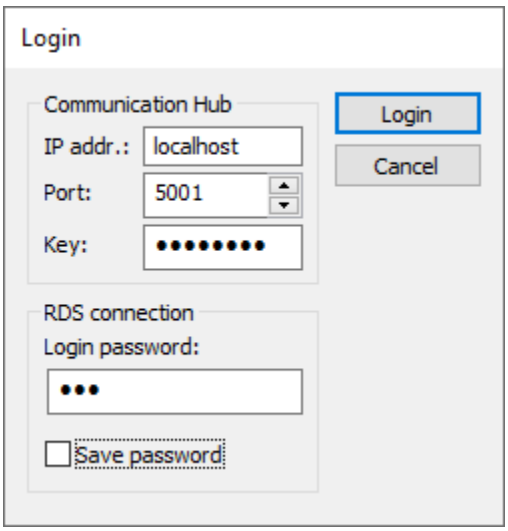
Help:



View Help	Opens the help file.
Hub Status	Opens the Hub status dialog.
About...	Opens the about dialog, showing the version numbers of the RDS and RDS manager.

1.4.1 Connect to the RTCU Deployment Server

To connect the manager client to the RDS, open the file menu, and select “Connect”.



Type in the RCH Server parameters and the RDS login password.
Press the “Login” button.
The manager client will now try to connect to the RDS.

Communication Hub

IP address	IP address of the RCH.
Port	Port of the RCH.
Key	Access key for the RCH.

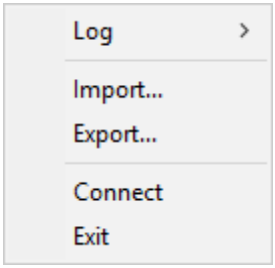
RDS Connection

Login Password	The password used to log in to the RDS. Note: the password is case-sensitive.
Save Password	When this option is selected, the password is saved between sessions, and the manager client will try to connect automatically.

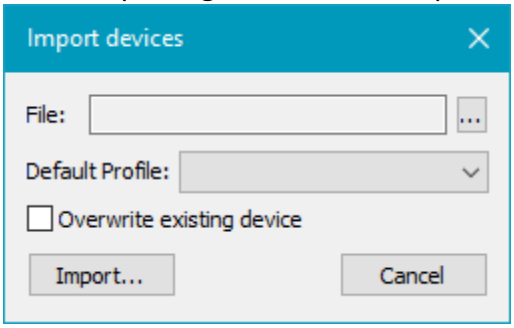
1.4.2 Import/Export of Devices

It is possible to import devices from and export devices to a comma-delimited file.

The functions are found in the “File” menu.



When importing devices, the “Import Devices” dialog is used.



File	The name and path to the comma-delimited file to import.
Default Profile	The devices in the file that do not have a profile associated with them will use this profile.
Overwrite existing device	If this option is selected and a device from the file is already in the RDS, the profile it uses will be changed to the one given either in the file or as default.

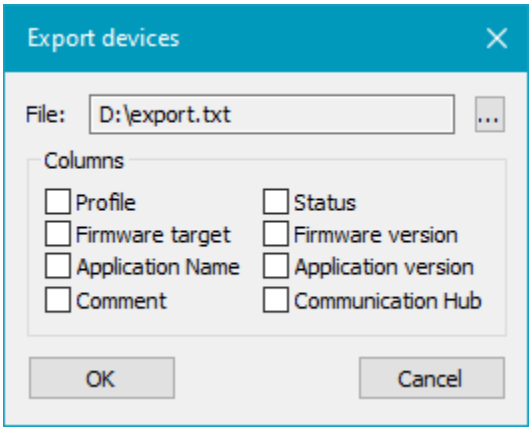
The comma-delimited file must have the following format:

```
<Device serial number>[,["<Profile name>"][,[<Enable flag>][,"<Comment>"]]]<NL><CR>
…
<Device serial number>[,["<Profile name>"][,[<Enable flag>][,"<Comment>"]]]<NL><CR>
```

Example:

```
750711023,"Profile 1"
750711024,"Profile 1",,"Imported"
750711025
750711026,,disable
750711027,"Profile 2"
750711028,"Profile 2",disable
750711029,"Profile 3"
750711032,"Profile 4"
```

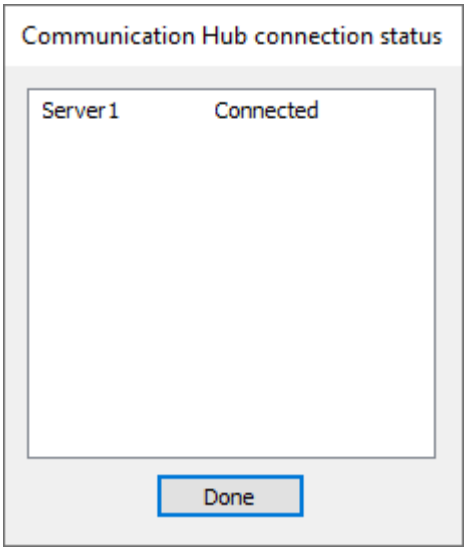
When exporting devices, the export devices' dialog is used.



File	The name and path of the comma-delimited file to export to.
Profile	Includes the name of the profile the device uses in the file.
Status	Includes the status of the device in the file.
Firmware Target	Includes the device target (type) information in the file.
Firmware Version	Includes the firmware version information of the device in the file.
Application Name	Includes the application name information of the device in the file.
Application Version	Includes the application version information of the device in the file.
Comment	Includes the comment for the device in the file.
Communication Hub	Includes the name of the RCH the device was most recently connected to in the file.

1.4.3 Hub Status

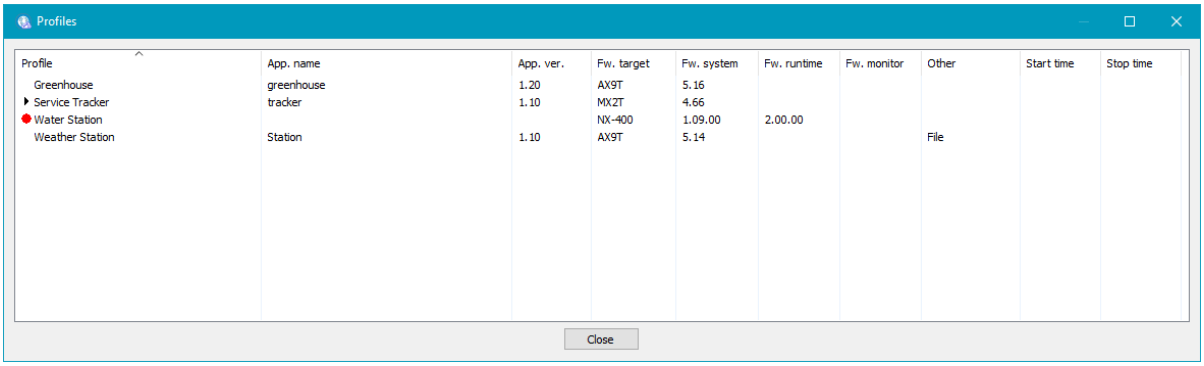
In the help menu, the ‘Hub Status’ dialog is found.



The Communication Hub Connection Status shows the connection status for each configured RCH server.

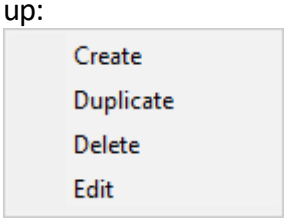
1.5 Working with Profiles

This window shows the current list of profiles.



When a new version of the firmware or application is available, edit the profile, and those devices
that are affected by the change start the transfer.

To work with the profiles, right-click in the profile window, and this pop-up menu shows up:

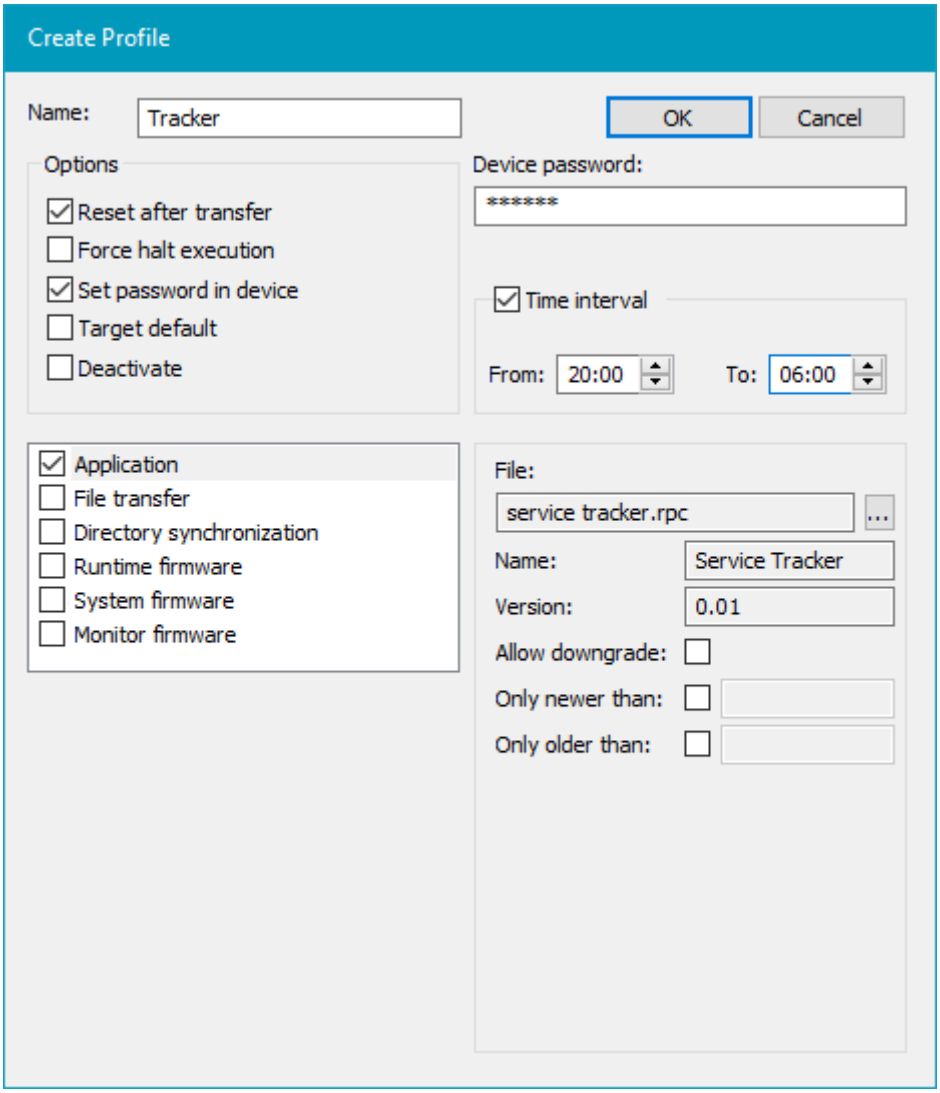


A profile can only be deleted if no devices are using it.

Duplicate can be used to create a new profile by copying the settings from another profile.

1.6 Profile Dialog

The profile dialog is used to create and edit profiles.



Name
This is the name of the profile.

Options

Reset after transfer	If this option is set, the RDS resets the RTCU device when an application or firmware transfer has been completed. Do not use this option if your application resets the device when a transfer is completed. Reset after a file transfer will never occur.
Force halt execution	If this option is set, the RDS will halt the execution of the application in the device before starting a transfer. It is recommended only to use this option if “Reset after Transfer” option is also selected. Halt execution before a file transfer will never occur.

Set password in device	If this option is set, the RDS sets the password in the RTCU device to the password entered in “Device Password”.
Target default	If this option is set, the RDS will use this profile when auto-creating RTCU devices with the firmware target. It can only be used when the profile contains at least one type of firmware(except monitor firmware), which is used to choose the target.
Deactivate	If this option is set, the RDS does not upgrade the devices that use this profile. A red dot is displayed in the profile window to indicate this.

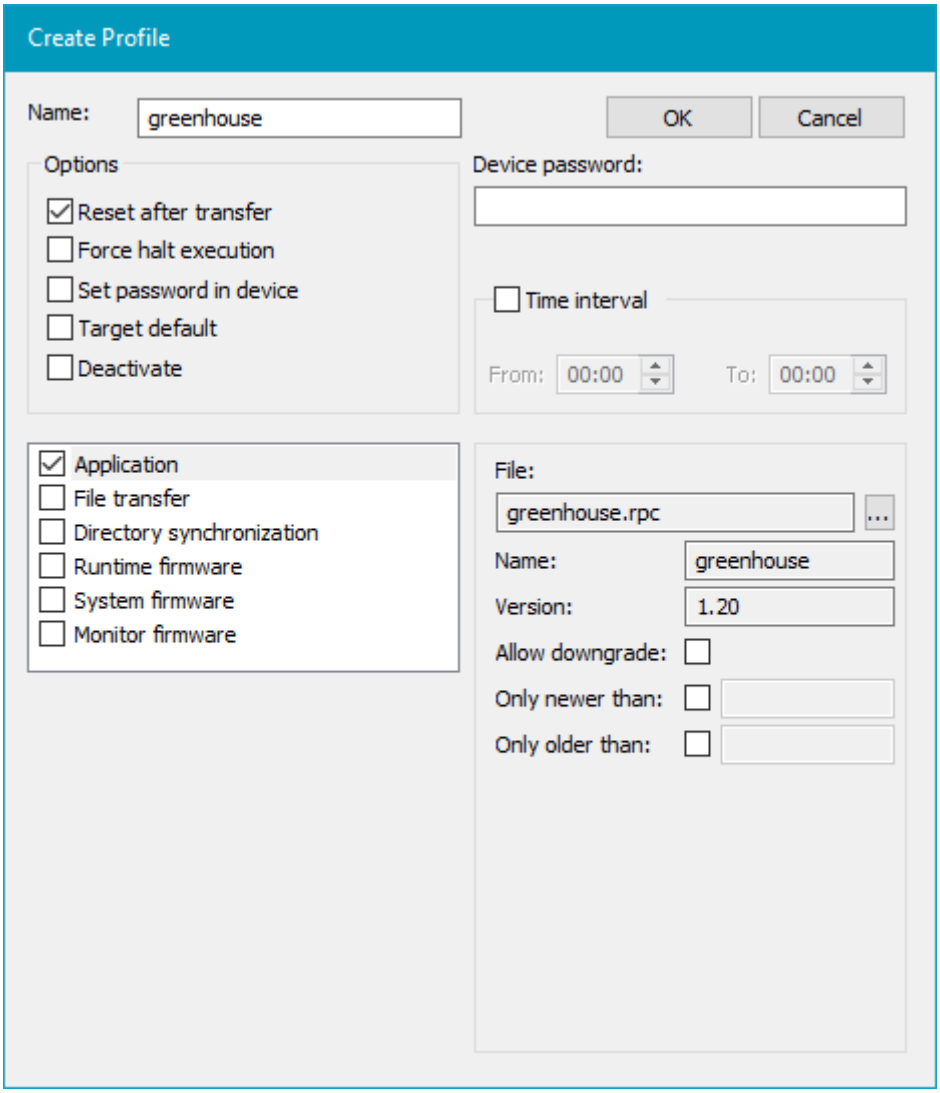
Device Password
If a password is entered here, it is used to connect to the RTCU devices that use this profile.
If the password in the RTCU device is not the same as the one entered here, the password must either be changed in the RTCU device or set in the device information (see Working with Devices) before the device can be updated.

Time interval
When ‘Time interval’ is activated, the RDS will update the devices in the interval from time ‘From’ till time ‘To’, while it will not do so outside this time interval. If ‘From’ is after ‘To’, the interval will include midnight. The ‘From’ and ‘To’ have to be at least 5 minutes apart.

Profile actions
Actions that can be performed to the RTCU devices that use this profile:
- Application
- File Transfer
- Directory synchronization
- Runtime firmware
- System firmware
- Monitor firmware

1.6.1 Application

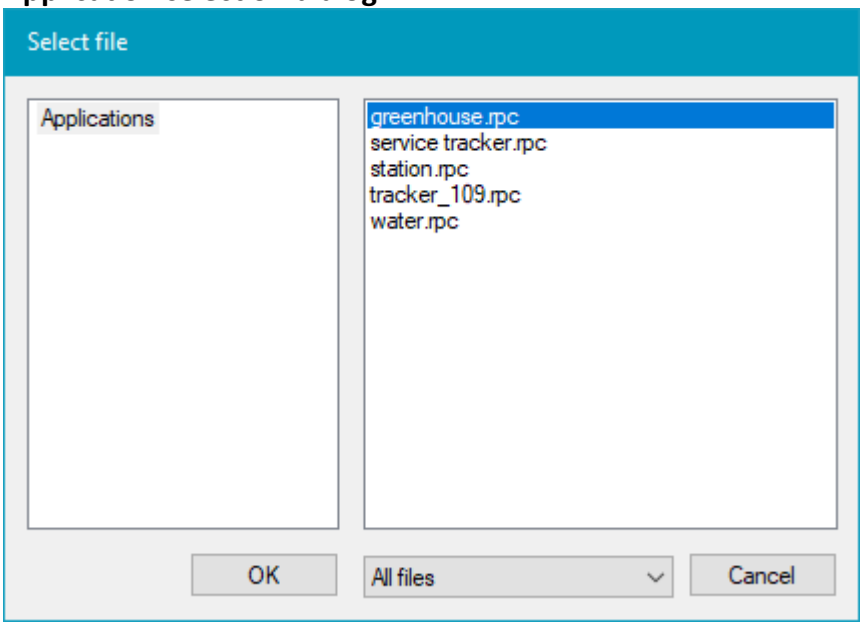
Update the application in RTCU devices.



File	File name of the application. To select a new application file, press the "Browse" button to open the Application file dialog.
Name	Name of the application. This is updated from the application file if possible. If the application name is not included in the file, it must be entered manually.
Version	Version of the application. This is updated from the application file if possible. If the application version is not included in the file, it must be entered manually.
Allow downgrade	If this option is set, downgrading the application is allowed.
Only newer than	If this option is enabled; the application will only be transferred if the version in the device is newer than the version set here.*
Only older than	If this option is enabled; the application will only be transferred if the version in the device is older than the version set here.*

*) If both ‘Only older than’ and ‘Only newer than’ is selected and,
1. The ranges overlap, then the update will only be transferred if the version in the device is inside both ranges.
2. The ranges do not overlap, then the update will be transferred if the version in the device is inside one of the ranges.

Application selection dialog:

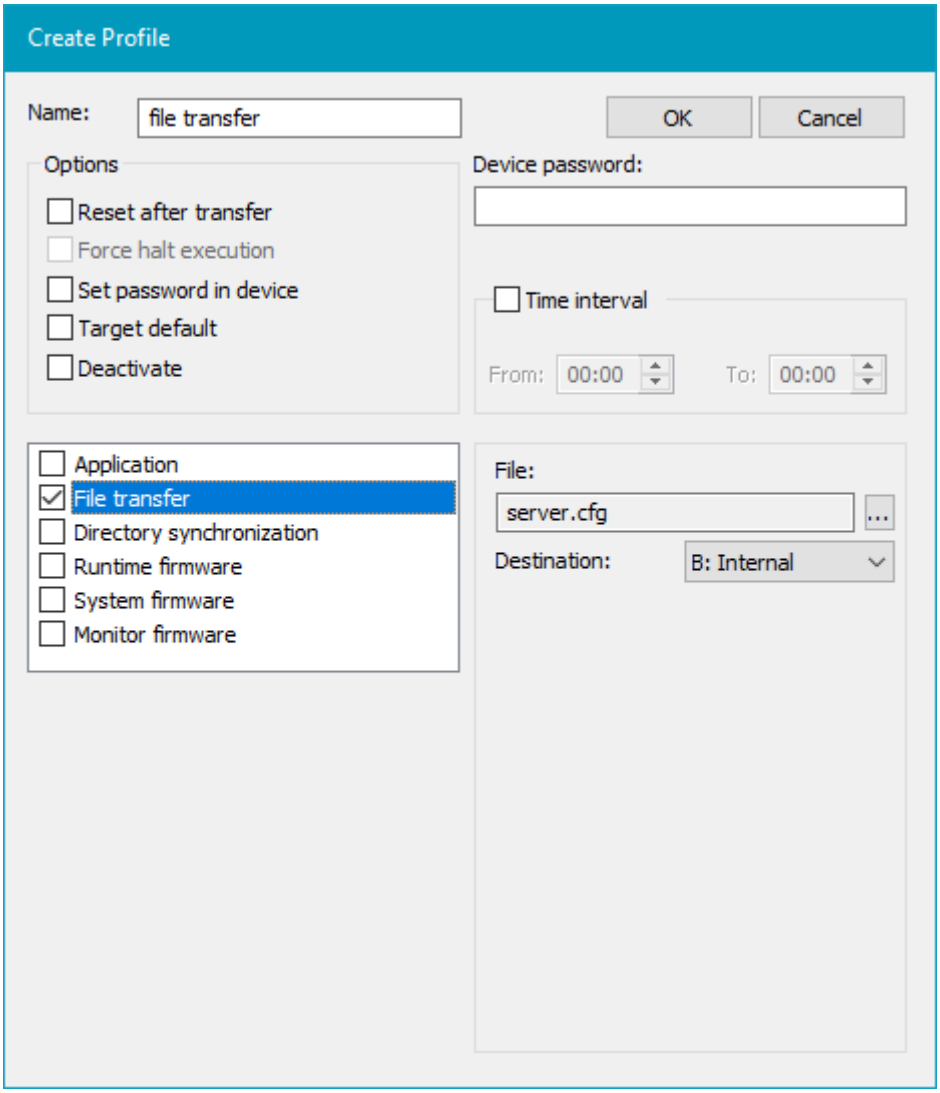


This dialog is used to select the application to use.
The filenames are sent by the RDS and are updated when the dialog is opened.

Please note: when browsing for application files, the entire directory tree is parsed - including sub-directories.
Application files without name and version are not listed in the file browser.

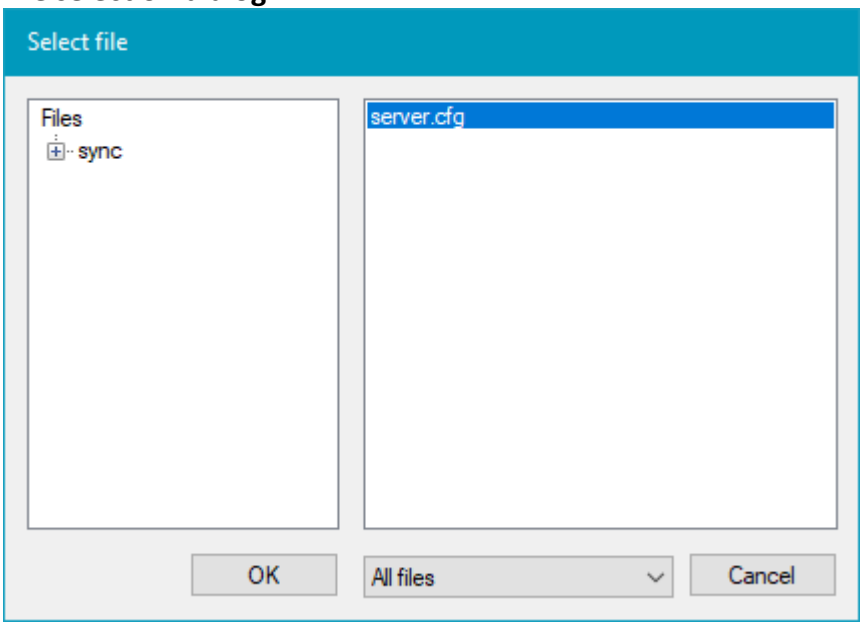
1.6.2 File transfer

Transfer a specified file to RTCU devices.



File	File name of the generic file. To select a new file, press the “Browse” button to open the File selection dialog.
Destination	The media in the RTCU device where the file is transferred to. The file will be placed on the selected media in the \RDS sub-directory.

File selection dialog:

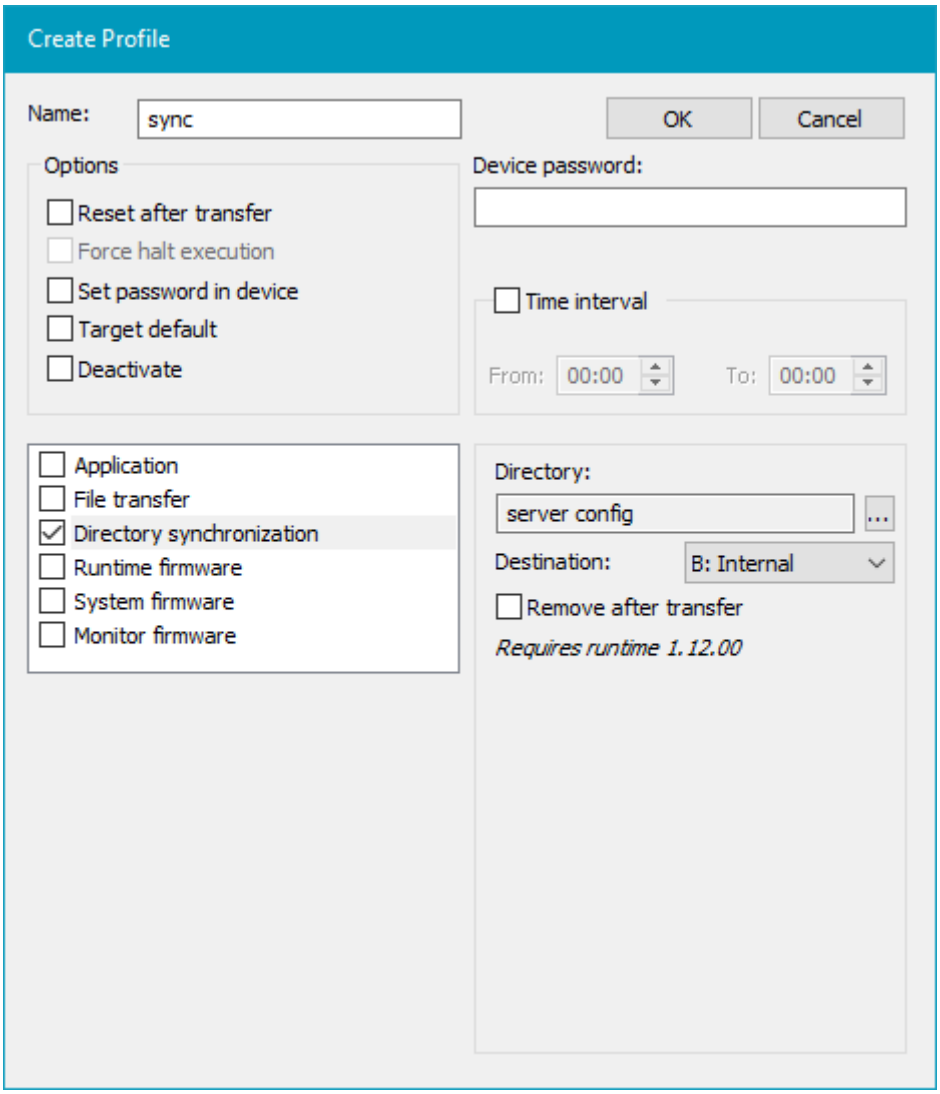


This dialog is used to select the file to use.
The filenames are sent by the RDS and are updated when the dialog is opened.

Please note: when browsing for files, the entire directory tree is parsed - including sub-directories.

1.6.3 Directory synchronization

Synchronize files from the selected directory to RTCU devices. This feature is only available for RTCU devices with the NX32L architecture.

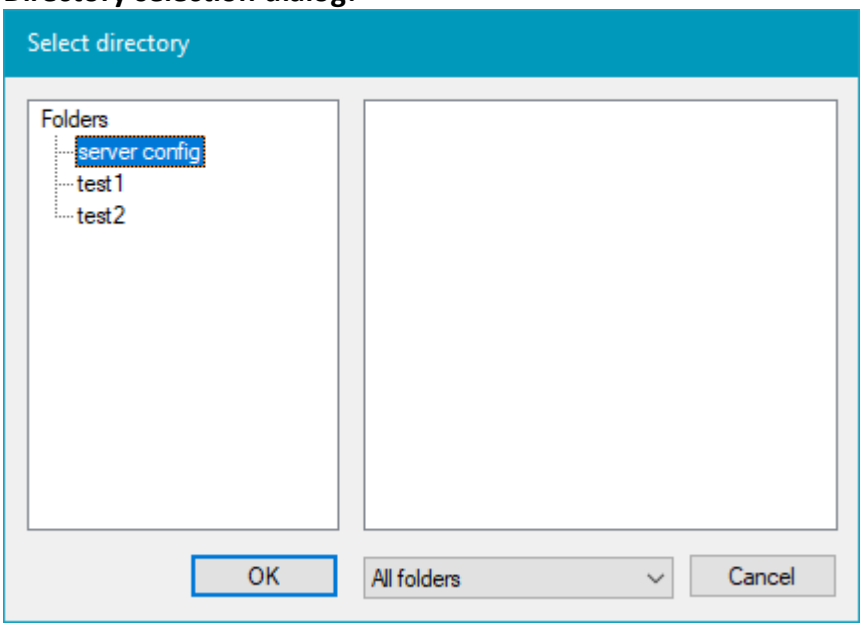


The RDS monitors the directory for changes to the files present. When changes to the file names, file size or modification time are detected, the affected files are collected and prepared for transmission to the RTCU device. Sub-directories are not included.
Note: Only files with valid file names (in the 8.3 format) will be included in the transfer. A maximum of 16MB can be transferred at once. If the total size of the files to transfer exceeds this, they will be split into several transfers. Files that are larger than 16MB will not be transferred.

Directory	The name of the selected directory. To select a new directory, press the "Browse" button to open the Directory selection dialog.
Destination	The media in the RTCU device where the files in the directory is transferred to.

	The files will be located under RDS\SYNC\.
Remove after transfer	If this option is enabled; the files in the source directory will be removed after they are transferred to the devices.

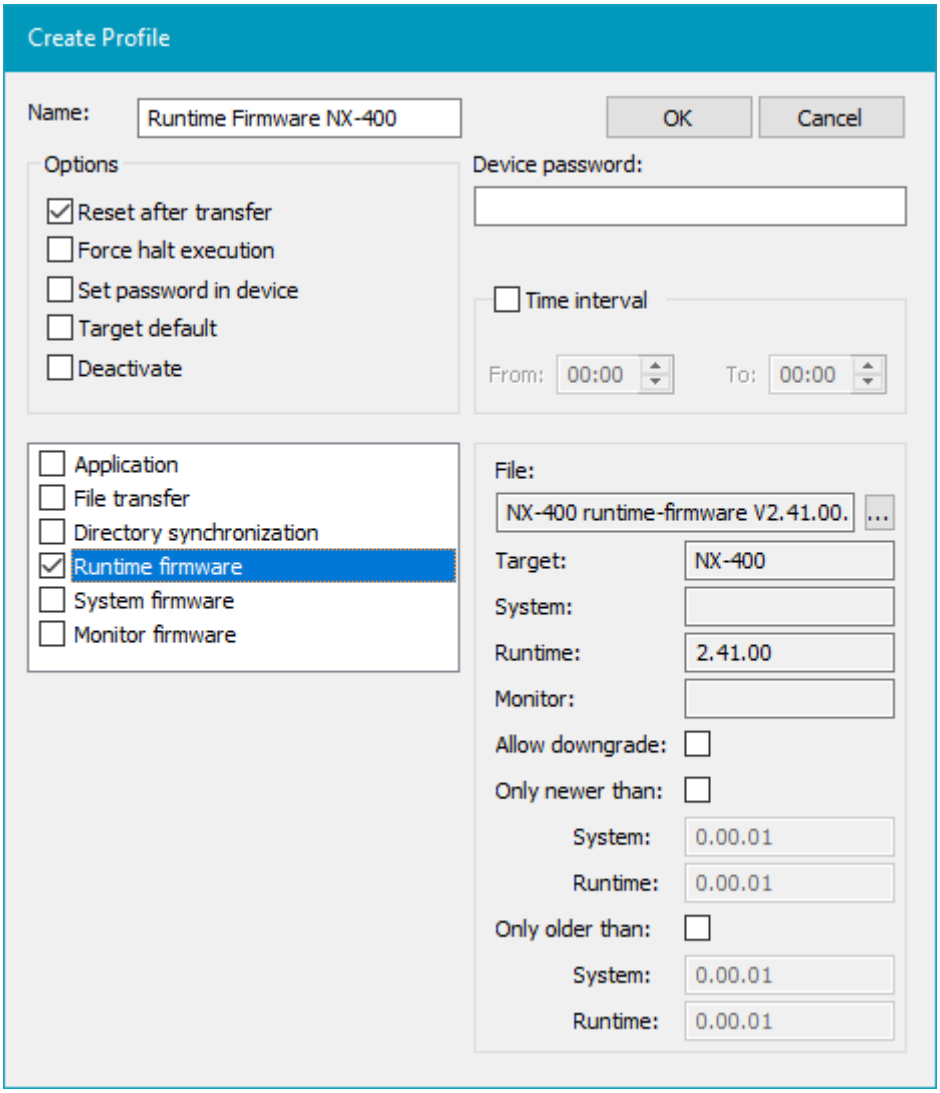
Directory selection dialog:



This dialog is used to select the directory to synchronize to the device.
The directory names are sent by the RDS and are updated when the dialog is opened.
The content of the directories is not shown.

1.6.4 Runtime firmware

Update runtime firmware in RTCU devices. Only available for NX32L architecture.

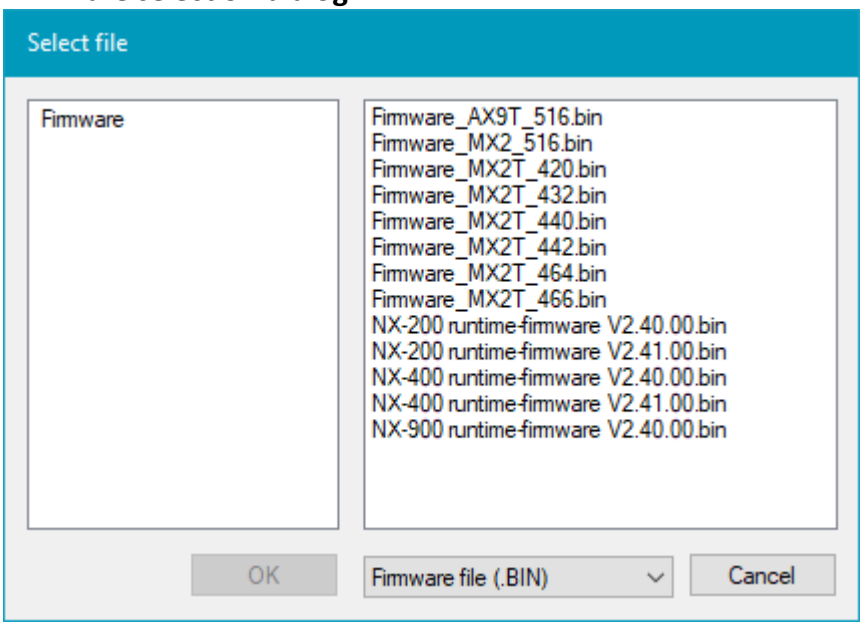


File	File name of the firmware. To select a new firmware, press the "Browse" button to open the Firmware selection dialog.
Target	The type of RTCU device the firmware is made for. This is updated from the firmware file.
Runtime	The runtime version of the firmware. (only used by NX32L architecture) This is updated from the firmware file.
Allow downgrade	If this option is set, downgrading the firmware is allowed.
Only newer than	If this option is enabled; the firmware will only be transferred if the version in the device is newer than the version set here.*
Only older than	If this option is enabled; the firmware will only be transferred if the version in the device is older than the version set here.*

*) If both 'Only older than' and 'Only newer than' is selected and,
1. The ranges overlap, then the update will only be transferred if the version in the device is inside both ranges.

2. The ranges do not overlap, then the update will be transferred if the version in the device is inside one of the ranges.

Firmware selection dialog:

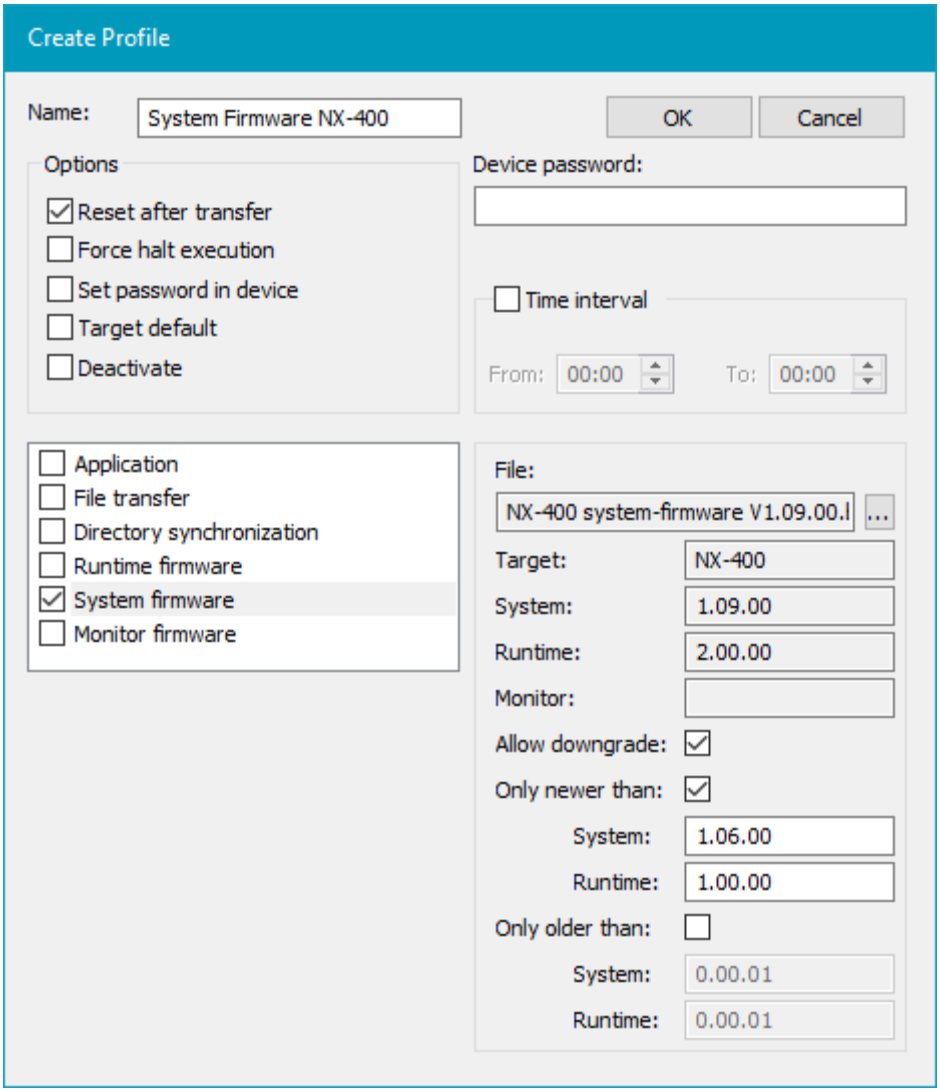


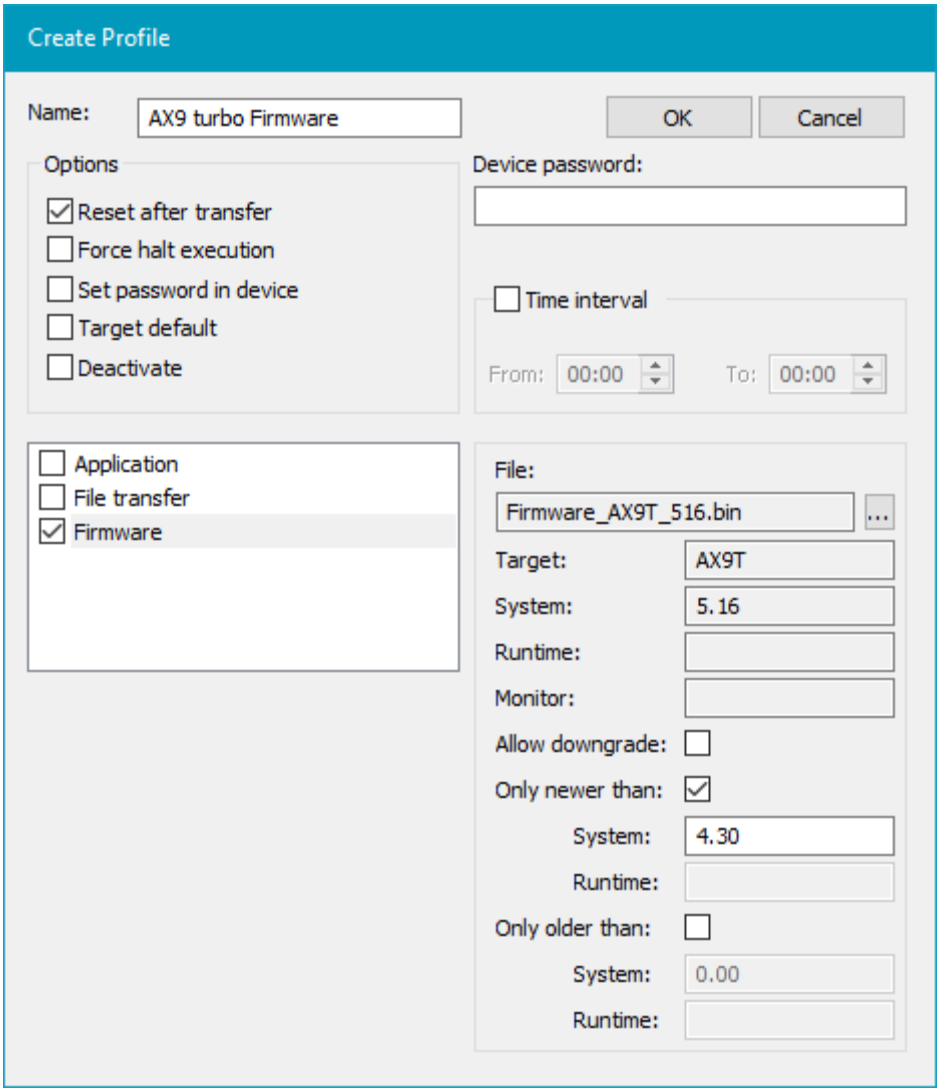
This dialog is used to select the firmware to use.
The filenames are sent by the RDS and are updated when the dialog is opened.

Please note: when browsing for firmware files, the entire directory tree is parsed - including sub-directories
The dialog shows both NX32L Runtime firmware and non-NX32L firmware files if the system firmware is not selected.
Note that once a system or monitor firmware file has been selected, only runtime firmware files for the same target will be shown.

1.6.5 System firmware

Update system firmware in RTCU devices.
This is used both for the system Firmware for NX32L devices and for the normal firmware for other devices.
When a firmware is selected, the list of profile actions is updated to show only the actions that are possible on the chosen device.
To switch to a different device type, select the firmware for the wanted device type.

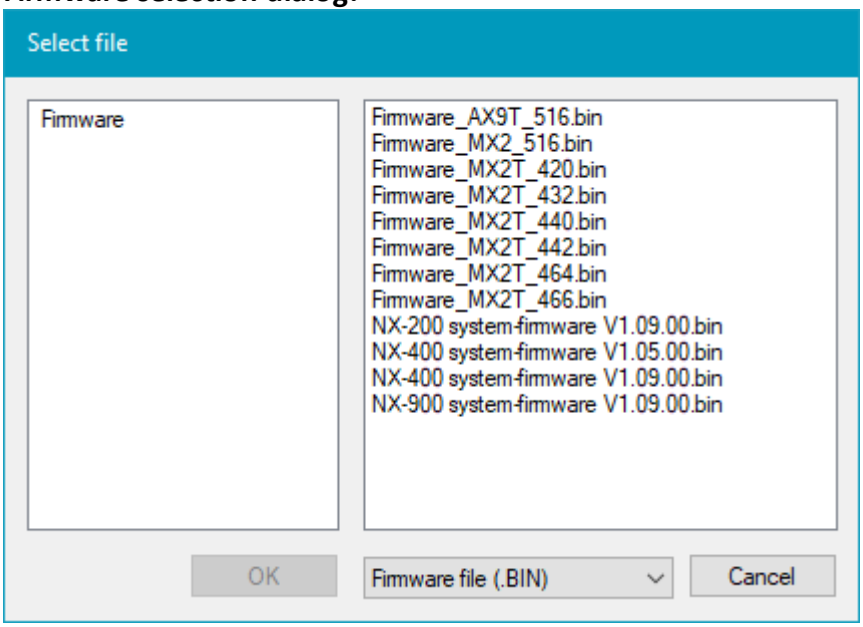




File	File name of the firmware. To select a new firmware, press the "Browse" button to open the Firmware selection dialog.
Target	The type of RTCU device the firmware is made for. This is updated from the firmware file.
System	The system version of the firmware. This is updated from the firmware file.
Runtime	The runtime version of the firmware. (only used by NX32L architecture) This is updated from the firmware file.
Monitor	The monitor version of the firmware. (only used by NX32L architecture) This is updated from the firmware file.
Allow downgrade	If this option is set, downgrading the firmware is allowed.
Only newer than	If this option is enabled; the firmware will only be transferred if the version in the device is newer than the version set here.*
Only older than	If this option is enabled; the firmware will only be transferred if the version in the device is older than the version set here.*

*) If both 'Only older than' and 'Only newer than' is selected and,
1. The ranges overlap, then the update will only be transferred if the version in the device is inside both ranges.
2. The ranges do not overlap, then the update will be transferred if the version in the device is inside one of the ranges.

Firmware selection dialog:

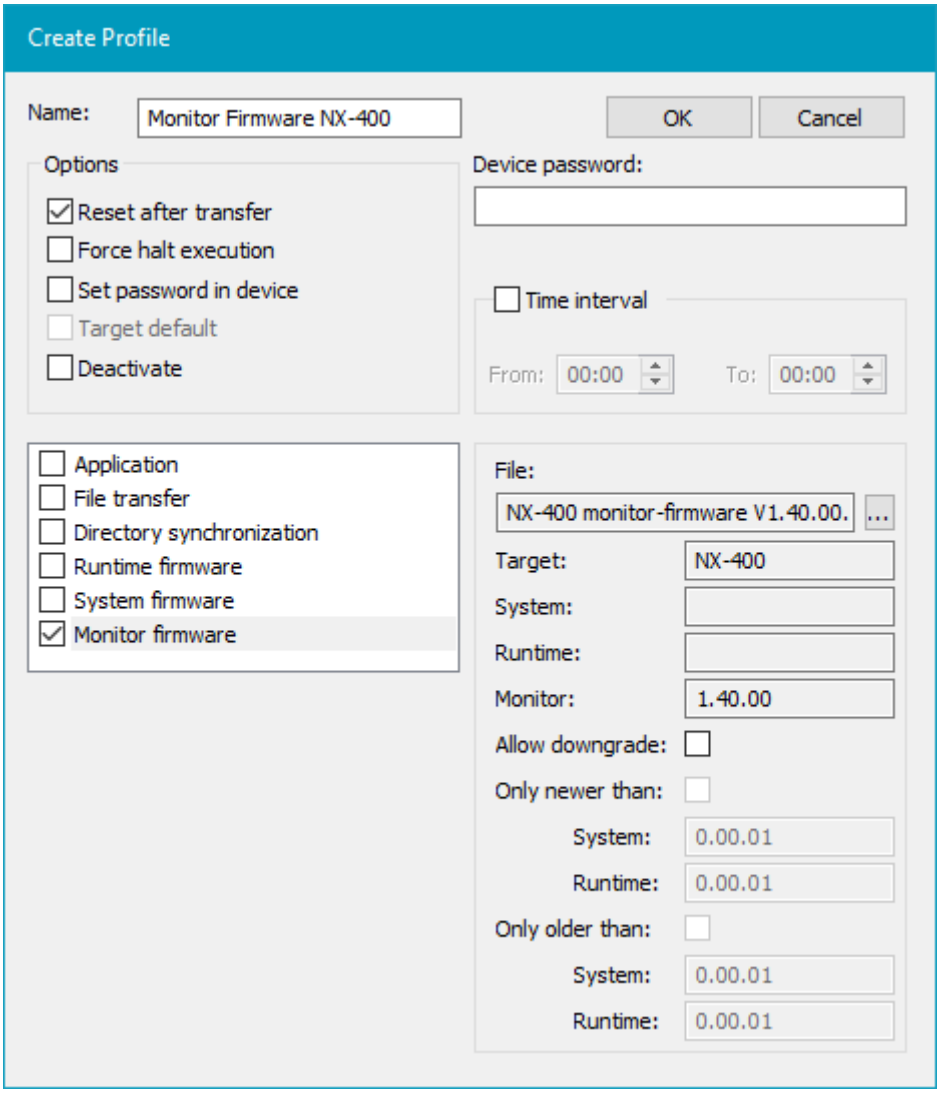


This dialog is used to select the firmware to use.
The filenames are sent by the RDS and are updated when the dialog is opened.

Please note: when browsing for firmware files, the entire directory tree is parsed - including sub-directories
The dialog shows both NX32L System firmware and non-NX32L firmware files if the Runtime firmware is not selected.
Note that once a runtime or monitor firmware file has been selected, only system firmware files for the same target will be shown.

1.6.6 Monitor firmware

Update monitor firmware in RTCU devices. Only available for NX32L architecture.

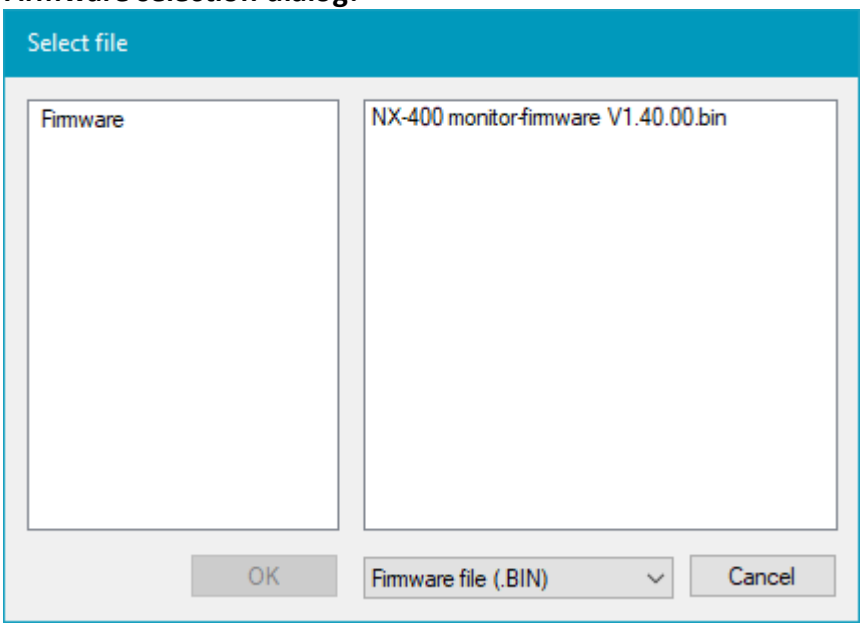


File	File name of the firmware. To select a new firmware, press the "Browse" button to open the Firmware selection dialog.
Target	The type of RTCU device the firmware is made for. This is updated from the firmware file.
Monitor	The monitor version of the firmware. (only used by NX32L architecture) This is updated from the firmware file.
Allow downgrade	If this option is set, downgrading the firmware is allowed.
Only newer than	If this option is enabled; the firmware will only be transferred if the version in the device is newer than the version set here.*
Only older than	If this option is enabled; the firmware will only be transferred if the version in the device is older than the version set here.*

*) If both 'Only older than' and 'Only newer than' is selected and,

1. The ranges overlap, then the update will only be transferred if the version in the device is inside both ranges.
2. The ranges do not overlap, then the update will be transferred if the version in the device is inside one of the ranges.

Firmware selection dialog:



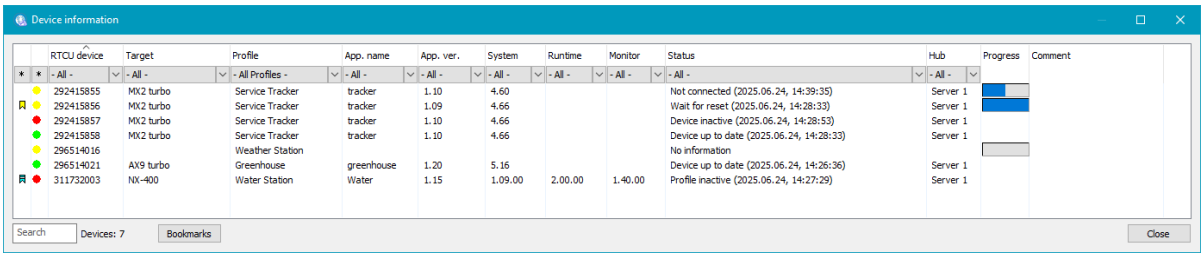
This dialog is used to select the firmware to use.
The filenames are sent by the RDS and are updated when the dialog is opened.

Please note: when browsing for firmware files, the entire directory tree is parsed - including sub-directories
Note that once a runtime or system firmware file has been selected, only monitor firmware files for the same target will be shown.

1.7 Working with devices

The device information window shows the information on the devices that have been registered.
Devices can be added in three different ways:

1. Imported from a file.
2. Manually created, see below.
3. Automatically created by a profile that is set as target default.



The first column shows if the device is bookmarked and if the bookmark has a note:

- No bookmark.
- Bookmarked
- Bookmarked with a note. Hovering over the bookmark will show the note.

Clicking in the bookmark column will toggle the bookmark.

The second column indicates whether the device is disabled (red), fully updated according to profile (green), or the device is in the process of being upgraded (yellow).

The “Status” column can have the following states:

No information	No information has been received from the RTCU device yet.
Not connected	RTCU device is currently not connected to the RDS.
Device up to date	RTCU device is up-to-date.
Device inactive	The device has been deactivated.
Profile inactive	The profile in use has been deactivated.
Transfer pending	RTCU device may not be up-to-date so a transfer has been queued.
Transfer waiting	Transfer in progress but suspended as it is outside the allowed time window defined in the profile.
Transferring application	RDS is transferring the application to the RTCU device.
Transferring file	RDS is transferring the file to the RTCU device.
Transferring firmware	RDS is transferring the firmware to the RTCU device.
Synchronizing folder	RDS is transferring the folder data to the RTCU device.
Wait for folder synchronization	Waiting for RTCU device to finish updating the folder.
Wait for reset	The upload has been completed and the RDS is waiting for the RTCU device to reset.
Incompatible Firmware	Firmware is not targeted for the RTCU device type.
Incompatible application	The RTCU is not programmable or does not support EIS.

Application file not found	RDS could not find the application file.
Application file not valid	File is not a valid application file.
Firmware file not found	RDS could not find the firmware file.
Firmware file not valid	The file is not a valid firmware file.
Wrong Password	The password in the profile or device is not identical to the password in the RTCU device.
Version mismatch	The same application or firmware has been transferred to the RTCU device repeatedly.
File transfer error	Failed to transfer file. See log for details.
Failed to update device	The device repeatedly failed to be updated, so the update has been stopped.

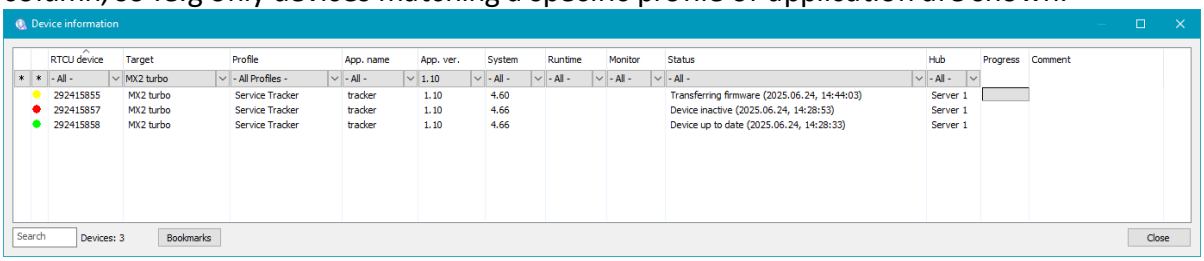
The time shown with the status is the time when the device entered this state. The up-to-date status show the time of the most recent reset.

The progress column shows how much of the current upload has been completed.

The search box allows searching for a device with the serial number typed in.

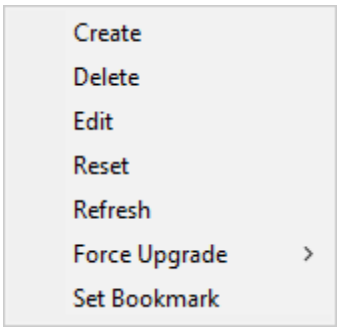
By clicking one of the headers, the devices will be sorted either in ascending or descending order by the selected header. Each time the same header is clicked, the sorting toggles between ascending and descending.

The drop-down box below some of the headers allows for filtering the contents of the column, so .e.g only devices matching a specific profile or application are shown:



Filtered to show only MX2 turbo with Application v1.10.

To work with the devices, right-click in the device information window and this pop-up menu shows up:

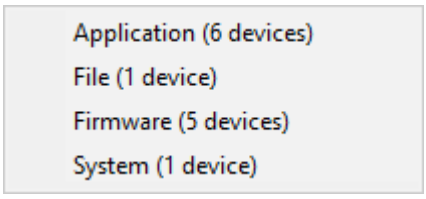


When a device is created or edited, the device information dialog is used.

"Reset" tells the device to reset, e.g. to install a pending update.

"Refresh" is a way to read the device information from the selected device(s).

"Force Upgrade" is a way to force the RDS to transfer the application or firmware to a device or devices. Depending on the types of selected devices and the available features of the profiles, the contents of the pop-up menu will change:



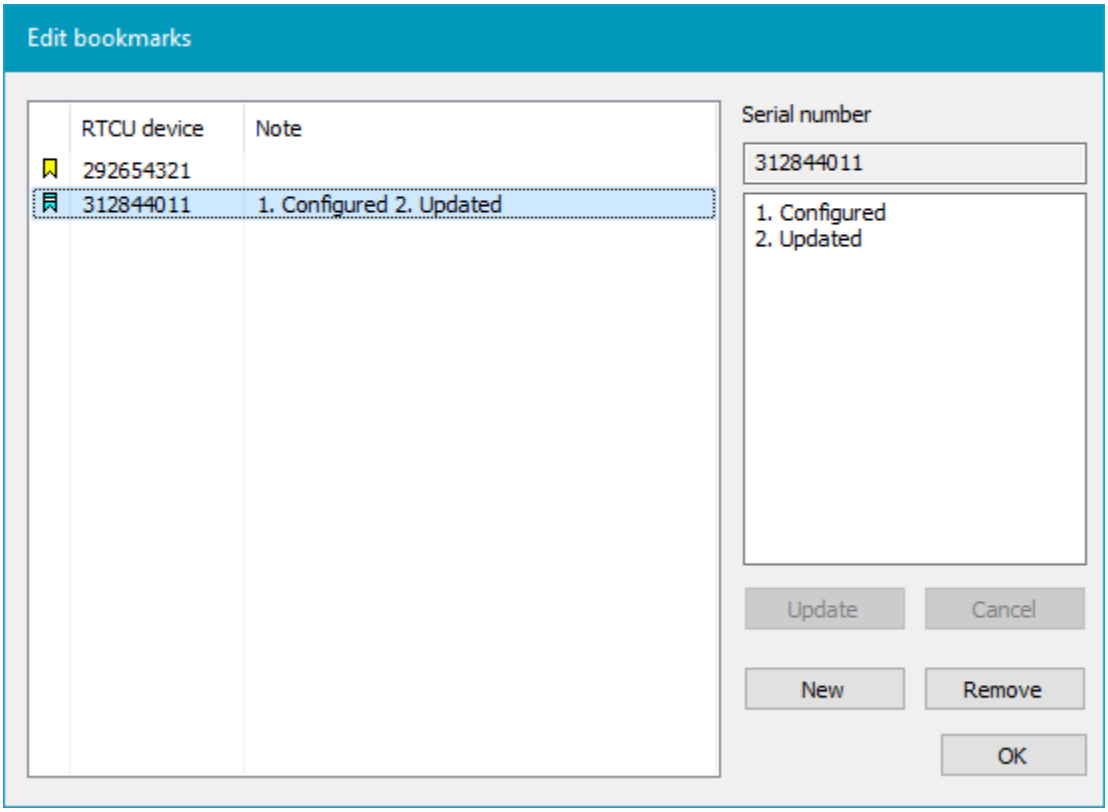
The menu also shows how many device will be affected by the forced upgrade.

The transfer will not be initiated if the device or profile is inactive or no firmware, application, or file has yet to be selected.
Once a transfer has been forced, the RDS will finish the transfer even if the RDS is restarted.

Set Bookmark and Clear Bookmark are used to manage the local bookmarks, which can be used to mark devices so they can be easily found.
Clicking in the bookmark column for a device will set or clear the bookmark for the device.
Clicking the Bookmarks button or clicking "Edit bookmark" in the context menu will open the bookmark dialog.

1.8 Bookmarks

The bookmark dialog is used to show and manage the local bookmarks.
The bookmarks can be used to mark devices that e.g. needs to be kept a closer eye on, or that has a special history.
Unlike the comments, the bookmarks are kept locally on the PC and are not shared with other users of the RDS.
Note: If multiple RDS Managers are used simultaneously, only the first one will be able to access the bookmarks.



A bookmark can optionally contain a note, which can contain further details about why the bookmark was set.

The following buttons are used to edit the notes:

Update:
Saves the changes to the note for the current bookmark. The note is removed if the text field is empty.

Cancel:
Removes the changes to the note.

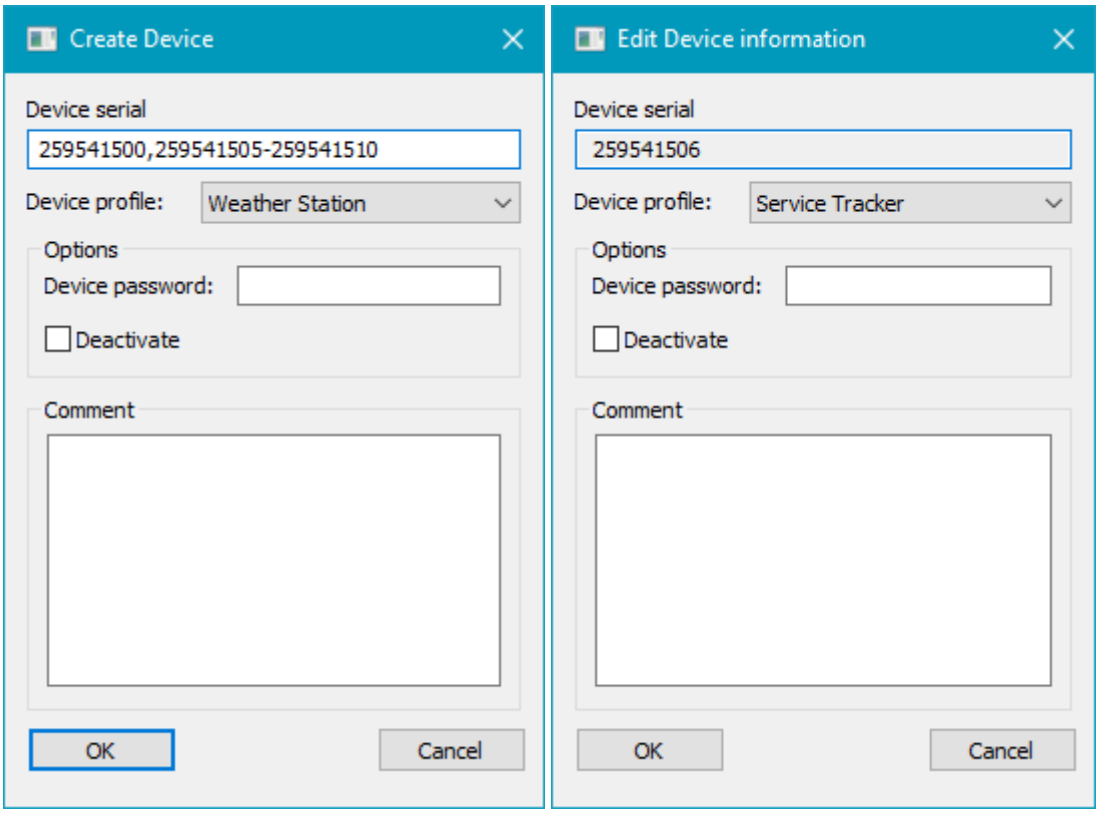
The following buttons are used to manage the bookmarks:
New:

Creates a new bookmark. The serial number can be changed until Update is pressed. The device does not have to exist on the RDS, so this can be used to mark a device before it has been turned on.

Remove:
Removes the selected bookmark.

1.9 Device Information dialog

This dialog is used to create and edit devices.



Device Serial Number(s)
When creating devices, it is possible to create:

1. Single serial number.
2. Multiple serial numbers. e.g. 750711023,750711025.
3. A range of serial numbers. e.g. 750711025-750711035.
4. Any combination of point 2 and 3. e.g. 750711023,750711025-750711035,750711040-750711049.

When editing a device, the serial number shown cannot be changed.
When editing more than one device, "[Various]" will be listed instead of the serial numbers.

Device Profile
The RDS uses this profile to determine when to update the RTCU device and what firmware and application to transfer.
When editing more than one device, an option not to change the profile is also included.

Options

Device password	The password used to access the RTCU device. If this is empty, the password of the profile is used instead.

	If more than one device is edited which contain different passwords, [Various] will be listed. If this is not removed, then the password will not be changed in any of the devices.
Deactivate	If this option is set, the RDS does not upgrade the device. A red dot is displayed in the device information window to indicate this. When editing more than one device, this option can also be set to “No Change”.
Comment	This is an optional comment about the device.