AirLink Management Services

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Overview

This page provides you with an overview of the portal's Device Management module. It describes the portal focusing on AirLink Management Services within the global portal architecture, showing how it is connected to other elements of the M2M services platform. It also gives information to be known prior to log in to the portal and start using it.

Objectives

Once a group of devices has been deployed on the field, the key challenge is to monitor, configure and maintain them cost effectively despite the distance.

The AirLink Management Services is a cloud-based device management solution that enables manufacturers or service providers to remotely monitor and upgrade a group of AirLink devices through a web portal, saving considerable operating costs.

This service is a turn-key solution including:

- A portal, which centralizes data and provides a web client interface to administrate a group of devices. The user interface includes the capacity to create dashboards in order to monitor key parameters and communication traffic of a group of devices, to configure them, and to remotely send AT commands. It also allows performing remote upgrade campaigns through a secure delta mechanism.
- An embedded agent natively integrated into AirLink Intelligent Embedded Module firmware.

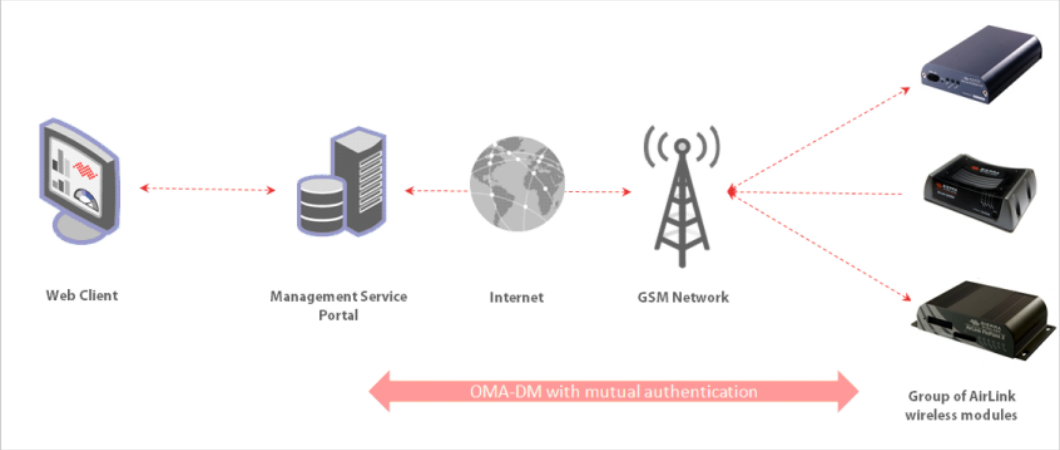
Architecture

The Management Services Portal and the embedded modules communicate together through the OMA-DM technology secured by mutual authentication mechanisms. This communication uses the same carrier subscription as for your other data transmission.

The access to the portal is protected with a RSA One Time Password.

Any data stored into the portal is redundantly saved.

The following figure shows an overview of the server and AirLink embedded modules architecture.



Prerequisites

As a prerequisite, your company account and one administrator user must have been created by the AirLink support team, following your request.
If not, you will not be able to access the portal and create children companies associated or other users within your company.

For more information on how to create a first user a company, please contact the AirVantage team at http://www.sierrawireless.com/wheretobuy/Contact_Sales/ContactAirVantageSales.aspx.

Certified Browsers

The web portal can be accessed using the following certified browsers:

Operating System	Browser
Windows	Internet Explorer 8, 9 Firefox 3.6, 4.0.1
Linux	Firefox 3.6, 4.0.1

Logging-in to the Management Service Portal

This section shows you how to log-in to the portal.

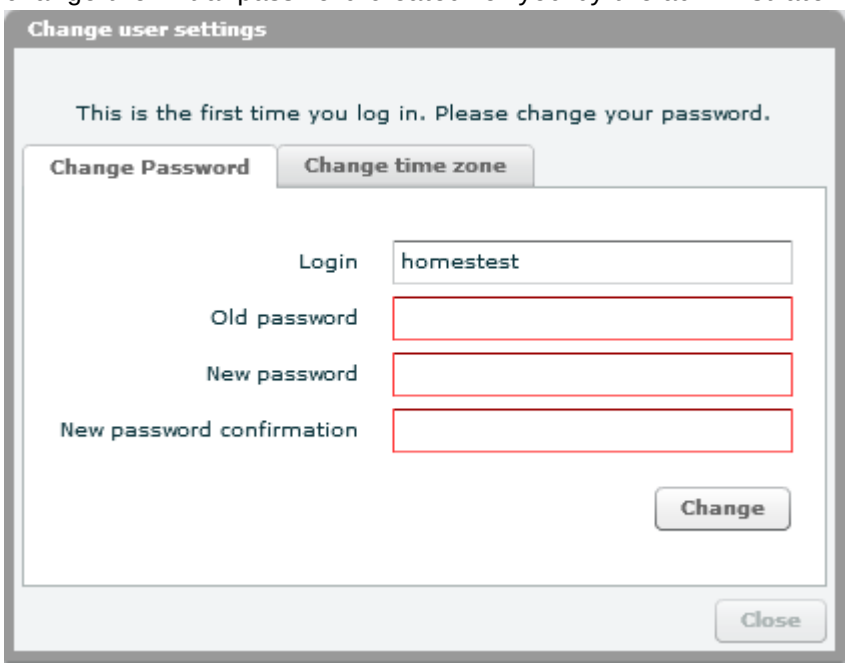
To log-in to the portal

1. Open your favorite and compatible browser.
2. Enter the following URL in your browser URL address bar: http://amsforairlink.sierrawireless.com
   The portal login page appears:

3 In the Username field, enter the username.

4 In the Password field, enter the user password.

5 Click on [Submit].
On your first connection, a Change user settings window opens, asking you to change the initial password created for you by the administrator:



6 Enter all required information in the *Change Password* tab: Old password, New password.

7 Confirm the new password in the New password confirmation field.

8 If needed, change the time zone settings in the *Change time zone* tab.

9 Click on [Change].
A pop-up message appears, indicating that the password, and possibly time zone, settings have been successfully changed.

10 Click on [OK].

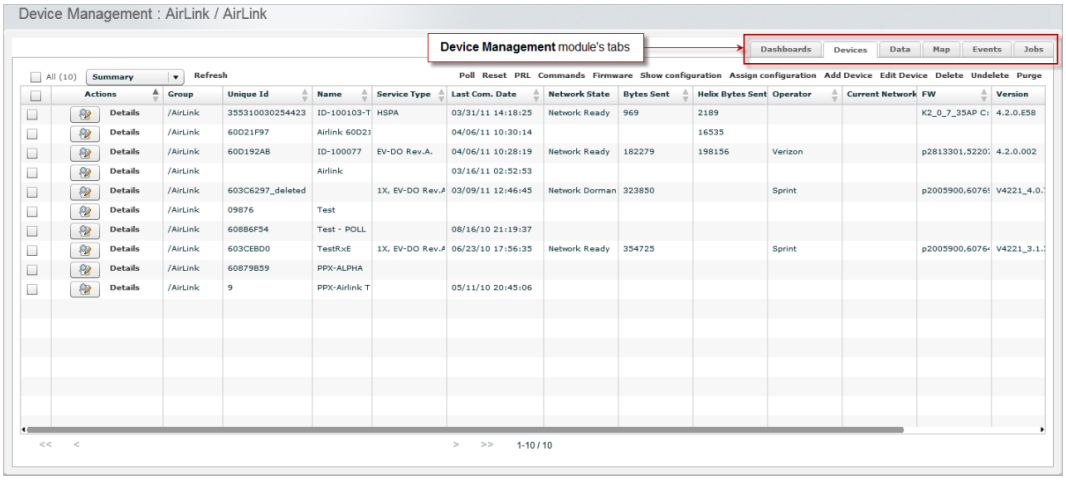
11 In the Change user settings window, click on [Close].
The portal opens on the portal homepage.

Device Management Module Description

This section describes the Device Management module, and more specifically the *Devices*, *Dashboards* and *Jobs* tab.

Device Management Tabs

When the Device Management module is selected, the Main pane is organized in tabs:



Each tab opens on a table, except the:

- *Dashboards* tab, which displays graphics and tables about devices activity, download and monitoring operations. For more information, see the dashboard-related sections: AirLink dashboard, Download Campaigns Dashboard and Device Group Details).
- *Map* tab, which displays a map.

The table below describes the tabs of the Device Management module's Main pane:

Tab	Description
Dashboard	Displays information about devices, such as device group details, download or monitoring information.
Devices	Displays the list of devices associated with the device group selected in the Left pane.
Data	Displays the list of device data. Allows you to monitor and export device data ([Export] button). The *Devices* tab includes a Menu and button bar for performing a number of actions on the device(s) selected in the device table. |
Map	Displays a map. Allows you to locate your devices.
Events	Displays the list of device events. Allows you to monitor, archive and export device events ([Export] and [Archive] buttons).
Jobs	Displays the list of device jobs. Allows you to monitor device jobs.

Imports	Displays the list of completed device imports. Allows you to download device import logs as well as performing new device imports ([New import] button).

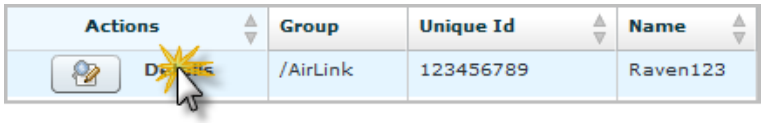
Devices Tab

The *Devices* tab displays all devices created for a given device group (to be selected in the Left pane).

It includes a Button bar as well as a drop-down menu listing views.

Devices Tab Button Bar

The table below describes the Button bar of the *Devices* tab:

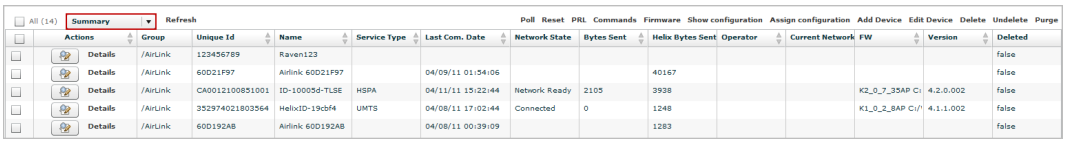
Button	Description
Refresh	Allows you to refresh device information.
Poll	Allows you to send a POLL common command to the selected device.
Ping	Allows you to send a PING common command to the selected device.
Read Status	Allows you to send a POLL command on a limited set of parameters, defined as follows - Phone number / IP address / Network State / RSSI / Network Device Type / ALEOS SW version / (EC/IO) / Channel/WAN \ Cellular bytes sent and received / Device Name - to the selected device.
Reset	Allows you to send a RESET common command to the selected device.
PRL	Allows you to send an UPDATE_PRL common command to the selected device.
Commands	Allows you to open the Actions window for sending commands to devices. For more information, see Sending Commands to Devices.
Firmware	Allows you to upgrade the selected device firmware using the Device firmware upgrade wizard. For more information, see Firmware and Software Upgrades
Show configuration	Allows you to display the selected device AceManager-based Details window. This window can also be launched by clicking on the [Details] link for a given device: 
Assign configuration	Allows you to assign a specific configuration template to the selected device.
Add device	Allows you to launch the Device Creation window for creating a new device.
Edit device	Allows you to launch the Device Edition window for editing the selected device.
Delete (Archive)	Allows you to archive the selected device(s).
Undelete (Unarchive)	Allows you to unarchive the selected device(s).
Purge	Allows you to remove definitely the selected device(s) that have been already archived.

Devices Tab Views

Five views have been defined to display specific device-related information: Summary, Network Status, Location, Status and Data.

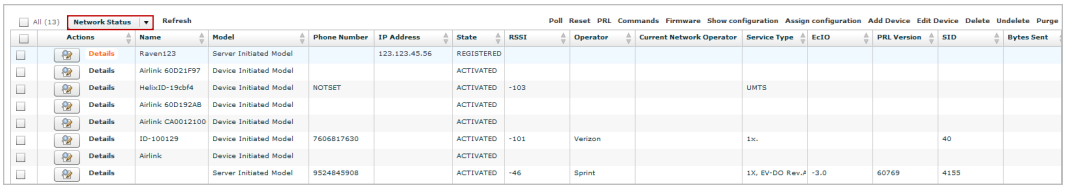
The tables below describe these views.

"Summary" View



Column name	Description
Group	Device group including the device
UniqueId	Device's unique ID (for example IMEI)
Name	Device's name
Service Type	Communication mode (radio system) used for communicating with the device
Last Com. Date	Date of last communication between portal and communication device
Network State	Netwok state (either `Dormant` or `Ready`)
Bytes Sent	Number of bytes sent by the communication device
Helix Bytes Sent	Number of helix bytes sent by the communication device
Operator	Telecommunication operator managing the SIM card
Current Network Operator	Network operator having registered the communication device
FW	Firmware version
Version	ALEOS version
Deleted	Indicates whether the device was deleted (`true`) or not (`false`)

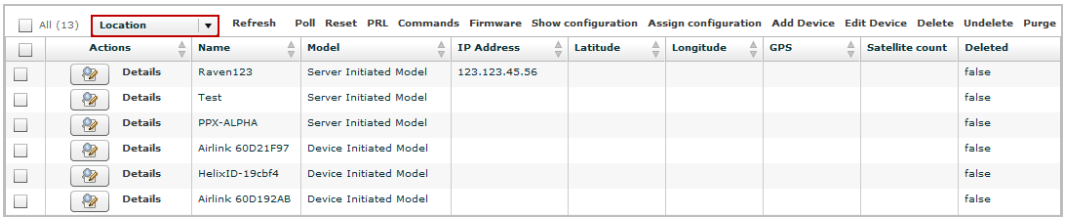
"Network Status" View



Column name	Description
Name	Device's name
Model	Communication initiation mode, either from the device (`Device Initiated Model` or from the server (`Server Initiated Model`)
Phone Number	Phone number of the user associated with the device
IP Address	IP address of the communication device
State	Device state : `REGISTERED` or `ACTIVATED`
RSSI	RSSI (Received Signal Strength Indication) level
Operator	Telecommunication operator managing the SIM card
Current Network Operator	Network operator having registered the communication device
Service Type	Communication mode (radio system) used for communicating with the device

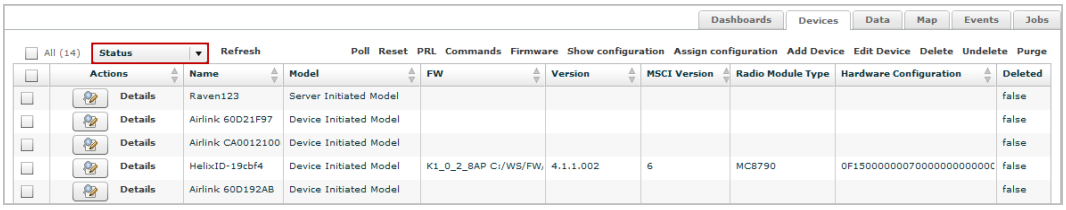
EcIO	Energy od Carrier over all noise
PRL version	PRL (Preferred Roaming List) version
SID	TBD
Bytes sent	Number of bytes sent by the communication device

"Location" View



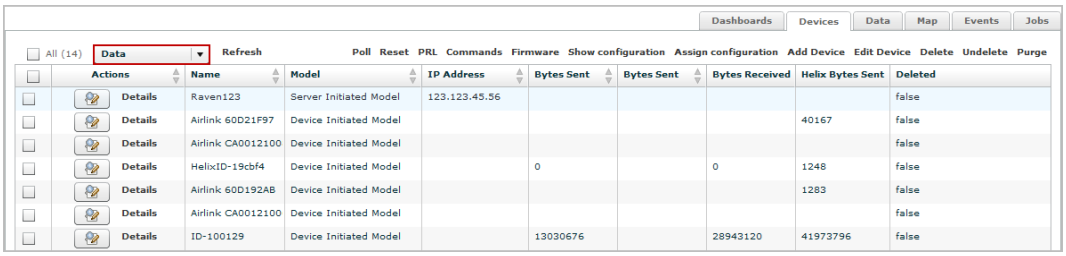
Column name	Description
Name	Device's name
Model	Communication initiation mode, either from the device (`Device Initiated Model` or from the server (`Server Initiated Model`)
IP Address	IP address of the communication device
Latitude	Device's latitude (between -90° and +90°)
Longitude	Device's longitude (between -180° and +180°)
GPS	GPS fix indication (0 – No fix, 1 – GPS Fix)
Satellite count	Number of satellites visible from the device's location
Deleted	Indicates whether the device was deleted (`true`) or not (`false`)

"Status" View



Column name	Description
Name	Device's name
Model	Communication initiation mode, either from the device (`Device Initiated Model` or from the server (`Server Initiated Model`)
FW	Firmware version
Version	ALEOS version
MSCI Version	Version of communication protocol between communication device and portal
Radio Module Type	Version of the radiocommunication module embedded in the communication device
Hardware Configuration	Telecommunication operator managing the SIM card
Deleted	Indicates whether the device was deleted (`true`) or not (`false`)

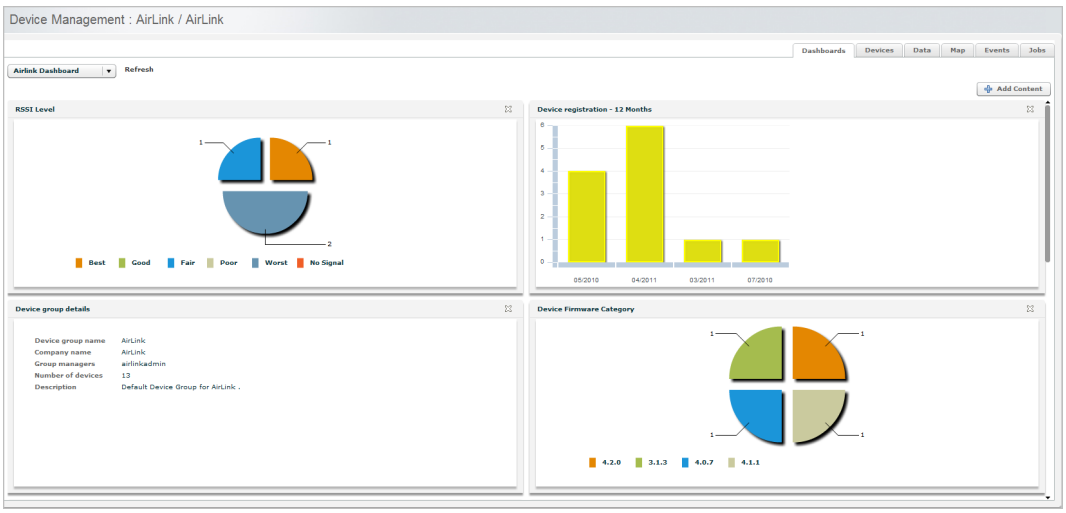
"Data" View



Column name	Description
Name	Device's name
Model	Communication initiation mode, either from the device (`Device Initiated Model` or from the server (`Server Initiated Model`)
IP Address	IP address of the communication device
Bytes Sent	Number of bytes sent by the communication device
Bytes Received	Number of bytes received by the communication device
Helix Bytes Sent	Number of helix bytes sent by the communication device
Deleted	Indicates whether the device was deleted (`true`) or not (`false`)

AirLink Dashboard Tab

The Device Management module gives you access to a number of dashboards, among which the AirLink Dashboard (for more information about other dashboards, see `Download Campaigns Dashboard` and `Device Group Details`):



The AirLink Dashboard offers an easy way to monitor your main device information at a glance. It is a fully configurable dashboard, in which you can add or remove content (in the form of predefined widgets) as well as organize the layout as needed.

The following sections describe how to add, remove and arrange content within the AirLink Dashboard, and provides you with details about each widget:

- Adding, Removing and Arranging Widgets
  - To add a widget

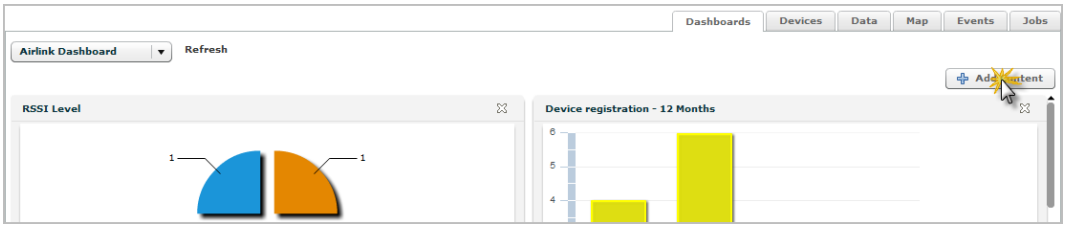
The size of a widget depends on how many widgets are organized within the AirLink Dashboard, and on the size of your browser's window. If only one widget is selected, it fills the whole dashboard space. Widgets are automatically resized when resizing the brower's window or arranging the dashboard layout.

Adding, Removing and Arranging Widgets

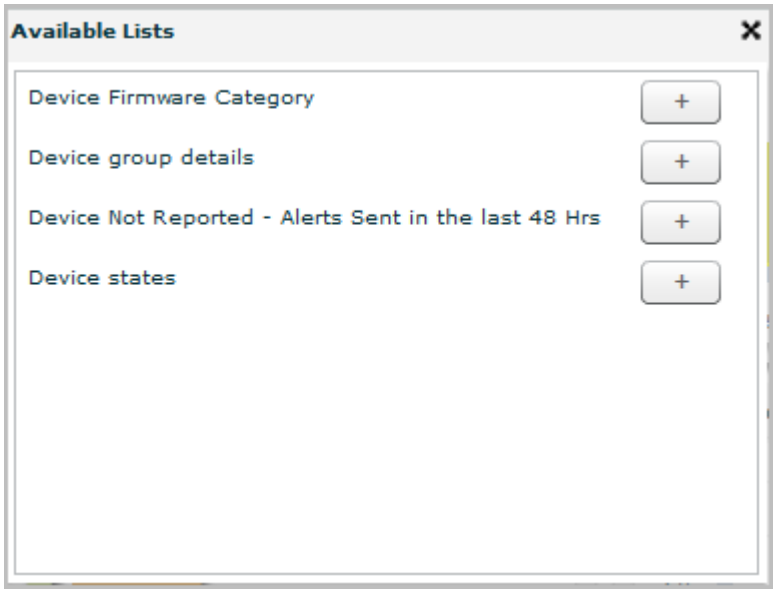
To add a widget

The following procedure describes how to add content to the AirLink Dashboard:

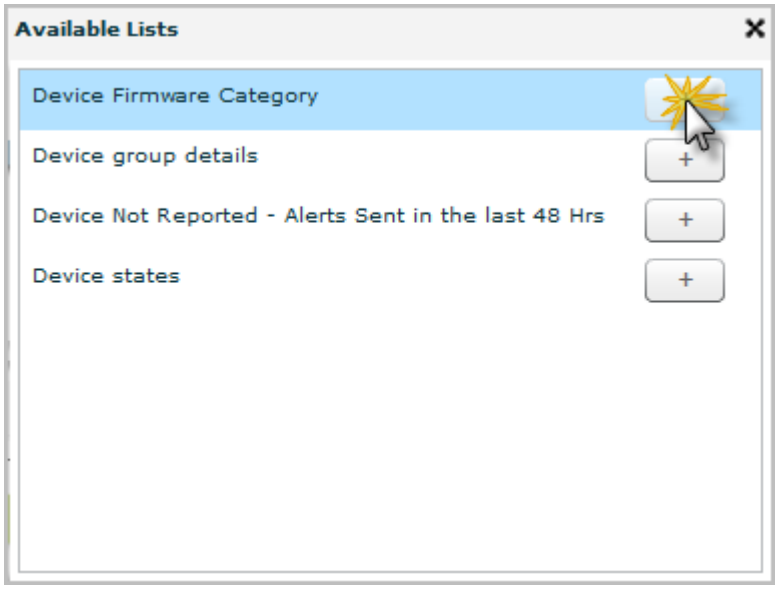
1 Assuming that the Device Management's Dashboards tab is selected, click on the [Add Content] button:



2 The Available Lists window listing all available widgets automatically opens:



3 Click on as many "Plus" buttons as widgets are required, one after the other:



Widgets are added at the bottom of the dashboard.

4 When all required widgets have been added, close the Available Lists window by clicking on the cross ( ) on the top right corner of the window.

To remove a widget

The following procedure describes how to remove content from the AirLink Dashboard:

1 Point your mouse over the cross on the top right corner of the widget to be closed. The cross turns red.

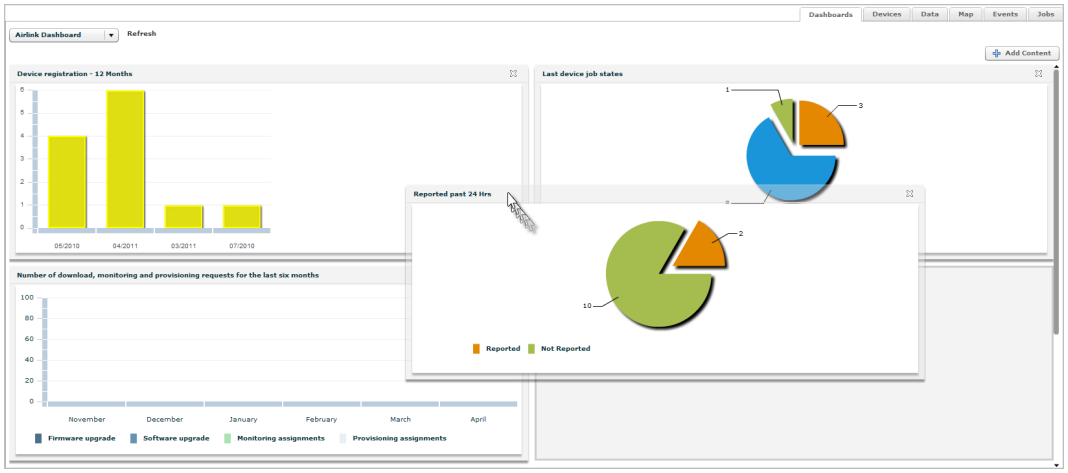
2 Click on the cross to close the widget.
The remaining widgets automatically slide and the dashboard is reconfigured.

To arrange the dashboard layout

The following procedure describes how to arrange the dashboard layout within the AirLink Dashboard:

1 Left-click on the upper part of the widget frame.

2 While keeping the mouse button pressed, drag the widget wherever wanted.



The other widgets automatically move to fit in the freed space.

3 When you are satisfied with the layout, drop the widget.

Widget Description

The following paragraphs describe each predefined widget.

"Device group details" Widget

The Device group details window displays the main selected device group details, as set while creating the device group: Device group name, Company name, Group managers, Number of devices, Description.

"Device Not Reported - Alerts Sent in the last 48 Hrs" Widget

The Device Not Reported - Alerts Sent in the last 48 Hrs widget displays all notifications sent to a user regarding communication errors with the device of the selected device group, when communication was lost for more than 48 h.

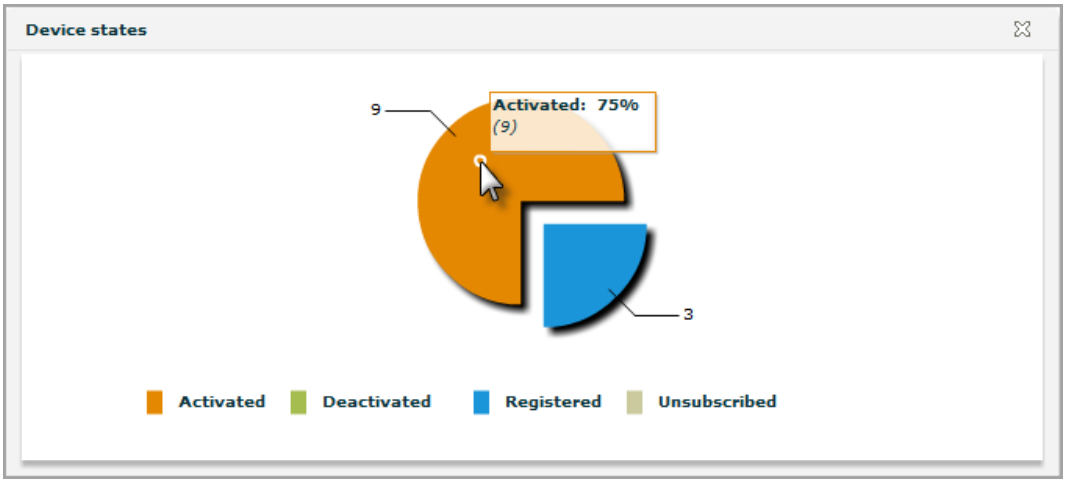
A notification can be generated even if the last communication was performed less than 48 h ago (alert generated before communication resumed).

The table below describes the widget's columns:

Column	Description
Name	Device name
RSSI	RSSI value a tthe time of logging
Last Communication Date	Date and time of last communication between server and communication device
Type	TBD
Message	Message sent in the alert notification

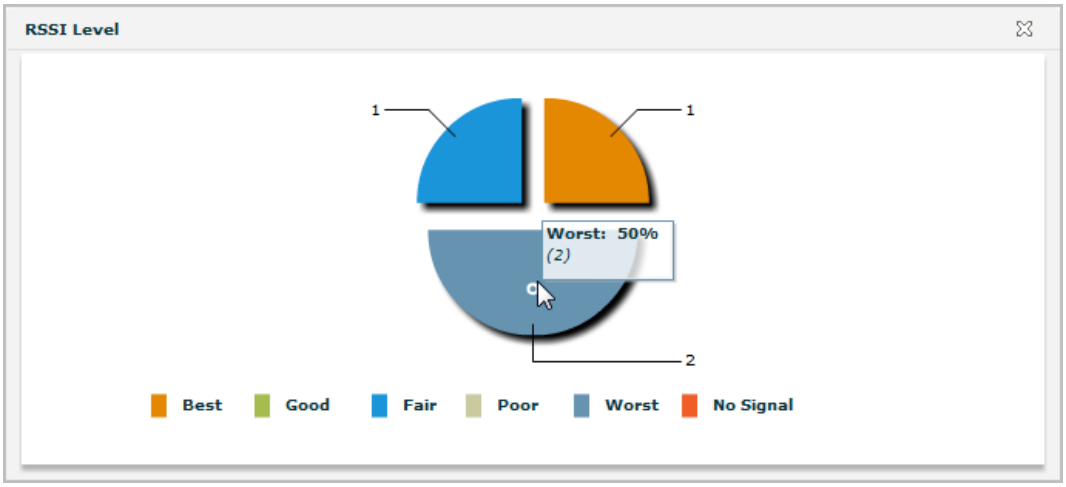
"Device states" Widget

The Device states widget displays a circular histogram showing the number and percentage of devices within a device group being at a certain defined state. States are divided into four categories: Activated, Deactivated, Registered and Unsubscribed. Pointing your mouse over one of the histogram slices displays complete information (state, number of devices in this state, percentage of devices in this state within the device group).



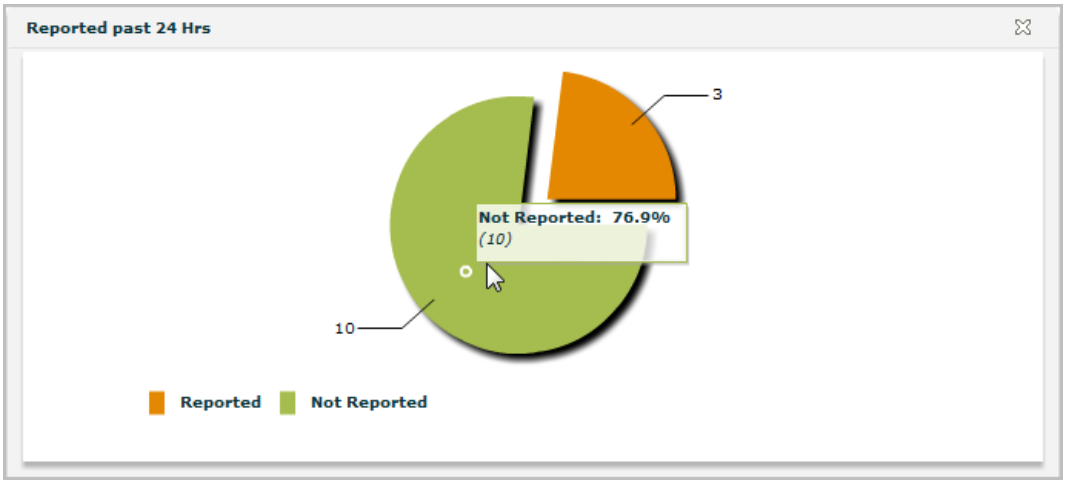
"RSSI Level" Widget

The RSSI Level widget displays a circular histogram showing the number and percentage of devices within a device group being at a given RSSI level. RSSI levels are divided into six categories: Best, Good, Fair, Poor, Worst and No Signal. Pointing your mouse over one of the histogram slices displays complete information (RSSI level, number of devices receiving signal at this level, percentage of devices receiving signal at this level within the device group).



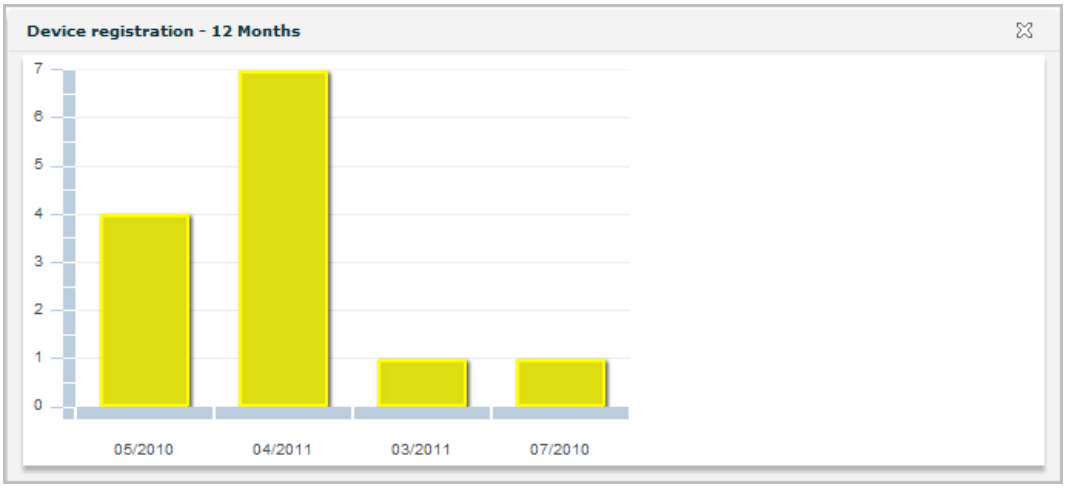
"Reported past 12 Hrs" Widget

The Reported past 24 Hrs widget displays a circular histogram showing the number and percentage of devices within a device group having reported - or not - in the last 24 hours. Pointing your mouse over one of the histogram slices displays complete information (Reported / Not Reported, number of devices having reported or not, percentage of devices having reported or not).



"Device registration - 12 months" Widget

The Device registration - 12 months widget displays a bar chart showing the number of devices registered over the last 12 months.



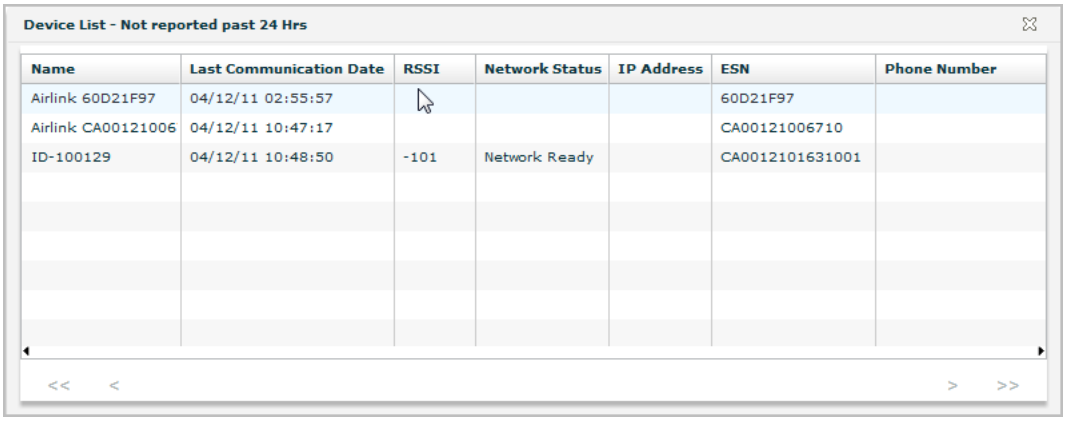
"Device List - Not reported past 24 Hrs" Widget

The Device List - Not reported past 24 Hrs widget displays the list of devices not having reported for 24 consecutive hours.

A device can appear in the list even if the last communication was performed less than 24 h before opening the widget. This means that the device did not report for 24 h, then resumed communication later.

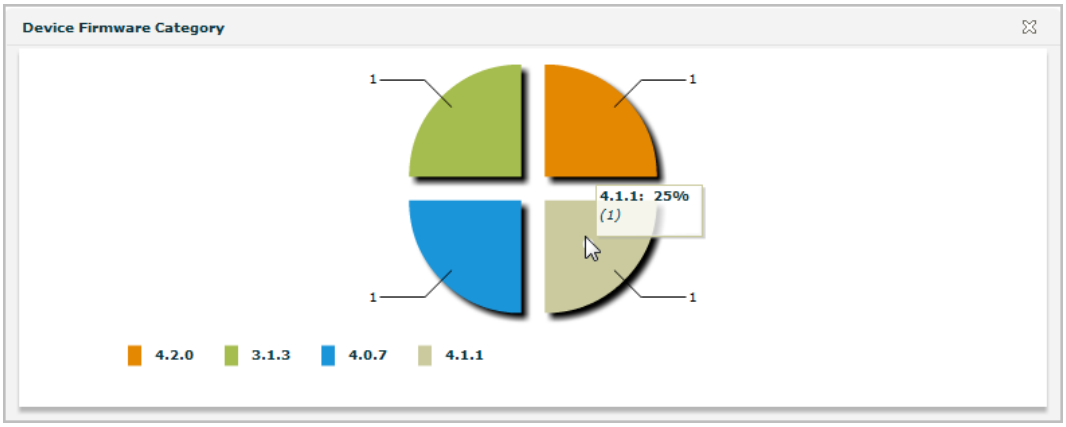
The table below describes the widget's columns:

Column	Description
Name	Device name
Last Communication Date	Date and time of last communication between server and communication device
RSSI	RSSI value at the time of logging
Network Status	Network status at the time of logging
IP Address	Device IP address
ESN	Device ID (equivalent of IMEI)
Phone Number	Phone number of the user in charge of the device group



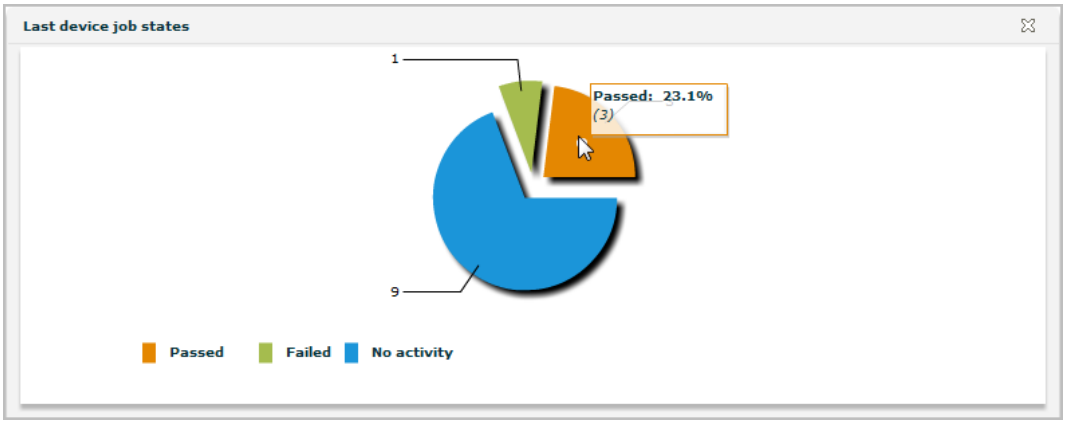
"Device Firmware Category" Widget

The Device Firmware Category widget displays a circular histogram showing the number and percentage of devices within a device group running in a given firmware version. Pointing your mouse over one of the histogram slices displays complete information (version number, number of devices running in this firmware version, percentage of devices running in this firmware version).



"Last device job states" Widget

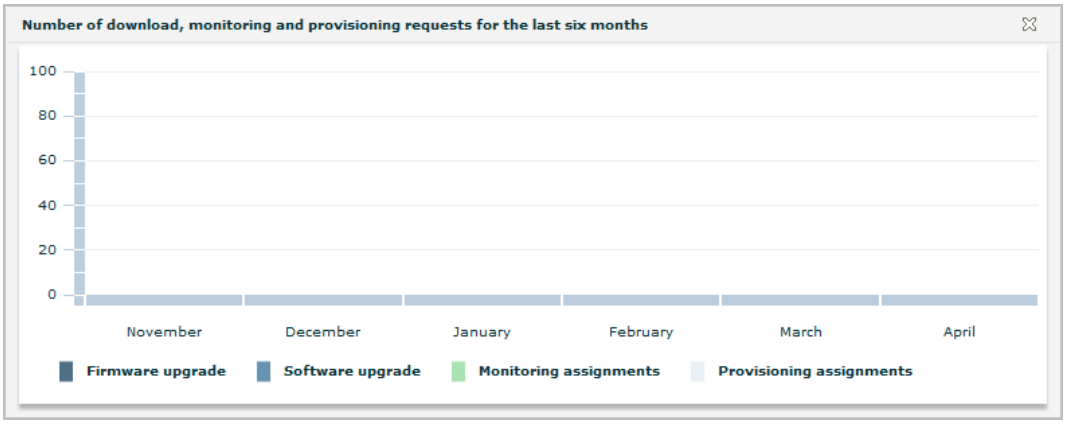
The Last device job states widget displays a circular histogram showing the number and percentage of jobs in a given state within a device group. Job states are divided into three categories: Passed, Failed and No activity. Pointing your mouse over one of the histogram slices displays complete information (job state, number of jobs in this state, percentage of jobs in this state).



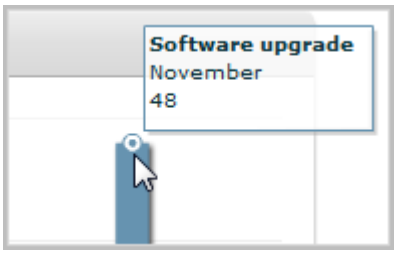
"Number of download, monitoring and provisioning requests for the last six months" Widget

The Number of downloads, monitoring and provisioning requests for the last six months widget displays a bar chart showing the number of download, monitoring and

provisioning requests sent for the last six months.



Pointing you mouse over the top of a bar displays the number and type of requests sent over the selected month.



Jobs tab

This section describes the *Jobs* tab and procedures for :

- Setting a Job Schedule and Periodicity
- Canceling a Periodic Job or a Single Occurrence of a Periodic Job

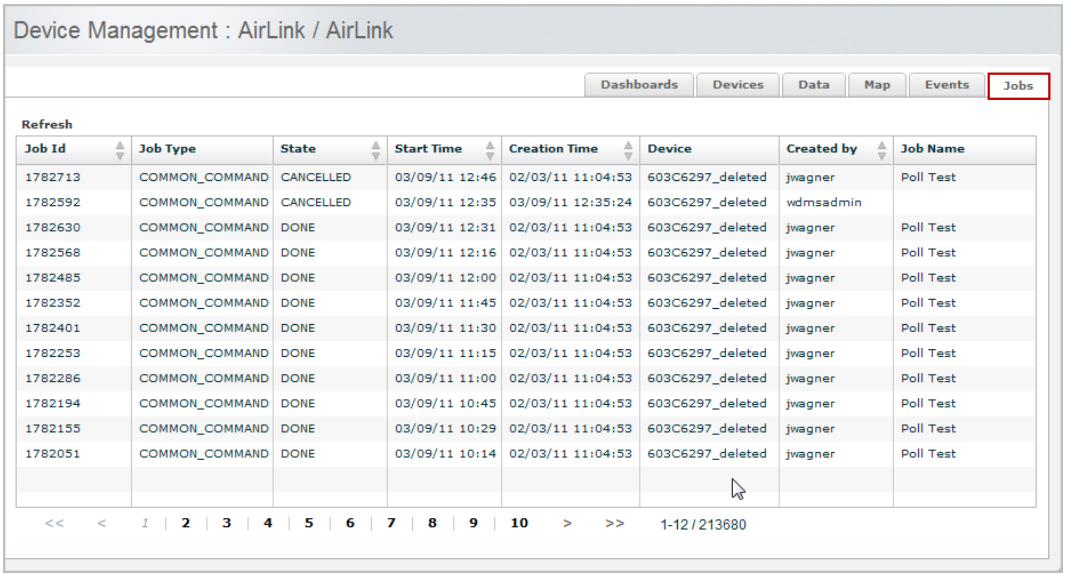
Tab Description

Different kind of operations can be scheduled on the server to be executed on the remote devices such as:

- configuration operations to set parameters on devices or set the monitoring of devices
- sending of commands
- program software upgrades

Each time an operation of this kind is scheduled, a job is created on the server. An operation can be launched on a single device or a list of multiple devices at the same time within a group of devices.
The status of any job enables to follow the status of the operation from its creation date until its end of execution.

You can follow up jobs by selecting the *Jobs* tab in the Device Management module's Main Pane. The list of scheduled jobs is then displayed:



The meaning of each column is described in the table below:

Job column	Description
Job Id	Unique identifier assigned to each job created on the server. Eases searches in the list of jobs.
Job Type	Available job types are the following: FIRMWARE UPGRADE: remote downloads of new firmwares into devices. WORKFLOW: running of a series of unitary commands on devices. COMMON COMMAND: running of common commands (Poll, Reset, PRL, Ping, Read Status...)
State	Provides the status of job processing: PENDING: server about to execute the job. APPLIED: job taken into account by server, waiting for devices to connect to the server. IN PROGRESS: device is currently executing the job. DONE: job complete (either successful, partially successful or in failure) CANCELLED: job cancelled by user
Start Time	Shows the actual date and time of a given job execution.
Creation Time	Shows the date of the creation of the job.
Device	Provides the unique identifier of the device on which the job was created for.
Created by	Displays the user who created the job.
Job Name	Diplays the name of the job given by the user who created it (if any).

When a communication is initiated between a device and the server, all pending jobs are successively executed for this device

Jobs Schedule and Periodicity

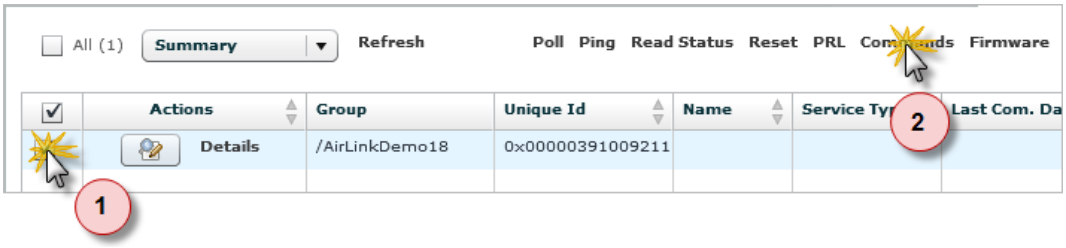
This section contains procedures for setting a job periodicity and canceling periodic jobs.

Setting a Job Schedule and Periodicity

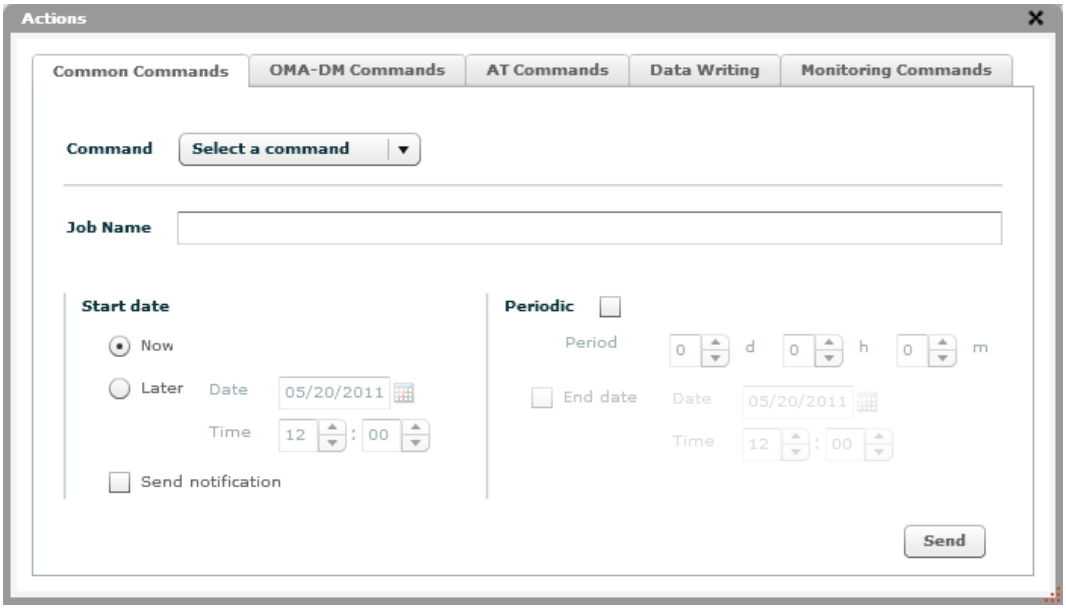
To set a job schedule and periodicity

1 Assuming that the *Devices* tab is selected, select a device by checking the corresponding checkbox.

2 Click on [Commands] in the Button bar.



The Actions window opens:



This window allows you to:

- decide whether to send the command now or later, and when (Start date area),
- set a periodicity, as well as an end date, for the command (Periodic area).

1 To send the command immediately, leave the Now radio button checked in the Start date area.

2 To send the command later:

   a. Check the Later checkbox,

   b. Enter a date directly in the Date field or select one by clicking on the schedule icon  ,

   c. Enter a time directly in the Time hour and minute fields or increase/decrease time by clicking on respective up and down arrows  ,

   d. If you want to initiate the job execution from the server, check the Send notification checkbox.

   e. A notification is sent to the device and it will connect to the server to run the scheduled job.

3 To set a job periodicity, check the Periodic checkbox. The area becomes active:

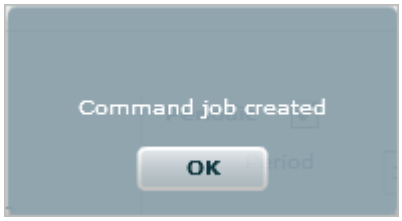
a. Enter a periodicity directly in the Period day, hour and minute fields or increase/ decrease period by clicking on respective up and down arrows  ,

b. If you want the job periodicity to end at a specific date, check the End date checkbox, then:

   i. Enter a date directly in the Date field or select one by clicking on the schedule icon  ,

   ii. Enter a time directly in the Time hour and minute fields or increase/ decrease time by clicking on respective up and down arrows  .

4 Click on [Send]. A confirmation window pops-up:



5 Close the Actions window.

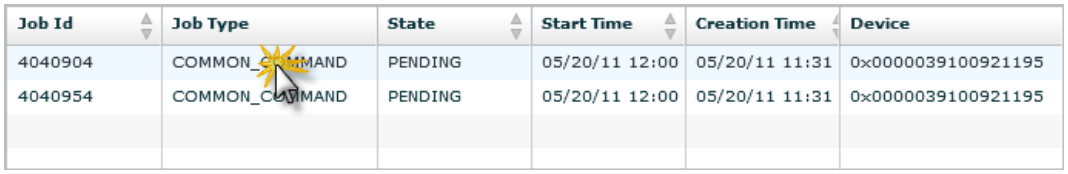
The job is sent to the job queue. If a periodicity has been set, as many jobs as scheduled through periodicity are queued. For example, if you set a command to be sent twice a day for 4 days, 8 jobs are queued. They all appear in the *Jobs* tab.

Canceling a Periodic Job or a Single Occurrence of a Periodic Job

This section describes how to cancel a periodic job and a single occurrence of a periodic job.

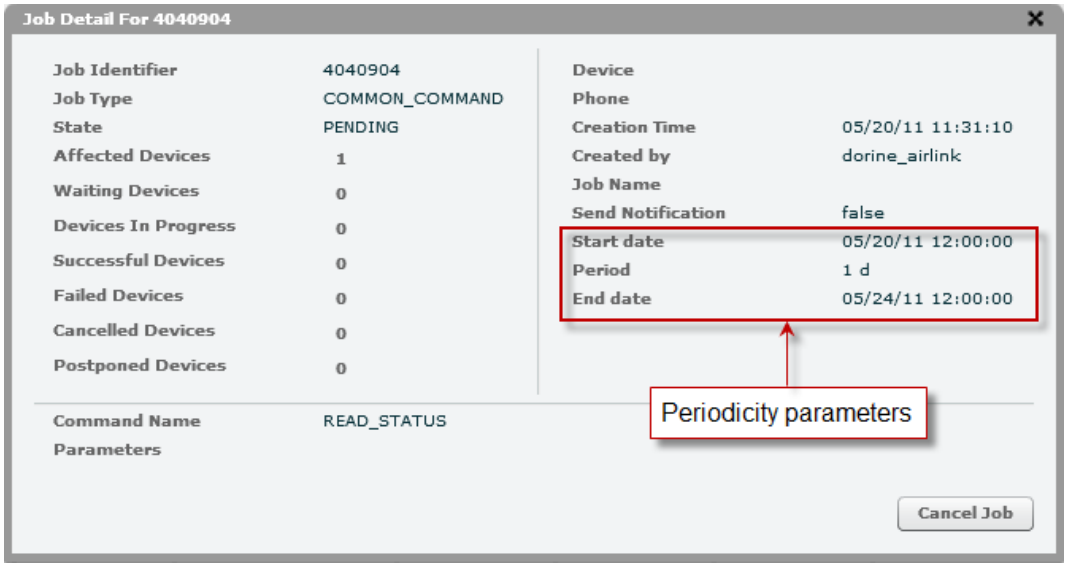
To cancel a periodic job

1 Assuming that the *Jobs* tab is selected, click on any occurrence of the periodic job to be deleted:



Job Id	Job Type	State	Start Time	Creation Time	Device
4040904	COMMON_COMMAND	PENDING	05/20/11 12:00	05/20/11 11:31	0x0000039100921195
4040954	COMMON_COMMAND	PENDING	05/20/11 12:00	05/20/11 11:31	0x0000039100921195

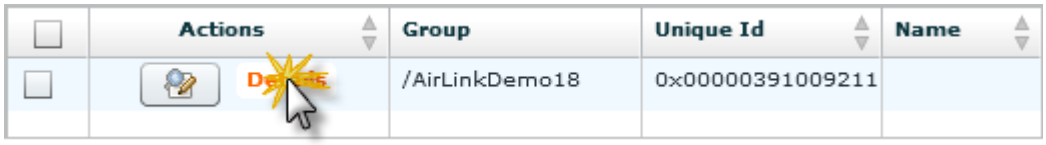
A Job Detail window opens, including information on periodicity if periodicity parameters have been set for this job:



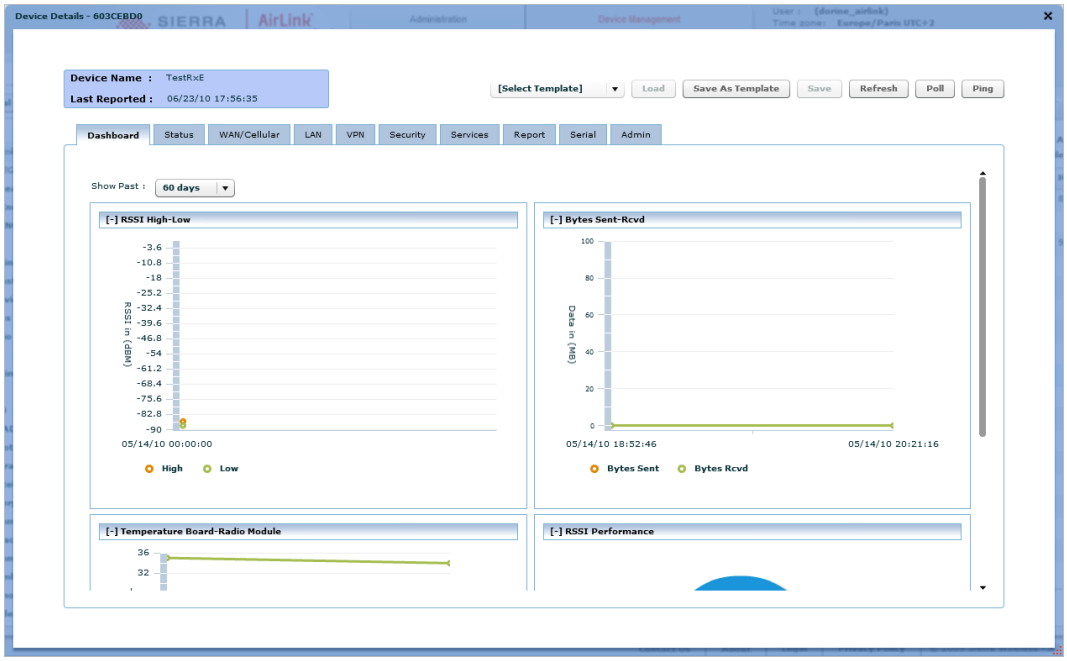
2 Click on [Cancel]. The job status (State column) turns to CANCELLED.

To cancel a single occurrence of a periodic job

1 Assuming that the *Devices* tab is selected, click on the Details link of the device for which jobs must be canceled:

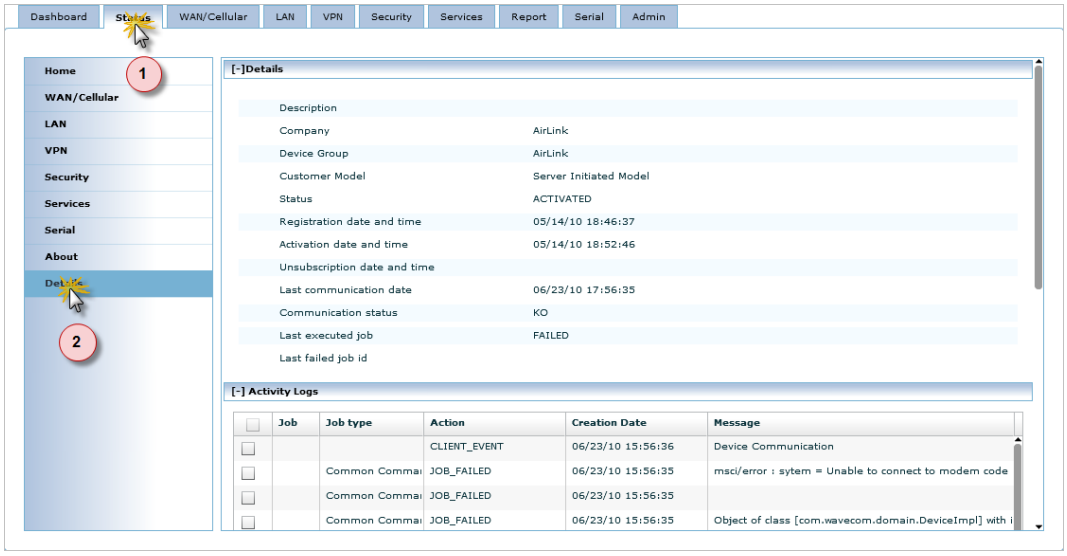


A Device Details window opens:



2 Click on the *Status* tab.

3 Select Details in the left list. The device's job details appear:



4 To cancel a specific occurrence of a periodic job, click on it in the Activity Logs table. A Job Detail window opens.

5 Click on [Cancel].

This specific occurrence of the periodic job is canceled.

Users and Devices

This page deals with users and devices. It defines notions such as companies, users, devices and device groups. and describes how to create, edit and delete instances of and how to browse through them.

Hierarchical Companies

This section explains the purpose of hierachical companies and describes how to create, edit, delete a company:

Purpose

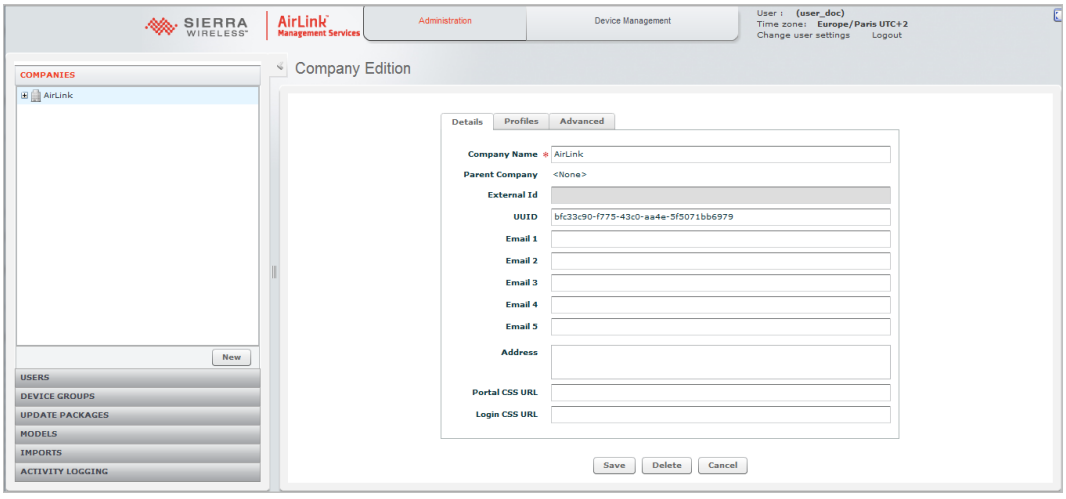
In the portal, companies are divided into parent and child companies. When Sierra Wireless creates your first user, which allows you to login to the portal, this user is associated with a *parent* company.

You can then create sub-companies belonging to the parent company. These are called *child* companies.

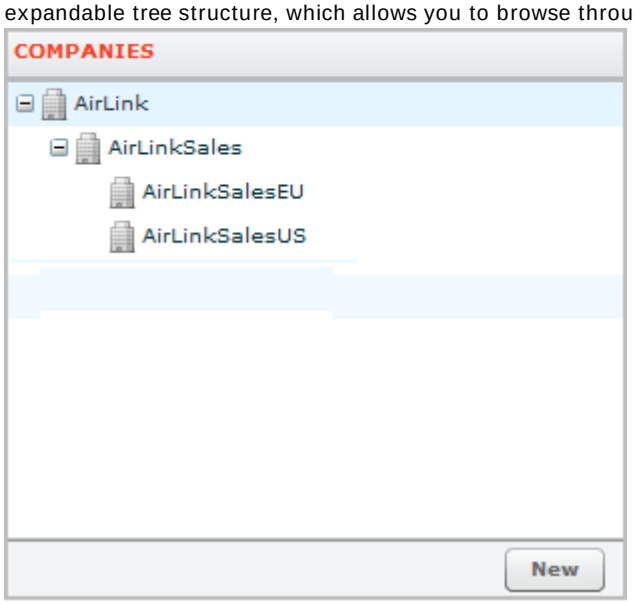
Parent and child companies are hierarchically organized as a tree structure. This tree structure is displayed in the *Companies* accordion tab of the Administration module.

Create, Edit and Delete Companies

Creating, editing or deleting a company is done from the *Companies* accordion tab of the Administration module:



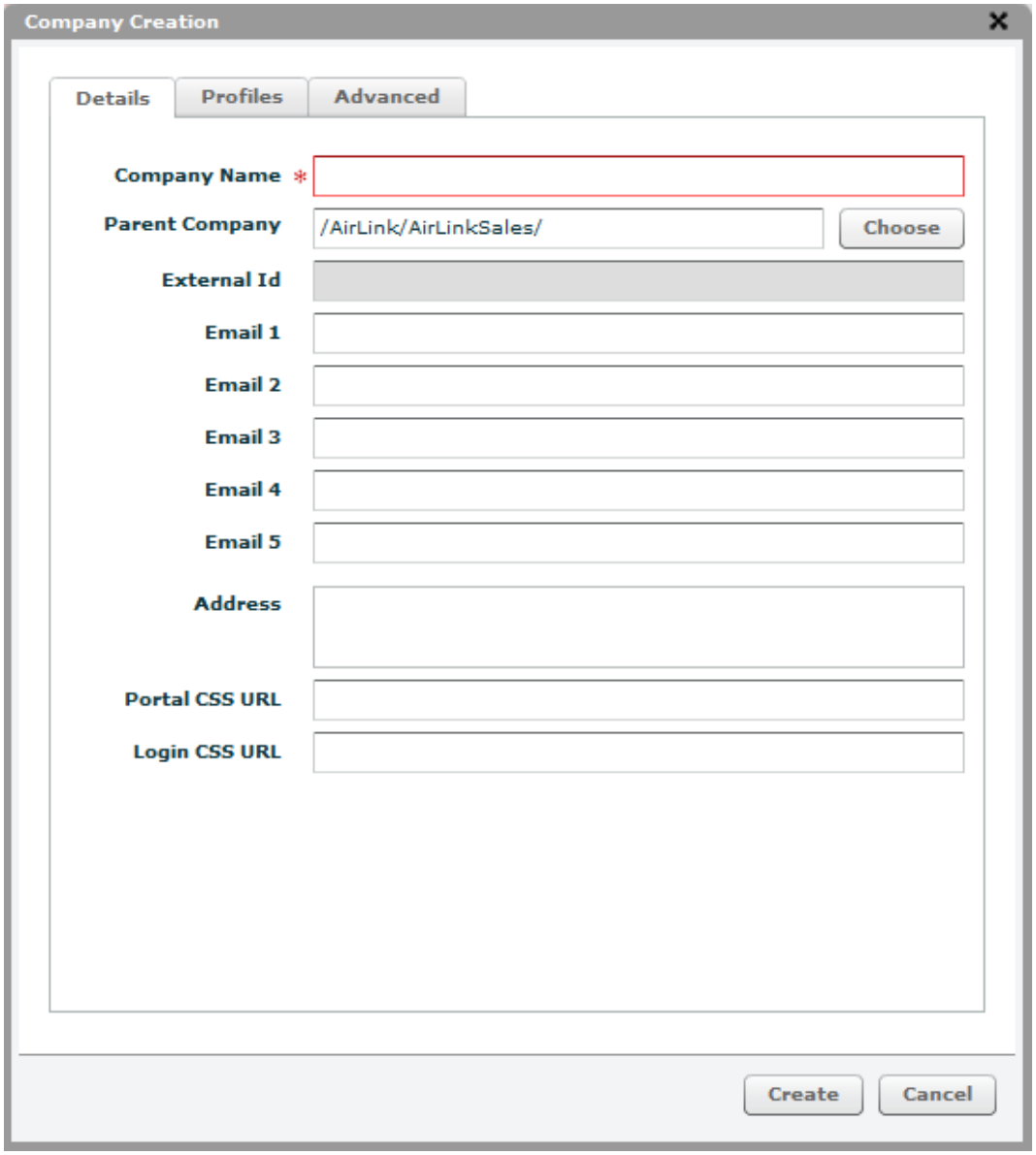
Accordion Tab	Description

Companies	Allows you to: ■ create new companies, ■ edit and delete existing companies. Companies are hierarchically displayed (parent company, child company) in an expandable tree structure, which allows you to browse through existing companies: 

To create a new company

1 In the *Companies* accordion tab, select the parent company.

2 Click on [New].
A Company Creation window opens:



The *Details* tab is selected by default. The Parent Company field is already filled with the name of the company selected before opening the window, as well as its parent company if applicable (`AirLinkSales`).
We will now create a child company called `AirLinkSalesUS`.

3 Enter the company name in the Company Name field: for example, `AirLinkSalesUS`.

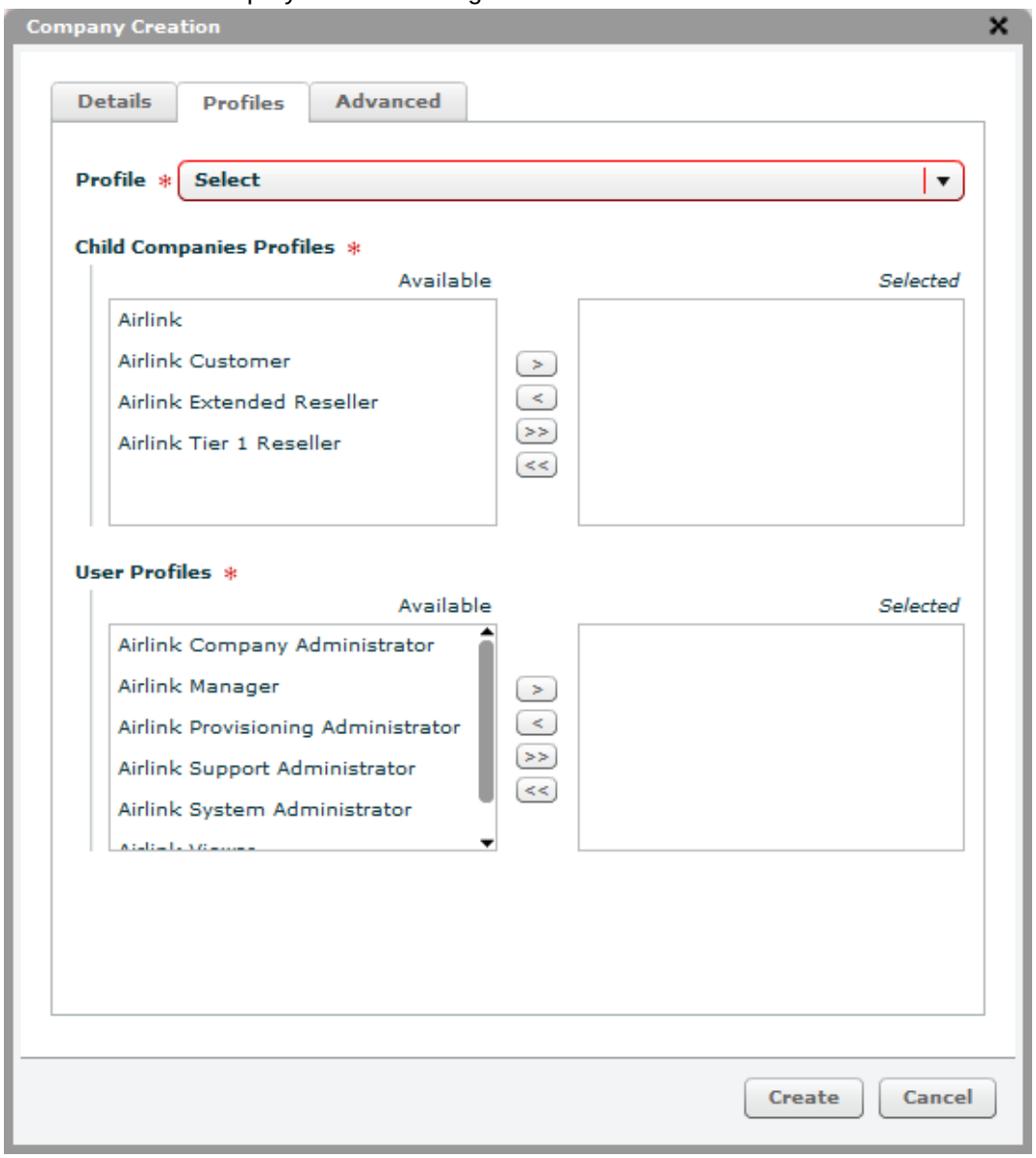
Only this parameter is mandatory in this tab. All others parameters are optional.

4 If needed, enter an e-mail in the Email1 field.
E-mails entered in the Email1 to Email5 fields are used as notification e-mail addresses when an event is triggered by a device.

- e-mails defined at company level can be e-mails of users of the portal or not
- e-mails of users of the portal can be used also if defined at user creation to receive alerts

The device triggering the event belongs to a device group associated with this company.

5 Select the *Profiles* tab.
The *Profiles* tab displays the following information:



6 Select a profile in the Profile drop-down menu.

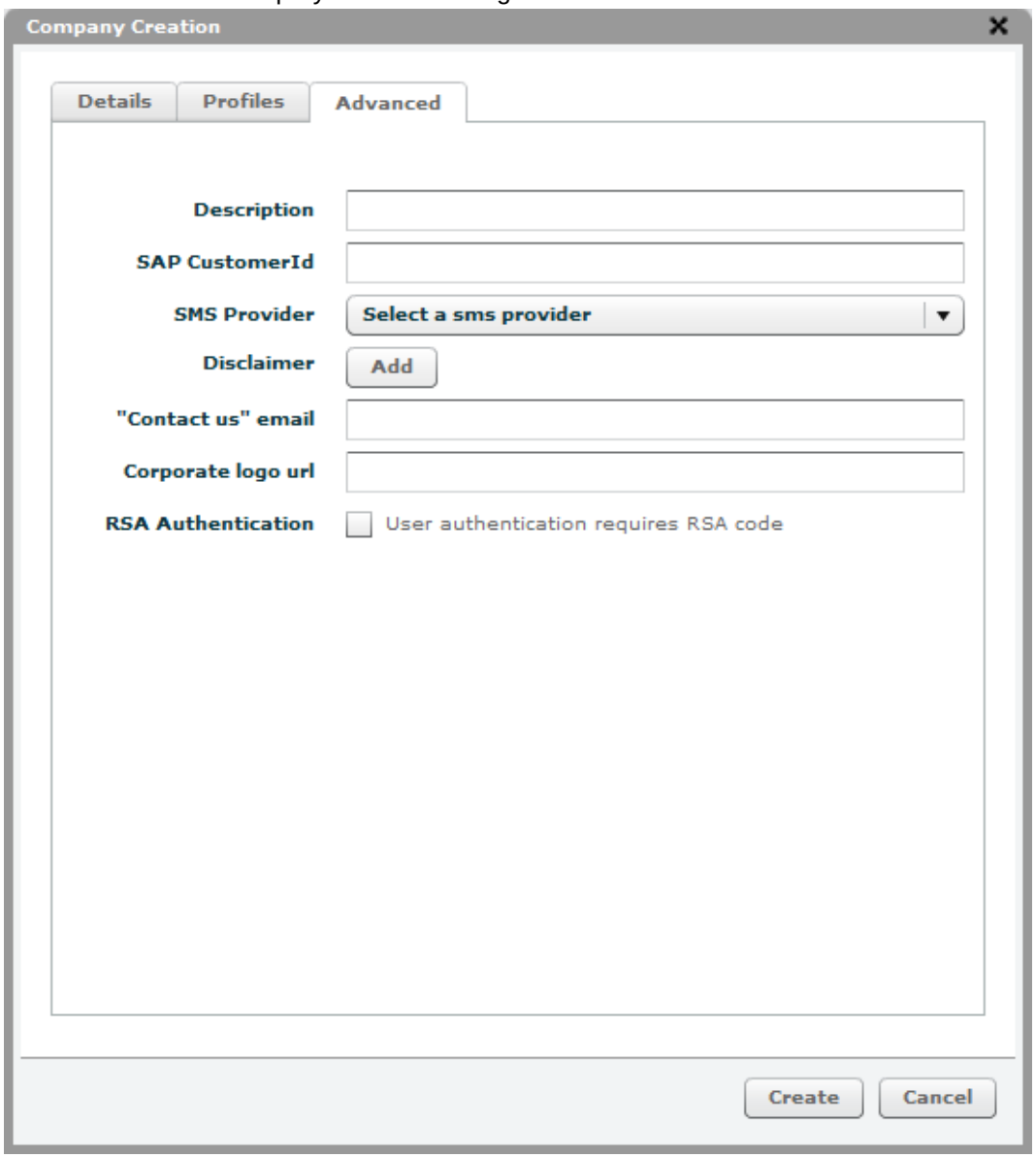
7 Using the Child Companies Profiles windows, specify which company profiles will be inherited by this company's children companies. To do so, select the required profile in the Available window, then click on > to make it slide to the Selected window.
Companies created with this company as parent company will inherit these profiles only.

8 Using the User Profiles windows, specify which user profiles will be available for users associated with this company.
Available user profiles depend on the company profile. Select the required profiles in the Available window, then click on > to make it slide to the Selected window.

You can also group your selection by keeping the Shift key pressed while selecting the required profiles, then click on .

9 When all required information has been set in the Company creation window, click on [OK].
The child company now appears in the *Companies* tab.

10 Select the *Advanced* tab.
The *Advanced* tab displays the following information:



This tab helps you customize your company environment.

11 Describe the company in the Description field.

12 If your company is stored within SAP with a `CustomerId`, enter it in the SAP CustomerId field.

13 Select a SMS provider in the SMS Provider drop-down menu.
When set, all SMS sent either to devices (for commanding them) or to users (for notification) are so through the selected SMS provider. If left unset, no SMS can be sent.

SMS providers can also be set at device level, for example to take advantage of competitive price policies in certain parts of the world.

14 If needed, add a disclaimer by clicking on Add. A Disclaimer Edition window opens. Type in the disclaimer then click on [Ok].
Disclaimers are displayed on first login of a user.

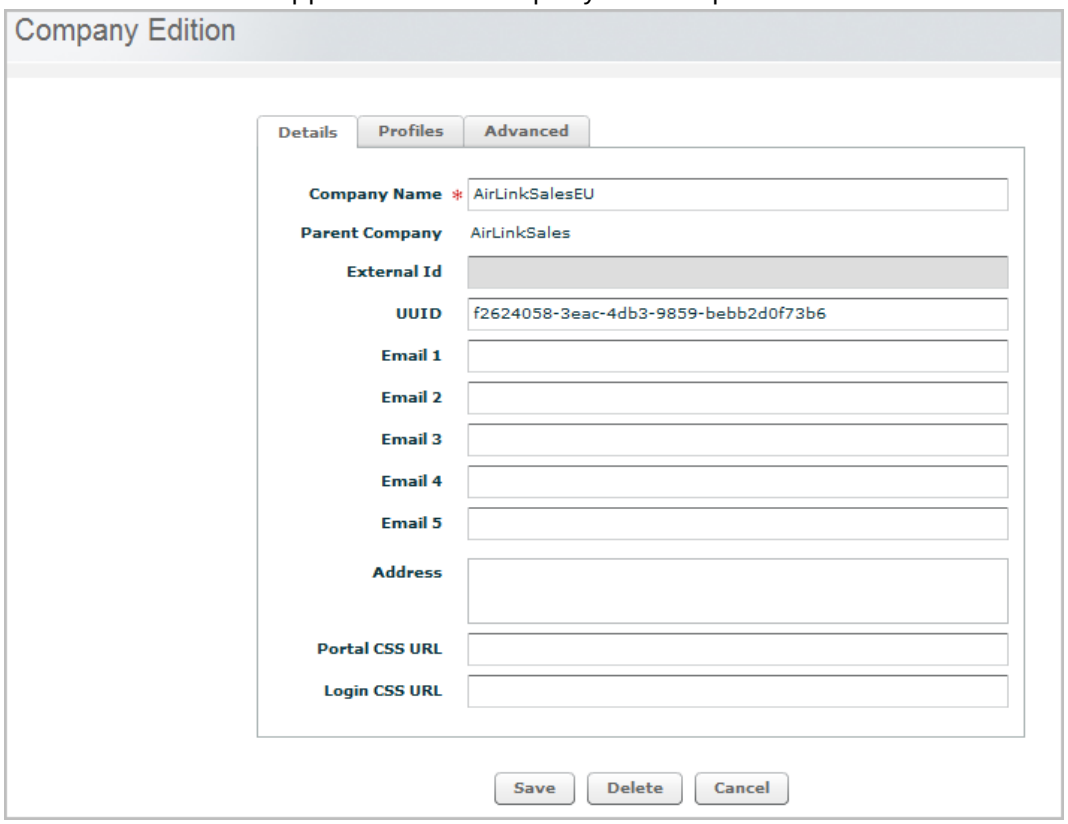
15 If needed, change the default email address used when clicking on the Contact Us web link (bottom of the portal) by entering a valid email address in the "Contact us" email field.

16 If needed, enter in the Corporate logo url field the URL of the company logo to be inserted to the bottom left corner of the portal.

17 If required, select RSA authentication to give the access to the AirLink Management Services only with a RSA key for any users of its account.

To edit an existing company

1 In the *Companies* accordion tab, select the required company.
A three-tabbed form appears in the Company Edition pane:



2 Edit each field and menu and tick or untick checkboxes of each tab as required.

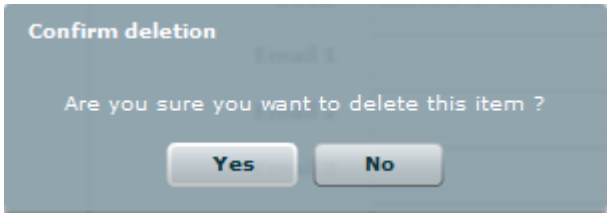
3 Click on [Save].
New settings are saved.

To delete an existing company

1 In the *Companies* accordion tab, select the required company.

2 Click on [Delete] in the Company Edition pane which appears.

3 A confirmation window pops-up:



4 Click on [Yes] to confirm.
The company is deleted.

Users and Rights

This section explains the purpose of users and rights, and describes how to create, edit, delete a user:

Purpose and User Profiles

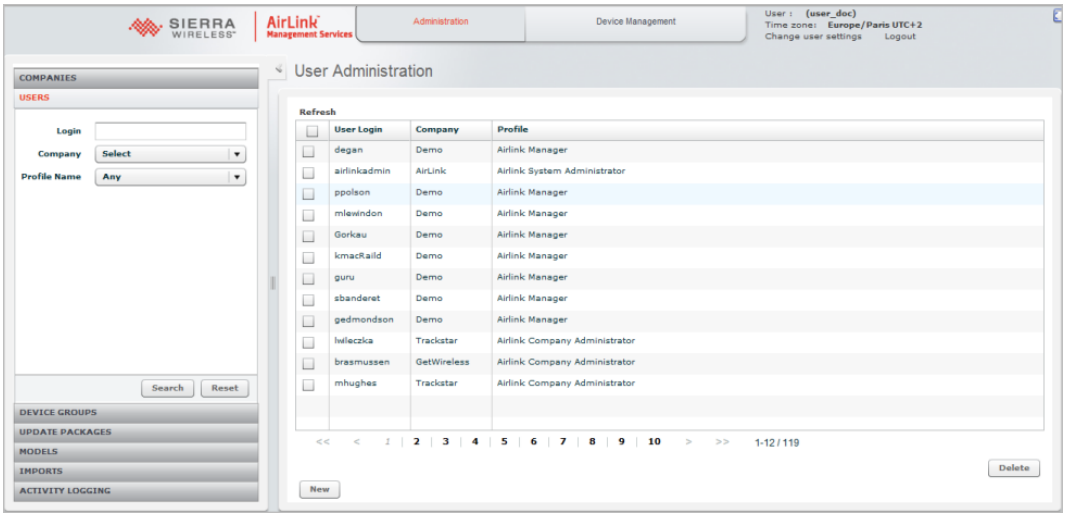
Users of companies are associated with a number of identification, contact, geographical and time parameters such as Login, First Name, Last Name, Email, Phone, Time Zone, Language, etc.

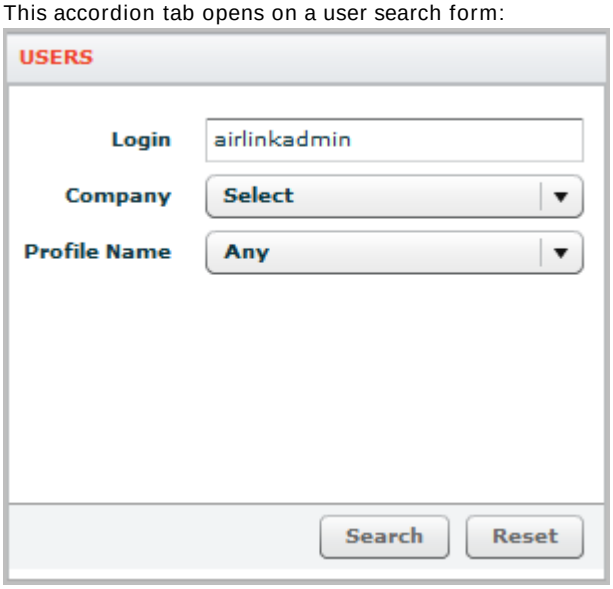
Their rights on companies depend on their profile, which can be chosen among the following ones:

User Profile	Description
AirLink Company Administrator	Read/Write access. Can create users.
AirLink Manager	Read/Write access. Cannot create users.
AirLink Viewer	Read only access.

Create, Edit and Delete Users

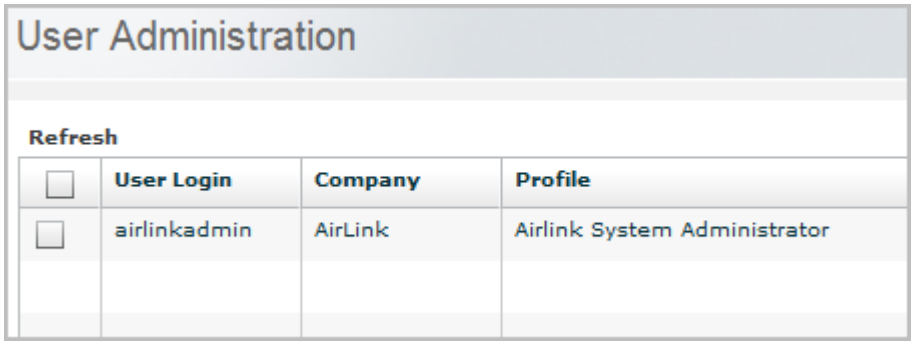
Creating, editing or deleting a user is done from the *Users* accordion tab of the Administration module:



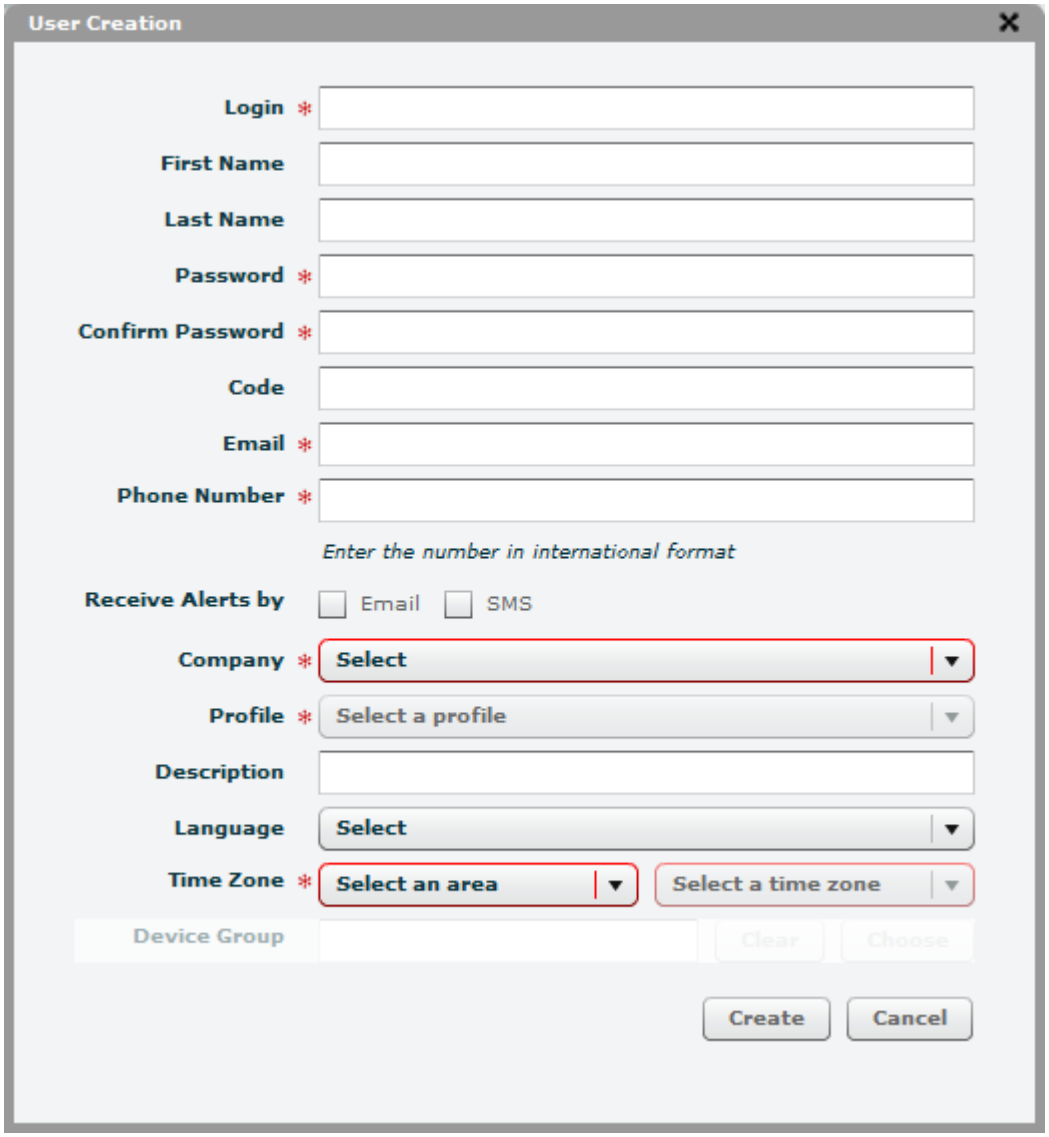
Administration Tab	Description
Users	Allows you to: ■ create new users, ■ search for existing users, ■ edit and delete existing users. This accordion tab opens on a user search form: 

To create a new user

1 In the Left pane, click on the *Users* accordion tab.
The accordion tab opens on a search form and the Main pane displays a User Administration table including all users created so far (here, `airlinkadmin`), together with the company it is associated with (here, `AirLink`) and its profile (here, `AirLink System Administrator`):



2 In the Main pane, click on [New].
A User Creation window opens:



3 Enter a login (username) in the Login field: for example, `airlinksalesadminUS`.

4 Enter and confirm the user password in the Password and Confirm password fields: for example, `airlinksalesadminUS`.

The password initially set for a user must be changed on first connection.

5 Enter an e-mail in the Email field.

6 Enter a phone number in the Phone number field.
E-mail and phone number are used for notifying the user of events triggered by devices belonging to the device groups specified for the user (see below).

7 Select a company in the Company drop-down menu: for example, `AirLinkSalesUS`.
The Device Group field becomes active. This field allows you to select among the device groups associated with the selected company.

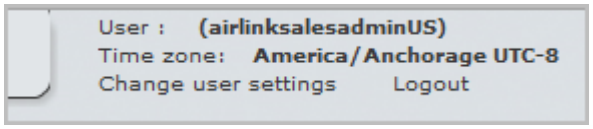
8 Select a profile in the Profile drop-down menu: for example, `AirLink Company Administrator`.

Only profiles associated with the company as user profiles when creating a company are available in the Profile drop-down menu.

9 Select an area and time zone in the Time zone drop-down menus: for example, `America` (area) and Anchorage (time zone).

Only the last eight parameters are mandatory when creating a user. All other parameters are optional.

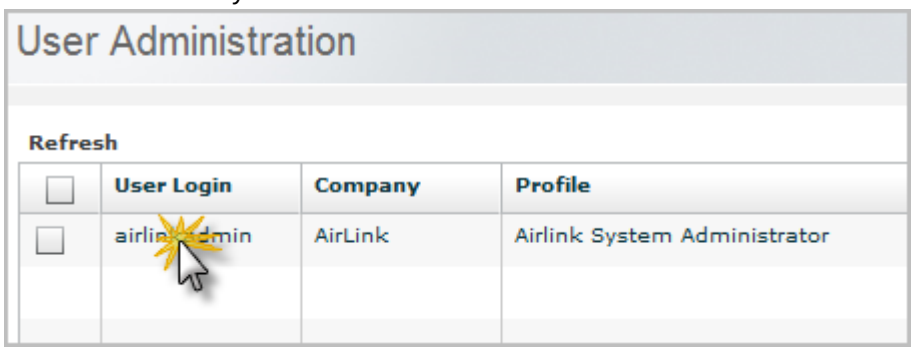
10 Click on [Create].
The `airlinksalesadminUS` user is now created.
When connecting to the portal, the user login and time zone remain visible throughout your session in the User Settings zone of the portal:



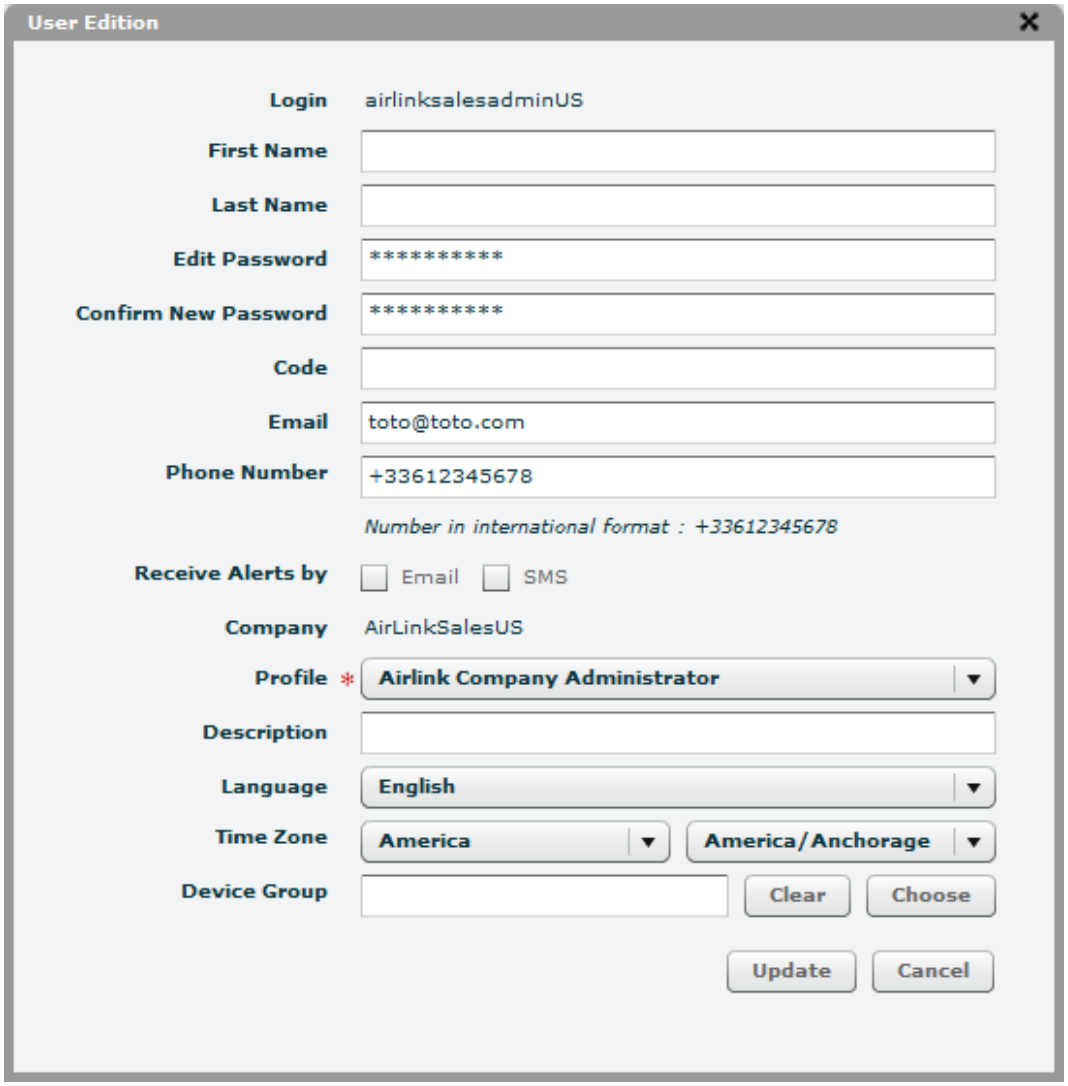
To edit an existing user

1 In the Left pane, click on the *Users* accordion tab.
The accordion tab opens on a search form and the Main pane displays a User Administration table including all users created so far.

2 Click on the user you want to edit:



A User Edition window opens:



3 Edit the user as required.

4 Click on [Update].
The user is edited.

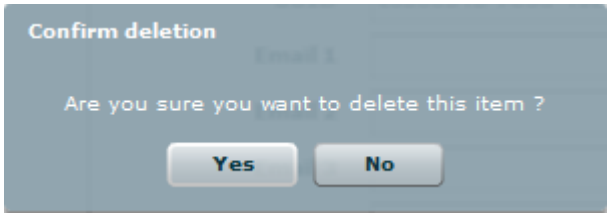
To delete an existing user

1 In the Left pane, click on the *Users* accordion tab.
The accordion tab opens on a search form and the Main pane displays a User Administration table including all users created so far.

2 Check the user you want to delete in the first column:

3 Click on [Delete] below the table.

4 A confirmation window pops-up:



5 Click on [Yes] to confirm.
The user is deleted.

Device Groups

This section explains the purpose of device groups, and describes how to create, edit and delete device groups as well as devices:

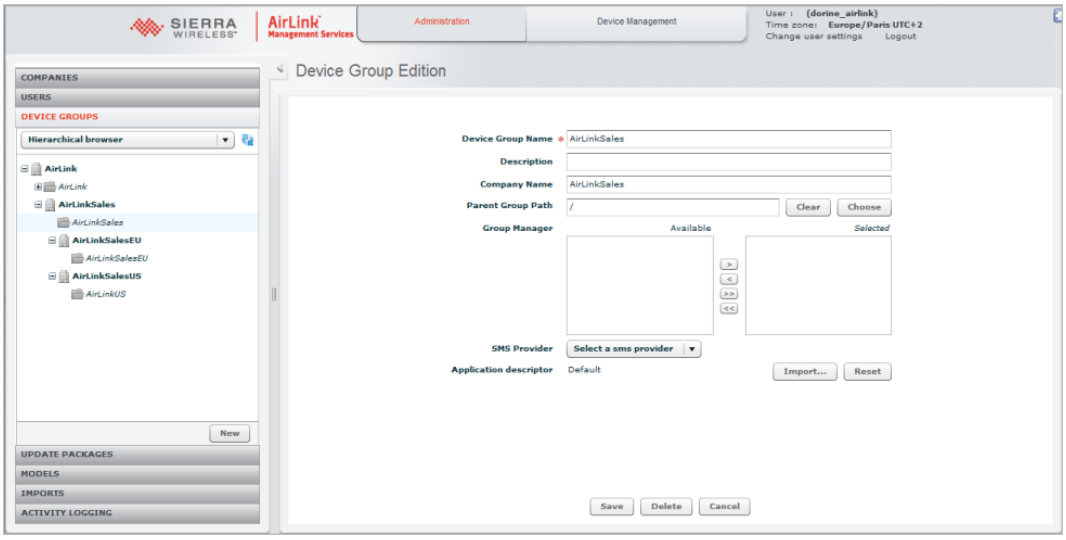
Purpose

Device groups allow you to group your device fleets by groups, to organize them either functionnally, geographically, or for any other reason.

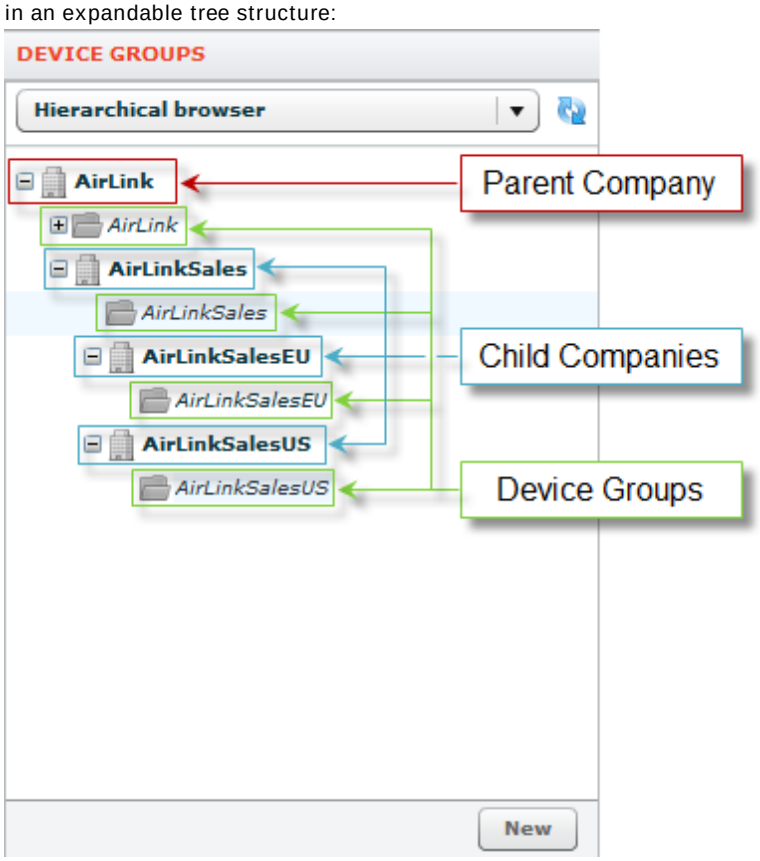
Default device groups are automatically created when creating a company, meaning that a company is always associated with a device group of the same name.

Create, Edit and Delete Device Groups

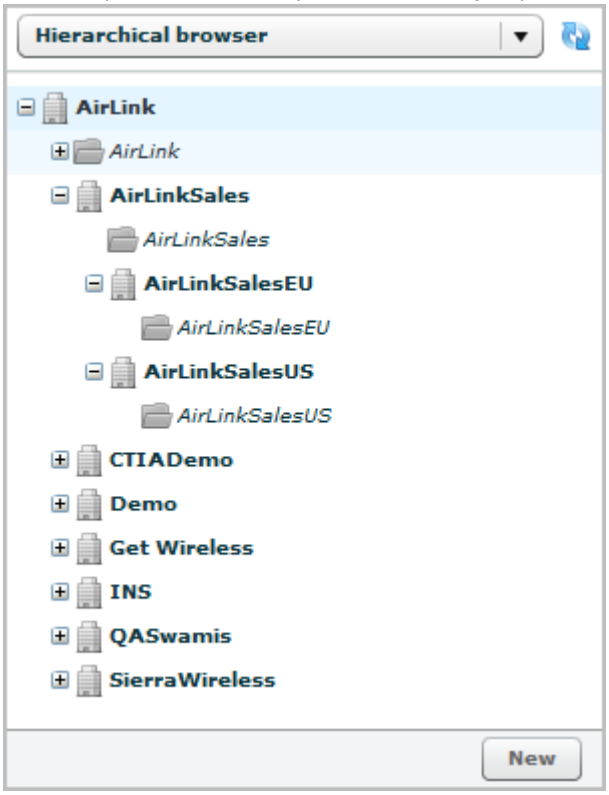
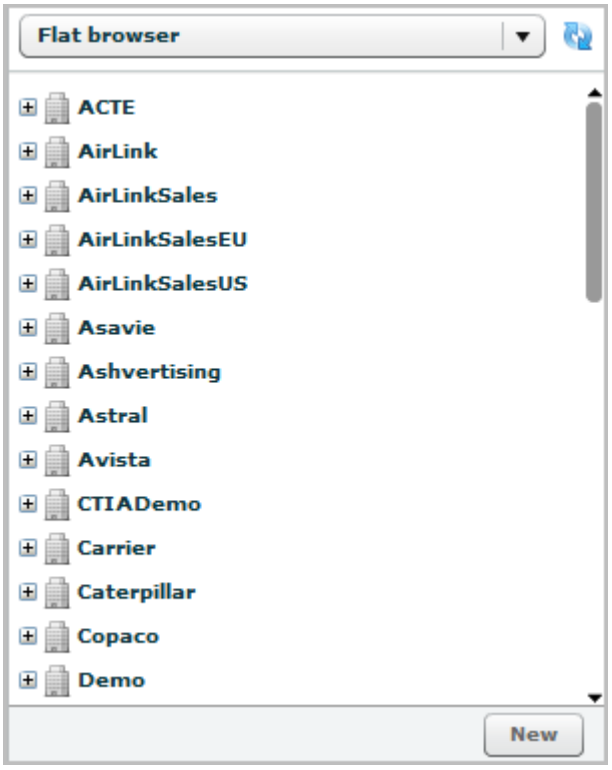
Creating, editing or deleting a user is done from the *Device Groups* accordion tab of the Administration module:



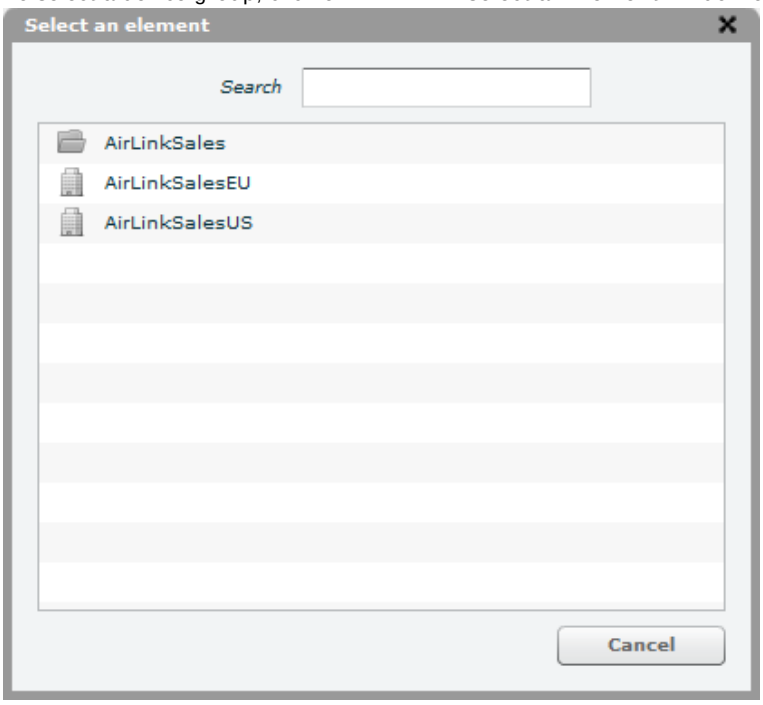
Administration Tab	Description
Device Groups	Allows you to manage your device groups, that is to say, groups of communicating devices related to a same company or sub-company to: ■ create new device groups, ■ edit and delete existing device groups. Device groups are hierarchically displayed (company, sub-company and device groups) in an expandable tree structure:



The table below describes how to browse through device groups using one of the three browsers available in the *Device Groups* tab:

Browser Type	Description
Hierarchical Browser	Displays all existing device groups as a traditional tree structure, with parent company and child companies identified by  and device groups identified by  :  *
Flat Browser	Displays all the companies and sub-companies in alphabetic order: 
Step-By-Step Browser	Allows you to select only device groups to be displayed. Useful when managing a large number of groups within a complex company structure:

To select a device group, click on ... . A Select an Element window opens:

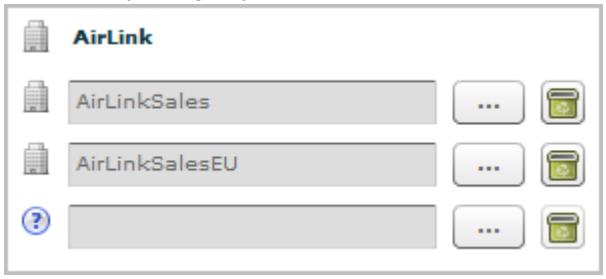


The Select an Element window allows you to select either a group ( ) or a company ( ), or to search for a specific element using the Search field.

- If you select a company/group, the company/group appears in the Left pane together with a second line for refining your search:

Clicking on the second line's Browse button (...) gives you access to device groups included in the previosuly selected company/group only.

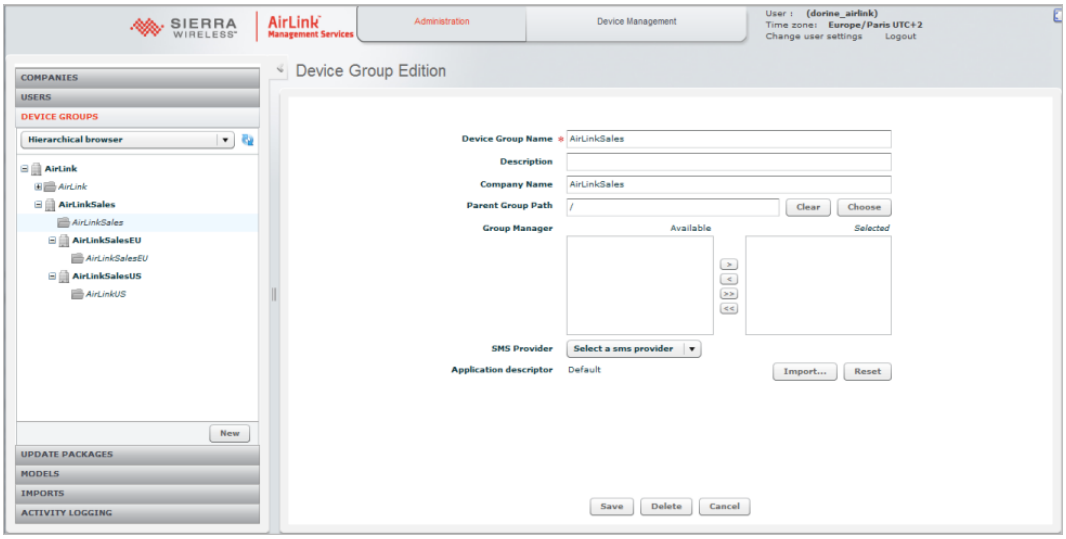
- You can then repeat the procedure and browse down your company/group structure until the required group is selected:



To remove a company/group, click on the corresponding "Reset" icon ( ).

To create a new device group

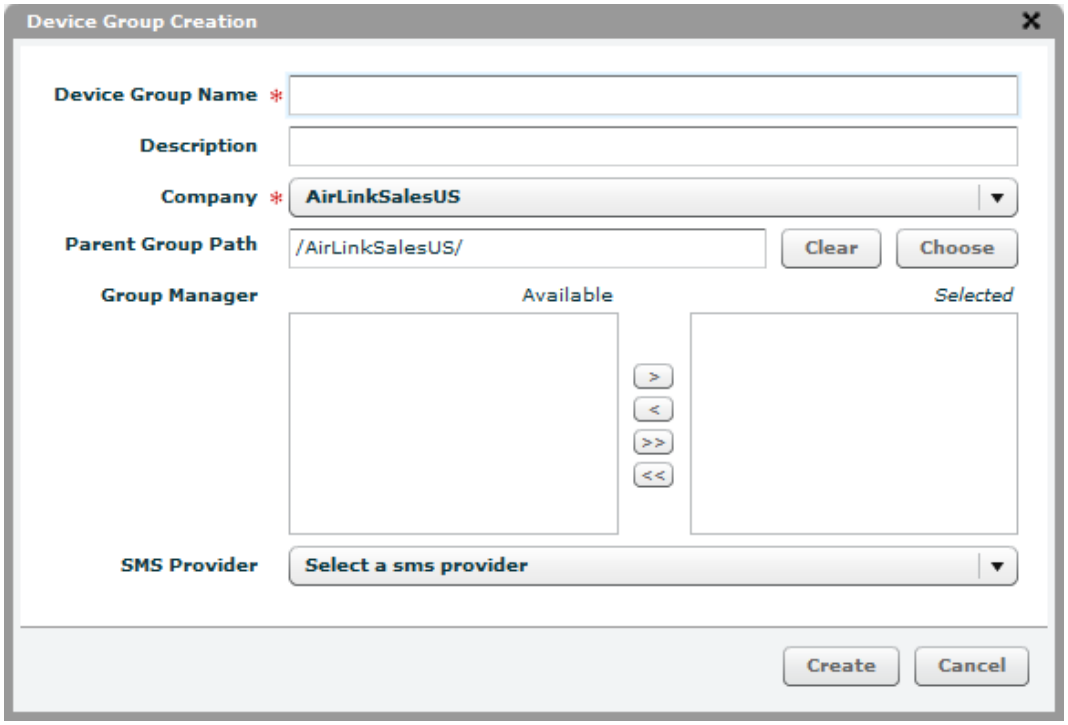
In the Left pane, click on the *Device Groups* accordion tab.
The accordion tab opens on a tree structure displaying companies administered by the user. By expanding each of them, device groups automatically created when creating companies appear:



Only companies visible by the user are displayed in the Device Groups tab. Visible companies depend on the user profile and company.

The following procedure shows how to create a device group (called `East`) as a child of another device group (called `AirLinkSalesUS`).

1. Select the parent device group in the Left pane: for example, `AirLinkSalesUS`.
2. Click on [New]. A Device Group Creation window opens:



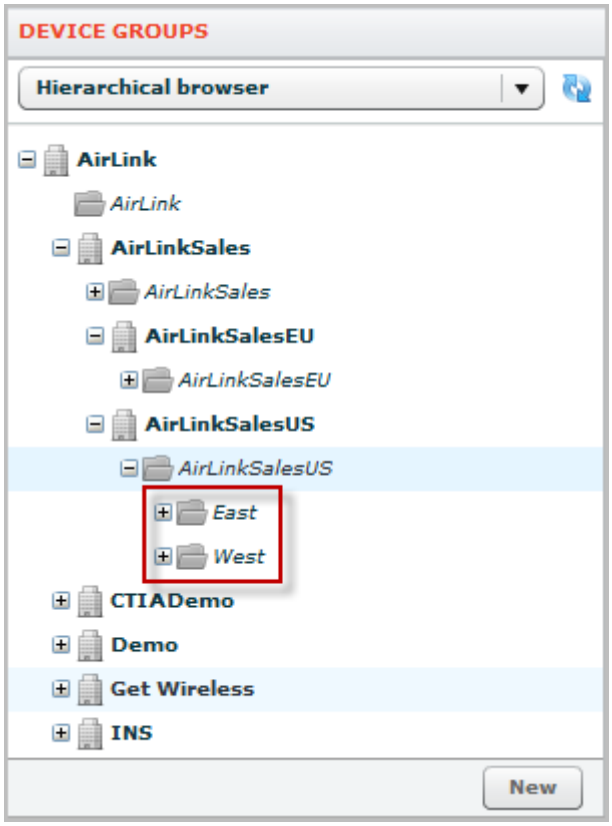
The Company and Parent Group Path fields are already filled with the name of the previously selected device group and associated company

3 Enter a device group name in the Device Group Name field: for example, East

Only the Company and Device Group Name parameters are mandatory when creating a device group

4 Click on [OK]. The East device group is now created.

5 Repeat the previous procedure for creating the West device group.
Newly created device groups now appear in the Left pane:

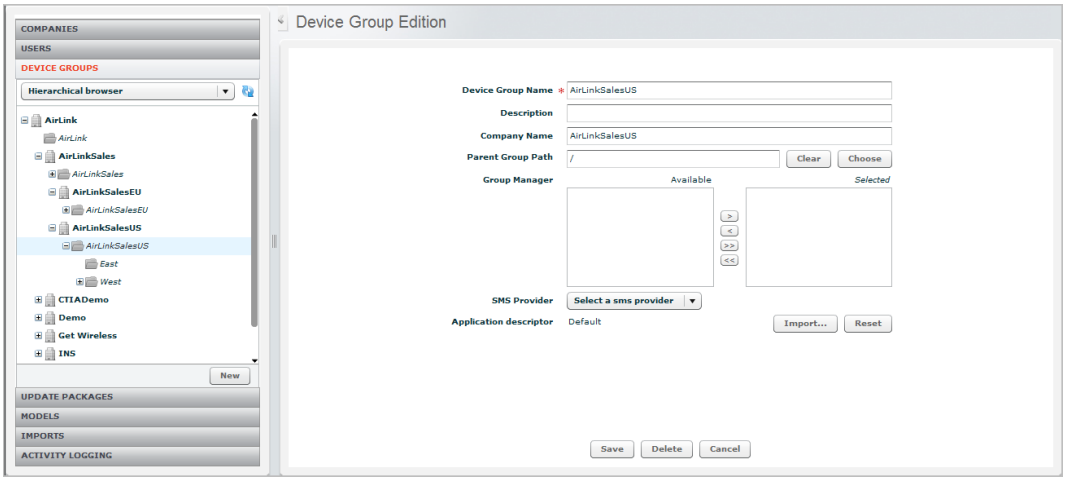


To complete the device group creation, you have to edit it and upload a dedicated file called airlink application descriptor to get the right device information display in devices tab for this device group.

The file can be uploaded from `http://www.sierrawireless.com/resources/support/AirVantage/AMZApplicationDescriptor.xml`.

To edit an existing device group

1. In the Left pane, click on the *Device Groups* accordion tab.
   The accordion tab opens on a tree structure displaying companies administered by the user. By expanding each of them, device groups automatically created when creating companies appear.
2. Click on the device group to be edited.
   The device group details appear in the Main pane:



3 Select [Import] to upload the airlink application descriptor file.

4 Edit other fields and menus if required.

5 Click on [Save].
The device group is updated.

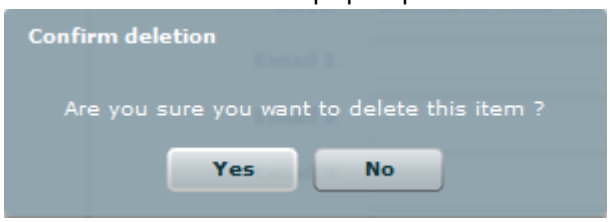
To delete an existing device group

1 In the Left pane, click on the *Device Groups* accordion tab.
The accordion tab opens on a tree structure displaying companies administered by the user. By expanding each of them, device groups automatically created when creating companies appear.

2 Click on the device group to be deleted.

3 Click on [Delete] in the Main pane.

4 A confirmation window pops-up:



5 Click on [Yes] to confirm.
The device group is deleted.

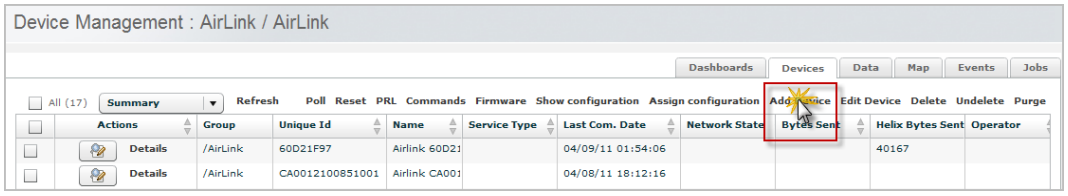
Create, Edit and Delete Devices

Device creation, edition and deletion is managed from the *Devices* tab of the Device Management module, using the [New], [Edit] and [Delete] buttons of the Main pane. This section describes how to create, edit and delete a device, and how to review a device's details.

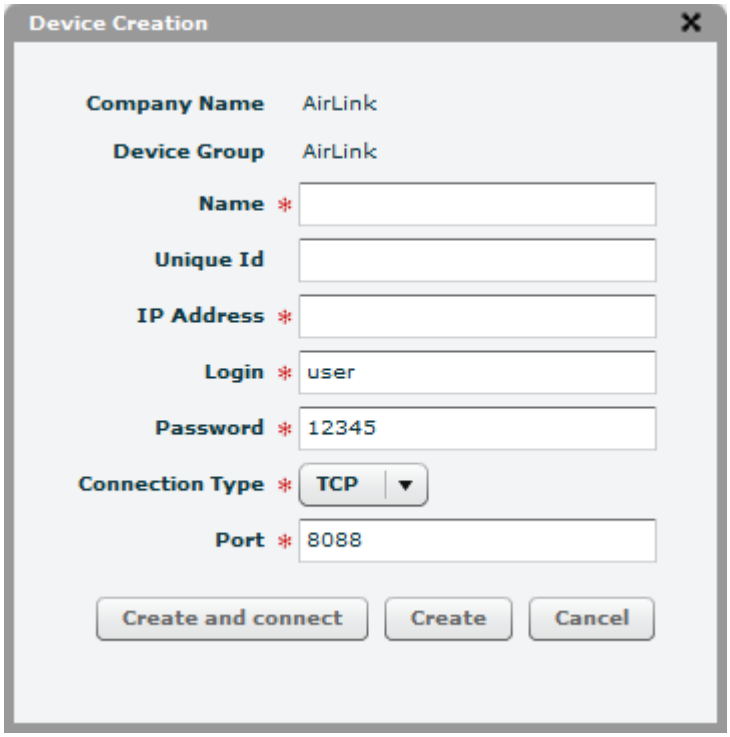
To create a new device

1 Assuming that the Device Management module's Devices_ tab is selected, select a device group in the Left pane.
After creation, the newly created device will be automatically included in the selected group.

2 Click on [Add Device] in the Button bar:



A Device Creation window opens automatically:



The Company Name and Device Group fields are already filled with the company name and device group selected before clicking on [Add Device].

3 Enter a device name in the Name field: for example, Raven123.

4 Enter an ID in the UniqueID field (optional).

5 Enter an IP address in the IP Address filed: for example, 123.123.45.56.

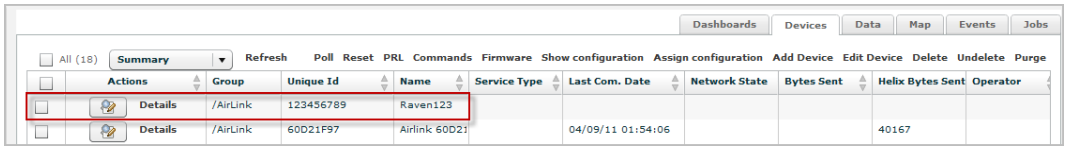
6 Enter a login in the Login field.

7 Enter a password in the Password field.

8 Select a connection type in the Connection Type (TCP, UDP or SMS).

9 Enter the port to open in the Port field: for example, 8088.

10 Click on [Create and Connect] to create the device and proceeed with a first connection, or on [Create] to create the device without connecting to it.
The device is now created in the system. It appears in the device table:



Device Initiated Communication

You can set your device so that it automatically registers on first connection with the server, eliminating the need to do it manually through the user interface.
To do so:

1 In the Devices Management module, click on the Details link of the required device. An AceManager window opens.

2 Click on the *Services* tab.

3 Select AMS in the left pane.
A number of parameters appear in the main pane to the right.
To set your device in device initiated communication mode, enter in the Account Name field either:

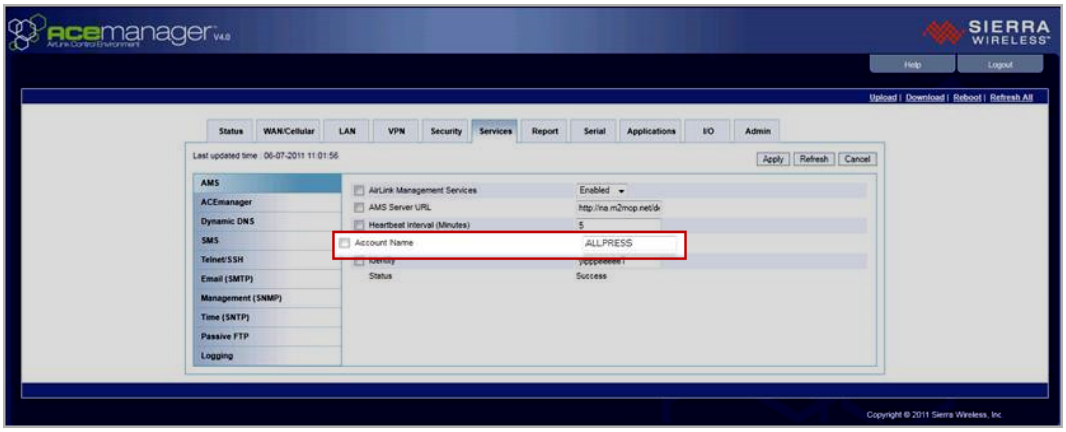
- the path of the company to which your device belongs or,
- the UIID of the company (used in AMS) to which your device belongs.

As a prerequisite, a company must have been created first. It is recommended to set the UIID instead of the company path in the Account Name field.

For instance, for a `Demo` child company belonging to the `AirLink` parent company, you can enter either:

- the company name: `Demo`,
- the full company path: `/AirLink/Demo`,
- the UUID of the `Demo` company: 2aa171da-6f71-4752-a555-4a6b30466fbb.

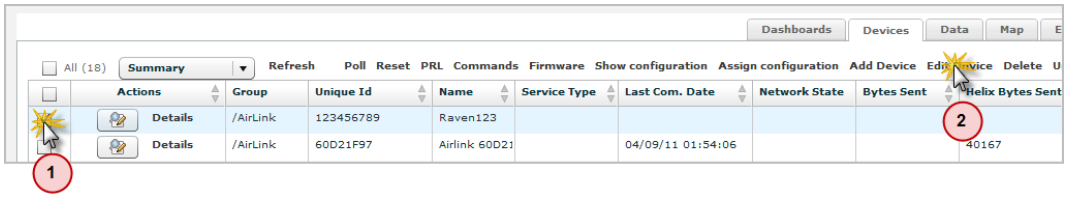
Here is an example with the ALLPRESS company:



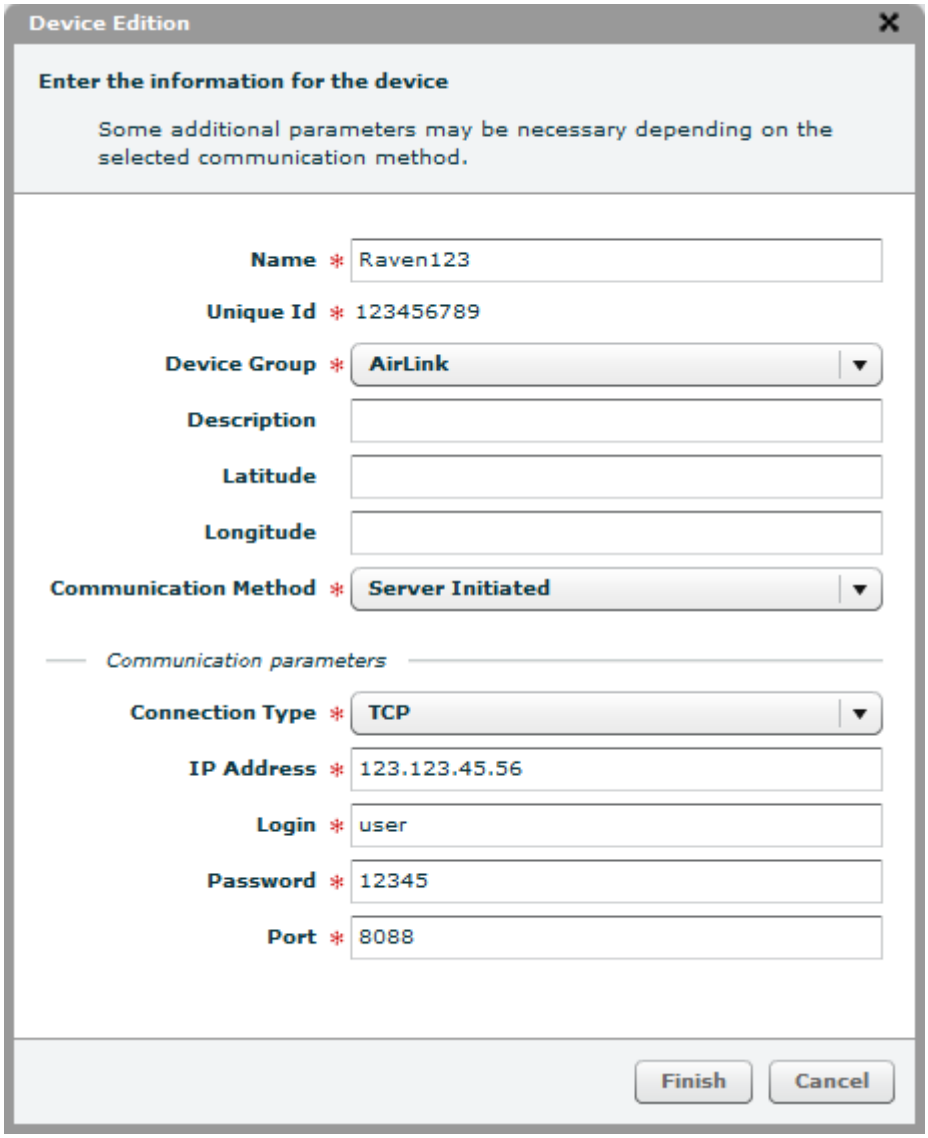
To edit an existing device

1 In the device table, check the checkbox corresponding to the device to be edited, in the table first column

2 Click on [Edit Device] in the tab's Button bar:



3 A Device Edition window opens:



It contains information entered in the Device Creation window when creating the device.

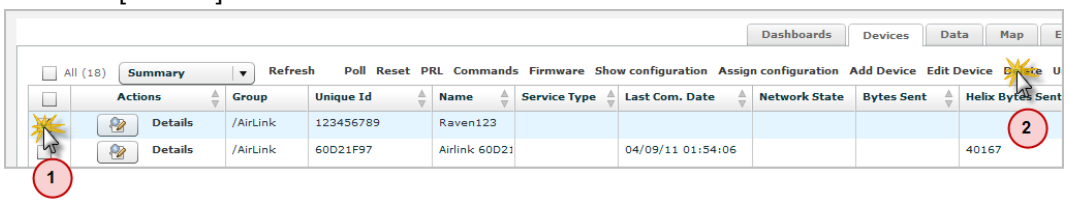
4 Change or add any required value.

5 Click on [Finish].
Device details are now updated.

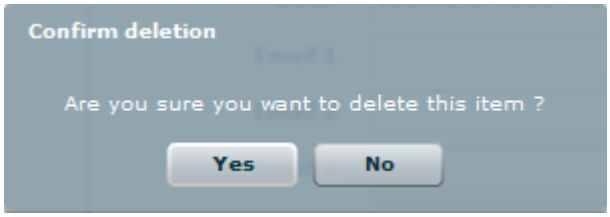
To delete an existing device

1 In the device table, check the checkbox corresponding to the device to be deleted, in the table first column:

2 Click on [Delete] in the tab's Button bar:



3 Click on [Yes] in the confirmation window which opens:



The device is now archived.

4 Depending on your user's profile, you can have to purge the device for it to be fully deleted. If so, click on [Purge] in the tab's Button bar.

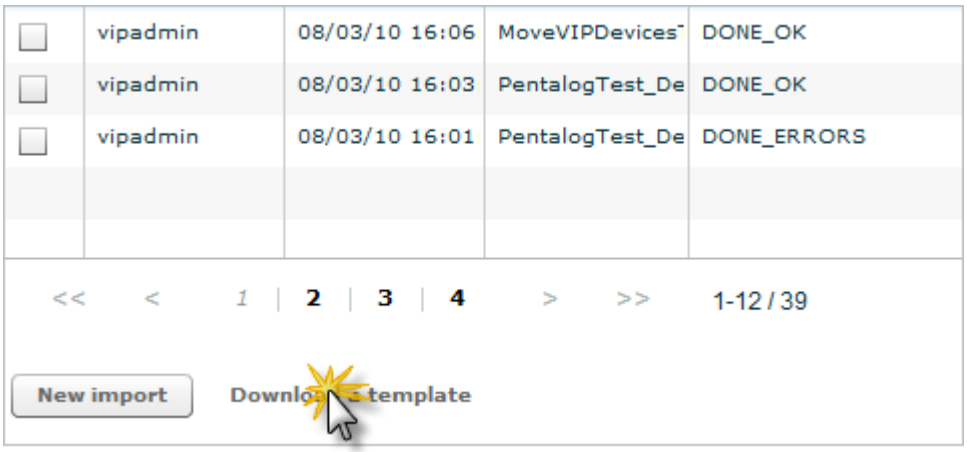
Create multiple devices

To create multiple devices at the same time, you have to import files with data required to declare devices.

1 Select the Device Management module.

2 Click on the *Imports* tab

In the import page, select on the *New import* button and retrieve the device file.
You can also download the import template by clicking the [Download a template] link below the table:



Once a device file is imported, you can check whether the import ended normally or in failure by opening import logs.

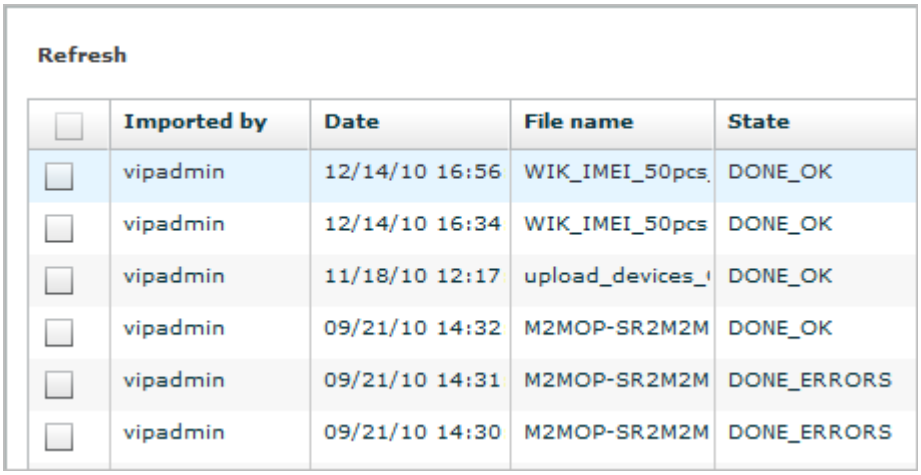
Open Import Log

The following procedure shows you how to open an import log.

1 Select the Device Management module.

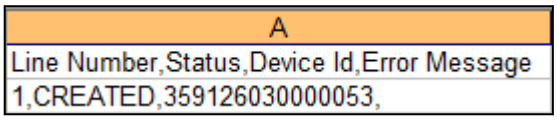
2 Click on the *Imports* tab

All import logs are displayed in a table together with the user having initiated the import. Imports are timestamped and their state (DONE_OK or DONE_ERRORS) is indicated:

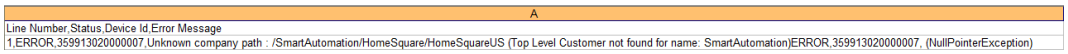


1 Click on the required import log row.
A download/open window pops-up.

2 Click [OK].
The import log opens in CSV format:



An error message is included if the import ended in error:



Firmware and Software Upgrades

This page introduces the notion of "packages" as applied to software and firmware. It defines the different types of packages available and shows through step-by-step procedures how to launch a download campaign and monitor it using the Download Campaigns Dashboard.

Purpose

The Operating Portal provides remote update and quick fix capabilities, therefore avoiding field technician visits and operation downtimes.
The server interoperates with compliant devices using standard hand-off mechanisms to achieve firmware package downloads into remote devices.

Update Package Definitions

Firmware: AirPrime embedded module core software provided by Sierra Wireless. It includes telecom capabilities and the embedded agents needed for operating the AirPrime Management Service.

There may be some dependencies between firmware and software. Any change to the software or the firmware may imply updating both.

Update package: package to be downloaded; installs a firmware or a software into the AirPrime module.

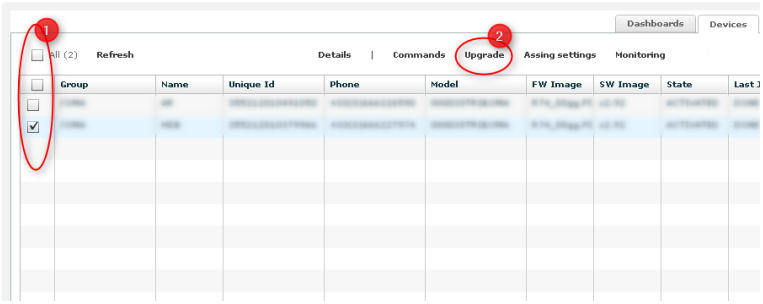
Binary package: update package containing the full firmware or software binary.

Launch Upgrade Campaign

To download an existing update package into a device, please first activate the device management module, then display the device list by clicking on a device group in the module's left pane.

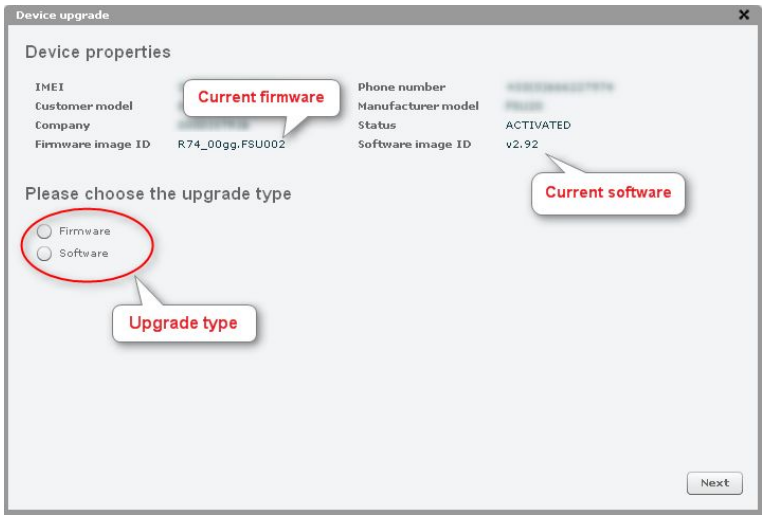
Once the device list is displayed:

1. Select the device(s) to be upgraded.
2. Click on the [Upgrade] button in the Button bar. Prerequisites: Customer model must be the same to upgrade several devices at the same time.

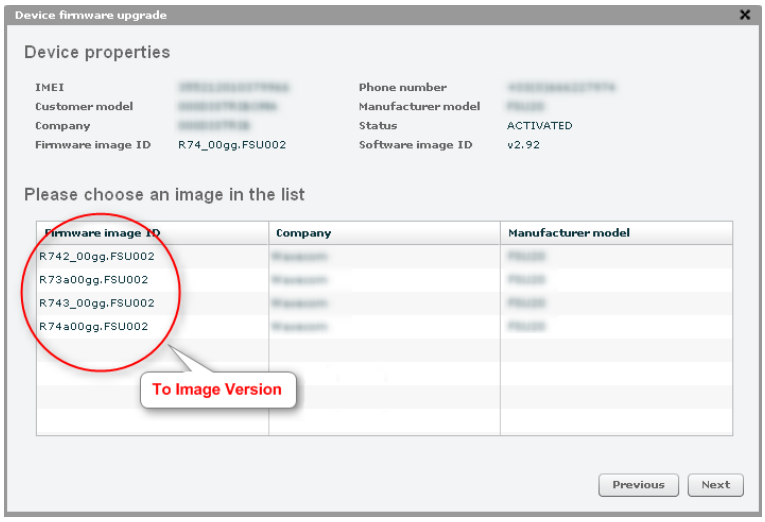


The upgrade wizard displays:

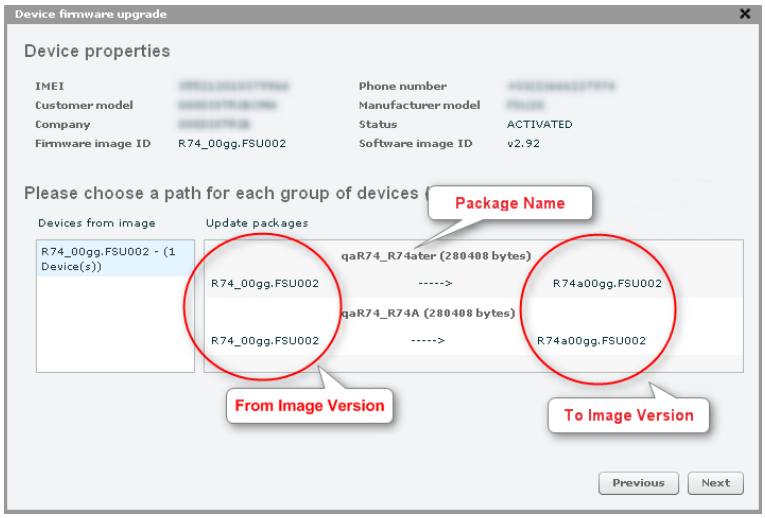
- a summary of device(s) properties,
- upgrade type options: Firmware or Sofware. Select the required upgrade type then click on [Next].



The next screen lists the compatible update packages for the selected device(s).
Choose one of them then click on [Next].

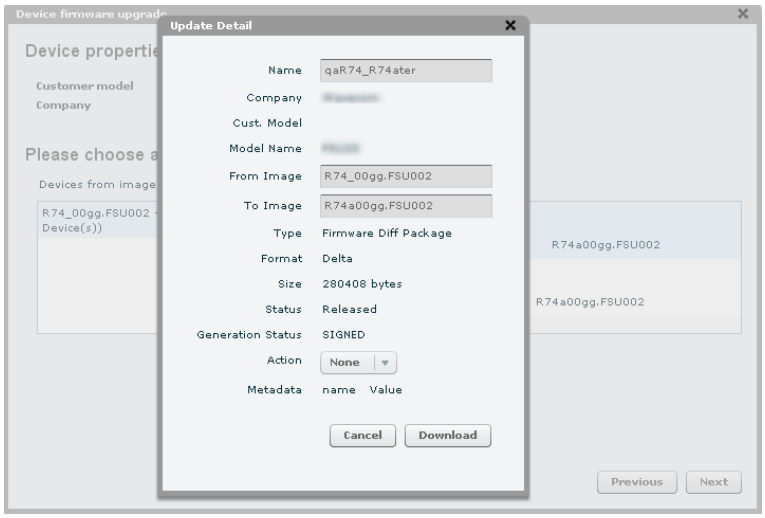


Once the update package has been selected, the wizard displays all possible upgrades (with one or many steps).
If you click on a package name, a popup opens displaying update package details.



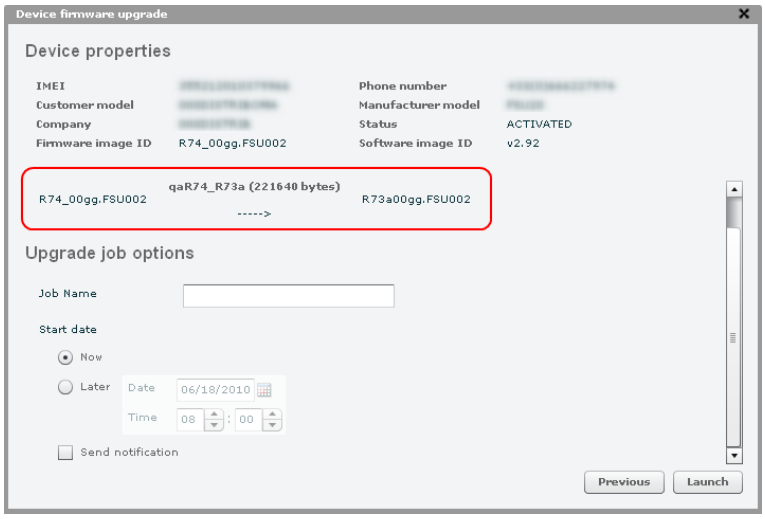
The popup includes the following update package details:

- General information about the package context: company, model, status.
- Package specific details: images version, package type, size.



The last step of the wizard allows you to set upgrade job options:

- Job name: Set here an optional name for the job (useful for later search purposes).
- Job schedule options: Set here when the job should start and whether the device(s) has(ve) to be waken up.



Download Campaigns Dashboard

To monitor upgrade processing is by using the Download Campaigns dashboard, which is part of the set of dashboards featured in the portal for monitoring device and device group information such as jobs, traffic, state, activity, etc. A download campaign is performed whenever the firmware/software version of a fleet of devices must be upgraded simultaneously.

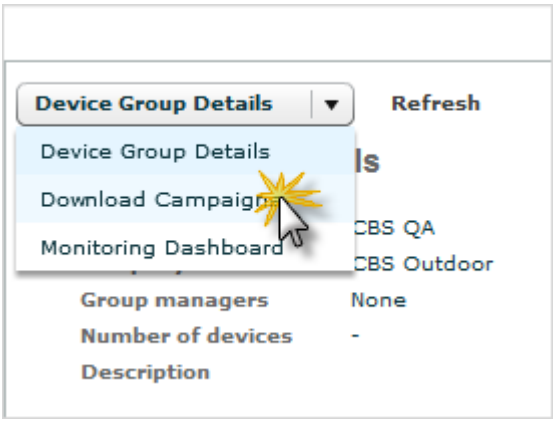
Three dashboards are currently accessible (from the Device Management module):

- Device Group Details - displays general information about the selected device group as well as a distribution of firmware/software versions, device states and latest device job states among a fleet of devices (in ring diagrams) and a bar graph representing the number of download, monitoring and provisioning requests for the last six months. For more information, see Managing your Devices.
- Download Campaigns - displays information related to all download campaigns carried out for the selected device group. This screen includes a summary table with download campaign-specific information and, for each campaign, a circular histogram as well as a 2-axis diagram showing the number of pending, failed, successful and cancelled device upgrades and an error description table. This screen is described in further detail in this section.

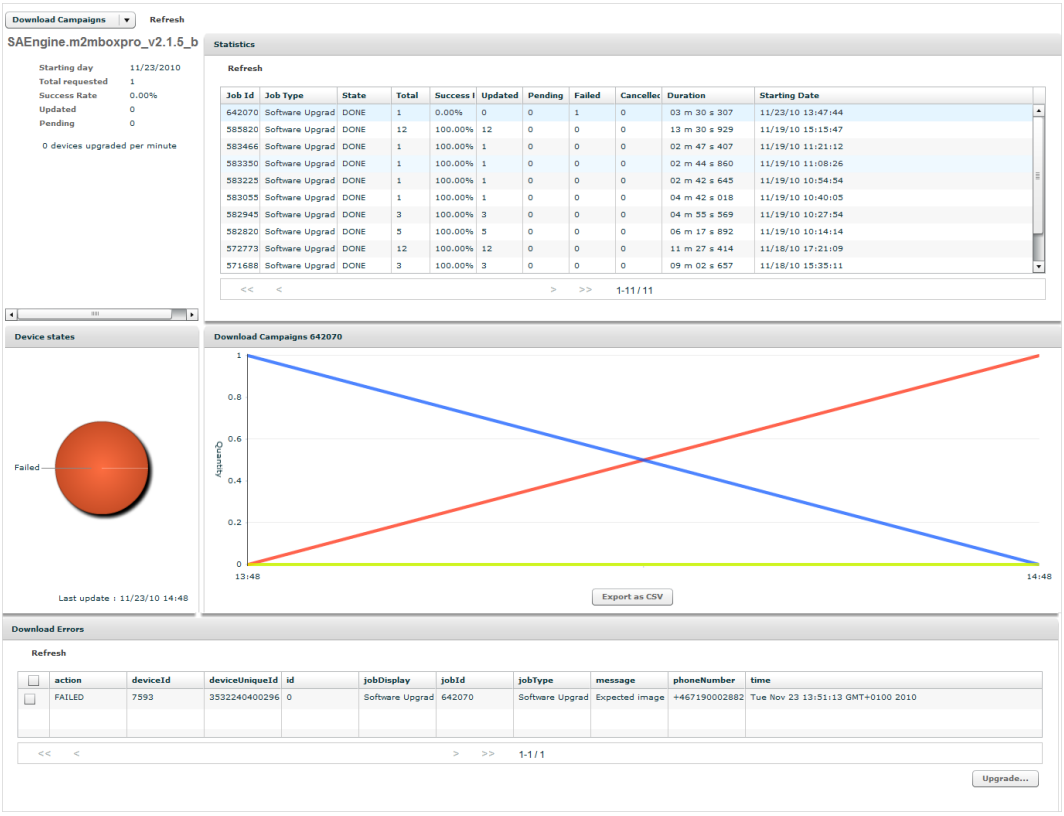
- AirLink Dashboard - displays device-related information in the form of widgets. You can add and remove widgets within the dashboard, as well as arrange their laoyout as required. For more information, see AirLink Dashboard.

To access the Download Campaigns dashboard

1. Select the Device Management module.
   The *Dashboard* tab is automatically selected.
2. Select Download Campaigns in the drop-down menu:



The Download Campaigns dashboard is displayed:



This dashboard is divided into four sections:

- Statistics
- Device States
- Download Campaigns
- Download Errors

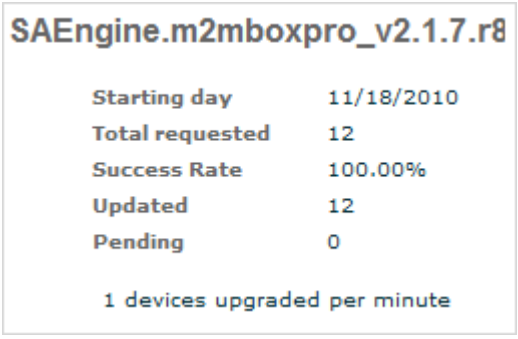
These sections are described in further detail in the following sections.

Statistics

Provides the user with a table including information about all download campaigns carried out for the device group selected in the Left pane:

Column Name	Description
Job Id	Job identification number, as referenced in the jobs list accessible from the *Jobs* tab.
Job Type	Type of job (Software Upgrade, Common Command, etc.)
State	Upgrade job state: . PENDING: Upgrade job about to enter job queue, . APPLIED: Upgrade job in buffer. Will be processed as soon as the communication device connects to the Operating Portal, . DONE: Command processed successfully by communication device, . CANCELLED: Upgrade job cancelled by user (available only if job status has not turned APPLIED yet)
Total	Total number of requests sent to the communication device as part of the upgrade.
Success Rate	Percentage of successful requests out of the total number of requests.
Updated	Number of requests successfully processed by the communication device.
Pending	Number of pending requests.
Failed	Number of failed requests. Connection with the device was successful but request could not be processed.
Cancelled	Number of cancelled requests.
Duration	Time required for performing the upgrade.
Starting Date	Job starting date.

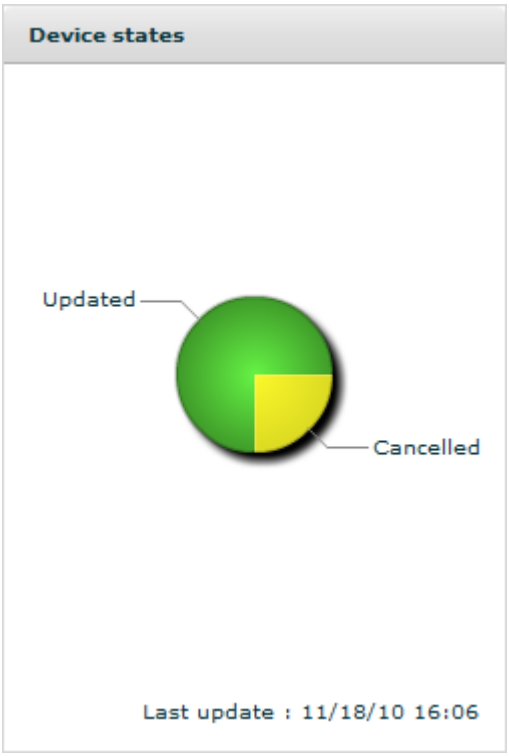
When selecting a download campaign in the table, the dashboard is updated. It displays a summary of the download campaign to the left of the table:



The other three sections (Device States, Download Campaigns and Download Errors), which display information specific to the selected download campaign only, are also updated. These sections are described in the following paragraphs.

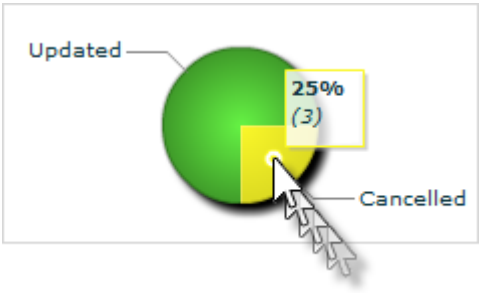
Device States

Circular histogram representing the current status of requests for the selected download campaign:



Request Date	Description
Updated	The device has been successfully updated.Percentage of successful requests appear in green.
Pending	The request is still pending. Percentage of pending requests appear in blue.
Cancelled	The request has been cancelled by the user. Percentage of cancelled requests appear in yellow.
Failed	The request has been sent to the communication device but ended in error. Percentage of failed requests appear in red. Errors are described in the Download Error section (see below).

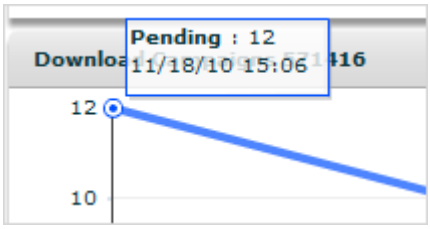
To know more about the exact percentage and number of requests of a given status, point your mouse over the circular histogram:



Download Campaigns *[JobNumber]*

2-axis diagram representing the number of updated, pending, failed and cancelled requests over the total download time (abscissa unit is 1h) for the *[JobNumber]* download campaign :

To know more about the exact number of requests of a given status at start or end of the download, point your mouse over the required line:



To export download campaign data in CSV format, click on [Export as CSV]. Dta automatically appears in CSV format in your default spreadsheet software:

	A	B	C	D	E	F	G	H	I	J	K
1	Job Id	Job Type	Status	Affected Devices	Waiting Devices	Updated Devices	Postponed devices	Failed Devices	Cancelled Devices	Scheduled Time	
2	571416	Software Upg	APPLIED	12	0	9	0	0	3	18/11/2010 15:05	
3											
4	Time	Updated	Waiting	Failed	Cancelled						
5	18/11/2010 15:06	0	12	0	0						
6	18/11/2010 16:06	9	0	0	3						
7											

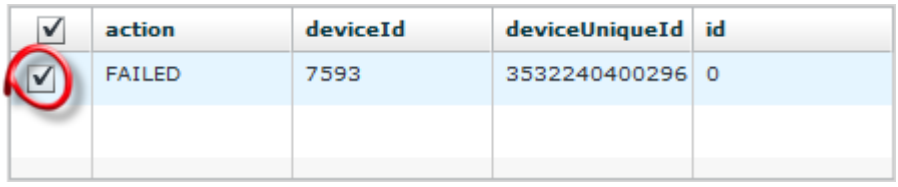
Download Errors

Table offering diagnosis capabilities by displaying errror-specific information such as:

Column	Description
action	Status of the request.
deviceUniqueId	IMEI of the communication device for which the upgrade returned an error.
jobType	Type of job which returned an error.
message	Error message.
time	Time at which the error occurred.

After the problem has been diagnosed and possibly resolved, you can try relaunching the upgrade by:

1 Selecting the job to be relaunched in the table:



2 Clicking on [Upgrade] below the error description table.
This launches the Device upgrade wizard (for more information, see Device(s) Upgrade).