

|  |  |
| --- | --- |
|  | **icenter** |
|  |  |
|  | icenter.admin Documentation |
|  |  |
|  |  |
|  |  |
|  | Technical Description |
|  |  |
|  | Version: 2.0 |
|  | State: Released |
|  | Classification: Internal use only |
|  | Author: WES |
|  | Creation date: 2014-12-05 |
|  | Repository: $/Gorba/Main/Center/Admin/Documents/TD\_Admin.docx |
|  | Gorba AG  Sandackerstrasse  9245 Oberbüren  Switzerland |

**Table of contents**

[1 Introduction 4](#_Toc430169527)

[1.1 Scope 4](#_Toc430169528)

[1.2 Intended Audience 4](#_Toc430169529)

[1.3 Wording 4](#_Toc430169530)

[2 Product Overview 4](#_Toc430169531)

[2.1 System Overview 4](#_Toc430169532)

[2.2 Components 4](#_Toc430169533)

[2.2.1 View and Edit System Configuration 4](#_Toc430169534)

[2.2.2 View and Edit Unit Configurations 4](#_Toc430169535)

[3 Function Description 5](#_Toc430169536)

[3.1 Entity Types 5](#_Toc430169537)

[3.1.1 Access Control 5](#_Toc430169538)

[3.1.2 Membership 5](#_Toc430169539)

[3.1.3 Units 6](#_Toc430169540)

[3.1.4 Resources 6](#_Toc430169541)

[3.1.5 Update 6](#_Toc430169542)

[3.1.6 Documents 7](#_Toc430169543)

[3.1.7 Software 7](#_Toc430169544)

[3.1.8 Configurations 7](#_Toc430169545)

[3.1.9 Meta 8](#_Toc430169546)

[3.2 Login and Tenant Selection 8](#_Toc430169547)

[3.3 Navigator 8](#_Toc430169548)

[3.4 Home Stage 8](#_Toc430169549)

[3.5 Entity Stages 8](#_Toc430169550)

[3.6 Entity Editor 9](#_Toc430169551)

[3.7 Removable Media Stage 9](#_Toc430169552)

[3.8 Unit Configurator 9](#_Toc430169553)

[3.8.1 Load Initial Data Step 9](#_Toc430169554)

[3.8.2 Export Preparation Step 10](#_Toc430169555)

[3.8.3 Pre and Post Installation Actions 10](#_Toc430169556)

[3.8.3.1 Local executables 10](#_Toc430169557)

[3.8.3.2 Unit executables 10](#_Toc430169558)

[3.8.4 Export Step 10](#_Toc430169559)

[3.8.5 Local Download Step 10](#_Toc430169560)

[3.8.6 Save changes to database 10](#_Toc430169561)

[3.8.7 Version selection 10](#_Toc430169562)

[3.8.8 Export Unit Configuration to file 11](#_Toc430169563)

[3.9 File menu 11](#_Toc430169564)

[3.9.1 Options 11](#_Toc430169565)

[4 Configuration 11](#_Toc430169566)

[5 Installation 11](#_Toc430169567)

[5.1 Full installation 11](#_Toc430169568)

[5.2 Upgrade 11](#_Toc430169569)

[6 Maintenance 11](#_Toc430169570)

[6.1 Common errors 11](#_Toc430169571)

**Modification management**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Version** | **Date** | **Name** | **Dept.** | **Modifications** | **State** |
| 0.1 | 2014-12-06 | WES | SW | Initial version | draft |
| 1.1 | 2015-09-14 | EPT | SW | - Added BackgroundSystemSettings and FTP servers to chapter 3.1.9  - Added Warning state to chapter 3.8  - Added Chapters 3.8.1 3.8.3, 3.8.6, 3.8.7, 3.8.8, 3.9  - Updated Chapter 5.2 to automatic upgrade | draft |

**Review**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Name** | **Dept.** | **Remarks** |
| 0.1 | 29.01.2015 | EPT | SW | ok |
|  |  |  |  |  |
| 1.1 | 16.09.2015 | OCS | SW | ok |
|  |  |  |  |  |

**Release**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Name** | **Dept.** | **Remarks** |
| 1.0 | 29.01.2015 | EPT | SW | 1st release |
|  |  |  |  |  |
| 2.0 | 16.09.2015 | OCS | SW |  |
|  |  |  |  |  |

# Introduction

## Scope

This document is a technical description of icenter.admin version **1.2**. It gives all information to Gorba internal people to be able to work with this product.

This document is not intended to be a user manual.

## Intended Audience

This document is written to be understood by Gorba staff familiar with Gorba products. Minimal technical skills are required.

## Wording

Words starting with a capital letter (e.g. “Unit”, “Update Group”) refer either to Entity Types (see below) or other application/domain specific terms. All those words are explained in this document.

For example the word “User” relates to the data about a login saved in the database while the word “user” relates to the person using the application.

# Product Overview

## System Overview

icenter.admin is the system configuration application mostly used by the project team, product managers and developers. Skilled customers may also use this tool.

The system configuration comprises of two major parts:

* The system configuration is basically a database administration tailored to the needs of Gorba.
* The Unit configuration allows to manage all applications and configuration files to be installed on Units (this version only supports InfoVision and Inform TFT units)

## Components

### View and Edit System Configuration

To edit information from the database, the user must select the **entity type** he wishes to edit; then a list of all **entities** belonging to (or related to) the currently selected tenant is loaded.

Depending on the rights of the user with which you logged into icenter.admin, you get to see more or less entity types. Also, you might not have the right to add, edit or delete entities depending on your rights. If you don’t have a certain right (or if it is simply not possible to do one of the actions), the relevant button is not visible.

### View and Edit Unit Configurations

A Unit Configuration is the list of all applications and their relevant configuration files. Unit Configurations are entities like any other, but they possess a separate editor (opening in a new window) because of their complexity.

Unit Configurations are created for a certain Product Type and are tightly linked to it. Therefore you can’t change the Product Type of a Unit Configuration after creating it. The Product Type (or rather its Hardware Descriptor) defines exactly which features the given hardware possesses (e.g. digital inputs and outputs, serial ports, display output and many more).

# Function Description

## Entity Types

Below you find the list of all types of entities available in the system and a short description.

Entities with a similar scope are grouped into partitions. The headings in this chapter are the names of the partitions.

### Access Control

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| User Roles | A role that can be applied to a user. For example: “Media Editor”  Every role has one or more Authorizations which say what rights that role has.  The User Role “Superuser” is always present in the system and is used for global access using the User “admin”. This role should be used wisely since a User with that role has all possible rights. |
| Authorizations | Gives a User Role the necessary rights. For example: “Media Editor can create icenter.media projects.  An authorization belongs to one User Role and gives one Permission for one Data Scope. Usually authorizations are directly edited from within the User Role editor (which has an easy to use grid editor for Authorizations). |

### Membership

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Tenants | A logical grouping of users. Within our applications, a Tenant is usually the public transports company for which a given project is done. Large companies can be split into multiple Tenants to define access rights more precisely. For example: “Bernmobil”  The Tenant “Administration” is always present in the system and is used for global access using the “admin” User. No other users should be added to that Tenant. |
| Users | The login a person uses to access the system. A User should always only belong to a single person (no account sharing). For example: “d.muster”  The User “admin” is always present in the system and is used for global access. This user has “super user” rights for all Tenants in the system. This account should only be used when creating new Tenants and assigning Users to them. |
| Users to User Roles | Also known as “Association Tenant – User – User Role”, this Entity Type gives a User a certain User Role for a certain Tenant. For example: The User “d.muster” has the Role “Media Editor” for the Tenant “Bernmobil”  If no Tenant is specified, the User has the given User Role for all current and future Tenants in the system.  The User “admin” has always the User Role “Superuser” for all Tenants. |

### Units

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Product Types | Defines the properties of a certain product of a certain type of unit. For example: “InfoVision Topbox PC-2 Atom”  Product types are usually created when the system is set up (or updated) and are never modified afterwards. |
| Units | Information about the real device (currently only TFTs are supported). For example: “TFT-45-F8-3C”  Every Unit is of a defined Product Type which should always match the real type of the device. |

### Resources

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Resources | A file that is stored in the Background System. This is usually not modified by the user directly but rather by creating files when exporting data for an Update Group in icenter.media or icenter.admin.  Every file is identified by a (almost) unique MD5 hash. |

### Update

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Update Groups | A grouping of Units that should all get exactly the same data (applications, configuration and Infomedia presentation files). For example “All our 18.5’’ Compacts”.  An Update Group belongs to a Tenant and only Units of that same Tenant can be added to the Update Group.  Be careful to use one Update Group per Product Type, otherwise Units might be getting Unit Configurations that don’t match their actual hardware. |
| Update Parts | An Update Part is created by the system automatically every time data for an Update Group is exported either by icenter.media or icenter.admin.  Update Parts are scheduled and therefore have a start and an end time. |
| Update Commands | The command sent from the Background System to a specific Unit to update it. The Background System automatically sends Update Commands to all configured FTP servers and the user has the possibility to export all currently valid Update Commands for a Unit or an entire Update Group using icenter.admin. |
| Update Feedbacks | The feedback about the state of an Update Command returned by the Unit either via FTP, Azure or USB. The import from a USB stick is done using icenter.admin. |

### Documents

All Unit Configurations and Media Configurations are stored as versioned Documents in the database. In the current version of icenter.admin and icenter.media only allow to see and edit the latest version. Future versions will support looking at old documents and probably reverting to older versions.

Usually the user should not have to handle Documents or Document Versions directly. They are managed by icenter.media and icenter.admin respectively.

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Documents | A configuration that can be versioned.  A document doesn’t contain any actual configuration data, but only references to Document Versions. |
| Document Versions | A version of a Document with its contents.  Usually major versions (with Minor = 0) are published versions (i.e. versions that are sent to a Unit). |

### Software

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Packages | A part of Unit software that can be versioned.  A Package doesn’t contain any actual files, but only references to Package Versions.  Packages are usually created when the system is set up (or updated) and are never modified afterwards. |
| Package Versions | A version of a software Package with its contents.  A Package Version contains references to all files that are required for that software including the directory structure of where the files must be installed on the Unit. The files themselves are stored as Resources.  Package Versions are usually created when the system is set up (or updated) and are never modified afterwards. |

### Configurations

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| Unit Configurations | Contains all settings for Units of a certain Product Type.  This includes configuration files and Software Packages.  The user edits Unit Configurations in a separate editor window (called Unit Configurator) that opens when clicking “Edit…” in the expanded details about a Unit Configuration.  A Unit Configuration is not directly linked to a Unit; its contents is exported in the Unit Configurator in icenter.admin and then sent to the Units that belong to the Update Groups selected during export. |
| Media Configurations | Contains all data relevant for an icenter.media project.  The user can only edit Media Configurations using icenter.media.  A Media Configuration is not directly linked to a Unit; its contents is exported in icenter.media and then sent to the Units that belong to the Update Groups selected during export. |

### Meta

|  |  |
| --- | --- |
| **Entity Type** | **Description** |
| User Defined Property | For some of the Entity Types defined above it is possible to define additional properties.  These properties can be defined either globally (for all Tenants) or for a specific Tenant).  With this mechanism it is possible to add information to the database that was not specified in the Entity Type. This information is always stored in string form (i.e. there are no integer, date, time or any other format. Currently this information is also only available from within icenter.admin. |
| Background System Settings | Contains all settings related to the Background System.  The user can enable/disable the Azure Update Provider for his system (only if the Background System is on Azure). That is needed if the units should be updated through Azure.  Currently the “admin” User has the possibility to enable the Maintenance mode which blocks all users trying to login to the system, except the “admin” User. That can be used to do maintenance work on the Background System. |
| FTP Servers | Contains a list of FTP servers used for updates.  The Background System will send new Update Commands to all defined servers. Be aware that the FTP servers are not tenant specific! |

## Login and Tenant Selection

When icenter.admin is started, the user must log in to an icenter Portal with his user name and password.

If the user has rights for more than one Tenant, he has to select the Tenant after the log-in.

## Navigator

The left part of the application always shows the Navigator. It allows to switch between the different Stages available.

The Home Stage can be reached by clicking the  icon in the top left corner of the Navigator.

Next to that button, there is the Search Box which allows the user to quickly search for a certain Entity Type (it does not search the contents of Entities, but just the names of Entity Types).

Below the Home button and the Search Box is the tree of all Partitions with their Entity Types.

## Home Stage

When icenter.admin is started, the user sees the Home Stage.

The current version of icenter.admin shows the list of recently edited Entities which can be clicked to jump directly to the given Entity.

## Entity Stages

For each Entity Type there is a separate Stage that contains a list of all Entities of that type that “belong” to the currently selected Tenant.

The filtering according to the selected Tenant largely depends on the Entity Type and will not be detailed here.

The list of Entities can be filtered, ordered and grouped.

It is also possible to select the columns that should be shown. Some columns are hidden by default since they are usually not of interest to the user.

With the buttons at the top right a new Entity can be created or the selected one can be edited, duplicated or deleted. All those operations, except for “delete”, open the Entity Editor.

Some Entity Types have additional information for each Entity. This information can be shown by expanding the row by clicking on the “+” sign at the very left of the grid. This will open the Entity Details that mostly show all references of the selected Entity to other Entities. The Entity names are clickable links with which the user can directly jump to the referenced Entity.

## Entity Editor

When an Entity is being created or edited, the Entity Editor for that Entity is shown. At any time it is only possible to edit a single Entity, but it is possible to navigate to other Entity Types while the Entity Editor stays open; but the Entity Editor must be closed to edit another Entity.

Errors in the Entity Editor are marked with red borders and must be fixed before the Entity can be saved.

## Removable Media Stage

When a USB stick or another removable media is detected, it shows up automatically at the bottom of the Navigator. When clicking on a medium, its Removable Media Stage is shown. There the user has the possibility to import feedback from the USB stick and export Update Commands to the USB stick.

Partial exports are possible by selecting only the required Units or Update Groups.

Imports always import all feedback (shown in the list) from the USB stick to the database and delete that data from the USB stick.

Only Devices which are detected as Removable Disk, are supported.

The icon in the Navigator and at the top of the Removable Media Stage also show if there is feedback available on the USB stick.

## Unit Configurator

The Unit Configurator can be reached by opening the Entity Details (not the Entity Editor) of a Unit Configuration and then pressing “Edit…”

The Unit Configurator guides the user through the creation of the entire configuration for Units. The options available in the Unit Configurator depend on the Product Type for which the Unit Configuration was created and options selected within the Unit Configurator.

This wizard is highly interactive and changes depending on user input. Generally it can be said that input done earlier in the wizard can have influence on steps further down in the wizard – but never the other way around.

The icon next to a wizard step shows its state:

*  means that the data configured in the step is valid
*  means that there is a warning in the step; this icon mostly appears if a step is not supported in the current selected software version
*  means that there is some input missing in the given step; this icon is only shown until the user has edited the step for the first time, then the error icon is shown if there is still some data missing
* means that there is an error in the step



For the last three states, there is always a tooltip available telling the user what is wrong with the given step.

### Load Initial Data Step

This step only shows up if the Unit Configuration is new. It allows the user to create a default empty Unit Configuration, copy an existing one from the current tenant or import one from an external file (\*.ucg).

### Export Preparation Step

This step allows the user to preview the export and edit any configuration files manually. Be aware that modified files will be sent as-is to the Units in the next step and that this data is not saved in the Unit Configuration. The next time the user edits a Unit Configuration, those changes will be lost and have to be added manually again, if needed.

### Pre and Post Installation Actions

These two steps allow the user to add actions that need to executed before or after the update has been installed on the unit. Special arguments needed to execute an action can be set in the “Arguments” column.

#### Local executables

Local executables are files (\*.bat / \*.exe) that need to be sent to the unit and then executed. Additional files needed by the executables can be added in the “Additional files” section.

#### Unit executables

Unit executables are scripts or applications already existing on the unit (e.g. Command Prompt). The user needs to set the absolute path of the executable. Additional files needed by the executables can be added in the “Additional files” section.

### Export Step

In this last step the user has to export the configuration to the selected Update Groups and he can define the validity interval for that export. This allows to export different configurations that should be valid at different times.

Before performing the export, the user must save the changes to the system (See chapter 3.8.6).

Once the export is performed, all required Update Commands will be immediately sent to all affected Units over FTP. For USB updates, switch to the Removable Media Stage to export the updates.

### Local Download Step

The user has the possibility to export the entire Unit Configuration locally after the Export. This is useful if a Unit has to be updated by hand. Be aware that only the Unit Configuration is exported, not the Media Configuration. Make sure, that you also manually export the Media Configuration by using icenter.media, if your Unit Configuration contains a Composer.

### Save changes to database

This function is used automatically before exporting or if the user clicks the “Save” button. It saves the changes to the database as a new version. The user must set the version number and a comment which will be shown later in the version selection.

Our suggestions when to use major or minor versions:

* Major version for a configuration which will be exported to the customer units
* Minor version for a configuration which will be exported to test units or which is in “working” state

### Version selection

This function allows the user to open and edit a previous version. If a previous version is changed and checked-in, it will become the new latest version.

### Export Unit Configuration to file

This function allows the user to save the Unit Configuration locally as file (\*.ucg).

This file can be used e.g. to import the Unit Configuration on another tenant or another system.

## File menu

### Options

The user can select the application language in the general settings tab. He must logout and login again to activate the newly selected language.

# Configuration

Currently there is no configuration available, except for NLog.

# Installation

## Full installation

icenter.admin is installed using ClickOnce, this means the user only has to click a link on the icenter Portal under “Applications.” The installer will then download and install the application for the current user. After the first launch from the Portal, the user has an application shortcut called “icenter.admin” in his start menu.

## Upgrade

The ClickOnce approach described above also caters for the upgrade of icenter.admin. Every time icenter.admin starts, it checks if a new version is available and automatically upgrades the application after login.

# Maintenance

## Common errors

None known at the moment.