Hotel Guest Room Management - Full Service and Luxury Solution

Application Specific Integration Guide

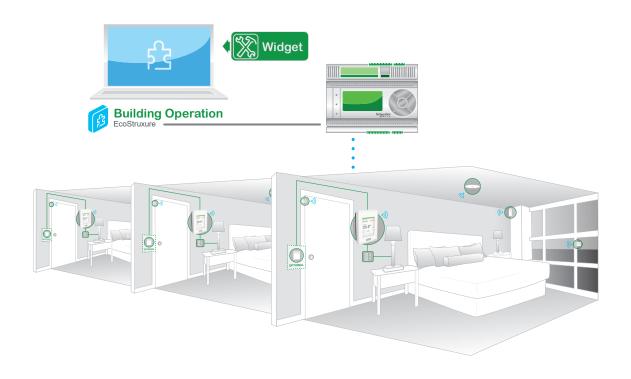




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Introduction

Our Guest Room Management suite of solutions range from simple limited service solutions, to feature-rich, fully integrated solutions.

GUEST ROOM MANAGEMENT VALUE

Good

Limited Service Standalone

- **Enhance Comfort**
- Improve brand recognition
- Visual appeal
- Deliver intuitive experience
- · Increased energy efficiency
- HVAC control with Occupancy management and window detection
- Master switch lighting control based on occupancy



Better

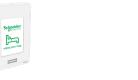
Limited Service Integrated

- Lower maintenance costs
- Gain visibility of operations
- Remotely manage the hotel
- Boost staff productivity
- BMS integration with GRMS dashboard
- PMS integration with BMS and **HVAC** management
- · Door Lock Integration
- Wired or Wireless integration



Full Service and Luxury

- Enhance guest experience
- Increase asset value and differentiation
- Full lighting and blind control via BMS and bedside panel
- Light scenes
- Do-not-disturb
- Make-up room







The Limited Service Standalone Guest Room Management Solution (GRMS) is covered in a separate guide.

This document covers the Integrated Solution and the Full Service and Luxury Solution. It also provides step-by-step integration of our guest room solutions to EcoStruxure™ Building Management Systems (BMS) including the GRMS dashboard, and 3rd party applications like Property Management System (PMS) and door lock integration.

When adding the Hotel Room Controller (HRC), the Full Service and Luxury Solution provides lighting, curtain, do not disturb (DND), make-up room (MUR), bedside panel and more. Each element of this solution can be selected "a la carte" to meet the needs of the specific hotel.

Guests enjoy a customized, intuitive digital experience along with exceptional comfort and convenience, while hotel operators are able to manage individual rooms, or the entire network of rooms, to drive energy efficiency, monitor alarms and events, and perform proactive maintenance.

PREREQUISITES

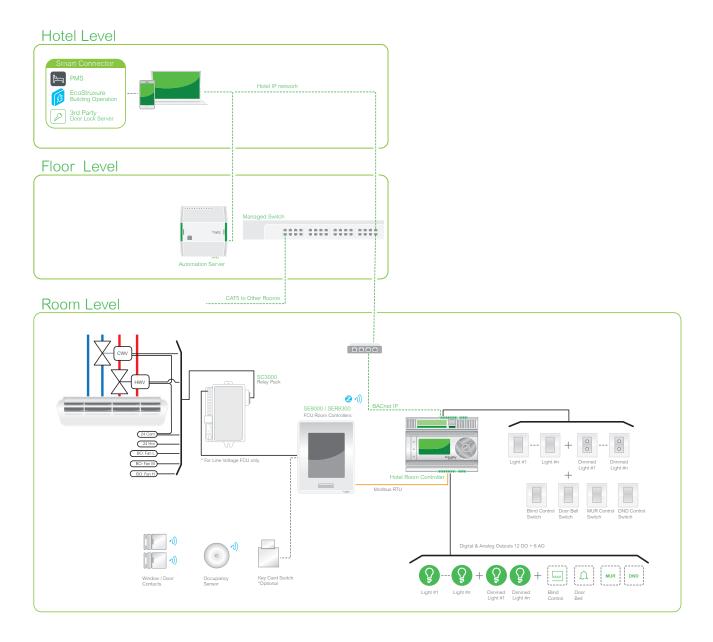
* This document assumes EBO is installed and licensed AND the System Integrator is a certified EBO user. Contact your local Schneider Electric representative if this is not the case.

Section 1 - General Architecture

This section provides an overview of the general system architecture for integrating a network of multiple guest rooms using the HRCs and SER/SE8300 Series Room Controllers with a wired or wireless network infrastructure.

MULTIPLE CIRCUIT LIGHTING + OPTIONAL HMI TABLET

The below shows the architecture for the Full Service and Luxury GMRS for the Hotel level, Floor level, and Room level with optional HMI functionality.



HARDWARE REQUIREMENTS

Qty	Part Number	Description
As required	SE8350U5BXX	Low Voltage FCU Room Controller
As required	SE8350U5BXXP	Low Voltage FCU Room Controller with built-in ZigBee
As required	SER8350A5BXX	Line Voltage FCU Room Controller (with relay pack)
As required	SER8350A5BXXP	Line Voltage FCU Room Controller (with relay pack) with built-in ZigBee
As required	SC3504E5045	Relay Pack (with SER8300)
As required	SED-WDS-P-5045	ZigBee wireless Door/Window contact
As required	SED-CMS-P-5045	ZigBee wireless ceiling motion sensor
As required	HRCPDG42R	HRC 42 IO, Display
As required	HRCPBG28R	HRC 28 IO, No Display
As required	HRCEP14R	Expansion Module, 14 IO
As required	RSZE1S48M	RS Socket
As required	RSB1A160B7	RS Plug-in Relay, 1 Pole, 16A, 24 Vac, 50/60 Hz
As required	RSB1A160BD	RS Plug-in Relay, 1 Pole, 16A, 24 Vdc
As required	SXWADBUND10001	Advanced Display,10- inch, Bundle Kit: Advanced Display tablet unit & mount
As required	ETA-U90JWE-1	USB Power adapter (optional for Bedside Panel)
As required	ET-UP900	Micro USB to RJ45 adapter (optional for Bedside Panel)
As required	SXWAUTSVR10001	AS Automation Server
As required	SXWTBASW110001	Terminal Base Automation Server
As required	SXWPS24VX10001	Power Supply, 24 Vac/21-30 Vdc
As required	SXWTBPSW110001	Terminal Base Power Supply

SOFTWARE REQUIREMENTS

Software	Version	Comment
EBO Enterprise Server	1.7.1	Download from Schneider Electric Exchange.
EBO Enterprise Server License	1.7.1	SXWSWESXX00001: Provided by Schneider Electric
EBO Work Station	1.7.1	Download from Schneider Electric Exchange.
EBO Work Station Pro License	1.7.1	SXWSWWORK00002: Provided by Schneider Electric
EBO License Administrator	1.7.1	Download from Schneider Electric Exchange.
EBO SER/SE8300 Widget	1.0	Provided by Schneider Electric
MiddleWare Smart Connector	2.0.11	Provided by Schneider Electric
Micros Fidelio	N/A	IFC_SXU 5007-134: Provided by User

NOTES AND LIMITATIONS

The notes and limitations are configured to August 1, 2016.

HVAC

All low voltage applications must be controlled by the SE8300 Room Controller, and all line voltage applications must be controlled by the SER8300 Room Controller and SC3000 Relay Pack. For full service, a TC500 can be used as an alternative to the SER/SE8300 Room Controller.

Lighting

Lighting switches and lights must be wired to the Hotel Room Controller (HRC). Light scenes are enabled with the HRC and EcoStruxure™ Building Operation (EBO) via BACnet. Only HRC I/Os for HVAC, lights, curtain, scenes and DND/MUR are monitored and controlled through EBO.



The current limitation for the relays in the HRC is 3A/1A, with a maximum in-rush current of 12A. Always ensure these are compatible with the load, especially the in-rush current, which is serveral times larger than the operational current. It is highly recommended to add an extra relay between the on-board relay and the load, such as a 16A relay socket.

Dimming

For dimming, the current HRC only supports 0-10V. However, there may be cases of compatibility issues for certain dimming drivers, and therefore, it is recommended to test the compatibility in advance. In case of compatibility issues, adding a resistor $(600\Omega, 0.5W)$ in parallel with the dimming drive may solve the issue.

BMS/PMS

All wired integration for the SER/SE8300 Series Room Controller and HRC to EBO must be wired via BACnet IP according to the following:

- No Automation Server (AS) required for applications with less than 200 rooms
- Automation Server required for applications with greater than 200 rooms

The Enterprise Server (ES) is required for both scenarios.

Add-ons

Wired Key-card switch can be added if required.

Output Contacts

The current rating for the output contacts of the HRC is strictly valid when driving resistive loads (contactors or relays). The output relays of the HRC are not designed to withstand the high in-rush current generated by capacitive or inductive loads such as LED drivers and other devices using an electronic PCB. Using the HRC with such devices will result in failure of the HRC output contacts and may damage the connected equipment. In case such type of equipment must be used as a Controller, a pilot relay such as the Schneider Electric Zelio RSB series with the proper current rating should be used.

Section 2 - Configure Hotel Room Controller

To add functionality, such as lighting scenes and control, DND/MUR, and curtain control, the HRC must be integrated into the solution. The HRC is connected, via Modbus, to the SE8300 Series Room Controller and is connected to EBO via BACnet IP. Configuration of the HRC is accomplished via a web interface, allowing the User to configure the HRC according to specific requirements.

HOTEL ROOM CONTROLLER WIRING

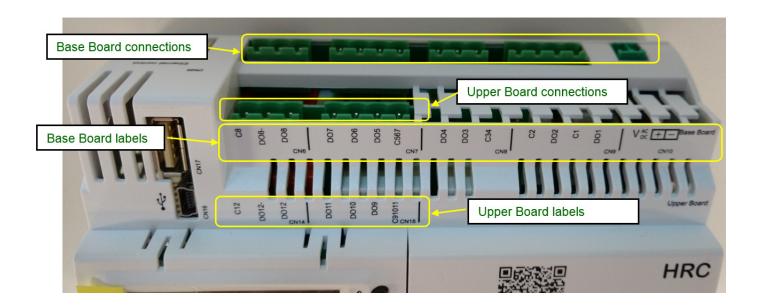


It is essential to wire the Hotel Room Controller correctly for this application. If a negative voltage is applied to any of the Outputs, the HRC will be damaged and none of the Outputs will operate anymore. Refer to the following best practices before wiring the HRC:

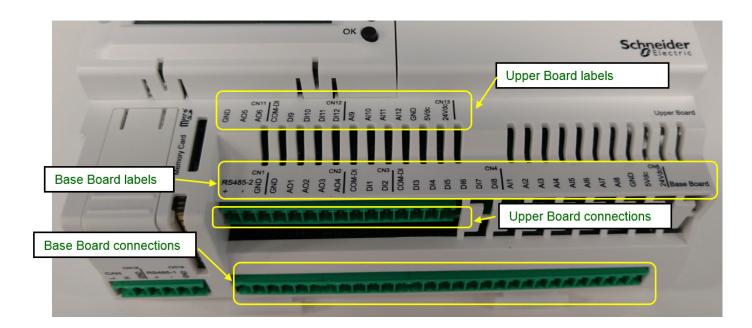
- Read all HRC labels carefully on the 42 I/O model so that Upper board connections are not confused with the Base board connections
- Power the HRC before connecting any device to the HRC Inputs or Outputs.

Always use the terminal blocks as shown in the illustration below. Incorrect wiring of the HRC can cause permanent damage to the device.

Inputs



Outputs



ACCESS HOTEL ROOM CONTROLLER

The default IP address of the HRC is 10.0.0.100.

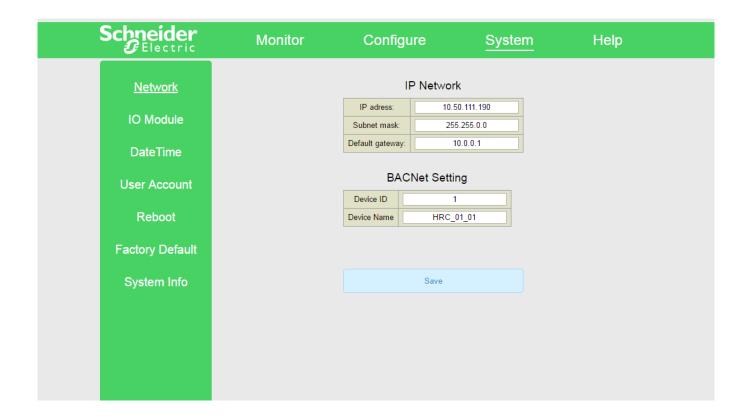
- 1. Using web browser, navigate to IP address of HRC.
- 2. For Username, enter administrator (default).
- 3. For password, enter password (default).
- 4. Click System tab.
- 5. Configure the following:
 - IP address (NOTE: IP address must be unique for each HRC on the network)
 - Subnet mask
 - · Default gateway
- 6. Under BACnet settings, set device to unique setting.

NOTE: this must be a unique number between 1 - 65,535.

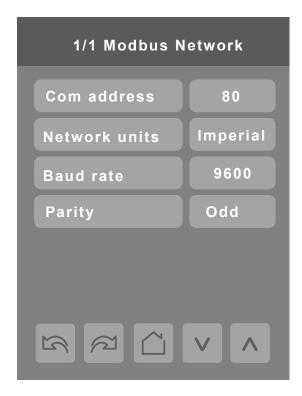
7. Name device HRC_xx_yy

NOTE: xx= floor number and yy=room number

8. Click Save. The HRC reboots and comes back online with the new IP address.



- 9. On SER/SE8300 Series Room Controller, navigate to Modbus screen 1/1 and enter the following:
 - COM address: 80Network units: ImperialBaud rate: 9600
 - Parity: Odd



10. Using the new IP address, log back into HRC and use the various configuration screens to configure device according to necessary requirements.

NOTE: the following pages can be used as reference pages when configuring the Hotel Room.

MONITOR PAGE

The Monitor Page shows the User the actual state of any inputs, outputs and scenes, as well as the SER/SE8300 Series Room Controller status. Verify Room Controller (thermostat) is online.



CONFIGURATION PAGE

The Device tab lets the User define and associate physical devices (lights, curtain) to the HRC configuration table. Additionally, this page is used to set the room numbers as shown below.



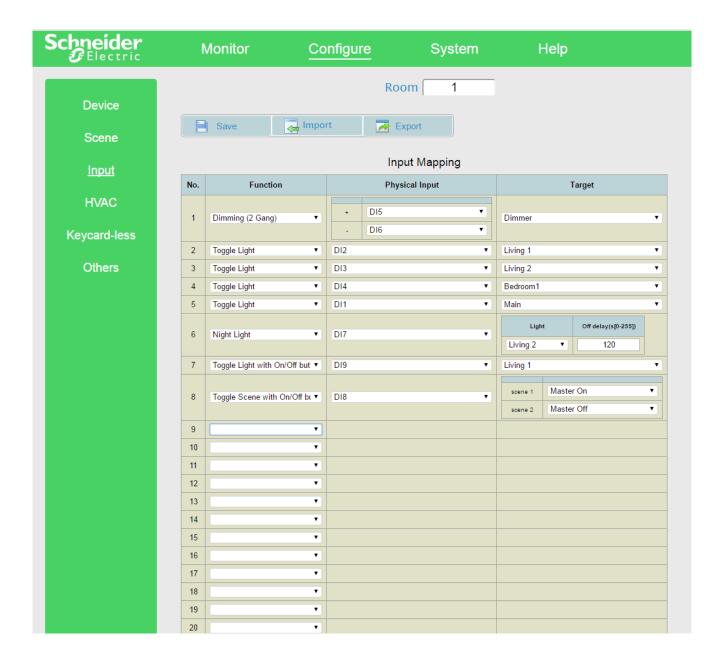
SCENE

The Scene tab allows you to configure up to 8 scenes. Each scene lets you define a device behaviour, such as 40% dimming when the guest first enters the room.



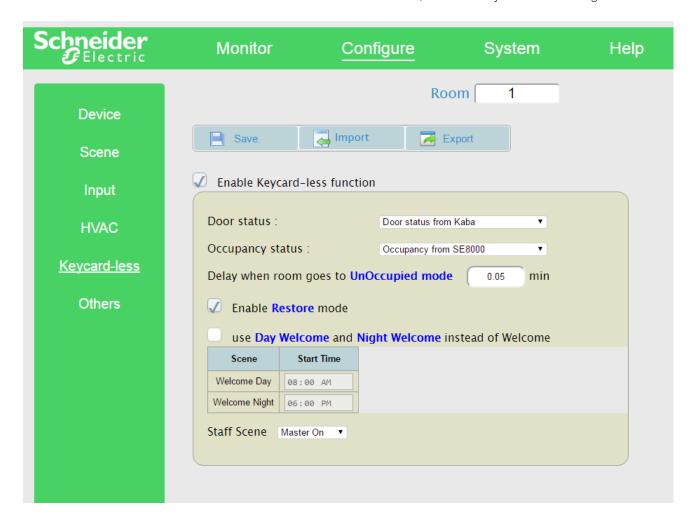
INPUT

The Input tab lets the User define the behavior of the different inputs such as toggle a light, dimming, curtain control, toggle scene, and setpoint.



KEYCARD-LESS

The Keycard-less tab lets the User define the behaviour of the HRC based on occupancy status of the SER/SE8300 Series Room Controller. It also allows for the use of various scenes such as Welcome, Welcome-day and Welcome-night.

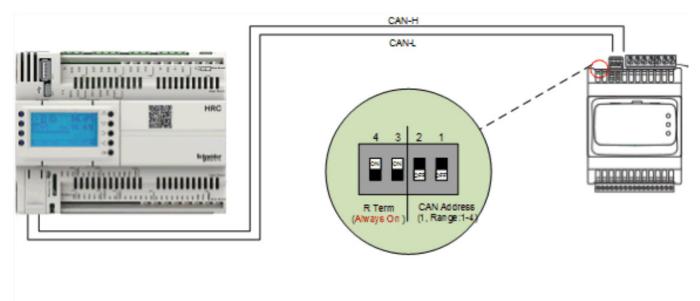


I/O EXTENSION

Wiring

The I/O Extension is connected to the HRC over CANbus. Make sure to configure the dip switches as shown below. The HRC and I/O Extension must be rebooted (power cycled) after configuring the dip switches.

Ensure the I/O Extension displays "Online" in the HRC configuration webpage.

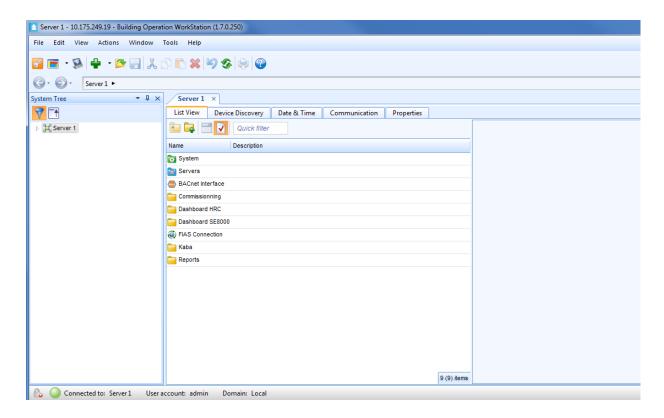


Section 3 - Integration to EBO

The HRC communicates to EBO using BACnet IP. All points must be discovered in EBO before they can be bound to the various widgets in the GRMS.

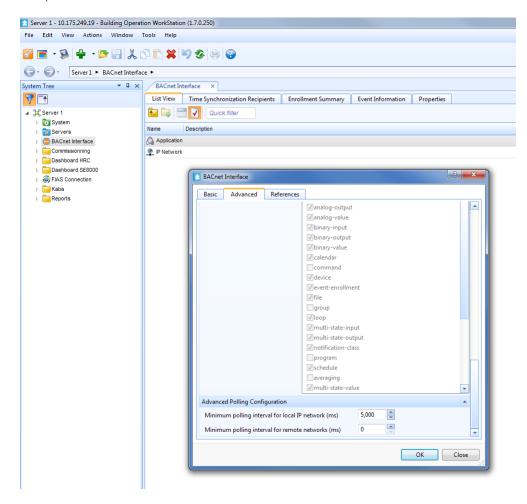
BACNET NETWORK DEVICE DISCOVERY

1. Start Building Operation Work Station session.



EBO Configuration

- 1. Create new BACnet interface.
- 2. Configure polling interval to 5000 milliseconds.
- 3. Right click in enterprise server and do a cold start.



- 4. On System Tree, click Automation Server.
- 5. On right pane, click **Device Discovery** tab.
- 6. In drop-down menu, select BACnet devices.

Note: this launches discovery of BACnet devices accessible from this automation server.

Note: when devices list appears, make sure HRC to be integrated shows.

7. Click HRC to integrate and drag it to left pane in IP Network under BACnet Interface.

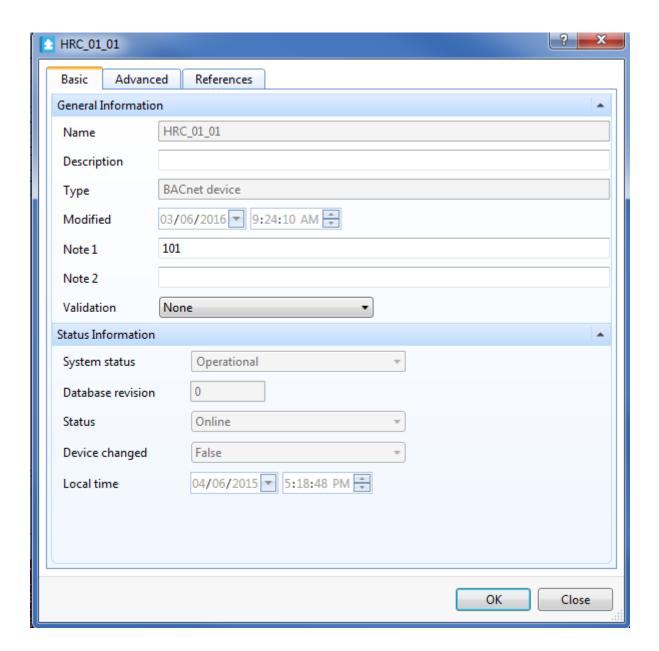
Note: a message shows that reads "Upload is required to host objects in device".

8. Click OK.

Note: the HRC is now part of the IP network of the BACnet interface of the Automation Server. This shows in the left pane.

9. Right click on HRC and select **Device** > **Upload all Objects**.

- 10. Upload Objects for all devices.
- 11. Right-click on device and navigate to Note1 field.
- In Note1 field, enter room number.
 NOTE: this room number will be displayed on the dashboard for each room.
- 13. Click **OK**.



Section 4 - PMS Integration

MICROS FIDELIO INTERFACE

Through Integration with Micros FIAS-based PMS, Schneider Electric has integrated the most widely used PMS in the industry employing Micros Fidelio and Micros Opera. Micros, a subsidiary of Oracle, is the developer of the Opera PMS and Fidelio PMS software suites. Both suites offer the Fidelio Interface Application Specification (FIAS) which allows integration to third-party systems.

EBO integrates with a FIAS PMS solution and extracts specific critical information from the PMS, and uses it to help manage the occupancy status of the guest rooms. Full integration is done using EBO SmartConnector. Also, processors have been configured to operate with the SmartConnector Service build 2.0.11. Use with any other version of the SmartConnector Service will cause errors.

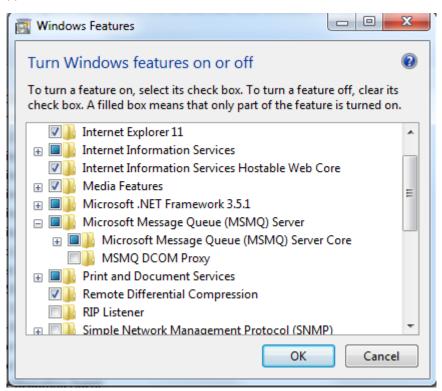
Pre-Requisites

The following must be completed before starting this procedure:

- · Smart Connector is installed.
- Before running any of the Processors, make sure MSMQ is enabled on the workstation as it is required for collecting messages from the FIAS PMS.

Enable MSMQ

- 1. Navigate to Control Panel and click **Program and Features**.
- 2. On left side, click **Turn Windows** features ON or OFF (on the left hand side).
- 3. In pop-up window, search for Microsoft Message Queue (MSMQ) Server and expand.
- 4. Expand MSMQ Server Core and check the following boxes if they are not already checked:
 - MSMQ Active Directory Domain Services Integration.
 - MSMQ HTTP Support.

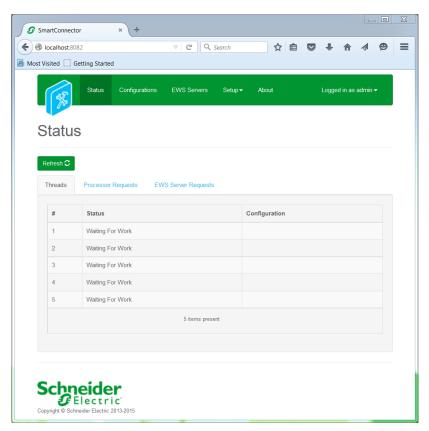


MICROS FIAS CONFIGURATION

The Smart Connector configuration tool is packaged in a Windows Installer file. To deploy the custom processor copy the file "ISCUK.MicrosFIAS.dll" into the service installation directory. The directory is normally "C:\ProgramFiles(x86)\Schneider Electric\SmartConnector"

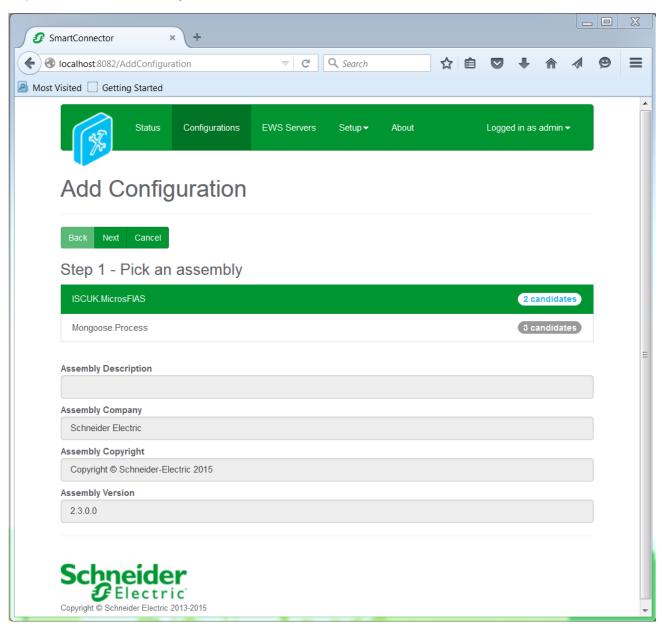
NOTE: For this example, the configuration page is accessed locally and uses default port 8082.

1. Open Browser and enter http://localhost:8082 in address bar to access SmartConnector Management portal.



- 2. Scroll over Configurations tab and select Add New+.
- 3. Select ISCUK.MicrosFIAS.

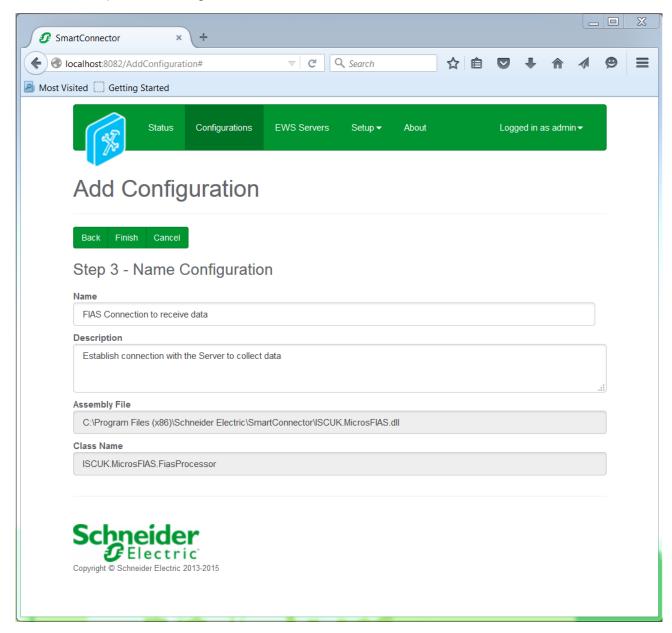
4. Complete all fields with necessary information.



5. Click **Next** to proceed to Step 2 and ensure class **ISCUK.MicrosFIAS.FiasProcessor** is selected.

ISCUK.MicrosFIAS.FiasProcessor

- 6. Click Next to proceed to Step 3 (refer to below screen).
- 7. Enter meaningful name and description for Processor.
- 8. Click Finish and proceed to Configuration screen.



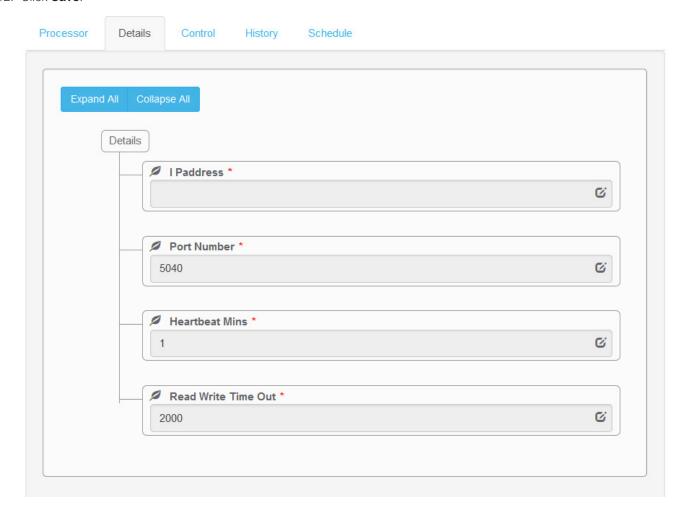
- 9. In Configuration window select **Details Tab**.
- 10. Set IP Address and Port Number.

NOTE: set these properties to Server's IP Address and Port Number respectively to establish connection to FIAS server.

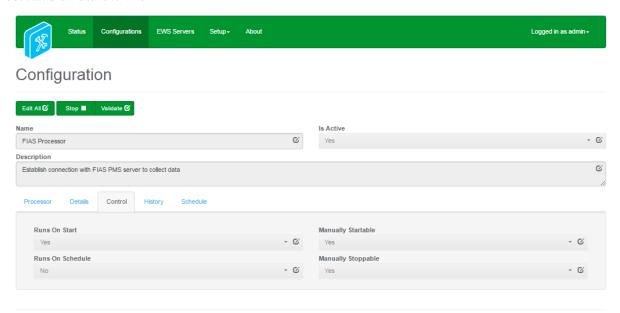
11. Set Heartbeat and Read Write Time Out.

NOTE: set these properties to a non decimal number.

12. Click Save.



- 13. Navigate to **Control** tab.
- 14. Set Runs on Start to YES.





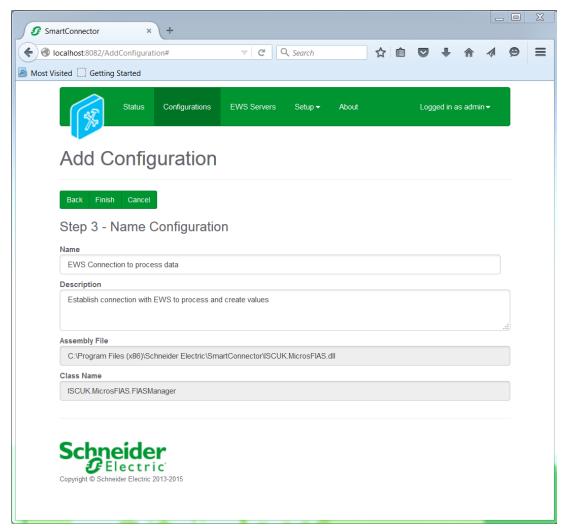
15. Repeat Steps 2 - 16 for second processor.

NOTE: ensure class ISCUK.MicrosFIAS.FiasManager is selected.

- 16. Click **Finish** and proceed to Configuration screen.
- 17. Enter necessary information in required fields.

ISCUK.MicrosFIAS.FIASManager

18. Scroll over Configurations and select Details.



19. Set User Name.

NOTE: this property is required to allow the EWS server connection to be authenticated. It is reccommended to use a specifically generated User credential in the EcoStruxure Building Operation system for this interface.

20. Set Password.

NOTE: related to User credentials.

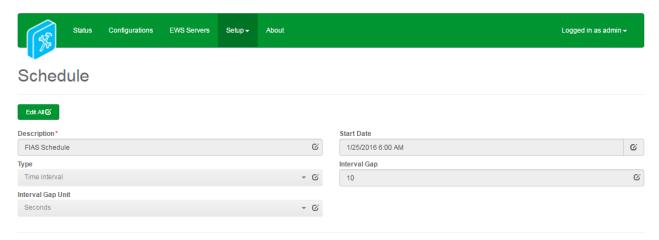
21. Sent End Point Address.

NOTE: set property to the full address required to access EWS interface. This is normally the case of a EcoStruxure ES or AS device as http://[SERVERNAME]:[PORT(57625)DEFAULT]/DataExchangeFias. **Note the address is case sensitive.**

22. Click Save.



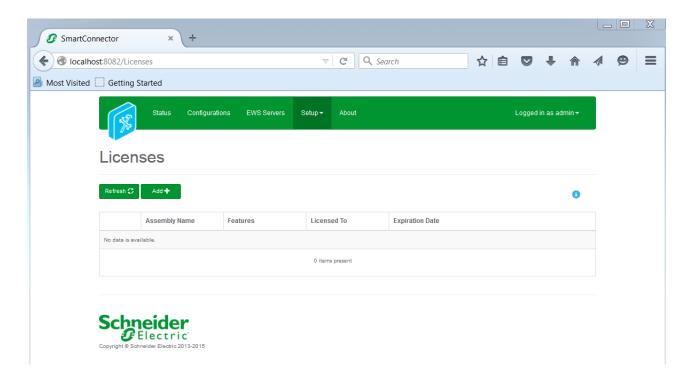
- 23. Navigate to top Setup tab and click Schedule.
- 24. Create Schedule for Manager to run at 10 seconds intervals.



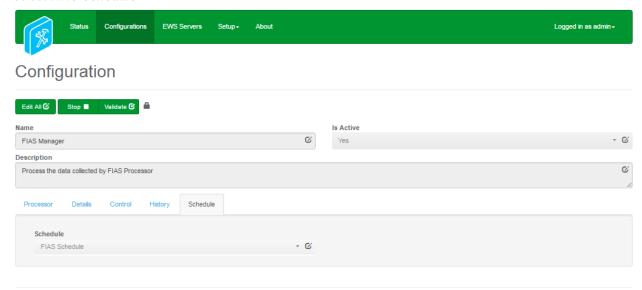


- 25. Navigate to **Setup** tab and select **Licenses**.
- 26. Click Add and import License file.

NOTE: License shows as a new entry. Once added to SmartConnector, license files are not longer needed. However, they should be stored in a safe place for backup purposes.

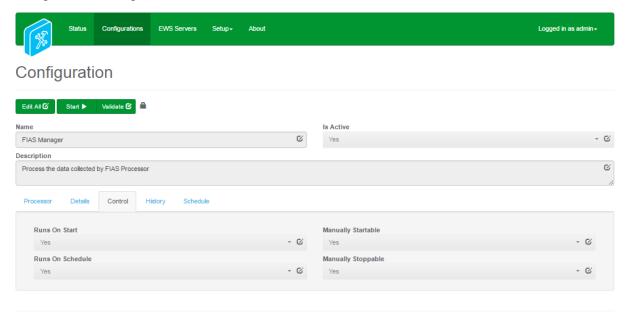


- 27. Navigate to FIAS Manager configuration.
- 28. Navigate to Schedule tab.
- 29. Select FIAS Schedule.



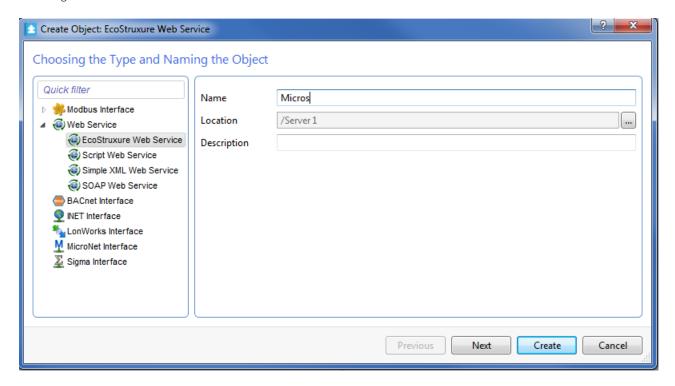


- 30. Navigate to Control tab.
- 31. Configure FIAS Manager to Runs on Start and Runs on Schedule.

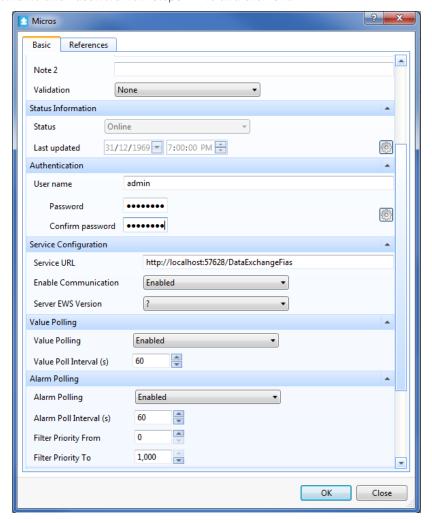




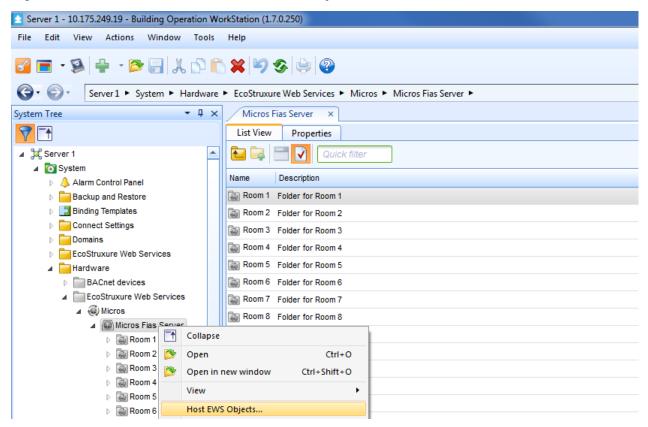
- 32. In the Enterprise Server, select **EcoStruxure Web Service** to create a new interface.
- 33. Enter logical name and click Create.



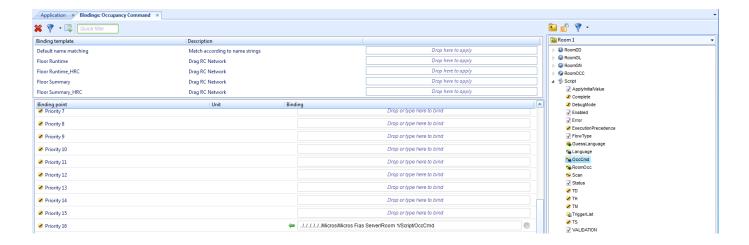
- 34. In Server 1 tree, right-click EcoStruxure Web Service and navigate to Properties.
- 35. Set Service URL using the End Point Address from step 19.
- 36. Configure Username and Password from steps 17-18 and click OK.



- 37. Browse to Server 1/System/Hardware/EcoStruxure Web Services.
- 38. Ensure Micros Fias Server shows in tree.
- 39. Right-click Micros Fias Server and select Host EWS Objects.



- 40. Select correct EcoStruxure Web Service.
- 41. Verify complete Guest Room list from Micros Fias database is displayed.
- 42. Browse to each room and import Micros PMS script.xml.
- 43. Navigate to each HRC device in BACnet IP network.
- 44. Navigate to Occupancy Command Object and Edit Bindings.
- 45. In right side window, navigate to Micros PMS script associated for necessary Guest Room.
- 46. Drag-and-drop OccCmd to Occupancy Command/Priority16 Binding point and click Save.



- 47. Navigate to **Display Language** Object and repeat step 37 using **Language** Object from Micros PMS script.
- 48. Repeat steps 31 38 for each HRC device on BACnet IP network.

Section 6 - Door Lock Integration

DOOR LOCK

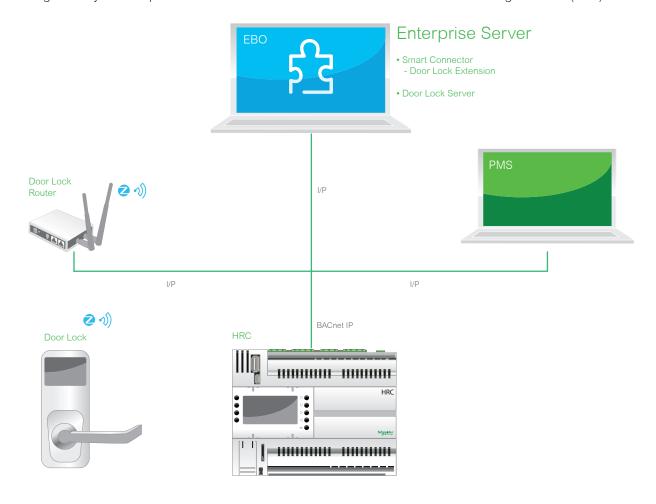
Integration with Door Lock provides the following:

- Triggers welcome scene when the door is opened by the guest for the first time.
- Triggers restore scene when the door is opened by guest for the second time, and subsequent times.
- Triggers "Maid Service" scene when room is accessed by cleaning staff.
- Sets DND to ON when door is dead-bolted.
- Reports door lock online status and triggers alarm in EBO when door lock is offline.
- · Reports door lock status at any time.
- · Reports door battery status and triggers alarm in EBO when door lock battery is low.

ARCHITECTURE

The solution is based on the Smart Connector framework. By installing a Door Lock extension in Smart connector, it enables communication between the Door Lock server and EBO.

Since the solution is performed on the server side, it is not applicable if the Door Lock is not online nor connected to the central management system. All paths involved in the event communication are based on the Change of Value (COV).

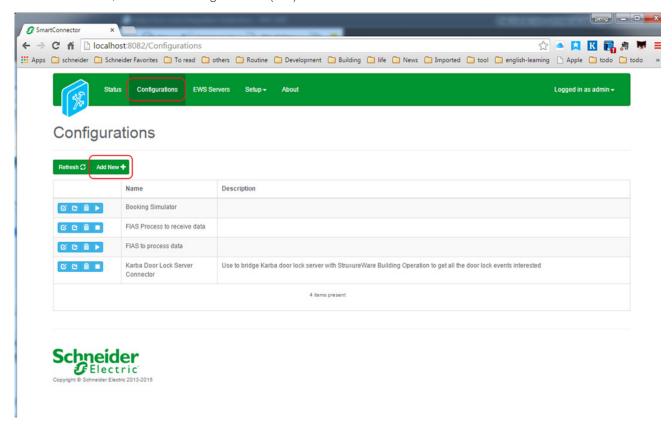


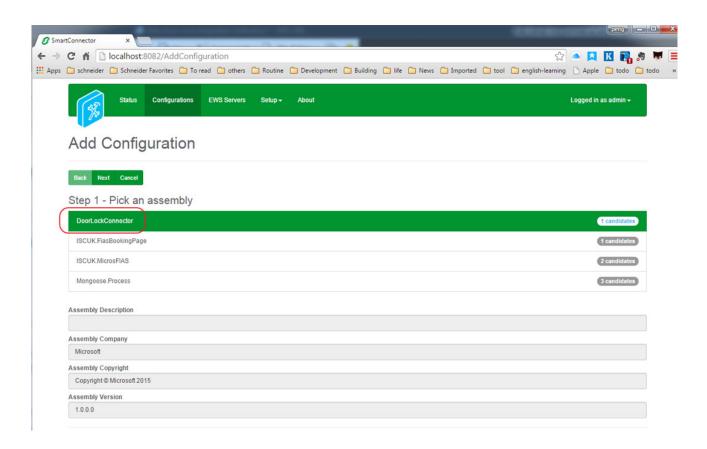
IMPORT TO EBO

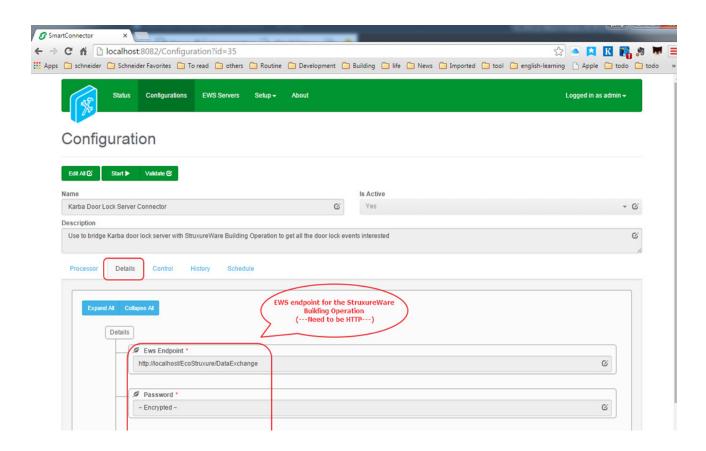
This procedure shows how to install, configure and integrate the Door Lock.

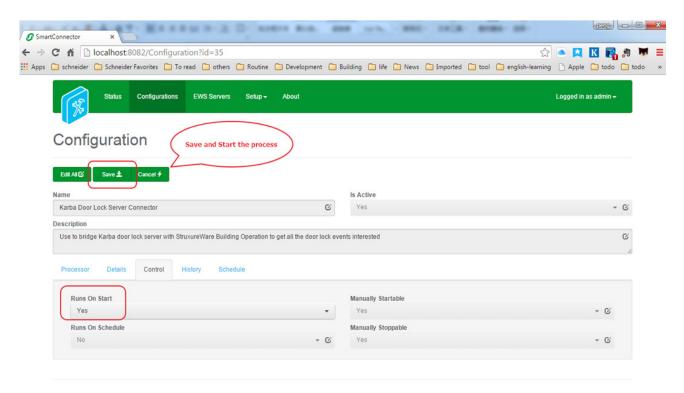
Configure Smart Connector and Door Lock Extension

- 1. Log on the web page for smart connector.
 - NOTE: this example uses URL: http://localhost:8082/
- 2. Enter **Username** (default admin).
- 3. Enter **Password** (default Admin!23).
- 4. Copy door lock library into install folder of SmartConnector.
 - if windows is 32 bit, use folder C:\Program Files\Schneider Electric\SmartConnector.
 - if windows is 64 bit, use folder C:\Program Files (x86)\Schneider Electric\SmartConnector.









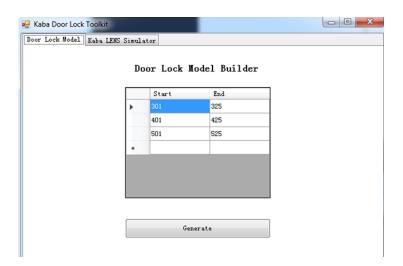


Generate Door Lock Model and Import to EBO

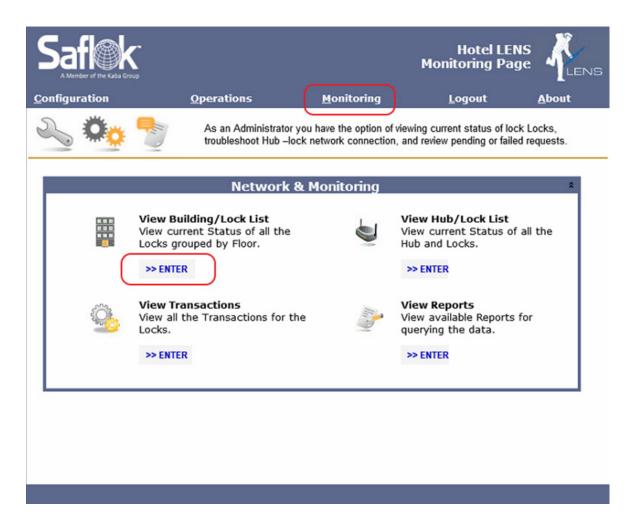
- 1. Open Door Lock Toolkit.
- 2. Enter door lock name according to Kaba server and generate door lock model.

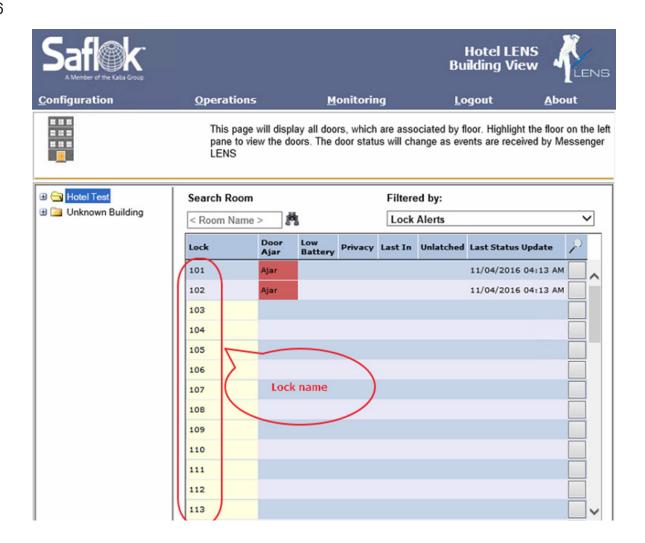
NOTE: Door Lock names are obtained from Kaba Lens Server.

3. Click Generate.



4. Follow next set of screens.

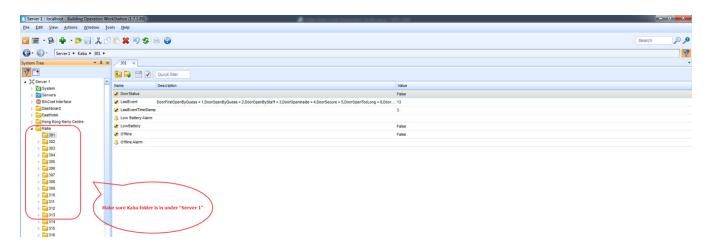




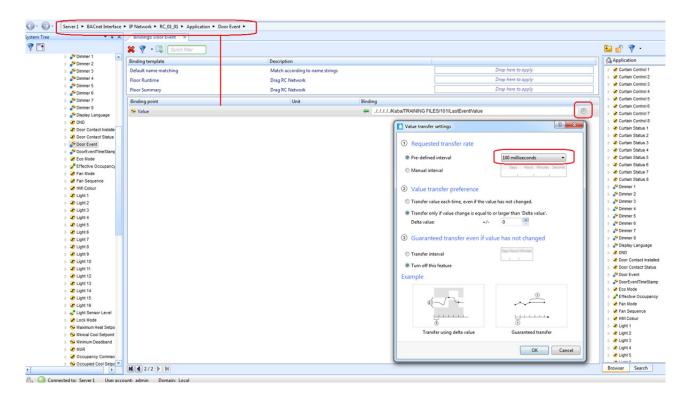
Import Door Lock File to EBO

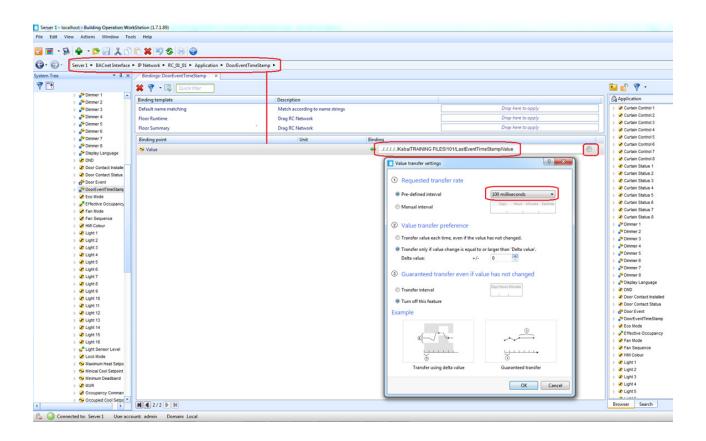
This procedure shows how to import the necessary file into EBO.

- 1. Ensure Kaba folder is under **Server 1**.
- 2. Import DoorLockModel.xml file into EBO.



3. Bind LastEvent and LastEventTimeStamp to HRC variables Door Event and DoorEventTimeStamp.

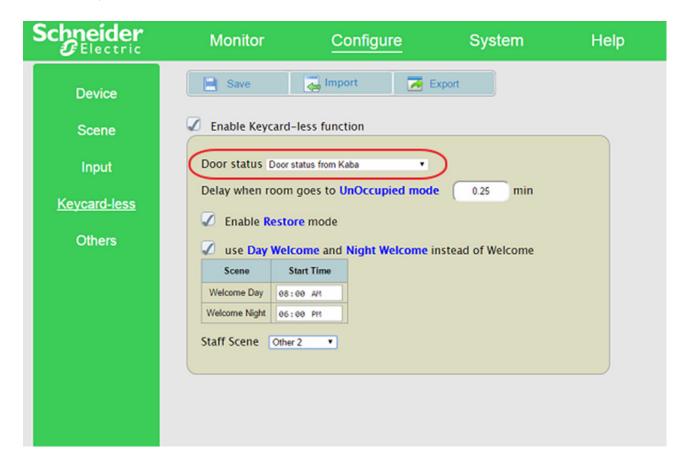




Configure HRC for Door Event

This procedure shows how to configure the HRC to acknowledge the door status from a Kaba door event.

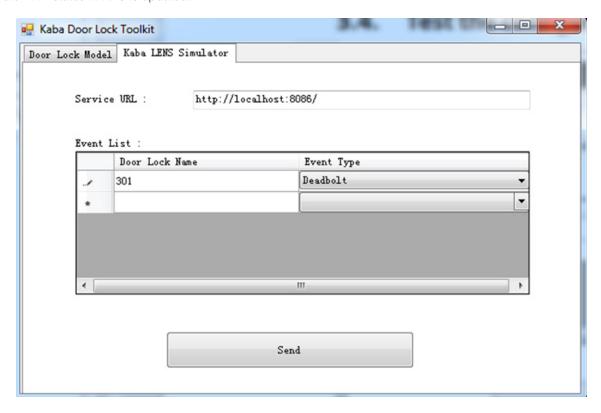
1. In Door status, set to **Door status from Kaba**.



Test Configuration with Kaba LENS Simulator

This procedure shows how to configure the HRC to acknowledge the door status from a Kaba door event.

- 1. Click **Send** Deadbolt message to ensure event Object in EBO is updated.
- 2. Ensure DND status in HRC is updated.

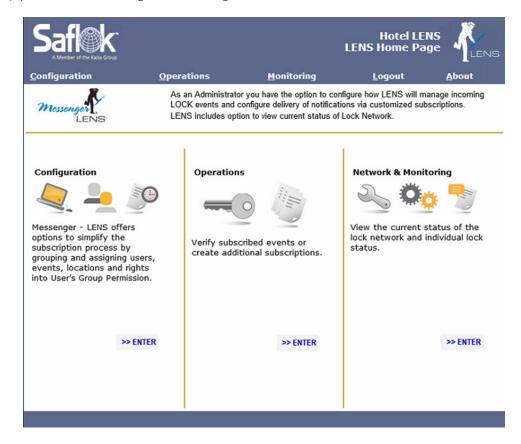


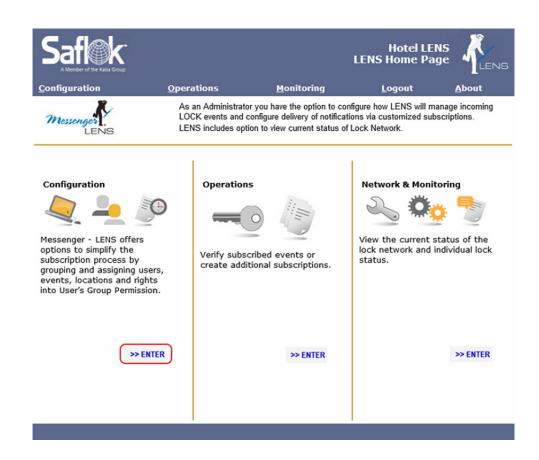
Configure Kaba LENS Server

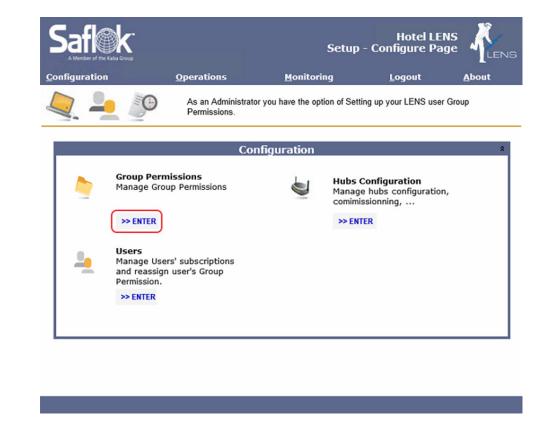
This procedure shows how to test the Kaba LENS server configuration.

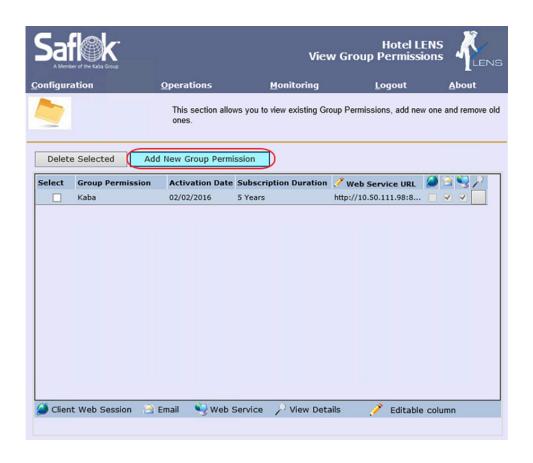


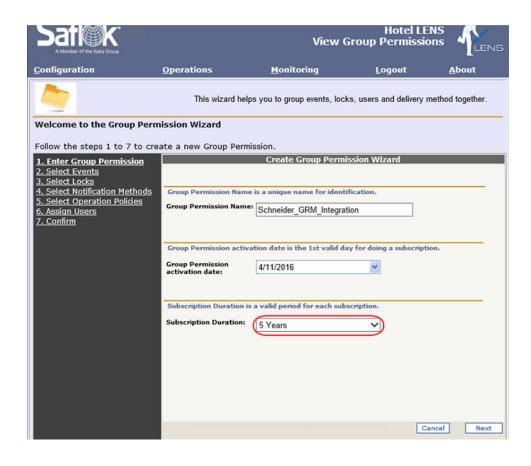
- 1. Click Admin Main Page icon to launch Kaba LENS application.
- 2. Create group permissions according to the following set of screen shots.

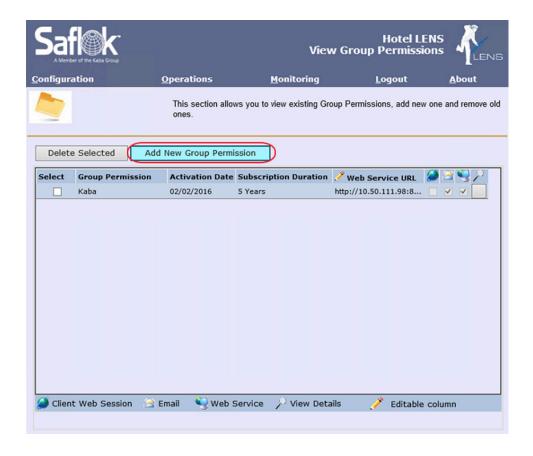


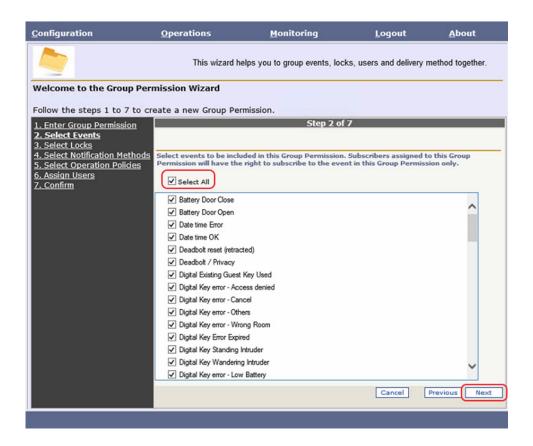


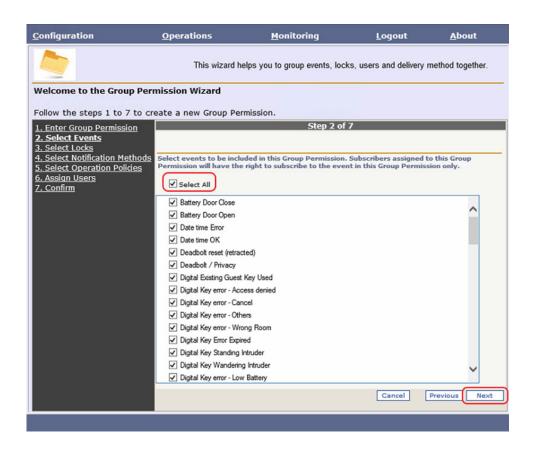


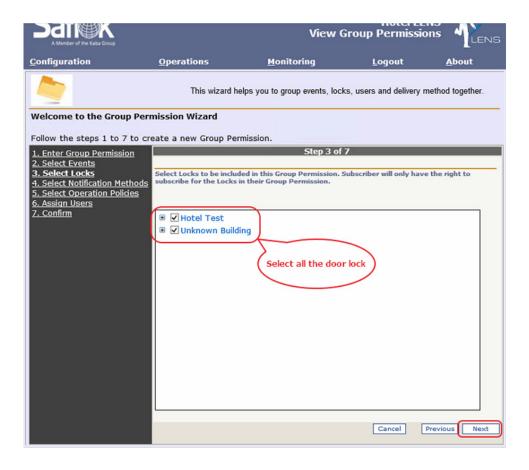


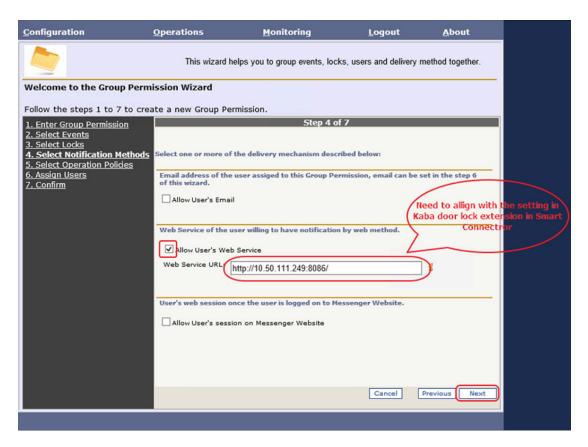




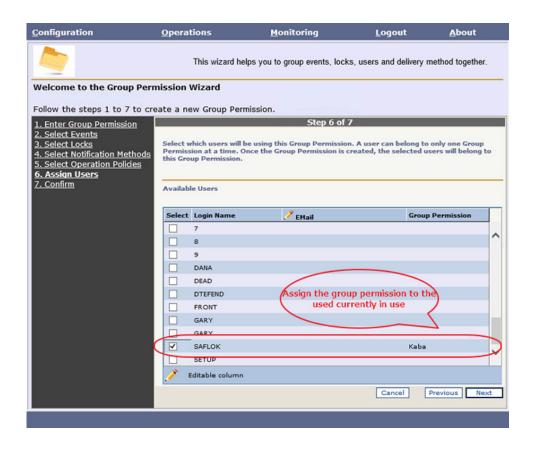


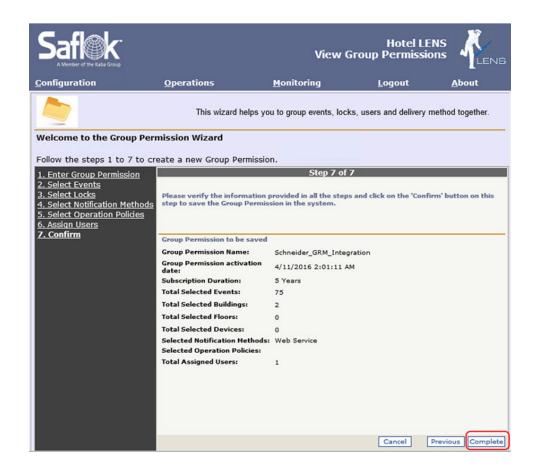








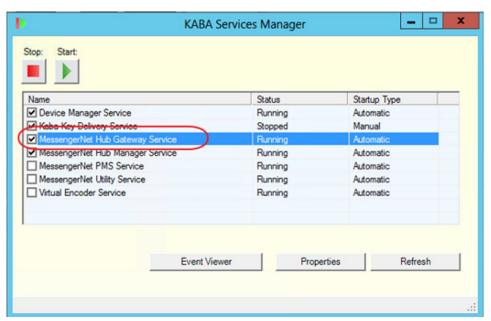




Validate Configuration

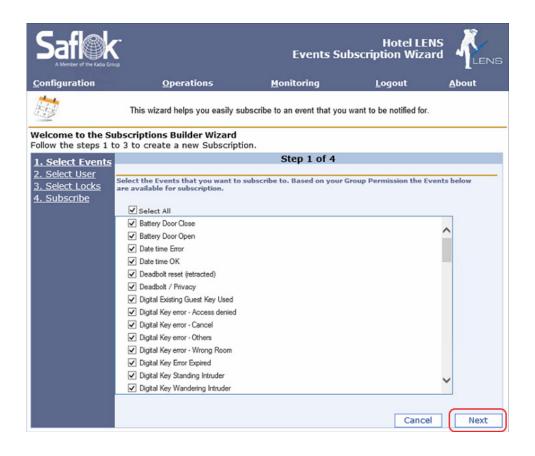
This procedure validates the Kaba LENS server configuration.

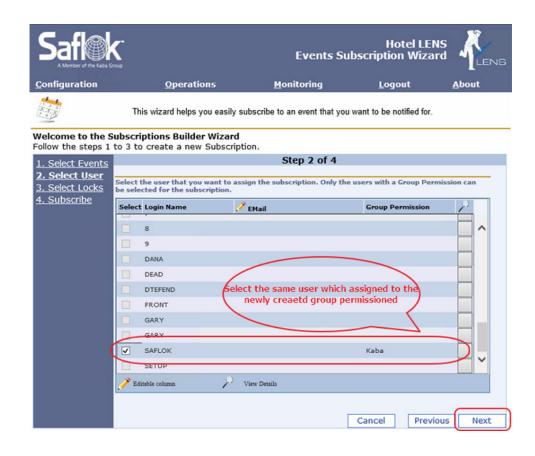
- 1. Log out from any active application.
- 2. Restart **LENS** Gateway service.
- 3. Wait for service to reconnect to translator service.
- 4. Create Group Permissions.

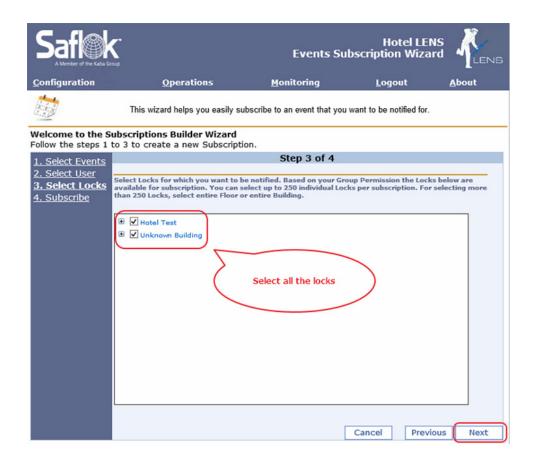


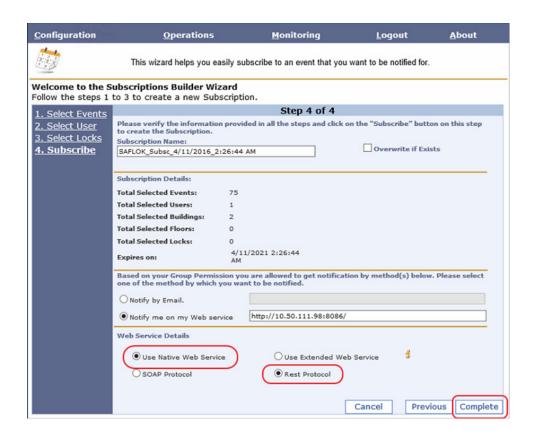
5. Create a subscription for the web service.











Technical Support

For any issues with EcoStruxure Solution contact Schneider Electric Technical Support according to your region

Level 1

- In-country support via SE Branches or SI Partners
- CCC / SRC / CSS

Level 2 - For product support, open ticket in BFO

- For Building Expert related issues*: PSS Advanced and Experts
- For EcoStruxure BMS issues: PSS Advanced

Level 2 - For solutions/application support

Country Champion / Solution Architects / App Center

Level 3

- For Building Expert related issues*: SBS Support team
- For EcoStruxure BMS issues: PSS Experts

Level 4 - For solutions/application support

- For Building Expert related issues*: SBS Solutions, Offer Management and R&E
- For EcoStruxure BMS issues: Global Sustain Team

*Only for P1 issues (high impact, urgent and complex), country champion have the option of opening a ticket in Jira to escalate directly to Level 3

About Schneider Electric

Schneider Electric is leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries.

With global presence in over 100 countries, Schneider is the undisputable leader in Power Management – Medium Voltage, Low Voltage and Secure Power, and in Automation Systems. We provide integrated efficiency solutions, combining energy, automation and software.

In our global Ecosystem, we collaborate with the largest Partner, Integrator and Developer Community on our Open Platform to deliver real-time control and operational efficiency.

We believe that great people and partners make Schneider a great company and that our commitment to Innovation, Diversity and Sustainability ensures that Life Is On everywhere, for everyone and at every moment.

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