SIEMENS

Engineering Guide

Intelligent Valve - Onboarding in Operations Manager

Minimum requirements:

- Hardware model info: ASE4U10E; HW=2.1.0
- Firmware revision: 03.54.02.10; APP=1.16.2251; SVS-300.6.SBC=15.00; ISC=01.00
- Application software version: AAS-20:SU=SiUn; APT=HvacFnct34; APTV=2.010; APS=1
- ABT Go 4.0
- ABT Site 4.0

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2022-06-23

Smart Infrastructure

Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit https://www.siemens.com/global/en/home/company/topic-areas/future-of-manufacturing/industrial-security.html.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, under https://www.siemens.com/cert/en/cert-security-advisories.htm.

Table of Contents

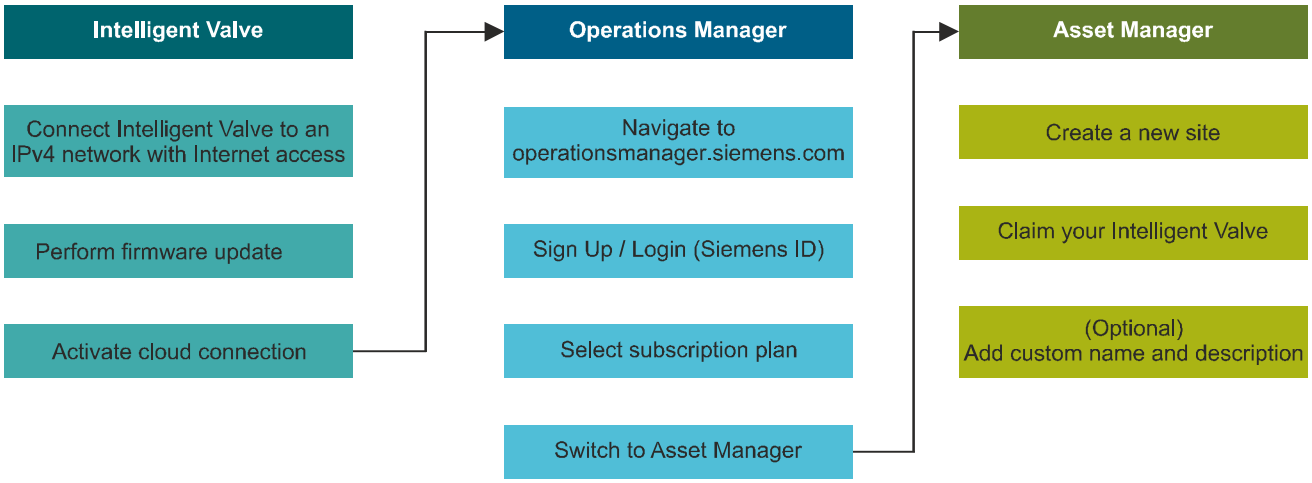
1 Workflow of Intelligent Valve Cloud Preconditions and Onboarding

This guide focuses on onboarding Intelligent Valve into Siemens Operations Manager using the ABT Go mobile application.

It is also possible to set the corresponding settings and perform a firmware update on Intelligent Valve with the ABT Site tool. For information on how to perform these steps. See the documentation in the ABT Site Online Help, which is directly accessible from the tool.

The workflow depicted below shows the three phases of the onboarding process:

1. On Intelligent Valve:
   - Connecting Intelligent Valve to an IPv4 network with Internet access. As of this release, Intelligent Valve does not support any HTTP proxies. HTTPS port 443 must be open.
   - Performing a firmware update.
   - Activating the cloud functionality.
2. In Siemens Operations Manager: Onboarding users by creating a user account and selecting an appropriate subscription model.
3. In Asset Manager: Creating a new site and assigning Intelligent Valve to this site.



2 Connecting Intelligent Valve to the Internet with ABT Go

Set up mobile device

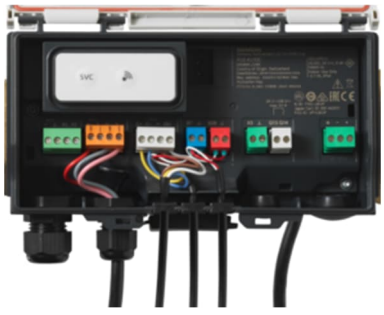
1. Scan QR code with your mobile device.
2. Install ABT Go application on your device.

➪ **Your mobile device is set up and ready to use.**

Android device	Apple device
GET IT ON Google Play	Download on the App Store
https://play.google.com/store/apps/details?id=com.siemens.abtgo&hl=en	https://itunes.apple.com/app/abt-go/id1293043551?l=en&ls=1&mt=8

Power up Intelligent Valve

- ➢ Intelligent Valve is installed.
- ➢ Piping system is flushed.
- ➢ All sensors are connected
- ➢ Power supply is connected and ready to use.
- ➢ Valve signal 0…10 V on terminal X1 (cable is connected).
- ➢ Pump is running.



1. Turn power on.
   → Valve initializes; LED is WHITE for approximately 5 s.
2. Valve is started up.
   → SVC-LED is green (steady with heartbeat).
   → WLAN-LED is flashing blue (0.5 s on / 0.5 s off): WLAN is activated but not connected.

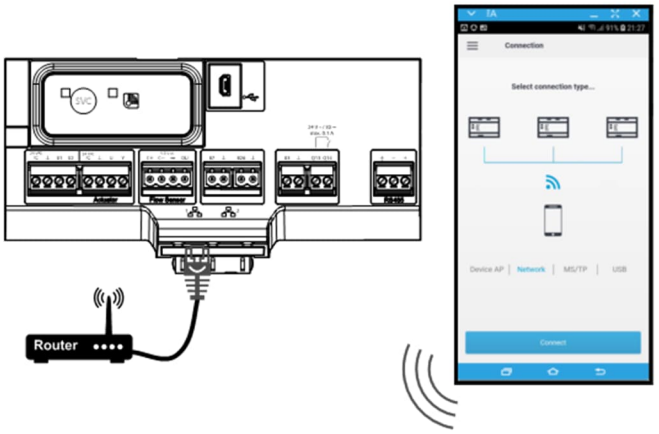
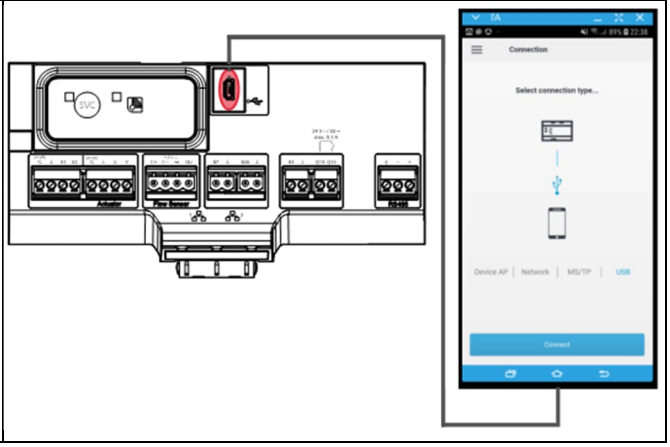
⇒ Valve is ready to use.

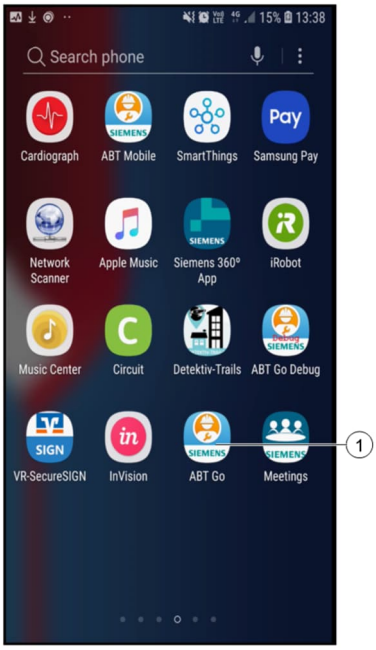
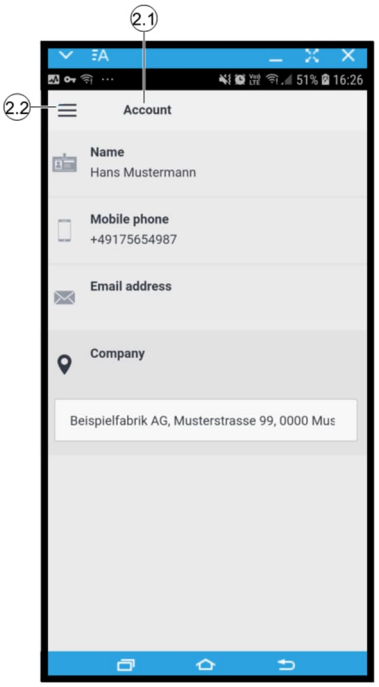
Connecting Intelligent Valve to the Internet for the first time

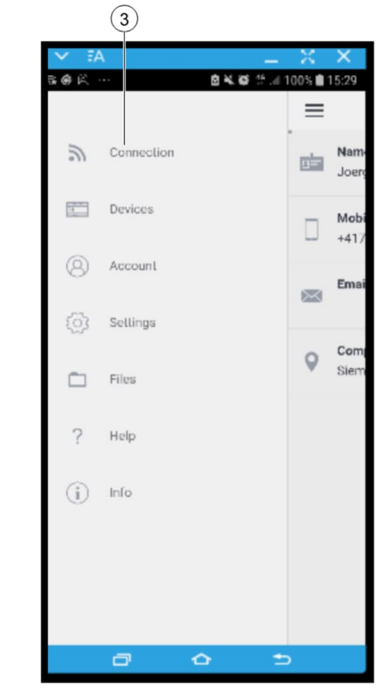
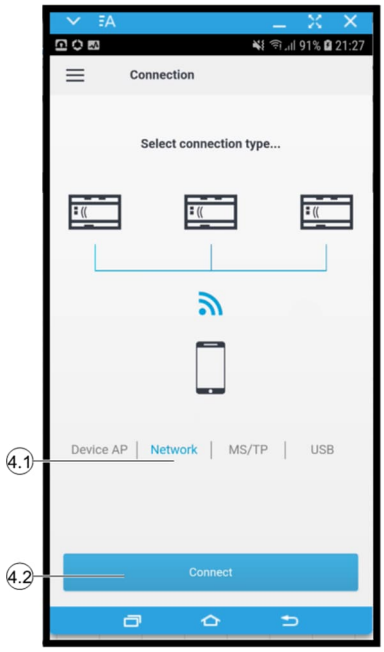
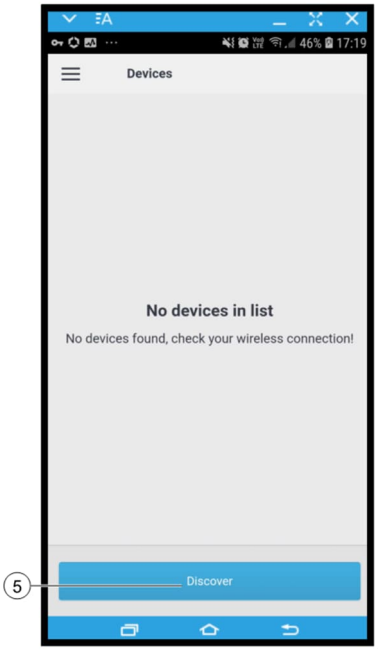
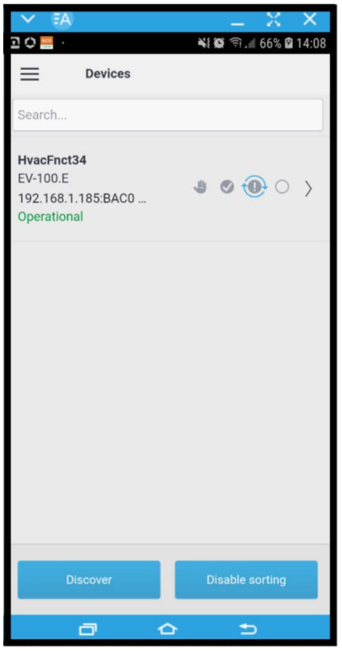
Although not recommended, from firmware version 1.15.1175 onward, it is possible to connect to Intelligent Valve via WLAN Direct.

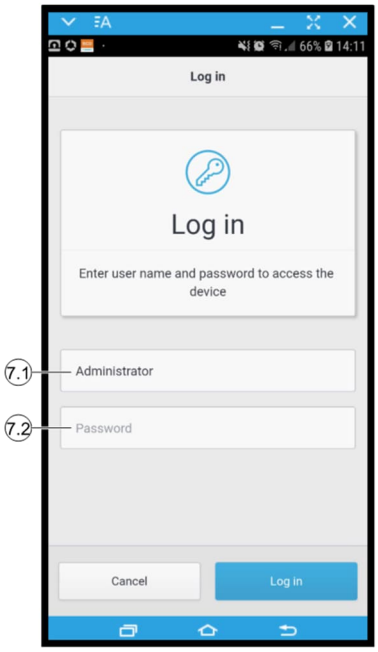
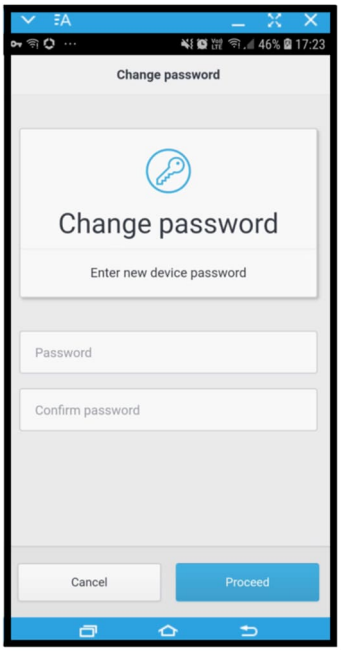
Below, option A for connection is described – however, option B, using a USB cable, is similar. Using options A or B is recommended.

➢ **Precondition:** User's mobile phone is connected via WLAN to the same IPv4 network as Intelligent Valve.

A	B
	

1	2
	
Start **ABT Go App** [1].	Welcome screen shows your **Account** [2.1]. Select **Menu** ☰ [2.2].

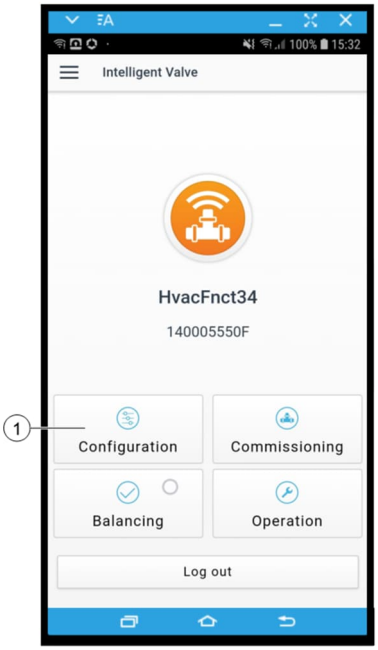
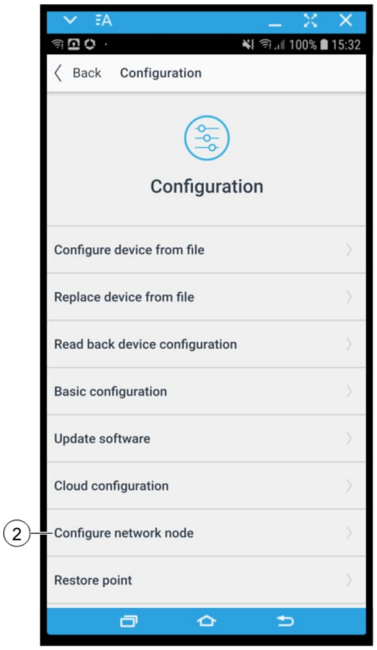
3	4
	
Select **Connection** [3].	Switch to **Network** [4.1]. Select **Connect** [4.2].
5	6
	
Device list may be empty. Select **Discover** [5].	Device appears in list. Switch to device by selecting it.

7	8
	
Enter role [7.1]: • **Administrator**: Full access • **Specialist**: Balancing, control functions, configuration • **Installer**: Balancing Enter password [7.2]. • Initial password for all roles: **OneBT**	First login requires a password change. Password rules: • 8 characters • 1 number • 1 special character • 1 capital letter ⚠ Remember your password! **Resetting the password resets ALL settings.**

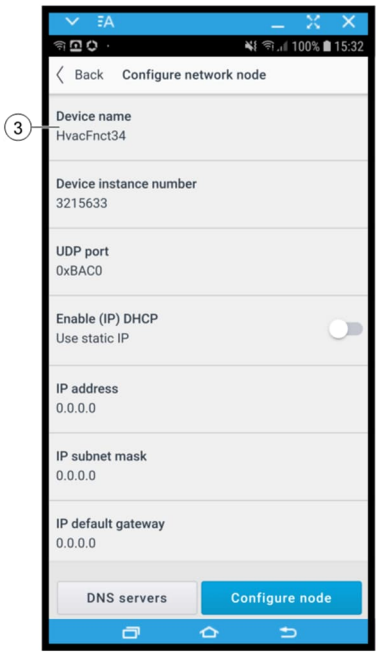
3 Configuring Network in ABT Go

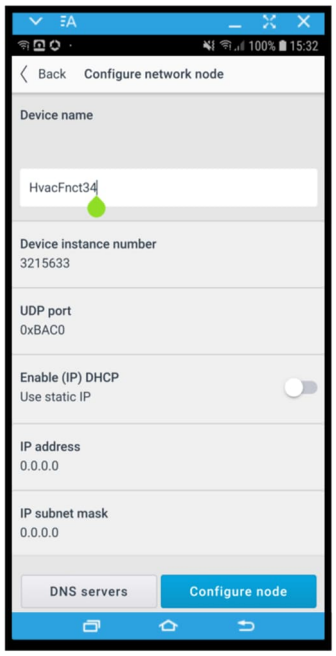
In order to connect your Intelligent Valve device to the cloud, your IPv4 network must fulfill certain requirements:

- As of this release, Intelligent Valve does not support any HTTP proxies.
- HTTPS port 443 must be open.
- Intelligent Valve supports both DHCP and static IP mode.
  - DNS IP entry must be set explicitly either to the same IP address as the “IP default gateway” or to the address of the specific DNS server if applicable.

1	2
	
Select **Configuration** [1].	Select **Configure network node** [2].

3





Select **Device name** [3] to change it.

The device name should not contain:

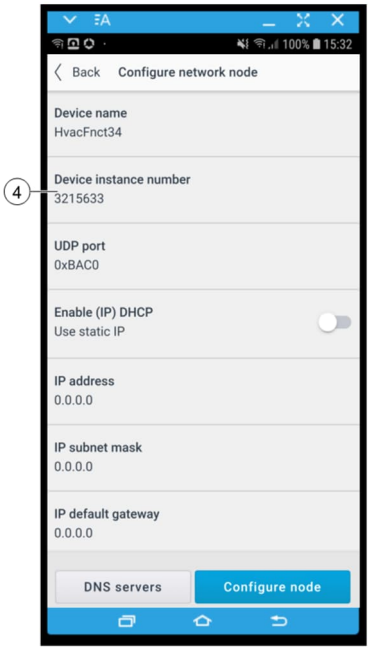
- letters with diacritical marks like *ä*, *à*, *á*, *ñ*
- special characters like *€*, *£*, *¥*

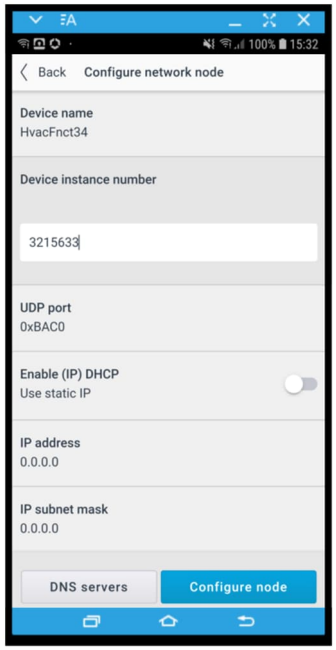
Error message is always

"Device name must be between 1 and 80 characters"

– even for using a disallowed character.

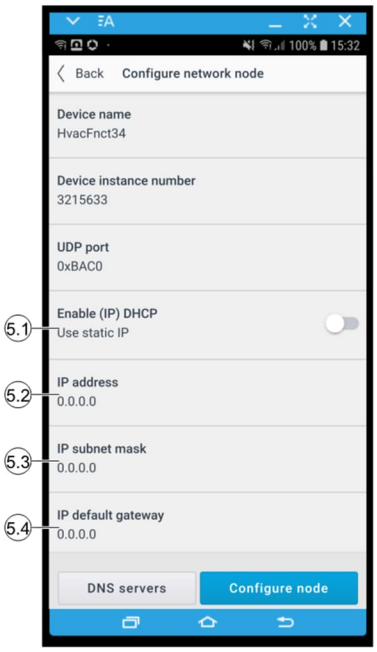
4





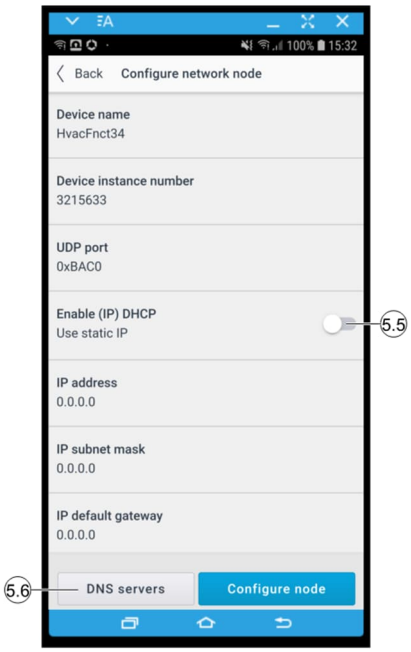
- Select **Device instance number** [4] to enter BACnet device instance number.

5



Select Ethernet settings to adjust them:

- [5.1]: **Enable (IP) DHCP**
- [5.2]: **IP address**
- [5.3]: **IP subnet mask**
- [5.4]: **IP default gateway**

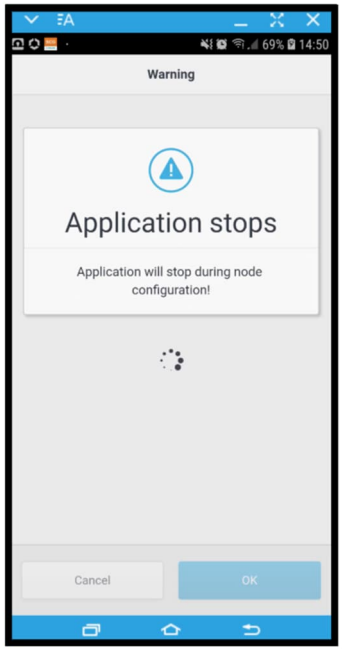


Uncheck **Enable (IP) DHCP** [5.5].

Set **DNS server** [5.6].

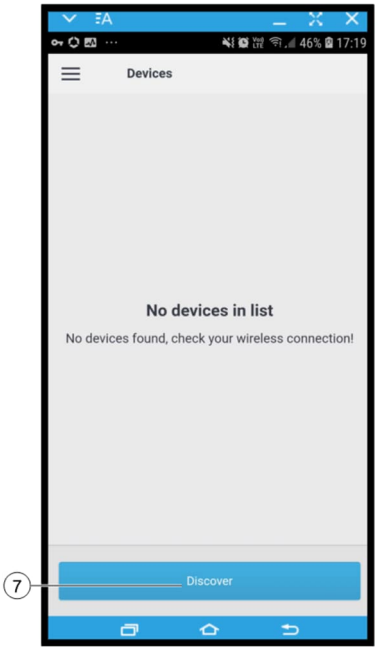
- Default: same as IP default gateway.

6



> Configuring the network node requires a device restart.
> Startup time approximately 45 s.
> During the restart, the device will close.

7



After configuration, ABT Go returns to device list and discovery is necessary [7].

4 Updating Firmware

Update in ABT Site

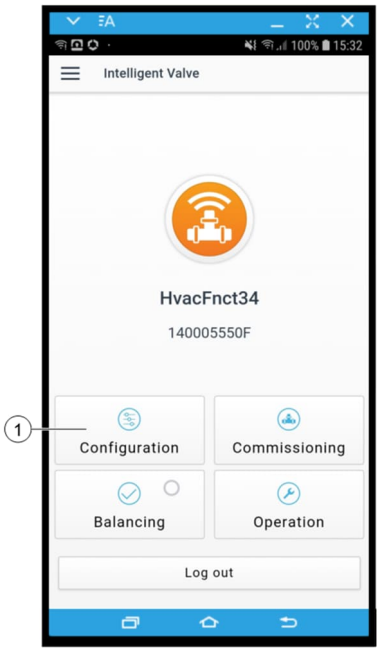
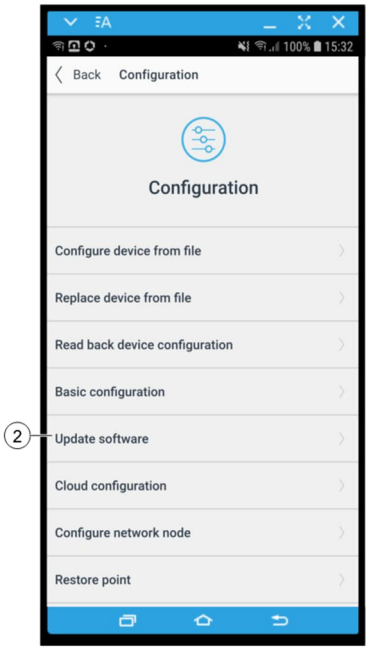
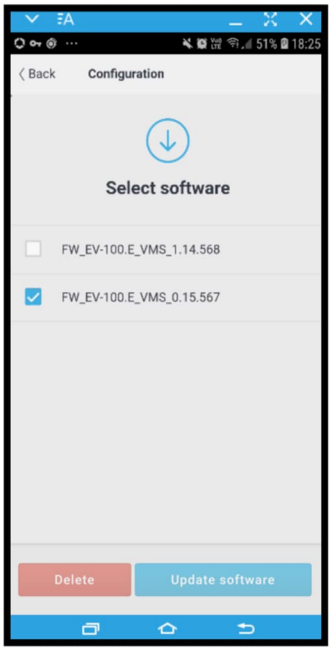
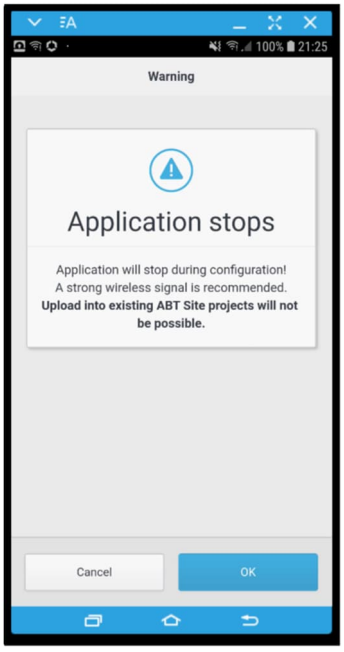
For documentation of firmware update through ABT Site, see ABT Site Online Help, or *Intelligent Valve, Engineering and Commissioning in Desigo* [A6V11572317].

Documents can be downloaded at the following Internet address:

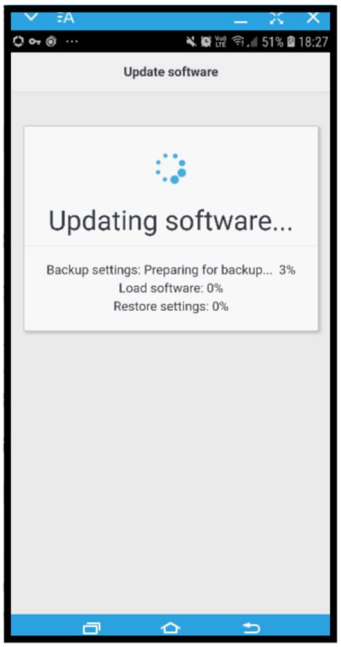
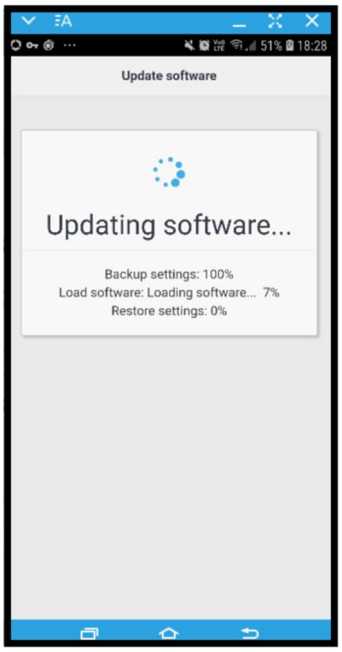
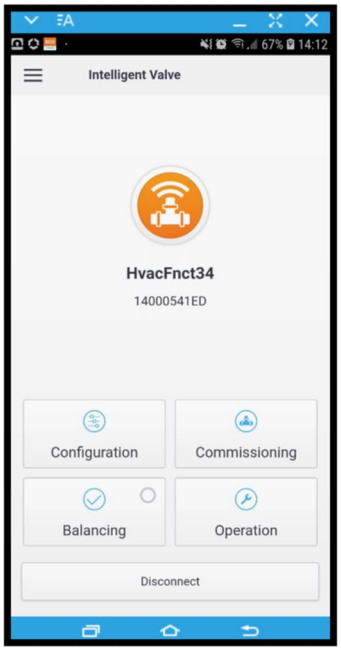
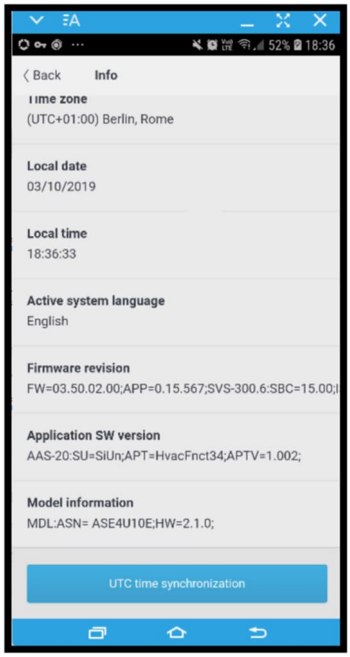
https://siemens.com/bt/download.

Update in ABT Go

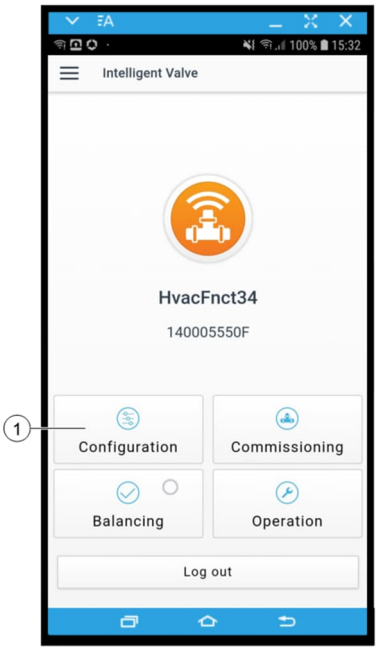
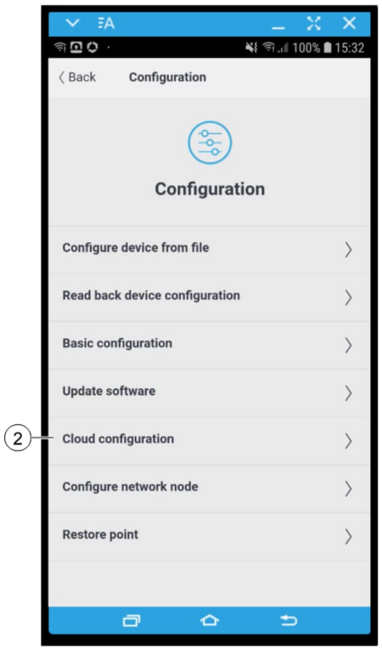
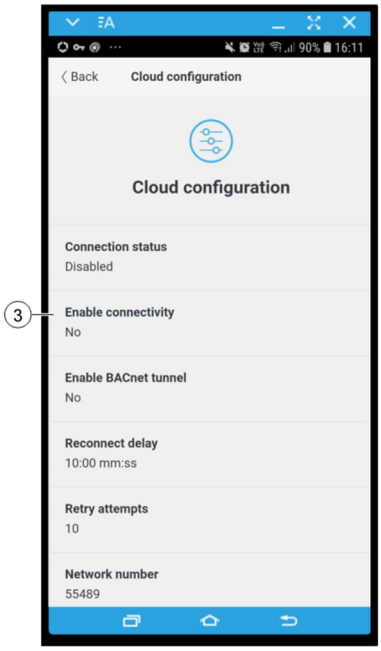
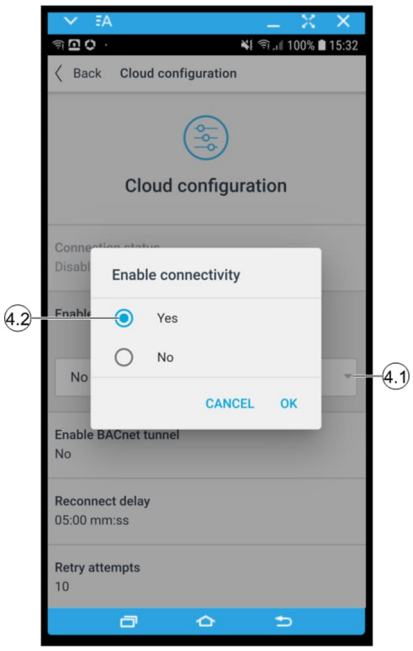
1. Send the software file to an e-mail account accessible from your mobile phone.
2. Open the e-mail on your smartphone and double-click the software file.
   → The e-mail program will save the file into the correct app folder.
   → Android:
   It is possible that the automated saving is blocked by the security settings of the e-mail program on Android phones (this is likely when using Siemens Nine Work).
   In this case, save the file manually to the following folder:
   My Files > *Internal storage* > *Android* > *data* > *com.siemens.abtgo* > *files* > *ABTGo* > *Firmware*
3. Power on Intelligent Valve Controller ASE4U10E.
4. Connect to the Internet (Connecting Intelligent Valve to the Internet with ABT Go [→ 5]).
5. Log in to device.
6. Perform update in the ABT Go app.

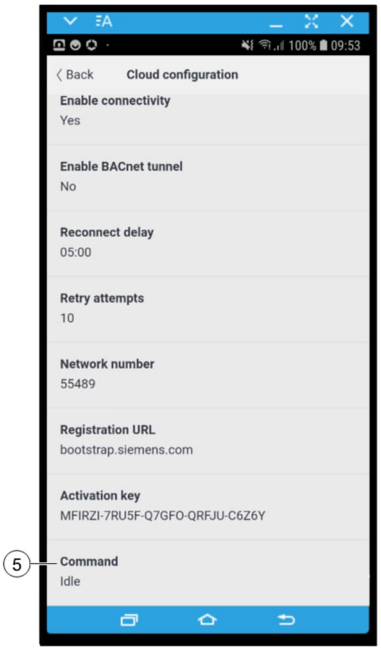
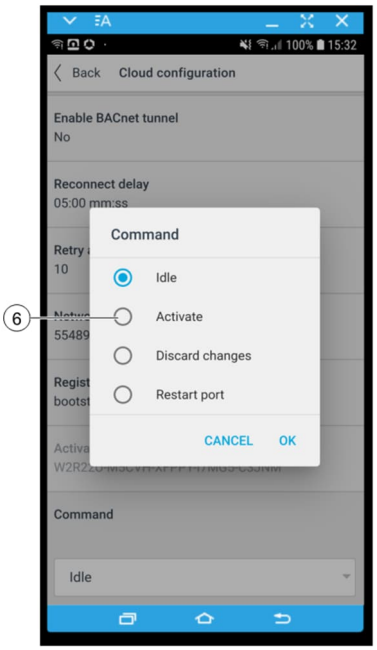
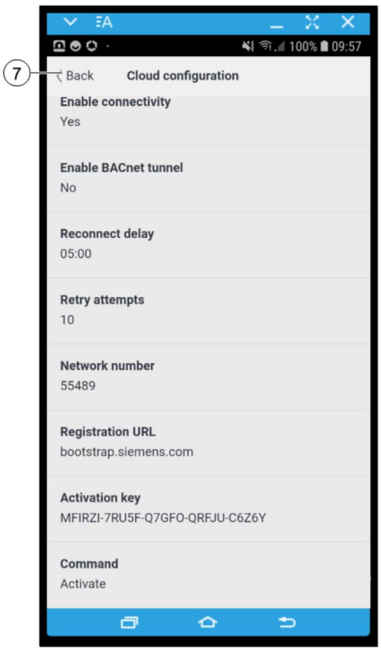
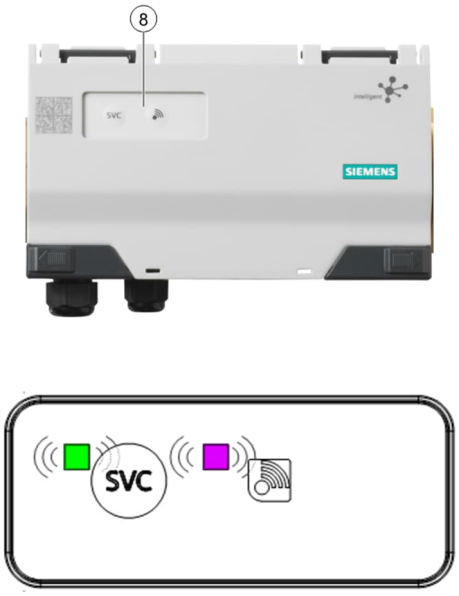
1	2
	
Select **Configuration** [1].	Select **Update Software** [2].
3	4
	
Select the software version you need from the software list.	Startup time approximately 30 s. Duration approximately 8 min.

Updating the software will take a few minutes.
During this process, the device is out of order, the control function of the Intelligent Valve is stopped and the **valve will close.**

5	6
	
Update process will start. 1. Backing up all parameters.	2. Loading software. 3. Restoring stored parameters to updated device.
7	8
	
All settings such as Network Node Configuration, Volume Flow Limitations, etc. remain the same as before. **When updating from version 1.17 or older to version 1.18 or newer, Basic Configuration has to be restored manually!**	**Operation** > **Info** shows the upgraded software version.

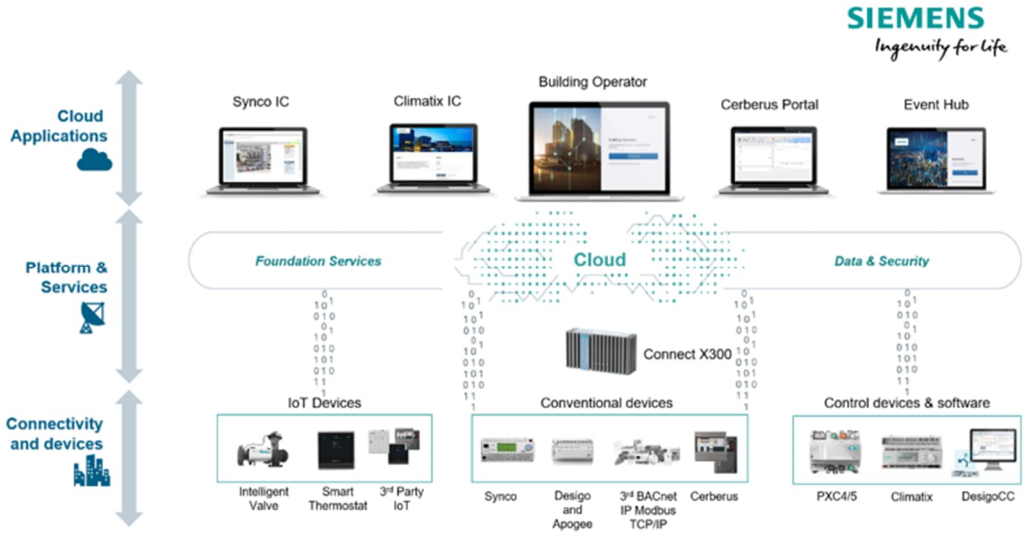
5 Activating Cloud Connection

1	2
	
Select **Configuration** [1].	Select **Cloud configuration** [2].
3	4
	
Select **Enable connectivity** [3] to change it.	Expand the pop-up menu by tapping on the arrow [4.1]. Choose **Yes** [4.2] to enable cloud connectivity.

5	6
	
Scroll down to **Command** [5] and tap twice to expand the pop-up menu.	Select **Activate** [6] to establish a connection.
7	8
	
Tapping **Back** [7] will cause the device to re-start and the cloud connection will be activated.	After a few minutes, once the connection to the cloud is active, the Communication LED on top of the Intelligent Valve controller [8] will start to blink purple. Please note if WLAN Direct is on, this LED will be blue, and need to turn WLAN Direct off first in order to see whether the cloud connection has been established.

6 Claiming Intelligent Valve in Operations Manager

Smart Infrastructure Building Products is driving the digitalization of buildings to the next level and is introducing a new family of software products and services, by leveraging state of the art internet technologies, like cloud computing, IoT, edge computing and big data analytics.



Operations Manager is a cloud-based software service for remote monitoring of a fleet of sites. It is made for companies providing maintenance and service for buildings. It will enable the service providers to offer a new range of digital services for their clients, such as remote operational assistance, corrective maintenance and troubleshooting.

Users of this software service get an overview of the connected building facilities to be serviced. The user can see the site status, can view the state of the HVAC applications on data point level, can command individual data points and view the stored history of a data point.

For all details, including market segmentation, target customers, target use cases, please refer to the Facts as published in November (EN: 48E002BC, DE: 48D002BC) or the Operations Manager Intranet.

For comprehensive documentation on the Operations Manager, see:

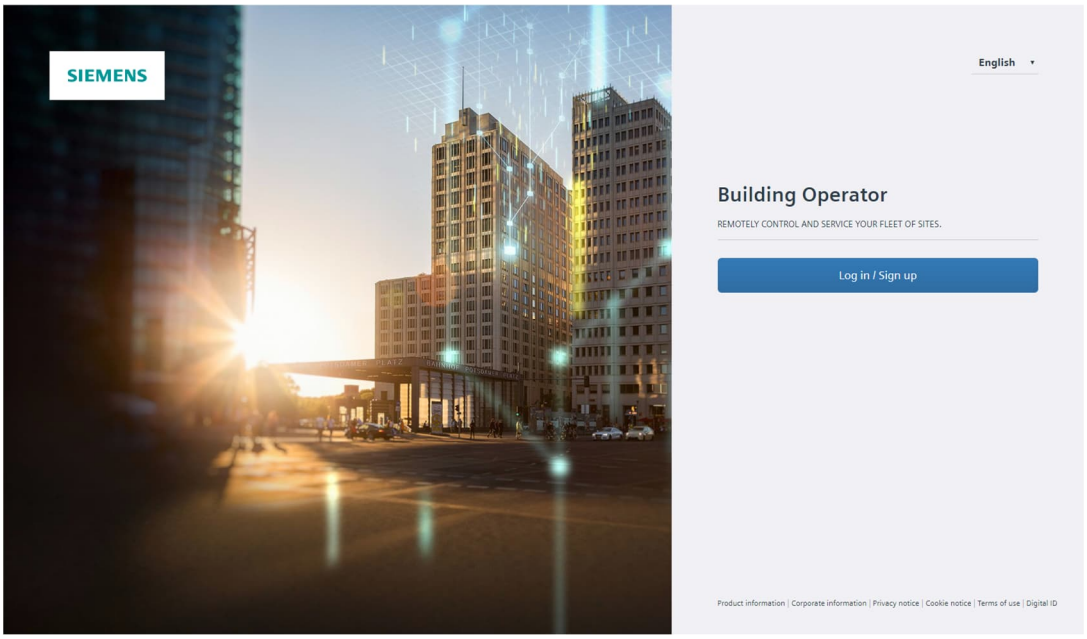
- Operations Manager User Guide [A6V11881696]
- Operations Manager Discovery Engineering Guide [A6V11881627]
- Operations Manager Cyber Security Guideline [A6V11852371]

Documents can be downloaded at the following Internet address:
http://siemens.com/bt/download.

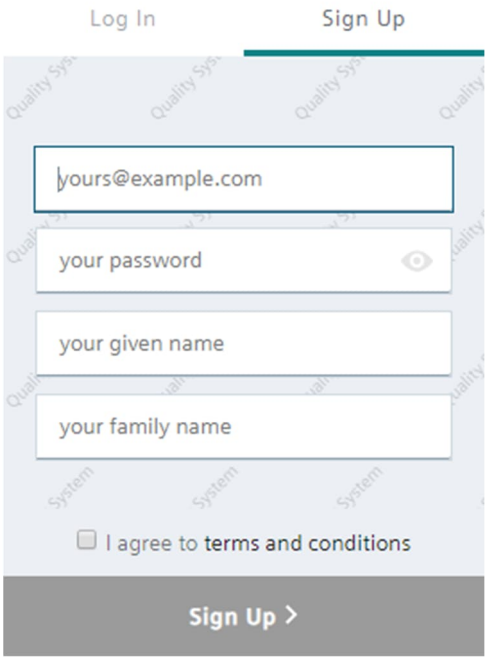
6.1 Signing up

To log in to the Operations Manager application for the first time, complete the following steps:

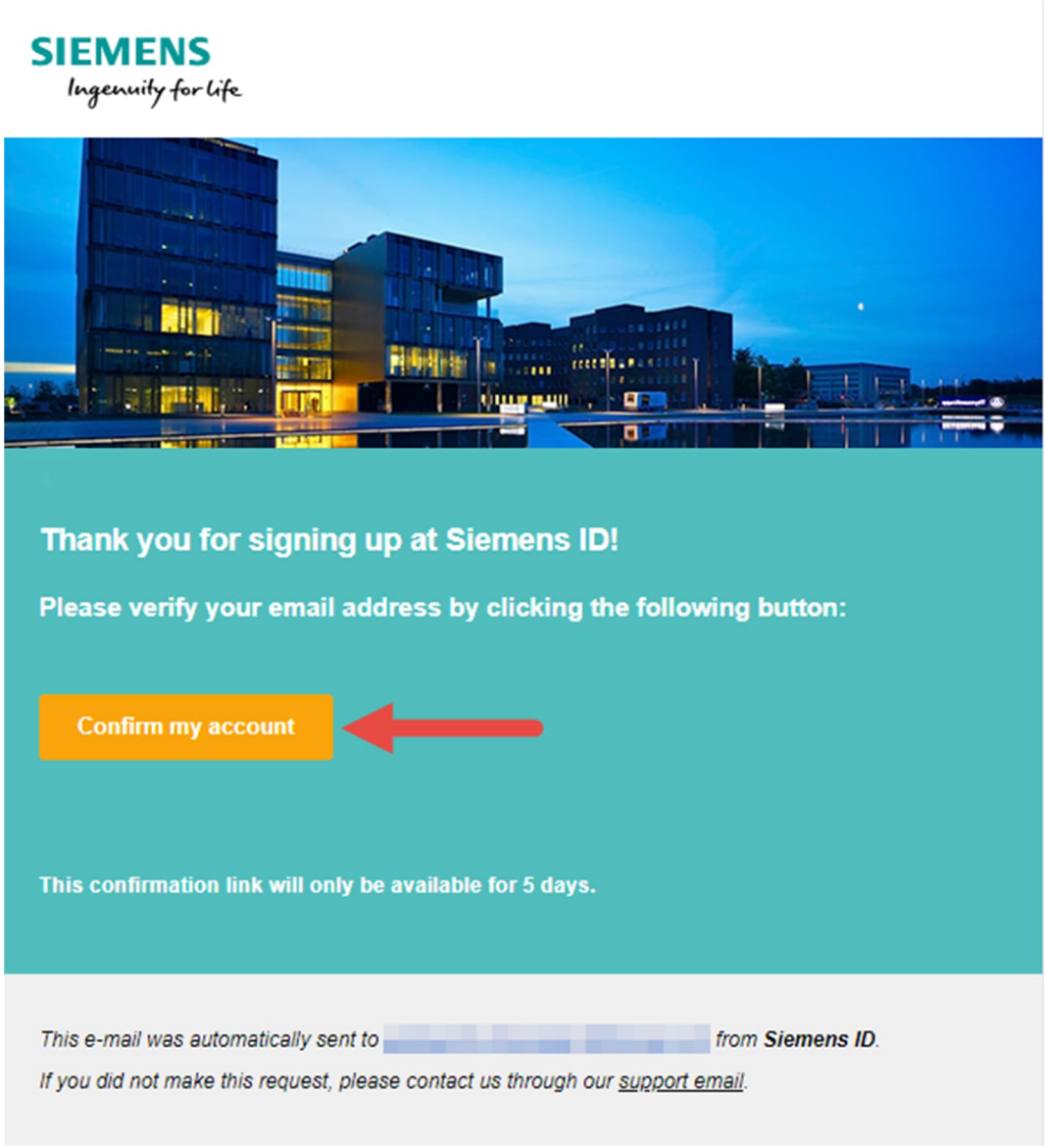
1. Open your browser and go to https://buildingoperator.siemens.com.
2. Select **Log In/Sign Up** on the landing page.



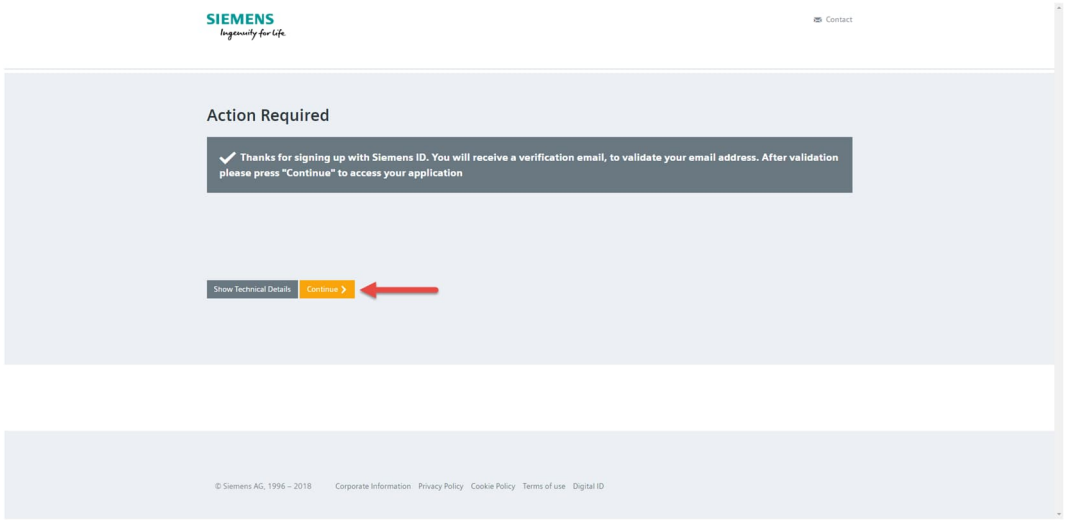
3. Select the **Sign Up** tab and complete the fields to create a Siemens ID. Select **Sign Up** to confirm. Keep this tab in the browser open.



4. Check your inbox for an email from Siemens ID. Select **Confirm my account** in the email.



5. Navigate back to the initial tab and select **Continue**.

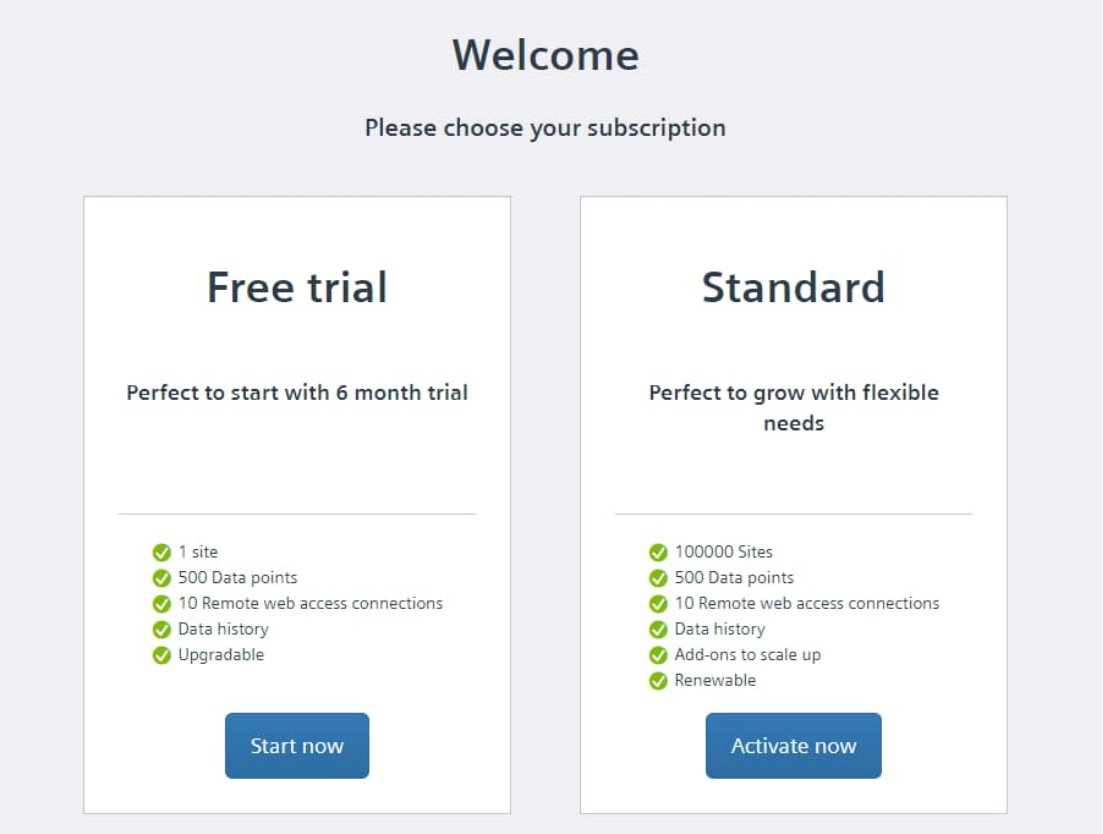


6.2 Choosing a subscription type

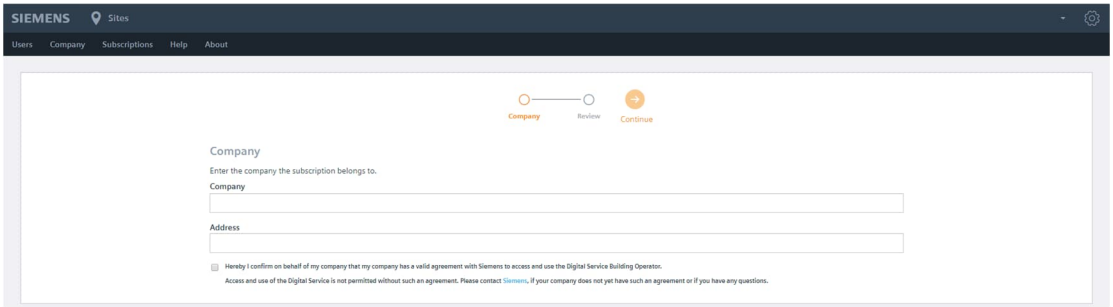
Once you've logged in to the Operations Manager application for the first time, you need to select a subscription plan. For more details on each subscription plan, please see the *Product and Service Datasheet* [A6V11913114].

To select a subscription:

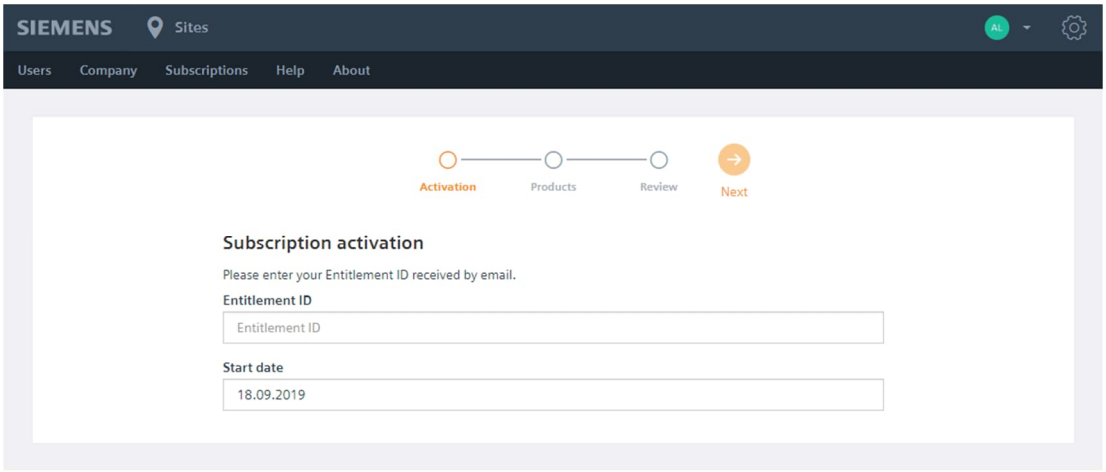
1. Select **Start Now** to start a Free Trial or **Activate Now** to activate the Standard subscription.



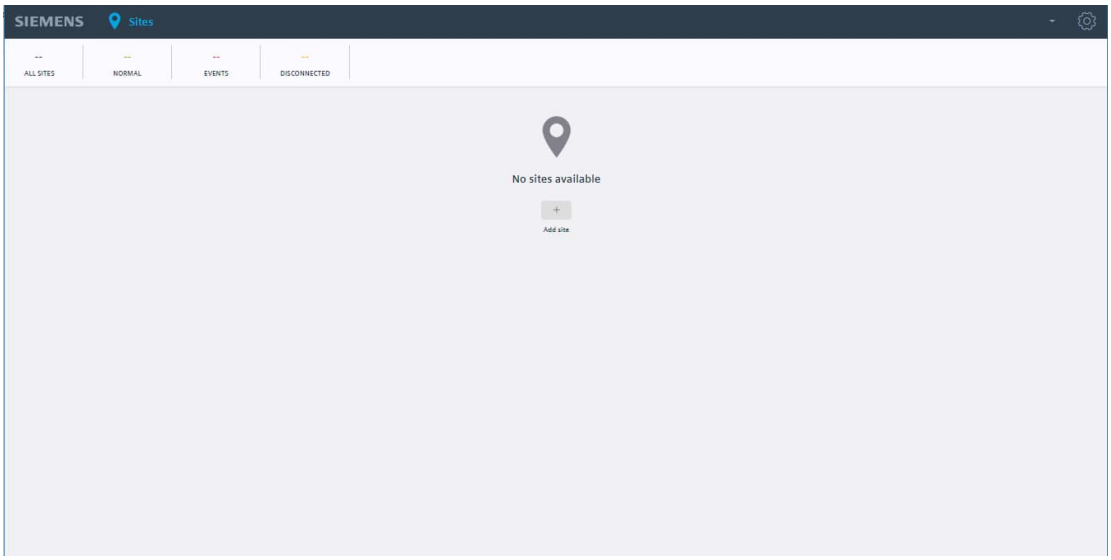
2. If you click **Start Now**:
   - Enter the information in the **Company** and **Address** fields provided.
   - Select the checkbox below, then **Continue** to proceed.
   - In the Review section, review the information you just entered. Select **Activate** to activate your free trial.



3. If you select **Activate Now** to activate a Standard subscription:
   - Enter your Entitlement ID in the field provided. Select **Continue** to proceed.
   - Enter the company information in the fields provided. Select **Continue**.
   - Select the products you want to activate. Select **Continue**.
   - Review the information and select **Activate** when ready.



4. After successfully activating one of the subscription options, you will be redirected to an empty page with no registered sites.



6.3 Creating a new site

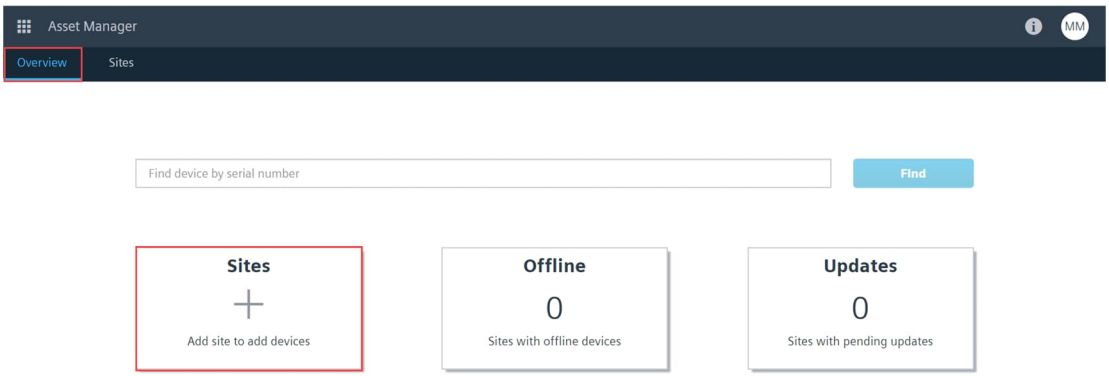
➢ In order to onboard Intelligent Valve to a new or existing site, switch from Operations Manager to Asset Manager.

1. Select **App Switcher** in the top left corner.
2. Select **Asset Manager**.

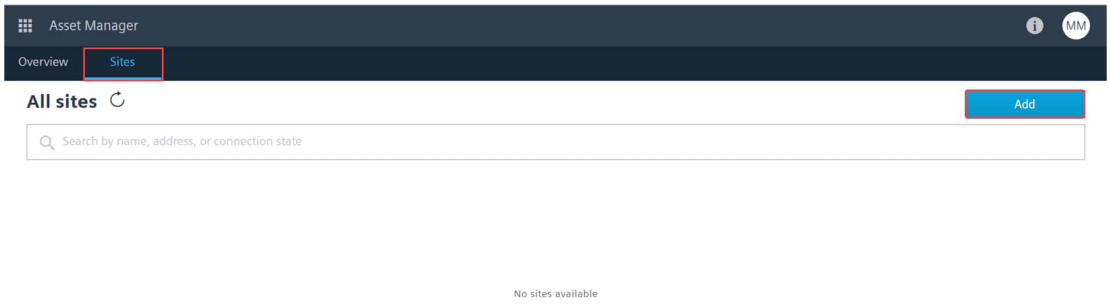
If you have not already created a site in Asset Manager, follow the steps below.

➢ In Asset Manager:

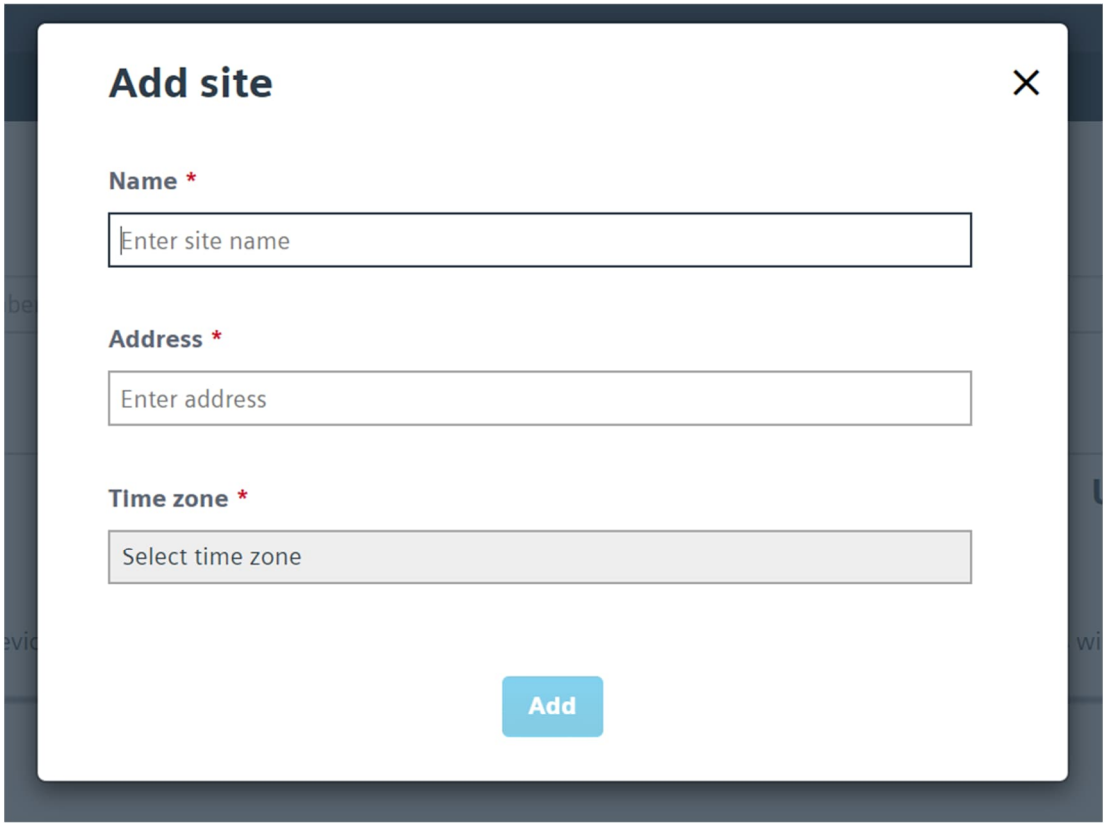
1. You can add a site in two ways:
   – To add a site through the **Overview** tab, select Sites.



– To add a site through the **Sites** tab, select Add.



2. Fill in the fields on the ensuing form appropriately. Select **Add**.



The **Address** field will automatically suggest addresses. Selecting a suggested address will automatically populate the **Time Zone** field. If you enter in an address manually, the time zone will need to be entered in manually.

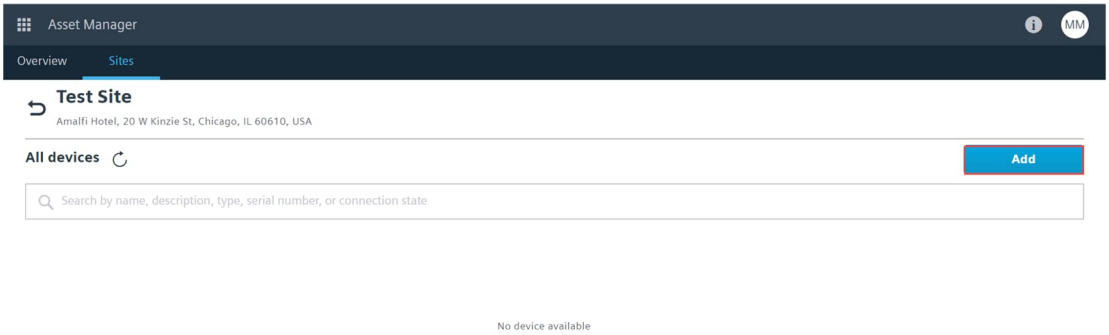
6.4 Claiming Intelligent Valve and adding it to a site

To add a device to a site, follow the steps below.

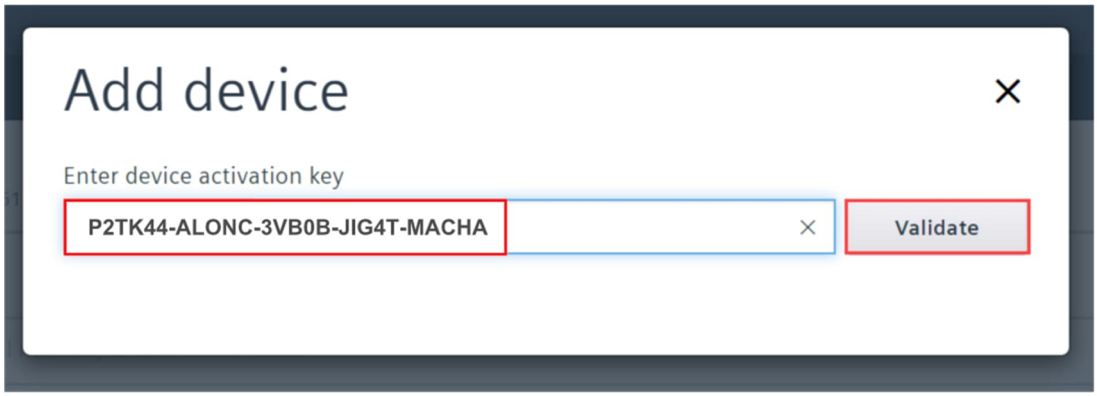
➢ In Asset Manager:

1. In the **Sites** tab, select the site where you want to add your device.

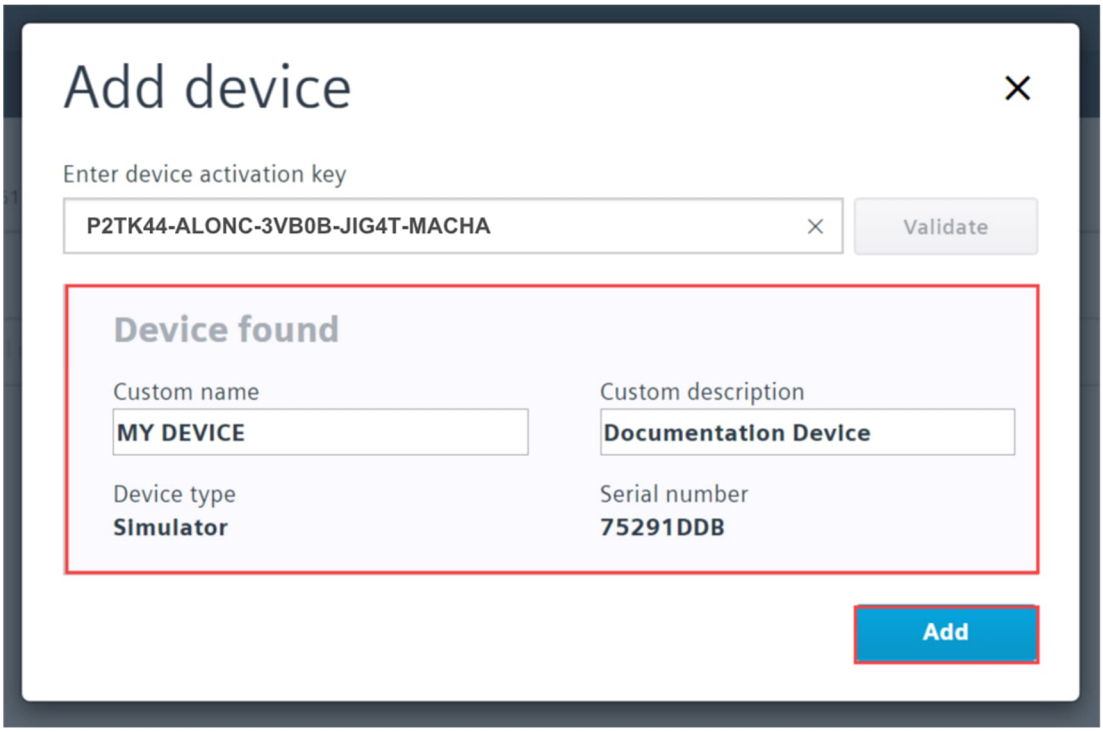
2. Select **Add**.



3. Enter the device activation key and select **Validate**.

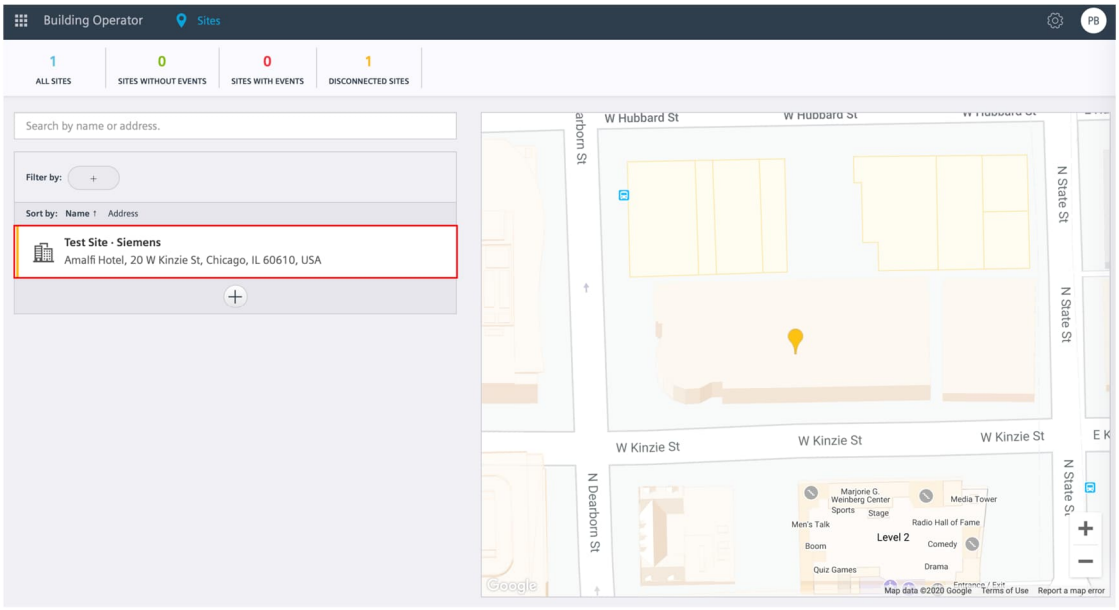


4. Confirm the details of your device and select **Add**.



5. After successfully onboarding Intelligent Valve, use App Switcher to return to **Operations Manager**.

6. In Operations Manager, the newly created site appears. By clicking on it, navigate to Intelligent Valve onboarded through Asset Manager.



7 Intelligent Valve data push mechanism

In order to optimize the trade-off between the data quality available in the cloud and minimizing the network load generated by Intelligent Valves while transmitting the data, multiple data push mechanisms are leveraged. These mechanisms are described below.

7.1 Data push after start-up phase

After the Intelligent Valve start-up phase is completed, the device pushes all the data points into the cloud.

7.2 Data push after reconnecting to the Internet

If Intelligent Valve is not connected to the Internet and changes are made that would trigger a data push, these changes are saved to the device and transmitted to the cloud as soon as Intelligent Valve reconnects to the Internet.

7.3 Periodic data push

All data points are periodically pushed to the cloud every 24 hours.

In addition, energy related data points such as TotCEngy, TotCVfl, TotHengy and TotHVfl are pushed to the cloud every 15 minutes.

7.4 Change-of-value (CoV) data push

Most of the data points (see Table 2 in Overview of data points pushed to the cloud [→ 31]) are pushed based on the change-of-value (CoV) principle. In other words, if a data point changes and exceeds a certain threshold, it will be sent to the cloud.

7.5 Data points available per selected HVAC application

Some data points are only applicable depending on the HVAC application in use. If the HVAC application is changed, Intelligent Valve will restart and inform the cloud applications about the change. Data points that are no longer applicable will be hidden from the user's view. At the same time, new data points will become accessible. In some cases, this process might take up to 24 hours if no changes to the particular data point are made. To speed up this process, a restart of Intelligent Valve is required. A detailed list of these data points is shown below in Table 1.

For more information on these data points, see "Intelligent Valve – BACnet Objects" [A6V11757108], available for download at http://siemens.com/bt/download (English only).

Interface	Dynamic control valve	Differential pressure control	Flow temperature control	Heating circuit outside temperature compensated flow temperature control	Control valve for changeover
PrSpSrc	Yes				
VlvDsgn	Yes				
MnFlt	Yes				
VlvMountPos	Yes				
HCSta	Yes			n/a	Yes
CtlSta	Yes				
TFlPrim	Yes				
TRtPrim	Yes				
VlvPosFb	Yes				
PrVfl	Yes				
PrPwr	Yes				
CtlMod	Yes	n/a	Yes		
EnVflMin	Yes	n/a	Yes		
EnVflMinC	n/a				Yes
VflMax	Yes				
VflMin	Yes	n/a	Yes		
VflMaxC	n/a				Yes
VflMinC	n/a				Yes
SpCTRt	Yes	n/a	Yes	n/a	Yes
SpHTRt	Yes	n/a	Yes		
EnTRtLm	Yes	n/a	Yes		
EnTRtLmC	n/a				Yes
SpTDiffFlRtLm	Yes	n/a	Yes	n/a	Yes
EnTDiffFlRtLm	Yes	n/a	Yes		
SpTDiffFlRtLmC	n/a				Yes
EnTDiffFlRtLmC	n/a				Yes
TFlPrimDsgn	Yes	n/a	Yes		
TRtPrimDsgn	Yes	n/a	Yes		
TFlPrimDsgnC	n/a				Yes
TRtPrimDsgnC	n/a				Yes

Interface	Dynamic control valve	Differential pressure control	Flow temperature control	Heating circuit outside temperature compensated flow temperature control	Control valve for changeover
PwrMax	Yes	n/a	Yes		
PwrMaxC	n/a				Yes
EnAdaVflMax	Yes	n/a	Yes		
PrAdaVflMax	Yes	n/a	Yes		
EnAdaVflMaxC	n/a				Yes
TotCEngy	Yes				
TotCVfl	Yes				
TotHEngy	Yes				
TotHVfl	Yes				
SpRelTrml	Yes	n/a			Yes
SpRelMdbs	Yes	n/a			Yes
VlvPos	Yes				
PrSpVfl	Yes	n/a	Yes		
PrSpPwr	Yes	n/a	Yes		
SpDiffP	n/a	Yes	n/a		
DiffPPrim	n/a	Yes	n/a		
TFl	n/a		Yes		n/a
SpTFl	n/a		Yes		n/a
HcrPuCmd	n/a		Yes		n/a
TOa	n/a			Yes	n/a
TOaDsgn	n/a			Yes	n/a
TOaHi	n/a			Yes	n/a
SpTFlDs	n/a			Yes	n/a
SpTFlHi	n/a			Yes	n/a
SpHCmf	n/a			Yes	n/a
SpHPcf	n/a			Yes	n/a
SpHEco	n/a			Yes	n/a
PrROpMod	n/a			Yes	n/a
RsnPrOpMod	n/a			Yes	n/a
ROpMod	n/a			Yes	n/a

Table 1: Overview of applicable data points pushed to the cloud based on the selected HVAC application on Intelligent Valve

7.6 Overview of data points pushed to the cloud

The following table provides an overview of all the data points historized in the cloud and the data push mechanism behind each of the data points.

Interface	Interface description	Unit	Push mechanism	CoV delta (SI units)	Periodically	Pushed to Cloud starting from FW Version
PrSpSrc	Present setpoint source	-	CoV	Any	n/a	1.17.4972
VlvDsgn	Valve design	-	CoV	Any	n/a	1.19.7671
MnFlt	Main fault	-	CoV and Periodically	Any	15 min	1.16.2251
VlvMountPos	Valve mounting position	-	CoV	Any	n/a	1.16.2251
HCSta	Heating/cooling state	-	CoV	Any	n/a	1.16.2251
CtlSta	Control state	-	CoV	Any	n/a	1.19.7671
TFlPrim	Primary flow temperature	°C	CoV	0.5 Kelvin	n/a	1.16.2251
TRtPrim	Primary return temperature	°C	CoV	0.5 Kelvin	n/a	1.16.2251
VlvPosFb	Valve position feedback	%	CoV	0.5 percentage points	n/a	1.16.2251
PrVfl	Present volume flow	m^3/h	CoV	Line size dependent	n/a	1.16.2251
PrPwr	Present power	kW	CoV	Line size dependent	n/a	1.16.2251
CtlMod	Control mode	-	CoV	Any	n/a	1.16.2251
EnVflMin	Enable minimum volume flow	-	CoV	Any	n/a	1.16.2251
EnVflMinC	Enable minimum volume flow cooling	-	CoV	Any	n/a	1.19.7671
VflMax	Maximum volume flow	m^3/h	CoV	Any	n/a	1.16.2251
VflMin	Minimum volume flow	m^3/h	CoV	Any	n/a	1.16.2251
VflMaxC	Maximum volume flow cooling	m^3/h	CoV	Any	n/a	1.19.7671
VflMinC	Minimum volume flow cooling	m^3/h	CoV	Any	n/a	1.19.7671
SpCTRt	Return temperature setpoint for cooling	°C	CoV	Any	n/a	1.16.2251
SpHTRt	Return temperature setpoint for heating	°C	CoV	Any	n/a	1.16.2251
EnTRtLm	Enable return temperature limitation	-	CoV	Any	n/a	1.16.2251
EnTRtLmC	Enable return temperature limitation cooling	-	CoV	Any	n/a	1.19.7671
SpTDiffFlRtLm	Setpoint temperature difference limitation between flow and return	K	CoV	Any	n/a	1.17.4972
EnTDiffFlRtLm	Enable temperature difference limitation between flow and return	-	CoV	Any	n/a	1.17.4972
SpTDiffFlRtLmC	Setpoint flow/return temperature difference limitation cooling	K	CoV	Any	n/a	1.19.7671
EnTDiffFlRtLmC	Enable flow/return temperature difference limitation cooling	-	CoV	Any	n/a	1.19.7671

Interface	Interface description	Unit	Push mechanism	CoV delta (SI units)	Periodically	Pushed to Cloud starting from FW Version
TFlPrimDsgn	Design primary flow temperature	°C	CoV	Any	n/a	1.16.2251
TRtPrimDsgn	Design primary return temperature	°C	CoV	Any	n/a	1.16.2251
TFlPrimDsgnC	Design primary flow temperature cooling	°C	CoV	Any	n/a	1.19.7671
TRtPrimDsgnC	Design primary return temperature cooling	°C	CoV	Any	n/a	1.19.7671
PwrMax	Maximum power	kW	CoV	Any	n/a	1.16.2251
PwrMaxC	Maximum cooling power	kW	CoV	Any	n/a	1.19.7671
EnAdaVflMax	Enable adapted maximum volume flow	-	CoV	Any	n/a	1.19.7671
PrAdaVflMax	Present adapted maximum volume flow	m^3/h	CoV	Any	n/a	1.19.7671
EnAdaVflMaxC	Enable adapted maximum volume flow cooling	-	CoV	Any	n/a	1.19.7671
TotCEngy	Total cooling energy	kWh	Periodically	n/a (periodically)	15 min	1.16.2251
TotCVfl	Total cooling volume flow	m^3	Periodically	n/a (periodically)	15 min	1.16.2251
TotHEngy	Total heating energy	kWh	Periodically	n/a (periodically)	15 min	1.16.2251
TotHVfl	Total heating volume flow	m^3	Periodically	n/a (periodically)	15 min	1.16.2251
SpRelTrml	Relative setpoint terminal	%	CoV	1 percentage point	n/a	1.16.2251
SpRelMdbs	Relative setpoint Modbus	%	CoV	1 percentage point	n/a	1.19.7671
VlvPos	Valve position	%	CoV	0.5 percentage points	n/a	1.16.2251
PrSpVfl	Present setpoint volume flow	m^3/h	CoV	Any	n/a	1.16.2251
PrSpPwr	Present setpoint Power	kW	CoV	Any	n/a	1.16.2251
SpDiffP	Setpoint differential pressure	-	CoV	Any	n/a	1.17.4972
DiffPPrim	Primary differential pressure	kPa	CoV	5 kPa	n/a	1.17.4972
TFl	Flow temperature	°C	CoV	0.5 Kelvin	n/a	1.17.4972
SpTFl	Flow temperature setpoint	°C	CoV	0.5 Kelvin	n/a	1.17.4972
HcrPuCmd	Heating circuit pump command	-	CoV	Any	n/a	1.17.4972
TOa	Outside temperature	°C	CoV	0.5 Kelvin	n/a	1.17.4972
TOaDsgn	Design outside temperature	°C	CoV	Any	n/a	1.19.7671
TOaHi	Outside temperature high	°C	CoV	Any	n/a	1.19.7671
SpTFlDs	Flow temperature setpoint for design outside temperature	°C	CoV	Any	n/a	1.19.7671
SpTFlHi	Flow temperature setpoint for high outside temperature	°C	CoV	Any	n/a	1.19.7671
SpHCmf	Heating setpoint for comfort	°C	CoV	Any	n/a	1.19.7671
SpHPcf	Heating setpoint for pre-comfort	°C	CoV	Any	n/a	1.19.7671
SpHEco	Heating setpoint for economy	°C	CoV	Any	n/a	1.19.7671
PrROpMod	Present room operating mode	-	CoV	Any	n/a	1.19.7671
RsnPrOpMod	Reason for present operating mode	-	CoV	Any	n/a	1.19.7671
ROpMod	Room operating mode	-	CoV	Any	n/a	1.19.7671

Table 2: Overview of data points pushed to the cloud and the corresponding push mechanism

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