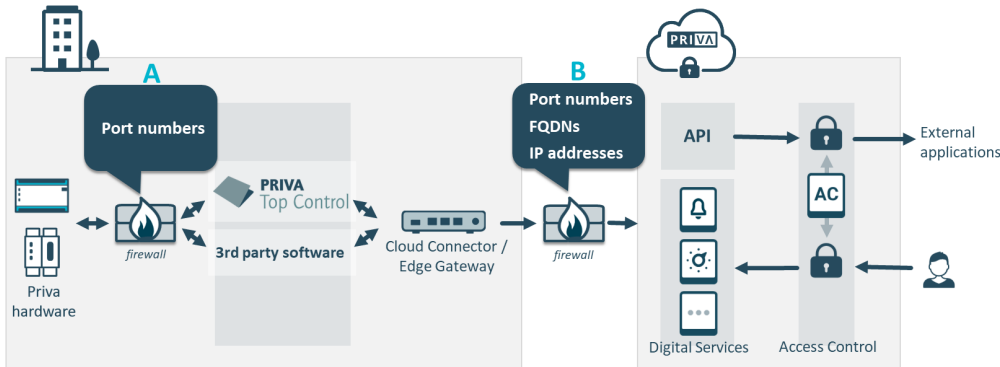


# > ICT INFORMATION

## Priva Blue ID, Top Control, Digital Services

How does Priva protect your building's data? And what should you do to enable communication between the Priva hardware and software in a secure way?



- A** To enable communication within the local network, specific ports must be open in the firewall (if there is a firewall). See: Communication within local network (page 2)
- B** To enable communication with the Priva Cloud, specific ports must also be open in this firewall. In addition, communication with the Priva Cloud must be permitted, based on the FQDNs or based on the IP addresses. See: Communication with the Priva Cloud (page 4)

### Function Edge Gateway / Cloud Connector

Building management systems should never run on a network with Internet access. In order to use cloud services, communication between the management system and the Priva Cloud is, of course, necessary. The Edge Gateway and the Cloud Connector are gateways that make this possible in a secure manner. The Edge Gateway is the successor to the Cloud Connector.

The gateway only allows outgoing connections. In this way, it protects the building management system from access by unauthorised persons via the Internet. The gateway does not allow incoming connections. If the gateway sets up the connection to the outside, incoming traffic within that active session will be allowed. This makes it possible to adjust values from outside with an application/service.

The data transferred between the gateway and the cloud is secured by means of encryption. In contrast to some other methods of accessing building automation systems such as VPN, this architecture uses a message-based system, so there is no full data link between the building and the outside world. Only very limited relevant data is exchanged.

Updates from Windows 10 IoT to the Cloud Connector downloaded and installed automatically in accordance with the default Windows Update mechanism. There is no forced restart of the Cloud Connector during normal business hours (8.00 am - 5.00 pm).

Updates of Linux on the Edge Gateway will be implemented in Installation & Maintenance (Module Firmware Updater).

### Support from Priva

Priva is easily able to provide support remotely on the Cloud Connector. Port 5938 must be open for this.

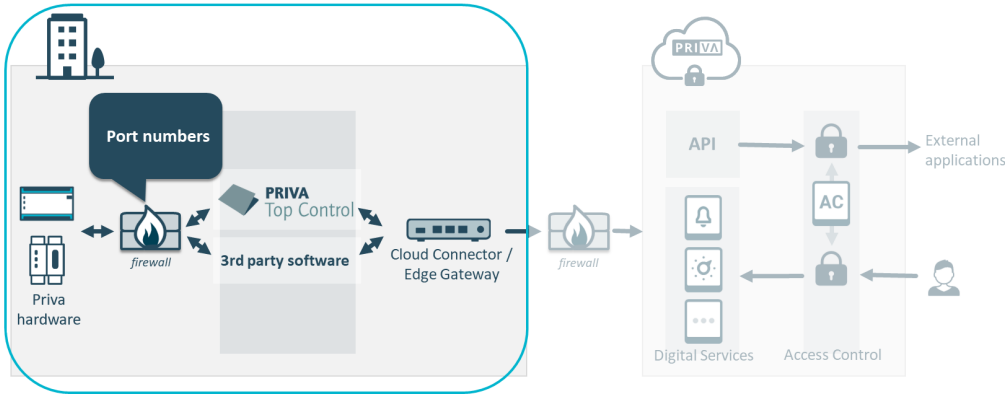
With Edge Gateway support via TeamViewer is not applicable, because this gateway cannot be approached directly from outside.

### Security measures by Microsoft

All Digital Services have been designed based on the Microsoft Azure cloud platform. Priva's services use the standard Microsoft Azure components IoT hub and Service Bus for the communication between the building and the cloud. You can find detailed information on Microsoft's security in the Microsoft Trust Center.

## Communication within local network

To enable communication within the local network, specific ports must be open in the firewall (if there is a firewall).



### Port numbers for (communication within local network)

The table below lists the port numbers that are required for communication with the Priva Blue ID hardware and Top Control applications and the Cloud Connector or Edge Gateway. The table also specifies whether the ports use incoming or outgoing communication. The configuration of the ports in the firewall depends on the Top Control applications used and the network configuration created in the project.

Port	Details	Transport protocol	Priva Blue ID	TC Engineer	TC Operator	TC Manager	TC ServeCenter	TC History proxy	TC History	TC LAN Manager	Edge Gateway	Cloud Connector
22	SSH	TCP										
25 465 587 <sup>16)</sup>	SMTP(S)	TCP										
53	DNS	TCP/UDP										
80	HTTP	TCP										
123	NTP	TCP/UDP										
161	SNMP <sup>8</sup>	TCP/UDP										
502 <sup>2)</sup>	Modbus	TCP										
514	Rsyslog	UDP										
1883	MQTT	TCP										
1900	SSDP	UDP										
5000	LOAS <sup>12</sup>	TCP										
5001	LOUM <sup>13</sup>	TCP										
5002	LOU <sup>14</sup>	TCP										
5003	LOAS <sup>15</sup>	TCP										
5353	mDNS	TCP/UDP										

Port	Details	Transport protocol	Priva Blue ID	TC Engineer	TC Operator	TC Manager	TC SeveCenter	TC History proxy	TC History	TC LAN Manager	Edge Gateway	Cloud Connector
7650	DDS	UDP									10	
7651	DDS	UDP									10	
7660	DDS	UDP									10	
7661	DDS	UDP									10	
8080 <sup>2)</sup>	HTTP	TCP										
9093	XML	TCP										
9354	SBMP	TCP (TLS 1.2)										
9508	PTP	UDP									10	
15000	Priva <sup>5,7)</sup>	UDP									10	10
15001	Priva <sup>5)</sup>	UDP		3	3		3		3		10	10
23456 24690 25924 27158 <sup>17)</sup>	Priva <sup>4)</sup>	TCP										
23457 24691 25925 27159 <sup>17)</sup>	Priva <sup>4)</sup>	UDP										
47808 through 47817 <sup>16)</sup>	BACnet <sup>6)</sup>	UDP										

= incoming  
 = outgoing  
 = incoming and outgoing

<sup>1</sup> Only online help

<sup>2</sup> Default port number, can be changed

<sup>3</sup> For local communication

<sup>4</sup> TC LAN Manager looks for a free port number to use

<sup>5</sup> Priva own protocol

<sup>6</sup> Reserved ports, adjustable in TC Engineer

<sup>7</sup> When using a Compri HX connection

<sup>8</sup> Only SNMP Step is supported in Top Control 8

<sup>9</sup> LAN port connected to internet

(Edge Gateway: LAN 1, Cloud Connector: LAN 3)

<sup>10</sup> LAN port connected to Priva network

(Edge Gateway: LAN 2, Cloud Connector: LAN 1)

<sup>11</sup> Service port

(Edge Gateway: LAN 3, Cloud Connector: LAN 2)

<sup>12</sup> Local Operator Authorization Service

<sup>13</sup> Local Operator User Management UI

<sup>14</sup> Local Operator UI

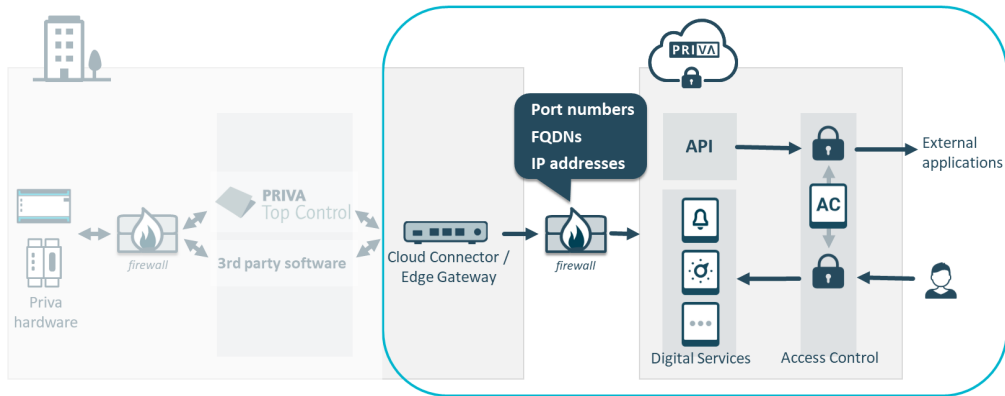
<sup>15</sup> Local Operator API

<sup>16</sup> Select one of the stated port numbers

<sup>17</sup> Select one of the stated port numbers. The selected port numbers from the two rows with note 17 must succeed each other (e.g. 23456 and 23457).

## Communication with the Priva Cloud

To enable communication with the Priva Cloud, specific ports must be open in the firewall. In addition, communication with the Priva Cloud must be permitted, based on the FQDNs or based on the IP addresses.



### Port numbers (communication with Priva Cloud)

The table below lists the port numbers that are required for communication with the Priva Cloud. All ports only use outgoing communication. Port 443 is the minimum requirement for communication with the cloud. The other ports provide for a more rapid and stable connection with the cloud. Port 5938 is required for support from Priva with TeamViewer (only on the Cloud Connector).

Port	Details	Transport protocol	Edge Gateway	Cloud Connector
67	DHCP:	TCP	1	
443	HTTPS	TCP	1	1
5671	AMQP	TCP	1	1
5672	AMQP	TCP	1	1
5938	Team-Viewer	TCP		1
8883	MQTT	TCP	1	1
9354	SBMP	TCP (TLS 1.2)	1	1

= outgoing

<sup>1</sup>LAN port connected to internet  
(Edge Gateway: LAN 1, Cloud Connector: LAN 3)

## FQDNs for Digital Services

The list below shows the Fully Qualified Domain Names (FQDN) that are required for Digital Services. You can choose between using wildcards (addresses starting with \*) or releasing the complete FQDNs. The list of complete FQDNs is, however, dynamic; FQDNs may be added or changed in the future. Using wildcards is more maintenance-friendly, because the list of wildcards will change less often than the list of complete FQDNs.

Wildcard	FQDN
*.servicebus.windows.net	priva-lwe-prod-gateway-master-weu.servicebus.windows.net priva-lwe-prod-gateway-partition-weu.servicebus.windows.net priva-lwe-prod-gateway-partition2-weu.servicebus.windows.net
*.azurewebsites.net	prd-gps-service-wa.azurewebsites.net prd-gps-state-wa.azurewebsites.net prd-safefiletransferapi-we.azurewebsites.net
*.blob.core.windows.net	prdinstallupdatesa.blob.core.windows.net
*.azure-devices.net	prd-priva-generic-ih.azure-devices.net
*.b2clogin.com	privaid.b2clogin.com
*.priva.com	accesscontrolapi.priva.com alarms.priva.com analytics.priva.com assetapi.priva.com auth.priva.com authorization.priva.com apps.priva.com catalogapi.priva.com comfortmanagement.priva.com connect.priva.com cr.priva.com iam.priva.com installationandmaintenance.priva.com my.priva.com notificationcenter.priva.com operator.priva.com scheduler.priva.com tenantapi.priva.com
*.erbis.one	erbis.one

## IP addresses for Digital Services

Priva uses the "EuropeWest" IP address ranges from Microsoft that are required for Digital Services. These series are used dynamically by Microsoft and therefore can not be mentioned specifically. The series that Microsoft uses, can be found on their website under 'Microsoft Azure Datacenter IP Ranges'  
<https://www.microsoft.com/en-us/download/details.aspx?id=41653>

## Internet connection for Digital Services

All Digital Services require a broadband Internet connection with a minimum upload and download speed of 1 Mbps.



The *Priva Cloud Connectivity Check* tool (shortcut on the Cloud Connector desktop) checks for this. Preferably, the Internet connection should have the highest possible upload speed. The larger the project, the greater the upload speed you will need.

## Additional requirements for TC Manager Connect



TC Manager Connect is being replaced by Building Operator. Priva advises you to use Building Operator.

You can use TC Manager remotely via TC Manager Connect over the Internet. A VPN connection is not needed.

The following requirements apply to the use of TC Manager and TC Manager Connect:

- Supported browser: Internet Explorer 10.0 or higher
- Microsoft Silverlight 5

## Priva Blue ID communication specifications

Ethernet	
Network standard used	IEEE 802.3 (37 ... 57 VDC) 10BASE-T (10 Mbps) 100BASE-TX (100 Mbps) auto negotiation auto-MDIX IPv4
DHCP	not supported
Baud rate	10 Mbps and 100 Mbps
Connection of third-party equipment permitted	yes
Cable type required	UTP or STP, minimum category 5
Maximum cable length	100 m
Connector type	RJ45, shielded
Cable diameter (when using Priva Blue ID TouchPoint Flush Back Cover (for panel mounting))	4 - 6.5 mm

Power over Ethernet is only applicable to Priva Blue ID S-Line.

Power over Ethernet	
Network standard used	IEEE 802.3af (37 ... 57 VDC) Powered Device (PD) Class 0

### Cables (Priva Blue ID S-Line)

Module	Specifications of cable to be used
Priva Blue ID S-Line SN1 Network module, Priva Blue ID S-Line SN2 Network module en Priva Blue ID S-Line SN3 Network module	<ul style="list-style-type: none"> <li>type: UTP or STP, minimum category 5</li> <li>maximum length: 100 m</li> <li>connector type: RJ45, shielded</li> </ul>
Priva Blue ID S-Line SN3t Network module	<p>Besides the cable mentioned above the following cable can be used:</p> <ul style="list-style-type: none"> <li>type: twisted pair (telephone or data cable)</li> <li>cable cross section area: 0.2 ... 2.5 mm<sup>2</sup> without ferrule connector 0.25 ... 2.5 mm<sup>2</sup> with ferrule connector</li> <li>maximum length between two controllers: 500 m nominal<sup>1</sup></li> <li>maximum total length: 1000 m nominal<sup>1</sup></li> <li>connector type: two-pin screw connector (polarity-insensitive connection)</li> </ul> <p><sup>1</sup> The maximum cable length is based on test results with twisted pair cable category 5E and Alpha Wire 5261C; for other types of cable, the maximum length may be less.</p>
Priva Blue ID TouchPoint	<ul style="list-style-type: none"> <li>type: UTP or STP, minimum category 5</li> <li>maximum length: 100 m</li> <li>connector type: RJ45, shielded</li> </ul>

### Cables (Priva Blue ID C-Line)

Module	Specifications of cable to be used
Priva Blue ID C4 C-MX34(m) - Ethernet	<ul style="list-style-type: none"> <li>type: UTP or STP, minimum category 5</li> <li>maximum length: 100 m</li> <li>connector type: RJ45, screened</li> </ul>
Priva Blue ID TouchPoint	<ul style="list-style-type: none"> <li>type: UTP or STP, minimum category 5</li> <li>maximum length: 100 m</li> <li>connector type: RJ45, screened</li> </ul>

## Compri HX communication specifications

Ethernet connection (only Compri HX 6E/8E)	
Supported network classes	A, B and C
Baud rate	10 Mbit/sec
Network type	10BASE-T as per the IEEE 802.3 standard
NE2000 Compatible	Yes
Connector type	RJ45 MDI (Media dependant interface)
Cable type	Unshielded twisted pair Cat.5 (UTP)
Maximum cable length	100 m
Connection with switched on Compri HX	Permitted

## Cables (Compri HX 3/4/6E/8E)

RS232 Connection	
Maximum transmission speed	38k4 bps
Connector type	RJ45 in accordance with EIA-561
Connection with switched on Compri HX	Permitted

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