

RUBY

Windmüller & Hölscher KG | Postfach 1660 | 49516 Lengerich | Deutschland | Tel.: +49 5481 14-0 | Fax: +49 5481 14-2649
info@wuh-lengerich.de | www.wuh-lengerich.de
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1.1 Installing the server

Installation conditions

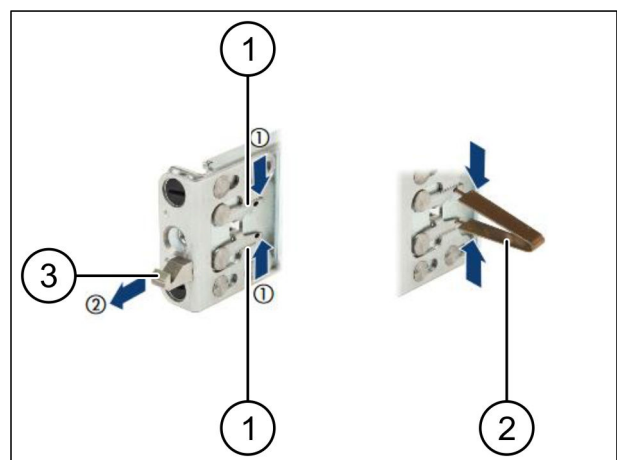
Observe the following installation conditions for continuous operation at elevations of less than 950 m:

- Temperature: 10 to 35 °C without any direct sunlight on the device
- Relative humidity: 10 % to 80 % relative humidity with a maximum dew point of 29 °C
- Maximum vibration: 0.26 grms at 5 Hz to 350 Hz

Step 1

(1)	Gear lever
(2)	Unlocking tool
(3)	Hook

- ▶ Press the rear end of the gear lever (1) together using the unlocking tool (2).
The interlocking will be released.
- ▶ Pull out the hook (3) until it reaches the limit stop.





Step 2



The sides of the rails are marked by stickers.

(1)	Rail
(2)	Assembly beam
(3)	Hook
(4)	Gear lever
(5)	Locking screw

- Position the left rail (1) on the rear left assembly beam (2).

The assembly beam is located between the two jaws of the rail.

- Press the rail together.
- Move the left rail outwards until the desired position is reached.

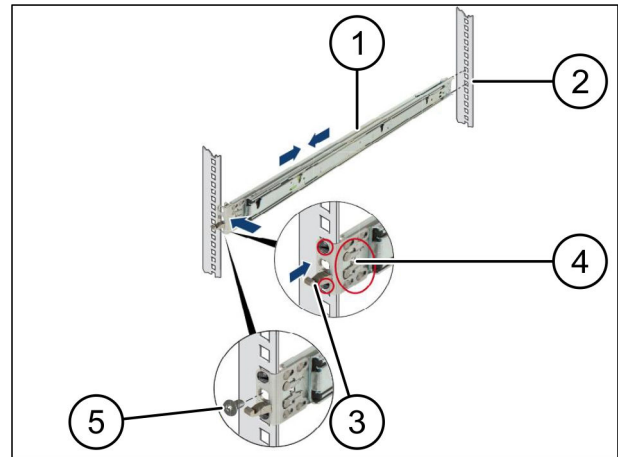
The black bolts engage in the holes.

- Press the hook (3) to the rear until the rail snaps.

The gear levers (4) are closed.

The black bolts are flush with the angle.

- Check the safe seating of the rail.
- Fix the rails with locking screws (5).
Tighten the locking screw to a maximum of 1 Newton meter.

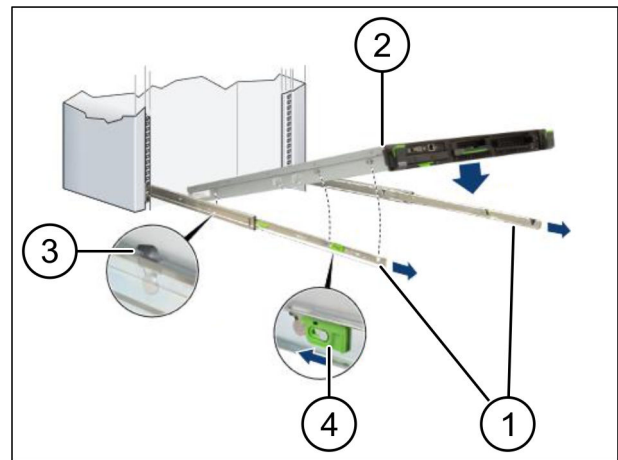


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Step 3

(1)	Rail
(2)	Server
(3)	Assembly point
(4)	Locking lever

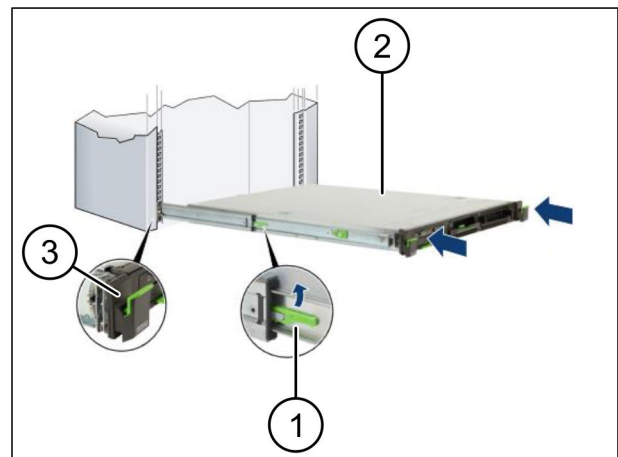
- ▶ Pull the rails (1) apart.
The rails snap and can no longer be moved.
- ▶ Position the server (2) at an angle at the rear assembly point.
- ▶ Press the rails inwards in the direction of the sides of the server and lower the server.
- ▶ Ensure that all of the bolts fit in the mounting points (3).
- ▶ Ensure that the locking levers (4) engage.



Step 4

(1)	Locking mechanism
(2)	Server
(3)	Quick-acting closure

- ▶ Loosen the locking mechanism (1) of both rails.
- ▶ Push the server (2) into the rack.
The quick acting-closures (3) engage.



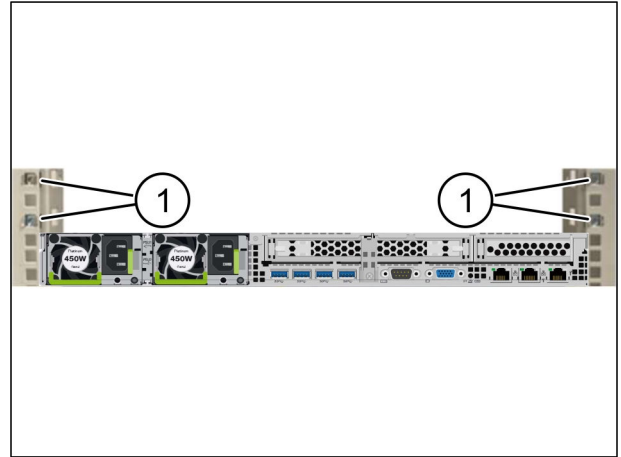


1.2 Incorporating the security gateway

Step 1

(1)	Nut
-----	-----

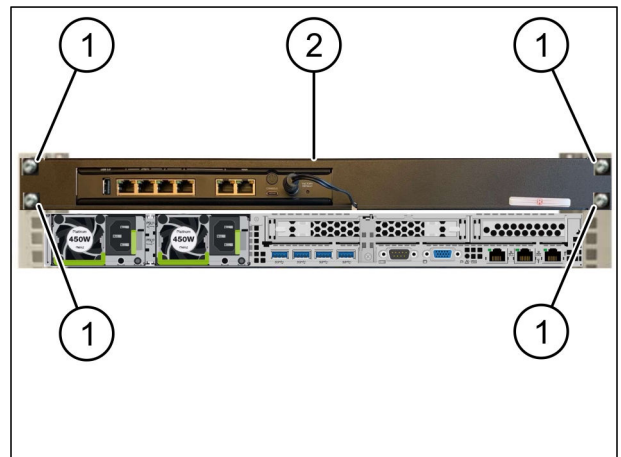
- ▶ Mark the first and third holes in the rack above the server.
- ▶ Fit the nuts (1) in the marked holes.



Step 2

(1)	Screw
(2)	Security Gateway

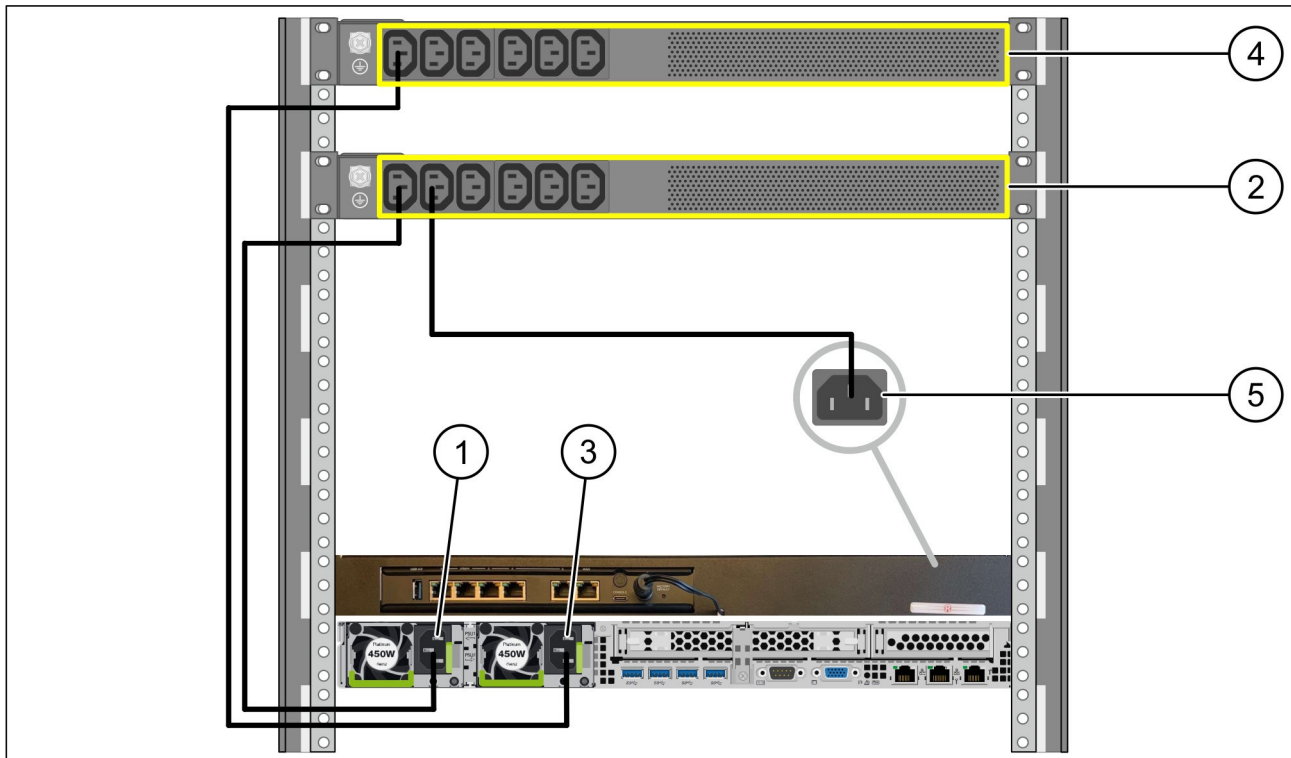
- ▶ Place the security gateway (2) in the rack.
 - ▶ Tighten the screws (1).
- The security gateway is installed.*



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1.3 Infrastructure cabling

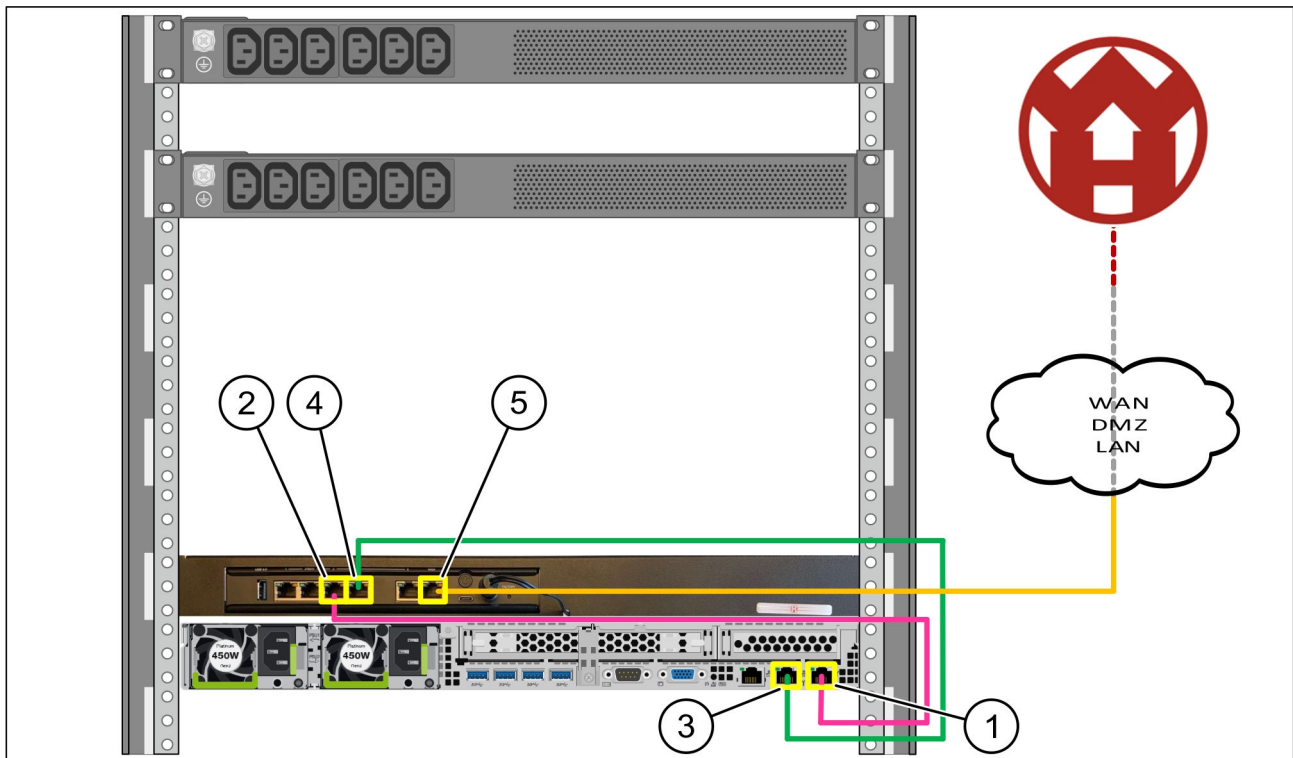
Step 1



(1)	Left-hand power supply unit of server	(2)	First electric circuit
(3)	Right-hand power supply unit of server	(4)	Second electric circuit
(5)	Power supply unit of the security gateway		

- ▶ Connect the left-hand power supply unit of the server (1) to the first electric circuit (2) using a C13/C14 cable.
- ▶ Connect the right-hand power supply unit of the server (3) to the second electric circuit (4) using a C13/C14 cable.
- ▶ Connect the power supply unit of the security gateway (5) to the first electric circuit using a C13/C14 cable.

Step 2



(1)	Management port of the server	(2)	Port 3 of the security gateway
(3)	Port 1 of the server	(4)	Port 4 of the security gateway
(5)	WAN port of the security gateway		

- Connect the management port of the server (1) with the pink RJ45 cable to port 3 of the security gateway (2).
- Connect port 1 of the server (3) to port 4 of the security gateway (4) using the green RJ45 cable.
- Connect the WAN port of the security gateway (5) with the yellow RJ45 cable to a network switch at the customer end.

The network switch allows you to connect to the Internet.

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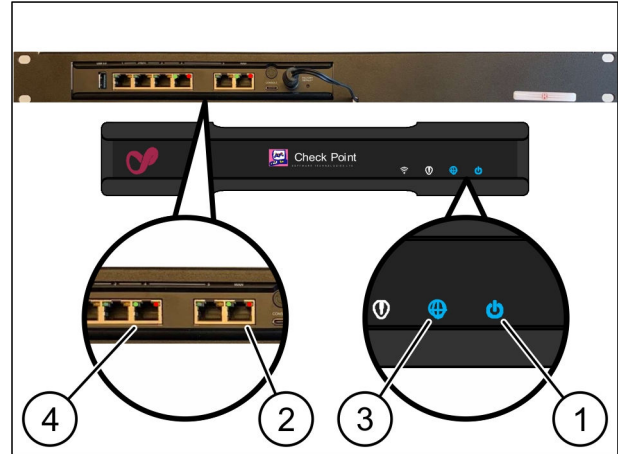
1.4 Commissioning

Commissioning the security gateway

(1)	Power LED
(2)	WAN port
(3)	Internet LED
(4)	LAN port 4

- Connect the security gateway to the power supply.

A connection with the data center of Windmüller & Hölscher KG is established.



The Power LED (1) illuminates in blue. If the Power LED lights up in red, there was a problem when booting up or the security gateway is in maintenance mode. Contact the Information and Diagnostic Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the infrastructure is established, the green LED of WAN port (2) illuminates. The green LED of the WAN port flashes when there is data traffic. If the green LED of the WAN port does not illuminate, check the cable connection at the local network switch. If required, the local network specialist must enable the WAN port in the network switch.

The Internet LED (3) illuminates in blue. If the Internet LED flashes, there is no connection to the Internet. Contact your local network specialist. If required, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the server's infrastructure is established, the green LED of LAN port 4 (4) illuminates. The green LED of LAN port 4 flashes when there is data traffic. If the green LED of the LAN port does not illuminate, check the cable connection to the server and remove the plug and reconnect it if necessary. The server must be switched on and booted up at this point in time.

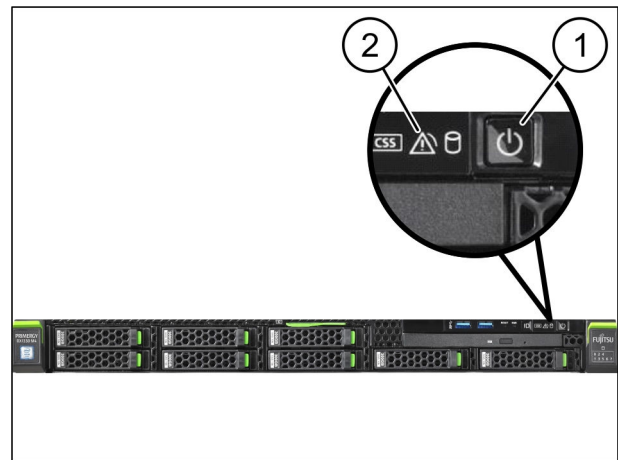
As soon as the status LEDs illuminate after approximately 60 seconds and when the server is switched on, the procedure is complete.



Commissioning the server

(1)	Switch-on button
(2)	Error indicator

- Connect the server to the power supply.
The LED of the switch-on button (1) flashes green.
The LED of the switch-on button goes out after 60 seconds.
- Press the switch-on button.
The server is switched on.



The Power LED lights up green.

If the error indicator (2) lights up or flashes, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

The LAN LEDs of the LAN ports connected with the security gateway light up or flash green.

If the LAN LEDs are not illuminated, check the cable connections. If necessary, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.



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2 Hardware Appliance – Dell Server

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2.1 Installing the server

Installation conditions

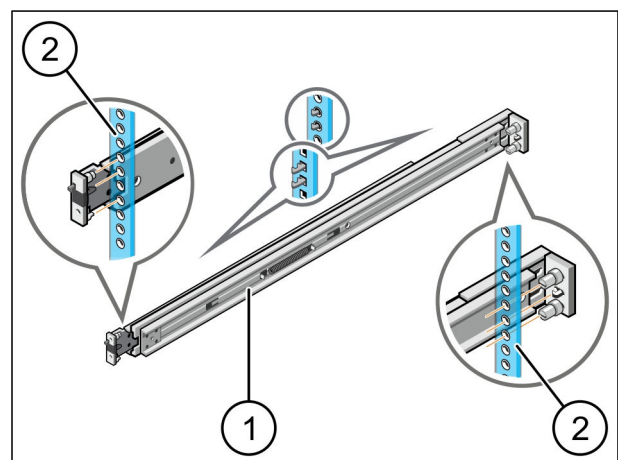
Observe the following installation conditions for continuous operation at elevations of less than 950 m:

- Temperature: 10 to 35 °C without any direct sunlight on the device
- Relative humidity: 10 % to 80 % relative humidity with a maximum dew point of 29 °C
- Maximum vibration: 0.26 grms at 5 Hz to 350 Hz

Step 1

(1)	Rail
(2)	Rack

- Align the front end of the rail (1) with the front side of the rack (2).
The 'FRONT' marking on the rail is pointing forwards.
- Insert the rear end of the rail into the rack.
The catch snaps into place.
- Insert the front end of the rail into the rack.
The catch snaps into place.

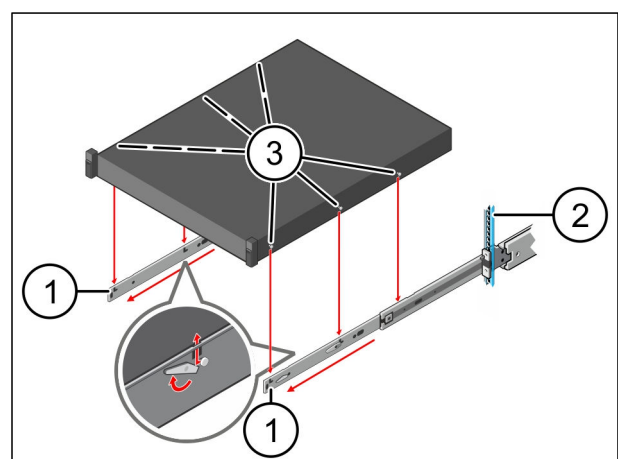


Follow the procedure on both sides.

Step 2

(1)	Inner rail
(2)	Rack
(3)	Pin on the server

- Pull the inner rails (1) out of the rack (2).
The inner rails snap into place.
- Align the rear pins on the server (3) on both sides at the rear slots of the rails.
The pins snap into place in the slots.
- Align the pins on the server at both sides at the rail slots.
The pins snap into place in the slots.

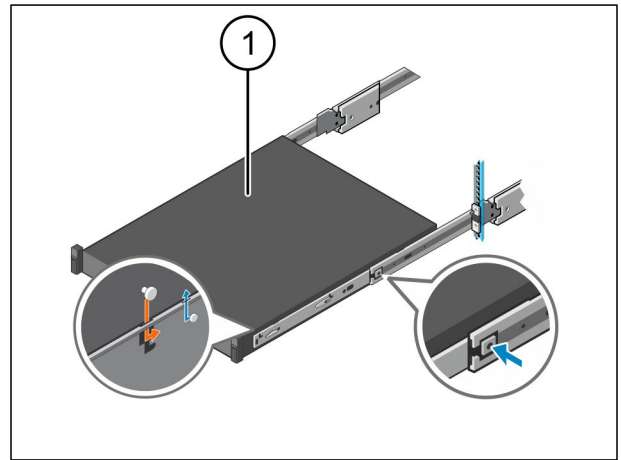




Step 3

(1)	Server
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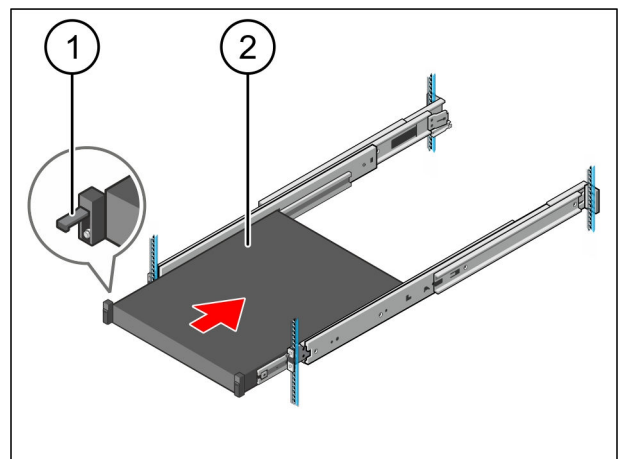
- Push the server (1) inwards.
The server locks snap into place on the rails.



Step 4

(1)	Sliding lock
(2)	Server

- Press the sliding lock (1) on both rails and push the server (2) into the rack.
The catches in the rails snap into place.



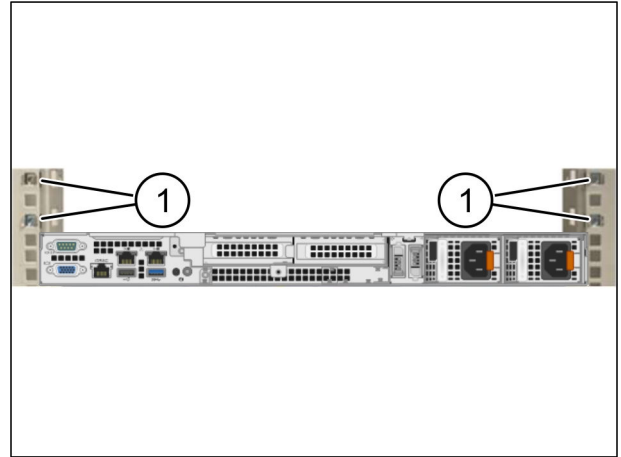
X000505237

2.2 Install security gateway

Step 1

(1)	Nut
-----	-----

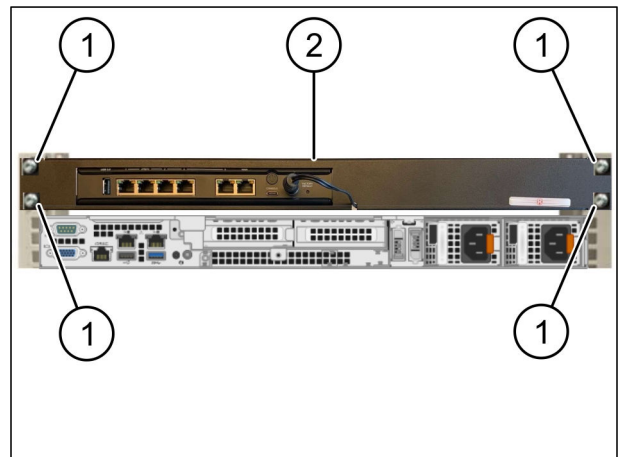
- ▶ Mark the first and third holes in the rack above the server.
- ▶ Fit the nuts (1) in the marked holes.



Step 2

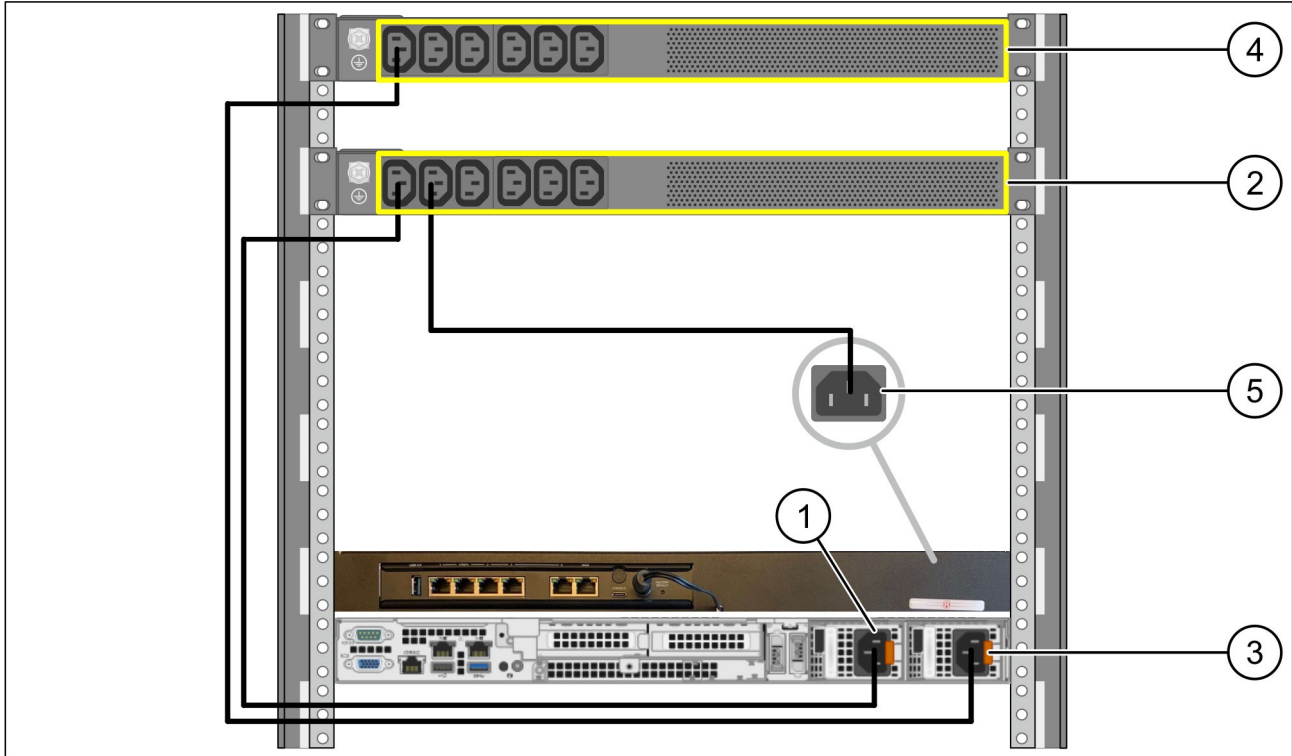
(1)	Screw
(2)	Security Gateway

- ▶ Place the security gateway (2) in the rack.
 - ▶ Tighten the screws (1).
- The security gateway is installed.*



2.3 Infrastructure cabling

Step 1

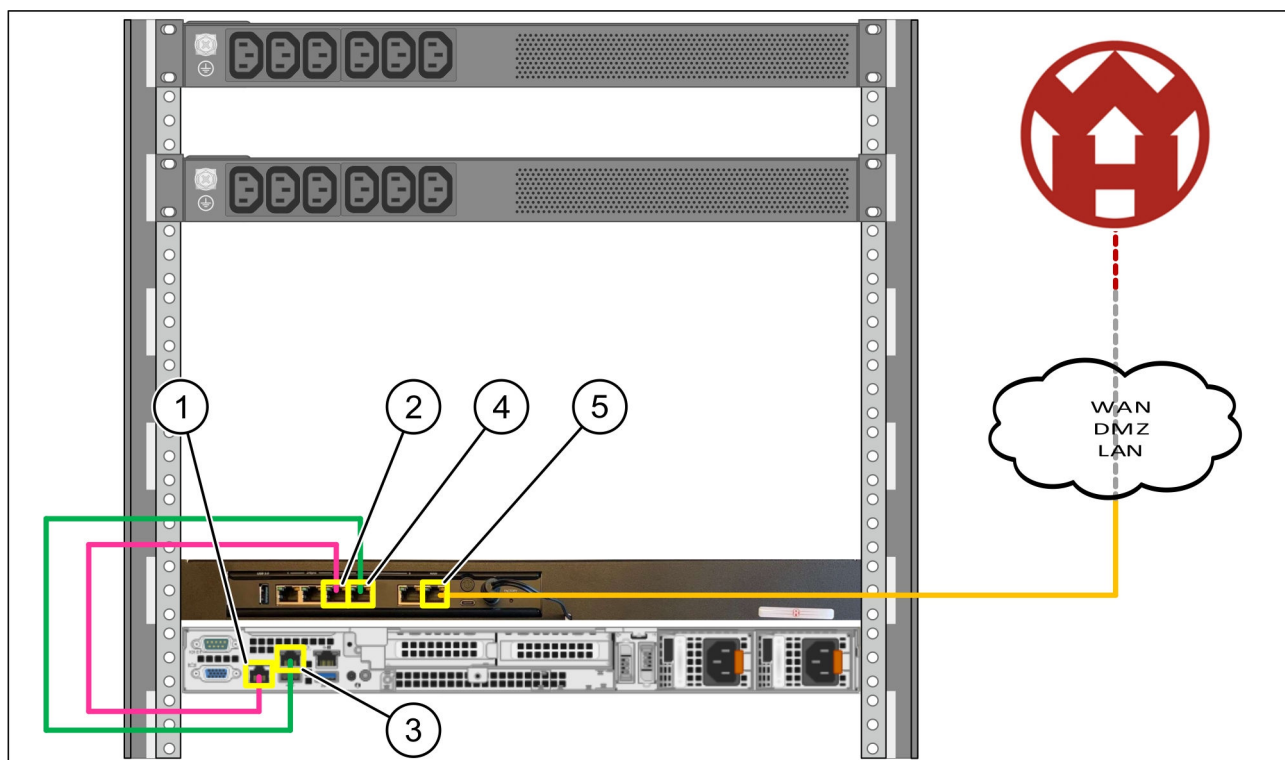


(1)	Left-hand power supply unit of server	(2)	First electric circuit
(3)	Right-hand power supply unit of server	(4)	Second electric circuit
(5)	Power supply unit of the security gateway		

- ▶ Connect the left-hand power supply unit of the server (1) to the first electric circuit (2) using a C13/C14 cable.
- ▶ Connect the right-hand power supply unit of the server (3) to the second electric circuit (4) using a C13/C14 cable.
- ▶ Connect the power supply unit of the security gateway (5) to the first electric circuit using a C13/C14 cable.

X000505240

Step 2



(1)	Management port of the server	(2)	Port 3 of the security gateway
(3)	Port 1 of the server	(4)	Port 4 of the security gateway
(5)	WAN port of the security gateway		

- ▶ Connect the management port of the server (1) with the pink RJ45 cable to port 3 of the security gateway (2).
- ▶ Connect port 1 of the server (3) to port 4 of the security gateway (4) using the green RJ45 cable.
- ▶ Connect the WAN port of the security gateway (5) with the yellow RJ45 cable to a network switch at the customer end.

The network switch allows you to connect to the Internet.

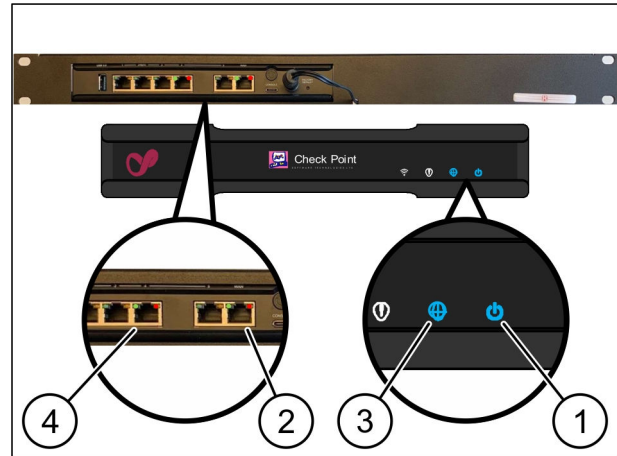
2.4 Commissioning

Commissioning the security gateway

(1)	Power LED
(2)	WAN port
(3)	Internet LED
(4)	LAN port 4

- Connect the security gateway to the power supply.

A connection with the data center of Windmüller & Hölscher KG is established.



The Power LED (1) illuminates in blue. If the Power LED lights up in red, there was a problem when booting up or the security gateway is in maintenance mode. Contact the Information and Diagnostic Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the infrastructure is established, the green LED of WAN port (2) illuminates. The green LED of the WAN port flashes when there is data traffic. If the green LED of the WAN port does not illuminate, check the cable connection at the local network switch. If required, the local network specialist must enable the WAN port in the network switch.

The Internet LED (3) illuminates in blue. If the Internet LED flashes, there is no connection to the Internet. Contact your local network specialist. If required, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the server's infrastructure is established, the green LED of LAN port 4 (4) illuminates. The green LED of LAN port 4 flashes when there is data traffic. If the green LED of the LAN port does not illuminate, check the cable connection to the server and remove the plug and reconnect it if necessary. The server must be switched on and booted up at this point in time.

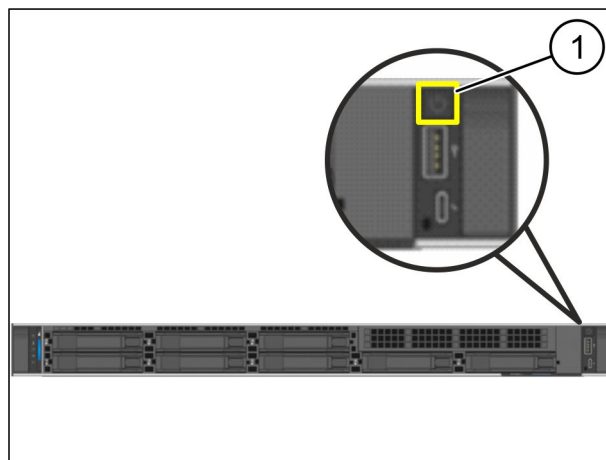
As soon as the status LEDs illuminate after approximately 60 seconds and when the server is switched on, the procedure is complete.

X000506509

Commissioning the server

(1)	Switch-on button
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- ▶ Connect the server to the power supply.
The Power LED of the switch-on button (1) flashes in green.
The LED of the switch-on button goes off after 60 seconds.
- ▶ Press the switch-on button.
The server is switched on.



The Power LED lights up in green.

If the Power LED lights up in orange or flashes, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

The LAN LEDs of the LAN ports connected to the security gateway light up or flash in green.

If the LAN LEDs do not light up, check the cable connections. If required, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.



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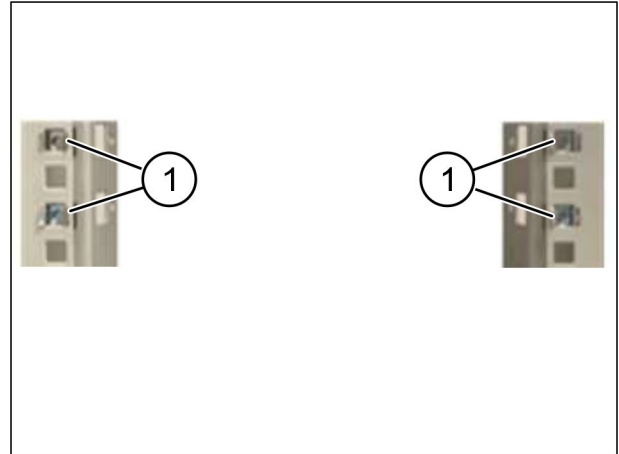
X000440611

3.1 Incorporating the security gateway

Step 1

(1)	Nut
-----	-----

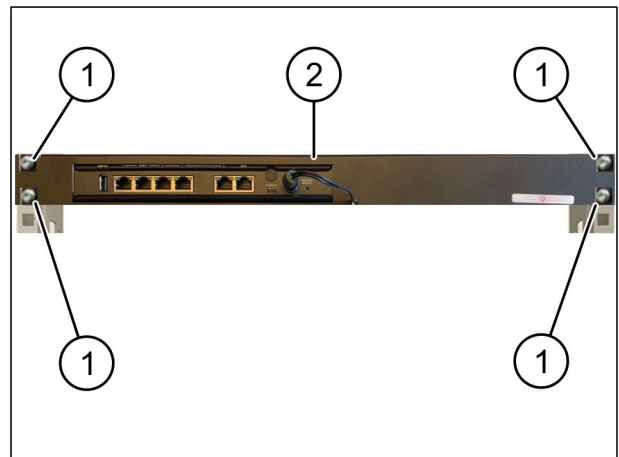
- ▶ Mark 2 holes each in the rack with one hole each apart.
- ▶ Fit the nuts (1) in the marked holes.



Step 2

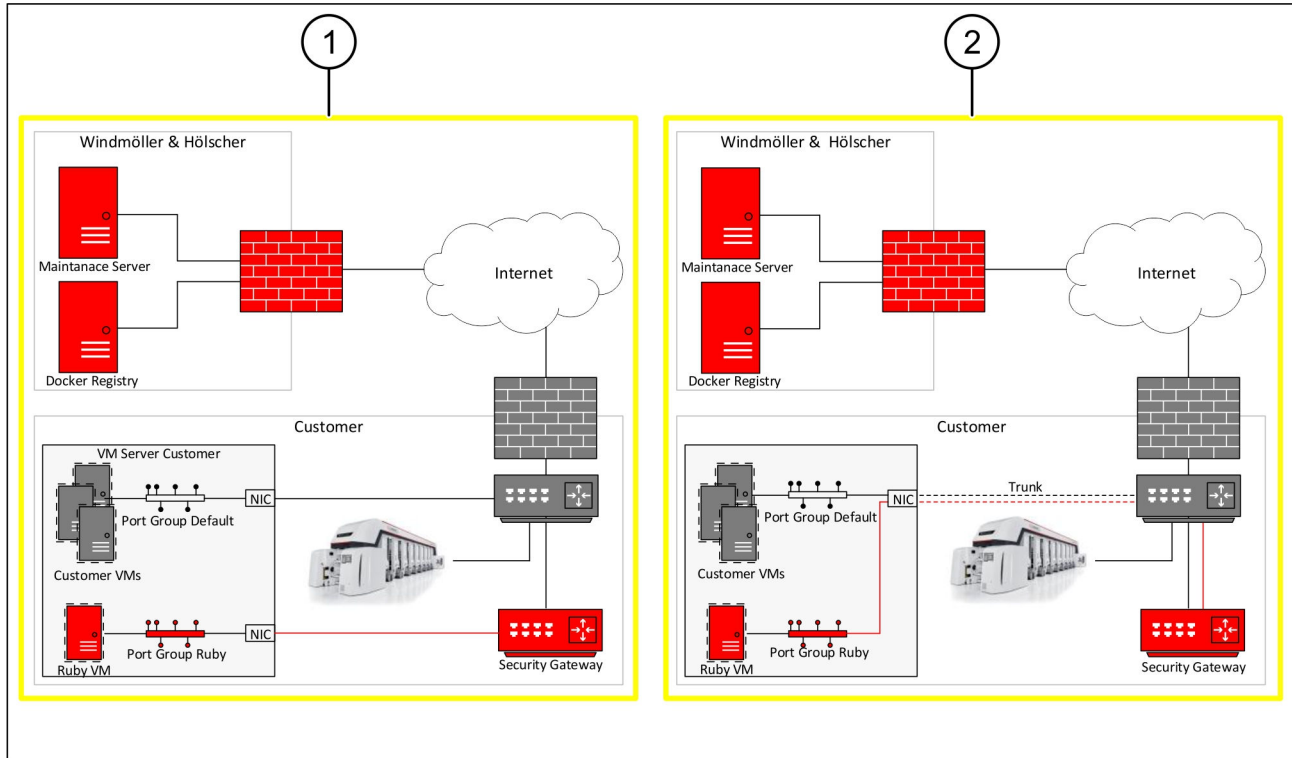
(1)	Screw
(2)	Security gateway

- ▶ Tighten the screws (1).
The security gateway (2) is installed.



3.2 Installing the security gateway

Network configuration

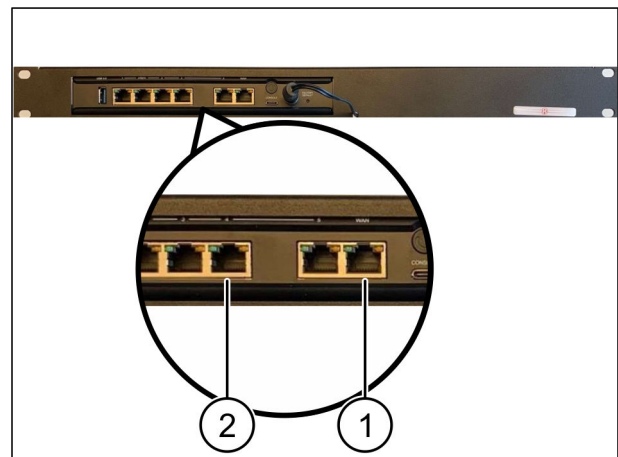


(1)	Dedicated port	(2)	Trunk port
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Connect the Security Gateway with a dedicated port

(1)	WAN port
(2)	LAN port 4

- ▶ Connect the WAN port (1) of the Security Gateway to the infrastructure using the yellow RJ45 cable.
- ▶ Check if there is an internet connection.
- ▶ Connect the LAN port 4(2) of the Security Gateway to the dedicated interface of the server using the green RJ45 cable.
- ▶ Configure a new port group on the server.
- ▶ Install the OVF template on the server.
- ▶ Adapt the network in the virtual machine.
- ▶ Switch on the virtual machine.
- ▶ To correctly load the network settings, restart the virtual machine.

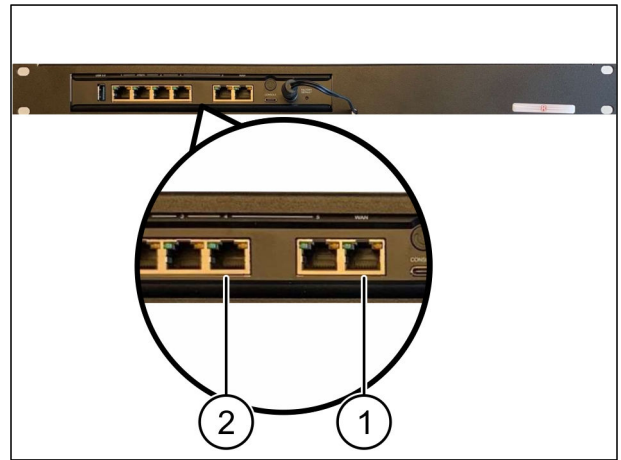


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Connect the Security Gateway with a trunk port

(1)	WAN port
(2)	LAN port 4

- ▶ Connect the WAN port (1) of the Security Gateway to the infrastructure using the yellow RJ45 cable.
- ▶ Check if there is an internet connection.
- ▶ Connect the LAN port 4 (2) of the Security Gateway to the infrastructure using the green RJ45 cable.
- ▶ Configure the VLAN on the trunk line to the server.
- ▶ Configure a new port group on the server.
- ▶ Install the OVF template on the server.
- ▶ Adapt the network in the virtual machine.
- ▶ Switch on the virtual machine.
- ▶ To correctly load the network settings, restart the virtual machine.



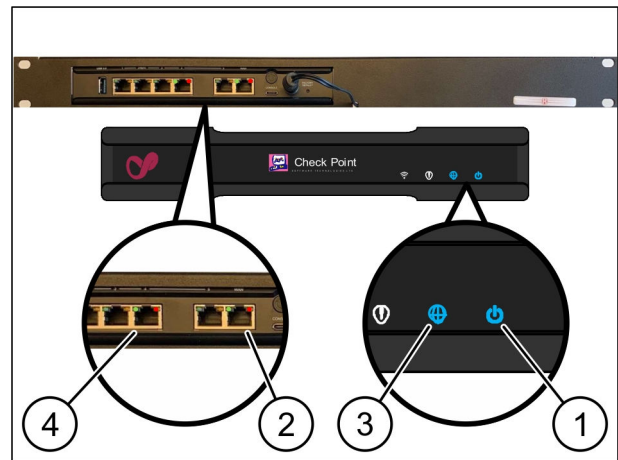


3.3 Commissioning

(1)	Power LED
(2)	WAN port
(3)	Internet LED
(4)	LAN port 4

- Connect the security gateway to the power supply.

A connection with the data center of Windmüller & Hölscher KG is established.



The Power LED (1) illuminates in blue. If the Power LED lights up in red, there was a problem when booting up or the security gateway is in maintenance mode. Contact the Information and Diagnostic Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the infrastructure is established, the green LED of WAN port (2) illuminates. The green LED of the WAN port flashes when there is data traffic. If the green LED of the WAN port does not illuminate, check the cable connection at the local network switch. If required, the local network specialist must enable the WAN port in the network switch.

The Internet LED (3) illuminates in blue. If the Internet LED flashes, there is no connection to the Internet. Contact your local network specialist. If required, contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

As soon as the connection to the network of the server's infrastructure is established, the green LED of LAN port 4 (4) illuminates. The green LED of LAN port 4 flashes when there is data traffic. If the green LED of LAN port 4 does not illuminate, check the cable connection to the server, and plug it in again if necessary. The server must be switched on and booted up at this point in time.

As soon as the status LEDs illuminate after approximately 60 seconds and when the server is switched on, the procedure is complete.



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4 Connect system to RUBY

4.1	Connecting the film extrusion line.....	30
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X000451769

4.1 Connecting the film extrusion line

DANGER

Electrical current

Contact with live parts leads to life-threatening injuries and even death.

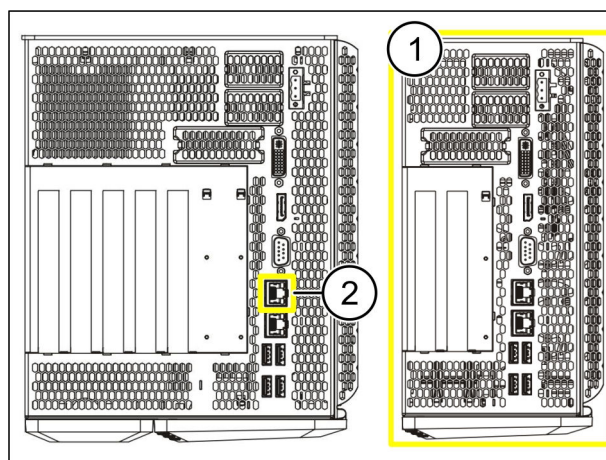
Only qualified electricians are permitted to undertake work on a terminal box or switch cabinet.



The network cable for the service PC (1) is required for the remote access and remains connected.

(1)	Service PC
(2)	LAN port 1 of the main industrial PC

- ▶ Connect LAN port 1 of the main industrial PC (2) to the RUBY network using a network cable.
- ▶ To add the system to the RUBY user interface, contact the Information and Diagnostic Center of Windmüller und Hölscher KG.





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X000445419

5.1 Logging in to RUBY

After installation, the RUBY website can be accessed in this format at the RUBY URL:

https://hostname.domain

Enter the RUBY URL in the internal DNS server.



The website cannot be called via the IP address.

The following login data is required for logging in for the first time:

Login name: admin

Password: 0initial



The password should be changed after logging in for the first time.

If you have any questions, please contact the Information and Diagnostics Center of Windmüller & Hölscher KG.

5.2 Service contact

E-mail	ruby-support@wuh-group.com
Service hotline	+49 (0) 5481 – 14 3333



5.3 Network requirements

The network requirements are necessary for operating the system.

Internet access	Fast internet connection	Minimum 16 Mbit
Network connection	Fast Ethernet connection	Minimum 100 Mbit
Remote access	pre-defined	Security Gateway
Security Gateway Outgoing ports necessary for remote maintenance by Windmüller & Hölscher KG	Port 500 Port 4500 Target: 193.25.209.5 Network of Windmüller & Hölscher KG for IPSec-Tunnel	UDP, IPSec-Tunnel for Windmüller & Hölscher KG
	Port 257 Port 18191 Port 18192 Port 18210 Port 18264 Target: 193.25.209.8 Network of Windmüller & Hölscher KG for management of the Security Gateway	TCP, management for the RUBY Security Gateway
	Port 5671 Target: 20.101.86.101	TCP, RabbitMQ to Cloud for mobile app
Incoming connection for the RUBY internet interface	Port 443	TCP for HTTPS The certificate is provided by the customer.
Outgoing and incoming machine connections	Port 4843	TCP for OPC-UA TLS Machine-to-machine communication protocol
	Port 123	UDP for NTP



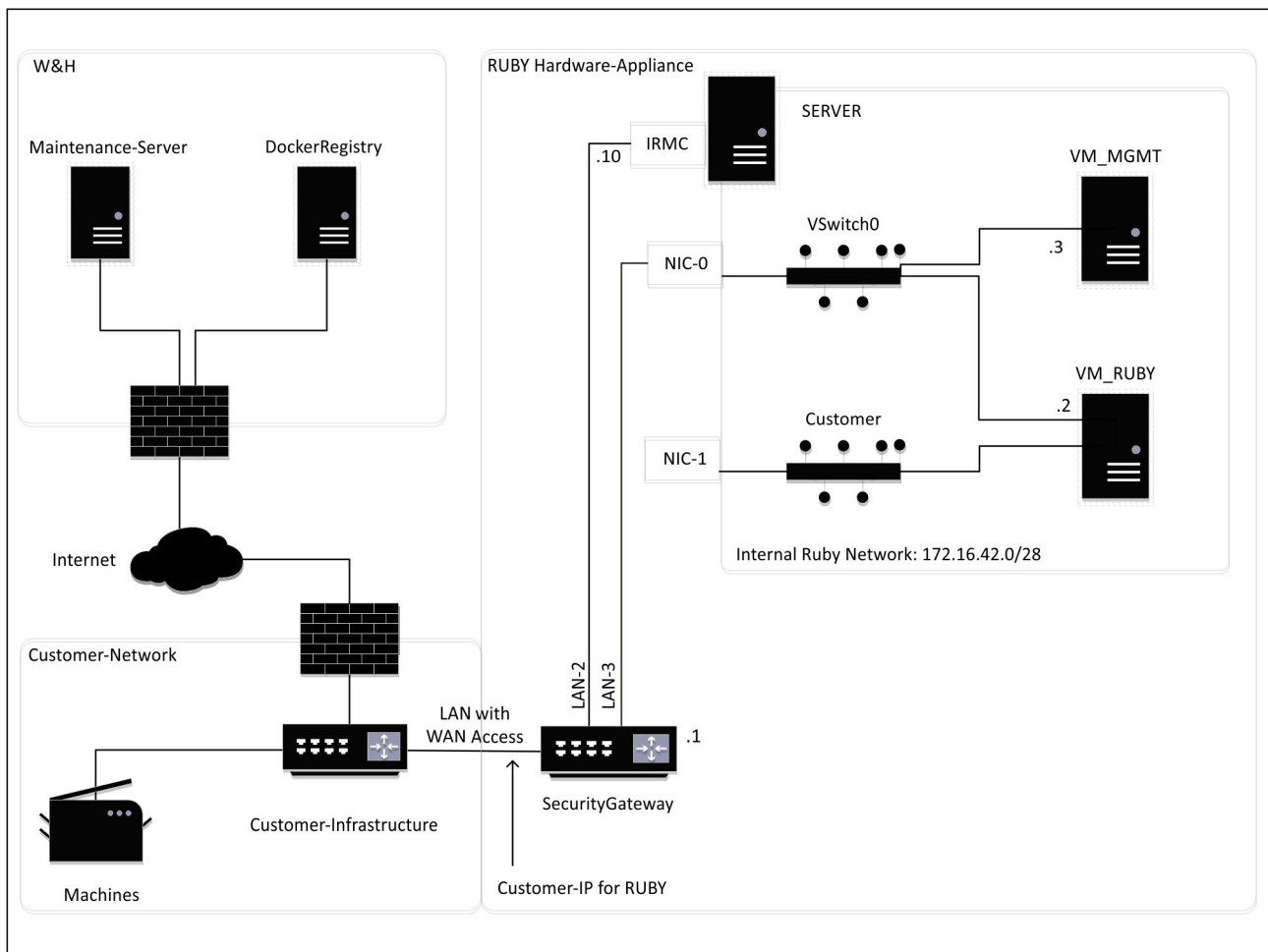
X000445398

5.4 Technical information

Technical information

Connecting the security gateway to the virtual equipment	<p>In order to connect the security gateway with the virtual appliance, a layer 2 connection is required between the security gateway and the virtual appliance. The virtual appliance is equipped with a virtual network interface card for the layer 2 connection.</p> <p>The virtual network interface card connects the virtual appliance to the customer network. The customer network is connected with the machines from Windmüller & Hölscher KG and the browser-based access to RUBY.</p> <p>There are 2 network configuration versions.</p>
<p>Version 1</p> <p>Version 1 is recommended by Windmüller & Hölscher KG.</p>	<p>Connect the security gateway to a free network interface of the host and create a new virtual network switch in the hypervisor. Assign the virtual network switch to the interface connected to the security gateway as a uplink.</p> <p>Connect the virtual network interface card of the virtual appliance to the virtual network switch.</p>
Version 2	<p>Connect the security gateway with a network switch in the computing center via VLAN. Label the port of the virtual network switch connected with a free VLAN. The name of this function depends on the network model of the virtual network switch.</p> <p>Label this VLAN on the uplink of the assigned hypervisor.</p> <p>Create a new port group in the hypervisor and assign the VLAN selected. The port group created can now be connected to the virtual network interface card of the virtual appliance.</p>

Hardware appliance

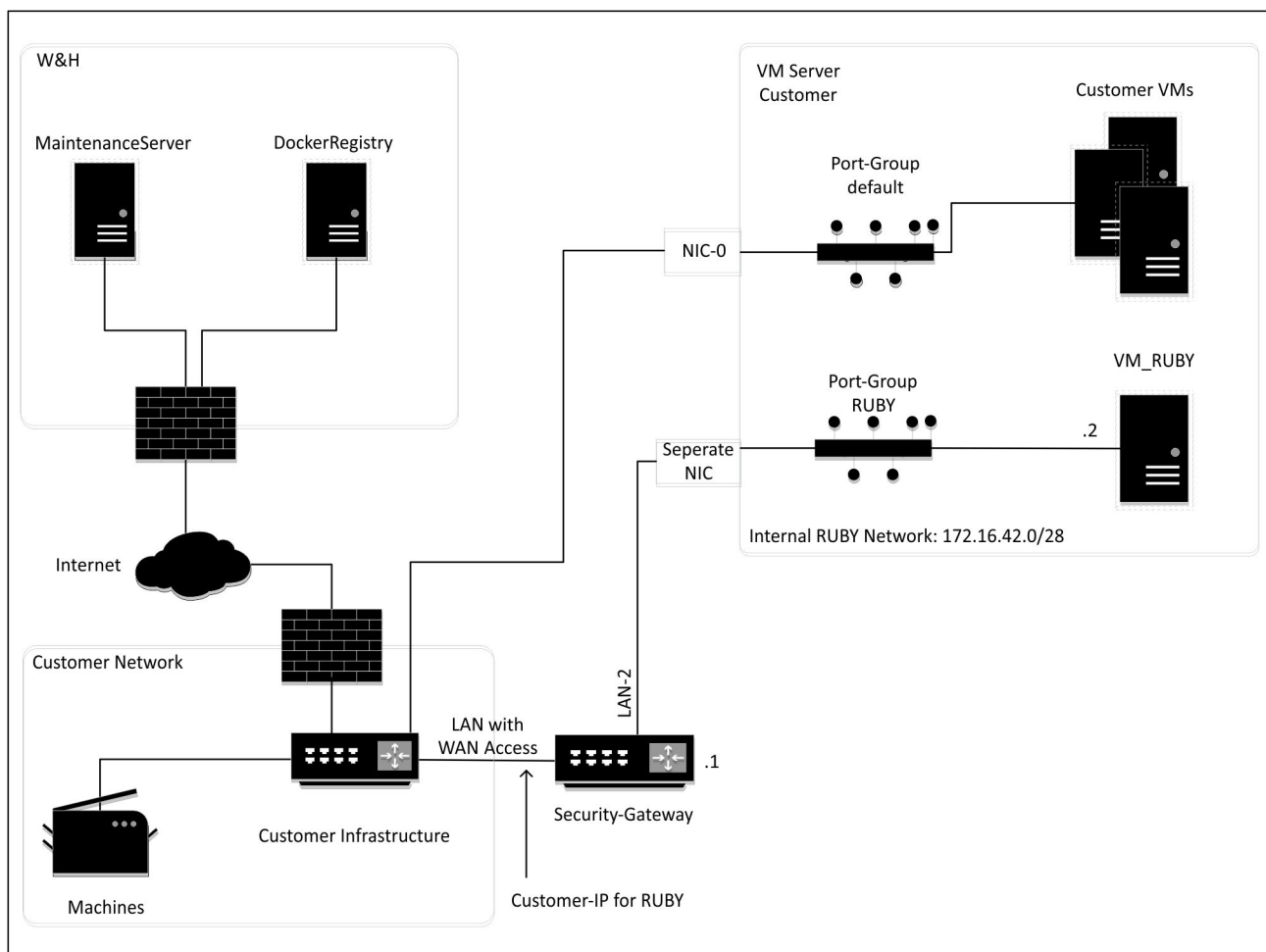


The security gateway hides the internal RUBY addresses behind the customer IP for RUBY. The customer sees the customer IP for RUBY. The data traffic on port 443 is networked to the internal RUBY-IP.

The second network interface card on the virtual machine could be used if the customer's machine network is completely insulated and cannot be accessed from the normal customer network.

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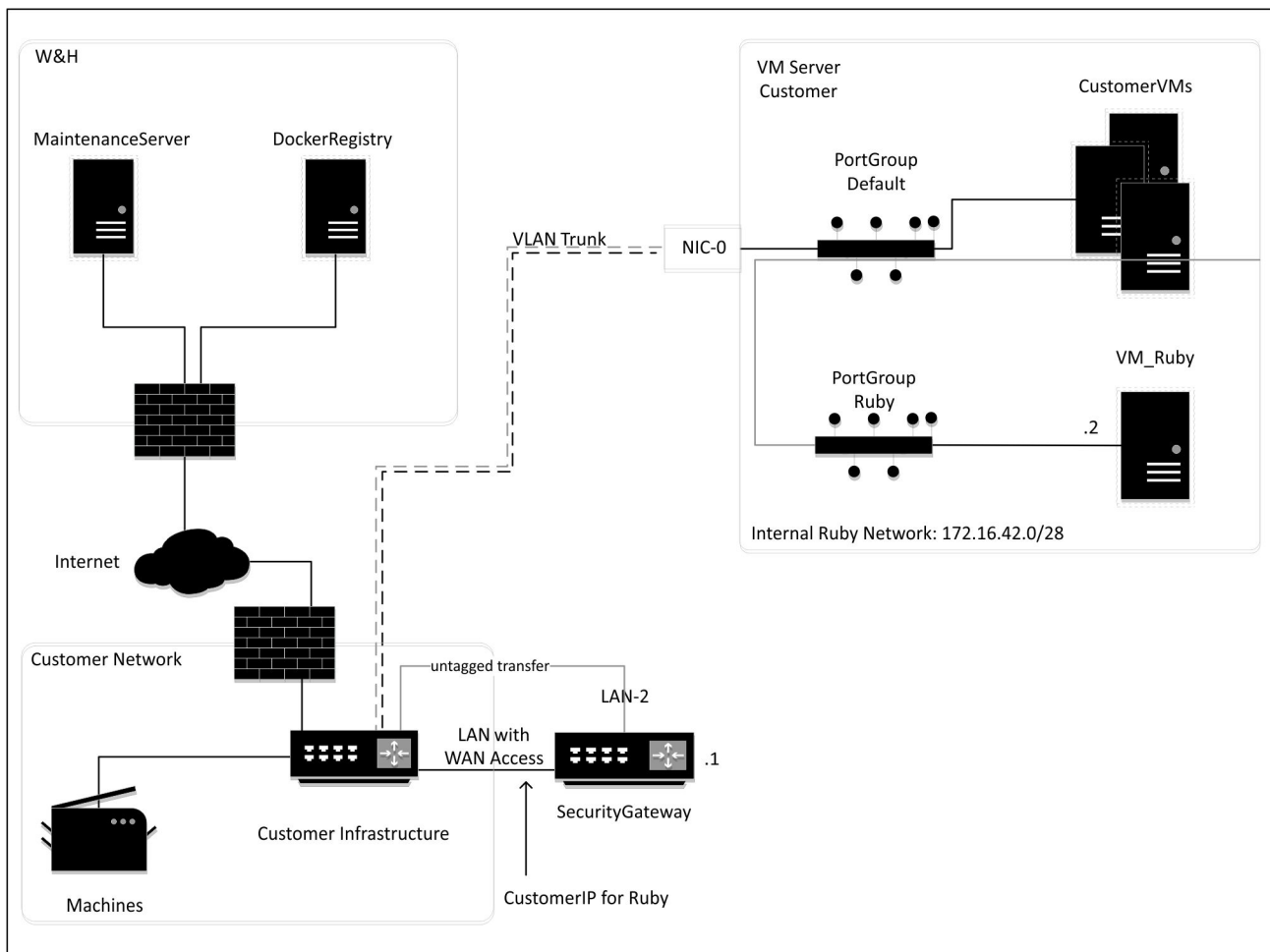
Virtual appliance with a dedicated port



The security gateway hides the internal RUBY addresses behind the customer IP for RUBY. The customer sees the customer IP for RUBY. The data traffic on port 443 is networked to the internal RUBY-IP.



Virtual appliance with a trunk port



The security gateway hides the internal RUBY addresses behind the customer IP for RUBY. The customer sees the customer IP for RUBY. The data traffic on port 443 is networked to the internal RUBY-IP.



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