



RUBY Installation Instructions





Scan QR code to open PDE.

Contact and further information

Windmöller & Hölscher SE & Co. KG Münsterstraße 50 49525 Lengerich Germany info@wuh-group.com www.wh.group

4/11/2025 | © Windmöller & Hölscher SE & Co. KG



Table of contents

1	Insta	Installation conditions		
2	Hard	ware appliance – Fujitsu server	6	
	2.1	Loosening the interlocking of the rail holder	6	
	2.2	Installing rails	6	
	2.3	Using the server	7	
	2.4 Pushing the server into the rack			
	2.5	Preparing security gateway installation	8	
	2.6	Installing the security gateway	8	
	2.7	Connecting the server power supply units	9	
	2.8	Connecting the security gateway to the server	10	
	2.9	Commissioning the security gateway	11	
	2.10	Commissioning the server	12	
3	Hard	ware appliance - Dell server	13	
	3.1	Installing rails in the rack	13	
	3.2	Using the server	13	
3.3 Securing the server on rails		Securing the server on rails	14	
	3.4	Pushing in the server	14	
	3.5	Preparing security gateway installation	14	
	3.6	Installing the security gateway	15	
	3.7	Connecting the server power supply units	15	
	3.8	Connecting the security gateway to the server	16	
	3.9	Commissioning the security gateway	17	
	3.10	Commissioning the server	18	
4	Virtu	al appliance	19	
	4.1	Preparing security gateway installation	19	
	4.2	Installing the security gateway	19	
	4.3	Network configuration	20	
	4.4	Connecting the security gateway to a dedicated port	20	
	4.5	Connecting the security gateway to a trunk port	21	
	4.6	Commissioning the security gateway	21	
5	Con	necting the extrusion line	23	
6	Logg	ging in to RUBY	24	
7	Service contact 2			



Table of contents

8	Technical notes		
	8.1	Network requirements	26
	8.2	Technical notes	26
	8.3	Hardware appliance	28
	8.4	Virtual appliance with a dedicated port	29
	8.5	Virtual appliance with a trunk port	30

5/31

1 | Installation conditions

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

- Temperature: 10 to 35 degrees Celsius without any direct sunlight on the device
- Relative humidity: 10 percent to 80 percent relative humidity with a maximum dew point of 29 degrees Celsius
- Maximum vibration: 0.26 $\rm G_{rms}$ at 5 Hz to 350 Hz

2 Hardware appliance - Fujitsu server | 2.1 Loosening the interlocking of the rail holder

2 | Hardware appliance – Fujitsu server

2.1 Loosening the interlocking of the rail holder

- (1) Gear lever(2) Unlocking tool(3) Hook
- 1. Press the rear end of the gear lever (1) together using the unlocking tool (2).

The interlocking will be released.

2. Pull out the hook (3) until it reaches the limit stop.



2.2 Installing rails

The sides of the rails are marked by stickers.

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

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

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

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

The black bolts engage in the holes.

4. Press the hook (3) back until the rail engages.

The gear levers (4) are closed. The black bolts are flush with the angle.

- 5. Check the safe seating of the rail.
- 6. Secure the rails with locking screws (5).

Tighten the locking screw to a maximum of 1 Newton meter.





7/31

2.3 Using the server

(1)	Rail
(2)	Server
(3)	Assembly point

- (4) Locking lever
- **1.** Pull the rails (1) apart.

The rails snap and can no longer be moved.

- **2.** Position the server (2) at the rear assembly point at an angle.
- **3.** Press the rails inwards in the direction of the sides of the server and lower the server.
- **4.** Ensure that all bolts fit in the mounting points (3).
- 5. Ensure that the locking levers (4) engage.

2.4 Pushing the server into the rack

- (1) Locking mechanism
- (2) Server
- (3) Quick-acting closure
- **1.** Loosen the locking mechanism (1) of both rails.
- 2. Push the server (2) into the rack.

The quick-acting closures (3) engage.





2 Hardware appliance - Fujitsu server | 2.5 Preparing security gateway installation

2.5 Preparing security gateway installation

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



2.6 Installing the security gateway

- (2) Security gateway
- **1.** Place the security gateway (2) in the rack.
- **2.** Tighten the screws (1).

The security gateway is installed.







2.7 Connecting the server power supply units

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

2 Hardware appliance - Fujitsu server | 2.8 Connecting the security gateway to the server

2.8 Connecting the security gateway to the server

(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	

- 1. Use the pink RJ45 cable to connect the server management port (1) and the security gateway port 3 (2).
- 2. Use the green RJ45 cable to connect server port 1 (3) and security gateway port 4 (4).
- **3.** Use the yellow RJ45 cable to connect the WAN port of the security gateway (5) with a computer network switch on the customer end.

The computer network switch enables Internet access.



2.9 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 to the Windmöller & Hölscher data cen-

ter is established.

- The Power LED (1) lights up blue. If the Power LED lights up red, there was a problem when booting up or the security gateway is in maintenance mode. Contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The green LED of WAN port (2) lights up as soon as the connection to the infrastructure computer network has been established. The green LED of the WAN port blinks when there is data traffic. If the green LED of the WAN port does not light up, check the cable connection at the local area network switch. If necessary, the local network specialist must enable the WAN port in the computer network switch.
- The Internet LED (3) lights up blue. If the Internet LED blinks, there is no connection to the Internet. Contact your local network specialist. If necessary, contact the Windmöller & Hölscher Information and Diagnostic Center.
- The green LED of LAN port 4 (4) lights up as soon as the connection to the computer network of the server's infrastructure has been established. The green LED of LAN port 4 blinks when there is data traffic. If the green LED of the LAN port does not light up, check the cable connection to the server, remove the plug and reconnect it, if necessary. The server must be switched on and booted up at this point in time.
- ⇒ The procedure is complete as soon as the status LEDs light up after approximately 60 seconds and when the server is switched on.



2.10 Commissioning the server

- (1) Switch-on button
- (2) Error display
- 1. Connect the server to the power supply.

The LED of the switch-on button (1) blinks green. The LED of the switch-on button goes off after 60 seconds.

- 2. Press the switch-on button to switch on the server.
- $\Rightarrow \text{ The Power LED lights up green.}$
- ➡ If the error display (2) lights up or blinks, contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The LAN LEDs of the LAN ports connected to the security gateway light up or blink green.
- ⇒ If the LAN LEDs do not light up, check the cable connections. If necessary, contact the Windmöller & Hölscher Information and Diagnostic Center.



3 | Hardware appliance - Dell server

3.1 Installing rails in the rack

(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.

2. Insert the rear end of the rail into the rack.

The catch snaps into place.

3. Insert the front end of the rail into the rack.

The catch snaps into place.

4. Perform the same procedure on both sides.

3.2 Using the server

(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.
- **2.** 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.

3. Align the pins on the server on both sides at the rail slots.

The pins snap into place in the slots.





3 Hardware appliance - Dell server | 3.3 Securing the server on rails

3.3 Securing the server on rails

(1)

1. Push the server (1) inwards.

Server

The server locks snap into place on the rails.



3.4 Pushing in the server

(1)	Sliding	lock
-----	---------	------

- (2) Server
- 1. Press the sliding lock (1) on both rails and push the server (2) into the rack.

The catches in the rails snap into place.



3.5 Preparing security gateway installation

(1) Nut

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





3.6 Installing the security gateway

- (1) Screw
- (2) Security gateway
- 1. Place the security gateway (2) in the rack.
- 2. Tighten the screws (1).

The security gateway is installed.



3.7 Connecting the server power supply units



1. Connect the left-hand power supply unit of the server (1) to the first electric circuit (2) using a C13/C14 cable.

2. Connect the right-hand power supply unit of the server (3) to the second electric circuit (4) using a C13/C14 cable.

3. Connect the power supply unit of the security gateway (5) to the first electric circuit using a C13/C14 cable.

3 Hardware appliance - Dell server | 3.8 Connecting the security gateway to the server

3.8 Connecting the security gateway to the server



- 1. Use the pink RJ45 cable to connect the server management port (1) and the security gateway port 3 (2).
- 2. Use the green RJ45 cable to connect server port 1 (3) and security gateway port 4 (4).
- **3.** Use the yellow RJ45 cable to connect the WAN port of the security gateway (5) with a computer network switch on the customer end.

The computer network switch enables Internet access.



3.9 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 to the Windmöller & Hölscher data cen-

ter is established.

- The Power LED (1) lights up blue. If the Power LED lights up red, there was a problem when booting up or the security gateway is in maintenance mode. Contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The green LED of WAN port (2) lights up as soon as the connection to the infrastructure computer network has been established. The green LED of the WAN port blinks when there is data traffic. If the green LED of the WAN port does not light up, check the cable connection at the local area network switch. If necessary, the local network specialist must enable the WAN port in the computer network switch.
- The Internet LED (3) lights up blue. If the Internet LED blinks, there is no connection to the Internet. Contact your local network specialist. If necessary, contact the Windmöller & Hölscher Information and Diagnostic Center.
- The green LED of LAN port 4 (4) lights up as soon as the connection to the computer network of the server's infrastructure has been established. The green LED of LAN port 4 blinks when there is data traffic. If the green LED of the LAN port does not light up, check the cable connection to the server, remove the plug and reconnect it, if necessary. The server must be switched on and booted up at this point in time.
- ⇒ The procedure is complete as soon as the status LEDs light up after approximately 60 seconds and when the server is switched on.



3.10 Commissioning the server

(1) Switch-on button

1. Connect the server to the power supply.

The Power LED of the switch-on button (1) blinks green. The LED of the switch-on button goes off after 60 seconds.

- 2. Press the switch-on button to switch on the server.
- \Rightarrow The Power LED lights up green.
- ➡ If the Power LED lights up orange or blinks, contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The LAN LEDs of the LAN ports connected to the security gateway light up or blink green.
- ⇒ If the LAN LEDs do not light up, check the cable connections. If necessary, contact the Windmöller & Hölscher Information and Diagnostic Center.



4 | Virtual appliance

4.1 Preparing security gateway installation

- (1) Nut
- **1.** Mark 2 holes on both sides of the rack at a distance of one hole each.
- **2.** Fit the nuts (1) in the marked holes.



4.2 Installing the security gateway

- (1) Screw
- (2) Security gateway
- **1.** Tighten the screws (1).

The security gateway (2) has been installed.



4.3 Network configuration



4.4 Connecting the security gateway to a dedicated port

- (1) WAN port
- (2) LAN port 4
- Use the yellow RJ45 cable to connect WAN port (1) of the security gateway to the infrastructure.
- Check whether there an Internet connection has been established.
- **3.** Use the green RJ45 cable to connect LAN port 4 (2) of the security gateway to the dedicated server interface.
- 4. Configure a new port group on the server.
- 5. Install the OVF template on the server.
- 6. Adjust the computer network in the virtual machine.
- 7. Switch on the virtual machine.
- Reboot the virtual machine to correctly load the network settings.



4.5 Connecting the security gateway to a trunk port

(1)	WAN port	
(2)	LAN port 4	

- **1.** Use the yellow RJ45 cable to connect WAN port (1) of the security gateway to the infrastructure.
- 2. Check whether there an Internet connection has been established.
- **3.** Use the green RJ45 cable to connect LAN port 4 (2) of the security gateway to the infrastructure.
- 4. Configure the VLAN on the trunk line to the server.
- 5. Configure a new port group on the server.
- 6. Install the OVF template on the server.
- 7. Adjust the computer network in the virtual machine.
- 8. Switch on the virtual machine.
- Reboot the virtual machine to correctly load the network settings.

4.6 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 to the Windmöller & Hölscher data center is established.
- The Power LED (1) lights up blue. If the Power LED lights up red, there was a problem when booting up or the security gateway is in maintenance mode.
 Contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The green LED of WAN port (2) lights up as soon as the connection to the infrastructure computer network has been established. The green LED of the WAN port blinks when there is data traffic. If the green LED of the WAN port does not light up, check the cable





4 Virtual appliance | 4.6 Commissioning the security gateway

connection at the local area network switch. If necessary, the local network specialist must enable the WAN port in the computer network switch.

- The Internet LED (3) lights up blue. If the Internet LED blinks, there is no connection to the Internet.
 Contact your local network specialist. If necessary, contact the Windmöller & Hölscher Information and Diagnostic Center.
- ⇒ The green LED of LAN port 4 (4) lights up as soon as the connection to the computer network of the server's infrastructure has been established. The green LED of LAN port 4 blinks when there is data traffic. If the green LED of the LAN port does not light up, check the cable connection to the server, remove the plug and reconnect it, if necessary. The server must be switched on and booted up at this point in time.
- ⇒ The procedure is complete as soon as the status LEDs light up after approximately 60 seconds and when the server is switched on.

5 | Connecting the extrusion line

A DANGER

Current

Contact with live parts may lead to life-threatening injuries, and even death.

• The work on the terminal box or switch cabinet must only be carried out by an electrically skilled person.

The network cable for the service PC (1) is required for 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 computer network using a network cable.
- Contact the Windmöller & Hölscher Information and Diagnostic Center to add the line to the RUBY user interface.



23 / 31

6 Logging in to RUBY

6 | Logging in to RUBY

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

https://hostname.domain

1. 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

- 2. Change the password after having logged in for the first time.
- 3. If you have any questions, contact the Windmöller & Hölscher Information and Diagnostic Center.

7 | Service contact

Email

ruby-support@wuh-group.com

Service hotline

+49 (0) 5481 – 14 3333

7 |

8 | Technical notes

8.1 Network requirements

The network requirements are necessary for system operation.

Internet access	Fast Internet connection	At minimum 16 MBit
Network connection	Fast Ethernet connection	At minimum 100 MBit
Remote access	Pre-defined	Security gateway
Security gateway Required outgoing ports for Wind- möller & Hölscher remote mainte- nance	Port 500 Port 4500 Target: 193.25.209.5 Windmöller & Hölscher computer network for IPSec tunnel Port 257 Port 18191 Port 18192 Port 18200 Port 18264 Target: 193.25.209.8 Windmöller & Hölscher computer	UDP, IPSec tunnel to Windmöller & Hölscher TCP, management for RUBY secu- rity gateway
	network for managing the security gateway Port 5671	TCP, RabbitMQ to cloud for mobile
	Target: 20.101.86.101	
Incoming connection to the RUBY	Роп 443	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

8.2 Technical notes

Connecting the security gateway to	In order to connect the security gateway with the virtual appliance, a layer 2
the virtual equipment	connection is required between the security gateway and the virtual appli-
	ance. The virtual appliance is equipped with a virtual network interface card
	for the layer 2 connection.

	The virtual network interface card connects the virtual appliance to the cus- tomer network. The customer network is connected to Windmöller & Hölscher machines and browser-based access to RUBY.
	There are 2 computer network configuration versions.
Version 1 Windmöller & Hölscher recommends	Connect the security gateway to a free network interface of the host and create a new virtual network switch in the hypervisor.
version 1.	Assign the virtual network switch to the interface connected to the security gateway as a uplink.
	Connect the virtual network interface card of the virtual appliance to the vir- tual network switch.
Version 2	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.
	Label this VLAN on the uplink of the assigned hypervisor.
	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 inter- face card of the virtual appliance.

27 / 31



8.3 Hardware appliance



TIP

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





8.4 Virtual appliance with a dedicated port

TIP

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.

8 Technical notes | 8.5 Virtual appliance with a trunk port



8.5 Virtual appliance with a trunk port

TIP

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.

