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## W01/02PRI Installation Admin Guide - English

 This Admin Guide describes and explains how to connect and configure W01PRI and W02PRI media gateways.

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## Safety Recommendations and Location Requirements

### Safety Recommendations

- This equipment must be installed and maintained by service personnel. Incorrectly connecting this equipment to a general-purpose outlet could be hazardous
- When the gateway is brought from a cold to a warm environment, condensation, that might be harmful to the device, may occur. If this is the case, wait one hour before powering it
- W01/02PRI must be grounded at all times when in use
- The device must be installed on a circuit equipped with a breaker so that you can easily power the unit off if required
- The device should be located at 20 cm from your monitor, computer casing or other peripheral including speakers

- Do not work on W01/02PRI, connect or disconnect its cables during periods of lightning
- To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cords

## Location Requirements

To avoid premature aging of W01/02PRI, insure user security and facilitate access, upgrades and maintenance, the following instructions must be followed:

- Install W01/02PRI:
  - on a standard 48.26 cm equipment rack
  - on a flat surface (desk, table, etc)
- Install W01/02PRI in a well-ventilated location where it will not be exposed to high temperatures or humidity:
  - Storage temperature: -20 °C to +70 °C
  - Operating temperature: 0 °C to +40 °C
  - Humidity lower than 85 % and non-condensing
- Do not install the device in a location exposed to direct sunlight or near stoves or radiators. Excessive heat could damage the internal components
- The device should be positioned to be accessible for future upgrade, maintenance and troubleshooting and where cables can be easily connected
- Maintain a minimum of 25 mm clearance around the device
- Keep airflow around and through the vents of the unit clear of any obstruction

## W01/02PRI Overview

### Front panel



### LEDs

#	LED	Behavior	Condition
1	Power	Green, blinking, 1 cycle per second, 50% duty	Device is being restarted
		Green, steady ON	Device is restarted
		OFF	No current or failing power supply
2	Ready	Green, steady ON	All lines are enabled (operational state)
		Green, steady OFF	All lines are disabled (operational state)

		Blinking 1 cycle per 4 seconds, 75% duty	One line is enabled and one line is disabled (operational state)
4	In-Use	OFF	Lines idled and unlocked
		Yellow, steady ON	Lines in use and unlocked
		Yellow, blinking yellow, 1 cycle per second, 50% duty	Locked
7	IN-USE	Amber, steady ON	Indicates that the PRI port is in use
		OFF	Indicates that the PRI port is not connected
8	LINK	Green, steady ON	Indicates that the PRI port is well connected
		OFF	Indicates that the PRI port is not connected
10	ERROR/TROUBLE	Red, steady ON	Indicates that the PRI port is not working properly
		OFF	Indicates that the PRI port is working properly
13	ETH1 - Right LED (activity)	Green, blinking, variable rate	Network traffic
		Green, steady ON	No network traffic
		OFF	Not connected
13	ETH1 -Left LED (speed)	OFF	10 Mbps
		Green	100 Mbps
		Yellow	1000 Mbps
14	ETH2/3/4/5 -Right LED (activity)	Green blinking, variable rate	Network traffic
		Green, steady ON	No network traffic
		OFF	Not connected
14	ETH2/3/4/5 -Left LED (speed)	OFF	10 Mbps
		Green	100 Mbps
		Yellow	1000 Mbps

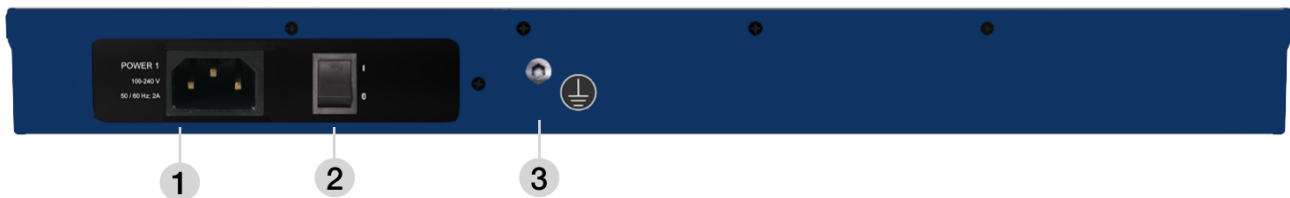
## Switches

#	Switch	Description
3	Reset/Default	Allows setting the device to default (known) values. Refer to <a href="#">Reset of the Gateway</a>

## Connectors and ports

#	Connectors /ports	Description
5	SYNC IN	8 KHz TDM synchronisation pulse input
6	SYNC OUT	8 KHz TDM synchronisation pulse output
9	PRI port	RJ-45 connector for ISDN-PRI connectivity
13	ETH1	A 10/100/1000 BaseT Ethernet RJ-45 connector for access to a LAN, WAN or computer. This port is by default used for uplink / WAN connection
14	ETH2-ETH3-ETH4/ETH5	10/100/1000 BaseT Ethernet RJ-45 connector for access to a LAN, WAN or computer. These ports are used by default for LAN connections

### Rear panel



#	Description
1	POWER connector
2	Power switch
3	Grounding screw

## Installation of W01/02PRI

- Install the device on a flat surface or in an equipment rack
- Connect the Telephony Interface Cables. Refer to [this Chapter](#)
- Connect the Ethernet Cables. Refer to one if these Chapters:
  - Using W01/02PRI on the Edge
  - Connecting W01/02PRI using DHCP Server
  - Connecting W01/02PRI using a static IP address

### Using W01/02PRI on the Edge

#### Before You Start

- Your computer must be set to use the 192.168.0.11 private IP address
- Make sure that your network connection is working

#### Steps:

- Connect a 10/100/1000 BaseT Ethernet RJ-45 cable into the ETH5ETH5/EXT Ethernet connector of the device
- Connect the other end of the cable into your PC
- Validate the installation
- Turn ON the power sources that are used to power the device at the circuit breaker
- Turn On the power switch of W01/02PRI

#### Result

You can now use the 192.168.0.10 IP address to access the device's management interface.

### Connecting the Telephony Cables

- Make sure the circuit breakers of AC power sources used to power the device are OFF
- Make sure the provided power cable is connected to the device and in an appropriate AC electrical outlet
- Connect a PBX or ISDN line to the PRI port

### Connecting W01/02PRI using DHCP server

Before you start:

- Make sure that your network connection is working
- You must use an IPv4 Network
- The IPv4 Network must have a DHCP server
- If you do not have access to the DHCP server's logs, then follow instructions described in [Connecting W01/02PRI using a static IP address](#)

#### Steps

- Connect a 10/100/1000 BaseT Ethernet RJ-45 cable into the ETH1 connector of the device
- Connect the other end of the cable to a router/switch connected to your Network
- Validate the installation
- Turn on the power sources that are used to power the gateway at the circuit breaker
- Turn on the power switch of the PRI gateway
- Consult the DHCP server's logs to find out your IP address

#### Result

The Power LED on the device will be flashing when the device performs a DHCP server query. It will become solid once it successfully gets an IP address from the DHCP server. At this point, you can now use the DHCP IP address to access your device's management interface.

### Connecting W01/02PRI using a static IP address

Before you start:

- Your network interface must be set with an IP address in the 192.168.0.0/24 subnet (e.g. 192.168.0.11)
- You must use an IPv4 Network
- Make sure that your network connection is working

#### Steps

- Connect a 10/100/1000 BaseT Ethernet RJ-45 cable into the ETH5ETH5/EXT Ethernet connector of the device

- Connect the other end of the cable into your PC
- Validate the installation
- Turn on the power sources that are used to power the PRI gateway at the circuit breaker
- Turn on the power switch of the PRI gateway

## Result

You can now use the 192.168.0.10 IP address to access your device's management interface.

## Configuration of W01/02PRI

Follow our [online Guide](#) to provision the PRI gateway.

For remote/ unreachable media gateways behind NAT/ Firewall, follow our [online Guide about remote provisioning](#).

Trunk parameters: [Trunk Settings Guide](#), [BRI/ PRI Trunk Settings](#).

## Firmware upgrade

Starting from WMS v. 5.01.20200508.1, PRI media gateways are directly upgraded via internet connection to firmwares.wildix.com or custom server defined in WMS [Settings](#) -> *Tools and utilities* -> *Upgrade* -> *Custom firmware server*.


- Media gateway must have access to the Internet to get a new firmware
- If there is no Internet access and media gateways provisioned to HW/ VM PBX, enable the option *Enable routing eth0* in WMS [Settings](#) -> *System* -> *Network*

Starting from PRI firmware version 44.1.1605 and higher, upgrade is performed via single firmware (binary) file. If you have media gateways with version 42.2.XXX and lower, proceed with the following steps:

1. Manually upgrade devices to version 43.1.1264 (steps are described in [How to manually upgrade W01-W02PRI 2017](#))
2. Within half an hour, media gateways are automatically updated to the latest firmware version 45.1.1870

Otherwise, skipping the upgrade to 43.1.1264 can lead to infinite transferring of configuration scripts.

## Logging on to the PRI gateway Web Interface

 Note: Access W01/02PRI web interface via https only.

- In your web browser, enter the IP address used by your device to communicate with the Management Interface
- If your computer is connected to the Ethernet port, commonly used to be connected to the LAN, i.e. ETH2 on most devices, use the 192.168.0.10 IP address
- If your device is configured to use a DHCP with IPv4, use the DHCP- provided IP address

- Enter "*public*" as your username and leave the password field empty



Note: After provisioning, use these credentials:

- login: public
- password: use the one indicated in the field "Password" in WMS -> *Devices*

- Click **Login**

## Troubleshooting

Problem	Cause
Unable to contact the Management Interface	Wrong Eth port used for the Network configuration (Consult <a href="#">Using W01 /02 PRI on the Edge</a> or in the LAN with or without a DHCP server)
Unable to contact the Management Interface via the CLI	<ul style="list-style-type: none"> <li>• CLI service not activated in the configuration</li> <li>• Protocol used to contact the CLI not activated</li> </ul>
Unable to contact the unit via SNMP	<ul style="list-style-type: none"> <li>• SNMP service not activated</li> <li>• Credentials do not grant access</li> </ul>
Unable to make calls, although cards appear in the Management Interface	Hour and date are not synchronized (required by certificates)

### LED Patterns

LED state	Description
All LEDs cycling from left to right, individually blinking 1 cycle per second, 33% duty	A firmware pack is being downloaded into the PRI gateway and written to persistent storage
All LEDs blinking at 3 cycles per second, 50% duty. One LED out of two has a 180 degree phase. This pattern lasts for 8 seconds	The download of the firmware has failed. After 4 seconds, the device restarts
Power1 or 2 and Ready LEDs blinking (synchronized) 1 cycle per second, 75% duty.	The partial reset is completed
Power LED blinking, 1 cycle per 4 seconds, 75% duty	Triggered when the device is booting on the recovery bank and no update is pending
Power LED blinking green 3 cycles per second, 50% duty.	Waiting for DHCP (IPv4 or IPv6) answer or IPv6 router advertisement or PPPoE connection. No IP Address configured
Ready LED OFF, all other LEDs cycling from right to left, left to right.	The device tries to download and install a firmware given by the Network Rescue server

## Reset of the Gateway

The Reset/Default switch can be used to perform a partial or factory reset while the PRI gateway is running.

In other words, the Reset/Default switch can be used to:

- Cancel an action that was started
- Revert to known factory settings if the device refuses to work properly for any reason or the connection to the network is lost
- Reconfigure the device

The Reset/Default switch will generate different actions depending on the amount of time the button is held.

Pressing Time	Action	Comment	LED Pattern
2 to 6 seconds	Restarts W01/02PRI	No changes are made to device's settings	Power1 blinking, all other LEDs OFF
7 to 11 seconds	Initiates a Partial Reset of the device	Restarts the device in a known and static state while keeping most of the configuration unchanged	All LEDs blinking, 1 cycle per second, 50% duty
12 to 16 seconds	Initiates a Factory Reset of the device	Reverts the device back to its default factory settings	All LEDs steady ON
17 seconds and more	No action is taken. This is useful if you accidentally pushed the button and do not need an action to be applied	The action is ignored	N/A

### Partial Reset

The partial reset provides a way to contact W01/02PRI in a known and static state while keeping most of the configuration unchanged.

A partial reset can be performed at the initial start-up of the device or on a device already in use where the configuration was modified in such a way that the user can no longer access the system by the web page or otherwise. In both cases, the user will access the Rescue Interface with the Rescue Network Interface using either a static IPv4 address (192.168.0.1) or an IPv6 Link Local address connection. These connections give access to the Rescue Management Interface where the configuration of a new unit can be completed and where an existing configuration can be modified.

By default the Rescue Network Interface is disabled. When a partial reset is performed, the Rescue network Interface becomes enabled. Once the configuration has been modified to solve the problem that required the partial reset, it is important to access the Management interface using the Network Interface Configuration defined for your set-up, and to disable the Rescue Network Interface to make sure that you are no longer working in the Rescue Network Interface.




Performing a partial reset on a new device will not modify the configuration, as it has not yet been modified to your needs. However, a partial reset performed on a device already in use will:

- Cancel the changes that were being modified but not yet applied to the configuration
- Disable any Network Interface in conflict with the Network Rescue Interface
- Configure and enable the Rescue Network Interface to:
  - use the Eth1 link, or the same link as the one used by the Uplink Network Interface
  - set the IP address to 192.168.0.1 and the Network Mask to 255.255.255.0
  - set the IPv6 link-local address on all network links. The IPv6 link-local address can be found underneath the unit


A partial reset will also modify the following parameters to their default value:

Service	Parameter	Default Value
AAA	Users.Password	User(s) from profile are restored with their factory password. All other usernames keep their password.
	Users.AccessRights	User(s) from profile are restored with their factory rights.
	ServicesAaaType (table)	Each service will be configured to use Local authentication and no accounting mechanism.
CLI	EnableTelnet	Disable
	TelnetPort	23
	EnableSsh	Enable
	SshPort	22
HOC	ManagementInterface	Lan1
SNMP	EnableSnmpV1	Disable
	EnableSnmpV2	Disable
	EnableSnmpV3	Enable
	Port	161
Web	ServerPort	80
	HTTPMode	Both
	SecureServerPort	443

 **Note:** It is not recommended to access the device on a regular basis through the Rescue Network Interface.

### To perform Partial reset:

- When the Power LED is steady or blinking rapidly, insert a small unbent paper clip into the Reset/Default switch located at the front of the device

 Note: The Power LED will start blinking.

- Wait a few seconds
- When all LEDs are blinking, but before they stop blinking, remove the paper clip

 Note: You have between 7 to 11 seconds.

### Result

The Rescue Network Interface is displayed when accessing the Management Interface. Several parameters and services are modified.

### Finally

Remove the changes in your configuration that caused the system to no longer respond, and do not forget to disable the Rescue Network interface ( Network/ Interfaces/ Rescue Network Configuration table).

### Factory Reset

The Factory reset reverts W01/02PRI back to its default factory settings.

It deletes the persistent configuration parameters of the device, including:

- User files stored in the File service
- Certificates, except for factory installed ones
- Log files of the File service

The Factory reset should be performed with the device connected to a network with access to a DHCP server. If the unit cannot find a DHCP server, it will sent requests indefinitely. A Factory Reset can be triggered either:

- Directly on the device
- Via the web interface of the device (*Management -> Firmware Upgrade*)
- Via the Command Line Interface of the PRI gateway by using the `fpu.defaultsetting` parameter

### To perform Factory reset:

- Power W01/02PRI Off
- Insert a small, unbent paper clip into the Reset/Default hole located at the rear panel of the device
- While pressing the Reset/Default button, restart the device
- Do not release the Reset/Default button before the LEDs stop blinking and are steadily ON. This can take up to 30 seconds
- Release the paper clip

### Result

All configuration parameters are reset to their default value. When W01/02PRI has finished its provisioning sequence, it is ready to be used with a DHCP server provided IP address and MIB parameters. This procedure can also be performed at run time.

### Disabling the Rescue Interface

By default the Rescue interface is disabled. However, after a partial reset the rescue interface is enabled.

- Go to Management -> Misc
- From the Network Interface drop-down menu, select the interface that will be used to manage the unit



Note: If you keep the Rescue Interface selected, you will not be able to get into the management interface after disabling it.

- Go to Network -> Interfaces
- In the Rescue Interface table, from the Activation selection list, select Disable
- Click **Apply**

### Result

The unit will be reachable on the new static IP address configured.

Rescue Network Configuration			
Family	Link	IP Address	Activation
IP version 4	eth1	192.168.0.1/24	Disable ↕
IP version 6	All	fe80::0290:f8ff:fe0b:c264	