UPS Interface Expander 2 (AP9624)
Frequently Asked Questions

Summary

UPS Interface Expander 2 (AP9624) is compatible with most of SmartSlot UPSs less than or equal to 30kVA. It replaces the 2-port Serial Interface Expander SmartSlot Card (AP9607) & Interface Expander with 2 UPS Communications Cable SmartSlot Card (AP9607CB).

This FAQ document provides answers to commonly-asked questions regarding the serial interface expander offer supporting SmartSlot enabled Smart-UPS & Symmetra UPS (Power Array, LX, RM range) and its capabilities.
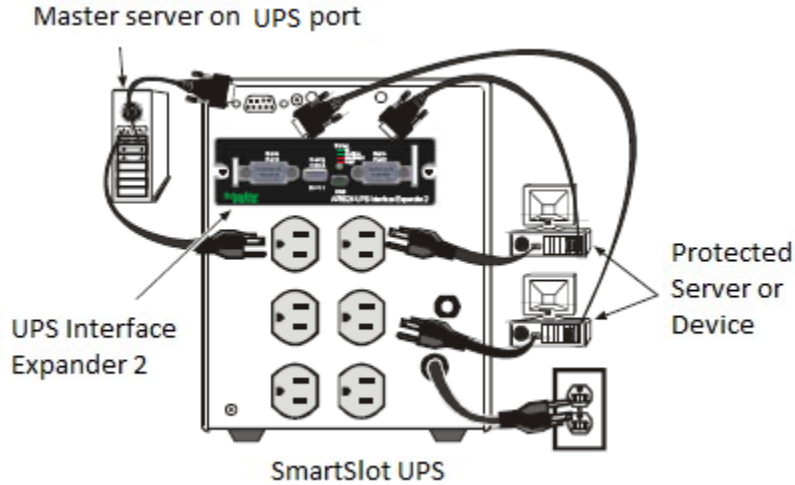
Questions

![APC by Schneider Electric logo]

What is the UPS Interface Expander 2 (AP9624) used for?

UPS Interface Expander 2 (AP9624) enables shutdown of 2 additional secondary devices such as Servers, Network storage devices over serial communication, powered by a SmartSlot UPS.

Typical setup is as shown below,

How do UPS Interface Expander 2 (AP9624) and 2-port Serial Interface Expander SmartSlot Card (AP9607) differ?

FEATURE	AP9607	AP9607CB	AP9624
Compatible with SMT, SMX* and SURTD Smart-UPS	✘	✘	✔
Ships with serial cables bundled	✘	✔	✔
Documentation available in English and Japanese & ships bundled with the SmartSlot Card	✘	✘	✔

* AP9624 supports all SmartSlot UPSs, without the need for Legacy Communication Card (AP9620)

How does AP9624 differ from AP9607 in physical appearance and connectivity?

2-port Serial Interface Expander SmartSlot Card (AP9607)	UPS Interface Expander 2 (AP9624)

Front panel consists of,
    a.   2 serial monitoring ports,
    b.   4 configuration DIP switches &
	Front panel consists of,
	    a. 2 serial monitoring ports,
	    b. 4 configuration DIP switches &

2

c. 1 status LED	c. 1 status LED
	d. **an additional USB mini B port**
	2 Simple signaling cables to ship with the SKU.
No firmware upgrade support	USB mini B port available for upgrade of AP9624 firmware
Single color Status LED	Multi-color (RED & GREEN) Status LED with simplified status description as provided in the User Manual (shipped with AP9624 and also available online here)

What are the main additional benefits of AP9624?

The main additional benefits of UPS Interface Expander 2 (AP9624) compared to AP9607 are as follows,

1.   Single SKU that supports all SmartSlot UPSs, comes bundled with serial cables & documentation in English & Japanese for a better user experience

2.   Hot-swappable and supports on-field upgrade of the UPS Interface Expander 2 (AP9624) firmware.

Are there any changes in shutdown modes in comparison to AP9607?

There are NO changes in shutdown modes in comparison to AP9607/AP9607CB, which are,

a.   *Confirmed*: Interface Expander shuts down the UPS after all connected servers have signaled that they have completed shutdown of the operating system (with option to treat server on UPS port as either of always confirmed or not). **Note**: Confirmed mode is not to be used, if any server connected to the Interface Expander ports or the UPS port is incapable of sending a shutdown confirmation signal.

b.   *Until Low Battery*: On detecting a UPS Low Battery condition, it sends a Low Battery signal on all ports for a period of time equal to the Low Battery Signal Time and then shuts down the UPS.

c.   *Timer*: Interface Expander allows the UPS to operate on battery for a user-specified length of time before shutting down the UPS.

How do I configure my AP9624?

The UPS Interface Expander 2 (AP9624) provides 3 shutdown modes as listed above, which can be selected using the DIP switches available on the front panel of the SmartSlot Card. Further details of shutdown modes such as DIP switch settings are provided in the manual, titled "*UPS Interface Expander 2*", available for download in the "*Manuals and Warranties*" section of the "*Documentation*" tab here.

Additionally, it's recommended to use PowerChute Business Edition in conjunction with the UPS Interface Expander 2 (AP9624). The Master Server connected to the UPS port has PowerChute Business Edition installed and communicates via smart signaling[1]. Additionally, if graceful shut down of two other servers is required, then PowerChute Business Edition is installed on them that communicate with the UPS Interface Expander 2 using the simple signaling cables that come with it.

Typical setup is as below,

---

[1] Choose the appropriate UPS Communications Signaling cable here.
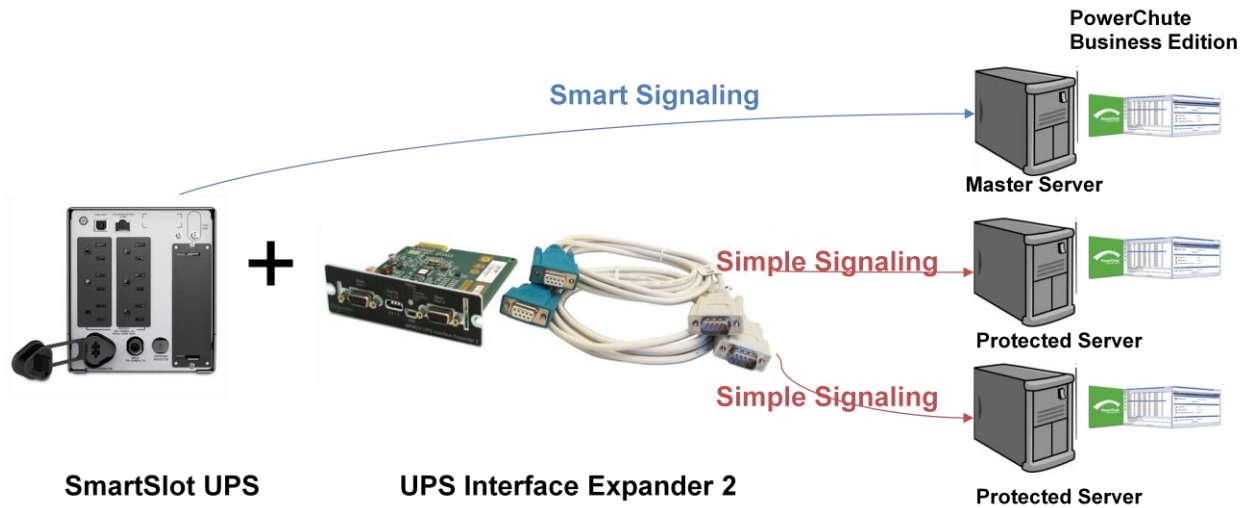
Note: For the sake of this FAQ, 'Protected Server' refers to additional secondary servers that are shutdown serially by the UPS Interface Expander 2.

Can we connect Master Server to UPS via a USB cable?

Yes, USB connection implies smart signaling to the Master Server.

How can we verify the signaling type used for the connection between UPS and Servers (Master and Protected)?

Signaling type can be determined from the cable being connected to the UPS from the server.

- Using USB connection implies smart signaling,
- Among the serial connections, 940-0024x / 940-1524x and 940-0625x / 940-1525x are smart serial connections and 940-0020x and 940-0128 are simple signaling connections.

Note: The cables supported by the UPS Interface Expander to connect to protected servers are listed at the end of this FAQ.

PowerChute Business Edition (PCBE) console can also be used, if you wish to select the signal type (among those supported for your configuration).

For PCBE v9.0.3 agent, there is a screen to select the signal type in the Console, located here, Server Shutdown ---> System Settings Screen ---> Communication Type ---> Signaling Type Entry "Simple with Interface Expander".

Additionally, the following table summarizes the signaling supported for various combinations of PCBE agents and Smart-UPS used.

Smart-UPS	Connection	PCBE v9.0.3	PCBE v9.1.1
SMT, SMX, SURTD, SRT	USB		Smart
SMT, SMX, SURTD, SRT	Serial	Simple	Smart
Other Smart-UPS	USB	Smart	
Other Smart-UPS	Serial	Smart/Simple	

Can we change the OS Duration time (the time until OS is shutdown) on the Protected Server?

No, by default this duration is set to five minutes (300 sec).

Is the OS Duration time (the time until OS is shutdown) on the Protected Server changed according to the value configured in the Master Server?

No, the shutdown duration of the Protected Server is independent of the Master Server. PCBE Agents do not support inter-agent communication.

By default, the Low-Runtime-Remaining Threshold (used by a smart-signaling UPS) and the Low-Battery Threshold (used by a simple-signaling UPS) are both set to five minutes (300 seconds). This ensures that a shutdown begins when 5 minutes of runtime remains in the UPS, regardless of the Power Failure setting.

However, if the combined time for the OS shutdown delay and OS shutdown duration exceeds 5 minutes, then both these thresholds will use this longer time period.

Therefore, on a protected server (where PCBE 9.0.3 Agent is installed) 5 Minutes of runtime is minimum amount of runtime at which a Shutdown will begin. This value is not affected by changing the OS Shutdown duration on the Master Server (where PCBE 9.1.1 Agent is installed).

When the Protected Server shuts down, the event "Power Failure" and "Low Battery Condition" are logged. Is this by design?

Yes, these events logged have no implication on the protected server and are part of internal housekeeping operation. Also, note that these events are logged even in the case of Master server scheduled shutdown.

How can we check the firmware version of UPS Interface Expander 2?

Following are the ways to determine the firmware version of the UPS Interface Expander 2:

For SMT, SMX UPS: If the UPS has an LCD display (such as SMT & SMX UPSs), then the firmware version of the accessory card will be available under the "About" menu.

For other Smart-UPS: Attaching a serial UPS-Link cable (940-0024x or 940-1524x, not provided with IE2 but ships with Smart-UPS, excl. SMT, SMX, SRT) and hitting enter at 2400 baud (8-N-1) will show the card's firmware version as part of the start for the firmware update process (the process will time-out or can be aborted).

What additional capabilities does PowerChute Business Edition provide?

PowerChute Business Edition software provides UPS management, safe system shutdown and innovative energy management capabilities. In the event of an extended power outage, graceful unattended shutdown ensures no information is lost and time to recovery is minimized. Energy cost and CO_2 reporting provides greater understanding of the energy

5

consumed by IT equipment enabling improved energy efficiency. Highly valued risk assessment reports detect potential threats to availability while advanced analysis features help to identify the causes of potential UPS and power related problems before they occur, ensuring the health of your system.

What cables are to be used with UPS Interface Expander 2 (AP9624)?

The cables to be used depend on the systems supported by the UPS Interface Expander 2. Please refer to the table below to use (if available) or order the suitable cable as per your requirement,

IF you want to connect the Interface Expander 2 to a…	THEN use or order	Part Number
Windows server	Simple Signaling Cable	940-0020 cables (included)
UNIX server	UNIX basic Signaling Cable	AP9823
10 or 15-ft extension cable	UPS Interface Extension Cable	AP9815
25 or 50-ft extension cable	Isolated Extension Cable	AP9825

Where can I purchase UPS Interface Expander 2 (AP9624)?

The UPS Interface Expander 2 will be available worldwide. Please contact your regional APC distributor to purchase the SKU. You can also purchase the SKU online from the SKU webpage, if enabled for your region. Please check here for online availability on the APC website.