SnapAV WattBox Integration Protocol Document
Integration Protocol v2.4 rev20210527

Overview

This integration protocol details how a third-party system can be used to control a SnapAV WattBox. With the WattBox online, the integration protocol will be listening for connections on port 23 or SSH on port 22 at the controllers IP address. To get started, netcat or similar software can be used to initiate a connection and test any of the following protocol commands below.

Important information:
The SSH feature was added with firmware 1.3.0.4. To connect with SSH you will need at least firmware version 1.3.0.4.
Only 10 simultaneous connections can be made at a time.

Authentication

The protocol requires authentication before proceeding with commands. Once connected, a login prompt will be received and the third-party system must provide a valid username and password. If correct, login will be successful and other commands can be issued. If incorrect, the third-party system will be prompted for login again.

Important information:
If using SSH, you will need to set a new password for the WattBox. There is a 13-character limit on passwords used for SSH user credentials.

Specification

> THIRD-PARTY SYSTEM <--> SnapAV WattBox
> i.e. Wattbox IP: 192.168.0.20 Port: 23

Integration

Message Structure
Command and response messages are standard ASCII text.
? – Request message
! – Control message
- Error message
~ - Unsolicited message
\n – End of command message, ASCII hex: 0x0A dec: 11

Protocol

Protocol Command	Description/Response
?Firmware\n	Request Firmware Version. Response: ?Firmware=1.0.0.0\n

?Hostname\n	Request Hostname. Response: ?Hostname=Wattbox\n
?ServiceTag\n	Request the unit's Service Tag. Response: ?ServiceTag=ST191500681E8422\n
?Model\n	Request Model Number. Response: ?Model=WB-800-IPVM-6\n
?OutletCount\n	Request Outlet Count. Response: ?OutletCount=16\n
?OutletStatus\n	Request Outlet States. Response: ?OutletStatus=0,0,0,0,0,0,0,0,0,0,0,0\n Where the array index is the outlet number and the value at the index indicates state. 0 for off, 1 for on.
?OutletPowerStatus=OUTLET\n Where OUTLET is the Outlet number.	Request Outlet Power Status for a specific outlet. *NOTE: Not supported on WB150/250.* Response: ?OutletPowerStatus=1,1.01,0.02,116.50\n Where 1 is the outlet index you requested, 1.01 is the power in watts, 0.02 is the current in amps, and 116.50 is the voltage in volts.
?PowerStatus\n	Request Power Status for the system. *NOTE: Not supported on WB150/250.* Response: ?PowerStatus=60.00,600.00,110.00,1\n Where 60.00 is the current in amps, 600.00 is the power in watts, 110.00 is the voltage in volts, and 1 is the safe voltage status.
?AutoReboot\n	Request Auto Reboot Status for the system. Response: ?AutoReboot=1\n Enabled = 1 Disabled = 0
?OutletName\n	Request Outlet Names for all outlets. The names will be sent with brackets around every NAME and comma delineated between each set. Response: ?OutletName={Outlet 1},{Outlet 2},{Outlet 3},{Outlet 4},{Outlet 5},{Outlet 6},{Outlet 7},{Outlet 8},{Outlet 9},{Outlet 10},{Outlet 11},{Outlet 12}\n
!OutletNameSet=OUTLET,NAME\n	Request to change the name of a specific outlet. Response:

Where OUTLET is the outlet number and NAME is the new name.	OK\n
!OutletNameSetAll={NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME},{NAME}\n Where NAME is the new name.	Request to change the names for every outlet. Order matters and starts with Outlet 1. The brackets are required around every NAME with commas in-between each set. Response: OK\n
?UPSStatus\n	Request UPS Status if there is a UPS attached. Response: ?UPSStatus=50,0,Good,False,25,True,False\n Where 50 is the battery charge perecentage, 0 is the battery load as a percentage, Good indicates battery health, False indicates power lost, 25 indicates battery runtime in minutes, True indicates alarm enabled, False indicates alarm muted. Battery Charge: 0-100% Battery Load: 0-100% Battery Health: Good/Bad Power Lost: True/False Battery Runtime: Number in Minutes Alarm Enabled: True/False Alarm Muted: True/False
?UPSConnection\n	Request UPS Connection to find out if a UPS has been attached to the wattbox. Response: ?UPSConnection=0\n Disconnected = 0 Connected = 1
!OutletSet=OUTLET,ACTION,DELAY\n Where OUTLET is the outlet number and ACTION is ON/OFF/TOGGLE/RESET. If action RESET, an optional third parameter is provided for delaying the reset by x amount of seconds.	Request to set a specific outlet to a new state. RESET does adhere to power on delay but one may override that value by passing a third optional parameter for DELAY. This delay must be in seconds and ranges from 1 – 600 seconds. To reset all outlets, set OUTLET to 0 and action to RESET. Response: OK\n
!OutletPowerOnDelaySet=OUTLET,DELAY\n	Request to set the power on delay for a specific outlet. The power on delay is in seconds and accepts values between 1 and 600. Response: OK\n

Where OUTLET is the outlet number and DELAY is the time in seconds.	
!OutletModeSet=OUTLET,MODE\n Where OUTLET is the outlet number and MODE is the new mode represented as a number.	Request to set a specific outlet to a new operating mode. Reference the below table to determine the mode and send the corresponding number value. Any number sent outside of this range will be rejected. Enabled = 0 Disabled = 1 Reset Only = 2 Response: OK\n
!OutletRebootSet=OP, OP, OP, OP, OP, OP, OP, OP, OP, OP, OP, OP\n Where OP is the reboot operation taken during a host reboot.	Request to change the reboot operation of an outlet when a host goes offline and triggers a reboot. Reference the below table to determine the mode and send the corresponding number value. Any number sent outside of this range will be rejected. (Any selected hosts time-out) Or = 0 (All selected hosts time out) And = 1 Response: OK\n
!AutoReboot=STATE\n Where STATE is 1 for enabled or 0 for disabled	Request to set auto reboot to a new state. Response: OK\n
!AutoRebootTimeoutSet=TIMEOUT,TIMEOUT,PING_DELAY,REBOOT_ATTEMPTS\n Where TIMEOUT is a number value in seconds, COUNT is a number value, PING_DELAY is a number value and REBOOT ATTEMPTS is a number value.	Request to change the timeout settings for the device. Reference the below table for valid range values. Timeout [1-60] – Select a value between 1 and 60 seconds. This is the amount of time the device will wait before timing out a host. Count[1-10] – Select a value between 1 and 10. This is the number of consecutive time-outs that must occur before triggering auto-reboot. Ping Delay [1-30] - Select a value between 1 and 30 minutes. This is the amount of time the device waits to retest the connection after auto-rebooting. Reboot attempts [0 = unlimited, 1-10] - Select a value between 0 and 10. This is the number of times the device will auto-reboot. 0 represents infinite reboots. Response: OK\n
!FirmwareUpdate=URL\n	Update firmware for the device. This API will respond OK right before the system shuts down. The client will loose the connection to the device until the device is back online.

Where URL is the full path to the upgrade file.	Response: OK\n
!Reboot\n	Request to reboot the device immediately. The client will loose the connection to the device until the device is back online. Response: OK\n
!AccountSet=USER,PASS\n Where USER is the username and PASS is the password.	Request to change the login credentials for a given user and given password. If successful, the client will loose the connection and require a reconnect to login again. Invalidate usernames or passwords will be rejected. Response: OK\n
!NetworkSet=HOST,IP,SUBNET,GATEWAY,DNS1,DNS2\n Where HOST is the hostname, IP is the static address, SUBNET is subnet, GATEWAY is gateway, DNS1 is primary dns server, DNS2 is secondary dns server.	Request to change the network settings for the device. If setting DHCP, do not send IP,SUBNET,GATEWAY,DNS1,DNS2. If setting STATIC, IP,SUBNET,GATEWAY,DNS1 are required. DNS2 is optional and will be auto filled to 8.8.8.8 if nothing was entered. If the settings are valid, the changes will be made and the device will reboot. The client will loose the connection to the device until the device is back online. Please note the device may come back at a different IP address depending on the settings sent. Response: OK\n
!ScheduleAdd={NAME},{OUTLET, OUTLET,OUTLET},{ACTION},{FREQ},{DAY,DAY,DAY | DATE},{TIME}\n Where NAME is the schedule name, OUTLET is an array of outlet numbers, ACTION is the action performed, FREQUENCY is once or recurring, DAYS or DATE are the days for recurring or date for once, TIME is the time.	Request to add a schedule to the scheduled events for the device. Brackets are required around every value with a comma delimiter between each set. Parameter 2 is an array of outlets to indicate which outlets the ACTION will be performed on once the schedule is triggered. Reference the below table to determine the correct field and send the corresponding values. Values outside of any of these ranges will be rejected. Outlet = {1,2,3} Would tie outlets 1,2,3 to this schedule. Action - Off = 0 - On = 1 - Reset 2 Frequency - Once = 0 - Recurring = 1 If Recurring

	Days [s,m,t,w,t,f,s] – This is an array where the index indicates the day of the week and if the value at the index is a 0, the day is not included, if the value at the index is 1, the day is included. The following example will recur every Monday, Wednesday, and Friday. {0,1,0,1,0,1,0} If Once Date [yyyy/mm/dd] – {2018/09/28} Time [hh:mm] – 24-Hour based so 1:30pm would be represented as 13:30. Response: OK\n
!HostAdd=NAME,IP,{OUTLET,OUTLET}\n Where NAME is the host name, IP is the Website or IP address to be tested, and OUTLET is an array of outlet numbers.	Request to add a host to the list of hosts to be monitored by the device. Brackets are required around the outlets array. This array indicates which outlets should be tied to the host being added.
!SetTelnet=MODE\n Where mode is 0 for disabled, 1 for enabled.	Request to enable or disable the telnet service. A reboot is required for settings to take effect.
!WebServerSet=MODE\n Where mode is 0 for disabled, 1 for enabled	Request to enable or disable the web server. A reboot is required for settings to take effect. Requires WattBox firmware 2.0
!SetSDDP=MODE\n Where mode is 0 for disabled, 1 for enabled	Request to enable or disable SDDP broadcasting. Requires WattBox firmware 2.0
!Exit	Close the session gracefully.
#Error\n	Sent whenever an invalid command was received or an internal device error has occurred. Please see the device log page for further detailed error messages.

Example:

```
$ nc 192.168.26.27 23
Please Login to Continue
Username: wattbox
Password: wattbox
Successfully Logged In!
?Firmware
?Firmware=0.0.0.1
```