



Global API Features

- HTTP or HTTPS (HTTP by default)
- Basic Authentication supported
- Web session tokens supported using x-auth-token header
- Authentication is required for access to all API features.
- Although not part of the API, mDNS is supported for dynamic discovery.
- All response bodies are in JSON format.
- Every JSON body has an "objType" key, which is an identifier, the same as the main API extension
- Protocol versioning is built into the URI. Any feature breaking changes implemented in firmware will iterate this protocol versioning. Multiple protocol versions may be available at the same time. It will be explicitly clear in firmware upgrades if any version is deprecated, breaking any systems built upon them.
- Currently the only supported protocol version is v1 as defined in the following document.
- Any non-documented key/value pairs should be treated as for internal use only, and not modified by any party unless explicitly instructed by AMETEK



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Request	Current Status
Request Type	GET
URL	/api/v1/currentStatus
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/currentStatus HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	<pre>{ "model": "SX-DC-8-1224", "serial": "240320200000", "activeState": "Running", "objType": "currentStatus", "autoLogoutTime": 10, "activeUsers": 1, "MAC": ["0e:b3:3a:d5:a0:64"], "temperatureUnits": "F", "shutdownRequests": 0, "time": "2020-03-24T18:11:04Z", "firmware": "0.5.25384", "devices": [{ "nominalFrequency": 60, "deviceMeasurements": { "energyUsage": 1435072, "line1Line2": 118.300003, "temperature": 30.5, "measurementBanks": 0, "frequency": 60.188999, "surgeGood": true, "current": 6.01, "pf": 0.85, "outletCount": 6, "energyUsageTime": "2020-01-07T17:17:27Z", "crestFactorNG": 1.399999, "crestFactor": 1.389999, "voltageRating": 120, "voltageLN": 118.300003, "crestFactorLN": 1.389999, "line2Ground": 2.96, "inputState": ["No Ground"] } }] }</pre>

	<pre> "power": 777, "voltageNG": 2.96, "crestFactorNI": 1.389999 }, "groups": [{ "outlets": ["/1/1", "/1/2", "/1/3", "/1/4", "/1/5", "/1/6"], "id": "/1/10", "name": "All Outlets", "deviceType": "OutletGroup", "sysLocation": "", "connected": true, "tags": "", "alarmSeverity": {} }], "outlets": [{ "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, "id": "/1/1", "outputConfirmation": 3, "name": "Monitor", "physicalName": "AC Outlet 1", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 25, "outputVoltageType": "AC", "alarmSeverity": {} }, { "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, </pre>
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	<pre>"id": "/1/2", "outputConfirmation": 3, "name": "Apple TV", "physicalName": "AC Outlet 2", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 8, "outputVoltageType": "AC", "alarmSeverity": {} }, { "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, "id": "/1/3", "outputConfirmation": 3, "name": "Cable TV", "physicalName": "AC Outlet 3", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 8, "outputVoltageType": "AC", "alarmSeverity": {} }, { "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, "id": "/1/4", "outputConfirmation": 3, "name": "Codec", "physicalName": "AC Outlet 4", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 8, "outputVoltageType": "AC", "alarmSeverity": {} }, },</pre>
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	<pre> { "state": 1, "initialState": 3, "plugType": "TerminalBlock2", "lastState": true, "status": 1, "id": "/1/5", "outputConfirmation": 3, "name": "12V - Network Switch", "physicalName": "DC Bank 1", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 25, "outputVoltageType": "DC", "alarmSeverity": {} }, { "state": 1, "initialState": 3, "plugType": "TerminalBlock2", "lastState": true, "status": 1, "id": "/1/6", "outputConfirmation": 3, "name": "24V - Control System", "physicalName": "DC Bank 2", "deviceType": "Outlet", "sysLocation": "", "connected": true, "tags": "", "rebootTime": 25, "outputVoltageType": "DC", "alarmSeverity": {} }], "id": "/1", "nominalVoltage": 120, "name": "Default Squid Device", "deviceType": "SquidDevice", "sysLocation": "", "connected": true, "tags": "", "dataLogInterval": 10, "alarmSeverity": {} }] </pre>
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	}
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Description:

"**model**", "**serial**", and "**MAC**" are hardware descriptors. MAC is the MAC address of the ethernet port, and is a unique identifier, along with serial.

"**activeState**" describes the current state of the device. There are three possible returns: Start Up, Running, and Shutdown.

"**autoLogoutTime**" is the amount of time in minutes that a user will be allowed to stay logged into the web server.

"**activeUsers**" is the number of users actively logged into the web server.

"**temperatureUnits**" is the units used for temperature measurement in the unit. Either F for Fahrenheit, or C for Celsius.

"**shutdownRequests**" is a counter for the number of times the unit has been requested to enter a shutdown state.

"**time**" is the internal time of the Squid device.

"**firmware**" is the firmware version that is currently installed in the device.

"**Devices**" is a general array container. In this case, the only object is a "Squid" device.

"**nominalFrequency**" and "**nominalVoltage**" are software settings to let the device know what electrical service is supposed to be connected.

"**deviceMeasurements**" is a container for all of the power measurements.

"**energyUsage**" reports back the energy usage since last reset as defined by "energyUsageTime", in Watt hours (Wh).

"**line1Line2**" is the line 1 to line 2 voltage measurement in volts. Line 1 is the primary conductor, also called hot or line. Line 2 is the secondary conductor, usually neutral.

"**temperature**" is the temperature measurement, reported in units defined by "temperatureUnits".

"**measurementBanks**" is the number of output power measurements. Squid only contains an input power measurement.

"**frequency**" is the frequency measurement report in Hertz.

"**surgeGood**" describes the state of the surge protection. Surge good will remain at true as long as the surge protection fuse is intact.

"**current**" is the total AC current measurement in Amps. This includes any AC or DC loads, measured on the AC side. Losses in the AC/DC converters will also be measured since the measurement is on the AC side.

"**pf**" is the power factor of the unit. By definition, this measurement can be between -1 and 1, but should only be between 0 and 1 since we only intend Squid to be a power distribution device, thus power will only flow from input to output.

"**outletCount**" is the number of switchable outlets.

"**energyUsageTime**" is the time of the last reset to the energy usage counter.

"**crestFactorNG**" is the crest factor for the neutral to ground voltage. The typical value for this is 1.414, but ideally there would be no neutral to ground voltage.

"**crestFactor**" is the crest factor for the line to neutral voltage. The typical value for a pure sine wave is 1.414. There are no units for crest factor. The minimum value is 1, there is technically no maximum value.

"**voltageRating**" is the same as "nominalVoltage".

"**voltageLN**" is the same as line1Line2. This is the line to neutral voltage measurement in volts.

"**crestFactorLN**" is the same as "crestFactor". This is the line to neutral voltage crest factor calculation.

"**line2Ground**" is the line 2 to ground voltage measurement in volts. This is the same as the neutral to ground voltage measurement.

"**inputState**" will report any abnormality that is seen on the input power. Specifically, "No Ground", "Reverse Polarity", "Wiring Fault".

"**power**" is the average power measurement in watts.

"**voltageNG**" is the neutral to ground voltage measurement in volts.

"**crestFactorNI**" is the crest factor for the AC current measurement. The current measurement is measured on the neutral line. There are no units, and the minimum value is 1, with no maximum value.

"**groups**" is an array that allows for the creation of outlet groups, that can have action taken on them at the same time.

"**outlets**" array contains the ids for each outlet that is contained in the group.

"**id**" is the identifier that can be used to reference this specific group for control.

"**name**" is a user friendly descriptor for the group.

"**outlets**" is an array that contains the definitions for each outlet that is on the device.

"**state**" is the current outlet state, and has 3 possible returns: 0 is off, 1 is on, 2 is rebooting.

"**initialState**" is the state that the outlet will take upon start up, if the initial state setting is used under device settings. 0 is always on, 1 is always off, 2 is shutdown, 3 is on, 4 is off, 5 is last state.

"**plugType**" is the type of connector that is used for this outlet. This can be used to display a specific image.

"**lastState**" is a boolean data type that describes the last state of the outlet to be used when initial state is set to last.

"**id**" is the identifier that can be used to command the outlet to change state. The first number refers to the id of the Squid device, and the second number refers to a specific endpoint on the device to be controlled.

"**name**" is a user-friendly name used to reference an outlet. This name is user configurable.

"**physicalName**" is the fixed name of the outlet. This name cannot be changed.

"**deviceType**" describes what kind of device the JSON object describes.

"**rebootTime**" is the time delay between turning the outlet off and back on during a reboot command.

"**outputVoltageType**" is the type of voltage that is being controlled.

"**id**" is the indentified for the physical unit. This is the first part of the extention to control endpoints.

"**nominalVoltage**" is the typical voltage that is expected to be supplied to the unit.

"**name**" is a user-friendly name used to reference a physical unit.

"**deviceType**": "SquidDevice" will never change. The "deviceType" key describes the physical device, and may be used across future AMETEK SurgeX products to differentiate between different product types.

"**dataLogInterval**" is the frequency at which min, max, and average electrical data will be stored.

Request	Network Settings
Request Type	GET
URL	/api/v1/networkSettings
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/networkSettings HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	<pre>{ "ethInterfaces": [{ "mac": "AC:A6:67:00:00:07", "ifname": "eth0", "dns": ["10.214.96.10", "10.1.1.5"], "addr": "10.214.98.119", "dhcp": true, "mask": "255.255.240.0", "gw": "10.214.96.1", "bcast": "10.214.111.255"}], "udpDiscovery": { "enabled": true, "status": "enabled" }, "objType": "networkSettings", "ntp": { "enabled": false, "frequency": 0, "server": "pool.ntp.org", "status": "disabled", "tz": { "name": "Pacific/Niue" } }, "remoteShell": { "enabled": true, "ssl": false, "status": "enabled", "port": 23 }, "status": "connected", "hostname": "" }</pre>

	<pre> "httpd": { "enabled": true, "ssl": false, "status": "enabled", "port": "8080" }, "snmp": { "enabled": true, "status": "enabled", "communities": [{ "name": "public", "address": "10.214.98.152", "priv": "rw" }], "sendAuthTraps": true, "manualControl": true, "systemTriggers": true, "port": 161, "v3": [{ "name": "admin", "passphrase": "", "priv": "rw", "auth": "MD5" }], "traps": [{ "host": "10.86.13.171", "name": "public", "port": 162 }] }, "802_1x": { "enabled": true, "ifname": "eth0", "wpa_suppllicant": { "ap_scan": "0", "network": { "eapol_flags": "0", "anonymous_identity": "test", "key_mgmt": "IEEE8021X", "eap": "MD5", "ca_cert": "/opt/ametek/etc/wpa_cert.ca", "identity": "foo", </pre>
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	<pre>"password": "", "phase2": "autheap=MSCHAP ", "phase1": "peapver=auto" } } }</pre>
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Description:

"ethInterfaces" is an array of objects that describe each network interface. "eth0" is the name of the primary network interface using the ethernet jack on a Squid device.

"mac" is the MAC address of the interface. The OUI SurgeX uses is owned by the parent company Electronic Systems Protection Inc, and is "AC:A6:67".

"ifname" is the name of the interface. "eth0" corresponds to the Ethernet RJ45 connector on a Squid device. "usb0" corresponds to the USB OTG connection if used for local configuration, or a secondary ethernet/wifi adapter.

"dns" is an array of IP addresses that are the DNS servers. These can be set from a static configuration or be set through the DHCP process.

"addr" is the IP address of the adapter.

"dhcp" is a Boolean value that represents the state of the DHCP client: true is running, false is stopped.

"mask" is the subnet bitmask in the same notation as an IP address.

"gw" is the IP address of the gateway.

"bcast" is the broadcast IP address.

"udpDiscovery" is an mDNS (Bonjour) service that is used by the Squid discovery app, and any other mDNS enabled discovery utilities. This service runs on port 5353. This is the only discovery service, so if DHCP is enabled, it is suggested that mDNS stays enabled to be able to find the IP address of the device without using the USB port, or resetting to factory defaults. mDNS can be disabled without consequence.

"enabled" is a Boolean value that describes if the server is running or not.

"status" is a string that describes the state of the server. Typical responses are "enabled" or "disabled" but in the event of a server error, this could show here as well.

"ntp" is an object that describes the NTP or SNTP client (Network Time Protocol). This lets the device's internal time be updated by the specified server.

"enabled" is a Boolean value describing the client as running (true) or stopped (false).

"frequency" is the frequency at which the client tries to connect and update its time at the specified server.

"server" is the IP address or name of the NTP server. This is where the client will go to attempt to retrieve time updates.

"status" is a string that describes the state of the server. Typical responses are "enabled" or "disabled" but in the event of a server error, this could show here as well.

"tz" is an object that contains the timezone definition that is used to offset the time retrieved from the NTP server.

"name" is a string that is used to describe the timezone.

"status" describes the state of the main ethernet interface. "Connected" is the typical response, which shows that the interface has a network connection.

"hostname" is the hostname of the device.

"httpd" describes the state of the web server. This key will always be httpd, even if security is enabled.

"enabled" is a Boolean value that describes if the server is running or not.

"ssl" is a Boolean value that describes if security is enabled for the server or not.

"status" is a string that describes the state of the server. Typical responses are "enabled" or "disabled" but in the event of a server error, this could show here as well.

"port" is the port number that the web server is running on. Default is port 80, but this can be changed as desired.

"snmp" describes the state of the SNMP client. This client can be used in an SNMPv3 system with the correct configuration.

"enabled" is a Boolean value that describes if the client is running or not.

"status" is a string that describes the state of the server. Typical responses are "enabled" or "disabled" but in the event of an error, this could show here as well.

"communities" is an array of objects that describe the SNMP communities that are allowed to read and/or write to the device.

"name" is the name of the community that is used to read/write

"address" is an optional key that white lists certain IP addresses or hostnames. If this key is not there, then there is no filter. If this key has a value, then reading/writing is limited to that value.

"priv" are the privileges that this community has. Either read only ("ro"), or read/write ("rw").

"sendAuthTraps" is a Boolean value that describes if authentication failure traps will be sent or not.

"manualControl" is a Boolean value that describes if manual outlet control traps will be sent or not.

"systemTriggers" is a Boolean value that describes if trigger onset and clear traps will be sent or not.

"port" is the port number that the SNMP client is running on. Default value is 161.

"v3" is an array of objects that describe the v3 authorization configurations

"name" is the username for authentication

"priv" are the privileges that this community has. Either read only ("ro"), or read/write ("rw").

"auth" is the algorithm used for encryption. Options are "md5" or "des".

"traps" is an array of objects that describe trap listeners.

"host" is the IP address or hostname of the device that will receive traps.

"name" is the community name for access level.

"port" is the port number that the trap listener is listening on.

"802_1x" is an object that describes the 802.1X configuration for the Squid device.

"enabled" is a Boolean value that describes if 802.1X is active or not.

"ifname" is the name of the interface that is using 802.1X authorization.

"wpa_supPLICANT" is an object describing the wpa supplicant set up.

"network": {

"anonymous_identity" is the anonymous identity used during authentication.

"eap" is the encryption type used initially during authentication.

"ca_cert" is the file location of the CA certificate that will be used during authentication. All CA certs will live in the base directory "/opt/ametek/etc/".

"client_cert" is the file location of the client certificate that will be used during authentication. All client certs will live in the base directory "/opt/ametek/etc/".

"identity" is the identity that is used during certain EAP methods during authentication.

"phase2" is used for initial EAP methods that require secondary encryption during the second phase of authentication.

"phase1" is used to specify a version or type for the initial EAP method.

Request	Change Network Settings
Request Type	PUT
URL	/api/v1/networkSettings
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	<pre> PUT /api/v1/networkSettings HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== { "httpd": { "enabled": true, "ssl": false, "status": "enabled", "port": "8080" }, "ethInterfaces": [{ "ifname": "eth0", "dns": ["10.214.96.10", "10.1.1.5"], "addr": "10.214.98.119", "dhcp": false, "mask": "255.255.240.0", "gw": "10.214.96.1", "bcast": "10.214.111.255" }], "remoteShell": { "enabled": false, "ssl": false, "status": "disabled", "port": "23" } } </pre>
Example Response Body	

Description:

"ethInterfaces" is an array of objects that describe each network interface. "eth0" is the name of the primary network interface using the ethernet jack on a Squid device.

Request	Device Settings
Request Type	GET
URL	/api/v1/deviceSettings
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/deviceSettings HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	<pre>{ "squid": { "nominalFrequency": 60, "deviceMeasurements": { "energyUsage": 1483101, "line1Line2": 115.400001, "temperature": 29, "measurementBanks": 0, "frequency": 60.048999, "surgeGood": true, "current": 6.670000, "pf": 0.850000, "outletCount": 6, "energyUsageTime": "2020-01-07T17:17:27Z", "crestFactorNG": 1.399999, "crestFactor": 1.389999, "voltageRating": 120, "voltageLN": 115.400001, "crestFactorLN": 1.389999, "line2Ground": 0.219999, "inputState": ["No Ground"], "power": 739, "voltageNG": 0.219999, "crestFactorNI": 1.389999 }, "groups": [{ "outlets": ["/1/1", "/1/2", "/1/3", "/1/4", "/1/5", "/1/6"] }] } }</pre>

	<pre>"id": "/1/10", "name": "All Outlets", "deviceType": "OutletGroup" }], "outlets": [{ "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, "id": "/1/1", "outputConfirmation": 3, "name": "Monitor", "physicalName": "AC Outlet 1", "deviceType": "Outlet", "rebootTime": 25, "outputVoltageType": "AC" }, { "state": 0, "initialState": 5, "plugType": "IEC", "lastState": false, "status": 0, "id": "/1/2", "outputConfirmation": 3, "name": "Apple TV", "physicalName": "AC Outlet 2", "deviceType": "Outlet", "rebootTime": 8, "outputVoltageType": "AC" }, { "state": 0, "initialState": 5, "plugType": "IEC", "lastState": false, "status": 0, "id": "/1/3", "outputConfirmation": 3, "name": "Cable TV", "physicalName": "AC Outlet 3", "deviceType": "Outlet", "rebootTime": 8, "outputVoltageType": "AC" } },</pre>
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	<pre>{ "state": 1, "initialState": 5, "plugType": "IEC", "lastState": true, "status": 1, "id": "/1/4", "outputConfirmation": 3, "name": "Codec", "physicalName": "AC Outlet 4", "deviceType": "Outlet", "rebootTime": 8, "outputVoltageType": "AC" }, { "state": 1, "initialState": 3, "plugType": "TerminalBlock2", "lastState": true, "status": 1, "id": "/1/5", "outputConfirmation": 3, "name": "12V - Network Switch", "physicalName": "DC Bank 1", "deviceType": "Outlet", "rebootTime": 25, "outputVoltageType": "DC" }, { "state": 1, "initialState": 3, "plugType": "TerminalBlock2", "lastState": true, "status": 1, "id": "/1/6", "outputConfirmation": 3, "name": "24V - Control System", "physicalName": "DC Bank 2", "deviceType": "Outlet", "rebootTime": 25, "outputVoltageType": "DC" } }, {id": "/1", "nominalVoltage": 120, "name": "Default Squid Device", "deviceType": "SquidDevice", "dataLogInterval": 10</pre>
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	<pre> }, "sequences": [{ "steps": [{ "method": "/1/1/PowerOn", "delay": 0 }, { "method": "/1/2/PowerOn", "delay": 5 }, { "method": "/1/3/PowerOn", "delay": 10 }, { "method": "/1/4/PowerOn", "delay": 150 }], "id": 0, "running": false, "name": "Start Up Sequence" }, { "steps": [{ "method": "/1/2/PowerOff", "delay": 0 }, { "method": "/1/3/PowerOff", "delay": 5 }], "id": 1, "running": false, "name": "Power off sensitive" }], "objType": "deviceSettings", "autoLogoutTime": 10, "startupProcedure": { "sequenceId": 0, "type": "RunSequence", "delay": 5 }, </pre>
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	<pre> "eventLogSchema": { "active": ["Timestamp", "Object", "User", "Name", "Type", "AlertLevel", "Message"], "default": ["Timestamp", "Object", "User", "Name", "Type", "AlertLevel", "Message"] }, "temperatureUnits": "F", "shutdownClearProcedure": { "sequenceld": 0, "type": "InitialState" }, "maxEntries": 32, "time": "2020-03-27T16:10:53Z", "dataLogSchema": { "active": ["Timestamp", "EnergyUsedDelta", "PowerFactorMode", "PowerFactorInd", "TempInternalAvg", "PowerAvg", "VoltageNGPeak", "VoltageLinePeak", "CurrentLinePeak", "CrestFactorLNAvg", "CrestFactorCurrentAvg", "FrequencyAvg", "VoltageRmsNGAvg", "VoltageRmsLineAvg", "CurrentRmsLineAvg", "TempInternalMin", "CrestFactorLNMin", "CrestFactorCurrentMin", "FrequencyMin", </pre>
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	<pre>"VoltageRmsNGMin", "VoltageRmsLineMin", "TempInternalMax", "PowerMax", "CrestFactorLNMax", "CrestFactorCurrentMax", "FrequencyMax", "VoltageRmsNGMax", "VoltageRmsLineMax", "CurrentRmsLineMax"], "default": ["Timestamp", "EnergyUsedDelta", "PowerFactorMode", "PowerFactorInd", "TempInternalAvg", "PowerAvg", "VoltageNGPeak", "VoltageLinePeak", "CurrentLinePeak", "CrestFactorLNAvg", "CrestFactorNGAvg", "CrestFactorCurrentAvg", "FrequencyAvg", "VoltageRmsNGAvg", "VoltageRmsLineAvg", "CurrentRmsLineAvg", "TempInternalMin", "CrestFactorLNMin", "CrestFactorNGMin", "CrestFactorCurrentMin", "FrequencyMin", "VoltageRmsNGMin", "VoltageRmsLineMin", "TempInternalMax", "PowerMax", "CrestFactorLNMax", "CrestFactorNGMax", "CrestFactorCurrentMax", "FrequencyMax", "VoltageRmsNGMax", "VoltageRmsLineMax", "CurrentRmsLineMax"] } }</pre>
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Description:

"**squid**" is the same device object that was returned in the Get Current Status request. This squid object references the same internal resource and will be an identical return to the Current Status request. Please use the Current Status request documentation for more information on this object and the keys/values it contains.

"**autoLogoutTime**" is the amount of time in minutes that a web session will remain active with a user logged in.

"**startupProcedure**" is the first thing that is done when the unit powers up after a power outage or hard restart. All outlets can enter their Initial State, defined per outlet, or a sequence can be run, to get into a known state.

"**sequenceld**" is the sequence ID that will be run on startup, if the RunSequence option is selected

"**type**" is the procedure that will occur, options are "RunSequence" or "InitialState".

"**delay**" is the delay time before the initial sequence is run, or before and between applying initial states to outlets.

"**temperatureUnits**" is the unit that temperature will be reported back in. "F" for Fahrenheit, "C" for Celsius.

"**shutdownClearProcedure**" is the method for power up after a shutdown. Options are the same as the "startupProcedure".

"**time**" is the current device time in standard datetime format.

"**dataLogSchema**" is an object that describes the historical data logging schema.

"**active**" is an array of strings that are all the data points that will be logged over time. "Timestamp" is a required data point, all others are optional. The more data points that are chosen to be logged, the smaller the time window of data will be able to be stored internally on the device.

"**default**" is an array of strings that are the default storage parameters on a factory reset. This array cannot be changed.

"**Timestamp**" is the time that corresponds to the logging of the data.

"**EnergyUsedDelta**" is the amount of energy that was measured to have been consumed during the logging period.

"**PowerFactorMode**" is the most commonly occurring Power Factor during the logging period. The mode doesn't look for the most commonly occurring full precision single measurement, but just uses one significant figure (0.9, 0.8, 0.7, etc.)

"**PowerFactorInd**" is the leading/lagging indicator for the Power Factor Mode.

"**TempInternalAvg**" is the average internal temperature measurement during the logging period.

"**PowerAvg**" is the average of the average power measurements during the logging period.

"**VoltageNGPeakMax**" is the maximum neutral to ground peak voltage measurement during the logging period.

"**VoltageLinePeakMax**" is the maximum line to neutral peak voltage measurement during the logging period.

"**CurrentLinePeakMax**" is the maximum peak current measurement during the logging period.

"**VoltageNGPeakMin**" is the minimum neutral to ground peak voltage measurement during the logging period.

"**VoltageLinePeakMin**" is the minimum line to neutral peak voltage measurement during the logging period.

"**CurrentLinePeakMin**" is the minimum peak current measurement during the logging period.

"**VoltageNGPeakAvg**" is the average neutral to ground peak voltage measurement during the logging period.

- "**VoltageLinePeakAvg**" is the average line to neutral peak voltage measurement during the logging period.
- "**CurrentLinePeakAvg**" is the average peak current measurement during the logging period.
- "**CrestFactorLNAvg**" is the average line to neutral voltage crest factor calculation during the logging period.
- "**CrestFactorNGAvg**" is the average neutral to ground voltage crest factor calculation during the logging period.
- "**CrestFactorCurrentAvg**" is the average current crest factor calculation during the logging period.
- "**FrequencyAvg**" is the average frequency measurement during the logging period.
- "**VoltageRmsNGAvg**" is the average neutral to ground RMS voltage measurement during the logging period.
- "**VoltageRmsLineAvg**" is the average line to neutral RMS voltage measurement during the logging period.
- "**CurrentRmsLineAvg**" is the average RMS current measurement during the logging period.
- "**TempInternalMin**" is the minimum internal temperature measurement during the logging period.
- "**CrestFactorLNMin**" is the minimum line to neutral voltage crest factor calculation during the logging period.
- "**CrestFactorNGMin**" is the minimum neutral to ground voltage crest factor calculation during the logging period.
- "**CrestFactorCurrentMin**" is the minimum current crest factor calculation during the logging period.
- "**FrequencyMin**" is the minimum frequency measurement during the logging period.
- "**VoltageRmsNGMin**" is the minimum neutral to ground RMS voltage measurement during the logging period.
- "**VoltageRmsLineMin**" is the minimum line to neutral RMS voltage measurement during the logging period.
- "**TempInternalMax**" is the maximum internal temperature measurement during the logging period.
- "**PowerMax**" is the maximum of the average power measurements during the logging period.
- "**CrestFactorLNMax**" is the maximum line to neutral voltage crest factor calculation during the logging period.
- "**CrestFactorNGMax**" is the maximum neutral to ground voltage crest factor calculation during the logging period.
- "**CrestFactorCurrentMax**" is the maximum current crest factor calculation during the logging period.
- "**FrequencyMax**" is the maximum frequency measurement during the logging period.
- "**VoltageRmsNGMax**" is the maximum neutral to ground RMS voltage measurement during the logging period.
- "**VoltageRmsLineMax**" is the maximum line to neutral RMS voltage measurement during the logging period.
- "**CurrentRmsLineMax**" is the maximum RMS current measurement during the logging period.

Request	Change Device Settings
Request Type	PUT
URL	/api/v1/deviceSettings
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	<pre> PUT /api/v1/deviceSettings HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== { "temperatureUnits":"C", "autoLogoutTime":30, "startupProcedure":{ "sequenceId":0, "type":"InitialState", "delay":5 }, "shutdownClearProcedure":{ "sequenceId":0, "type":"InitialState" }, "squid":{ "name":"Default Squid Device", "dataLogInterval":10 } } </pre>
Example Response	false

Description:

Syntax should be treated the same as the Device Settings GET request.

"squid" is the same device object that was returned in the Get Current Status request. This squid object references the same internal resource and will be an identical return to the Current Status request. Please use the Current Status request documentation for more information on this object and the keys/values it contains.

"autoLogoutTime" is the amount of time in minutes that a web session will remain active with a user logged in.

Request	User Settings
Request Type	GET
URL	/api/v1/users
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/users HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	[<pre> { "username": "admin", "authmode": "internal", "email": "admin@company.com", "admin": true, "passwd": "", "name": "Administrator", "privs": ["TriggerConfig", "DeviceControl", "NetworkSettings", "SoftwareUpdate", "UserAdmin"] }, { "username": "tester", "authmode": "ldap", "email": "tester@test.com", "admin": "user", "dateAdded": "2020-03-09T14:30:37Z", "dateModified": "2020-03-19T13:52:00Z", "passwd": "", "name": "tester", "privs": ["TriggerConfig"] }] </pre>

Description:

The response body is an array of objects that describe a user, and their privileges.

"username" is the character limited name that is used for a user to log into the Squid device. This username may not contain special characters or spaces.

"authmode" describes the kind of user. Options for this include "internal" or "ldap". This defines if a password is stored internally, or if authentication is passed along to an authentication server for validation.

"email" is the email address for the user. Currently email is not supported by the device, but this field is still present for possible feature explanation, and for documentation purposes.

"admin" defines if the user is an admin and has administrative privileges or not.

"name" is the display name of the user, without username restrictions.

"privs" is an array of strings that define the privileges that the user has.

"TriggerConfig" allows users with this privilege to add, edit, and delete trigger configurations.

"DeviceControl" allows the user to control outlet on the device.

"NetworkSettings" allows the user to change network settings on the device.

"SoftwareUpdate" allows the user to preform software/firmware updates on the device.

"UserAdmin" allows the user to create, edit, and delete other users on the device.

Request	Change User Settings
Request Type	POST
URL	/api/v1/UserChange
URL Parameters	N/A
Data Parameters	"username": Required "authmode": Optional "email": Optional "admin": Optional "dateAdded": Optional "dateModified": Optional "passwd": Optional "name": Optional "privs": Optional
Request Headers	N/A
Success Response Code	200
Example Request	<pre>POST /api/v1/UserChange HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== { "username":"tester", "authmode":"internal", "email":"tester@tester.com", "admin":"admin", "dateAdded":"2020-03-09T14:30:37Z", "dateModified":"2020-05-20T15:50:34Z", "passwd":"Test12345", "name":"tester1", "privs":["TriggerConfig", "DeviceControl", "NetworkSettings"] }</pre>
Example Response Body	[0,"tester"]

Description:

"username" is the only required parameter, and must match the username that you want to edit. This is not a way to create a new user, but to edit an existing user. Please see Add New User for a request to create a new user.

"admin" describes the kind of user, either "admin" or "user".

Request	Add New User
Request Type	POST
URL	/api/v1/UserAdd
URL Parameters	N/A
Data Parameters	"username": Required "authmode": Required "email": Optional "admin": Required "dateAdded": Optional "passwd": Optional "name": Required "privs": Required
Request Headers	N/A
Success Response Code	200
Example Request	<pre> POST /api/v1/UserAdd HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== { "username":"newUser", "name":"New User", "email":"newuser@tester.com", "passwd":"", "admin":"admin", "authmode":"ldap", "privs":["TriggerConfig", "DeviceControl", "NetworkSettings", "SoftwareUpdate"] } </pre>
Example Response Body	[0,"newUser"]

Description:

"username" is the username for the user. This will be the identifier for event logging and changing this user. No two users can have the same username.

"admin" describes the kind of user, either "admin" or "user".

"authmode" describes how the user will be authenticated. Options are "internal" or "ldap". If "ldap" is selected, "passwd" is ignored. If "internal" is selected and there is no "passwd" key, this request will fail.

Request	Delete User
Request Type	POST
URL	/api/v1/UserDel
URL Parameters	N/A
Data Parameters	"username": Required
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/UserDel HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== "newUser"
Example Response Body	[0,"newUser"]

Description:

"username" is the username for the user. This is not a key/value parameter, but simply the username value that is to be deleted.

Request	Sequences
Request Type	GET
URL	/api/v1/sequences
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/sequences HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	[<pre> { "currentStep":3, "steps":[{ "method":"/1/1/PowerOn", "delay":0 }, { "method":"/1/2/PowerOn", "delay":5 }, { "method":"/1/3/PowerOn", "delay":10 }, { "method":"/1/4/PowerOn", "delay":150 }], "id":0, "running":false, "name":"Start Up Sequence" }, { "currentStep":1, "steps":[{ "method":"/1/2/PowerOff", "delay":0 }, { "method":"/1/3/PowerOff", "delay":5 }] }] </pre>

	<pre>"id":1, "running":false, "name":"Power off sensitive" }]</pre>
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Description:

The response body is an array of sequence objects.

"steps" is an array of actions that make up the sequence.

"method" is command to be called. This command is built similar to the URI for controlling an outlet. `/*ID*//*OUTLET*//*COMMAND*` is the syntax. ID will be the device ID, and for Squid will always be "1". OUTLET will be the outlet ID or group ID, which can be found in the Device Settings or Current Status requests. COMMAND will be "PowerOn", "PowerOff", or "Reboot".

"delay" is a delay time in seconds before the method is called. This allows for delay between steps, as well as a delay before the sequence begins running.

"currentStep" is the current step that is running when the "running" boolean is true. If "running" is false, this value means nothing, and will be the array index of the last step.

"id" is a number that allows the sequence to be referenced by other parts of the program, as well as through this rest API. The sequence "id" is used to run, edit, and delete the sequence.

"running" is a boolean that represents the state of the sequence. If the Sequence is in process and running, the boolean will be "true". If not, it will be "false".

"name" is a user-friendly way to identify the sequence.

Request	Add Sequence
Request Type	POST
URL	/api/v1/AddSequence
URL Parameters	N/A
Data Parameters	"id": Required "name": Required "steps": Required "delay": Required "method": Required
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/AddSequence HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== <pre>[{ "id":null, "name":"Another Sequence", "steps":[{ "delay":0, "method":"/1/1/PowerOn" }, { "delay":5, "method":"/1/2/PowerOn" }, { "delay":10, "method":"/1/3/PowerOn" }, { "delay":5, "method":"/1/5/PowerOn" }] }]</pre>
Example Response Body	2

Description:

The response body is simply the id of the new sequence that was created. All parameters are the same as the Sequences request.

Request	Change Sequence
Request Type	POST
URL	/api/v1/ChangeSequence
URL Parameters	N/A
Data Parameters	"id": Required "name": Required "steps": Required "delay": Required "method": Required
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/ChangeSequence HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== <pre>[{ "steps":[{ "method":"/1/1/PowerOn", "delay":0 }, { "method":"/1/2/PowerOn", "delay":5 }, { "method":"/1/3/PowerOff", "delay":"20" }], "id":2, "name":"Another Sequence" }]</pre>
Example Response Body	true

Description:

The response body is a boolean describing the success of the change. "true" for a successful change, "false" for and unsuccessful change. All parameters are the same as the Sequences request.

Request	Remove Sequence
Request Type	POST
URL	/api/v1/AddSequence
URL Parameters	N/A
Data Parameters	"id": Required
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/AddSequence HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== [2]
Example Response Body	true

Description:

The response body is a boolean describing the success of the deletion. "true" for a successful deletion, "false" for and unsuccessful deletion. The "id" parameter is simply the "id" value of the sequence that is to be deleted.

Request	Events Settings
Request Type	GET
URL	/api/v1/EventSettings
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/EventSettings HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	<pre> { "objType": "eventSettings", "triggers": { "numActive": 1, "numEntries": 3, "maxEntries": 16, "triggers": [{ "enabled": true, "active": true, "all": true, "extra": "", "expressions": { "off": [{ "val": { "samples_outof": 10, "val": 100, "samples_for": 5 }, "oper": "<", "prop": "1/LineVoltage" }], "on": [{ "val": { "samples_outof": 10, "val": 110, "samples_for": 5 }, "oper": ">", "prop": "1/LineVoltage" }] } }] }, "stats": { </pre>

	<pre> "lastSavedState": true, "counter": 1, "lastTrigger": "2020-01-07T18:53:40Z" }, "actions": [{ "off": { "cmd": "/ClearShutdownState", "delay": 0, "parms": [] }, "on": { "cmd": "/EnterShutdownState", "delay": 0, "parms": [0] } }, "type": "CallMethod" }], "id": "8c8fa032-151d-5d63-b27c-bb4b31c76f6f", "name": "Under Voltage", "type": "ThresholdSamples" }, { "enabled": true, "active": false, "all": true, "extra": "", "expressions": { "off": [{ "val": { "0.0.0.0": { "numSuccess": 3 } }, "oper": ">", "prop": "af/Status" }], "on": [{ "val": { "0.0.0.0": { "numFailure": 10 } } }] } } </pre>
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	<pre> }, "oper": ">", "prop": "af/Status" }] }, "stats": { "lastSavedState": true, "counter": 1, "lastTrigger": "2020-03-09T20:11:06Z" }, "actions": [{ "off": { "cmd": "/1/1/None", "delay": 0, "parms": [] }, "on": { "cmd": "/RunSequence", "delay": 0, "parms": [1] }, "type": "CallMethod" }], "id": "e230330d-5003-5ffd-bc7c-b37a38e2d4ba", "name": "Network Autoping", "type": "Autoping" }, { "enabled": true, "active": true, "all": true, "extra": "", "expressions": { "on": [{ "val": { "DCBank1Feedback": 0 }, "oper": "=", "prop": "1/GpioStatus" }, { "val": 1, "oper": "=", "prop": "1/5/OutletState" }] } } </pre>
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	<pre> }] }, "stats": { "lastSavedState": true, "counter": 1, "lastTrigger": "2020-05-18T15:52:24Z" }, "actions": [{ "off": { "cmd": "/None", "delay": 0, "parms": [] }, "on": { "cmd": "/1/7/Reboot", "delay": 0, "parms": [] }, "type": "CallMethod" }], "id": "186ab7c9-c0f1-5174-9c96-49dea135d7ce", "name": "Reboot AC/DC Internal", "type": "GpioStateChange" }] }</pre>
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Description:

"triggers" is an object that describes the trigger configuration.

"numActive" is the number of triggers that have met their initial criteria to be set to "on", and are now looking for their "clear" criteria.

"numEntries" is the number of triggers that are configured.

"maxEntries" is the maximum number of allowed trigger configurations.

"triggers" is an array of objects that are the trigger configurations

"enabled" is a boolean describing whether the trigger is being evaluated or not.

"active" says that the trigger has met the criteria to be "on" or "triggered" and is now looking for the "clear criteria.

"expressions" is an object that holds the evaluation criteria for turning the trigger on and off.

"off" is an array of expressions that must be met for the trigger to return from the "on" state back to the "off" state.

"val" is an object that is used to define an expression where a measurement, or value, is evaluated.

This object will change depending on the "type" attribute inside the trigger object

("ThresholdSamples", "Schedule", "Autoping", "GpioStateChange"). A "ThresholdSamples" type will contain the "samples_outof", "val", and "samples_for" keys. A "Schedule" type will use "val" as a string, describing the date/time that will trigger the schedule trigger. A "Autoping" type will contain a key with the IP address to be tested, whose value has more specifics. The "GpioStateChange" type will have a key for the interested feedback signal.

"samples_outof" is the size of the ringbuffer that will be used to evaluate the measurement parameter.

"val" is the value of interest for reference when making the evaluation.

"samples_for" is the number of measurements in the ringbuffer that must meet the evaluation to trigger the state change.

"0.0.0.0" is an object that describes the evaluation for autoping failure. The string here is the IP address that is being pinged, not 0.0.0.0.

"numFailure" is the number of failed pings that it takes to have the trigger to move into the "on" state.

"numPass" is the number of successful pings that it takes to have the trigger to move into the "off" state.

"period" is the number of seconds that are between pings.

"DCBank1Feedback" is an example for one of the possible keys describing the feedback signal to be measured. The value, either 0 or 1, is what is tested for a match to turn the trigger into the "on" state. Other options for key names are "DCBank2Feedback", "5VBankFeedback", "SurgeGoodFeedback".

"oper" defines the direction in reference to the "val" parameter which causes the evaluation to pass or fail. Options are "<" or ">".

"prop" is a string that describes the measurement or state to be evaluated. Always prepended with "1/", options are "1/LineVoltage", "1/Current", "1/NGVoltage", "1/Temperature", "1/Frequency", "1/PowerAvg", "1/CrestFactorLN", "1/CrestFactorNG", "1/CrestFactorI", "1/PowerFactor", "1/GpioStatus", or "/1/X/OutletState" where "X" is the "id" of the outlet in question.

"on" is an array of expressions that must be met for the trigger to enter the "active" or "on" state.

"stats" is an object containing some historical information on the trigger.

"counter" is the number of times this trigger has fired in its lifetime. Currently there is no way to reset this counter. A work around is to delete the trigger and recreate a new trigger with the same properties. This will cause a new UUID to be generated.

"lastTrigger" is the time in datetime format when the last trigger occurred.

"actions" is an array of action objects that will be taken when the trigger switches into the corresponding state.

"off" is an object that describes the action that will be taken on a transition to the "off" state.

"cmd" is the command to run on the state change. Options are "/ClearShutdownState", "/EnterShutdownState", "/RunSequence", "/1/X/PowerOn", "/1/X/PowerOff", "/1/X/Reboot", "/1/X/None" where "X" is the "id" of the outlet or group that is to be controlled.

"delay" is a delay in seconds to take between the state change, and submitting the

"parms" is an array of parameters for the command. In our case, this is only used for the "/RunSequence" command, and the parameter is the index of the sequence that we want to run.

"on" is an object that describes the action that will be taken on a transition to the "on" state.

"type" describes the kind of action that will be taken. This value is always "CallMethod" and should not be changed.

"id" is a random UUID that is assigned to every new trigger. This is used mainly for updating the trigger in the future and for historical data logging purposes.

"name" is a user-friendly name to describe the trigger. This will show up in the time stamped events view/request.

"type" is a string describing the kind of trigger. This allows the receiver to know how to parse the JSON, and what keys to look for. Options are "ThresholdSamples", "Schedule", "Autoping", "GpioStateChange".

Request	Add Trigger
Request Type	POST
URL	/api/v1/AddTrigger
URL Parameters	N/A
Data Parameters	<p> "id": Required "enabled": Required "name": Required "type": Required "actions": Required "type": Required "on": Required "cmd": Required "params": Optional "delay": Optional "off": Required "cmd": Required "params": Optional "delay": Optional "expressions": Required "on": Required "val": Required "oper": Required "prop": Required "off": Required "val": Required "oper": Required "prop": Required </p>
Request Headers	N/A
Success Response Code	200
Example Request	<pre> POST /api/v1/AddTrigger HTTP/1.1 Host: 10.214.98.105:8080 Content-Type: application/x-www-form-urlencoded Authorization: Basic YWRtaW46QWRtaW4xMjM0NTQ= [{ "id": 0, "enabled": true, "name": "Reboot AC/DC Internal", "type": "GpioStateChange", "extra": "", "actions": [{ "type": "CallMethod", "on": { "delay": 0, "cmd": "/1/7/Reboot", } }] }] </pre>

	<pre> "parms": [] }, "off": { "delay": 0, "cmd": "None", "parms": [] } }], "all": true, "expressions": { "on": [{ "val": { "DCBank1Feedback": 0 }, "oper": "=", "prop": "1/GpioStatus" }, { "val": 1, "oper": "=", "prop": "1/5/OutletState" }], "off": [] } }] </pre>
<p>Example Response Body</p>	<pre> [{ "enabled": true, "name": "Reboot AC/DC Internal", "type": "GpioStateChange", "extra": "", "actions": [{ "type": "CallMethod", "on": { "delay": 0, "cmd": "/1/7/Reboot", "parms": [] }, "off": { "delay": 0, "cmd": "None", "parms": [] } }] }] </pre>

	<pre> }], "all": true, "expressions": { "on": [{ "val": { "DCBank1Feedback": 0 }, "oper": "=", "prop": "1/GpioStatus" }, { "val": 1, "oper": "=", "prop": "1/5/OutletState" }], "off": [] } }]</pre>
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Description:

The response body is the newly created trigger. All parameters are the same as the triggers object under the Event Settings request.

	<pre> "parms": [] }, "off": { "delay": 0, "cmd": "None", "parms": [] } }], "all": true, "expressions": { "on": [{ "val": { "DCBank1Feedback": 0 }, "oper": "=", "prop": "1/GpioStatus" }, { "val": 1, "oper": "=", "prop": "1/5/OutletState" }], "off": [] } }] </pre>
Example Response Body	"554186f6-85b2-5122-a799-c6126a2f5939"

Description:

The response body is the UUID for the changed trigger. All parameters are the same as the triggers object under the Event Settings request.

Request	Time Stamped Events
Request Type	POST
URL	/api/v1/timeStampedEvents
URL Parameters	N/A
Data Parameters	<p>Syntax: [-1,-1,"startDate","endDate"]</p> <p>The beginning "-1, -1," needs to be present in the request. "startDate" is earliest date that will be contained in the response. "endDate" defines the last date that will be contained in the response. Any event logged in between these two dates will be in the response.</p>
Request Headers	N/A
Success Response Code	200
Example Request	<p>POST /api/v1/timeStampedEvents HTTP/1.1</p> <p>Host: 10.214.98.105:8080</p> <p>Content-Type: application/x-www-form-urlencoded</p> <p>Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==</p> <p>[-1,-1,"2020-04-01","2020-05-99"]</p>
Example Response Body	<pre>{ "objType": "timeStampedEvents", "events": [{ "message": "Squid Service Started", "alertLevel": 1, "name": "Squid Service Started", "time": "2020-04-30T15:04:44.300Z", "type": "System", "user": "" }, { "message": "Outlet Control: Successfully Powered On Outlet 1", "alertLevel": 1, "name": "Powered On Outlet 1", "time": "2020-04-30T15:04:45.400Z", "type": "Control", "user": "" }, { "message": "Outlet Control: Successfully Powered On Outlet 4", "alertLevel": 1, "name": "Powered On Outlet 4", "time": "2020-04-30T15:04:45.400Z", "type": "Control", "user": "" }] }</pre>

	<pre> { "message": "Outlet Control: Successfully Powered On DC Bank 1", "alertLevel": 1, "name": "Powered On DC Bank 1", "time": "2020-04-30T15:04:45.400Z", "type": "Control", "user": "" }, { "message": "Outlet Control: Successfully Powered On Outlet 2", "alertLevel": 1, "name": "Powered On Outlet 2", "time": "2020-04-30T15:04:45.500Z", "type": "Control", "user": "" }, { "message": "User Successfully Logged Off: 'admin' logged off.", "alertLevel": 1, "name": "User Successfully Logged Off", "time": "2020-04-30T16:10:49.600Z", "type": "System", "user": "Administrator" }, { "message": "User Successfully Logged In: 'admin' was allowed access.", "alertLevel": 1, "name": "User Successfully Logged In", "time": "2020-04-30T16:11:13.600Z", "type": "System", "user": "admin" }, { "message": "Outlet Control: Successfully Powered Off Outlet 1", "alertLevel": 1, "name": "Powered Off Outlet 1", "time": "2020-04-30T17:13:30.600Z", "type": "Control", "user": "" }, { "message": { "action": { </pre>
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	<pre> "name": "Outlet 1", "type": "PowerOff" }, "active": true, "subtype": "line1Line2OvervoltTrig", "threshold": 135, "id": "1582a27c-9ab9-5c69-ba02-d3a8c8fffd9a", "type": "ThresholdSamples" }, "alertLevel": 2, "name": "Over Voltage Trigger (On)", "time": "2020-04-30T17:13:30.700Z", "type": "Trigger (On)", "user": "1582a27c-9ab9-5c69-ba02-d3a8c8fffd9a" }, { "message": "Outlet Control: Successfully Powered On Outlet 1", "alertLevel": 1, "name": "Powered On Outlet 1", "time": "2020-04-30T17:13:31.300Z", "type": "Control", "user": "" }, { "message": { "action": { "name": "Outlet 1", "type": "PowerOn" }, "active": false, "subtype": "line1Line2OvervoltClear", "threshold": 130, "id": "1582a27c-9ab9-5c69-ba02-d3a8c8fffd9a", "type": "ThresholdSamples" }, "alertLevel": 1, "name": "Over Voltage Trigger (Clear)", "time": "2020-04-30T17:13:31.400Z", "type": "Trigger (Clear)", "user": "1582a27c-9ab9-5c69-ba02-d3a8c8fffd9a" }, { "message": "Outlet Control: Successfully Powered Off Outlet 2", "alertLevel": 1, "name": "Powered Off Outlet 2", "time": "2020-04-30T17:13:57.600Z", </pre>
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	<pre> "type": "Control", "user": "" }, { "message": { "action": { "name": "Outlet 2", "type": "PowerOff" }, "active": true, "subtype": "line1Line2UndervoltTrig", "threshold": 100, "id": "cd233069-8388-5158-bdf0-94b027a8bf26", "type": "ThresholdSamples" }, "alertLevel": 2, "name": "Under Voltage Trigger (On)", "time": "2020-04-30T17:13:57.700Z", "type": "Trigger (On)", "user": "cd233069-8388-5158-bdf0-94b027a8bf26" }, { "message": "Outlet Control: Successfully Powered On Outlet 2", "alertLevel": 1, "name": "Powered On Outlet 2", "time": "2020-04-30T17:14:16.700Z", "type": "Control", "user": "" }, { "message": { "action": { "name": "Outlet 2", "type": "PowerOn" }, "active": false, "subtype": "line1Line2UndervoltClear", "threshold": 110, "id": "cd233069-8388-5158-bdf0-94b027a8bf26", "type": "ThresholdSamples" }, "alertLevel": 1, "name": "Under Voltage Trigger (Clear)", "time": "2020-04-30T17:14:16.800Z", "type": "Trigger (Clear)", "user": "cd233069-8388-5158-bdf0-94b027a8bf26" }, </pre>
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	<pre>{ "message": "Invalid User Attempted to Login: 'Admin' was denied access.", "alertLevel": 1, "name": "Invalid User Attempted to Login", "time": "2020-04-30T17:23:57.800Z", "type": "System", "user": "Admin" }, { "message": "User Successfully Logged In: 'admin' was allowed access.", "alertLevel": 1, "name": "User Successfully Logged In", "time": "2020-04-30T17:24:15.700Z", "type": "System", "user": "admin" }, { "message": "User Successfully Logged Off: 'admin' logged off.", "alertLevel": 1, "name": "User Successfully Logged Off", "time": "2020-05-04T14:07:02.500Z", "type": "System", "user": "Administrator" }, { "message": "User Successfully Logged In: 'admin' was allowed access.", "alertLevel": 1, "name": "User Successfully Logged In", "time": "2020-05-04T14:10:08.900Z", "type": "System", "user": "admin" }], "numEntries": 19 }</pre>
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Description:

"events" is an array of all the events between the dates specified in the request body.

"message" is either a descriptive string describing the event, or an object containing other information about the event. When the logged event was a trigger, this "message" key will be an object containing some information on the action taken, and the ID of the trigger.

"action" is an object that contains information about the control that took place.

"name" is the name of the device that was controlled.

"type" is the action that was taken on the device. "PowerOn", "PowerOff", or "Reboot".

"active" is the "on" or "off" state of the trigger, as a boolean where "on" is true.

"subtype" is more specifically, the direction and measurement of the trigger.

"threshold" is the threshold that was reached or passed to cause this event to be logged.

"id" is the UUID of the trigger that caused this event to be logged.

"type" is the type of the trigger that caused this event to be logged.

"alertLevel" is the importance of the event. As of firmware v1.0.0 there is no ability to change the alert level of a trigger, however all triggers are level 2 when active by default. Levels are as follows: 1 "OK", 2 "Alert", 3 "Warning".

"name" is the name of the event. Either the trigger name, or a more general event name.

"time" is the specific time of the event in datetime format.

"type" is the type of event, which can be used for filtering. "Trigger", "System", "Control" are all possible responses.

"user" is the name of the user that caused the event, or the "id" of the trigger if it was a trigger.

Request	Historical Data Info
Request Type	POST
URL	/api/v1/logFileInfo
URL Parameters	N/A
Data Parameters	
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/logFileInfo HTTP/1.1 Host: 10.214.98.105:8080 Content-Type: application/json Authorization: Basic YWRtaW46QWRtaW4xMjM0NDQ== ["SquidData"]
Example Response Body	<pre> { "schema": ["Timestamp", "EnergyUsedDelta", "PowerFactorMode", "PowerFactorInd", "TempInternalAvg", "PowerAvg", "VoltageNGPeak", "VoltageLinePeak", "CurrentLinePeak", "CrestFactorLNAvg", "CrestFactorNGAvg", "CrestFactorCurrentAvg", "FrequencyAvg", "VoltageRmsNGAvg", "VoltageRmsLineAvg", "CurrentRmsLineAvg", "TempInternalMin", "CrestFactorLNMin", "CrestFactorNGMin", "CrestFactorCurrentMin", "FrequencyMin", "VoltageRmsNGMin", "VoltageRmsLineMin", "TempInternalMax", "PowerMax", "CrestFactorLNMax", "CrestFactorNGMax", "CrestFactorCurrentMax", "FrequencyMax", "VoltageRmsNGMax", "VoltageRmsLineMax", "CurrentRmsLineMax"] } </pre>

	<pre>], "logDuration": 3600, "logType": 1, "folder": "log/squiddata/", "files": ["1589810400.gz", "1589814000.gz", "1589817600.gz", "1589821200.gz", "1589824800.gz", "1589828400.gz", "1589832000.gz", "1589835600.gz", "1589839200.gz", "1589842800.gz", "1589846400.gz", "1589850000.gz", "1589853600.gz", "1589857200.gz", "1589860800.gz", "1589864400.gz", "1589868000.gz", "1589871600.gz", "1589875200.gz", "1589878800.gz", "1589882400.gz", "1589886000.gz", "1589889600.gz", "1589893200.gz", "1589896800.gz", "1589900400.gz", "1589904000.gz", "1589907600__inprocess__.gz"] } </pre>
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Description:

"schema" is an array of strings, that define the CSV columns in each data file.

"logDuration" is the max time range of each data file in seconds.

"folder" is the URI of the folder containing all of the files in the "files" array. To access these files, issue a get request to the address of the file.
(i.e. "http://10.214.98.105:8080/log/squiddata/1589774400.gz")

"files" is an array of file names which can be retrieved from the folder. The file that is still being used by the system with the addendum __inprocess__ should be treated as corrupt, and not used. All files are compressed CSV files, and should have a ".csv" extension added to them after uncompressing using gzip.

Request	File Upload
Request Type	POST
URL	/api/v1/UploadFile
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	<pre>POST /api/v1/ UploadFile HTTP/1.1 Host: 10.214.98.105:8080 Content-Type: multipart/form-data; boundary=---- WebKitFormBoundary7MA4YWxkTrZu0gW Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== -----WebKitFormBoundary7MA4YWxkTrZu0gW Content-Disposition: form-data; name="snmpd.conf"; filename="snmpTestConf.conf" Content-Type: application/octet-stream -----WebKitFormBoundary7MA4YWxkTrZu0gW--</pre>
Example Response Body	1

Description:

This is a method for uploading files to the Squid devices. This can be used to automate policy updates, or update expiring certificates. The **“name”** in the from-data should have a value that corresponds to the type of file that is wished to be uploaded. Options are "fwupdate.img", "squid.cfg", "snmpd.conf", "ssl.crt", "ssl.key", "cert.ca", "wpa_suppllicant.conf", "wpa_cert.ca", "wpa_user.crt", "wpa_user.prv", and "wpa_fast.pac".

Request	Who Are You
Request Type	GET
URL	/api/v1/WhoAreYou
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	GET /api/v1/WhoAreYou HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ==
Example Response Body	<pre>{ "model": "SX-SQUID", "serial": "", "ethInterfaces": [{ "mac": "0e:b3:3a:d5:a0:64", "ifname": "eth0", "dns": ["127.0.0.53"], "mtu": 9001, "addr": "172.31.23.63", "dhcp": false, "mask": "255.255.240.0", "gw": "172.31.16.1", "bcast": "172.31.31.255" }], "objType": "whoAreYou", "hostname": "", "MAC": ["0e:b3:3a:d5:a0:64"], "httpd": { "enabled": true, "ssl": false, "status": "enabled", "port": "8080" }, "deviceName": "OSquidAppObject", "manufacturer": "AMETEK ESP/SurgeX", "deviceType": "Power Controller", "time": "2020-05-19T19:12:39Z", "firmware": "0.5.25388" }</pre>



Description:

"model" is the base model number of the unit, without any configuration options accommodated by the factory.

"serial" is the serial number that can be used as a unique identifier.

"ethInterfaces" is an array of interfaces that are accessible. These interfaces have the same definitions as the "ethInterfaces" object in the Network Settings request.

"hostname" is the hostname of the device.

"MAC" is the MAC address assigned to the RJ45 Ethernet connector, which is the main "eth0" interface.

"httpd" is an object describing the web server. This object has the same definitions as the "httpd" object in the Network Settings request.

"deviceName" is a user-friendly name for the device, which may include a room number, or specifics on a location.

"manufacturer" is a user-friendly string that lists the manufacturer, which will always be "AMETEK ESP/SurgeX"

"deviceType" is a string describing the function of the unit. The Squid products are classified as "Power Controllers" because their main function is remote access and remote reboot of connected equipment.

"time" is the current device time in standard datetime format.

"firmware" is the firmware version of the unit. The first number is the major revision which may have feature breaking changes, the second number is the minor revision which usually adds new features, the third number is the build number, which is typically bug fixes and patches.

Request	Run Sequence
Request Type	POST
URL	/api/v1/runSequence
URL Parameters	N/A
Data Parameters	"id": Required
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/runSequence HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== [1]
Example Response Body	true

Description:

The "id" data parameter is the "id" of the sequence that is to be run.
The response body is a boolean describing the success of the change. "true" for a successful change, "false" for and unsuccessful change. All parameters are the same as the Sequences request.

Request	Reboot Outlet
Request Type	POST
URL	/api/v1/*ID*/*OUTLET*/Reboot
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/1/1/Reboot HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

In this case, the URI is the command, and there is no need for any parameters in the body of the request. *ID* is the "id" of the whole device (always 1 for a Squid). *OUTLET* is the "id" of the outlet object or group. In the example request, we are turning off Outlet 1. "/1/5/Reboot" would reboot DC Bank 1, and "/1/10/reboot" would reboot the All Outlets group. The response body is a boolean describing the success of the command. "true" is a successful reboot of the outlet, while "false" is a failure to reboot the outlet. The user that is being authenticated for this command must have Device Control privileges.

Request	Power Off Outlet
Request Type	POST
URL	/api/v1/*ID*/*OUTLET*/PowerOff
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/1/1/PowerOff HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

The response body is a boolean describing the success of the command. “true” is a successful power off of the outlet, while “false” is a failure to power off the outlet. The ID and OUTLET are the same as the Reboot Outlet Command. The user that is being authenticated for this command must have Device Control privileges.

Request	Power On Outlet
Request Type	POST
URL	/api/v1/*ID*/*OUTLET*/PowerOn
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/1/1/PowerOn HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

The response body is a boolean describing the success of the command. “true” is a successful power on of the outlet, while “false” is a failure to power on the outlet. The ID and OUTLET are the same as the Reboot Outlet Command. The user that is being authenticated for this command must have Device Control privileges.

Request	Enter Shutdown State
Request Type	POST
URL	/api/v1/EnterShutdownState
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/EnterShutdownState HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

The URI is the command for this request as well. This command allows the user to make the device switch to a shutdown state. A shutdown state won't let any outlets turn on by manual control, before the device goes back into a running state. The response body is a boolean describing the success of the command. "true" means the device successfully entered shutdown state. The user that is being authenticated for this command must have Admin privileges.

Request	Clear Shutdown State
Request Type	POST
URL	/api/v1/ClearShutdownState
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/ClearShutdownState HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

The URI is the command for this request as well. This command allows the user to take the device out of a shutdown state. A shutdown state won't let any outlets turn on by manual control, before the device goes back into a running state. The response body is a boolean describing the success of the command. "true" means the device successfully entered shutdown state. The user that is being authenticated for this command must have Admin privileges.

Request	Reset Energy Usage
Request Type	POST
URL	/api/v1/1/ResetEnergyUsage
URL Parameters	N/A
Data Parameters	N/A
Request Headers	N/A
Success Response Code	200
Example Request	POST /api/v1/ResetEnergyUsage HTTP/1.1 Host: 10.214.98.105:8080 Authorization: Basic YWRtaW46QWRtaW4xMjM0NQ== []
Example Response Body	true

Description:

The URI is the command for this request as well. This command clears the total energy usage counter, and resets the date since last reset to the current device time.