



### Style conventions used in this document:

**UI Text:** Text that represents elements of the UI such as button names, menu options etc. is presented with a grey background and border, in Tahoma font which is traditionally used in Windows UIs. For example:

Ok

**Standard Terms (Jargon):** Text that is not English Language but instead refers to industry standard concepts such as Strategy, BACnet, or Analog Input is represents in slightly condensed font. For example:

BACnet

**Code:** Text that represents File paths, Code snippets or text file configuration settings is presented in fixed-width font, with a grey background and border. For example:

```
$config_file = c:\CYLON\settings\config.txt
```

**Parameter values:** Text that represents values to be entered into UI fields or displayed in dialogs is represented in fixed-width font with a shaded background. For example

10°C

**Product Names:** Text that represents a product name is represented in bold colored text. For example

INTEGRA™

**Company Brand names:** Brands that are not product names are represented by bold slightly compressed text:

ABB Active Energy

**PC Keyboard keys:** Text representing an instruction to press a particular key on the keyboard is enclosed in square brackets and in bold font. For example:

[Ctrl]+[1]

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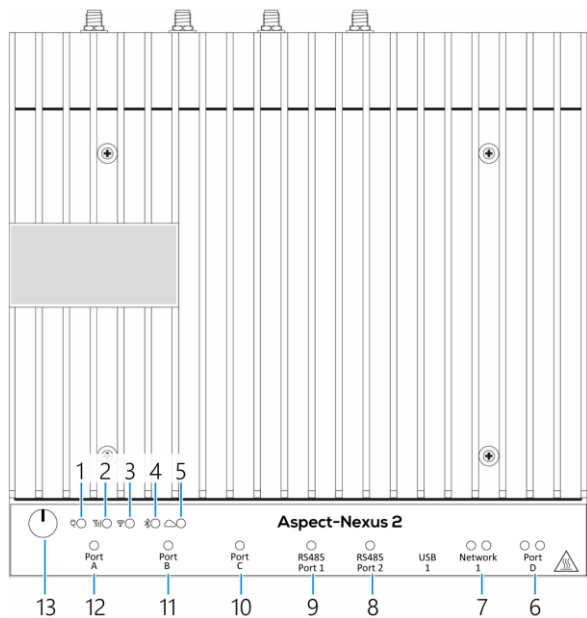
# 1 Overview

**CYBERSECURITY DISCLAIMER:**

This product is designed to be connected to and to communicate information and data via a network interface. It is your sole responsibility to provide and continuously ensure a secure connection between the product and your network or any other network (as the case may be). You shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, secure VPNs, application of authentication measures, encryption of data, installation of anti-virus programs, etc.) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB Ltd and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

This chapter provides an overview of the NEXUS Series device system as well as optional modules.

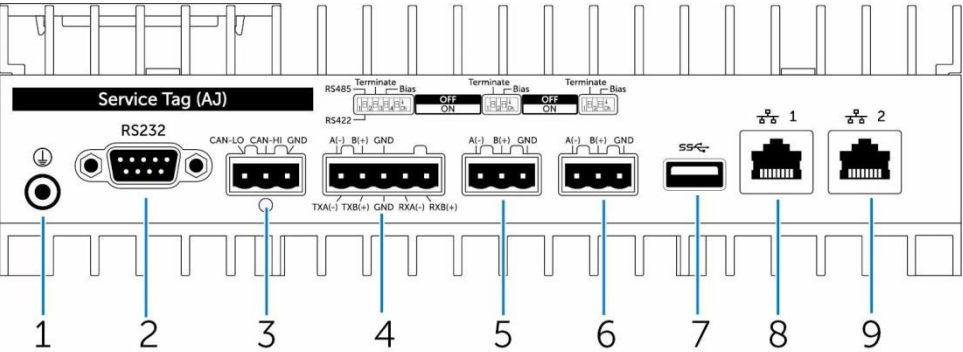
## FRONT PANEL (LED INDICATORS)



1	Power status LED	Indicates the power-state of the system.
2	Mobile broadband status LED	Unused
3	Wireless status LED	Unused
4	Bluetooth status LED	Unused
5	Cloud connection status LED	unused
6	Port D status LEDs	Unused
7	Network 1 status LEDs	Indicates the connectivity status and network activity. Orange = 100Mb/s (10/100) Green = 1000Mb/s (Gigabit)
8	RS485 port status Port 2 LED	Provides the status of the RS485 port connections.
9	RS485 port status Port 1 LED	Provides the status of the RS485 port connections.
10	Port C LED	unused
11	Port B LED	Unused
12	Port A LED	Unused

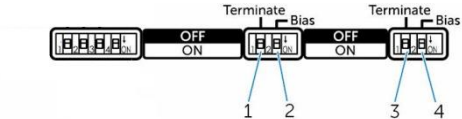
- 13
- Power button
- Press and hold for 2 seconds to turn on the system if it is turned off.

**BOTTOM PANEL (PORTS)**



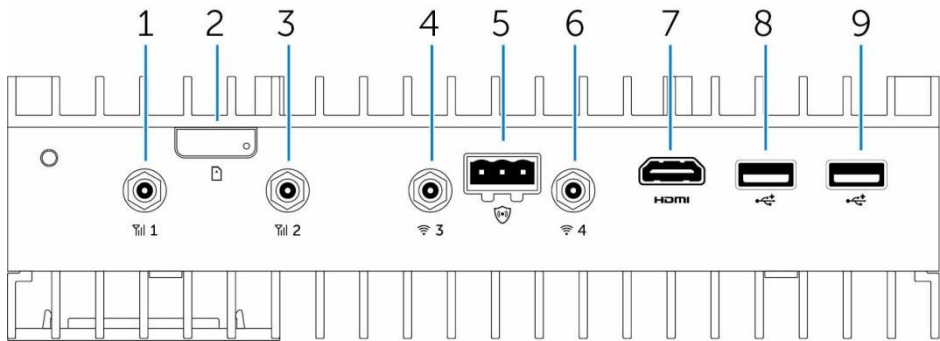
- |   |                |   |
|---|----------------|---|
| 1 | Earth ground   | Connect the grounding cable to the system.  |
| 2 | Port A         | Unused  |
| 3 | Port B         | Unused  |
| 4 | Port C         | Unused  |
| 5 | RS485 port 1   | Connect a RS485 fieldbus.   |
| 6 | RS485 port 2   | Connect a RS485 fieldbus.   |
| 7 | USB 1 port     | Connect a USB 3.0 device.   |
| 8 | Network 1 port | Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or internet access (appropriate security measures required, such as VPN or firewall). |
| 9 | Port D         | Recovery Ethernet Port  |

**BOTTOM PANEL (DIP SWITCHES)**



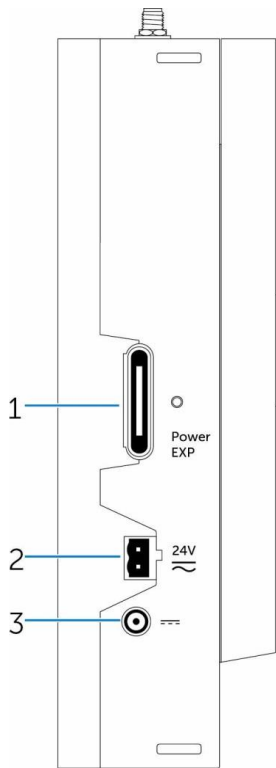
- |   |                                   |   |
|---|-----------------------------------|---|
| 1 | RS485 port 1 resistor switch      | Enable/disable the differential termination resistor for RS485. |
| 2 | RS485 port 1 bias resistor switch | Enable/disable the bias resistor for RS485 port 1.              |
| 3 | RS485 port 2 resistor switch      | Enable/disable the differential termination resistor for RS485. |
| 4 | RS485 port 2 bias resistor switch | Enable/disable the bias resistor for RS485 port 2.              |

TOP PANEL



1	Mobile broadband antenna port (port one)	Unused
2	Micro-SIM card slot	Unused
3	Mobile broadband antenna port (port two)	Unused
4	Wi-Fi antenna port (port three)	Unused
5	Intrusion detection connector	Unused
6	Wi-Fi antenna port (port four)	Unused
7	HDMI port	Connect a monitor or other HDMI device. Provides video and audio output.
8	USB 2.0 port	Unused
9	USB 2.0 port	Unused

**Note:** In order to function the HDMI must be connected when the system boots.



LEFT EDGE

**Note:** When the Nexus 2 is shipped from the factory, both power connectors are covered by a warning label. Make sure this label is completely removed before using the Nexus 2.

- |   |                                    |  |
|---|------------------------------------|--|
| 1 | Power module expansion port        | Unused   |
| 2 | 24 V AC/DC power Phoenix connector | Connect a 24 V AC/DC power connector to provide power to your system.        |
| 3 | 19.5 V DC power adapter port       | Connect a 19.5 V DC power adapter connector to provide power to your system. |

**Note:** Nexus 2 requires a dedicated SELV 24 V 60VA AC / DC supply (Class II supply) or a dedicated Dell SELV 19.5 V 65 W PSU.

**Note:** **The recommended supply for warranty purposes is the included Dell PSU.**

When using a higher VA transformer, care must be taken to ensure that the voltage stays within specification (see *Detailed Engineering Specifications - Power* on page 15).

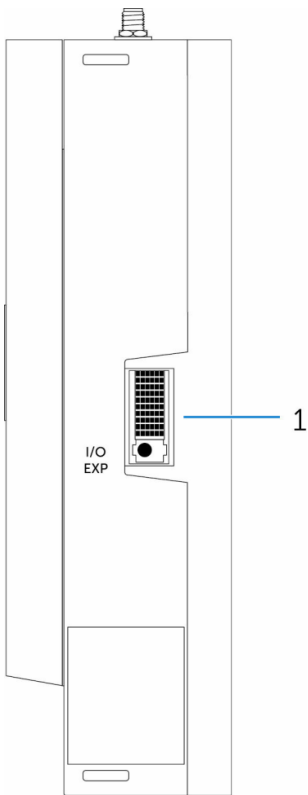
**Warning:**

Earthing or Grounding of any of the terminals connected to the SELV power supply will cause serious damage to the power supply rectifier and will invalidate the product Warranty.

**Never** Earth or Ground any of the terminals connected to this power supply.

**Never** use this power supply to power CB, NB, or SBC control devices, **or any other** equipment, because it is possible that the other equipment may be connected to Earth or Ground.

**Note:** If the Nexus 2 is acting as a Site's central server, hosting the primary UI and historical data, it is recommended that its power supply is connected to an Uninterruptible Power Supply (UPS).



RIGHT EDGE

- |   |                   |        |
|---|-------------------|--------|
| 1 | IO expansion port | Unused |
|---|-------------------|--------|

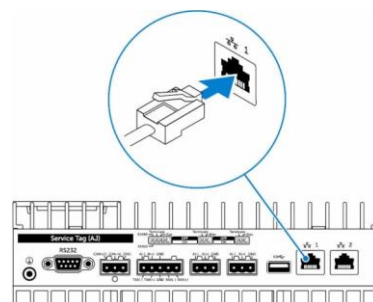


## 2 Installation and configuration

**Note:** The information in this chapter provides an overview of the installation and configuration requirements of the NEXUS Series device. The NEXUS Series device is designed for specific applications and needs to be installed by qualified personnel with RF and regulatory-related knowledge.

### POWERING ON THE NEXUS SERIES DEVICE

1. Install the NEXUS Series device on the wall mount using a [wall mounting kit](#), or Install the NEXUS Series device on the rack infrastructure using [DIN-rail mounting brackets](#).
2. Connect a network cable.
3. Connect a SELV/limited energy circuit power source (24 V AC/DC or 19.5 V DC) to the NEXUS Series device and press the power button to turn it on.



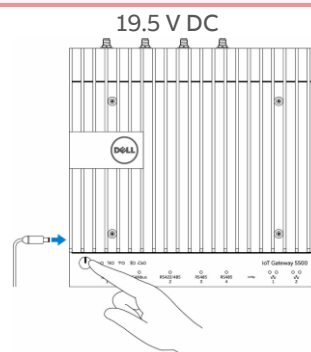
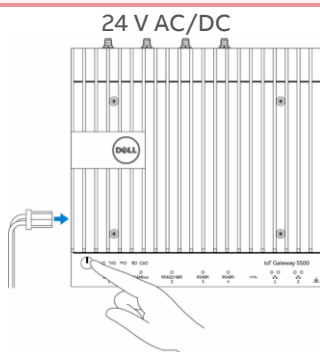
**Note:** For warranty purposes it is recommended that only the included power supply should be used with NEXUS Series devices.

#### Warning:

Earthing or Grounding of any of the terminals connected to the SELV power supply will cause serious damage to the power supply rectifier and will invalidate the product Warranty.

**Never** Earth or Ground any of the terminals connected to this power supply.

**Never** use this power supply to power CB, NB, or SBC control devices, **or any other** equipment, because it is possible that the other equipment may be connected to Earth or Ground.

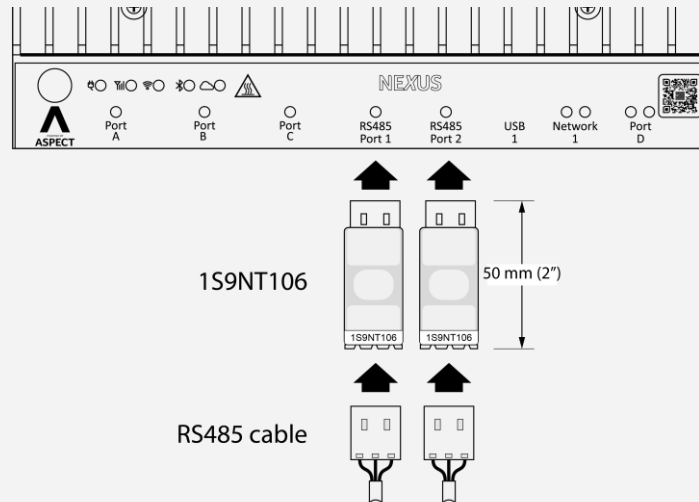


### 4. Connect and configure devices using the RS485 ports.

**Note:** The RS485 voltage surge protector, order code 1S9NT106, is approximately 20 mm (0.8") wide x 50 mm (2") long.

Two of these parts are shipped with each NEXUS Series device and for warranty purposes **must** be installed as described below.

Each RS485 cable must be plugged into a surge protector, and the protector plugged into one of the NEXUS Series device's RS485 ports:



Additional units can be ordered if required, in packs of two.

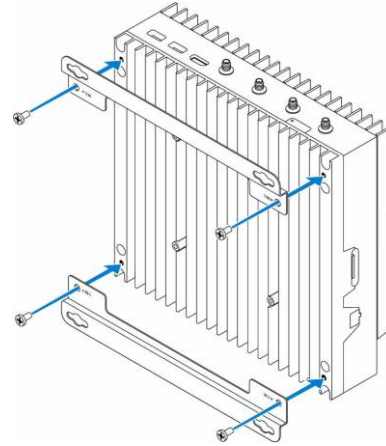
**Note:** Turn on the corresponding dip switches to enable the network bias and termination.

**Note:** After the NEXUS Series device setup is complete, reinstall the dust covers on any unused ports.

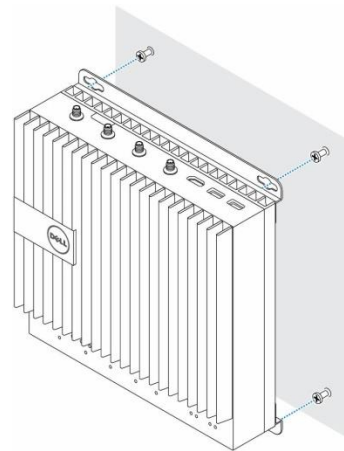
## MOUNTING THE NEXUS SERIES DEVICE ON THE WALL

You can mount the NEXUS Series device on a wall by using mounting brackets (sold separately).

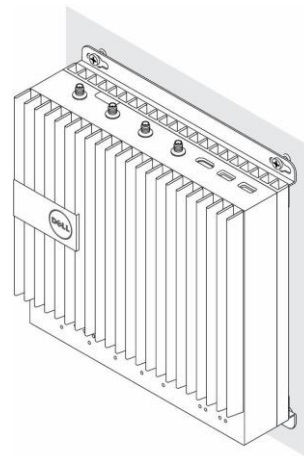
1. Secure the two mounting brackets to the back of the NEXUS Series device by using four screws.



2. Drill four holes in the wall that correspond to the holes in the mounting bracket, then place the NEXUS Series device against the wall and align the holes in the mounting brackets with the holes in the wall.



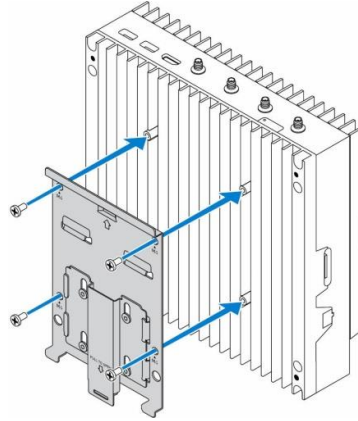
3. Tighten the screws to secure the NEXUS Series device to the wall.



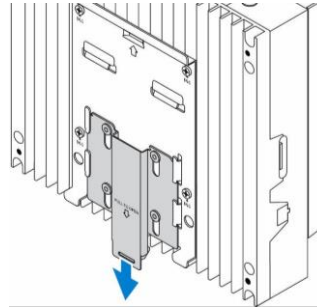
## MOUNTING THE NEXUS SERIES DEVICE ON A DIN RAIL

The NEXUS Series device can be mounted on a DIN rail. The DIN rail bracket mounts to the back of the NEXUS Series device.

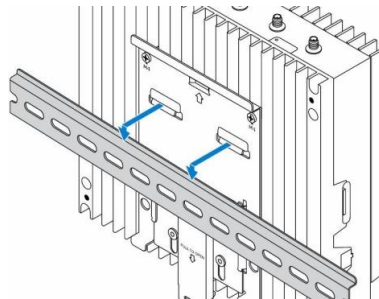
1. Align the screw holes on the DIN rail mount to the back of the NEXUS Series device, place the screws on the DIN rail mount and secure it to the NEXUS Series device.



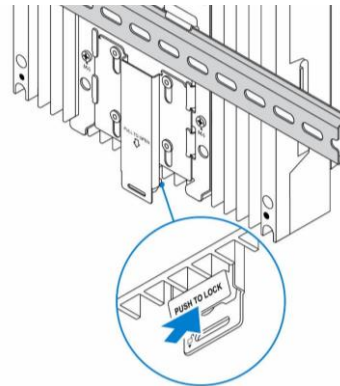
4. Pull down on the tab to release the latch on the DIN rail mount.



5. Mount the NEXUS Series device on a DIN rail.



6. Secure the NEXUS Series device to the DIN rail by pressing the latch.



### 3 Detailed engineering specifications

#### DIMENSIONS AND WEIGHT

##### PRODUCT DIMENSIONS AND WEIGHT

Volume (Liters)	3.167 liters
Weight	3.0 kg (6.6 lb)
Height	228.4 mm (8.99 in)
Width	216 mm (8.50 in)
Depth	64.20 mm (2.52 in)

**Note:** The dimensions for the enclosure do not include the latches and wall bracket on the back of the enclosure. The wall bracket adds 5 mm (0.04 inches) to the depth.

##### PACKAGING DIMENSIONS AND WEIGHT

Height	344 mm (13.56 in)
Width	295 mm (11.63 in)
Depth	156 mm (6.13 in)
Shipping weight (includes packaging materials)	3.8 kg (8.38 lb)

##### MOUNTING DIMENSIONS

Height	246 mm (9.69 in)
Width	228.4 mm (8.99 in)
Depth	72.7 mm (2.86 in)

ENVIRONMENTAL AND OPERATING CONDITIONS

Ingress protection rating	IP50
<ul style="list-style-type: none"><li>Temperature range</li></ul>	
Operating (with a maximum temperature gradation of 15°C per hour)	0°C ∙ 50°C (32°F ∙ 122°F) when connected to a 24 V AC/DC power source. 0°C ∙ 40°C (32°F ∙ 104°F) when connected to a power adapter.
	<b>Note:</b> The maximum operating temperature is derated 1°C/305 m (1000 ft) above sea level altitude.
Non-operating (with a maximum temperature gradation of 15°C per hour)	-40°C ∙ 70°C (-40°F ∙ 158 °F)
<ul style="list-style-type: none"><li>Relative humidity (maximum):</li></ul>	
Operating (with maximum humidity gradation of 10% per hour)	10% ∙ 90% (non-condensing)
Non-operating (with maximum humidity gradation of 10% per hour)	5% ∙ 95% (non-condensing)
<ul style="list-style-type: none"><li>Altitude (maximum, unpressurized):</li></ul>	
Operating	-15.20 m ∙ 5000 m (-50 ft ∙ 16,404 ft)
	<b>Note:</b> The maximum operating temperature is derated 1°C/305 m (1000 ft) above sea level altitude.
Storage	-15.20 m ∙ 10,668 m (-50 ft ∙ 35,000 ft)

## POWER

### POWER ADAPTOR (OPTIONAL)

- General parameters

Power supply	EPS Level V
Wattage	65 W
AC input voltage range	90-264 V AC
AC input current (low AC range/high AC range)	1.7 A/1.0 A
AC input frequency	47 Hz/63 Hz
Average efficiency (ESTAR 5.2 compliant)	87%

- DC parameters

+19.5 v output	19.5 V / 3.34 A
Total power (maximum)	65 W
BTUs/h (based on PSU max wattage)	222 BTU

- Power-input tolerances

24V AC/DC	+10% to -25% (26.4 V to 18 V)
-----------	-------------------------------

**Note:** The recommended supply is a 24 V 60 VA transformer. When using a higher VA transformer, care must be taken to ensure that the voltage stays within specification.

**Warning:**

Earthing or Grounding of any of the terminals connected to the SELV power supply will cause serious damage to the power supply rectifier and will invalidate the product Warranty.

**Never** Earth or Ground any of the terminals connected to this power supply.

**Never** use this power supply to power CB, NB, or SBC control devices, **or any other** equipment, because it is possible that the other equipment may be connected to Earth or Ground.

COMMUNICATIONS—ETHERNET

• General specifications	
Ethernet type	Ethernet LAN 10/100/1000
External connector type	RJ45
Data rates supported	10/100/1000 Mbps

HARD DRIVES - M.2 SATA 64GB SSD

• General specifications	
Capacity (bytes)	64 Gb
Dimensions inches (W x D x H)	3.94 x 2.75 x 0.374
Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	800,000 hours
Logical blocks	500,118,192



## 4 Software Configuration

### INTRODUCTION

The following provides details on the software configuration of the NEXUS Series hardware. Please follow the steps contained within this section for proper setup and configuration.

### TOOLS REQUIRED

The following tools will be required for proper configuration of the system:

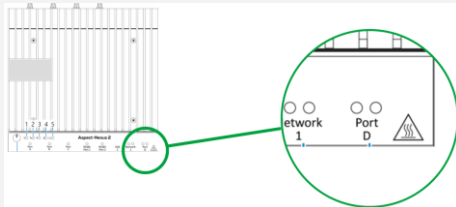
- PC/Laptop
- Ethernet cross-over cable, or other network connection to your NEXUS Series device
- Standard web-browser such as Windows Edge, Mozilla Firefox, Apple Safari, or other.
- NEXUS Series License file pre-installed
- 24 V AC power source

### CONNECTING TO A NEXUS SERIES DEVICE

The NEXUS Series device is shipped with a default IP address (192.168.1.251) and subnet mask (255.255.255.0) on the primary Ethernet Port. Your laptop's network card must be configured in a manner where it may access this IP network setting. Refer to your operating system documentation for details on how to configure your network card.

See *Ethernet Settings* on page 30 for details on how to reconfigure NEXUS Series device IP Address.

**Note:** The secondary Ethernet Port (marked "Port D") is configured with a default IP address (192.168.1.250) and subnet mask (255.255.255.0), so that if connectivity is lost on the primary LAN port, you can use the secondary port to gain access to the NEXUS Series controller as described below and reset it.



**Primary and Recovery ports should not be both connected at the same time – unplug the primary port when connecting your laptop to the recovery port.**

To use the recovery port:

- Depending on your Operating System, set your Network Adaptor to the 192.168.1.0/24 IP network. e.g. in Windows, in **Settings > Network & Internet** set the IP address to 192.168.1.1 and Subnet Mask to 255.255.255.0 (i.e. the default value).
- You should now be able to reach <http://192.168.1.250/> in a browser on your PC and proceed from there. (If you have HTTPS enabled, you can reach the target at <https://192.168.1.250/> instead.)
- Once recovery is complete, the NEXUS Series device must be rebooted.

## LOG-IN

To log-in to the NEXUS Series device:

1. With your PC's network card configured, open any standard web browser.
2. Browse to the IP address of your NEXUS Series device as defined during installation.
3. If your connection is successful, the main login page of ASPECT will be displayed:

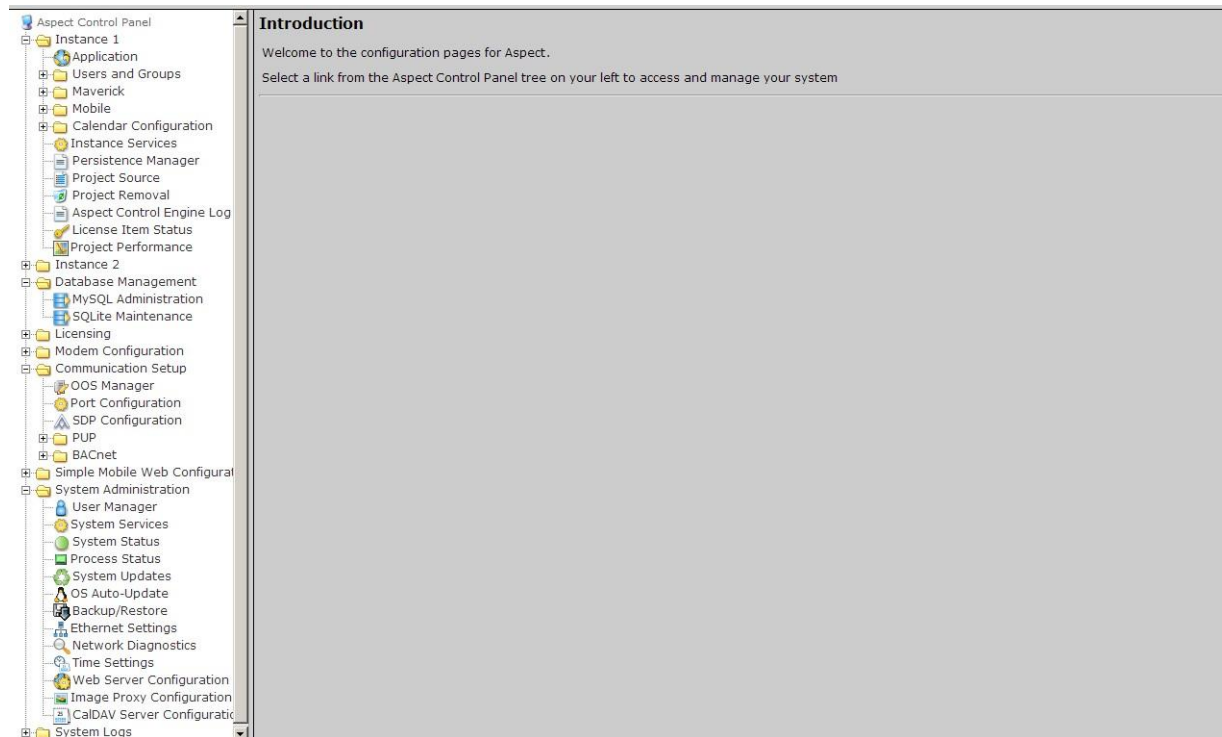


The screenshot shows a login interface with two input fields: 'Username' and 'Password'. Below these fields is a 'Log In' button. The background is a solid light gray.

4. Enter the case-sensitive default username and password into the fields provided.
5. Click the Log In button.

## CONTROL PANEL

When you successfully log-in, you will be directed to the Control Panel. The Control Panel contains a navigation tree to the left of the web user interface; allowing users to select different configuration areas of the product.



## PROJECT INSTANCES

Two instances are available within the **NEXUS Series** device. This provides the capability to host up to two projects within the target. Each instance runs its own Aspect Control Engine allowing service to be performed on separate instances. Within Instance 1 and Instance 2, the same options exist for the following:

- Calendar Configuration
- Users and Groups
- Mobile
- Instance Services
- Project Source
- Project Removal
- Aspect Control Engine Logs
- License Item Status
- Project Thread Status

## CALENDAR CONFIGURATION

The Calendar Configuration area is used to configure iCalendar integration variables of the **NEXUS Series** device. Within this section there are two pages:

- Calendar File
- Calendar User

### Calendar File

Calendar File can be used to browse and modify what calendars have been previously published to the instance, as well as allow users to manually upload iCalendar files (files with .ics extensions) to the device.

- To upload a saved calendar file, simply select the Browse/Choose File button and locate the iCalendar file on your computer. Once located, click the Upload button.
- To delete a previously published calendar, place a check mark next to the corresponding file and select the Delete button.

**Calendar File Management**

Upload and manage calendar files stored on this device. Calendar User credentials must be provided in order to download a calendar.

Calendar file (.ics):  
 No file chosen

Calendar .ics files:	Date Modified	Delete
<a href="#">Monday thru Friday 8to5 Calendar.ics</a>	July 27 2011 14:59:42	<input type="checkbox"/> <input type="button" value="Delete"/>

## Calendar User

Calendar User provides the ability to change the default username and password credentials that are required to allow iCalendar-based tools to publish data to the **NEXUS Series** device. By default, the username (*calendar*) and password (*user*) can be changed to any desired credential set. When referencing Calendars in Aspect Studio, these credentials must be specified in order to properly access the file.

**Calendar Configuration**

Use the following form to configure the Calendar username and password.

Username:

Password:

Confirm Password:

## USERS AND GROUPS

Users and Groups are included within each instance in the **NEXUS Series** device. This provides the ability to manage users in the Aspect control instance it serves.

**User Manager**

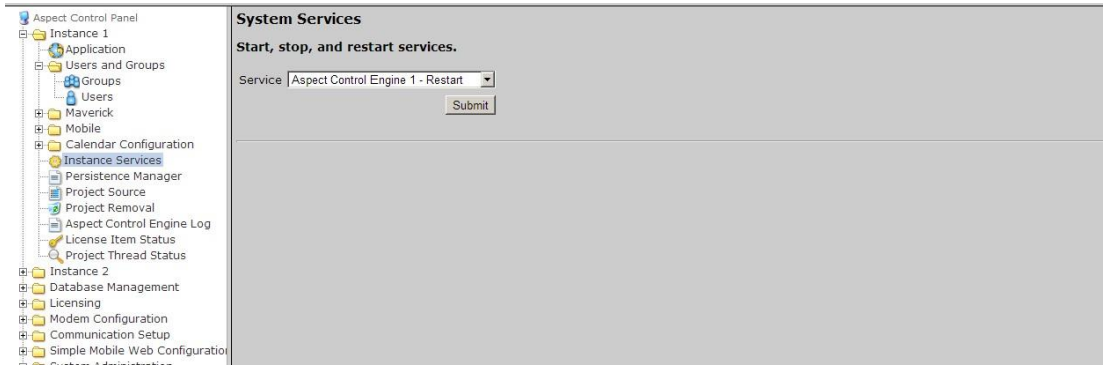
Add, edit, and delete users.

[Add User](#) | [Print Users](#)

User	Groups	Delete <input type="checkbox"/>
<a href="#">aamuser</a>	MIXAdmin	<input type="checkbox"/>

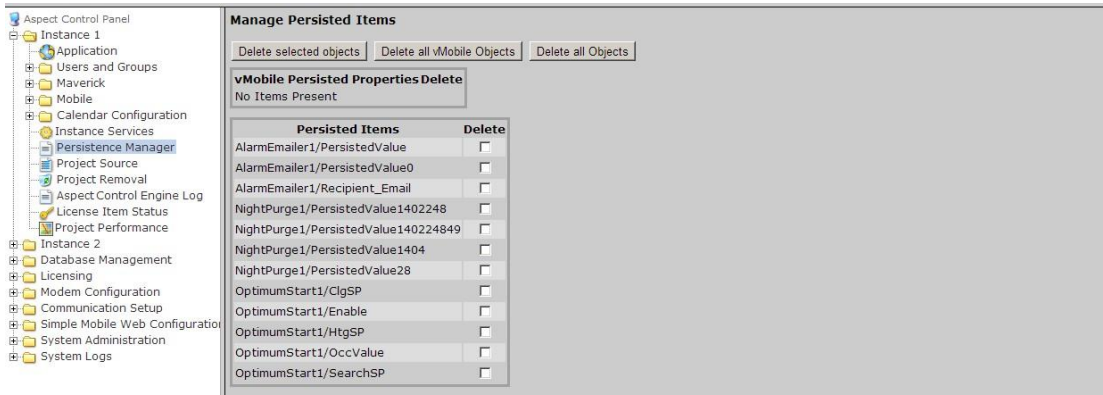
## INSTANCE SERVICES

The Instance Services provides users with the ability to restart the Aspect Control Engine for the instance they are working with. Only one option is available in the Instance Services drop-down which will allow the instance to be reset.



## PERSISTENCE MANAGER

The Persistence Manager area is used to manage and delete Persisted data. Persisted data is localized data stored from Persisted Elements that may be present in an Aspect project, as well as data persisted by vSTAT elements when such functionality is implemented in a delivered solution.



## PROJECT SOURCE

The Project Source page provides administrators with the ability to download a password protected copy of the Aspect project deployed to the Instance. When selecting this in the Control Panel, you will be prompted to re-enter your credentials in order to download a copy of the project.

The required credentials will be the same as the ones used to originally deploy the project.

Project Name	Deployment Date	Archive Size
<a href="#">test_10803.zip</a>	2013-04-11 09:40:47	679.2 KB

## PROJECT REMOVAL

The project removal page provides administrators the ability to remove a currently deployed project from an Aspect instance.

**Aspect Project Removal**

Remove the deployed application.

Click the button to remove the deployed application.

[Remove](#)

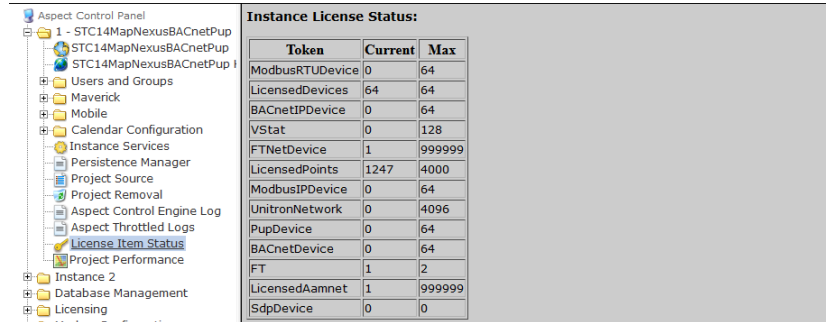
## ASPECT CONTROL ENGINE LOG

The Aspect Control Engine log provides administrators and technicians the ability to view project status and debugging information relating to the health of the deployed Aspect project. Up to 10 pages of Aspect logs are contained and individual logs can be downloaded.

```
INFO : 2013-04-16 12:42:05,025 WATCHDOG PET - petInterval=[14.0] com.aamatrix.mix.server.Controller.tick(Controller.java:325)
INFO : 2013-04-16 12:41:52,294 RESETTING WATCHDOG TIMEOUT - watchdogTimeout=[68] com.aamatrix.mix.server.Controller.tick(Controller.java:315)
INFO : 2013-04-16 12:41:52,251 LOAD COMPLETE (LOGIC INIT/START DONE) FOR PROJECT>>> [test_10803]
com.ergotech.mix.server.HeadlessController.reloadLogic(HeadlessController.java:537)
INFO : 2013-04-16 12:41:52,250 Lifecycle Start Complete for [GlobalDeviceLogic] Elapsed Time [14] milliseconds
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,247 [GPC1_2738] Establishing [4] Socket connection(s) to [10.10.4.7:4222]
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,244 [ASC_884] Establishing [4] Socket connection(s) to [10.10.4.7:4222]
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,240 [VAV_9934] Establishing [4] Socket connection(s) to [10.10.4.7:4222]
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,233 Lifecycle Start Complete for [GlobalConfigLogic] Elapsed Time [68] milliseconds
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,215 [BACnetDriver] Establishing [5] Socket connection(s) to [10.10.4.7:4222]
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:52,207 [Nexus] Establishing [1] Socket connection(s) to [10.10.4.7:4222]
com.ergotech.vib.utils.Log4JLogger.info(Log4JLogger.java:49)
INFO : 2013-04-16 12:41:51,668 LOADING PROJECT >>> [test_10803] deployed from AspectStudio version=[1.08.03] on=[2013-04-11 09:40:16.780]
com.ergotech.util.ProjectLogicImpl(ProjectLogicImpl.java:72)
INFO : 2013-04-16 12:41:51,447 Loading Logic for: /home/aspect1/.htmlroot/mix
com.ergotech.mix.server.HeadlessController.reloadLogic(HeadlessController.java:484)
```

## LICENSE ITEM STATUS

The License Item Status area provides the ability to view how many current license items a project may be using, as well as the maximum amount of licenses available for a particular feature or function.



Token	Current	Max
ModbusRTUDevice	0	64
LicensedDevices	64	64
BACnetIPDevice	0	64
VStat	0	128
FTNetDevice	1	999999
LicensedPoints	1247	4000
ModbusIPDevice	0	64
UnitronNetwork	0	4096
PupDevice	0	64
BACnetDevice	0	64
FT	1	2
LicensedAamnet	1	999999
SdpDevice	0	0

## PROJECT PERFORMANCE

The Project Performance area provides the ability to dynamically view and monitor the status of Threads, Maps, and Ports being used by the Aspect project loaded into the target.

By default, the all Tabs will update information every 15 seconds. You may adjust this update timer by choosing the Settings tab, and changing the Global Settings Update time.

Aspect Control Panel

Instance 1

Application

Users and Groups

Mavenlink

Mobile

Calendar Configuration

Instance Services

Persistence Manager

Project Source

Project Removal

Aspect Control Engine Log

License Item Status

Project Performance

Instance 2

Database Management

Licensing

Modem Configuration

Communication Setup

Simple Mobile Web Configuration

System Administration

System Logs

Threads

Maps

Port Pool

Settings

Thread Status at 13:32:07 GMT-0400 (Eastern Daylight Time)

Total Timers: 9

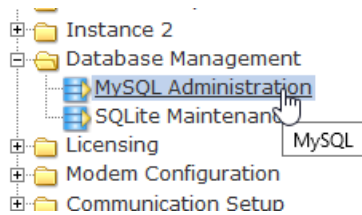
Total Targets: 30

	Timebase	Target Class	HashCode	Target Count	ElapsedTime (ms)	Last Tick Time (s)	Load
	60.0	Schedule	1082029522	1	163	59.4s ago	0.27%
	14.0	Default	1288520654	1	19	3.7s ago	0.14%
	1.0	Default	1579795854	12	1	0.3s ago	0.10%
	2.0	Default	453897055	4	1	0.3s ago	0.05%
	15.0	Schedule	1602698930	1	2	2.8s ago	0.01%
	3600.0	Default	1511627065	2	0	2013.2s ago	0.00%
	600.0	Default	1192380230	3	0	231.6s ago	0.00%
	300.0	Default	1725603492	3	1	129.2s ago	0.00%
	15.0	Default	1877445782	3	0	5.6s ago	0.00%

## DATABASE MANAGEMENT

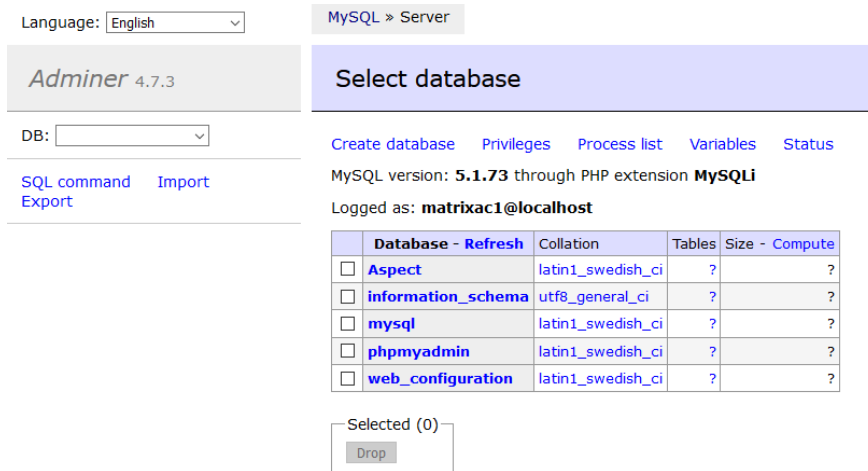
Database Management is the centralized location for all database storage and contains paths to MySQL Administration and SQLite Maintenance.

### MYSQL ADMINISTRATION

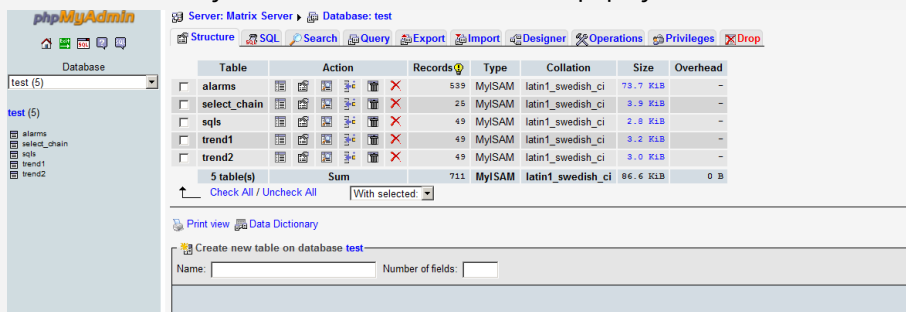


The **MySQL Administration** item in the webUI tree links to an administration interface for ASPECT's MySQL Database Server. To access the Database Interface, the user must enter (case sensitive) login credentials. The default credentials are:

- Username - **matrixac1**
- Password - **aam**



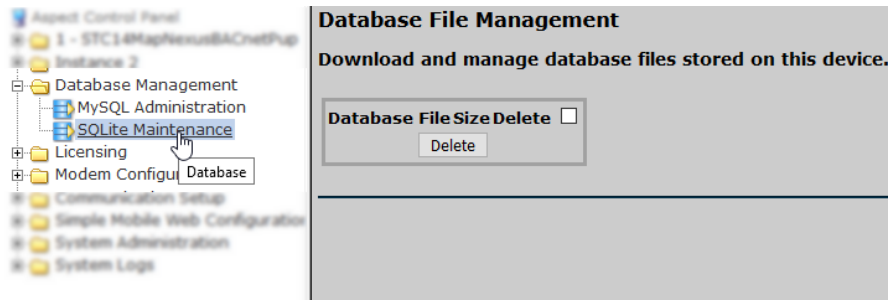
**Note:** MySQL administration in ASPECT 3.03.02 and later uses Adminer. However, on devices running 3.03.01 or earlier the UI for MySQL administration is based on phpMyAdmin:





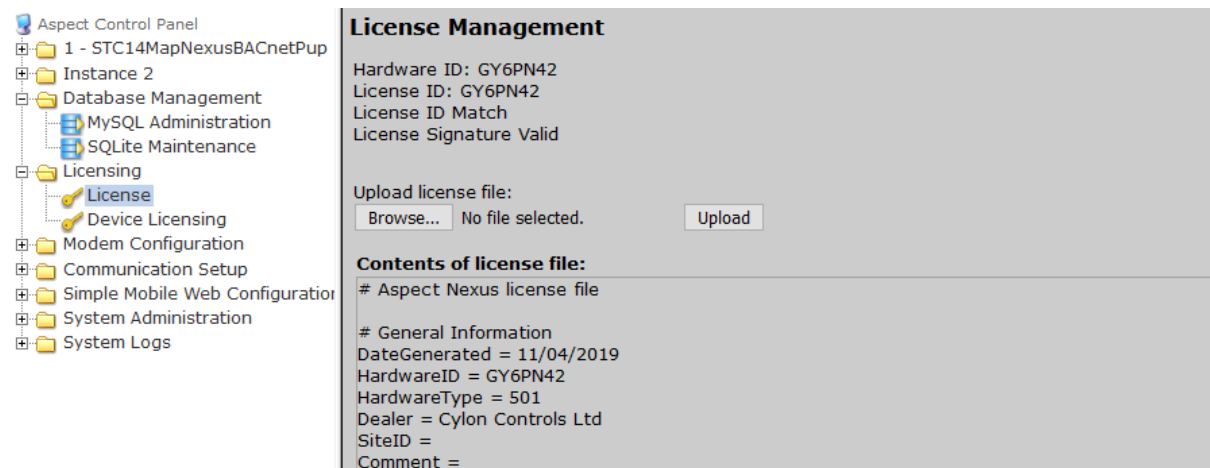
## SQLite Maintenance

The **SQLite Maintenance** page provides users with the ability to manage the **SQLite** database. This page shows the database files and sizes.



## Licensing

The **License** page provides the ability to view the current license status of the **NEXUS Series** device as well as a method to upload/download license files. If a license file is uploaded, Cylon Controls recommends rebooting the **NEXUS Series** device to ensure the license file is successfully applied.



## COMMUNICATION SETUP

The **Communication Setup** page provides administrators the ability to configure manual Out of Service entries, SDP Network Properties, BACnet IP Router, BBMD and Time Synchronization settings.

### OUT OF SERVICE MANAGER (OSS)

The **Out Of Service Manager (OSS)** provides a single location that allows administrators to manually mark devices out of service using the Manual OOS check boxes.

The screenshot shows the 'Commit OOS Settings' page. On the left is a navigation tree with 'OOS Manager' selected. The main area has two sections: 'PUP Devices' and 'BACnet Devices'. Each section contains a table with columns for Device, Last Transaction, OOS, and Manual OOS. Search bars are provided for each table.

**PUP Devices**

Device	Last Transaction	OOS	Manual OOS
Line:0 ID:11305	60s		<input type="checkbox"/>
Line:0 ID: 64	60s		<input type="checkbox"/>
Line:0 ID: 100	60s		<input type="checkbox"/>
Line:0 ID: 9934	60s		<input type="checkbox"/>
Line:0 ID:15163	60s		<input type="checkbox"/>

**BACnet Devices**

Device	Last Transaction	OOS	Manual OOS
Network: 3691 ID:0.0.0.0:14	46s		<input checked="" type="checkbox"/>
Network: 3691 ID:0.0.0.0:5	1s		<input type="checkbox"/>

## BACNET SETTINGS

The **BACnet Configuration** area allows configuration of read/write retries, port configuration, and router settings for BACnet/IP.

The screenshot shows the 'BACnet Configuration' page. On the left is a navigation tree with 'BACnet Settings' selected. The main area contains three configuration sections: 'BACnet IP Configuration', 'BACnet MSTP Configuration', and 'BACnet Router Configuration'. Each section has several input fields and dropdown menus. A 'Submit' button is at the bottom right.

**BACnet IP Configuration**

- UDP Port: 47808
- IP Timeout (seconds): 0.5
- IP Write Retries: 1
- IP Read Retries: 1
- IP Out Of Service Time (seconds): 60
- IP Discovery Timeout (seconds): 3

**BACnet MSTP Configuration**

- MSTP Timeout (seconds): 1.0
- MSTP Write Retries: 1
- MSTP Read Retries: 1
- MSTP Out Of Service Time (seconds): 60

**BACnet Router Configuration**

- Device Name: NexusX
- BACnet Device Instance Number: 541
- BACnet Ethernet Enabled: No
- BACnet IP Enabled: Yes
- BACnet IP Network Number: 555
- BACnet Internal Network Number: 2651
- BACnet NAT Network Enabled: No
- Router Debug Level: 1
- BACnet Debug Level: 1

## BBMD SETTINGS

The **BBMD settings** area is used to configure the BACnet/IP Broadcast Management Device (BBMD) table setup for BACnet networks.

**BBMD Configuration**

**Configure BBMD.**

[Add Device](#)

Entries may only be added to the BBMD configuration when BACnet IP or BACnet Ethernet protocols are enabled

IP Address	UDP Port	Subnet Mask	Delete
192.168.50.100	47808	255.255.255.255	<input type="checkbox"/>

Entries may only be added to the BBMD NAT configuration when BACnet NAT is enabled

IP Address	UDP Port	Subnet Mask	Delete
			<input type="checkbox"/>

## MODBUS NETWORK PROPERTIES

The **Modbus Network Properties** page is used to set the configuration for Modbus communications.

**Modbus Network Properties**

**Modbus Configuration**

Modbus Timeout(seconds) 3.0

Modbus Write Retries 0

Modbus Read Retries 0

Modbus Out Of Service Time (seconds) 60

IP Gap Delay 20

## TIME SYNC SETTINGS

The **Time Sync Settings** area provides the ability to configure BACnet network time synchronizations.

**Time Sync Configuration**

**Configure the BACnet Network configuration.**

Time Sync Interval 1 Hour

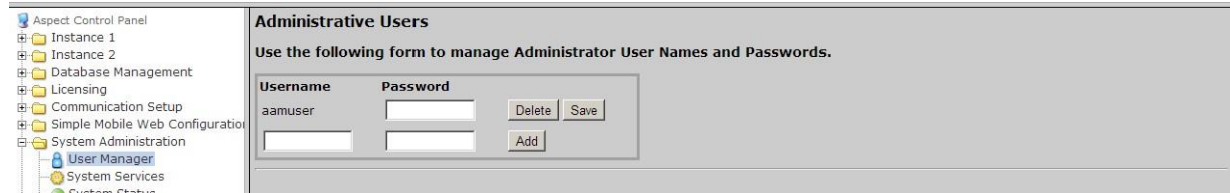
Time Sync Recipients (Up to four networks)

## SYSTEM ADMINISTRATION

The System Administration area contains system settings for the **NEXUS Series** device. These fields include the User Manager, System Services, System Status, System Updates, Ethernet Settings, Time Settings Web Server Configuration, Process Status, Image Proxy Configuration, and CalDAV Server Configuration.

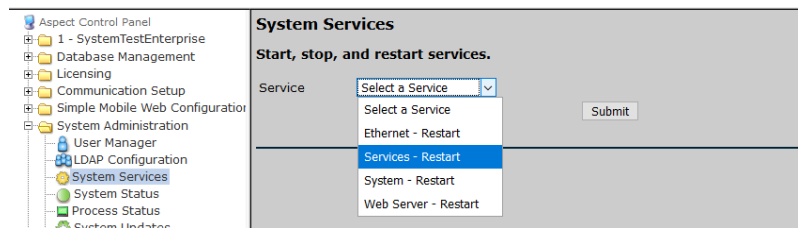
### USER MANAGER

The User Manager area provides fields to setup, add and remove administrative users from the **NEXUS Series** device. Administrative users are granted full access to the Aspect Control Panel while users/groups created within an instance are only allowed access to deployed projects.



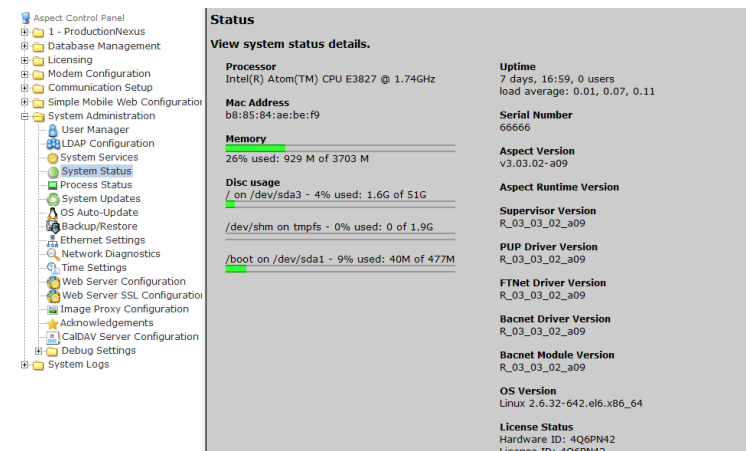
### SYSTEM SERVICES

The System Services area provides administrators with the ability to control key services relative to the target. Through this area, users can restart specific services of the **NEXUS Series** device. Simply select an option from the drop-down and click Submit. A message will indicate that the service has been stopped/started/restarted successfully.



### SYSTEM STATUS

The System Status page provides details on the current health of the system including Uptime, memory (RAM) utilization, disk space and all information pertaining to revision levels.



## PROCESS STATUS

This shows the result of a top command which produces an updating list of current processes running.

top - 15:46:11 up 3 days, 2:45, 0 users, load average: 0.03, 0.02, 0.00  
 Tasks: 150 total, 1 running, 149 sleeping, 0 stopped, 0 zombie  
 Cpu(s): 0.1%us, 0.3%sy, 0.0%ni, 99.4%id, 0.1%wa, 0.0%hi, 0.0%si, 0.0%st  
 Mem: 1912684k total, 1089852k used, 822832k free, 146460k buffers  
 Swap: 2097144k total, 0k used, 2097144k free, 282172k cached

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
19533	apache	20	0	15028	1120	820	R	3.8	0.1	0:00.04	top
2241	root	20	0	1468m	3116	700	S	1.9	0.2	74:12.41	mix-com-srv
1	root	20	0	19352	1528	1220	S	0.0	0.1	0:02.04	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.01	kthreadd
3	root	RT	0	0	0	0	S	0.0	0.0	0:00.31	migration/0
4	root	20	0	0	0	0	S	0.0	0.0	0:00.99	ksoftirqd/0
5	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
6	root	RT	0	0	0	0	S	0.0	0.0	0:00.36	watchdog/0
7	root	RT	0	0	0	0	S	0.0	0.0	0:00.31	migration/1
8	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/1
9	root	20	0	0	0	0	S	0.0	0.0	0:01.97	ksoftirqd/1
10	root	RT	0	0	0	0	S	0.0	0.0	0:00.39	watchdog/1
11	root	RT	0	0	0	0	S	0.0	0.0	0:00.34	migration/2
12	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/2
13	root	20	0	0	0	0	S	0.0	0.0	0:01.80	ksoftirqd/2
14	root	RT	0	0	0	0	S	0.0	0.0	0:00.34	watchdog/2
15	root	RT	0	0	0	0	S	0.0	0.0	0:00.32	migration/3
16	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/3
17	root	20	0	0	0	0	S	0.0	0.0	0:01.75	ksoftirqd/3
18	root	RT	0	0	0	0	S	0.0	0.0	0:00.36	watchdog/3
19	root	20	0	0	0	0	S	0.0	0.0	0:22.84	events/0

## SYSTEM UPDATES

The **System Updates** area is used to perform firmware upgrades to the ASPECT device. These firmware updates can be obtained from **Error! Unknown document property name..**

**Update System - Confirm**

**CAUTION: Please be aware that the Aspect Control Engine will be shut down once you click continue.**

It is recommended to download a **Configuration Backup** using [Backup/Restore](#) before applying updates.

Click "Continue" to proceed to upload stage.

Clicking on the **Continue** button opens the upload page:

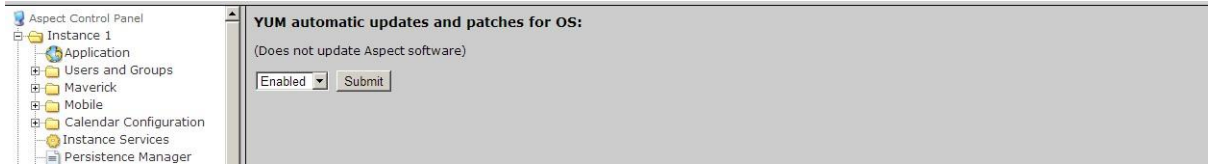
**Update System - File Upload**

Upload the ".aam" file and then submit the form to execute the system update.

Update Aspect  No file chosen

## OS AUTO UPDATE

Permits whether to allow or disallow automatic YUM updates. It is recommended that this setting be left at “Enabled”.



## BACKUP/RESTORE

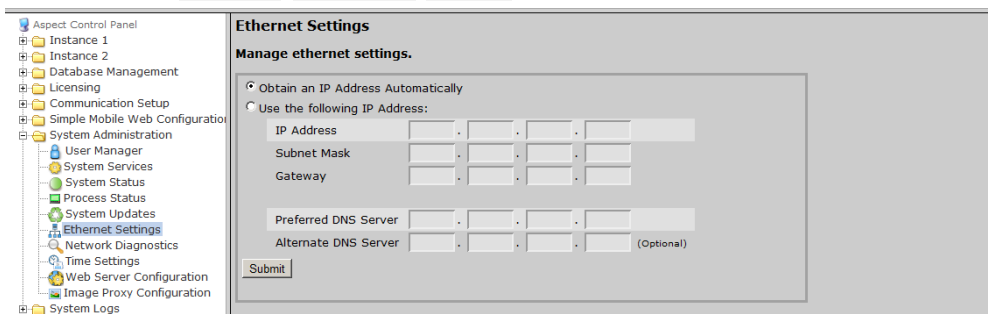
Backup /Restore provides the means to backup an ASPECT target's device configuration (network addresses, port and driver configuration, etc). To create a backup, simply click the Download button.



## ETHERNET SETTINGS

The Ethernet Settings area permits for Ethernet address configuration of the NEXUS Series device. The NEXUS Series device can support static IP addresses or DHCP addressing from a valid DHCP server. Simply select the appropriate address setting for your application.

- To configure the device to use DHCP addressing, select the Obtain an IP Address Automatically radio button. In most DHCP environments, a resolvable DNS name or reserved IP address is assigned to the NEXUS Series device by the local network administrator prior to configuring the device for this option.
- To configure the device to use a static IP address, select the Use the following IP Address radio button, then enter your IP address, Subnet Mask, Gateway, and DNS information into the boxes provided below.





## NETWORK DIAGNOSTICS

The **Network Diagnostics** area contains useful troubleshooting methods for network connectivity problems without the need for additional tools.

**Aspect Control Panel**

- Instance 1
  - Application
  - Users and Groups
  - Maverick
  - Mobile
    - vStat
  - Calendar Configuration
  - Instance Services
  - Persistence Manager
  - Project Source
  - Project Removal
  - Aspect Control Engine Log
  - License Item Status
  - Project Thread Status
- Instance 2
- Database Management
- Licensing
- Modem Configuration
- Communication Setup
- Simple Mobile Web Configuration
- System Administration
  - User Manager
  - System Services
  - System Status
  - Process Status
  - System Updates
  - OS Auto-Update
  - Backup/Restore
  - Ethernet Settings
  - Network Diagnostics**
  - Time Settings
  - Web Server Configuration
  - Image Proxy Configuration
  - System Logs

**Ping**

Ping Host:

Start Ping Test Clear Ping Results

**Traceroute**

Traceroute:

Start Traceroute Clear Traceroute Results

**DNS Test**

Hostname:

Start DNS Test Clear DNS Results

**MySQL Test**

Hostname:

Username:

Password:

Database:

Start MySQL Test Clear MySQL Results

## TIME SETTINGS

The Time Settings area allows users to configure the **NEXUS Series** device Time and Date parameters. In this section, users can set the following items using the appropriate drop-downs and editors:

- System Time - specified in military time
- System Date - specified in MM/DD/YYYY
- TimeZone/Region - specified in one of many configurable options
- Time Server Synchronization - Specifies an NTP time server on the Internet with which to sync the system time (via firewall). Refer to [pool.ntp.org](http://pool.ntp.org) for information relative to other available NTP servers available.

**Aspect Control Panel**

- Instance 1
  - Application
  - Users and Groups
  - Maverick
  - Mobile
    - vStat
  - Calendar Configuration
  - Instance Services
  - Persistence Manager
  - Project Source
  - Project Removal
  - Aspect Control Engine Log
  - License Item Status
  - Project Thread Status
- Instance 2
- Database Management
- Licensing
- Modem Configuration
- Communication Setup
- Simple Mobile Web Configuration
- System Administration
  - User Manager
  - System Services
  - System Status

**Time/Date Settings**

Use the following forms to configure time and date settings.

Set System Time   Submit

Set System Date  Submit

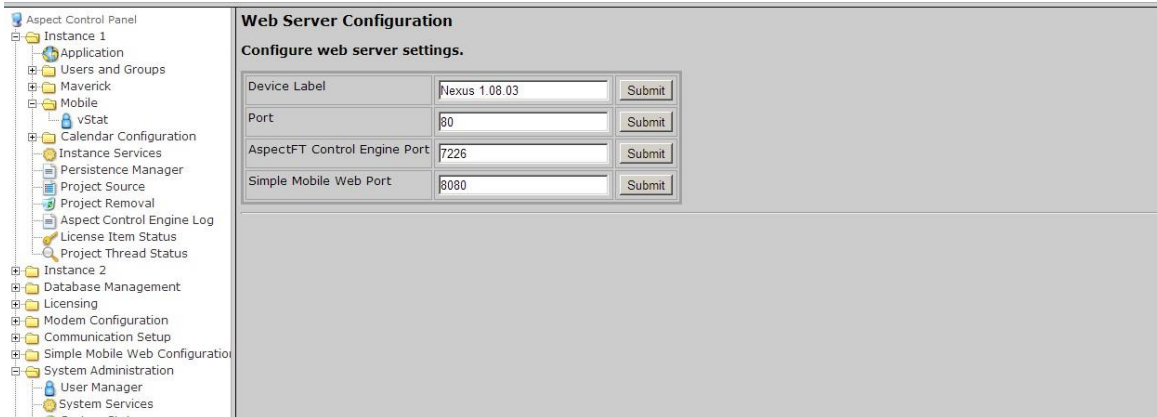
Set TimeZone/Region  Submit

Time Server Synchronization  Submit

## WEB SERVER CONFIGURATION

The Web Server Configuration area is used to set a label for the login screen and change port settings for the following:

- Aspect Control Panel - defaults to port 80(HTTP)
- Aspect Control Engine - defaults to port 7226
- Simple Mobile Web - defaults to port 8080



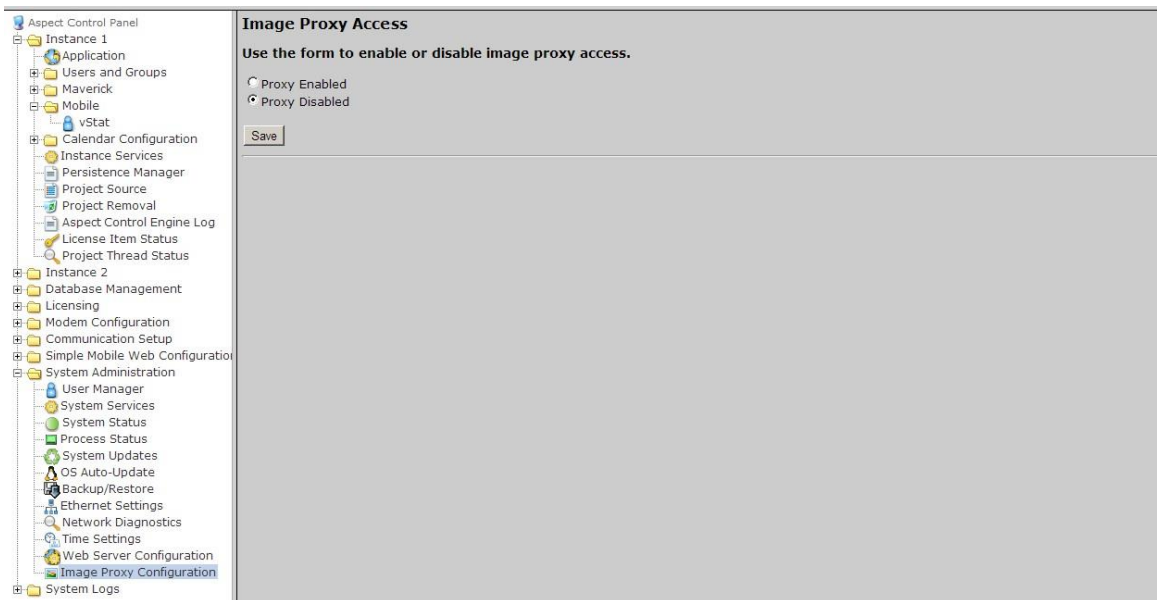
**Web Server Configuration**

Configure web server settings.

Device Label	Nexus 1.08.03	Submit
Port	80	Submit
AspectFT Control Engine Port	7226	Submit
Simple Mobile Web Port	8080	Submit

## IMAGE PROXY CONFIGURATION

The Image Proxy Configuration page permits users to enable to disable image proxy, allowing Aspect to access external sites retrieve graphics.



**Image Proxy Access**

Use the form to enable or disable image proxy access.

☐ Proxy Enabled  
☒ Proxy Disabled

Save



## SYSTEM LOGS

The System Logs area provides users with the ability to view and download messages generated by the NEXUS Series device and the Aspect control engine. The System Logs area provides the following logs:

- **Diagnostic Buffer** - provides kernel operating system output for the device. The information shown here is for diagnostic purposes and may be referenced during troubleshooting session with Cylon Controls.
- **Remote Logging** - The Remote Logging page is used to allow or disallow centralized syslog messaging. All Aspect targets support the ability to send their log information to a centralized Aspect target or IT-supported syslog server.
- **System Log** - contains information processed by the sub-level operating system outside of Aspect
- **Update Log** - shows any recent YUM updates in the system.

## DIAGNOSTIC BUFFER

The Diagnostic Buffer provides diagnostic information regarding the NEXUS Series device hardware and OS details.

The screenshot shows the 'Diagnostic Buffer' window in the Aspect Control Panel. The left sidebar lists various system components, with 'Diagnostic Buffer' selected. The main panel displays the output of the kernel's diagnostic buffer, including system initialization details, hardware information, and BIOS data.

**Diagnostic Buffer**  
View the output of kernel's diagnostic buffer  
[Download the output of the buffer](#)

```

Initializing cgroup subsys cpuset
Initializing cgroup subsys cpu
Linux version 2.6.32-358.2.1.el6.x86_64 (mockbuild@c6b8.bsys.dev.centos.org) (gcc version 4.4.7 20120313 (Red Hat 4.4.7-3) (GCC) ) #1 SMP
Wed Mar 13 00:26:49 UTC 2013
Command line: ro root=UUID=72da8038-b870-4e9b-baae-8862efebc46 rd_NO_LUKS rd_NO_LVM rd_NO_MD rd_NO_DM LANG=en_US.UTF-8
SYSFONT=latarcyrheb-sun16 KEYBOARDTYPE=pc KEYTABLE=us crashkernel=auto crashkernel=auto rhgb quiet 8250.nr_uarts=6
KERNEL supported cpus:
Intel GenuineIntel
AMD AuthenticAMD
Centaur CentaurHauls
BIOS-provided physical RAM map:
BIOS-e820: 0000000000000000 - 0000000000009fc00 (usable)
BIOS-e820: 0000000000009fc00 - 000000000000a0000 (reserved)
BIOS-e820: 000000000000e0000 - 00000000000100000 (reserved)
BIOS-e820: 00000000000100000 - 000000000007f6a0000 (usable)
BIOS-e820: 000000000007f6a0000 - 000000000007f6ae000 (ACPI data)
BIOS-e820: 000000000007f6ae000 - 000000000007f6e0000 (ACPI NVS)
BIOS-e820: 000000000007f6e0000 - 000000000007f700000 (reserved)
BIOS-e820: 000000000007f700000 - 000000000007f700000 (reserved)
BIOS-e820: 000000000007f700000 - 000000000007f700000 (reserved)
BIOS-e820: 000000000007f700000 - 000000000007f700000 (reserved)
DMI present.
SMBIOS version 2.6 @ 0xF8AA0
DMI: To Be Filled By O.E.M. To Be Filled By O.E.M./To be filled by O.E.M., BIOS 080015 01/26/2010
AMI BIOS detected: BIOS may corrupt low RAM, working around it.
  
```

## REMOTE LOGGING

The Remote Logging page is used to allow or disallow centralized syslog messaging. All Aspect targets support the ability to send their log information to a centralized Aspect target or IT-supported syslog server.

The screenshot shows the 'Remote Syslog Listener' window in the Aspect Control Panel. The left sidebar lists various system components, with 'Remote Syslog Listener' selected. The main panel contains a form to configure remote syslog messaging.

**Remote Syslog Listener**  
Use the form to allow or disallow incoming remote syslog messages.

☒ Remote Syslog Messages Allowed  
☐ Remote Syslog Messages Disallowed

## SYSTEM LOG

The System Log area provides complete syslog information for the hardware. Information provided within this log includes boot up details and lower level information regarding runtime of the system.

## UPDATE LOG

The update log shows all recent updates to the operating system.

**Update Log**

**View Package Update Logs**

yum.log

[Download the update log](#)

Apr 17 05:17:56	Updated: krb5-libs-1.10.3-10.el6_4.2.x86_64
Apr 06 04:50:35	Updated: coreutils-8.4-19.el6_4.1.x86_64
Apr 06 04:50:31	Updated: coreutils-libs-8.4-19.el6_4.1.x86_64
Mar 29 05:06:12	Updated: 32:bind-utils-9.8.2-0.17.rc1.el6_4.4.x86_64
Mar 29 05:06:12	Updated: 32:bind-libs-9.8.2-0.17.rc1.el6_4.4.x86_64
Mar 28 12:03:55	Updated: tzdata-2013b-1.el6.noarch
Mar 28 12:03:44	Updated: tzdata-java-2013b-1.el6.noarch
Mar 28 12:03:40	Updated: pixman-0.26.2-5.el6_4.x86_64
Mar 28 12:03:40	Updated: 4:perl-Time-HiRes-1.9721-130.el6_4.x86_64
Mar 28 12:03:40	Updated: 1:perl-Digest-SHA-5.47-130.el6_4.x86_64
Mar 28 12:03:40	Updated: perl-Archive-Tar-1.58-130.el6_4.x86_64
Mar 28 12:03:39	Updated: 1:perl-Package-Constants-0.02-130.el6_4.x86_64
Mar 28 12:03:39	Updated: 1:perl-IO-Zlib-1.09-130.el6_4.x86_64
Mar 28 12:03:39	Updated: perl-Compress-Zlib-2.020-130.el6_4.x86_64

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