AirWave 8.2.11.1

API Guide

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Introduction

This is the AirWave application programming interface (API). AirWave collects and correlates a wealth of information from several components of a network, including access points, controllers, switches, and authentication sources. AirWave can provide this valuable information to other wireless applications relegating the need for these applications to develop direct interfaces with these components. Examples of wireless applications that would require AMP's correlated information are RF scanning IDS solutions, RF scanning analysis solutions, and wireless site planning tools.

The API uses Extensible Markup Language (XML) over HTTPS using session-based authentication. All HTTP parameters and form fields must be URL encoded.

API Authentication

AirWave requires all API requests to pass a /LOGIN authentication gateway, then obtain a cookie and token called **X-BISCOTTI**. AirWave API requests must to have this cookie and token in the request header to complete authentication and also prevent cross-site request forgery (CSRF) attacks.

The following code example can be used for AirWave API authentication.

```
// code starts
   var unirest = require('unirest');
   var cookie_jar = unirest.jar();
   var hostname = 'samplehost.corp.airwave.com';
   unirest.post('https://' + hostname + '/LOGIN')
   .jar(cookie_jar)
   .strictSSL(false)
   .headers({
   'Content-Type': 'application/x-www-form-urlencoded'
   })
   .send({
   destination: '/',
   credential_0: 'admin username', // Username for admin user
   credential_1: 'admin password'  // Password for admin user
   })
   .end(function(resp) {
   var token = resp.headers ? resp.headers['x-biscotti'] : null;

   if (token) {
   unirest.get('https://' + hostname + '/amp_stats.xml') // This is an exmaple for calling amp_
   stats api.
   .jar(cookie_jar)
   .strictSSL(false)
   .headers({
   'Content-Type': 'application/xml',
   'X-BISCOTTI': token
   })
   .end(function (res) {
   console.log(res.body);
   });
   } else {
   console.error('there should be a token in header with successful login');
   }
   });
// code ends
```

Overview

AirWave APIs are split into Query APIs, Search and Report APIs, and APIs to Batch Execute AP Commands.

Query APIs

- AMP Stats – Provides a high level summary of AirWave's current status.
- Folder List – Provides a full (or optionally partial) list of folders on the AirWave server, and a high level summary of the folder's current status.
- Alert List – Provides a list of all AirWave alerts.
- AP List – Provides a full (or optionally partial) list of managed Access Points on AirWave. A partial list of APs can be obtained by providing one or more AP IDs, as described below.
- AP BSSID List – Provides a full (or optionally partial) list of BSSIDs of managed Access Points on an AMP. A partial list of BSSIDs of APs can be obtained by providing one or more AP IDs, as described below.
- AP Detail – Provides detailed information about managed APs: associated clients and neighboring rogue access points.
- AP Log – Provides a specified number of the most recent log messages for APs. This API requires one or more AP IDs to be supplied.
- Rogue Detail – Provides detailed information about rogue access points, including a history of individual discovery events. This API requires one or more rogue_ap IDs.
- Client Detail – Provides detailed information about wireless clients, including a history of associations. This API requires one or more client MAC addresses.
- User Info – Provides authorization information about the currently logged in user.
- Topology List - Provides a list of all devices in a folder.

Configuration APIs

- Modify or Add Template Variables – Enables an external application to update AP's template variables in AirWave. User defined variables are also supported.
- Import AP Whitelist – Enables an external application to create, update, and delete AP Whitelist in AirWave.

Search APIs

- AP Search – Provides an interface to AirWave's AP search functionality. This API requires a query string and returns an XML version of the AirWave WebUI search results.
- Client Search – Provides an interface to AirWave's client search functionality. This API requires a query string and returns an XML version of the AirWave WebUI's search results.
- VPN User Search – Provides an interface to AirWave's VPN User search functionality. This API requires a query string and returns an XML version of the AirWave WebUI's search results.

Report APIs

- Latest Report – Provides an XML version of the latest generated report for a given report definition.

Querying by Field

AirWave has two methods for querying the XML API: the URL interface, and the deprecated XML POST interface.

When using the URL interface, all the query parameters are contained in the URL of an HTTP GET request. For example, to query for the most recent log messages of APs with ids of 12 and 13, the URL would be:

```
https://example.host.com/ap_log.xml?id=12&id=13
```

When using the XML POST interface, the query is made by submitting a small XML document in an HTTP POST request. To accomplish the same query as above, the POST parameter "aps" would be set to the following XML string:

```
<access_points>
  <ap id="12"/>
  <ap id="13"/>
</access_points>
```

The only difference for other APIs is the HTTP POST parameter name and the individual tag names and parameters in the XML document, as detailed in each API section below.

The URL interface should be used for all query APIs, and the XML POST interface has been deprecated. The existing functionality of the POST interface will be removed in a future version of AirWave.

Limiting Historical Information

Certain APIs return historical information about network devices, and over time the amount of information returned can become very large. To limit the number of historical XML elements returned, the limit tag can be included in the query XML:

```
<clients>
  <client mac="00:40:96:46:43:D8"/>
  <client mac="00:30:65:08:C6:9E"/>
  <limit>5</limit>
</clients>
```

Or for the URL interface:

```
https://example.host.com/client_detail.xml?mac=00:40:96:46:43:D8&mac=00:30:65:08:C6:9E&limit=5
```

This query would return the 5 most recent associations for each client.

Search and Report API Elements

The Search and Report APIs are optimized for use by the Master Console, so each XML element contains 3 different representations of the data:

- **display_value attribute:** Suitable for inclusion in an HTML page, after HTML character entities are decoded. May contain HTML that references AirWave Javascript functions.
- **sort_value attribute**: When multiple records are returned, this field allows a logical sorting to be performed on fields for which a straight numeric or alphabetical sort is inappropriate (e.g., IP addresses and time durations).
- **element value**: This is the text representation of the data.

Report API Parameters

Most of the report APIs take 2 optional parameters: start_epoch and end_epoch. These are time parameters, in number of seconds since the UNIX epoch: 00:00:00 1970-01-01 UTC. If end_epoch is not provided, it defaults to the most recent midnight. If start_epoch is not provided, it defaults to 24 hours before the end_epoch.

Reports can be generated in either blocking or non-blocking mode. Non-blocking mode is suggested, since large reports can easily time out in blocking mode. To request a report in non-blocking mode, set nb to 1 in your request. The initial response will give you back an ID number. Set report_id to that number in subsequent queries to poll the report state. When the report is complete you will get a response with state set to 3 and the report data in the body. You can only pull down the completed report once, after that it will be deleted from AirWave.

Query APIs

AirWave Stats

- **URL**: https://example.host.com/amp_stats.xml
- **XML Schem**a: amp_stats.xsd
- **Parameters**: Optionally include_bandwidth or include_all_stats can be passed in the request.
- **Example Output**: https://example.host.com/amp_stats.xml?include_all_stats=1&include_bandwidth=1

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_stats console_refresh_rate="60" failover_status="" version="4.4rc6"
     xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_stats.xsd">
  <alerts>0</alerts>
  <audit_disabled>3</audit_disabled>
  <bandwidth_in>0</bandwidth_in>
  <bandwidth_out>0</bandwidth_out>
  <client_count>0</client_count>
  <configuration_unknown>2</configuration_unknown>
  <down>10</down>
  <down_wired>1</down_wired>
  <down_wireless>9</donw_wireless>
  <mismatched>13</mismatched>
  <name>AirWave Management Platform</name>
  <new_count>2</new_count>
  <rogue>30</rogue>
  <up>25</up>
  <up_wired>10</up_wired>
  <up_wireless>15</up_wireless>
  <vpn_bandwidth_in>0</vpn_bandwidth_in>
  <vpn_bandwidth_out>0</vpn_bandwidth_out>
  <vpn_count>0</vpn_count>
</amp:amp_stats>
```

Folder List

- **URL**: https://example.host.com/folder_list.xml
- **XML Schem**a: amp_folder_list.xsd
- **Parameters**: Optionally limit information returned to one or more folders by supplying folder IDs.
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_folder_list version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_folder_list.xsd">
  <folder id="1">
    <bandwidth_in>1725</bandwidth_in>
    <bandwidth_out>577</bandwidth_out>
    <client_count>2</client_count>
    <down>2</down>
    <mismatch>0</mismatch>
    <name>Top</name>
    <up>12</up>
    <vpn_client_count>0</vpn_client_count>
  </folder>
  <folder id="2">
    <bandwidth_in>5783</bandwidth_in>
    <bandwidth_out>5074</bandwidth_out>
```

```
    <client_count>6</client_count>
    <down>3</down>
    <mismatch>0</mismatch>
    <name>Folder1</name>
    <parent_id>1</parent_id>
    <up>16</up>
    <vpn_client_count>3</vpn_client_count>
  </folder>
</amp:amp_folder_list>
```

Alert List

- **URL**: https://example.host.com/alerts.xml
- **XML Schema**: amp_alert.xsd
- **Parameters**: None.
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_alert version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_alert.xsd">
  <record id="83">
    <creation_time ascii_value="10/2/2006 10:16 AM" display_value="10/2/2006 10:16 AM"
      sort_value="1159809360">1159809360</creation_time>
    <message ascii_value="this is example message text" display_value="this is example message
text" sort_value="this is example message text">this is example message text</message>
    <remote_id ascii_value="83" display_value="83" sort_value="83">83</remote_id>
    <severity ascii_value="Normal" display_value="Normal" sort_value="2">2</severity>
    <summary ascii_value="Client Count >= 10 for 15 seconds" display_value="Client Count >= 10
for 15 seconds"
      sort_value="Client Count >= 10 for 15 seconds">Client Count >= 10 for 15 seconds</summary>
    <triggering_agent ascii_value="lwapp-1250-1" display_value="<a href="/ap_
monitoring?id=3645">LWAPP-1250-1</a>"
      sort_value="lwapp-1250-1">lwapp-1250-1</triggering_agent>
    <type ascii_value="Device Client Count" display_value="Device Client Count" sort_
value="Device Client Count">Device Client Count</type>
    <view_url ascii_value="/ap_monitoring?id=455" display_value="/ap_monitoring?id=455" sort_
value="/ap_monitoring?id=455">/ap_monitoring?id=455</view_url>
    <viewed ascii_value="0"  display_value="0" sort_value="0">0</viewed>
  </record>
</amp:amp_alert>
```

AP List

- **URL**: https://example.host.com/ap_list.xml
- **XML Schema**: amp_ap_list.xsd
- **Parameters**:
  - Optionally limit information returned to one or more APs by supplying AP IDs.
  - Similarly, limit by AP folders, AP groups, and controllers by supplying their IDs.
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_ap_list version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_ap_list.xsd">
```

```
<ap id="98893">
    <controller_id>98847</controller_id>
    <device_category>thin_ap</device_category>
    <firmware>8.6.0.0</firmware>
    <folder id="1">Top</folder>
    <group id="10414">AOSCLUSTER1</group>
    <is_remote_ap>true</is_remote_ap>
    <is_up>false</is_up>
    <lan_ip>1.1.1.155</lan_ip>
    <lan_mac>B4:5D:50:CE:14:0C</lan_mac>
    <last_contacted>1573276692</last_contacted>
    <last_reboot>1573270685</last_reboot>
    <mesh_mode>0</mesh_mode>
    <mfgr>Aruba</mfgr>
    <model id="701">AP 305</model>
    <monitor_only>true</monitor_only>
    <name>b4:5d:50:ce:14:0c</name>
    <operating_mode>ap</operating_mode>
    <planned_maintenance_mode>false</planned_maintenance_mode>
    <radio index="1">
      <antenna/>
      <antenna_gain/>
      <channel>11</channel>
      <display_channel>1</display_channel>
      <display_enabled>false</display_enabled>
      <display_transmit_power>18 dBm</display_transmit_power>
      <enabled>true</enabled>
      <operational_mode>n</operational_mode>
      <radio_interface>2</radio_interface>
      <radio_mac>B4:5D:50:61:40:C0</radio_mac>
      <radio_role>ap</radio_role>
      <radio_type>bgn</radio_type>
      <transmit_power>18 dBm</transmit_power>
    </radio>
    <radio index="2">
      <antenna/>
      <antenna_gain/>
      <channel>149</channel>
      <display_channel>149</display_channel>
      <display_enabled>false</display_enabled>
      <display_transmit_power>18 dBm</display_transmit_power>
      <enabled>true</enabled>
      <operational_mode>ac</operational_mode>
      <radio_interface>1</radio_interface>
      <radio_mac>B4:5D:50:61:40:D0</radio_mac>
      <radio_role>ap</radio_role>
      <radio_type>ac</radio_type>
      <transmit_power>18 dBm</transmit_power>
    </radio>
    <reboot_count>26</reboot_count>
    <remote_lan_ip>192.168.1.8</remote_lan_ip>
    <remote_outer_ip>123.112.107.133</remote_outer_ip>
    <serial_number>CNCFJSS15T</serial_number>
    <snmp_uptime>0</snmp_uptime>
<ssid>
    ethersphere-bridge, ethersphere-voip, ethersphere-wpa2-arubaos
</ssid>
<syscontact/>
<syslocation/>
<upstream_device_id/>
<upstream_port_index/>
</ap>
</amp:amp_ap_list>
```

AP BSSID List

- **URL**: https://example.host.com/api/ap_bssid_list.xml
- **XML Schema**: amp_ap_bssid_list.xsd
- **Parameters**:
  - Optionally limit information returned to one or more APs by supplying AP IDs.
  - Similarly, limit by AP folders, AP groups, and controllers by supplying their IDs.
- **Example Output**:

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<amp:amp_ap_bssid_list version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_ap_bssid_list.xsd">
  <ap id="19251" name="AP 1">
    <group id="2524">GROUP 1</group>
    <radio index="1" radio_type="abg" channel="8" radio_mac="AA:00:00:00:00:0B">
      <bssid mac="88:88:17:2F:64:22" text="SSID 1" had_client="1"/>
      <bssid mac="88:88:35:85:74:58" text="SSID 2" had_client="0"/>
      <bssid mac="88:88:21:08:4C:8A" text="SSID 3" had_client="0"/>
    </radio>
    <radio index="2" radio_type="a" channel="8" radio_mac="AA:00:00:00:00:0D">
      <bssid mac="88:88:FA:12:37:12" text="SSID 1" had_client="0"/>
      <bssid mac="88:88:FB:18:87:23" text="SSID 2" had_client="1"/>
    </radio>
  </ap>
  <ap id="19252" name="AP 2">
    <group id="2524">GROUP 2</group>
    <radio index="1" radio_type="abg" channel="8" radio_mac="AA:00:00:00:00:0E" />
  </ap>
</amp:amp_ap_bssid_list>
```

AP Detail

- **URL**: https://example.host.com/ap_detail.xml
- **XML Schema**: amp_ap_detail.xsd
- **Parameters**:
  - Optionally limit information returned to one or more APs by supplying AP IDs.
  - Similarly, limit by AP folders, AP groups, and controllers by supplying their IDs.
- **Optional Tags**:
  - include=ignored - neighbors that have been ignored through the AirWave WebUI are not included in the list of neighbor APs by default.
  - Append this to the URL to include ignored neighbors in the output.
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_ap_detail version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_ap_detail.xsd">
  <ap id="79">
    <interface id="88">
      <admin_status>Up</admin_status>
      <alias/>
      <avg_bw_in>10.11</avg_bw_in>
      <avg_bw_out>73.58</avg_bw_out>
      <description>GigabitEthernet1/0/2</description>
      <mac_address>88:88:FC:03:C6:2C</mac_address>
      <name>Gi1/0/2</name>
```

```
      <oper_status>Dormant</oper_status>
      <port_index>34</port_index>
      <type>ethernetCsmacd</type>
    </interface>
    <ap_folder>Top > FolderA</ap_folder>
    <ap_group>A Group</ap_group>
    <is_remote_ap>true</is_remote_ap>
    <is_up>true</is_up>
    <remote_lan_ip>10.1.1.1</remote_lan_ip>
    <remote_outer_ip>172.22.22.1</remote_outer_ip>
    <radio index="1">
      <bw>2</bw>
      <client id="627">
        <assoc_stat>true</assoc_stat>
        <auth_stat>false</auth_stat>
        <bw>2</bw>
        <ip>10.51.1.51</ip>
        <radio_mac>00:0E:35:52:8C:AB</radio_mac>
        <rssi>38</rssi>
        <signal>-63</signal>
        <snr>38</snr>
        <vendor>Intel</vendor>
        <role>Employee</role>
      </client>
      <neighbor_ap id="506">
        <channel>4</channel>
        <name>XEROX CORP-00:00:F0</name>
        <neighbor_mode>ap</neighbor_mode>
        <neighbor_type>rogue</neighbor_type>
        <radio_mac>00:00:00:00:00:F0</radio_mac>
        <rssi>20</rssi>
        <security>none</security>
        <signal>-82</signal>
        <snr>20</snr>
        <vendor>XEROX CORPORATION</vendor>
      </neighbor_ap>
      <neighbor_ap id="3644">
        <channel>64</channel>
        <name>aironet-1030-2</name>
        <neighbor_mode>ap</neighbor_mode>
        <neighbor_type>managed</neighbor_type>
        <radio_mac>00:0B:85:55:8A:10</radio_mac>
        <rssi>38</rssi>
        <security>none</security>
        <signal>-64</signal>
        <snr>38</snr>
        <vendor>Airespace, Inc.</vendor>
      </neighbor_ap>
      <radio_type>bg</radio_type>
      <operational_mode>g</operational_mode>
    </radio>
    <snmp_uptime>99.31</snmp_uptime>
  </ap>
</amp:amp_ap_detail>
```

AP Log

- **URL**: https://example.host.com/ap_log.xml
- **XML Schema**: amp_ap_log.xsd
- **Parameters**: Must supply one or more AP IDs.

- **Optional Tags**: limit - (defaults to 20) as explained above
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_ap_log version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_ap_log.xsd">
  <ap id="79">
    <log_message>
      <date>2006-10-04T11:16:57-07:00</date>
      <message>AP Client Count: Device: ORiNOCO-AP-700-55-e6-e1: &gt;= 1 clients for 15 seconds
(Normal)</message>
      <user>System</user>
    </log_message>
    <log_message>
      <date>2006-10-04T11:16:07-07:00</date>
      <message>Configuration verification: configuration on device does not match desired
configuration</message>
      <user>System</user>
    </log_message>
    <log_message>
      <date>2006-10-04T11:16:02-07:00</date>
      <message>Up</message>
      <user>System</user>
    </log_message>
    <log_message>
      <date>2006-10-04T11:16:02-07:00</date>
      <message>Status changed to 'OK'</message>
      <user>System</user>
    </log_message>
    <log_message>
      <date>2006-10-04T11:15:18-07:00</date>
      <message>Status changed to 'SNMP Get Failed'</message>
      <user>System</user>
    </log_message>
  </ap>
</amp:amp_ap_log>
```

Rogue Detail

- **URL**: https://example.host.com/rogue_detail.xml
- **XML Schema**: amp_rogue_detail.xsd
- **Parameters**: Must supply one or more Rogue AP IDs. Rogue IDs are obtained from a neighbor_ap ID in the AP Detail API, when the neighbor_type is rogue.
- **Optional Tags**: limit - as explained above
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_rogue_detail version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_rogue_detail.xsd">
  <rogue_ap id="495">
    <channel>6</channel>
    <discovery_event id="600644">
      <channel>6</channel>
      <discovering_ap id="3650">
        <name>Cisco-1130-1</name>
        <radio_index>1</radio_index>
      </discovering_ap>
      <discovery_time>2006-10-04T07:08:03-07:00</discovery_time>
```

```
      <mode>ap</mode>
      <rssi>-88</rssi>
      <security>WEP</security>
      <signal>-88</signal>
      <snr>-2</snr>
      <ssid>blec</ssid>
      <type>Wireless AP scan</type>
    </discovery_event>
    <discovery_event id="560515">
      <channel>6</channel>
      <discovering_ap id="3647">
        <name>ap:1b:a6:90</name>
        <radio_index>1</radio_index>
      </discovering_ap>
      <discovery_time>2006-10-03T21:56:31-07:00</discovery_time>
      <mode>ap</mode>
      <rssi>-89</rssi>
      <security>WEP</security>
      <signal>-89</signal>
      <snr>6</snr>
      <ssid>blec</ssid>
      <type>Wireless AP scan</type>
    </discovery_event>
    <first_discovered>2006-09-29T21:34:48-07:00</first_discovered>
    <ignored>false</ignored>
    <last_discovered>2006-10-04T07:08:03-07:00</last_discovered>
    <mode>ap</mode>
    <name>Cisco-Link-FC:B4:84</name>
    <radio_mac>00:13:10:FC:B4:84</radio_mac>
    <radio_vendor>Cisco-Linksys</radio_vendor>
    <score>5</score>
    <security>WEP</security>
    <ssid>blec</ssid>
  </rogue_ap>
</amp:amp_rogue_detail>
```

Client Detail

- **URL**: https://example.host.com/client_detail.xml
- **XML Schema**: amp_client_detail.xsd
- **Parameters**: Must supply one or more Client MAC Addresses.
- **Optional Tags**: limit - as explained above
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_client_detail version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_client_detail.xsd">
  <client mac="00:0E:35:52:8C:AB">
    <ap id="3645">LWAPP-1250-1</ap>
    <assoc_stat>true</assoc_stat>
    <association id="1962">
      <ap id="79">ORiNOCO-AP-700-55-e6-e1</ap>
      <bytes_used>135357</bytes_used>
      <connect_time>2006-10-04T11:22:43-07:00</connect_time>
      <disconnect_time>2006-10-04T11:27:30-07:00</disconnect_time>
      <lan_elements>
        <lan hostname="bob.acmeville.org" ip_address="192.1.50.102" />
        <lan hostname="cats.awesome.com" ip_address="26:1F89:1820:A:98:7A:75AD:53B" />
      </lan_elements>
```

```
      <rssi>36</rssi>
    </association>
    <association id="1961">
      <ap id="79">ORiNOCO-AP-700-55-e6-e1</ap>
      <bytes_used>512</bytes_used>
      <connect_time>2006-10-04T11:19:12-07:00</connect_time>
      <disconnect_time>2006-10-04T11:20:13-07:00</disconnect_time>
      <vpn_elements>
        <vpn hostname="bob.acmeville.org" ip_address="192.1.1.1" />
      </vpn_elements>
      <rssi>38</rssi>
    </association>
    <auth_stat>false</auth_stat>
    <connect_time>2006-10-04T11:48:19-07:00</connect_time>
    <lan_elements>
      <lan hostname="cats.awesome.com" ip_address="26:1F89:1820:A:98:7A:75AD:53B" />
    </lan_elements>
    <rssi>0</rssi>
    <signal>-42</signal>
    <snr>0</snr>
    <vendor>Intel</vendor>
  </client>
</amp:amp_client_detail>
```

User Info

- **URL**: https://example.host.com/user_info.xml
- **XML Schema**: amp_user_info.xsd
- **Parameters**: None.
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_user_info version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_user_info.xsd">
  <user id="3">
    <access_level>admin</access_level>
    <rapids>true</rapids>
    <username>admin</username>
  </user>
</amp:amp_user_info>
```

Topology List

getTopology output times might vary by folder depending on number of nodes available in the selected folder, and a high number of devices can impact Topology load times. Aruba recommends selecting the desired folders you wish to view before loading Topology.

For more than 2,500 devices, the Topology loading time takes approximately six minutes. Wait for two to three minutes for AirWave to get the **getTopology** output and calculate the number of edges. When prompted, click **Proceed** so that the Topology page can continue to load which would take three more minutes to complete.

- **URL**: https://example.host.com/topology/getTopology?folderId=<FolderID>
- **Parameters**:
  - Limit information returned to a folder by supplying a folder ID.

    For example, to limit your view to the devices in a folder that has an ID number 5, enter the following URL into a browser:

    https://example.com/topology/getTopology?folderId=5.

- Optionally, do not supply a folder ID to load API for all folders.

  For example, enter:

  https://example.host.com/topology/getTopology?folderId=

- **Example Output for Folder**:


```
 { "nodes": [{"apID":31,"name":"b4:5d:50:","role":"AP","model":"Aruba AP
325","ip":"192.0.2.0/24","mac":"B4:5D:50:","folder":{"id":5,"name":"Top/Aruba
HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},{"apID":230,"name":"SLR01-OUT-
b4:5d:50:","role":"AP","model":"Aruba AP 275","ip":"192.0.2.0/24","mac":"B4:5D:50:","folder":
{"id":5,"name":"Top/Aruba HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},
{"apID":816,"name":"SLR01-ENG02-AP515-2020","role":"AP","model":"Aruba AP
515","ip":"192.0.2.0/24","mac":"80:8D:B7:","folder":{"id":5,"name":"Top/Aruba
HPE/SLR01"},"HealthInfo":{"health":"poor","reason":[{"attribute":"alert","value":1},
{"attribute":"up","value":0}]}},{"apID":240,"name":"SLR01-OUT-
b4:5d:50:","role":"AP","model":"Aruba AP
275","ip":"192.0.2.0/24","mac":"B4:5D:50:SS:SS:SS","folder":{"id":5,"name":"Top/Aruba
HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},{"apID":499,"name":"SLR01-ENG02-AP345-
2309","role":"AP","model":"Aruba AP 345","ip":"192.0.2.0/24","mac":"C8:B5:AD:SS:SS:SS","folder":
{"id":5,"name":"Top/Aruba HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},
{"apID":891,"name":"SLR01HPEAP6006","role":"AP","model":"Aruba AP
325","ip":"192.0.2.0/24","mac":"B0:B8:67:SS:SS:SS","folder":{"id":5,"name":"Top/Aruba
HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},
{"apID":178,"name":"SLR01HPEAP5031","role":"AP","model":"Aruba AP
325","ip":"192.0.2.0/24","mac":"84:D4:7E:SS:SS:SS","folder":{"id":5,"name":"Top/Aruba
HPE/SLR01"},"HealthInfo":{"health":"poor","reason":[{"attribute":"alert","value":1},
{"attribute":"up","value":0}]}},{"apID":456,"name":"SLR01-ENG02-AP345-
2321","role":"AP","model":"Aruba AP 345","ip":"192.0.2.0/24","mac":"C8:B5:AD:SS:SS:SS","folder":
{"id":5,"name":"Top/Aruba HPE/SLR01"},"HealthInfo":{"health":"good","reason":[]}},
```


Configuration APIs

Modify or Add Template Variables

- **URL**: https://example.host.com/template_variable_api
- **Parameters**: None. The modify or add template variable API will accept either requests with a Content-Type of application/x-www-form-urlencoded or text/xml. Requests with Content-Type application/x-www-form-urlencoded must submit the url encoded XML data in a parameter named 'xml'.
- **Supported Template Variable List**: Table 1

Table 1: *Template Variable List*

Variable Names		
management_mode => 1: Monitor Only, 0: Manage/Write	vc_vlan_num => Instant VC vlan number	custom_variable_5
clock_timezone => -12 - +12: Time zone,	prefer_master => 1: True, 0: Fasle	custom_variable_6
has_vc_vlan => 1: Has VC VLAN, 0: No VC Vlan	zone_name => Instant AP zone name	custom_variable_7
hostname => Change AP hostname	use_dhcp => 1: DHCP, 0: Static IP	custom_variable_8
ip_address => Desired AP Lan or VC IP Address	subnet_mask => Network Mask	custom_variable_9
pppoe_chapsecret => pppoe chapsecret	gateway => Gateway	ap_include_1
pppoe_password => pppoe password	dns => DNS Server IP	ap_include_2

Table 1: *Template Variable List (Continued)*

Variable Names		
pppoe_servicename => pppoe servicename	uplink_vlan => Uplink VLAN number	ap_include_3
pppoe_username => pppoe username	ethernet_port_mode => IAP Enet0 Uplink Mode: 0: Uplink, 1: Downlink	ap_include_4
radius_server_ip => VC radius server IP list (comma seperated)	instant_networking_mode => 1: Cluster 0: Standalone	ap_include_5
rf_band => 'swarm_rf_band',	custom_variable_1	ap_include_6
syslog_server => syslog server	custom_variable_2	ap_include_7
vc_vlan_gateway => Instant VC vlan gateway	custom_variable_3	ap_include_8
vc_vlan_netmask => Instant VC vlan netmask	custom_variable_4	ap_include_9

- **Example POST**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp_template_variable_update version="1" xmlns:template_variable_api="http://www.airwave.com">
  <ap id="4370">
    <custom_variable_9>Malayo-javanese-Hydrocotyle</custom_variable_9>
    <swarm_radius_servers>10.250.244.121,10.14.112.234</swarm_radius_servers>
    <prefer_master>1</prefer_master>
    <custom_variable_1>Goerke-bristling</custom_variable_1>
    <pppoe_username>patrol-mutuel</pppoe_username>
    <instant_networking_mode>1</instant_networking_mode>
    <zone_name>Beta Sales, Inc</zone_name>
  </ap>
  <ap id="4371">
    <custom_variable_9>Malayo-javanese-Hydrocotyle</custom_variable_9>
    <swarm_radius_servers>10.250.244.121,10.14.112.234</swarm_radius_servers>
    <prefer_master>1</prefer_master>
    <custom_variable_1>Goerke-bristling</custom_variable_1>
    <pppoe_username>patrol-mutuel</pppoe_username>
    <instant_networking_mode>1</instant_networking_mode>
    <zone_name>Beta Sales, Inc</zone_name>
  </ap>

</amp_template_variable_update>
```

Example Output:

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<template_variable_api:results version="1" xmlns:template_variable_api="http://www.airwave.com">
  <result ap_id="134" ap_name="test_ap" index="1" lan_mac="34:a2:34:2e:45:87">
    <update monitor_only="0" name="vilipenditory-gregaritic" needs_config_push="1" swarm_
mode="1"/>
    <info>config is pushed to device since it is in manage mode</info>
    <warning>variable:'custom_variable_9' is not supported by this device.</warning>
    <warning>variable:'radius_server_ip' is not supported by this device.</warning>
    <warning>variable:'custom_variable_1' is not supported by this device.</warning>
    <warning>variable:'pppoe_username' is not supported by this device.</warning>
 </result>
</template_variable_api:results>
```

Example Failure Output:

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<template_variable_api:results version="1" xmlns:template_variable_api="http://www.airwave.com">
  <result ap_id="134" ap_name="test_ap" index="1" lan_mac="34:a2:34:2e:45:87">
    <error>missing ap id</error>
    <error>cannot find device by given id</error>
    <error>not well-formed (invalid token) at line 1, column 0</error>
    <error>device does not support management</error>
    <error>cannot modify igc managed device</error>
    <error>no changes found</error>
    <error>Management Mode: must be an integer.</error>
    <error>Management Mode: must be numeric.</error>
    <error>Use DHCP: must be an integer.</error>
    <error>Invalid LAN IP Address.</error>
    <error>Invalid Subnet Mask.</error>
    <error>Invalid Gateway.</error>
    <error>Invalid DNS IP Address.</error>
    <error>Uplink VLAN: must be an integer.</error>
    <error>Uplink VLAN: must be numeric.</error>
    <error>Ethernet port mode: must be an integer.</error>
    <error>Instant Networking Mode: must be an integer.</error>
    <error>config is not updated to the device</error>
    <warning>variable:'prefer_master' is not supported by this device.</warning>
    <warning>variable:'pppoe_password' is not supported by this device.</warning>
    <warning>variable:'zone_name' is not supported by this device.</warning>
    <warning>variable:'syslog_server' is not supported by this device.</warning>
    <warning>variable:'vc_vlan_gateway' is not supported by this device.</warning>
    <warning>variable:'vc_vlan_netmask' is not supported by this device.</warning>
    <warning>variable:'pppoe_servicename' is not supported by this device.</warning>
    <warning>variable:'has_vc_vlan' is not supported by this device.</warning>
    <warning>variable:'clock_timezone' is not supported by this device.</warning>
    <warning>variable:'rf_band' is not supported by this device.</warning>
    <warning>variable:'radius_server_ip' is not supported by this device.</warning>
    <warning>variable:'pppoe_username' is not supported by this device.</warning>
    <warning>variable:'pppoe_chapsecret' is not supported by this device.</warning>
    <warning>variable:'vc_vlan_num' is not supported by this device.</warning>
    <warning>variable:'Marshville_metal_grinding' is not supported by system.</warning>
  </result>
</template_variable_api:results>
```

Import AP Whitelist

- **URL**: https://example.host.com/api/ap_whitelist_upload
- **Parameters**:
  - csv - AP whitelist in csv format
  - append_whitelist - 0: Replace the whole list 1: Update list without removing
- **Log Messages**: Changes made to APs will be logged in audit log. In case of whitelists, log could be found in System > Event Log
- **Example POST**:

```
Name,LAN MAC Address,Serial Number,Virtual Controller Name,Group Name,Folder Name,custom_
variable_1,custom_variable_9,Modify authorized device,Sync dynamic variables,dynamic_variable_
rule_name
IAP_Canada_1,ff:c7:c8:c4:21:ff,BD0086086,Canada-Office,Canada,Vancouver:Downtown,abc,456,0,0,foo
IAP_US_1,F0:0B:86:CF:93:FF,BE0542245,US-Office,US,San
Fancisco:CenterTown:HillTop,cde,789,1,1,bar
```

Example Successful Output:

```
Device (Name:IAP_Canada_1, LAN MAC:ff:c7:c8:c4:21:ff, Serial Number:BD0086086): created/updated
successfully
```

```
Device (Name:IAP_US_1, LAN MAC:F0:0B:86:CF:93:FF, Serial Number:BE0542245): created/updated
successfully
2 devices created or updated.
```

Example Failure Output:

```
CSV list is empty.
Invalid headers in CSV file.
Error parsing line 2 (Name:Customer_1, LAN MAC:U8:c7:c8:c4:21:ff, Serial Number:BD0086086):
U8:c7:c8:c4:21:ff: Invalid LAN MAC Address.
Error parsing line 3 (Name:Customer_2, LAN MAC:00:08:86:CF:93:5F, Serial Number:were): were:
Invalid Serial Number.
Error parsing line 5 (Name:Fake_test): Please provide serial number or LAN MAC address.
Error parsing line 5 (LAN MAC:D8:C7:C8:CD:ED:1D): Please provide Name
```

Search APIs

AP Search

- **URL**: https://example.host.com/ap_search.xml
- **Parameters**: query - search string
- **Example Output**: (most display values omitted for brevity):

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_ap_search version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_ap_search.xsd">
  <record id="3647">
    <ap_folder_name
      display_value="&lt;a href=&quot;/ap_list?ap_folder_id=1&quot; target=&quot;_
blank&quot;&gt;Top&lt;/a&gt;"
      sort_value="top">Top</ap_folder_name>
    <ap_group_name display_value="[...]" sort_value="Access Points">Access Points</ap_group_
name>
    <apparent_ip display_value="[...]" sort_value="010.051.001.028">10.51.1.28</apparent_ip>
    <bandwidth display_value="0" sort_value="0">0</bandwidth>
    <cached_type_string display_value="Cisco Aironet 1030 LWAPP"
      sort_value="Cisco Aironet 1030 LWAPP">Cisco Aironet 1030 LWAPP</cached_type_string>
    <client_count display_value="0" sort_value="0">0</client_count>
    <configuration_status display_value="[...]" sort_
value="Mismatched">Mismatched</configuration_status>
    <device_config_ssid display_value="-" />
    <device_config_uptime display_value="5 days 21 hrs 1 min"
      sort_value="50768400">5 days 21 hrs 1 min</device_config_uptime>
    <display_channel_1 display_value="1" sort_value="1">1</display_channel_1>
    <display_channel_2 display_value="36" sort_value="36">36</display_channel_2>
    <firmware_status display_value="-" sort_value="-" />
    <lan_mac display_value="00:0B:85:1B:A6:90" sort_
value="00:0B:85:1B:A6:90">00:0B:85:1B:A6:90</lan_mac>
    <monitoring_status display_value="[...]" sort_value="Up">Up</monitoring_status>
    <name display_value="[...]" sort_value="ap:1b:a6:90">ap:1b:a6:90</name>
    <radio_mac display_value="00:0B:85:1B:A6:90" sort_
value="00:0B:85:1B:A6:90">00:0B:85:1B:A6:90</radio_mac>
    <radio_type_1 display_value="802.11bg" sort_value="bg">bg</radio_type_1>
    <radio_type_2 display_value="802.11a" sort_value="a">a</radio_type_2>
    <version display_value="4.0.179.8" sort_value="4.0.179.8">4.0.179.8</version>
  </record>
</amp:amp_ap_search>
```

Client Search

- **URL**: https://example.host.com/client_search.xml
- **Parameters**: query - search string
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_client_search version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com amp_client_search.xsd">
  <record id="310">
    <ap_id ascii_value="lwapp-1250-1" display_value="&lt;a href=&quot;/ap_
monitoring?id=3645&quot;
        target=&quot;_blank&quot;&gt;LWAPP-1250-1&lt;/a&gt;"
      sort_value="lwapp-1250-1">3645</ap_id>
    <last_ap_id ascii_value="pentahedral" display_value="&lt;a href=&quot;/ap_
monitoring?id=1436&quot;&gt;pentahedral&lt;/a&gt;" sort_value="pentahedral">1436</last_ap_id>
    <ap_radio_description ascii_value="802.11bg" display_value="802.11bg"
      sort_value="802.11bg">802.11bg</ap_radio_description>
    <from_snmp_trap ascii_value="Poll" display_value="Poll" sort_value="Poll">Poll</from_snmp_
trap>
    <connect_time ascii_value="10/4/2006 11:48 AM" display_value="10/4/2006 11:48 AM"
      sort_value="1159987699.52914">10/4/2006 11:48 AM</connect_time>
    <duration ascii_value="2 mins" display_value="2 mins" sort_value="136.636464983225">2
mins</duration>
    <lan_ip ascii_value="0.0.0.0" display_value="0.0.0.0" sort_
value="000.000.000.000">0.0.0.0</lan_ip>
    <mac ascii_value="00:0E:35:52:8C:AB" display_value="[...]" sort_
value="00:0E:35:52:8C:AB">00:0E:35:52:8C:AB</mac>
    <radio_mode ascii_value="802.11b" display_value="802.11b" sort_value="b">b</radio_mode>
    <ssid ascii_value="Wireless Network" display_value="Wireless Network" sort_value="Wireless
Network">Wireless Network</ssid>
    <username ascii_value="packplane" display_value="packplane" sort_
value="packplane">packplane</username>
    <vlan ascii_value="0" display_value="0" sort_value="0">0</vlan>
    <device_type ascii_value="HTC" display_value="HTC" sort_value="HTC">HTC</device_type>
    <device_os ascii_value="Windows Mobile" display_value="Windows Mobile" sort_value="Windows
Mobile">Windows Mobile</device_os>
    <device_os_detail ascii_value="Windows Mobile 5.0" display_value="Windows Mobile 5.0" sort_
value="Windows Mobile 5.0">Windows Mobile 5.0</device_os_detail>
    <aruba_device_type ascii_value="AP125" display_value="AP125" sort_
value="AP125">AP125</aruba_device_type>
    <forward_mode ascii_value="-" display_value="-" sort_value="-" />
    <ht_mode ascii_value="-" display_value="-" />
    <is_guest_user ascii_value="No" display_value="No" sort_value="No">No</is_guest_user>
    <lan_hostname ascii_value="-" display_value="-" sort_value=""></lan_hostname>
    <role ascii_value="-" display_value="-" />
    <vpn_hostname ascii_value="-" display_value="-" sort_value=""></vpn_hostname>
    <vpn_ip ascii_value="-" display_value="-" />
  </record>
</amp:amp_client_search>
```

VPN User Search

- **URL**: https://example.host.com/vpn_user_search.xml
- **Parameters**: query - search string
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:amp_vpn_user_search version="1" xmlns:amp="http://www.airwave.com"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.airwave.com amp_vpn_user_search.xsd">
```

```
  <record id="310">
    <first_seen ascii_value="8/12/2011 9:50 PM" display_value="8/12/2011 9:50 PM" sort_
value="1313166011">1313166011</first_seen>
    <last_seen ascii_value="8/12/2011 9:50 PM" display_value="8/12/2011 9:50 PM" sort_
value="1313166011">1313166011</last_seen>
    <userid ascii_value="photocrayon" display_value="&lt;a href=&quot;/vpn_user_
monitoring?userid=photocrayon&quot;&gt;photocrayon&lt;/a&gt" sort_
value="photocrayon">photocrayon</username>
    <session_count ascii_value="1" display_value="1" sort_value="1">1</vlan>
  </record>
</amp:amp_vpn_user_search>
```

Report APIs

Latest Report

- **URL**: https://example.host.com/latest_report.xml
- **Parameters**: report_definition_id - Get it from the URL of a Report Definition Edit Page, ex. https://example.host.com/reports_definition?definitions_edit=1&id=42
- **Example Output**:

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<amp:report version="1" xmlns:amp="http://www.airwave.com"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://www.airwave.com report.xsd"
     report_id="72" state="3">
  <pickled_remote_capacity
     ap_name="[...]"
     capacity_combined="0.06"
     capacity_in="0.03"
     capacity_out="0.16"
     description="[...]"
     end_epoch="1198891800"
     interface_id="53"
     managed_amp_id="16"
     raw_in="9921"
     raw_out="16506"
     report_id="72"
     start_epoch="1198890000"/>
</amp:report>
```

Introduction

This is the application programming interface (API) to AirWave VisualRF.

The API uses Extensible Markup Language (XML) over HTTPS using session-based authentication. All HTTP parameters and form fields must be URL encoded.

APIs are broken down by object type.

Optional include query parameters

These parameters may be included in queries for a campus, building and site.

Parameter	Description
buildings	include buildings in the context of the campus
sites	include sites in the context of the building
aps	include access points placed on the corresponding site
clients	include clients placed on the corresponding site
rfids	include RFID tags placed on the corresponding site
rogues	include rogues placed on the corresponding site
surveys	include surveys taken on the corresponding site
walls	include walls drawn on the corresponding site
regions	include regions drawn on the corresponding site
images	include the site image URLs and details
properties	include additional object properties
messages	include object processing messages
stats	include site statistics
XML Schema	visualrf_common.xsd
Usage	buildings=&sites=&aps=&clients=&rogues=

Common response

The standard response XML

XML Schema	visualrf_results.xsd

Example	<?xml version="1.0" encoding="UTF-8" ?> <visualrf:results xmlns:visualrf="http://www.airwave.com" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <success> <campus created="2007-11-19T14:06:08-06:00" id="c6e52023-a129-4a5b-9c88- edb9174bbd15" name="Oakland"/> </success> </visualrf:results>

Campus

Query	List campuses

Building

Query	List buildings

Site

Query	List sites
Copy	Copy sites
Backup	Backup sites
Restore	Restore sites

Access Point

Query	List access points
Add/Update	Add or update access points placed on a site
Delete	Delete access points from a site
Match	Match a planned access points to monitored access points

Reports

BOM Report	Generate BOM report
Query	List reports
Delete	Delete reports

Walls

Add/Update	Add or update walls on a site
Delete	Delete walls from a site

Discovered Device

Transmit power override

Add/Update	Add or update transmit power override for discovered device or OUI
Delete	Delete transmit power override for discovered device or OUI

API Examples

Campus Query

URL	https://amp.airwave.com/visualrf/campus.xml
XML Schema	visualrf_campuses.xsd
Parameters	• id: optional constraint for campus

Example:

```
https://amp.airwave.com/visualrf/campus.xml?id=3&buildings=&sites=&aps=&messages=
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:campuses xmlns:visualrf='http://www.airwave.com'
                   xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <campus created='2007-10-31T14:57:48-05:00' id='3' name='NorthEast'>
        <building campus_id='3' created='2007-10-31T14:57:48-05:00' floor_atten_db='20.0'
                  floor_height_ft='10.0' id='15' name='NYC Office'>
            <site id='f6cffbef-4a17-438b-97da-1a29de9d1802' name='Office' env='4.0' floor='1.0'
                  building_id='15' gridsize='5' height='38.6' units='ft' width='26.72'>
                <ap id='12300' name='gw-nyc' x='21.29' y='8.88' status='up'>
                    <total-bandwidth>0</total-bandwidth>
                    <total-clients>1</total-clients>
                    <uptime>100.0</uptime>
                    <radio antenna='' beamwidth='0.0' gain='-1.0' index='1'
mac='00:10:DB:9A:83:1A' mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15'>
                        <message date='2007-10-31T15:15:24-05:00' type='info'>
                            Transmit power unsupported or unknown, defaulting to [100%]
                        </message>
                    </radio>
                </ap>
                <ap id='12625' name='ap' x='4.75' y='13.30' status='up'>
                    <total-bandwidth>0</total-bandwidth>
                    <total-clients>2</total-clients>
                    <uptime>100.0</uptime>
                    <radio antenna='' beamwidth='0.0' gain='-1.0' index='1'
mac='00:0E:38:62:61:20' mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15' />
                </ap>
            </site>
        </building>
    </campus>
</visualrf:campuses>
```

Building Query

URL	https://amp.airwave.com/visualrf/building.xml

XML Schema	visualrf_buildings.xsd
Parameters	• id: optional constraint for building

Example:

```
https://amp.airwave.com/visualrf/building.xml?id=15&buildings=&sites=&aps=&messages=
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:buildings xmlns:visualrf='http://www.airwave.com'
                    xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <building campus_id='3' created='2007-10-31T14:57:48-05:00' floor_atten_db='20.0'
              floor_height_ft='10.0' id='15' name='NYC Office'>
        <site id='f6cffbef-4a17-438b-97da-1a29de9d1802' name='Office' env='4.0' floor='1.0'
              building_id='15' gridsize='5' height='38.6' units='ft' width='26.72'>
            <ap id='12300' name='gw-nyc' x='21.29' y='8.88' status='up'>
                <total-bandwidth>0</total-bandwidth>
                <total-clients>1</total-clients>
                <uptime>100.0</uptime>
                <radio antenna='' beamwidth='0.0' gain='-1.0' index='1' mac='00:10:DB:9A:83:1A'
                       mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15'>
                    <message date='2007-10-31T15:15:24-05:00' type='info'>
                        Transmit power unsupported or unknown, defaulting to [100%]
                    </message>
                </radio>
            </ap>
            <ap id='12625' name='ap' x='4.75' y='13.30' status='up'>
                <total-bandwidth>0</total-bandwidth>
                <total-clients>2</total-clients>
                <uptime>100.0</uptime>
                <radio antenna='' beamwidth='0.0' gain='-1.0' index='1' mac='00:0E:38:62:61:20'
                       mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15' />
            </ap>
        </site>
    </building>
</visualrf:buildings>
```

Site Query

URL	https://amp.airwave.com/visualrf/site.xml
XML Schema	visualrf_sites.xsd
Parameters	• id: optional constraint for site

Example:

```
https://amp.airwave.com/visualrf/site.xml?id=f6cffbef-4a17-438b-97da-1a29de9d1802&aps=&messages=
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:sites xmlns:visualrf='http://www.airwave.com'
                xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <site id='f6cffbef-4a17-438b-97da-1a29de9d1802' name='Office' env='4.0' floor='1.0'
          building_id='15' gridsize='5' height='38.6' units='ft' width='26.72'>
```

```
        <summary ap-count='2' calc-time='8.82' client-count='7' last-calc='2008-04-07T08:46:10-
05:00' next-calc='2008-04-07T08:51:01-05:00' radio-count='2' rogue-count='12' />
        <ap id='12300' name='gw-nyc' x='21.29' y='8.88' status='up'>
            <total-bandwidth>0</total-bandwidth>
            <total-clients>1</total-clients>
            <uptime>100.0</uptime>
            <radio antenna='' beamwidth='0.0' gain='-1.0' index='1' mac='00:10:DB:9A:83:1A'
                   mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15'>
                <message date='2007-10-31T15:15:24-05:00' type='info'>
                    Transmit power unsupported or unknown, defaulting to [100%]
                </message>
            </radio>
        </ap>
        <ap id='12625' name='ap' x='4.75' y='13.30' status='up'>
            <total-bandwidth>0</total-bandwidth>
            <total-clients>2</total-clients>
            <uptime>100.0</uptime>
            <radio antenna='' beamwidth='0.0' gain='-1.0' index='1' mac='00:0E:38:62:61:20'
                   mount='Ceiling' orientation='0.0' phy='g' valid='true' xmit-dbm='15' />
        </ap>
    </site>
</visualrf:sites>
```

Site Copy

URL	https://amp.airwave.com/visualrf/copy_sites
XML Schema	visualrf_site_copy.xsd
Parameters	• xml: XML document following the above schema Specify whether to copy desired data-rate, AP point placement, walls and regions Range format is comma separated floors or floor range

Example:

```
<?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:site_copy xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <site id='4f674301-4b47-4ac6-8417-4eba3f7df3a6' data_rate='true' aps='true' walls='true'
regions='true'>
        <range>9,11,13,20-25</range>
    </site>
</visualrf:site_copy>
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:results xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
    <success>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='9.0' gridsize='3'
height='161.14' id='60ff8fef-ddf9-45f6-9267-5c411cfacbfb' name='Floor 9.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='11.0' gridsize='3'
height='161.14' id='d0d0f9dd-020b-4567-a5be-5b02261ab8cd' name='Floor 11.0' units='ft'
width='124.51'>
```

```
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='13.0' gridsize='3'
height='161.14' id='a3b03ea6-c8ef-45b6-b9f6-293e52868552' name='Floor 13.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='20.0' gridsize='3'
height='161.14' id='6806c7ef-d65e-46c5-9beb-4fc34b6ff0fe' name='Floor 20.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='21.0' gridsize='3'
height='161.14' id='ccc25cf0-f7c3-446b-9522-e451b3492b13' name='Floor 21.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='22.0' gridsize='3'
height='161.14' id='09819589-e2c3-46b9-a226-68d1eb8e3ada' name='Floor 22.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='23.0' gridsize='3'
height='161.14' id='8029b6d8-9824-49ac-9e37-fa861eae7496' name='Floor 23.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='24.0' gridsize='3'
height='161.14' id='fb973a86-f202-4943-8522-5c3ad66ee05f' name='Floor 24.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
        <site building_id='7' desired-data-rate='null' env='4.0' floor='25.0' gridsize='3'
height='161.14' id='88b0e613-d316-4b4d-8dd8-a20f55cb205f' name='Floor 25.0' units='ft'
width='124.51'>
            <summary ap-count='0' calc-time='0' client-count='0' last-calc='' next-calc=''
radio-count='0' rogue-count='0' />
        </site>
    </success>
</visualrf:results>
```

Site Backup

URL	https://amp.airwave.com/visualrf/backup_sites
XML Schema	visualrf_sites.xsd
Parameters	• xml: XML document following the above schema

Example:

```
  <?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:sites xmlns:visualrf='http://www.airwave.com'
                xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <site id='f6cffbef-4a17-438b-97da-1a29de9d1802'/>
```

```
</visualrf:sites>
```

Response:

```
backup.zip
```

Site Restore

URL	https://amp.airwave.com/visualrf/restore_sites
XML Schema	visualrf_sites.xsd
Parameters	• zip: The backup.zip file from Site Backup

Response:

```
<?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:sites xmlns:visualrf='http://www.airwave.com'
                xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <site id='f6cffbef-4a17-438b-97da-1a29de9d1802' name='Baxter Office' env='3.5' floor='1.0'
          building_id='15' gridsize='3' height='38.6' units='ft' width='26.72'>
        <summary ap-count='2' calc-time='' client-count='' last-calc='' next-calc='' radio-
count='2' rogue-count='' />
    </site>
</visualrf:sites>
```

Access Point Query

URL	https://amp.airwave.com/visualrf/access_point.xml
XML Schema	visualrf_site_access_points.xsd
Parameters	• id: optional constraint for an access point • site_id: optional constraint for site

Example:

```
https://amp.airwave.com/visualrf/access_point.xml?id=12660
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:site_access_points version='1' xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
    <ap id='12660' manufacturer='Tropos' model='3210' name='Tropos Mesh Node 49842'
state='monitored' status='down'>
        <total-bandwidth>0</total-bandwidth>
        <total-clients>0</total-clients>
        <uptime>0.0</uptime>
        <radio antenna='' beamwidth='360.0' enabled='true' gain='0.0' index='1'
mac='00:0D:97:00:45:0B' mount='' orientation='0.0' phy='g' valid='false' xmit-dbm='0.0' xmit-
value='20 dBm' />
    </ap>
</visualrf:site_access_points>
```

Access Point Add/Update

URL	https://amp.airwave.com/visualrf/add_access_points

XML Schema	visualrf_site_access_points.xsd
Parameters	• site_id: ID of the Site to add access points • xml XML: document following the above schema When adding a planned AP, omit the id attribute and supply manufacturer and model Planning requires radio phy attribute Only AP name, x and y may be updated Only radio beamwidth, orientation, gain and mount may be updated

Example:

```
  <?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:site_access_points xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <ap id='12660' x='50' y='80'>
        <radio index='1' beamwidth='180' orientation='90' gain='2.5' mount='ceiling'/>
    </ap>
</visualrf:site_access_points>
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:results xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
  <success>
    <ap id='12660' x='50' y='80'>
        <radio index='1' beamwidth='180' orientation='90' gain='2.5' mount='ceiling'/>
    </ap>
  </success>
</visualrf:results>
```

Access Point Delete

URL	https://amp.airwave.com/visualrf/remove_access_points
XML Schema	visualrf_site_access_points.xsd
Parameters	• site_id: ID of the Site to remove access points • xml: XML document following the above schema

Example:

```
<?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:site_access_points xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <ap id='12660'/>
</visualrf:site_access_points>
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:results xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
  <success>
    <ap id='12660' x='50' y='80'>
        <radio index='1' beamwidth='180' orientation='90' gain='2.5' mount='ceiling'/>
    </ap>
  </success>
</visualrf:results>
```

Access Point Match

URL	https://amp.airwave.com/visualrf/match_access_points
XML Schema	visualrf_match_access_points.xsd
Parameters	• xml: XML document following the above schema

Example:

```
<?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:match_access_points xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <match planned_id='6d3350db-6468-4acb-9625-6c546da7122e' monitored_id='12660'/>
</visualrf:match_access_points>
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:results xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
  <success>
    <ap id='12660' x='50' y='80'>
        <radio index='1' beamwidth='180' orientation='90' gain='2.5' mount='ceiling'/>
    </ap>
  </success>
</visualrf:results>
```

BOM Report

URL	https://amp.airwave.com/visualrf/bom_report
XML Schema	visualrf_sites.xsd
Parameters	• xml: XML document following the above schema

Example:

```
<?xml version='1.0' encoding='ISO-8859-1'?>
<visualrf:sites xmlns:visualrf='http://www.airwave.com'
                xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' version='1'>
    <site id='f6cffbef-4a17-438b-97da-1a29de9d1802'/>
</visualrf:sites>
```

Response:

```
<?xml version='1.0' encoding='ISO-8859-1' standalone='yes' ?>
<results>
  <success>
    <report created="2008-04-28T15:06:32-05:00" id="5df9829d-4f9b-4262-a940-21b71323b9b8"
name="BOM Report">
      <filename>/var/airwave/data/reports/5df9829d-4f9b-4262-a940-21b71323b9b8.html</filename>
      <relative-url>data/reports/5df9829d-4f9b-4262-a940-21b71323b9b8.html</relative-url>
    </report>
  </success>
</results>
```

Report Query

URL	https://amp.airwave.com/visualrf/reports.xml
XML Schema	visualrf_reports.xsd
Parameters	• site_id: optional constraint for a site • id optional: constraint for a report

Example:

```
https://amp.airwave.com/visualrf/report.xml?id=71c1057b-1771-4b56-a955-ce6514e8f703
```

Response:

```
<?xml version='1.0' encoding='UTF-8' ?>
<visualrf:reports version='1' xmlns:visualrf='http://www.airwave.com'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'>
    <report created='2008-04-07T13:15:42-05:00' id='71c1057b-1771-4b56-a955-ce6514e8f703'
name='BOM Report'>
        <filename>/var/airwave/data/reports/71c1057b-1771-4b56-a955-ce6514e8f703.html</filename>
        <relative-url>data/reports/71c1057b-1771-4b56-a955-ce6514e8f703.html</relative-url>
    </report>
</visualrf:reports>
```

Report Delete

URL	https://amp.airwave.com/visualrf/remove_report
XML Schema	visualrf_reports.xsd
Parameters	• xml: XML document following the above schema

Wall Add/Update

URL	https://amp.airwave.com/visualrf/add_walls
XML Schema	visualrf_site_walls.xsd
Parameters	• site_id: ID of the Site to add access points • xml: XML document following the above schema

Wall Delete

URL	https://amp.airwave.com/visualrf/remove_walls
XML Schema	visualrf_site_walls.xsd
Parameters	• site_id: ID of the Site to remove access points • xml: XML document following the above schema

Discovered Device Transmit Power Override Add/Update

URL	https://amp.airwave.com/visualrf/xmit_service
XML Schema	visualrf_xmit_service.xsd
Parameters	• xml: XML document following the above schema When overriding device type for an OUI, supply oui and device-type attributes only When overriding transmit power for an OUI, supply oui, phy and xmit-mw attributes only When overriding device type for a device, supply radio-mac and device-type attributes only When overriding transmit power for a device, supply radio-mac, phy and xmit-mw attributes only

Discovered Device Transmit Power Override override Delete

URL	https://amp.airwave.com/visualrf/xmit_service
XML Schema	visualrf_xmit_service.xsd
Parameters	• xml: XML document following the above schema When deleting a device type override for an OUI, supply oui and an empty device-type attribute When deleting a transmit power override for an OUI, supply oui, phy and an empty xmit-mw attribute When deleting a device type override for a device, supply radio-mac and an empty device-type attribute When deleting a transmit power override for a device, supply radio-mac, phy and an empty xmit-mw attributes only