



Monitoring Cisco Wireless LAN Controllers

Cisco: Wireless PowerPack version 102

Table of Contents

Introduction	3
What are Cisco Wireless LAN Controllers?	3
What Does the Cisco: Wireless PowerPack Monitor?	4
Installing the Cisco: Wireless PowerPack	4
Configuring Cisco WLC Monitoring	6
Prerequisites for Monitoring Cisco WLC	6
Configuring a Cisco WLC SNMP Credential	7
Discovering Cisco WLC Devices	8
Verifying Discovery and Dynamic Application Alignment	9
Manually Aligning Dynamic Applications	11
Viewing Cisco WLC Component Devices	13
Cisco WLC Dashboards	15
Device Dashboards	15
Cisco WLC: AP Dashboard	16
Cisco WLC: Interface Dashboard	16

Chapter

1

Introduction

Overview

This manual describes how to monitor Cisco wireless LAN controllers in the ScienceLogic platform using the *Cisco: Wireless PowerPack*.

The following sections provide an overview of Cisco wireless LAN controllers and the *Cisco: Wireless PowerPack*:

- [What are Cisco Wireless LAN Controllers? 3](#)
- [What Does the Cisco: Wireless PowerPack Monitor? 4](#)
- [Installing the Cisco: Wireless PowerPack 4](#)

NOTE: ScienceLogic provides this documentation for the convenience of ScienceLogic customers. Some of the configuration information contained herein pertains to third-party vendor software that is subject to change without notice to ScienceLogic. ScienceLogic makes every attempt to maintain accurate technical information and cannot be held responsible for defects or changes in third-party vendor software. There is no written or implied guarantee that information contained herein will work for all third-party variants. See the End User License Agreement (EULA) for more information.

What are Cisco Wireless LAN Controllers?

Cisco wireless LAN controllers (WLC) play a central role in Cisco unified wireless networks. WLCs collect management and data packets from the network's access points (AP) and then switch those packets between wireless clients and the wired portion of the network. The WLC also controls the network configuration and passes this configuration data to the access points, which act as wireless client interfaces.

What Does the Cisco: Wireless PowerPack Monitor?

The *Cisco: Wireless PowerPack* enables you to monitor Cisco WLCs and APs using the AIRESPACE-WIRELESS-MIB and CISCO-LWAPP-MIB. The PowerPack includes the following features:

- Dynamic Applications that discover and collect data from all Cisco WLC component devices monitored
- Event Policies and corresponding alerts that are triggered when Cisco WLC component devices meet certain status criteria
- Device Classes for each of the Cisco WLC component devices monitored
- Device Dashboards that display information about Cisco WLC component devices

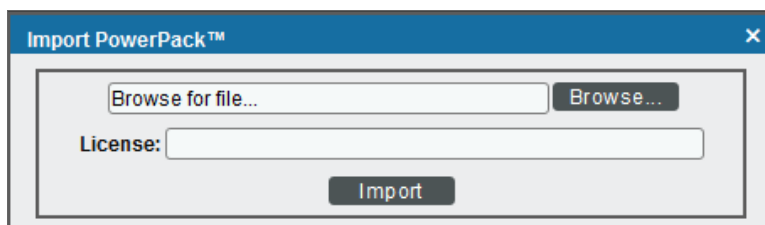
Installing the Cisco: Wireless PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Cisco: Wireless PowerPack*.

TIP: By default, installing a new version of a PowerPack overwrites all content in that PowerPack that has already been installed on the target system. You can use the **Enable Selective PowerPack Field Protection** setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. (For more information, see the **System Administration** manual.)

To download and install a PowerPack:

1. Download the PowerPack from the [ScienceLogic Customer Portal](#).
2. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
3. In the **PowerPack Manager** page, click the **[Actions]** button, then select *Import PowerPack*.
4. The **Import PowerPack** dialog box appears:



5. Click the **[Browse]** button and navigate to the PowerPack file.
6. When the **PowerPack Installer** modal page appears, click the **[Install]** button to install the PowerPack.

NOTE: If you exit the **PowerPack Installer** modal page without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPack Manager** page. However, the imported PowerPack will appear in the **Imported PowerPacks** modal page. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

Configuring Cisco WLC Monitoring

Overview

The following sections describe how to configure and discover Cisco wireless LAN controllers for monitoring by the ScienceLogic platform using the Cisco: *Wireless PowerPack*:

<i>Prerequisites for Monitoring Cisco WLC</i>	6
<i>Configuring a Cisco WLC SNMP Credential</i>	7
<i>Discovering Cisco WLC Devices</i>	8
<i>Verifying Discovery and Dynamic Application Alignment</i>	9
<i>Manually Aligning Dynamic Applications</i>	11
<i>Viewing Cisco WLC Component Devices</i>	13

Prerequisites for Monitoring Cisco WLC

Before you can monitor Cisco wireless LAN controllers using the Cisco: *Wireless PowerPack*, you must have the following information:

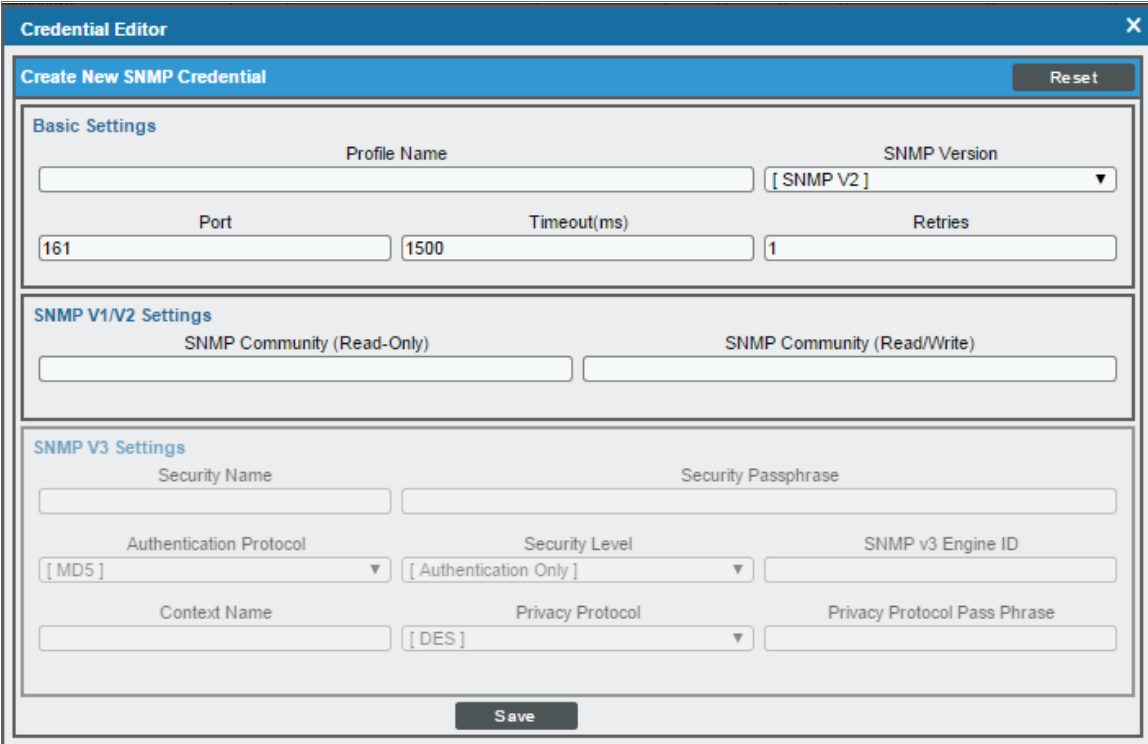
- The IP address of the WLC that you want to monitor with the ScienceLogic platform
- The settings for an SNMP V2 or SNMP V3 credential that can be used to communicate with the WLC

Configuring a Cisco WLC SNMP Credential

To configure the ScienceLogic platform to monitor a Cisco WLC, you must first create a SNMP V2 or SNMP V3 credential. This credential allows the Dynamic Applications in the *Cisco: Wireless PowerPack* to communicate with the WLC.

To create an SNMP credential for monitoring a WLC:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click **[Actions]**, and then select *Create SNMP Credential*. The **Credential Editor** page appears:



The screenshot shows the 'Credential Editor' window with a 'Create New SNMP Credential' header and a 'Reset' button. The form is divided into three sections: 'Basic Settings', 'SNMP V1/V2 Settings', and 'SNMP V3 Settings'. The 'Basic Settings' section includes fields for 'Profile Name', 'SNMP Version' (set to '[SNMP V2]'), 'Port' (161), 'Timeout(ms)' (1500), and 'Retries' (1). The 'SNMP V1/V2 Settings' section has two fields for 'SNMP Community (Read-Only)' and 'SNMP Community (Read/Write)'. The 'SNMP V3 Settings' section includes fields for 'Security Name', 'Security Passphrase', 'Authentication Protocol' (set to '[MD5]'), 'Security Level' (set to '[Authentication Only]'), 'SNMP v3 Engine ID', 'Context Name', 'Privacy Protocol' (set to '[DES]'), and 'Privacy Protocol Pass Phrase'. A 'Save' button is located at the bottom of the form.

3. In the **Profile Name** field, type a name for the credential.
4. In the **SNMP Version** field, select *SNMP V2* or *SNMP V3*.

NOTE: Do not use an SNMP V1 credential for monitoring a WLC. Using an SNMP V1 credential will decrease the performance of the data collection process.

5. If you selected *SNMP V2*, then in the **SNMP Community (Read Only)** field, type the community string for the WLC.
6. If you selected *SNMP V3*, supply values in the following fields:
 - **Security Name.** Type the SNMP user name for the WLC.

- **Security Passphrase.** Type the passphrase for the SNMP user.
 - **Authentication Protocol.** If applicable, select the authentication protocol for the SNMP user.
 - **Security Level.** If applicable, select the security level that is applicable to the SNMP user.
 - **SNMP v3 Engine ID.** If applicable, type the SNMP V3 Engine ID for the SNMP user.
 - **Privacy Protocol.** If applicable, select the privacy protocol for the SNMP user.
 - **Privacy Protocol Pass Phrase.** If applicable, type the privacy protocol passphrase for the SNMP user.
7. Optionally, supply values in the other fields on this page. In most cases, you can use the default values for the other fields. For a description of the fields in this page, see the **Discovery & Credentials** manual.
 8. Click **[Save]**.

Discovering Cisco WLC Devices


To discover Cisco WLC devices:

1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
2. Click the **[Create]** button. The **Discovery Session Editor** page appears:

The screenshot displays the 'Discovery Session Editor | Editing Session [3]' interface. It features a top navigation bar with 'New' and 'Reset' buttons. The main content area is divided into several sections:


- Identification Information:** Includes fields for 'Name' and 'Description'.
- IP and Credentials:** Contains an 'IP Address/Hostname Discovery List' with an 'Upload File' button and a list of 'SNMP Credentials' (e.g., Cisco SNMPv2 - Example, Cisco SNMPv3 - Example) and 'Other Credentials'.
- Detection and Scanning:** Includes dropdown menus for 'Initial Scan Level', 'Scan Throttle', 'Port Scan All IPs', and 'Port Scan Timeout'. It also features a 'Detection Method & Port' list (e.g., UDP: 161 SNMP, TCP: 1 - tcpmux) and input fields for 'Interface Inventory Timeout (ms)' (600000) and 'Maximum Allowed Interfaces' (10000).
- Basic Settings:** Includes checkboxes for 'Discover Non-SNMP', 'Model Devices', and 'DHCP'. It also has input fields for 'Device Model Cache TTL (h)' (2), 'Collection Server PID: 1' (JJA-AIO-CiscoWLS), and 'Organization' ([System]).

At the bottom, there are 'Save' and 'Save As' buttons, and a 'Log All' checkbox.

3. Supply values in the following fields:
 - **Name**. Type a name for the discovery session.
 - **IP Address Discovery List**. Type the IP address for the WLC.
 - **SNMP Credentials**. Select the [SNMP credential you created for the WLC](#).
4. Optionally, supply values in the other fields in this page. In most cases, you can use the default values for the other fields. For a description of the fields in this page, see the **Discovery & Credentials** manual.
5. Click **[Save]**, then close the **Discovery Session Editor** page.
6. The **Discovery Control Panel** page will refresh. Click the lightning bolt icon () for the discovery session you created.
7. In the pop-up window that appears, click **[OK]**. The **Discovery Session** page displays the progress of the discovery session.

Verifying Discovery and Dynamic Application Alignment

To verify that the ScienceLogic platform has automatically aligned the correct Dynamic Applications during discovery:

1. In the **Discovery Session** page, click the device icon () for the newly discovered Cisco WLC device to view its **Device Properties** page.
2. From the **Device Properties** page for the Cisco WLC device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.

3. The following Dynamic Applications should appear on the **Dynamic Application Collections** page for the WLC device:

The screenshot shows the 'Dynamic Application Collections' page for a Cisco WLC device. The page includes a navigation bar with tabs for Close, Properties, Thresholds, Collections, Monitors, and Schedule. Below the navigation bar, there are sections for Device Name, IP Address / ID, Class, Organization, Collection Mode, Description, Device Hostname, Managed Type, Category, Sub-Class, Uptime, Collection Time, and Group / Collector. A Cisco logo and 'WI-FI' indicator are also present. The main content area is a table of Dynamic Application Collections with columns for ID, Poll Frequency, Type, and Credential. The table lists several applications, including Cisco: WLC CPU, Cisco: WLC CPU and Memory Performance, Cisco: WLC Memory, Cisco: WLC System Counts, Cisco: WLC Configuration, Cisco: WLC Interface Performance Average, Cisco: WLC Interface Average, Cisco: WLC Noise Average, Cisco: WLC AP Discovery, and Entity Configuration. A 'Save' button is located at the bottom of the page.

Dynamic Application	ID	Poll Frequency	Type	Credential
+ Cisco: WLC CPU	1334	5 mins	SNMP Performance	Default SNMP Credential
+ Cisco: WLC CPU and Memory Performance	1354	5 mins	SNMP Performance	Default SNMP Credential
+ Cisco: WLC Memory	1335	5 mins	SNMP Performance	Default SNMP Credential
+ Cisco: WLC System Counts	1353	5 mins	SNMP Performance	Default SNMP Credential
+ Cisco: WLC Configuration	1348	360 mins	SNMP Configuration	Default SNMP Credential
+ Cisco: WLC Interface Performance Average	1350	5 mins	Snippet Performance	Default SNMP Credential
+ Cisco: WLC Interface Average	1351	5 mins	Snippet Performance	Default SNMP Credential
+ Cisco: WLC Noise Average	1352	5 mins	Snippet Performance	Default SNMP Credential
+ Cisco: WLC AP Discovery	1336	120 mins	Snippet Configuration	Default SNMP Credential
+ Entity Configuration	1313	1440 mins	Snippet Configuration	Default SNMP Credential

- Cisco: WLC CPU
- Cisco: WLC CPU and Memory Performance
- Cisco: WLC Memory
- Cisco: WLC System Counts
- Cisco: WLC Configuration
- Cisco: WLC Interface Performance Average
- Cisco: WLC Interface Average
- Cisco: WLC Noise Average
- Cisco: WLC AP Discovery

NOTE: It can take several minutes after discovery for Dynamic Applications to be automatically aligned to the controller device. If the listed Dynamic Applications do not display on this page, try clicking the **[Reset]** button.

Manually Aligning Dynamic Applications

If the Dynamic Applications have not been automatically aligned, you can align them manually.

NOTE: The "Cisco: WLC Rogue AP" Dynamic Application, which can be used to collect information about rogue access points, is not automatically aligned during discovery. To use the "Cisco: WLC Rogue AP" Dynamic Application, follow the instructions in this section.

To manually align Dynamic Applications:

1. From the **Device Properties** page for the Cisco WLC device, click the **[Collections]** tab.
2. Click the **[Actions]** button and then select *Add Dynamic Applications*. The **Dynamic Application Alignment** page appears:

The screenshot shows the 'Dynamic Application Alignment' dialog box. It features a title bar 'Dynamic Application' with a close button. Below the title bar is a sub-header 'Dynamic Application Alignment' with a 'Reset' button. The main area is divided into two columns: 'Dynamic Applications' and 'Credentials'. The 'Dynamic Applications' column has a search field containing 'wlc' and a list of applications. The 'Credentials' column has a search field and a list of credentials. A 'Save' button is at the bottom center.

Dynamic Applications	Credentials
Bulk Snippet Configuration: Cisco: WLC AP Config Cisco: WLC AP Interface Discovery Cisco: WLC Interface Configuration Cisco: WLC Interface Configuration (AP)	Default: Default SNMP Credential
Bulk Snippet Performance: Cisco: WLC AP IF Performance Average Cisco: WLC AP Interference Average Cisco: WLC AP Noise Average Cisco: WLC Interface Interference Cisco: WLC Interface Interference (AP) Cisco: WLC Interface Noise Cisco: WLC Interface Noise (AP) Cisco: WLC Interface Performance Cisco: WLC Interface Performance (AP) Cisco: WLC Interface RSSI Cisco: WLC Interface RSSI (AP) Cisco: WLC Interface SNR Cisco: WLC Interface SNR (AP)	SNMP: Cisco SNMPv2 - Example Cisco SNMPv3 - Example EM7 Default V2 EM7 Default V3 IPSLA Example LifeSize: Endpoint SNMP Nexus snmp SNMP Public V1 SNMP Public V2
Snippet Journal: Cisco: WLC Rogue APs	Database: EM7 Central Database EM7 Collector Database EM7 DB
	SOAP/XML Host: Amazon Web Services Credential Azure Classic Credential SOAP Azure Credential - SOAP/XML Cisco CE Series Configuration Cisco CE Series History Cisco CE Series Status Cisco: Conductor Example (Discov

3. In the **Dynamic Applications** field, select the Dynamic Application you want to align.
4. In the **Credentials** field, select the Cisco WLC SNMP credential.
5. Repeat steps 2-4 for the remaining Dynamic Applications you want to align with the device.

- After aligning the Dynamic Applications, click the **[Reset]** button and then click the plus icon (+) for the Dynamic Application. If collection for the Dynamic Application was successful, the graph icons (📊) for the Dynamic Application are enabled:

Dynamic Application™ Collections		Expand	Actions	Reset	Guide				
Cisco WLC CPU									
	1395	5 mins	SNMP Performance	Default SNMP Credential	<input type="checkbox"/>				
Cisco WLC CPU and Memory Performance									
	1415	5 mins	SNMP Performance	Default SNMP Credential	<input type="checkbox"/>				
Presentation Object									
+		1.1	p_5778	yes	yes	Vitals	CPU	50	<input checked="" type="checkbox"/>
+		1.1	p_5780	yes	yes	--	--	50	<input checked="" type="checkbox"/>
+		1.1	p_5779	yes	yes	Vitals	Memory	50	<input checked="" type="checkbox"/>
+		1.1	p_5781	yes	yes	--	--	0	<input checked="" type="checkbox"/>
Misc Collection Object									
			o_15465	no	yes	Collecting			<input checked="" type="checkbox"/>
+	Cisco: WLC Memory	1396	5 mins	SNMP Performance	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC System Counts	1414	5 mins	SNMP Performance	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC Configuration	1409	360 mins	SNMP Configuration	Default SNMP Credential				<input type="checkbox"/>
+	System Uptime: sysUptime	706	5 mins	SNMP Configuration	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC Interface Performance Average	1411	5 mins	Snippet Performance	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC Interference Average	1412	5 mins	Snippet Performance	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC Noise Average	1413	5 mins	Snippet Performance	Default SNMP Credential				<input type="checkbox"/>
+	Cisco: WLC AP Discovery	1397	120 mins	Snippet Configuration	Default SNMP Credential				<input type="checkbox"/>
+	Entity Configuration	1223	1440 mins	Snippet Configuration	Default SNMP Credential				<input type="checkbox"/>
+	Host Resource: Configuration	55	15 mins	Snippet Configuration	Default SNMP Credential				<input type="checkbox"/>

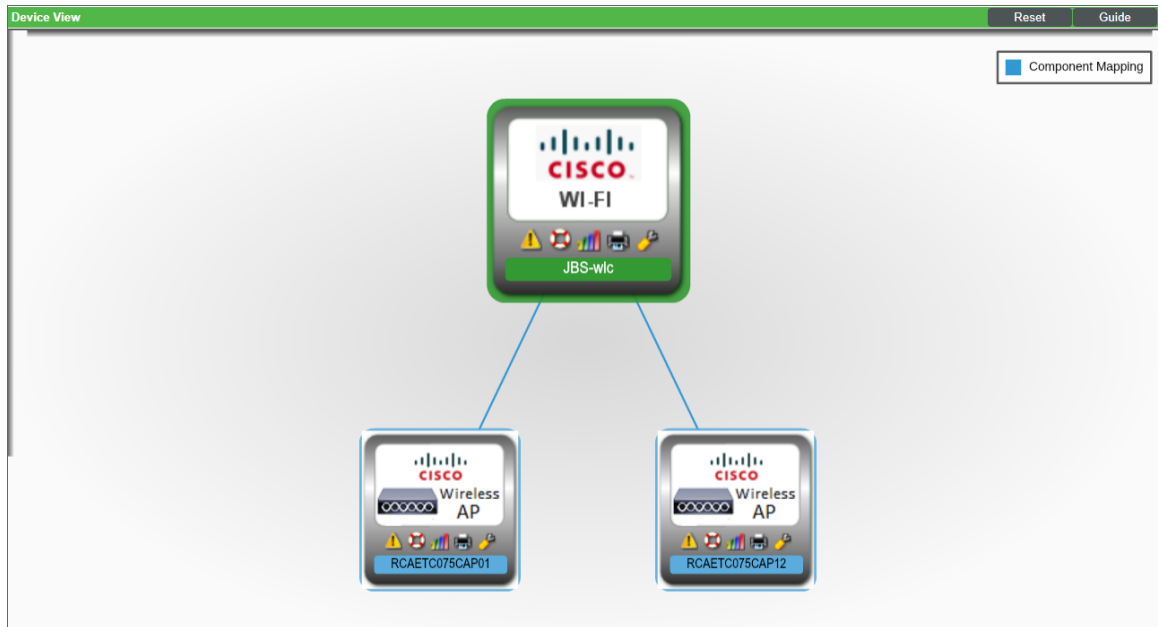
[Select Action] [Go]

Save

Viewing Cisco WLC Component Devices

In addition to the **Device Manager** page (Registry > Devices > Device Manager), you can view the Cisco WLC device and all associated component devices in the following places in the user interface:

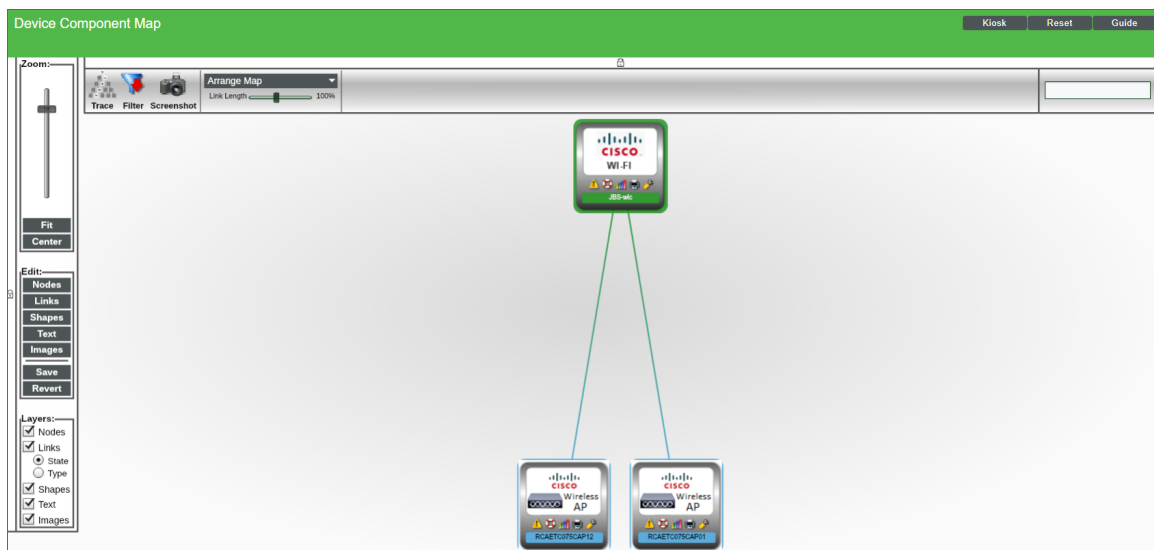
- The **Device View** page displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device the primary device:



- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by the ScienceLogic platform in an indented view, so you can easily view the hierarchy and relationships between child devices, parent devices, and root devices. To view the component devices associated with a Cisco WLC, click its plus icon (+):

Device Name	IP Address	Device Category	Device Class Sub-class	DD	Organization	Current State	Collection Group	Collection State
JBS-bag-wlc	10.2.10.135	controller	Cisco Systems AIR CT 8510	12	System	Healthy	CUG	Active
SIM1AP-1	--	Access Point	Cisco Systems AIR-AP1141N	5351	System	Healthy	CUG	Active
SIM1AP-10	--	Access Point	Cisco Systems AIR-AP1141N	751	System	Healthy	CUG	Active
SIM1AP-100	--	Access Point	Cisco Systems AIR-AP1141N	1977	System	Healthy	CUG	Active
SIM1AP-1000	--	Access Point	Cisco Systems AIR-AP1141N	598	System	Healthy	CUG	Active
SIM1AP-1001	--	Access Point	Cisco Systems AIR-AP1141N	3424	System	Healthy	CUG	Active
SIM1AP-1002	--	Access Point	Cisco Systems AIR-AP1141N	2404	System	Healthy	CUG	Active
SIM1AP-1003	--	Access Point	Cisco Systems AIR-AP1141N	4554	System	Healthy	CUG	Active
SIM1AP-1004	--	Access Point	Cisco Systems AIR-AP1141N	3576	System	Healthy	CUG	Active
SIM1AP-1005	--	Access Point	Cisco Systems AIR-AP1141N	4641	System	Healthy	CUG	Active
SIM1AP-1006	--	Access Point	Cisco Systems AIR-AP1141N	5444	System	Healthy	CUG	Active
SIM1AP-1007	--	Access Point	Cisco Systems AIR-AP1141N	4180	System	Healthy	CUG	Active
SIM1AP-1008	--	Access Point	Cisco Systems AIR-AP1141N	5157	System	Healthy	CUG	Active
SIM1AP-1009	--	Access Point	Cisco Systems AIR-AP1141N	2649	System	Healthy	CUG	Active
SIM1AP-101	--	Access Point	Cisco Systems AIR-AP1141N	5572	System	Healthy	CUG	Active
SIM1AP-1010	--	Access Point	Cisco Systems AIR-AP1141N	3646	System	Healthy	CUG	Active
SIM1AP-1011	--	Access Point	Cisco Systems AIR-AP1141N	2055	System	Healthy	CUG	Active

- The **Component Map** page (Views > Device Maps > Components) allows you to view devices by root node and view the relationships between root nodes, parent components, and child components in a map. This makes it easy to visualize and manage root nodes and their components. The ScienceLogic platform automatically updates the **Component Map** as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for a Cisco WLC, go to the **Component Map** page and select the map from the list in the left NavBar. To learn more about the **Component Map** page, see the **Views** manual.



Chapter

3

Cisco WLC Dashboards

Overview

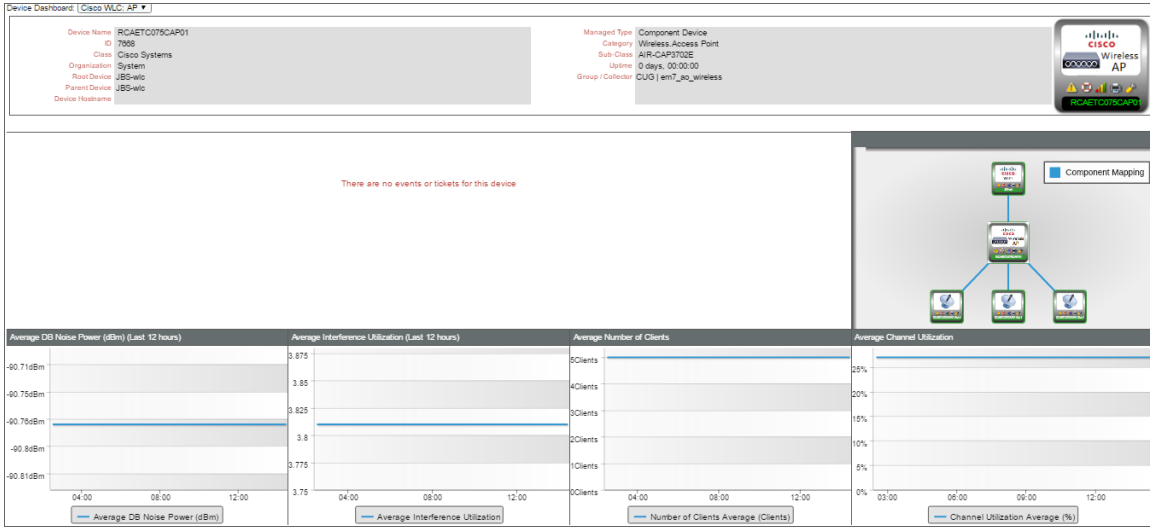
The following sections describe the device dashboards that are included in the *Cisco: Wireless PowerPack*:

<i>Device Dashboards</i>	15
<i>Cisco WLC: AP Dashboard</i>	16
<i>Cisco WLC: Interface Dashboard</i>	16

Device Dashboards

The *Cisco: Wireless PowerPack* includes device dashboards that provide summary information for Cisco WLC component devices. Each of the device dashboards in the *Cisco: Wireless PowerPack* is set as the default device dashboard for the equivalent device class.

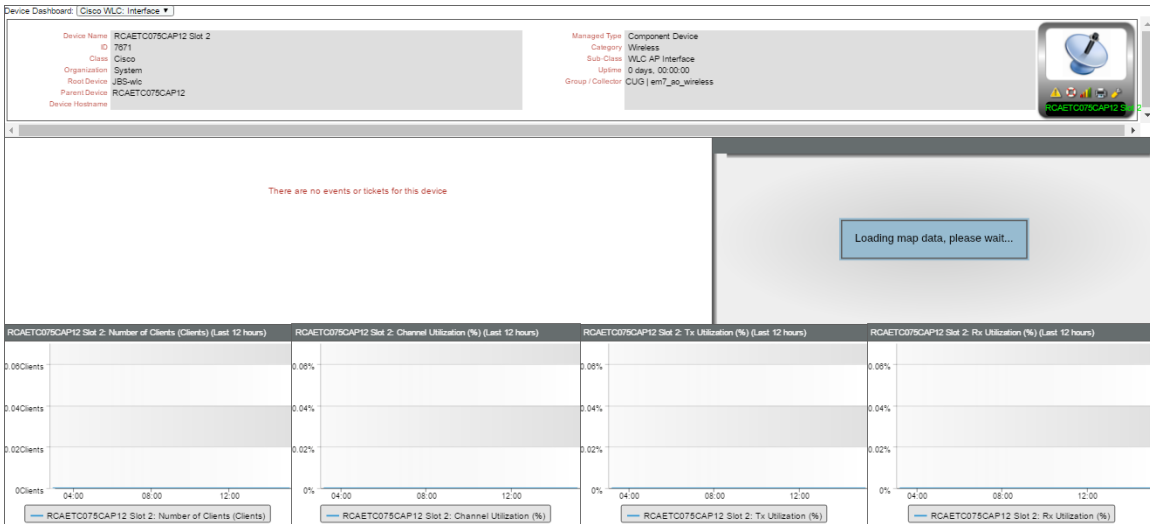
Cisco WLC: AP Dashboard



The Cisco WLC: AP device dashboard displays the following information about Cisco wireless access points:

- Events and tickets on the device
- A component map
- Average decibel (dB) noise over the past 12 hours
- Average interface utilization over the past 12 hours
- Average number of clients across all interfaces on the access point for the most recent poll
- Average channel utilization across all interfaces on the access point for the most recent poll

Cisco WLC: Interface Dashboard



The Cisco WLC: Interface dashboard displays the following information about Cisco wireless access point interfaces:

- Events and tickets on the device
- A component map
- Number of clients over the past 12 hours
- Channel utilization over the past 12 hours
- Tx utilization over the past 12 hours
- Rx utilization over the past 12 hours

© 2003 - 2018, ScienceLogic, Inc.

All rights reserved.

LIMITATION OF LIABILITY AND GENERAL DISCLAIMER

ALL INFORMATION AVAILABLE IN THIS GUIDE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED. SCIENCELOGIC™ AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT.

Although ScienceLogic™ has attempted to provide accurate information on this Site, information on this Site may contain inadvertent technical inaccuracies or typographical errors, and ScienceLogic™ assumes no responsibility for the accuracy of the information. Information may be changed or updated without notice. ScienceLogic™ may also make improvements and / or changes in the products or services described in this Site at any time without notice.

Copyrights and Trademarks

ScienceLogic, the ScienceLogic logo, and EM7 are trademarks of ScienceLogic, Inc. in the United States, other countries, or both.

Below is a list of trademarks and service marks that should be credited to ScienceLogic, Inc. The ® and ™ symbols reflect the trademark registration status in the U.S. Patent and Trademark Office and may not be appropriate for materials to be distributed outside the United States.

- ScienceLogic™
- EM7™ and em7™
- Simplify IT™
- Dynamic Application™
- Relational Infrastructure Management™

The absence of a product or service name, slogan or logo from this list does not constitute a waiver of ScienceLogic's trademark or other intellectual property rights concerning that name, slogan, or logo.

Please note that laws concerning use of trademarks or product names vary by country. Always consult a local attorney for additional guidance.

Other

If any provision of this agreement shall be unlawful, void, or for any reason unenforceable, then that provision shall be deemed severable from this agreement and shall not affect the validity and enforceability of any remaining provisions. This is the entire agreement between the parties relating to the matters contained herein.

In the U.S. and other jurisdictions, trademark owners have a duty to police the use of their marks. Therefore, if you become aware of any improper use of ScienceLogic Trademarks, including infringement or counterfeiting by third parties, report them to Science Logic's legal department immediately. Report as much detail as possible about the misuse, including the name of the party, contact information, and copies or photographs of the potential misuse to: legal@sciencelogic.com



800-SCI-LOGIC (1-800-724-5644)

International: +1-703-354-1010