TECHNICAL DOCUMENTATION

Cloudpath

Cloudpath
Enrollment System

Cloudpath Integration with Palo Alto Firewalls

Software Release 5.0
December 2016

Summary: This document describes how to configure Cloudpath to integrate with Palo Alto firewalls, including the Ruckus WLAN controller AAA configuration, and example output on the Palo Alto firewall.
Document Type: Configuration
Audience: Network Administrator

Cloudpath

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Cloudpath Integration with Palo Alto Firewalls

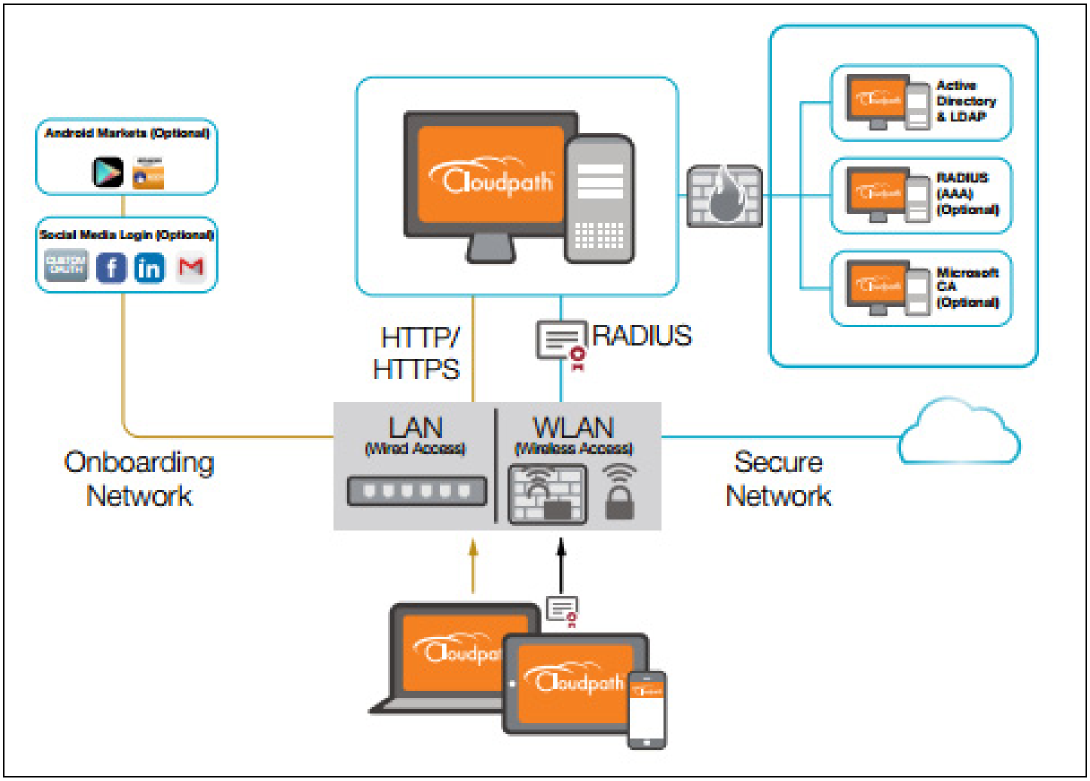
Cloudpath Security and Management Platform

Cloudpath Enrollment System (ES) software is a security and policy management platform that enables any IT organization to protect the network by easily and definitively securing users and their wired and wireless devices—while freeing those users and IT itself from the tyranny of passwords.

Available cloud-managed or as a virtual instance and priced per user, Cloudpath software lets IT do with one system what usually requires many, while easily and automatically integrating with existing access and network security infrastructure.

Cloudpath software consolidates and simplifies the deployment of multiple services that are typically disparate and complex to manage: Certificate Management, Policy Management and Device Enablement.

FIGURE 1. Cloudpath Security and Policy Management Platform



Integration with Palo Alto Firewalls

Cloudpath supplements data already captured by Palo Alto firewalls by adding mappings of the IP address to a UserId, allowing the captured traffic to be more identifiable. When a user joins the network via Cloudpath, the Palo Alto firewall is notified of the user's login. Similarly, when a user is known to have left the network, the firewall is notified of the logout.

Cloudpath also sends Host Information Profile (HIP) data to the firewall, which increases visibility on connections and allows filtering on the type of client (by operating system, etc).

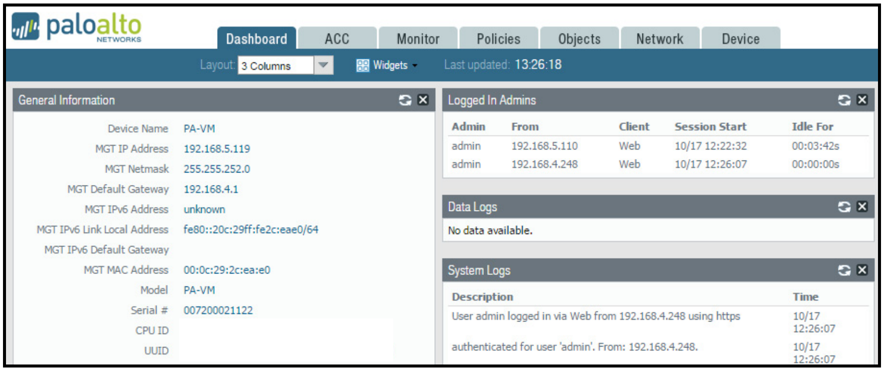
This section describes how to integrate Cloudpath with a Palo Alto firewall.

Palo Alto Firewall Prerequisites

Configuring Cloudpath to integrate with a Palo Alto firewall requires:

- Administrator credentials for the Palo Alto system
- IP address or hostname of the Palo Alto system

FIGURE 2. Palo Alto Firewall System Information



Layout: 3 Columns

Last updated: 13:26:18

General Information

Device Name	PA-VM
MGT IP Address	192.168.5.119
MGT Netmask	255.255.252.0
MGT Default Gateway	192.168.4.1
MGT IPv6 Address	unknown
MGT IPv6 Link Local Address	fe80::20c:29ff:fe2c:eae0/64
MGT IPv6 Default Gateway	
MGT MAC Address	00:0c:29:2c:ea:e0
Model	PA-VM
Serial #	007200021122
CPU ID	
UUID	

Logged In Admins

Admin	From	Client	Session Start	Idle For
admin	192.168.5.110	Web	10/17 12:22:32	00:03:42s
admin	192.168.4.248	Web	10/17 12:26:07	00:00:00s

Data Logs

No data available.

System Logs

Description	Time
User admin logged in via Web from 192.168.4.248 using https	10/17 12:26:07
authenticated for user 'admin'. From: 192.168.4.248.	10/17 12:26:07

Wireless Controller Configuration

The examples in this section show Ruckus Wireless controllers. However, Cloudpath supports integration with Palo Alto firewalls using wireless controllers from most vendors.

The wireless controller configuration requirements:

- AAA authentication server and AAA accounting server.

    -RADIUS enabled (RADIUS Accounting for AAA Accounting server)

    -IP address of Cloudpath system

    -Authentication port =1812 (Accounting port=1813)

-Shared must match the shared secret for the Cloudpath onboard RADIUS server (or shared secret for the external RADIUS server).

- WLAN configuration

  -Standard Usage

  -802.1x EAP Method

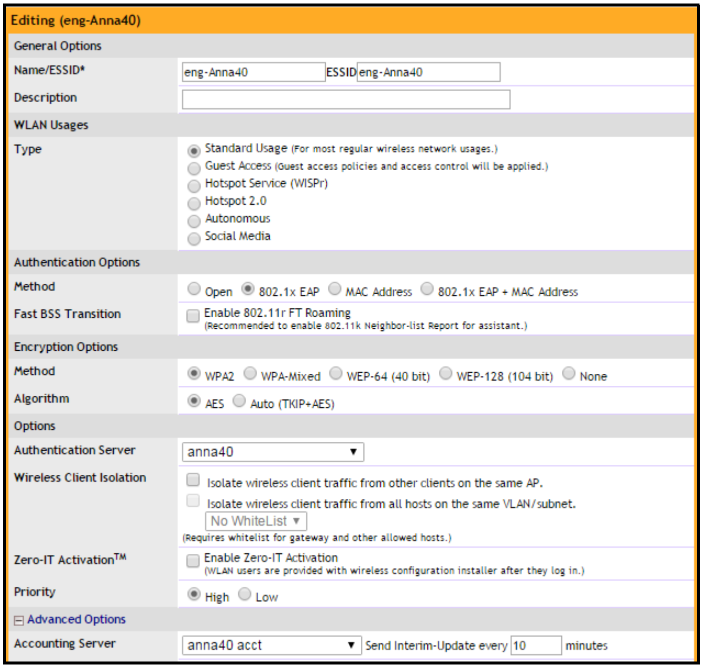
  -WPA2 Encryption

  -AES Algorithm

  -Select AAA authentication server previously configured

  -In Advanced Options section, select AAA accounting server previously configured

FIGURE 3. WLAN Configuration with AAA Accounting Server



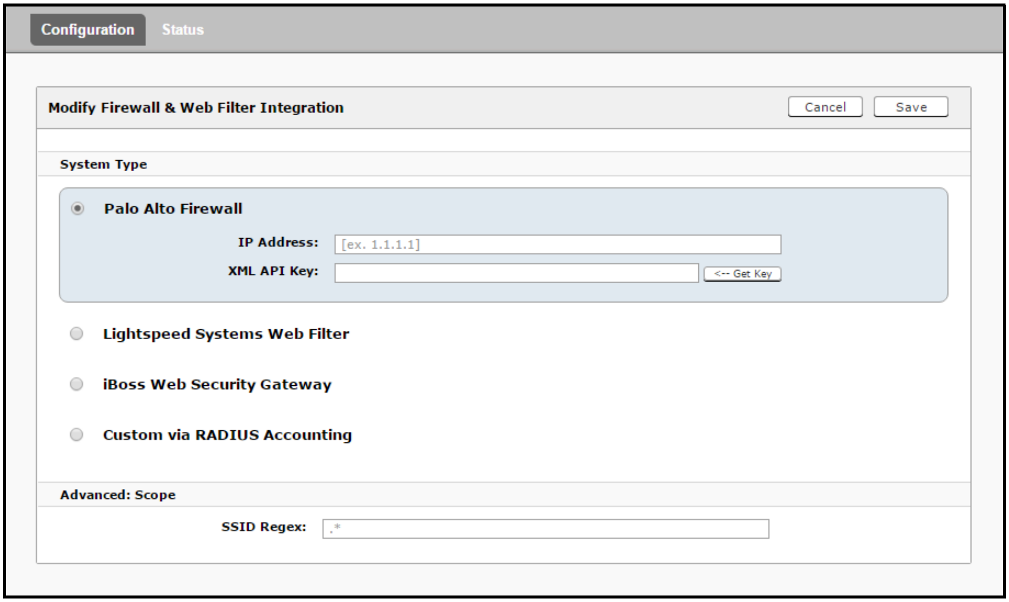
Editing (eng-Anna40)

General Options	
Name/ESSID*	eng-Anna40 ESSID eng-Anna40
Description	
WLAN Usages	
Type	● Standard Usage (For most regular wireless network usages.) ○ Guest Access (Guest access policies and access control will be applied.) ○ Hotspot Service (WISPr) ○ Hotspot 2.0 ○ Autonomous ○ Social Media
Authentication Options	
Method	○ Open ● 802.1x EAP ○ MAC Address ○ 802.1x EAP + MAC Address
Fast BSS Transition	□ Enable 802.11r FT Roaming (Recommended to enable 802.11k Neighbor-list Report for assistant.)
Encryption Options	
Method	● WPA2 ○ WPA-Mixed ○ WEP-64 (40 bit) ○ WEP-128 (104 bit) ○ None
Algorithm	● AES ○ Auto (TKIP+AES)
Options	
Authentication Server	anna40 ▼
Wireless Client Isolation	□ Isolate wireless client traffic from other clients on the same AP. □ Isolate wireless client traffic from all hosts on the same VLAN/subnet. No WhiteList ▼ (Requires whitelist for gateway and other allowed hosts.)
Zero-IT Activation™	□ Enable Zero-IT Activation (WLAN users are provided with wireless configuration installer after they log in.)
Priority	● High ○ Low
⊟ Advanced Options	
Accounting Server	anna40 acct ▼ Send Interim-Update every 10 minutes

Cloudpath Configuration

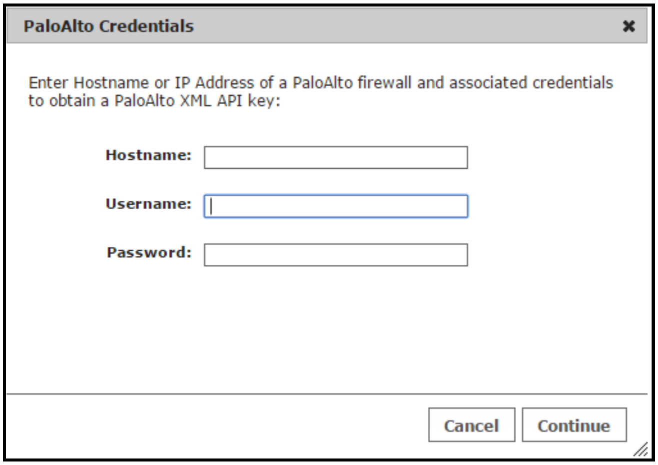
1. Navigate to Configuration > Advanced > Firewalls & Web Filters.
2. Select Palo Alto Firewall.

FIGURE 4. Firewalls & Web Filters


Configuration
Status
Modify Firewall & Web Filter Integration
Cancel
Save
System Type
● Palo Alto Firewall
IP Address: [ex. 1.1.1.1]
XML API Key:
<-- Get Key
○ Lightspeed Systems Web Filter
○ iBoss Web Security Gateway
○ Custom via RADIUS Accounting
Advanced: Scope
SSID Regex: .*

3. Enter the management IP address of the Palo Alto system.
4. Click Get Key.

FIGURE 5. Palo Alto Credentials



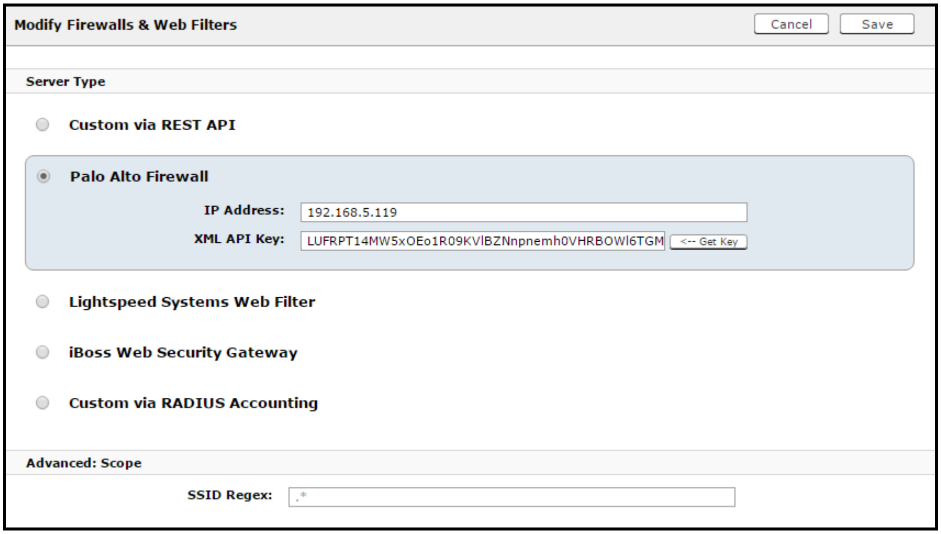
Enter Hostname or IP Address of a PaloAlto firewall and associated credentials to obtain a PaloAlto XML API key:

5. In the Palo Alto Credentials popup, enter:

- Hostname or IP address of the Palo Alto firewall.
- Palo Alto administrator username.
- Palo Alto administrator password.

The API key is generated by the system and displayed. This is the API key the Cloudpath system will use to communicate with the firewall.

FIGURE 6. Generated API Key



Server Type

○ Custom via REST API

● Palo Alto Firewall

IP Address: 192.168.5.119

XML API Key: LUFRPT14MW5xOEo1R09KVlBZNnpnemh0VHRBOWl6TGM

○ Lightspeed Systems Web Filter

○ iBoss Web Security Gateway

○ Custom via RADIUS Accounting

Advanced: Scope

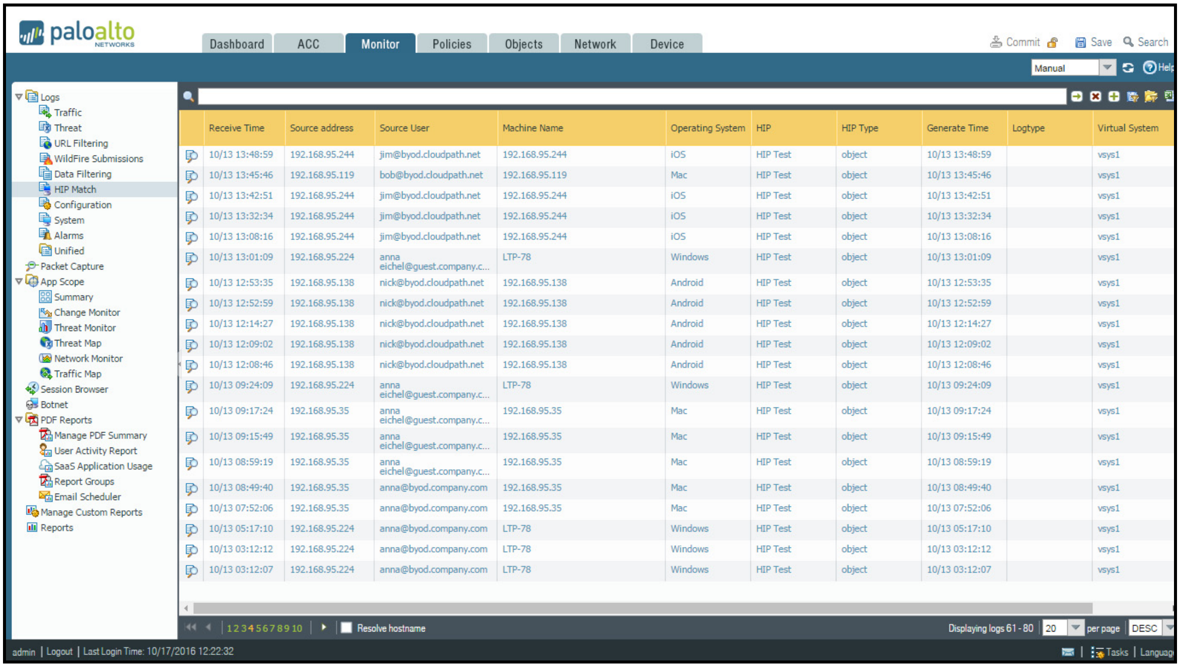
SSID Regex: .*

6. *Scope* is optional. If you want only information from a specific SSID to be forwarded to the Palo Alto firewall (or other specified web filters), enter it in the *SSID Regex* field.

Palo Alto Output

The example output below displays the type of information displayed from the Palo Alto firewall *Monitor* tab, and *Host Information Profile (HIP) Match* logs. The Source address and Source User display the user data from the Cloudpath enrollment record. The Machine Name and Operating System fields, if known by Cloudpath, display the machine information.

FIGURE 7. Palo Alto Firewall Displaying Cloudpath Traffic



Receive Time	Source address	Source User	Machine Name	Operating System	HIP	HIP Type	Generate Time	Logtype	Virtual System
10/13 13:48:59	192.168.95.244	jim@byod.cloudpath.net	192.168.95.244	iOS	HIP Test	object	10/13 13:48:59		vsys1
10/13 13:45:46	192.168.95.119	bob@byod.cloudpath.net	192.168.95.119	Mac	HIP Test	object	10/13 13:45:46		vsys1
10/13 13:42:51	192.168.95.244	jim@byod.cloudpath.net	192.168.95.244	iOS	HIP Test	object	10/13 13:42:51		vsys1
10/13 13:32:34	192.168.95.244	jim@byod.cloudpath.net	192.168.95.244	iOS	HIP Test	object	10/13 13:32:34		vsys1
10/13 13:08:16	192.168.95.244	jim@byod.cloudpath.net	192.168.95.244	iOS	HIP Test	object	10/13 13:08:16		vsys1
10/13 13:01:09	192.168.95.224	anna eichel@guest.company.c...	LTP-78	Windows	HIP Test	object	10/13 13:01:09		vsys1
10/13 12:53:35	192.168.95.138	nick@byod.cloudpath.net	192.168.95.138	Android	HIP Test	object	10/13 12:53:35		vsys1
10/13 12:52:59	192.168.95.138	nick@byod.cloudpath.net	192.168.95.138	Android	HIP Test	object	10/13 12:52:59		vsys1
10/13 12:14:27	192.168.95.138	nick@byod.cloudpath.net	192.168.95.138	Android	HIP Test	object	10/13 12:14:27		vsys1
10/13 12:09:02	192.168.95.138	nick@byod.cloudpath.net	192.168.95.138	Android	HIP Test	object	10/13 12:09:02		vsys1
10/13 12:08:46	192.168.95.138	nick@byod.cloudpath.net	192.168.95.138	Android	HIP Test	object	10/13 12:08:46		vsys1
10/13 09:24:09	192.168.95.224	anna eichel@guest.company.c...	LTP-78	Windows	HIP Test	object	10/13 09:24:09		vsys1
10/13 09:17:24	192.168.95.35	anna eichel@guest.company.c...	192.168.95.35	Mac	HIP Test	object	10/13 09:17:24		vsys1
10/13 09:15:49	192.168.95.35	anna eichel@guest.company.c...	192.168.95.35	Mac	HIP Test	object	10/13 09:15:49		vsys1
10/13 08:59:19	192.168.95.35	anna eichel@guest.company.c...	192.168.95.35	Mac	HIP Test	object	10/13 08:59:19		vsys1
10/13 08:49:40	192.168.95.35	anna@byod.company.com	192.168.95.35	Mac	HIP Test	object	10/13 08:49:40		vsys1
10/13 07:52:06	192.168.95.35	anna@byod.company.com	192.168.95.35	Mac	HIP Test	object	10/13 07:52:06		vsys1
10/13 05:17:10	192.168.95.224	anna@byod.company.com	LTP-78	Windows	HIP Test	object	10/13 05:17:10		vsys1
10/13 03:12:12	192.168.95.224	anna@byod.company.com	LTP-78	Windows	HIP Test	object	10/13 03:12:12		vsys1
10/13 03:12:07	192.168.95.224	anna@byod.company.com	LTP-78	Windows	HIP Test	object	10/13 03:12:07		vsys1

The information displayed is obtained from the Cloudpath Enrollment Record.