

Plugin

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Overview

In CPC, reference data is considered information that is needed to operate the policy engine, but not used for evaluating policies. For example, in the **Reference Data** tab in CPC, are the forms used to define systems, clusters, and instances, and to set times and dates used for tariff switching. The policy engine needs to refer to this data only to process policies correctly. However, the data does not define the policy itself.

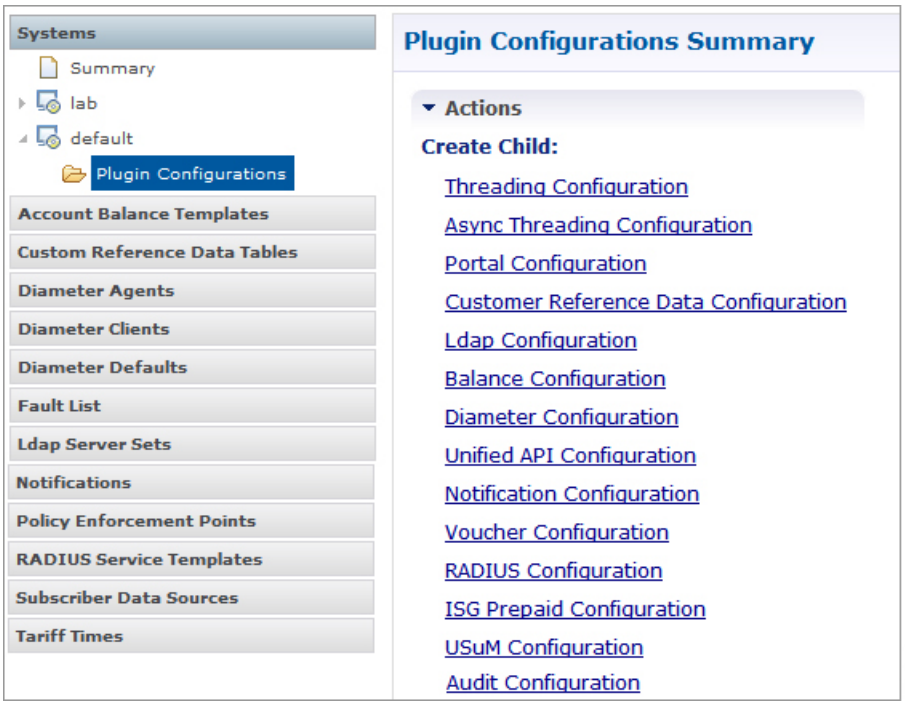
CPC provides core plug-ins for customizing and optimizing your installation.

- Configurations set at the system level are system-wide except as noted in the bullet items below.
- Configurations set at the cluster level apply to that cluster and the instances in it. A value set here overrides the same value set at the system level.
- Configurations set at the instance level apply to the instance only and override the same value set at the cluster or system level.

Select the **Create Child** action in a **Plug-in Configuration** node in the **Systems** tree to define them. You can change any of the variables from the default, or choose not to use a plug-in, as necessary.

When you create a system from the example, the following configuration stubs appear at the cluster and instance level:

Figure 1: Create Child Action



You are notified when a new policy is applied that overrides the existing configuration.

The notification is displayed as a warning icon above the configuration heading. When you hover over the warning icon, it displays the notification message as a tooltip. When there is an error and warning in the plugin configuration, then the error is overridden by a warning message.

A warning message is displayed under the following conditions:

- At the System level, if the selected plugin configuration is overridden by cluster or Instance plugin configuration.
- At the Cluster level, if the selected plugin configuration overrides the same plugin configuration at the system level or is overridden by the same plugin configuration at an Instance level.
- At the Instance level, if the selected plugin configuration overrides the same plugin configuration at system or cluster level.

Threading Configuration

A threading configuration utility is provided for advanced users.

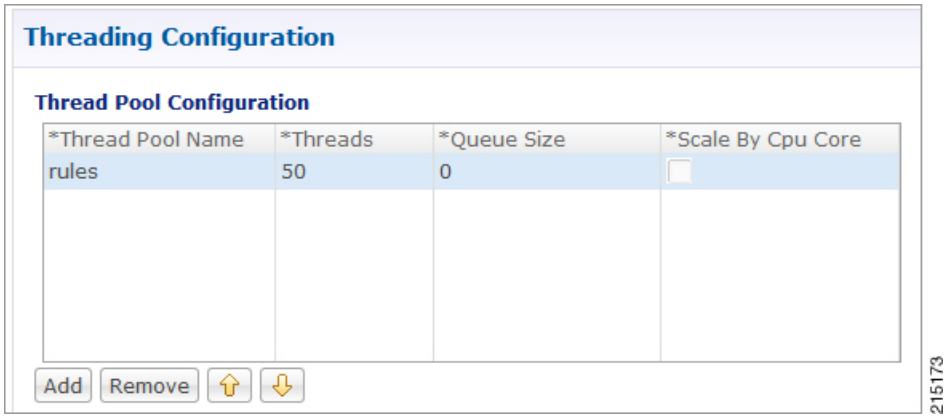
Click **Threading Configuration** in the right pane to add the threading configuration to the system. This is a performance tuning parameter and can be changed in case of a performance issue according to the call model and hardware. For further information, contact your Cisco Account representative.

The Threading Plug-in is for Mobility. The only value to set is **rules**. It controls the total number of threads in the Policy Engine (QNS) that are executing at any given time. The default value is 50.

It is recommended not to configure the value below 50. It can be set higher to help increase performance in certain situations where the queue full issue or performance issue is being observed. The value also depends on call model, hardware type.

A configuration example is shown below:

Figure 2: Thread Pool Configuration



The following parameters can be configured under Threading Configuration:

Table 1: Threading Configuration Parameters

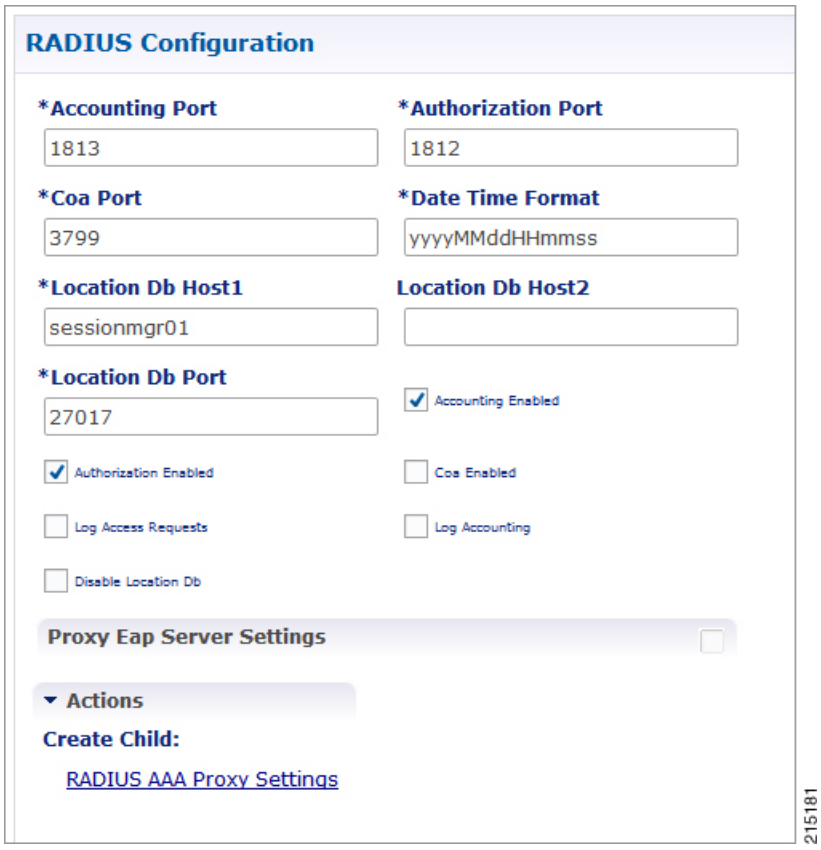
Parameter	Description
Thread Pool Name	Name of the Cisco thread pool i.e., rules.
Threads	Specify the threads to set in the thread pool. You can set rules thread ranging from 50 to 100 depending on the call flow (based on number of lookup operations). • rules = 50; Queue Size = 0; Scale By Cpu Core = unchecked • rules = 100; Queue Size = 0 (If TPS is > 2000 per Policy Server (QNS) depending on call model used; Scale By Cpu core = unchecked The threads are driven based upon average response time of the message. The response time is call model dependent.

Parameter	Description
Queue Size	Specify the size of the queue before the threads are rejected. If value is greater than 50, performance may degrade because it holds the number of tasks in queue waiting for threads to be executed when TPS is high. If the value is lower than 50, the requests start dropping when all worker threads are busy in executing actions. The queue belongs to each Policy Server (QNS) process, and it holds incoming messages from Policy Directors (LB), but also internal events/messages (for example, an internal time change that triggers a policy evaluation). This is a performance tuning parameter and can be changed in case of a performance issue according to the call model and hardware. Default value is 0. **Note** In most of the setups, keep the queue size value default.
Scale By Cpu Core	Select this check box to enable the processor cores to scale the maximum number of threads. By default, this check box is unchecked.

RADIUS Configuration

Click **RADIUS Configuration** in the right pane to add the configuration in the system.

Figure 3: RADIUS Configuration



The following parameters can be configured under RADIUS Configuration:

Table 2: RADIUS Configuration Parameters

Parameter	Description
Accounting Port	Port used for incoming radius accounting.
Authorization Port	Port used for incoming radius authorization.
Coa Port	Port used for Change of Authority between CPC and Radius Device.
Date Time Format	Time stamping format for radius transactions.
Location Db Host1	Mongo location for Primary Radius database.
Location Db Host2	Mongo location for Secondary Radius database.
Location Db Port	Port number for the Radius database.
Accounting Enabled	Enables CPC to receive incoming Radius Accounting. Default value is True (checked).

Parameter	Description
Authorization Enabled	Enables CPC to receive incoming Radius Authorization. Default value is True (checked).
Coa Enabled	Enables CPC to send and receive CoAs.
Log Access Requests	Log the radius accounting which is configured in `/etc/broadhop/logback.xml`. The typical default logging location is `/var/broadhop/radius/accounting/accounting.current`.
Log Accounting	Logs radius authorization requests, also configured in `/etc/broadhop/logback.xml`. The typical default logging location is `/var/broadhop/radius/access/rejects.current`.
Disable Location Db	Will not record WLC locations in the Radius mongo DB. Default value is False (unchecked).

For information on proxy settings, refer to RADIUS AAA Proxy Settings.

RADIUS AAA Proxy Settings

Click **RADIUS AAA Proxy Settings** to add the configuration in the system. These proxy settings are used for domain-based subscriber authorization.

Table 3: RADIUS AAA Proxy Settings

Parameter	Description
RADIUS Server	Server Identification which will be mapped between Proxy Settings and Domain/Service.
Accounting Port	AAA Server Accounting Port which will receive and process accounting requests.
Authorization Port	AAA Server Authorization Port which will receive and process authentication requests.
Primary IP Address	Primary AAA Server IP address.
Secondary IP Address	Secondary AAA Server IP address.
RADIUS NAS IP Address	NAS IP address which will be sent in the proxied requests.
RADIUS Auth Protocol	RADIUS authentication protocol used. Default: PAP
RADIUS Password	RADIUS authentication password.
Retries	Number of times the requests will be retried in a failure scenario.
Shared Secret	Shared Secret of the AAA Server.

Parameter	Description
Test User Id	RADIUS username used for testing between CPC and AAA Server.
Test Password	RADIUS password used for testing between CPC and AAA Server.
Thread Pool Size	Number of threads to handle proxying of requests.
Max Proxy Queue Size	Maximum number of requests that can be queued before being proxied.
Send Test Message	Select this option to send a test message to the AAA server when CPC comes up.

ASR9K Configuration

Click **ASR9K Service** to add the configuration in the system.

Table 4: RADIUS AAA Proxy Settings

Parameter	Description
Display Name Priority	Order of preference for display configurations.
Accept Access Template	Structure for accepted access requests.
Proxy Access Accept Values	Criteria for accepting access requests.
Avp Subscription (List)	List of subscribed attribute-value pairs.
Additional Avps (List)	Extra attribute-value pairs for requests.
Multi Co A Template	Supports multiple Change of Authorization requests.