
WiFi Aggregation and Offload Command Reference

Command Hierarchies

dynamic-services

Syntax	dynamic-services
Context	config>service
Description	This command enables the context to configure dynamic data services. Only available on systems with multi-core CPM (CPM3 or up).

dynamic-services-policy

Syntax	dynamic-services-policy <i>dynsrv-policy-name</i> [create] no dynamic-services-policy <i>dynsrv-policy-name</i>
Context	config>service>dynsvc
Description	This command creates a new dynamic services policy that can be used to create dynamic data services. The no form of the command removes the dynamic services policy from the configuration. This is only allowed when there are no active dynamic data services referencing this policy.
Default	none
Parameters	<i>dynsrv-policy-name</i> — Specifies a unique name of a dynamic services policy up to 32 characters in length.

accounting-1

Syntax	accounting-1
Context	config>service>dynsvc>policy
Description	This command enables the context to configure the first RADIUS accounting destination and corresponding RADIUS accounting parameters for dynamic data services.

accounting-2

Syntax	accounting-2
Context	config>service>dynsvc>policy

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Description This command enables the context to configure the second RADIUS accounting destination and corresponding RADIUS accounting parameters for dynamic data services.

server-policy

Syntax **server-policy** *policy-name*
no server-policy

Context config>service>dynsvc>acct-1
config>service>dynsvc>acct-2

Description This command configures the radius server policy to be used for dynamic data services RADIUS accounting.

The **no** form of the command removes the radius server policy from the configuration. This is only allowed when there are no active dynamic data services referencing this policy.

Default no server-policy

Parameters *policy-name* — Specifies the name of the radius server policy.

Values max length = 32 characters.

stats-type

Syntax **stats-type** {*time*|*volume-time*}
no stats-type

Context config>service>dynsvc>acct-1
config>service>dynsvc>acct-2

Description This command configures the type of statistics to be reported in dynamic data services RADIUS accounting. A RADIUS specified Stats Type overrides the CLI configured value.

The no form of the command resets the default value.

Default volume-time

Parameters *time* — Only report Session-Time in the RADIUS Accounting Interim-Update and Stop message.

volume-time — Report both Session-Time and Volume counter attributes in the RADIUS Accounting Interim-Update and Stop messages.

update-interval

Syntax **update-interval** [*hrs hours*] [*min minutes*] [*days days*]
no update-interval

Context config>service>dynsvc>acct-1
config>service>dynsvc>acct-2

Description This command specifies the interval between each RADIUS Accounting Interim-Update message (minimum 5 minutes; maximum 180 days).

The **no** form of the command disables the sending of Accounting Interim-Update messages. A RADIUS specified Accounting Interim Interval overrides the CLI configured value.

Default	no update-interval (do not send Accounting Interim-Update messages)
Parameters	<i>hrs</i> — specifies the interval in hours. Values 1 — 23
	<i>min</i> — Specifies the interval in minutes. Values 1 — 59
	<i>days</i> — specifies the interval in days. Values 1 — 180

update-interval-jitter

Syntax	update-interval-jitter absolute seconds no update-interval-jitter
Context	config>service>dynsvc>acct-1 config>service>dynsvc>acct-2
Description	This command specifies the absolute maximum random delay introduced on the update interval between two RADIUS Accounting Interim Update messages. The effective maximum random delay value is the minimum of the configured absolute jitter value and 10% of the configured update-interval. A value of zero will send the accounting interim update message without introducing an additional random delay. The no form of the command sets the default to 10% of the configured update-interval.
Default	no update-interval-jitter (10% of the configured update-interval)
Parameters	<i>seconds</i> — Specifies the absolute maximum jitter value in seconds. Values 0 — 3600

cli-user

Syntax	cli-user name no cli-user
Context	config>service>dynsvc>policy
Description	This command specifies the CLI user to be used to execute the dynamic data services CLI scripts. Via the specified user's profile, it is possible to further restrict the internal list of allowed commands to be executed via dynamic data service CLI scripts. The no form of the command sets the CLI user to an internal user with all configuration rights.
Default	no cli-user
Parameters	<i>name</i> — Specifies the CLI user name that must exist in the >config>system>security CLI context.

description

Syntax	description <i>description-string</i> no description
Context	config>service>dynsvc>policy
Description	The description command associates a text string with a configuration context to help identify the content in the configuration file. The no form of this command removes the string from the configuration.
Default	no description
Parameters	<i>description-string</i> — The description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

sap-limit

Syntax	sap-limit [0..131072] no sap-limit
Context	config>service>dynsvc>policy
Description	This command specifies a limit for the number of dynamic data service instances (SAPs) that can be setup simultaneously using a given dynamic services policy. A value of zero (0) means the policy will be drained: existing dynamic data services can be modified and torn down but no new dynamic data services can be setup.
Default	sap-limit 1
Parameters	[0..131072] — Specifies the number of dynamic data service SAPs that can be setup simultaneously using this dynamic services policy. Values 0 — 131072

script-policy

Syntax	script-policy <i>name</i> no script-policy
Context	config>service>dynsvc>policy
Description	This command specifies the radius script policy to be used to setup the dynamic data services. The script-policy configuration cannot be changed when there are active dynamic data services referencing the policy. The no form of this command removes the script-policy from the configuration. This is only allowed when there are no active dynamic data services referencing this policy.
Default	no script-policy
Parameters	<i>name</i> — Specifies the radius script policy name.

service-range

Syntax	service-range <i>service-id service-id</i> no service-range
Context	config>service>dynsvc
Description	This command specifies the service id range that is reserved for dynamic data service creation. The range cannot overlap with existing static configured services. Once configured with active dynamic services in the range, the service-range can only be extended at the end. The no form of this command removes the service-range from the configuration. This is only allowed when there are no active dynamic data services. When no service-range is specified, the setup of dynamic data services will fail.
Default	no service-range
Parameters	<i>service-id</i> — Specifies the start and end service-id to define the service-range for dynamic services. Values 1 — 2147483647

timers

Syntax	timers
Context	config>service>dynsvc
Description	This command enables the context to configure dynamic data services related timers.

setup-timeout

Syntax	setup-timeout <i>access-accept timeout</i> no setup-timeout
Context	config>service>dynsvc>timers
Description	This command specifies the time that dynamic data services setup requests from a RADIUS Access-Accept are hold in an internal work queue waiting to be processed. If after the timeout, the dynamic data service setup request is still in the queue (meaning it is not setup), then the dynamic service setup request will be removed from the queue and the setup fails. The no form of this command resets the timeout to 2 seconds.
Default	no setup-timeout (30 seconds)
Parameters	<i>timeout</i> — Specifies the setup-timeout in seconds for setup requests of dynamic services received via Access-Accept. Values 2 — 3600 seconds

dynsvc-password

Syntax	dynsvc-password <i>password</i> [hash hash2] no dynsvc-password
Context	config>system>security>password
Description	<p>NOTE: See also the description for the enable-dynamic-services-config command.</p> <p>This command allows a user with admin permissions to configure a system wide password which enables a user to enter a special dynamic services configuration mode.</p> <p>The minimum length of the password is determined by the minimum-length command. The complexity requirements for the password are determined by the complexity command.</p> <p>The no form of the command removes the dynsvc password from the configuration</p>
Default	no dynsvc-password
Parameters	<p><i>password</i> — Configures the password which enables a user to enter a special dynamic services configuration mode. The maximum length can be up to 20 characters if unhashed, 32 characters if hashed, 54 characters if the hash2 keyword is specified.</p> <p>hash — Specifies the key is entered in an encrypted form. If the hash parameter is not used, the key is assumed to be in a non-encrypted, clear text form.</p> <p>hash2 — — Specifies the key is entered in a more complex encrypted form. If the hash2 parameter is not used, the key is assumed to be in a non-encrypted, clear text form.</p>

enable-dynamic-services-config

Syntax	[no] enable-dynamic-services-config
Context	<global>
Description	<p>NOTE: See also the description for the dynsvc-password command.</p> <p>If the dynsvc-password is configured in the config>system>security>password context, then any user can enter a special dynamic services configuration mode by entering the enable-dynamic-services-config command.</p> <p>The enable-dynamic-services-config command is not in the default profile. To give access to this command, the user must belong to the administrative profile or a new profile should be created.</p> <p>Once the enable-dynamic-services-config command is entered, the user is prompted for a password. If the password matches, the user is given access to the dynamic services configuration. Access to static configuration is in this case prohibited.</p> <p>To verify that a user is in the enable-dynamic-services-config mode, use the show users command. Users in the enable-dynamic-services-config mode lists the letter “D” next to the user’s CLI session.</p> <p>The no form of this command disables the dynamic services configuration mode for this user.</p>
Default	no enable-dynamic-services-config

Show Commands

dynamic-services

Syntax	dynamic-services
Context	show>service
Description	This command enables the context to show dynamic services information.

dynamic-services-policy

Syntax	dynamic-services-policy [<i>policy-name</i>]
Context	show>service>dynsvc
Description	This command displays the dynamic services policy information.
Parameters	<i>policy-name</i> — specifies for which dynamic services policy the information is requested.

Sample Output

```
# show service dynamic-services dynamic-services-policy "dynsvc-policy-1"
=====
Dynamic Service Policies
=====
Dynamic Service Policy      : dynsvc-policy-1
-----
cli-user                    : (Not Specified)
description                  : Dynamic Services Policy 1
script-policy                : script-policy-5
sap-limit                    : 2000

Accounting instance 1
Stats type                   : volume-time
server policy                 : aaa-server-policy-1
Update interval (minutes)    : 30
Update interval jitter       : 180s

Accounting instance 2
Stats type                   : time
server policy                 : aaa-server-policy-2
Update interval (minutes)    : 0
Update interval jitter       : 10%
-----
No. of Services-policies: 1
=====
```

root-objects

Syntax	root-objects
Context	show>service>dynsvc
Description	<p>This command displays the root objects created by dynamic data services.</p> <p>OID prefix and index — The corresponding SNMP OID prefix and index for this root object.</p> <p>Snippet name — The name of the python function that created this root object. The name is set to N/A when the root-object is orphaned.</p> <p>Snippet instance — The instance for which the python function with “Snippet name” created this root object. If the snippet is a result from a dynamic reference, then the snippet instance is the reference-id string passed in the dyn.reference(). If the snippet is not the result from a dynamic reference, then the snippet instance is the dynamic data service SAP-ID. The instance is set to N/A when the root object is orphaned.</p> <p>Orphan time — Shows the timestamp when the root-object became orphaned (root-object not deleted when corresponding teardown function is called) or N/A if the root-object is not orphaned.</p>

Sample Output

```
# show service dynamic-services root-objects
=====
Dynamic Service Root Objects
=====
OID prefix           : svcRowStatus
OID index            : .100000
Snippet name         : vprn
Snippet instance     : VRF-1
Orphan time          : N/A
-----
No. of Root Objects: 1
=====
```

saps

Syntax	saps [control-session acct-session-id] [port port-id] [dynsvc-policy policy-name] [summary] [orphaned] [sap sap-id] [svc-id service-id]
Context	show>service>dynsvc
Description	<p>This command displays the dynamic services SAPs (instances) details:</p> <ul style="list-style-type: none"> • SAP — The dynamic service SAP id. • Acct session-ID — The dynamic service accounting session id. • Acct session-ID control — The control channel accounting session id. • Service — The dynamic service id. • Orphaned — Yes/No – orphaned state is when the SAP is not deleted when corresponding dynamic service teardown function was called. • Dynamic Services policy — The policy referenced to setup the dynamic service.

- Number of scripts executed — The number of times the script was executed for this dynamic service (setup, modify, revert or teardown).
- Number of scripts w success — The number of times the script was executed successfully for this dynamic service.
- Last script action — The setup, modify, revert, teardown.
- Time of last script action — The timestamp.
- Parameters of last action — The content of the Dynamic Services Script Parameters attribute corresponding with the last action.
- For each of the two accounting instances:
 - Status — RADIUS accounting enabled or disabled.
 - Stats type — the type of statistics reported in accounting.
- Update interval (minutes) — the interval between Accounting Interim Update messages.

Parameters

summary — Displays a summary view only.

orphaned — Displays only SAPs in the orphaned state.

Filtering options, display SAPs that belong to the specified:

control-session *acct-session-id* — Specifies control session accounting session id

port *port-id* — Specifies Ethernet port.

dynsvc-policy *policy-name* — Specifies dynamic services policy.

sap sap-id — Specifies dynamic services SAP id.

svc-id *service-id* — - service ID of the dynamic service.

Sample Output

```
# show service dynamic-services saps
=====
Dynamic Services SAP's
=====
SAP                               : 1/1/1:1.901
-----
Acct session-ID                   : 242FFF000001AE512CE4B6
Acct session-ID control           : 242FFF000001AB512CE4B6
Service                           : [100000]
Orphaned                          : no
Dynamic Services policy           : dynsvc-policy-1
Number of scripts executed        : 1
Number of scripts w success       : 1
Last script action                : setup
Time of last script action        : 2013/02/26 16:37:10
Parameters of last action         : vprn_1={'t':('VRF-1',65000,1000,'cpe-int-1','192.
                                   : 168.20.1/24','2001:db8:cafe::1/64',901,901,910,92
                                   : 0,'192.168.20.0/24','192.168.20.2')}

Accounting instance 1
Status                            : enabled
Stats type                        : volume-time
Update interval (minutes)         : 30

Accounting instance 2
Status                            : enabled
```

Show Commands

```
Stats type           : time
Update interval (minutes) : 0

-----
No. of SAP's: 1
=====

# show service dynamic-services saps summary
=====
Dynamic Services SAP's summary
=====
SAP                      Acct-Session-ID      Acct-Session-ID-Ctrl
-----
1/1/1:1.901              242FFF000001AE512CE4B6  242FFF000001AB512CE4B6
-----
No. of SAP's: 1
=====
```

script

- Syntax** `script`
- Context** `show>service>dynsvc`
- Description** This command enables the context to show dynamic services script information.

snippets

- Syntax** `snippets [detail]`
`snippets name snippet-name [instance snippet-instance] [detail]`
- Context** `show>service>dynsvc>script`
- Description** This command displays the dynamic services snippets information.
The CLI output generated by a single dynamic service python function call is a snippet instance.
The name of the snippet instance is the function key in the `dyn.action()` dictionary that caused this function to be called. This name is the dictionary name passed via RADIUS for top-level snippets or the first parameter to `dyn.reference()` for the others.
The snippet instance is either the dynamic data service SAP id or if the function is called via dynamic reference, the reference-id (that is, second parameter) provided in the `dyn.reference()` call.
- Parameters** **detail** — display detailed dynamic services snippet information.
Filtering options, display dynamic services snippets information that matches:
name *snippet-name* — Specifies the snippet name.
instance *snippet-instance* — Specifies the snippet instance.

Sample Output

```
# show service dynamic-services script snippets
```

```

=====
Dynamic Services Snippets
=====
Name                Instance                Ref-count  Dict-len
-----
vprn                 VRF-1                   1          75
vprn_1               1/1/1:1.901            0          190
-----
No. of Snippets: 2
=====

# show service dynamic-services script snippets detail
=====
Dynamic Service Snippets
=====
Snippet             : vprn:VRF-1
-----
reference-count     : 1
dictionary-length   : 75

Root-object
-----
oid                 : svcRowStatus.100000

Reserved-id
-----
id                  : service-id:100000
-----
Snippet             : vprn_1:1/1/1:1.901
-----
reference-count     : 0
dictionary-length   : 190

Referenced-snippet
-----
snippet             : vprn:VRF-1
-----
No. of Snippets: 2
=====

```

statistics

Syntax **statistics**

Context show>service>dynsvc>script

Description This command displays dynamic service script statistics. Only non-zero values are shown. The script statistics can be cleared with the “clear service statistics dynamic-services” command.

Sample Output

```

# show service dynamic-services script statistics
=====
Dynamic Services Script Statistics
=====
Description                Counter

```

Show Commands

```
-----  
python scripts with 0 retries due to timeout          46  
setup - jobs launched                                16  
setup - jobs handled                                  16  
setup - success                                       13  
setup - syntax error                                  1  
setup - execution failed                              2  
teardown - jobs launched                              15  
teardown - jobs handled                               15  
teardown - success                                    14  
teardown - syntax error                               1  
-----  
No. of Script Statistics: 10  
-----  
Last Cleared Time: 02/26/2013 09:59:07  
=====
```

summary

- Syntax** `summary`
- Context** `show>service>dynsvc`
- Description** This command displays the global configuration summary for dynamic services:
- Service range
 - Timers

Sample Output

```
# show service dynamic-services summary  
=====  
Dynamic Services Summary  
=====  
range start           : 100000  
range end             : 200001  
setup timeout Access Accept : 30  
=====
```

sap-using

- Syntax** `sap-using [msap] [dyn-script] [description]`
- Context** `show>service`
- Description** This command displays SAP information.
- Parameters** `dyn-script` — Displays dynamic service SAPs information.

Sample Output

```
# show service sap-using dyn-script
```

```

=====
Service Access Points
=====
PortId                SvcId      Ing.  Ing.  Egr.  Egr.  Adm  Opr
                   QoS      QoS   Fltr  QoS   Fltr
-----
[1/1/1:1.901]        [100000]   901   ip4   901   ip4   Up   Up
-----
Number of SAPs : 1
-----
Number of Dynamic Service SAPs : 1, indicated by [<sap-id>] [<svc-id>]
=====

```

```

# show service sap-using dyn-script description
=====
Service Access Points
=====
PortId                SvcId      Adm  Opr  Description
-----
[1/1/1:1.901]        [100000]   Up   Up   This is a dynamic
                               service SAP
-----
Number of SAPs : 1
-----
Number of Dynamic Service SAPs : 1, indicated by [<sap-id>] [<svc-id>]
=====

```

Clear Command

dynamic-services

Syntax	dynamic-services
Context	clear>service>stats
Description	This command resets the dynamic services script statistics. See also show service dynamic-services script statistics .

Debug Commands

dynamic-services

Syntax	[no] dynamic-services
Context	debug
Description	This command enables the context to configure dynamic services debugging.

scripts

Syntax	scripts
Context	debug>dynsvc
Description	This command enables the context to configure dynamic services script debugging.

event

Syntax	[no] event
Context	debug>dynsvc>scripts debug>dynsvc>scripts>inst debug>dynsvc>scripts>script
Description	This command enables/disables the generation of all dynamic data service script debugging events output: cli, errors, executed-cmd, warnings, state-change.

cli

Syntax	[no] cli
Context	debug>dynsvc>scripts>event debug>dynsvc>scripts>inst>event debug>dynsvc>scripts>script>event
Description	This command enables/disables the generation of a specific dynamic data service script debugging event output: cli.

errors

Syntax	[no] errors
Context	debug>dynsvc>scripts>event

Debug Commands

```
debug>dynsvc>scripts>inst>event  
debug>dynsvc>scripts>script>event
```

Description This command enables/disables the generation of a specific dynamic data service script debugging event output: errors.

executed-cmd

Syntax [no] **executed-cmd**

Context debug>dynsvc>scripts>event
debug>dynsvc>scripts>inst>event
debug>dynsvc>scripts>script>event

Description This command enables/disables the generation of a specific dynamic data service script debugging event output: executed-cmd.

state-change

Syntax [no] **state-change**

Context debug>dynsvc>scripts>event
debug>dynsvc>scripts>inst>event
debug>dynsvc>scripts>script>event

Description This command enables/disables the generation of a specific dynamic data service script debugging event output: state-change.

warnings

Syntax [no] **warnings**

Context debug>dynsvc>scripts>event
debug>dynsvc>scripts>inst>event
debug>dynsvc>scripts>script>event

Description This command enables/disables the generation of a specific dynamic data service script debugging event output: warnings.

instance

Syntax **instance** *instance*

Context debug>dynsvc>scripts

Description This command enables the context to configure dynamic services script debugging for a specific instance.

Parameters *instance* — Specifies the instance name.

script

Syntax	script <i>script</i>
Context	debug>dynsvc>scripts
Description	This command enables the context to configure dynamic services script debugging for a specific script.
Parameters	<i>script</i> — Specifies the script name.

Tools Commands

dynamic-services

Syntax	dynamic-services
Context	tools>perform>service
Description	This command enables the context to execute dynamic services tools perform commands.

evaluate-script

Syntax	evaluate-script sap sap-id control-session acct-session-id action script-action [dynsvc-policy name] [param-string string]
Context	tools>perform>service>dynamic-services
Description	This tools command performs the execution of a dynamic service script action as if the corresponding RADIUS attributes were received from RADIUS. It is possible to setup, modify or teardown a dynamic service associated with the specified control channel.
Parameters	<p>sap sap-id — specifies the dynamic service SAP id.</p> <p>control-session acct-session-id — Specifies the accounting session id of the control channel associated with this dynamic service</p> <p>action script-action — Specifies the requested action: setup, modify or teardown.</p> <p>dynsvc-policy name — Specifies the dynamic services policy to use for this action. Mandatory parameter for setup and modify actions. In case of a modify action, the dynamic services policy must be the same as the policy used at setup.</p> <p>param-string string — Specifies the dynamic service parameter list. Mandatory parameter for setup and modify actions.</p>

dynamic-services

Syntax	dynamic-services command-list
Context	tools>dump>service
Description	<p>This command displays the list of supported commands that are allowed to be used in dynamic service CLI scripts.</p> <p>There are two types of CLI nodes in this list:</p> <ul style="list-style-type: none"> • Pass through nodes: navigation is allowed but attributes creation or attribute changes are prohibited in this node. • Allowed nodes: navigation, attribute creation and attribute changes are allowed in this node (available from 11.0R2 onward).