



# PCC-Action-Set Configuration Mode Commands



## Important

This configuration mode is supported from StarOS Release 12.1 onward.

## Command Modes

The PCC- Action-Set Configuration Mode provides the parameters to indicate the policy and charging as well as event generation related decisions that will get activated when the corresponding PCC-Condition-Group is evaluated to TRUE within a profile. A maximum of 32 actions can be configured in an instance of PCC-Action-Set.

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```



## Important

The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

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## af-media-type

This command is used to set the action to be taken when specific media type is received from Application Function (AF) over Rx interface.

**Product** IPCF

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

### Syntax Description

```
[ no ] af-media-type {application | audio | control | data | message |
other | text | video} {qos-profile qos_profile_value[ gate-status { disabled
| enabled | enabled-downlink | enabled-uplink ] } | {gate-status {disabled
| enabled | enabled-downlink | enabled-uplink [qos-profile qos_profile_value]
} [ monitoring-key mon_key_id
```

#### no

Removes the configured action set for different type of AF media in a PCC-Action-Set configuration instance for PCC-Service configuration.

#### application

Sets the AF media type to 'application' data traffic for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

#### audio

Sets the AF media type to 'audio' data traffic for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

#### control

Sets the AF media type to 'control' signal for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

**data**

Sets the AF media type to 'data' for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

**message**

Sets the AF media type to 'message' data for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

**other**

Sets the AF media type to 'other', out of AF media type configured here, for various action configuration under PCC-Action-Set configuration instance for PCC-Service configuration.

**text**

Sets the AF media type to 'text' for various action configured under PCC-Action-Set configuration instance for PCC-Service configuration.

**video**

Sets the AF media type to 'video' for various action configured under PCC-Action-Set configuration instance for PCC-Service configuration.

**qos-profile *qos\_profile\_value***

Associate the pre-defined PCC-QoS-Profile for specific AF media type for various action configured for PCC-Service configuration.

*qos\_profile\_value* is name of the pre-defined PCC-QoS-Profile in PCC-Service Configuration instance.

**gate-status {disabled | enabled | enabled-downlink | enabled-uplink}**

Default: Enabled

Associate the status of Gate for specific AF media type for various action configured for PCC-Service configuration.

**disabled**: disables the Gate status in downlink and uplink direction for specific type of AF media type along optionally with PCC-QoS-Profile in PCC-Service Configuration instance.

**enabled**: Enables the Gate status in downlink and uplink direction for specific type of AF media type along optionally with PCC-QoS-Profile in PCC-Service Configuration instance. This is the default status of Gate.

**enabled-downlink**: Enables the Gate status in downlink direction for specific type of AF media type along optionally with PCC-QoS-Profile in PCC-Service Configuration instance.

**enabled-uplink**: Enables the Gate status in uplink direction for specific type of AF media type along optionally with PCC-QoS-Profile in PCC-Service Configuration instance.

**monitoring-key *mon\_key\_id***

Specifies the Monitoring Key identifier to be associated with AF-Media-type under PCC-Action-Set configuration instance for PCC-Service configuration.

*mon\_key\_id* must be a preconfigured monitoring key having integer between 1 through 65535.

**Usage Guidelines**

Use this command to set the action to be taken when specific media type is received from Application Function (AF) over Rx interface.

It also associates the pre-defined PCC-QoS-Profile and **Gate** function and monitoring key with specific media type.

**Example**

The following command sets the AF media type to 'video' with PCC-QoS-Profile named *video\_qos1* with gate status enabled in downlink and uplink traffic for various action configured under PCC-Action-Set configuration instance for PCC-Service configuration:

```
af-media-type video qos-profile video_qos1 gate-status enabled
```

## associate monitoring-key

This command associates a Monitoring Key id with a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

```
[no] associate monitoring-key mon_key_id usage-monitor usage_mon_name
```

**no**

Removes the associated Monitoring Key id configuration along with the association to PCC-Usage-Monitor from a PCC-Action-Set configuration instance for PCC-Service configuration.

**mon\_key\_id**

Specifies the Monitoring Key identifier to be associated with PCC-Usage-Monitor under PCC-Action-Set configuration instance for PCC-Service configuration.

*mon\_key\_id* must be an integer between 1 through 65535.

**usage-monitor usage\_mon\_name**

Specifies the PCC-Usage-Monitor associated with Monitoring Key *mon\_key\_id* under PCC-Action-Set configuration instance for PCC-Service configuration.

*usage\_mon\_name* is a pre-configured PCC-Usage-Monitor instance in PCC-Service Profile Configuration for PCC-Service configuration.

**Usage Guidelines**

Use this command to associate a Monitoring Key with a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

There is a Many-To-Many relationship between Usage-Monitor and Monitoring-Key. Operator can change this relationship using required command.

When usage is reported to IPCF for a particular Monitoring Key, the usage is added to all the Usage Monitoring to which the Monitoring Key is associated.

Operator can break the relationship between Monitoring Key and Usage Monitor by **dissociate monitoring-key** command.

**Example**

The following command associates Monitoring Key id *102* with pre-defined PCC-Usage-Monitor named *usage\_mon1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
associate monitoring-key 102 usage-monitor usage_mon1
```

# authorize

This command sets an action to change the various authorization parameters used for the IP-CAN session under PCC-Action-Set configuration instance for PCC-Service configuration.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

```
[no] authorize {apn-mbr | default-eps-bearer | qci qci_value} qos-profile qos_prof_name
```

**no**

Removes the configured action for QoS Profile authorization parameters from PCC-Action-Set configuration instance for PCC-Service configuration.

**apn-mbr**

Sets the action for QoS authorization of Maximum Bit Rate (MBR) at APN through a pre-configured QoS profile name *qos\_prof\_name* which is to use for the authorization at different level in an PCC-Service instance.

This keyword is applicable only to EPS access type. MBR Download and MBR Upload values of the QoS profile is used with this authorization.

**default-eps-bearer**

Sets the action QoS authorization of the Default EPS bearer in an EPS access network through a pre-configured QoS profile name *qos\_prof\_name* which is to use for the authorization at different level in an PCC-Service instance.

This keyword is applicable only to EPS access type. QoS Class Identifier (QCI) and Allocation and Retention Priority (ARP) values of the QoS profile is used with this authorization.

**qci qci\_value**

Sets the action QoS authorization per QCI in case of PCEF binding through a pre-configured QoS profile name *qos\_prof\_name* which is to use for the authorization at different level in an PCC-Service instance.

*qci\_value* must be an integer value between 1 through 255.

**Important**

This keyword is applicable only in case of PCEF binding. QCI defined in QoS profile is not used when this keyword is active, so this keyword is repeated per QCI that has to be authorized by IPCF. For each QCI authorization Maximum Bit Rate Upload/Download (MBR DL/MBR UL) or Guaranteed Bit Rate Upload/Download (GBR DL/MBR UL) and ARP values of the QoS profile is used with this authorization.

**qos-profile qos\_prof\_name**

This keyword associate the action configured for authorization with a pre-configured PCC-QoS-Profile named *qos\_prof\_name* and uses configured values from specific PCC-QoS-Profile during authorization.

*qos\_prof\_name* specifies the pre-configured QoS profile name which is to use for the authorization at different level in an PCC-Service instance.

**Usage Guidelines**

Use this command to define an action for the authorization parameters in PCC-QoS-Profile which is to be used under PCC-Action-Set configuration instance for PCC-Service configuration.

**Example**

Following command sets the action for QoS authorization for APN MBR with PCC-QoS-Profile *apn\_qos\_prof1* under PCC-Action-Set configuration instance for PCC-Service configuration.

```
authorize apn-mbr qos-profile apn_qos_prof1
```

# dissociate monitoring-key

This command dissociates a Monitoring Key id with a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name (config-pcc-action-set) #
```

### Syntax Description

```
[no] dissociate monitoring-key mon_key_id usage-monitor usage_mon_name
```

**no**

Removes the dissociated Monitoring Key id configuration from a PCC-Action-Set configuration instance for PCC-Service configuration.

#### *mon\_key\_id*

Specifies the Monitoring Key identifier to be dissociated with PCC-Usage-Monitor under PCC-Action-Set configuration instance for PCC-Service configuration.

*mon\_key\_id* must be an integer between 1 through 65535.

#### **usage-monitor** *usage\_mon\_name*

Specifies the PCC-Usage-Monitor need to be dissociated with Monitoring Key *mon\_key\_id* under PCC-Action-Set configuration instance for PCC-Service configuration.

*usage\_mon\_name* is a pre-configured PCC-Usage-Monitor instance in PCC-Service Profile Configuration for PCC-Service configuration.

### Usage Guidelines

Use this command to dissociate a Monitoring Key with a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

There is a Many-To-Many relationship between Usage-Monitor and Monitoring-Key. Operator can change this relationship using required commands.

When usage is reported to IPCF for a particular Monitoring Key, the usage is added to all the Usage Monitoring to which the Monitoring Key is associated.

Operator can reassociate the relationship between Monitoring Key and Usage Monitor by **associate monitoring-key** command.

### Example

The following command dissociates a associated pair of Monitoring Key id *102* and PCC-Usage-Monitor named *usage\_mon1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
dissociate monitoring-key 102 usage-monitor usage_mon1
```

## dynamic-rule-install

This command sets an action to install a PCC Dynamic rule for the specified PCC-Data-service in PCC-Action-Set configuration for PCC-Service instance.

### Product

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec &gt; Global Configuration &gt; Context Configuration &gt; PCC Service Configuration &gt; PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

*[context\_name]*host\_name(config-pcc-action-set)#**Syntax Description**

```
[no] dynamic-rule-install data-service data_svc_name [qos-profile qos_prof_name]
[precedence preced_value] [monitoring-key mon_key_id [rating-group rating_grp_id]
[gate-status {disabled | enabled | enabled-downlink | enabled-uplink}]
[defer-by interval delayed_dur] [metering-method {both-duration-volume |
duration | volume}] [reporting-level {service-identifier-level |
rating-group-level}] [failure-policy { continue | terminate}]
```

**no**

Removes the Dynamic Rule install action configured for specific PCC-Data-Service from a PCC-Action-Set configuration instance for PCC-Service configuration.

**data-service** *data\_svc\_name*

Specifies the name of the pre-configured PCC-Data-Service for which Dynamic Rules to be installed under PCC-Action-Set configuration instance for PCC-Service configuration.

*data\_svc\_name* is a pre-configured PCC-Data-Service instance in PCC-Service Configuration mode.**metering-method** {**both-duration-volume** | **duration** | **volume**}

Specifies the reporting level to be used by PCEF to report the data usage for the related PCC rule in a PCC-Data-service instance on IPCF node.

- **both-duration-volume** sets the metering method as based on volume of data usage and duration of session, both for offline charging in a PCC-Data-service instance on IPCF node.
- **duration** sets the metering method as based on duration of session usage for offline charging in a PCC-Data-service instance on IPCF node.
- **volume** sets the metering method as based on the volume of data usage for offline charging in a PCC-Data-service instance on IPCF node.

If no metering method is defined, the reporting level preconfigured at PCEF is considered.

**monitoring-key** *mon\_key\_id*

Specifies the pre-defined Monitoring Key identifier which is to be used in Dynamic Rule for specific PCC-Data-service under PCC-Action-Set configuration instance for PCC-Service configuration.

*mon\_key\_id* is a pre-defined Monitoring Key identifier in PCC-Service Configuration mode.**precedence** *preced\_value*

Specifies the precedence value for the Dynamic Rule for specific PCC-Data-service under PCC-Action-Set configuration instance for PCC-Service configuration.

*preced\_value* must be an integer between 1 through 65535.



**qos-profile *qos\_prof\_name***

Specifies the name of the pre-configured PCC-QoS-Profile which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration.

*qos\_prof\_name* is a pre-configured PCC-QoS-Profile instance in PCC-Service Configuration mode.

**rating-group *rating\_grp\_id***

Specifies the pre-defined Rating Group identifier which is to be used in Dynamic Rule for specific PCC-Data-service under PCC-Action-Set configuration instance for PCC-Service configuration.

*rating\_grp\_id* is a pre-defined Rating Group identifier in PCC-Service Configuration mode.

**reporting-level {service-identifier-level | rating-group-level}**

Specifies the reporting level to be used by PCEF to report the data usage for the related PCC rule in a PCC-Data-service instance on IPCF node.

- **service-identifier-level** sets the data usage reporting level to be used by PCEF to report the data usage for the related PCC rule at the Service Identifier level which is configured in a PCC-Data-service instance on IPCF node.
- **rating-group-level** sets the data usage reporting level to be used by PCEF to report the data usage for the related PCC rule at the Rating Group level which is configured in a PCC-Data-service instance on IPCF node.

If no reporting level is defined, the reporting level preconfigured at PCEF is considered.

**gate-status {disabled | enabled | enabled-downlink | enabled-uplink}**

Default: Enabled

Sets the Gate-status which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration.

**disabled:** disables the Gate status in downlink and uplink direction which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration.

**enabled:** Enables the Gate status in downlink and uplink direction which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration. This is the default status of Gate.

**enabled-downlink:** Enables the Gate status in downlink direction which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration.

**enabled-uplink:** Enables the Gate status in uplink direction which is to be used in Dynamic Rule for specific PCC-Data-Service under PCC-Action-Set configuration instance for PCC-Service configuration.

**defer-by interval *delayed\_dur***

This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for dynamic rule installation.

*delayed\_dur* configures the relative delay time by which the corresponding dynamic rule installation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

### **failure-policy { continue | terminate }**

Default: Continue

This optional keyword configures the rule failure policy action when failure occurs on PCEF for PCC rules.

- **Continue:** If this option enabled, the IPCF continues even if PCEF reports rule failure through charging rule report. This is the default action.
- **Terminate:** If this option enabled, the IPCF triggers PCC session termination on receiving rule failure through charging rule report.

### **Usage Guidelines**

Use this command to set an action to install a PCC Dynamic rule for the specified PCC-Data-Service in PCC-Action-Set configuration for PCC-Service instance

Operator can override parameters such as, QoS profile, Precedence, Gate-status, Monitoring Key and PCC-Rating-id.

The same command is used to modify already installed PCC Dynamic-rule for the PCC-Data-Service by overriding required parameters only.

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding dynamic rule installation is deferred.

IPCF handles operation of PCC Rule and activate/deactivate/install/modify/remove the PCC rules at PCEF through this configuration. PCC rule operation may fail on PCEF due to various reasons. In such failure cases PCEF sends back a Charging Rule Report containing name of the failed PCC rule and corresponding failure cause.

The IPCF handles these charging rule report and take appropriate actions based on configuration done through **failure-policy** keyword.

Charging Rule Report comes through CCA or RAA messages in a call flow used for handling the charging-rule-report.

IPCF supports following charging rule failure codes in report:

- Out-of-credit
- Reallocation-of-credit
- Unknown rule name
- Invalid Rating Group
- Invalid Service Identifier
- GW/PCEF Malfunction
- Limited Resources
- Max No. of Bearers Reached
- Unknown Bearer Id
- Missing Bearer Id
- Missing Flow Description
- Resource Allocation Failure
- QoS Validation Failure

Charging rule status can any one of the following in this scenario:

- Active
- Inactive
- Temporarily Inactive

A charging rule report can occur in CCR message multiple times and maximum of 16 charging rule reports per CCR message is supported by IPCF.

### Example

The following command sets the action for PCC-Data-Service named *temp\_data1* for Dynamic Rule install with PCC-QoS-Profile named *temp\_qos1* having precedence 22 and Gate-status as **Enabled** under PCC-Action-Set configuration instance for PCC-Service configuration:

```
dynamic-rule-install data-service temp_data1 qos-profile temp_qos1 precedence
22
```

## dynamic-rule-uninstall

This command sets an action to uninstall a Dynamic Rule for the specified PCC-Data-Service in PCC-Action-Set configuration for PCC-Service instance.

<b>Product</b>	IPCF
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration  <b>configure</b> > <b>context</b> <i>context_name</i> > <b>pcc-service</b> <i>service_name</i> > <b>action-set</b> <i>action_set_name</i>  Entering the above command sequence results in the following prompt:  [ <i>context_name</i> ]host_name(config-pcc-action-set)#
<b>Syntax Description</b>	[ <b>no</b> ] <b>dynamic-rule-uninstall data-service</b> <i>data_svc_name</i> [ <b>defer-by interval</b> <i>delayed_dur</i> ]  <b>no</b>  Removes the Dynamic Rule Uninstall action configured for specific PCC-Data-Service from a PCC-Action-Set configuration instance for PCC-Service configuration.  <b>data-service</b> <i>data_svc_name</i>  Specifies the name of the pre-configured PCC-Data-Service for which Dynamic Rules to be uninstalled under PCC-Action-Set configuration instance for PCC-Service configuration.  <i>data_svc_name</i> is a pre-configured PCC-Data-Service instance in PCC-Service Configuration mode.  <b>defer-by interval</b> <i>delayed_dur</i>  This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for dynamic rule removal.

**end**

*delayed\_dur* configures the relative delay time by which the corresponding dynamic rule uninstallation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

---

**Usage Guidelines**

Use this command to set an action to uninstall a PCC Dynamic rule for the specified PCC-Data-Service in PCC-Action-Set configuration for PCC-Service instance

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding dynamic rule uninstallation is deferred.

**Example**

The following command sets the action of Dynamic Rule uninstall for PCC-Data-Service named *temp\_data1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
dynamic-rule-uninstall data-service temp_data1
```

## end

Exits the current configuration mode and returns to the Exec mode.

---

**Product**

All

---

**Privilege**

Security Administrator, Administrator

---

**Syntax Description**

**end**

---

**Usage Guidelines**

Use this command to return to the Exec mode.

## exit

Exits the current mode and returns to the parent configuration mode.

---

**Product**

All

---

**Privilege**

Security Administrator, Administrator

---

**Syntax Description**

**exit**

---

**Usage Guidelines**

Use this command to return to the parent configuration mode.

# log-event

This command allows operator to specify a string to be logged at Subscriber Service Controller (SSC) when the corresponding action set is triggered under PCC-Action-Set configuration for PCC-Service instance.

---

**Product**

IPCF

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**Privilege**

Security Administrator, Administrator

---

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

---

**Syntax Description**

[no] **log-event msg-text** *message\_string*

**no**

Removes the notification message configured for specific action under a PCC-Action-Set configuration instance for PCC-Service configuration.

**msg-text** *message\_string*

Specifies the message notification text string to be logged at the SSC when a particular PCC-Action-Set triggered for PCC-Service instance.

*message\_string* is a string of alphanumerical characters of 1 through 255 characters

---

**Usage Guidelines**

Use this command to allow operator to specify a string to be logged at Subscriber Service Controller (SSC) when the corresponding action set is triggered under PCC-Action-Set configuration for PCC-Service instance.

**Example**

The following command sets the notification message for an action under PCC-Action-Set configuration instance for PCC-Service configuration:

```
log-event msg-text "This Action is Applicable for EPS Session Only."
```

# notify-user

This command allows operator to specify a string template-id at SSC under PCC-Action-Set configuration for PCC-Service instance.

---

**Product**

IPCF

---

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

[no] **notify-user message-id** *message\_id* [**parameter** *value\_pair*]

**no**

Removes the user notification message id configured for specific action under a PCC-Action-Set configuration instance for PCC-Service configuration.

**message-id** *message\_id*

Specifies the message template id stored at SSC to be used for user notification for action under PCC-Action-Set configuration for PCC-Service instance.

*message\_id* is a string of alphanumeric characters of 1 through 255 characters

**parameter** *value\_pair*

Specifies the parameters in the form of name value pairs separated by comma. A maximum of 16 name value pairs can be defined for action under PCC-Action-Set configuration for PCC-Service instance.

The name value pairs is encoded into **xml** data like other parameters and sent out to SSC for user notification.

*value\_pair* is a string of alphanumeric characters of 1 through 255 characters which can accommodate up to 16 name value pair separated by comma (.).

**Usage Guidelines**

Use this command to allow operator to specify a string template-id under PCC-Action-Set configuration for PCC-Service instance.

The template description exists at SSC and when the corresponding action set is hit, the subscriber is notified with the specified template configured via this command.

The action set makes a XML remote procedure call towards SSC. The XML contains information like IMSI, template-id of the SMS/E-mail template and other details like MSISDN, NAI if available. To give more flexibility to the operator, now the this command accepts name value pairs, which are also sent along with the said data.

**Example**

The following command sets the message id "*Invalid User.*" for user notification message to an action under PCC-Action-Set configuration instance for PCC-Service configuration:

```
notify-user message-id "Invalid User."
```

# offline-charging-server

This command sets the action to change the offline charging server applicable to an IP-CAN session under PCC-Action-Set configuration instance for PCC-Service configuration.

**Product** IPCF

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description** **[no] offline-charging-server primary** *pri\_serv\_address* [**secondary** *sec\_serv\_address*]

**no**

Removes the action set to change the offline charging server under PCC-Action-Set configuration instance for PCC-Service configuration.

**primary** *pri\_serv\_address*

Identifies the name of the primary offline charging server which is to be used for action to change under PCC-Action-Set configuration instance for PCC-Service configuration.

The *pri\_serv\_address* must be the address of an offline charging server in Diameter URI format (*FQDN* [*port*] [*transport*] [*protocol*]).

**secondary** *sec\_serv\_address*

Identifies the name of the secondary offline charging server which is to be used for action to change under PCC-Action-Set configuration instance for PCC-Service configuration.

The *sec\_serv\_address* must be the address of an offline charging server in Diameter URI format (*FQDN* [*port*] [*transport*] [*protocol*]).

**Usage Guidelines** Use this command to set an action to change the offline charging server applicable to an IP-CAN session under PCC-Action-Set configuration instance for PCC-Service configuration.

## Example

Following command configures an action change the offline charging server to primary server *aaa://host.abc.com:6666;transport=tcp;protocol=diameter* and secondary server *aaa://host.xyz.com:6666;transport=sctp;protocol=radius* under PCC-Action-Set configuration instance for PCC-Service configuration:

```

offline-charging-server primary
aaa://host.abc.com:6666;transport=tcp;protocol=diameter secondary
aaa://host.xyz.com:6666;transport=sctp;protocol=radius

```

## online-charging-server

This command sets the action to change the online charging server applicable to an IP-CAN session under PCC-Action-Set configuration instance for PCC-Service configuration.

<b>Product</b>	IPCF
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration  <b>configure &gt; context</b> <i>context_name</i> > <b>pcc-service</b> <i>service_name</i> > <b>action-set</b> <i>action_set_name</i> Entering the above command sequence results in the following prompt: <pre>[context_name]host_name(config-pcc-action-set)#</pre>
<b>Syntax Description</b>	<pre>[no] <b>online-charging-server primary</b> <i>pri_serv_address</i> [<b>secondary</b> <i>sec_serv_address</i>]</pre> <p><b>no</b></p> <p>Removes the action set to change the online charging server under PCC-Action-Set configuration instance for PCC-Service configuration.</p> <p><b>primary</b> <i>pri_serv_address</i></p> <p>Identifies the name of the primary online charging server which is to be used for action to change under PCC-Action-Set configuration instance for PCC-Service configuration.</p> <p>The <i>pri_serv_address</i> must be the address of an online charging server in Diameter URI format (<i>FQDN</i> [<i>port</i>] [<i>transport</i>] [<i>protocol</i>]).</p> <p><b>secondary</b> <i>sec_serv_address</i></p> <p>Identifies the name of the secondary online charging server which is to be used for action to change under PCC-Action-Set configuration instance for PCC-Service configuration.</p> <p>The <i>sec_serv_address</i> must be the address of an online charging server in Diameter URI format (<i>FQDN</i> [<i>port</i>] [<i>transport</i>] [<i>protocol</i>]).</p>
<b>Usage Guidelines</b>	Use this command to set an action to change the online charging server applicable to an IP-CAN session under PCC-Action-Set configuration instance for PCC-Service configuration.

### Example

Following command configures an action change the online charging server to primary server *aaa://host.abc.com:6666;transport=tcp;protocol=diameter* and secondary server



*aaa://host.xyz.com:6666;transport=sctp;protocol=radius* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
online-charging-server primary aaa://host.abc.com:6666;transport=tcp;protocol=diameter
secondary aaa://host.xyz.com:6666;transport=sctp;protocol=radius
```

## request-usage-report monitoring-key

This command configures the action to allow operator to explicitly request usage report for the specified Monitoring Key or all Monitoring Keys under PCC-Action-Set configuration for PCC-Service instance.

**Product** IPCF

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name] host_name (config-pcc-action-set) #
```

**Syntax Description** **[no] request-usage-report monitoring-key** {*mon\_key\_id* | **any**}

**no**

Removes the usage request action configuration for Monitoring Key id from a PCC-Action-Set configuration instance for PCC-Service configuration.

***mon\_key\_id***

Specifies the Monitoring Key identifier for which usage report action is to be set under PCC-Action-Set configuration instance for PCC-Service configuration.

*mon\_key\_id* must be an integer between 1 through 65535.

**any**

Specifies the Monitoring Key identifier to "ANY" value for which usage report action is to be set under PCC-Action-Set configuration instance for PCC-Service configuration.

**Usage Guidelines**

Use this command to configure the action to allow operator to explicitly request usage report for the specified Monitoring Key or all Monitoring Keys under PCC-Action-Set configuration for PCC-Service instance.

**Example**

The following command sets an action to request the usage report for Monitoring Key id *102* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
request-usage-report monitoring-key 102
```

# rule-activate

This command sets an action to activate a pre-configured Rule in PCC-Action-Set configuration for PCC-Service instance.

**Product** IPCF

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description** **[no] rule-activate** *rule\_name* [**defer-by interval** *delayed\_dur*]

**no**

Removes the action to activate a pre-configured Rule from a PCC-Action-Set configuration instance for PCC-Service configuration.

***rule\_name***

Specifies the name of the pre-configured Rule on PCEF for an activation action is set under PCC-Action-Set configuration instance for PCC-Service configuration.

*rule\_name* is a pre-configured Rule in PCEF.

**defer-by interval *delayed\_dur***

This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for rule activation.

*delayed\_dur* configures the relative delay time by which the corresponding rule activation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

**Usage Guidelines** Use this command to set an action to activate a pre-configured Rule in PCC-Action-Set configuration for PCC-Service instance.

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding rule activation is deferred.

**Example**

The following command sets an action to activate for Rule *rule1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
rule-activate rule1
```

# rule-deactivate

This command sets an action to deactivate a pre-configured Rule in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

```
[no] rule-deactivate rule_name [defer-by interval delayed_dur]
```

**no**

Removes the action to deactivate a pre-configured Rule from a PCC-Action-Set configuration instance for PCC-Service configuration.

**rule\_name**

Specifies the name of the pre-configured Rule on PCEF for a deactivation action is set under PCC-Action-Set configuration instance for PCC-Service configuration.

*rule\_name* is a pre-configured Rule in PCEF.

**defer-by interval delayed\_dur**

This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for rule deactivation.

*delayed\_dur* configures the relative delay time by which the corresponding rule deactivation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

**Usage Guidelines**

Use this command to set an action to deactivate a pre-configured Rule in PCC-Action-Set configuration for PCC-Service instance.

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding rule deactivation is deferred.

**Example**

The following command sets an action to deactivate for Rule *rule1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
rule-deactivate rule1
```

# rulebase-activate

This command sets an action to activate a pre-configured Rulebase in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

**configure** > **context** *context\_name* > **pcc-service** *service\_name* > **action-set** *action\_set\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

[**no**] **rulebase-activate** *rulebase\_name* [**defer-by interval** *delayed\_dur*]

**no**

Removes the action to activate a pre-configured Rulebase from a PCC-Action-Set configuration instance for PCC-Service configuration.

**rulebase\_name**

Specifies the name of the pre-configured Rulebase on PCEF for an activation action is set under PCC-Action-Set configuration instance for PCC-Service configuration.

*rulebase\_name* is a pre-configured Rulebase in PCEF.

**defer-by interval delayed\_dur**

This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for Rulebase activation.

*delayed\_dur* configures the relative delay time by which the corresponding Rulebase activation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

### Usage Guidelines

Use this command to set an action to activate a pre-configured Rulebase in PCC-Action-Set configuration for PCC-Service instance.

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding Rulebase activation is deferred.

### Example

The following command sets an action to activate for Rulebase *rulebase1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
rulebase-activate rulebase1
```

## rulebase-deactivate

This command sets an action to deactivate a pre-configured Rulebase in PCC-Action-Set configuration for PCC-Service instance.

### Product

IPCF

### Privilege

Security Administrator, Administrator

### Command Modes

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

### Syntax Description

```
[no] rulebase-deactivate rulebase_name [defer-by interval delayed_dur]
```

#### no

Removes the action to deactivate a pre-configured Rulebase from a PCC-Action-Set configuration instance for PCC-Service configuration.

#### *rulebase\_name*

Specifies the name of the pre-configured Rulebase on PCEF for a deactivation action is set under PCC-Action-Set configuration instance for PCC-Service configuration.

*rule\_name* is a pre-configured Rulebase in PCEF.

**defer-by interval *delayed\_dur***

This optional keyword supports the time-of-day-based procedures under PCC-Action-Set instance by configuring the relative time delay for Rulebase deactivation.

*delayed\_dur* configures the relative delay time by which the corresponding Rulebase deactivation is deferred. The action is triggered only when the time specified by *delayed\_dur* is passed.

*delayed\_dur* specifies the delayed interval in *HH MIN SS* format.

Following format is used for *HH MIN SS* in *delayed\_dur*:

- *HH* specifies the hour to defer the action trigger and must be an integer between 00 through 23.
- *MIN* specifies the minutes to defer the action trigger and must be an integer between 00 through 59.
- *SS* specifies the seconds to defer the action trigger and must be an integer between 00 through 59.

**Usage Guidelines**

Use this command to set an action to deactivate a pre-configured Rulebase in PCC-Action-Set configuration for PCC-Service instance.

Additionally **defer-by interval** keyword is used to configure relative time by which the corresponding Rulebase deactivation is deferred.

**Example**

The following command sets an action to deactivate for Rulebase *rulebase1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
rulebase-deactivate rulebase1
```

## service-tag

This command sets an action to activate/deactivate a pre-configured Service Tag rule in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

```
[no] service-tag svc_tag {activate-rule | activate-rule}
```

**no**

Removes the action to activate/deactivate a pre-configured Service Tag rule in PCC-Action-Set configuration for PCC-Service instance.

***svc\_tag***

Specifies the name of the pre-configured Service Tag rule for an activation/deactivation is set under PCC-Action-Set configuration instance for PCC-Service configuration.

*svc\_tag* is a pre-configured Service Tag name.

**activate-rule**

Specifies that action to be set for Service Tag activation rule under PCC-Action-Set configuration instance for PCC-Service configuration.

**deactivate-rule**

Specifies that action to be set for Service Tag deactivation rule under PCC-Action-Set configuration instance for PCC-Service configuration.

**Usage Guidelines**

Use this command to set an action to activate/deactivate a pre-configured Service Tag rule in PCC-Action-Set configuration for PCC-Service instance.

**Example**

The following command sets the an activation rule for Service Tag named *service\_1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
service-tag service_1 activate-rule
```

## terminate-session

This command sets an action to terminate a Bearer based on **bearer-id** or unique combination of QCI and ARP received through current CCR message in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set)#
```

**Syntax Description**

```
[no] terminate-session
```

**no**

Removes the action to terminate a Bearer based on **bearer-id** from a PCC-Action-Set configuration instance for PCC-Service configuration.

**Usage Guidelines**

Use this command to set an action to terminate a Bearer based on **bearer-id** or unique combination of QCI and ARP received through current CCR message in PCC-Action-Set configuration for PCC-Service instance. Termination of Bearer is possible only in case of PCRF binding and limited to Dynamic rules.

**Important**

This action is only applicable to IP-CAN sessions with access type as GPRS. When terminate Bearer is initiated, IPCF triggers **Bearer Termination Procedure** for the **bearer-id** received through current CCR message.

**Caution**

This command triggers termination of **Gx** and **SPR** sub session active under PCC-Service instance.

**Example**

The following command sets an action to terminate a Bearer based on **bearer-id** received through current CCR message under PCC-Action-Set configuration instance for PCC-Service configuration:

```
terminate-session
```

## usage-monitor

This command sets an action to allow operator to stop, reset or start the counting for a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

**Product**

IPCF

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > PCC Service Configuration > PCC Action-Set Configuration

```
configure > context context_name > pcc-service service_name > action-set action_set_name
```

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-pcc-action-set) #
```

**Syntax Description**

```
[no] usage-monitor usage_mon_name {reset-counter | start-counter | stop-counter}
```

**no**

Removes the action to allow operator to stop, reset or start the counting for a PCC-Usage-Monitor in PCC-Action-Set configuration for PCC-Service instance.

***usage\_mon\_name***

Specifies the name of the pre-configured PCC-Usage-Monitor for which counter action is configured under PCC-Action-Set configuration instance for PCC-Service configuration.



*usage\_mon\_name* is a pre-configured PCC-Usage-Monitor.

**reset-counter**

Resets the usage counts for PCC-Usage-Monitor under PCC-Action-Set configuration instance for PCC-Service configuration.

**start-counter**

Starts the accumulation of usage counts for PCC-Usage-Monitor under PCC-Action-Set configuration instance for PCC-Service configuration.

**stop-counter**

Stops the accumulation of usage counts for PCC-Usage-Monitor under PCC-Action-Set configuration instance for PCC-Service configuration.

---

**Usage Guidelines**

Use this command to set an action to allow operator to stop, reset or start the counting for a usage monitor in PCC-Action-Set configuration for PCC-Service instance.

**Example**

The following command sets the an action to stop the accumulation of usage counts for PCC-Usage-Monitor named *usage\_1* under PCC-Action-Set configuration instance for PCC-Service configuration:

```
usage-monitor usage_1 stop-counter
```

