PCC-Sp-Endpoint Configuration Mode Commands

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Important   This configuration mode is supported from StarOS Release 12.1 onward.

Command Modes   The PCC-Sp-Endpoint Configuration mode provides a mechanism for Intelligent Policy Control Function (IPCF) to support the **Sp** interface endpoint. It represents a client end for SSC interactions. The PCC-Sp-Endpoint configuration mode facilitates the configuration of **Sp** interface, and manages the connection and operational parameters related to its peer.

Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

configure > context *context_name* **> pcc-sp-endpoint** *endpoint_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-spendpoint)#
```

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

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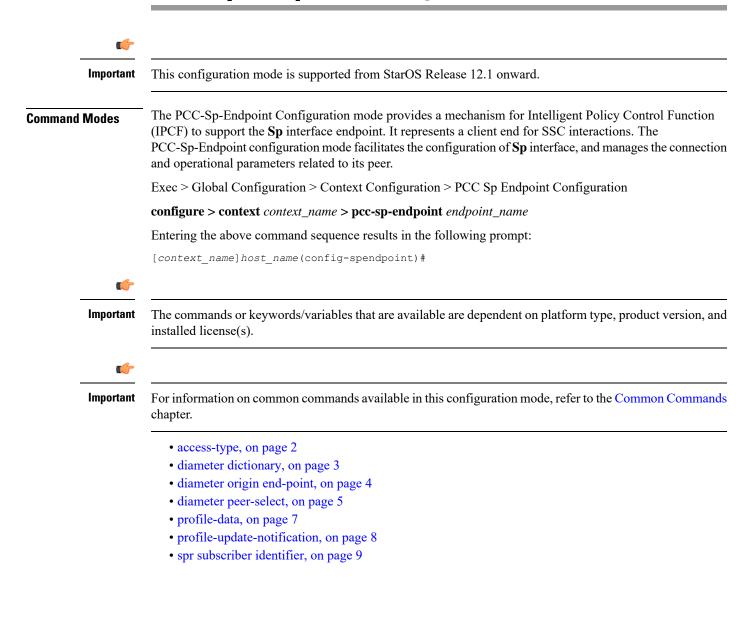**Important**   For information on common commands available in this configuration mode, refer to the Common Commands chapter.

access-type

This command is used to define the type of access protocol to be used with a PCC-Sp-Endpoint instance for IPCF configuration.

Product	IPCF
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

Command Modes **configure > context** *context_name* **> pcc-sp-endpoint** *endpoint_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-spendpoint)#`

Syntax Description
```
access-type {diameter | ldap}
default access-type
```

default

Sets access type protocol to be used by endpoints to default protocol of **Diameter** protocol in a PCC-Sp-Endpoint instance for IPCF configuration.

diameter

Default: Enabled

Sets access type protocol to be used by endpoints to Diameter protocol in a PCC-Sp-Endpoint instance for IPCF configuration.

ldap

Default: Disabled

Sets access type protocol to be used by endpoints to Lightweight Directory Access Protocol (LDAP) in a PCC-Sp-Endpoint instance for IPCF configuration.

Usage Guidelines Use this command to define the type of access protocol to be used with a PCC-Sp-Endpoint instance for IPCF configuration.

Example

Following command sets the access type of protocol to **Diameter** for a PCC-Sp-Endpoint instance.

`default access-type`

diameter dictionary

This command is used to assign a Diameter dictionary for interaction with SSC and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

Product	IPCF
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

Command Modes

configure > context *context_name* **> pcc-sp-endpoint** *endpoint_name*

Entering the above command sequence results in the following prompt:

[*context_name*]*host_name*(config-spendpoint)#

Syntax Description

```
diameter dictionary {sh-custon-starent | sh-custom2 | sh-standard }
default diameter dictionary
```

default

Sets the Diameter **Sh** dictionary to default dictionary **sh-custon-starent** (3GPP Rel. 8 Sh standard) for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

sh-custom-starent

Default: Enabled

Sets the Diameter **Sh** dictionary to default dictionary **sh-custom-starent** for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

sh-custom2

Default: Disabled

Sets the Diameter **Sh** dictionary to **sh-custom2**with Cisco ULI AVP support for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

sh-standard

Default: Disabled

Sets the Diameter **Sh** dictionary to default dictionary **sh-standard** (3GPP Rel. 8 standard) for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

Usage Guidelines

Use this command to assign a Diameter dictionary for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration.

Example

Following command sets the Diameter dictionary for **Sh** interaction and messaging over **Sp** interface in a PCC-Sp-Endpoint instance of IPCF configuration to 3GPP Rel. 8 standard.

```
diameter dictionary sh-standard
```

diameter origin end-point

This command is used to bind/associate a pre-configured Diameter host/realm (SSC) over **Sp** interface for SPR interactions with a PCC-Sp-Endpoint instance to be used for subscriber profile and policy management.

Product	IPCF
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration **configure > context** *context_name* **> pcc-sp-endpoint** *endpoint_name* Entering the above command sequence results in the following prompt: [*context_name*]*host_name*(config-spendpoint)#
Syntax Description	`diameter origin endpoint` *ssc_node_name* `no diameter origin endpoint` **no** Removes the associated Diameter Origin Endpoint configuration from PCC-Sp-Endpoint instance configured for IPCF configuration. ***ssc_node_name*** The *ssc_node_name* is a predefined Diameter origin endpoint node (SSC) and must be an alphanumerical string from 1 through 63 characters.
Usage Guidelines	Use this command to bind the SSC node over **Sp** interface by associating a pre-configured Diameter Origin Endpoint configuration with a PCC-Sp-Endpoint instance. The Diameter origin endpoint must be a pre-configured instance in the Context Configuration Mode. For more information on Diameter origin endpoint configuration, refer *Diameter Endpoint Configuration Mode Commands* chapter. **Example** Following command associates a pre-configured Diameter endpoint node configuration named *ssc_1* with a PCC-Sp-Endpoint instance for subscriber policy profile management. `diameter origin endpoint` *ssc_1* Following command removes the pre-associated Diameter endpoint node configuration named *ssc_1* from a PCC-Sp-Endpoint instance. `no diameter origin endpoint`

diameter peer-select

This command nominates primary and secondary Diameter peers amongst the peers configured under Diameter Endpoint Configuration instance which is associated with a PCC-Sp-Endpoint configuration.

Product	IPCF
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

Command Modes (continued):

configure > context *context_name* **> pcc-sp-endpoint** *endpoint_name*

Entering the above command sequence results in the following prompt:

[*context_name*]*host_name*(config-spendpoint)#

Syntax Description

```
diameter peer-select peer pri_peer_name [row-precedence row_prec_name
selection-condition imsi {mcc mcc-string [mnc mnc-string] [msin msin-string] |
mnc mnc-string [msin msin-string] | msin msin-string}] [realm realm_name]
[secondary-peer sec_peer_name [realm sec_realm_name]]
no diameter peer-select
no diameter peer-select row-precedence
```

no

To remove all the configuration parameters.

To remove a particular selection-condition, a row-precedence value is specified.

peer *pri_peer_name*

Sets a configured Diameter peer, which is configured in Diameter Endpoint configuration associated with PCC-Sp-Endpoint instance configuration, as **primary** in Diameter peer selection process for IPCF configuration.

The *pri_peer_name* is a pre-configured Diameter peer in Diameter Endpoint configuration which is associated with a PCC-Sp-Endpoint configuration and must be an alphanumerical string from 1 through 63 characters. *pri_peer_name* allows punctuation marks.

row-precedence *row_prec_name*

The row-precedence decides order of evaluation of the selection conditions.

The *row_prec_name* is an integer between 1 and 63. Lower the value, higher is the priority of evaluation.

selection-condition

The selection-condition parameter is used to define Diameter SPR peer selection conditon.

imsi

It indicates that the selection condition is based on subscriber IMSI.

mcc *mcc-string*

It indicates that the selection condition is based on MCC component of subscriber IMSI.

The *mcc-string* can have one of the following formats: *mccval1* or *mccval1-mccval2*. The first format compares single MCC value and second one incorporates the range with mccval1 <= mccval2.

The values for both mccval1 and mccval2 must be between 100 to 999.

mnc *mnc-string*

It indicates that the selection condition is based on MNC component of subscriber IMSI.

The *mnc-string* can have one of the following formats: *mncval1* or *mncval1-mncval2*. The first format compares single MNC value and second one incorporates the range with mncval1 <= mncval2.

The values for both mncval1 and mncval2 must be between 1 to 999.

msin *msin-string*

It indicates that the condition is based on MSIN component of subscriber IMSI.

The *msin-string* can have following format: *msinval1-msinval2*. The format incorporates the range with mccval1 <= mccval2.

The values for both mccval1 and mccval2 must be of maximum of 10 digits.

realm *realm-name*

This keyword optionally defines the realm (domain) of a configured **primary** Diameter peer, which is configured in Diameter Endpoint configuration associated with PCC-Sp-Endpoint instance configuration, in Diameter peer selection process for IPCF configuration.

realm_name is the realm (domain) of the associated primary Diameter peer in Diameter Endpoint configuration which associated with a PCC-Sp-Endpoint configuration. The *realm_name* must be an alpha and/or numeric string of 1 to 127 characters. The realm may typically be a company or service name and it allows punctuation marks.

secondary-peer *sec_peer_name*

Sets a configured Diameter peer, which is configured in Diameter Endpoint configuration associated with PCC-Sp-Endpoint instance configuration, as **secondary** in Diameter peer selection process for IPCF configuration.

The *sec_peer_name* is a pre-configured Diameter peer in Diameter Endpoint configuration which is associated with a PCC-Sp-Endpoint configuration and must be an alphanumerical string from 1 through 63 characters. *sec_peer_name* allows punctuation marks.

realm *sec_realm-name*

This keyword optionally defines the realm (domain) of a configured **secondary** Diameter peer, which is configured in Diameter Endpoint configuration associated with PCC-Sp-Endpoint instance configuration, in Diameter peer selection process for IPCF configuration.

sec_realm_name is the realm (domain) of the associated primary Diameter peer in Diameter Endpoint configuration which associated with a PCC-Sp-Endpoint configuration. The *sec_realm_name* must be an alpha and/or numeric string of from 1 to 127 characters. The realm may typically be a company or service name and it allows punctuation marks.

Usage Guidelines Use this command to nominate primary and secondary Diameter peers amongst the peers configured under Diameter Endpoint Configuration instance which is associated with a PCC-Sp-Endpoint configuration. When both primary and secondary are down, the remaining Diameter peers are chosen based on their configured weight in round robin manner.

When row-precedence and selection-conditions are not defined for peer selection configuration, the row precedence value is assumed to be 64 (which is the lowest). This is a deafult peer selection when all the other configured selection conditions fail.

Multiple Diameter peers can be configured in a PCC-Sp-Endpoint instance by entering this command multiple times.

Example

Assume the operator has two MCC-MNC combinations: 123-456 and 123-457 respectively for subscriber IMSI values. If operator wishes to divert subscribers with these two different combinations to different SSC peers (say ssc123456 and ssc123457) then the operator needs to use following commands under PCC-Sp-Endpoint :

diameter peer-select row-precedence *4* **selection-condition imsi mcc** *123* **mnc** *456* **peer** *ssc123456*
diameter peer-select row-precedence *6* **selection-condition imsi mnc** *123* **mnc** *456* **peer** *ssc223457*

Following command nominates a pre-configured Diameter peer *dia1* as primary and *dia2* as secondary for Diameter peer selection process in a PCC-Sp-Endpoint configuration instance.

diameter peer-select peer *dia1* **secondary peer** *dia2*

profile-data

This command allows the operator to specify data-reference and service indication AVP values used in UDR/SNR message for profile data sent over **Sp** endpoint when access type is set to Diameter.

Product IPCF

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

configure > context *context_name* **> pcc-sp-endpoint** *endpoint_name*

Entering the above command sequence results in the following prompt:

[*context_name*]*host_name*(config-spendpoint)#

Syntax Description **profile-data key data-reference** *data_ref_value* [**service-indication** *svc_ind_value*]
default profile-data key

default

Specifies the data-reference value used in UDR/SNR message for profile data sent over **Sp** endpoint to default value of '*0*' (zero) and service indication AVP value to *profile data* when access type is set to Diameter in PCC-Sp-Endpoint instance.

data-reference *data_ref_value*

Default: 0

Specifies the data-reference values used in UDR/SNR message for profile data sent over **Sp** endpoint when access type is set to Diameter in PCC-Sp-Endpoint instance.

The data reference value *data_ref_value* must be an integer from 1 through 65535.

service-indication *svc_ind_value*

Specifies the service indication AVP value used in UDR/SNR message for profile data sent over **Sp** endpoint when access type is set to Diameter in PCC-Sp-Endpoint instance.

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Important   The Service-Indication values are set as per application logic and are supposed to be used only with SSC.

The service indication value *svc_ind_value* must be a string of alpha and/or numeric characters from 1 to 32 characters.

Usage Guidelines   Use this command to allow the operator to specify data-reference and service indication AVP values used in UDR/SNR message for profile data sent over **Sp** endpoint when access type is set to Diameter in PCC-Sp-Endpoint configuration instance.

Default service-indication value varies as per other interface configuration **default profile-data key** is used to set the service indication value.

Example

Following command set the data-reference value used in UDR/SNR message for profile data sent over **Sp** endpoint to default value of '*0*' (zero) and service-indication value as per application logic when access type is set to Diameter in PCC-Sp-Endpoint instance.

```
default profile-data key
```

profile-update-notification

This command sets the system to indicate whether SSC and IPCF are capable of supporting profile update notifications in a PCC-Sp-Endpoint instance.

Product	IPCF
Privilege	Security Administrator, Administrator
Command Modes	Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

configure > context *context_name* > pcc-sp-endpoint *endpoint_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-spendpoint)#
```

Syntax Description

```
profile-update-notification {allow | disallow}
default profile-update-notification
```

default

Set the PCC-Sp-Endpoint instance default mode for supporting profile update notifications in a PCC-Sp-Endpoint instance and also to use the same in a PCC-Sp-Endpoint configuration instance.

allow

Default: Enabled

Set the PCC-Sp-Endpoint instance to support the profile update notifications and also allow to use the same in **Sp** interaction.

disallow

Default: Disabled

Set the PCC-Sp-Endpoint instance to not to support the profile update notifications and also does not allow to use the same in **Sp** interaction.

Usage Guidelines

Use command to set to indicate whether SSC and IPCF are capable of supporting profile update notifications in a PCC-Sp-Endpoint instance. It also sets that whether profile update notification should be used or not for a PCC-Sp-Endpoint configuration instance.

Example

Following command indicates that SSC and IPCF are capable of supporting profile update notifications in a PCC-Sp-Endpoint instance and also allow to use it for a PCC-Sp-Endpoint configuration instance.

```
default profile-update-notification
```

spr subscriber identifier

This command sets the PCC-Sp-Endpoint instance to indicate how a subscriber is uniquely identified in SPR database while requesting subscriber data from SSC.

Product

IPCF

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > PCC Sp Endpoint Configuration

configure > context *context_name* > pcc-sp-endpoint *endpoint_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-spendpoint)#
```

Syntax Description

```
spr subscriber identifier {imsi | msisdn | nai}
default spr subscriber identifier
```

default

Sets the PCC-Sp-Endpoint instance to use subscriber IMSI to identify subscriber uniquely in SPR database while requesting subscriber data from SSC.

imsi

Default: Enabled

Sets the PCC-Sp-Endpoint instance to use subscriber IMSI to identify subscriber uniquely in SPR database while requesting subscriber data from SSC.

msisdn

Default: Disabled

Sets the PCC-Sp-Endpoint instance to use subscriber MSISDN to identify subscriber uniquely in SPR database while requesting subscriber data from SSC.

nai

Default: Disabled

Sets the PCC-Sp-Endpoint instance to use Network Address Identifier as token to identify subscriber uniquely in SPR database while requesting subscriber data from SSC.

This token facilitates CDMA users for Policy Control and Charging functions.

Usage Guidelines

Use command to set the PCC-Sp-Endpoint instance to indicate how a subscriber is uniquely identified in SPR database on SSC while requesting subscriber data. By default it uses Subscriber IMSI for identification in SPR database.

For IP-CAN session between PDSN and IPCF the subscriber token NAI facilitates the Policy Control and Charging functions to subscribers.

Example

Following command sets the PCC-Sp-Endpoint instance to use a subscriber IMSI to uniquely identified in SPR database at SSC.

```
default spr subscriber identifier
```