

Tracking Policy Failure Statistics

Users can track the number of calls that the Session Border Controller (SBC) rejected based on the rules established in the number analysis policies, routing policies, or Call Admission Control (CAC) policies. Users can also view and query the policy failure statistics associated with these rejected calls, which can help them determine whether changes need to be made to the existing policies.



Note

For ACE SBC Release 3.0.00, this feature is supported in the unified model only.

Feature History for Policy Failure Statistics

Release	Modification
ACE SBC Release 3.0.00	This feature was introduced on the Cisco 7600 series router along with support for the SBC unified model.

Contents

This module contains the following sections:

- [Restrictions for Tracking Call Policy Failure Statistics, page 22-1](#)
- [Information About Policy Failure Statistics, page 22-2](#)

Restrictions for Tracking Call Policy Failure Statistics

Review the following restrictions for policy failure statistics:

- Only new call failures are tracked by this feature.
- Only call failures associated with local policy are recorded. Calls rejected by downstream signaling devices are not included in this statistics.

Information About Policy Failure Statistics

The section provides information on the following:

- [Policy Failure Statistics for a Specified Time Interval](#), page 22-2
- [Policy Set Statistics](#), page 22-2
- [Automatic Tracking of Policy Failure Statistics](#), page 22-3
- [Policy Failure Statistics and Hunting](#), page 22-4

Policy Failure Statistics for a Specified Time Interval

[Table 22-1](#) lists the commands to view and clear the failure statistics on the specified signaling border element (SBE) for a certain time interval.

Table 22-1 *Commands for Time-Based Policy Failure Statistics*

clear services sbc <i>service-name</i> sbe policy-failure-stats	Clears the policy failure statistics for the current and previous time interval.
---	--

Policy Set Statistics

To determine whether calls failed because of policies configured in the routing, number validation, or CAC tables, users can view policy failure statistics. [Table 22-2](#) lists the commands to view and clear the statistics in a policy table.

Table 22-2 *Per-Table Statistics Commands*

show services sbc <i>service-name</i> sbe cac-policy-set <i>policy set-id</i> tables	Displays a summary of the CAC policy tables associated with the given policy set, including the number of failed calls.
clear services sbc <i>service-name</i> sbe cac-rejection-stats	Clears all CAC policy failure statistics.
show services sbc <i>service-name</i> sbe call-policy-set <i>policy set-id</i> tables	Displays a summary of routing policy tables associated with the given policy set, including the number of failed calls.
clear services sbc <i>service-name</i> sbe call-rejection-stats	Clears all routing and number analysis policy rejection statistics.
show services sbc <i>sbc-name</i> sbe cac-policy-set <i>id</i> table <i>name</i> entries	Displays a summary of the CAC policy tables associated with the given policy set.

[Table 22-3](#) lists the commands to view the detailed information for a specific entry in a CAC policy table and routing table.

Table 22-3 Per-Entry Statistics Commands

show services sbc <i>service-name</i> sbe cac-policy-set <i>policy set-id</i> table name entry <i>entry</i>	Displays detailed statistics for the given entry in a CAC policy table.
show services sbc <i>service-name</i> sbe call-policy-set <i>policy set-id</i> table name entry <i>entry</i>	Displays detailed statistics for the given entry in the routing table.
show services sbc <i>sbc-name</i> sbe cac-policy-set id <i>id</i> table name entries	Displays a summary of the CAC policy tables associated with the given policy set.
show services sbc <i>sbc-name</i> sbe call-policy-set id <i>id</i> table name entries	Displays a summary of the entries associated with the given routing table.

Automatic Tracking of Policy Failure Statistics

The SBC automatically tracks policy failure statistics for call attribute sets representing the following:

- Per source adjacency statistics for all configured adjacencies
- Per destination adjacency statistics for all configured adjacencies
- Per source account statistics for all configured accounts
- Per destination account statistics for all configured accounts

[Table 22-4](#) lists the commands to view and clear automatically tracked policy failure statistics.

Table 22-4 Automatically Tracked Statistics Commands

<pre>show services sbc <i>service-name</i> sbe policy-failure-stats src-adjacency <i>table-name</i> <i>period</i></pre>	<p>Specifies the time period to which the statistics apply. Choose one of the following time intervals:</p> <ul style="list-style-type: none"> • current15mins—Displays statistics in 15 minute intervals starting from the current minute. • current5mins—Displays statistics in 5 minute intervals starting from the current minute. • currentday—Displays statistics for the current day starting midnight of the same day. • currenthour—Displays statistics for the current hour. • previous15mins—Displays statistics from previous 15 minute intervals. • previous5mins—Displays statistics from previous 5 minute intervals. • previousday—Displays statistics from the previous day. • previoushour—Displays statistics from the previous hour.
<pre>clear services sbc <i>service-name</i> sbe policy-failure-stats src-adjacency <i>table-name</i></pre>	<p>Clears the policy statistics of the specified source adjacency.</p>

Policy Failure Statistics and Hunting

If the CAC module refuses a call or if a call cannot be signaled to the chosen destination adjacency because of a negative or no response, call hunting occurs. Call hunting is the process of selecting an alternative adjacency from the routing tables and retrying the call using the newly selected destination adjacency.

Hunting continues until one of the following conditions is fulfilled:

- The call gets connected.
- No further adjacencies are available for retry.
- The call has been hunted too many times.

Global Statistics and Call Hunting

If a call gets connected after hunting, the SBC does not include it in any of the following global statistics:

- Total call setup failures
- Total call setups failed due to number analysis
- Total call setups failed due to routing

- Total call setups failed due to CAC
- CAC failure due to number of calls limit
- CAC failure due to call rate limit
- CAC failure due to media channels limit
- CAC failure due to bandwidth limit

If a call fails after number analysis, hunting does not occur. The SBC includes it in the following global statistics:

- Total call setup failures
- Total call setups failed due to number analysis

If a call fails the first time it is routed because no destination adjacency is found in the routing table, then the SBC includes it in the following global statistics:

- Total call setup failures
- Total call setups failed due to routing

If a call fails because a CAC policy refused it permission to proceed, the SBC includes the failure in the total call setups failed due to CAC statistics. Additionally, the call is included in one of the following statistics depending on the nature of the CAC limit:

- CAC failure due to number of calls limit
- CAC failure due to call rate limit
- CAC failure due to media channels limit
- CAC failure due to bandwidth limit

Per-table and Per-entry Statistics and Call Hunting

If a call undergoes N iterations of hunting, then it traverses the number analysis tables once, and the routing and the CAC tables N times. But the CAC tables can reject the call each time it traverses the CAC table. For each time the CAC table rejects the call, the SBC finds the table and entry that was responsible for setting the CAC limit, and increments the following:

- the number of calls refused by the CAC table
- the number of calls refused by the table entry

Per-adjacency and Per-Account Statistics and Call Hunting

If a call gets connected after hunting, the SBC does not include it in the following per-account or per-adjacency statistics:

- total call setup failures
- total call setups failed due to number analysis
- total call setups failed due to CAC
- CAC failures due to rate limit
- CAC failures due to media channels limit
- CAC failures due to bandwidth limit

If a call fails due to number analysis, then hunting does not occur and the SBC includes the call in the following per-account and per-source adjacency statistics:

- total call setup failures
- total call setups failed due to number analysis

If a call fails in the routing tables before hunting occurs, the SBC includes the call in the following per-source account and per-source-adjacency statistics:

- total call setup failures
- total call setups failed due to routing

A call included in the total call setup failures statistics is included in the per-source adjacency, per-destination-adjacency, per-source-account adjacency, and per-destination account statistics. Additionally, if the most recent hunting attempt failed because a CAC policy refused the call permission to proceed, the SBC includes the failure in the total call setups failed due to CAC statistics in the per-source-adjacency, per-destination-adjacency, per-source-account, and per-destination-account statistics. The call is also included in one of the following statistics depending on the nature of the CAC limit depending on the nature of the CAC limit:

- CAC failure due to number of calls limit
- CAC failure due to call rate limit
- CAC failure due to media channels limit
- CAC failure due to bandwidth limit