CHAPTER 12

Partitions and Calling Search Spaces

Partitions and calling search spaces provide the capability for implementing calling restrictions and creating closed dial plan groups on the same Cisco CallManager.

This section covers the following topics:

Understanding Partitions and Calling Search Spaces

A partition comprises a logical grouping of directory numbers (DNs) and route patterns with similar reachability characteristics. Devices that are typically placed in partitions include DNs and route patterns. These entities associate with DNs that users dial. For simplicity, partition names usually reflect their characteristics, such as “NYLongDistancePT,” “NY911PT,” and so on.

A calling search space comprises an ordered list of partitions that users can look at before users are allowed to place a call. Calling search spaces determine the partitions that calling devices, including IP phones, soft phones, and gateways, can search when attempting to complete a call.

When a calling search space is assigned to a device, the list of partitions in the calling search space comprises only the partitions that the device is allowed to reach. All other DNs that are in partitions not in the device calling search space receive a busy signal.

Partitions and calling search spaces address three specific problems:

- Routing by geographical location
- Routing by tenant
- Routing by class of user

Partitions and calling search spaces provide a way to segregate the global dialable address space. The global dialable address space comprises the complete set of dialing patterns to which the Cisco CallManager can respond.

Partitions do not significantly impact the performance of digit analysis, but every partition that is specified in a calling device search space does require that an additional analysis pass through the analysis data structures. The digit analysis process looks through every partition in a calling search space for the best match. The order of the partitions that are listed in the calling search space serves only to break ties when equally good matches occur in two different partitions. If no partition is specified for a pattern, the pattern goes in the null partition to resolve dialed digits. Digit analysis always looks through the null partition last.

Examples

Calling search spaces determine partitions that calling devices search when they are attempting to complete a call.

For example, assume a calling search space named “Executive” has four partitions: NYLongDistance, NYInternational, NYLocalCall, and NY911. Assume that another calling search space named “Guest” includes two partitions, NY911 and NYLocalCall.

If the Cisco IP Phone that is associated with a phone or line is in the “Executive” calling search space, the search looks at partitions “NYLongDistance,” “NYInternationalCall,” “NYLocalCall,” and “NY911” when it attempts to initiate the call. Users who are calling from this number can place international calls, long-distance calls, local calls, and calls to 911.

If the Cisco IP Phone that is associated with a phone or line is in the "Guest" Calling Search Space, the search looks only at the "NYLocalCall" and "NY911" partitions when it initiates the call. If a user who is calling from this number tries to dial an international number, a match does not occur, and the call cannot be routed.

Guidelines and Tips

Use concise and descriptive names for your partitions. The CompanynameLocationCalltypePT format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a partition. For example, CiscoDallasMetroPT identifies a partition for toll-free inter-LATA (local access and transport area) calls from the Cisco office in Dallas.

Dependency Records

If you need to find out specific information about partitions and calling search spaces, click the Dependency Records link that is provided on the Cisco CallManager Administration Partition Configuration and Calling Search Space Configuration windows.

Partition Dependency Records

The Dependency Records Summary window for partitions displays information about calling search spaces, route patterns, and directory numbers that are using the partition. To find more information, click the record type, and the Dependency Records Details window displays.

Calling Search Space

The Dependency Records Summary window for calling search spaces displays information about phones, gateways, voice-mail ports, and device pools that are using the calling search space. To find more information, click the record type, and the Dependency Records Details window displays.

For more information about Dependency Records, refer to Accessing Dependency Records, *Cisco CallManager Administration Guide*.

Partition Name Limitations

A calling search space (CSS) clause that calling processing uses internally limits the maximum number of partitions. The CSS clause comprises the list of partitions in the calling search space by name. The CSS clause that calling processing uses comprises a combination of a device CSS and the CSS for the directory number (DN) or route pattern that is associated with the device (for example, a line on a phone).

The maximum length of the combined CSS clause (device and pattern) comprises 1024 characters, including separator characters between each partition name (for example, “partition 1:partition 2:partition 3”). Because the CSS clause uses partition names, the maximum number of partitions in a CSS varies depending on the length of the partition names. Also, because the CSS clause combines the CSS of the device and the CSS of the route pattern, the maximum character limit for an individual CSS specifies 512 (half of the combined CSS clause limit of 1024 characters).

When you are creating partitions and calling search spaces, keep the names of partitions short relative to the number of partitions that you plan to include in a calling search space. Refer to “Calling Search Space Configuration Settings” in the *Cisco CallManager Administration Guide* for examples of the maximum number of partitions that can be added to a calling search space if the partition names are of fixed length.

Where to Find More Information

Related Topic

- Understanding Route Plans, page 13-1

Additional Cisco Documentation

- Partition Configuration, *Cisco CallManager Administration Guide*
- Calling Search Space Configuration, *Cisco CallManager Administration Guide*