



Cisco HCS Dial Plan Model for Generic Leaf Cluster

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Generic Leaf Cluster

The generic leaf cluster workbook is used to provision the Unified Communications Manager. The workbook consists of the following worksheets.

Note Worksheet numbering (CCM 6.1.x) in the following table refers to the earliest Cisco Unified Communications Domain Manager model that the worksheets were supported in; the numbering is fixed and has no significance for Cisco HCS or the Cisco Unified Communications Manager being provisioned.

Table 1: Generic Leaf Cluster Worksheets

Worksheet	Description
Notes	The Notes tab is used to capture Revision History.
CCM 6.1.x* - Clear Models	This worksheet is used to clear all the existing models before loading a new Dial Plan Model.
CCM 6.1.x* - Time Periods	The generic Cisco HCS model supports two time periods: AllDay (Monday to Sunday: 00:00 to 24:00) StandardHours (Monday to Friday: 07:00 to 18:00).

Worksheet	Description
CCM 6.1.x* - Time Schedules	The generic Cisco HCS model supports two time schedules: AllDay and StandardHours.
CCM 6.1.x* - TP to TS Mappings	This worksheet is used to map Time Periods to Time Schedules. Time Period AllDay is mapped to Time Schedule AllDay. Time Period StandardHours is mapped to Time Schedule StandardHours.
CCM 6.1.x* - Partitions	This worksheet is used to create partitions on the Unified Communications Manager. The partitions may be cluster-wide or per location.
CCM 6.1.x* - CSS	This worksheet is used to create calling search spaces on the Unified Communications Manager. The CSSs may be cluster-wide or per location.
CCM 6.1.x* - Partition-CSS Map	This worksheet is used to define mappings between CSSs and Partitions defined earlier.
CCM 6.1.x* - COS-CSS Mappings	The Unified Communications Domain Manager GUI does not expose CSSs to users, but rather exposes Class of Service to users. This worksheet is used to map class of service to a CSS.
CCM 6.1.x* - Route Patterns	This worksheet is used to create route patterns on the Unified Communications Manager. The country-specific route patterns are captured in the Country Dial Plans directory, while the feature-related route patterns are captured in the Addon directory.
CCM 6.1.x* - Translate Patterns	This worksheet is used to create translation patterns on the Unified Communications Manager. The country-specific Translation patterns are captured in the Country Dial Plans directory, while the feature-related translation patterns are captured in the Addon directory.
CCM 6.1.x*—Transform Patterns	This worksheet is used to define Calling Party Number (CgPN) Transformation for: Incoming PSTN Calls that are forwarded back to PSTN through aggregation where CgPN consists + Incoming PSTN Calls that are forwarded back to PSTN using LBO where CgPN consists + CgPN Transformation for non-Cisco-Emergency-Responder-based calls.
CCM 6.1.x*—Called Xformations	This worksheet is used to define Called Party Number (CdPN) Transformation. None is defined for Cisco HCS.
CCM 6.1.x*—CTI Route Points	This worksheet is used to define CTI Route Points. None are defined for Cisco HCS.

Worksheet	Description
CCM 6.1.x*—H.323 Trunks	This worksheet is used to define H.323 Trunk to unmanaged PBX.
CCM 6.1.x*—SIP Trunks	This worksheet is used to define Intercluster SIP trunks and SIP trunk to unmanaged PBX.
CCM 6.1.x*—Route Lists	This worksheet is used to define route lists toward aggregation local gateway other clusters unmanaged PBX
CCM 6.1.x*—Route Groups	This worksheet is used to define route groups toward aggregation (Manual) local gateway other clusters unmanaged PBX.
CCM 6.1.x*— RL-RG Mappings	This worksheet is used to map route groups to routelists.
CCM 6.1.x*—RG-H.323 Trunk Maps	This worksheet is used to map route group to Intercluster H.323 Trunk to unmanaged PBX.
CCM 6.1.x*—RG-SIP Trunk Maps	This worksheet is used to map route groups to SIP trunks.
CCM 6.1.x*—Regions	Not used
CCM 6.1.x*—Global Settings	This worksheet is used to define Global Settings. For more information, see worksheet.
CCM 6.1.x*—Network Locales	This worksheet is used to define Network Locale Name, CCM Network Locale, and Language Locale (optional) for each country.
CCM 6.1.x*—Country Details	Not used
CCM 6.1.x*—Device Pools	Not used
CCM 6.1.x*—CTI Ports	Not used
CCM 6.1.x*—Call Park	Not used
CCM 6.1.x*—AAR Groups	Not used
* Supports Cisco Unified Communications Manager 6.1 or later	

Model Basics

The Dial Plan Model is detailed by configurable Microsoft Excel workbooks. Each spreadsheet in a Cisco HCS model workbook corresponds to the configurations of different elements within the target product

(Unified Communications Manager, Cisco vPGW Softswitch, and so on), such as Unified Communications Manager partitions or Unified Communications Manager calling search spaces.

Generally, all the configuration elements detailed in the model worksheets correspond to a transaction that occurs during the provisioning workflow. Therefore you always see a transaction name associated with the elements that you are configuring to tell the system when to provision those elements.

A transaction is defined as a singular element during the provisioning life cycle for a customer or can occur multiple times, for example, when locations are added to that customer.

Model Worksheets

The Cisco HCS consists of the following standard model files. The files and directories are loaded to Cisco Unified Communications Domain Manager in the listed order.

Because there are multiple files for the Cisco HCS Dial Plan Model, there is a model configurator tool that allows the service provider or your Cisco representative to select the countries from the country dial plan and features from the Addon directory. The configurator tool then combines all the selected files in to one Excel spreadsheet.

Table 2: Model Files and Directories

Node	Filenames	Description
Base Data	Dial Plan Specific Platform Specific	These files are released along with the Dial Plan Model. They are loaded to Cisco Unified Communications Domain Manager using the Bulk Loader.
Unified Communications Manager	Generic Leaf Cluster Country DP	The Dial Plan Model for Unified Communications Manager is split into several directories. The base DP model is specified in the generic leaf cluster spreadsheet. The country-specific Dial Plans are specified in the Country DP Directory.
IOS	Generic IOS	The Dial Plan Model for Cisco IOS gateways is defined in the Generic IOS spreadsheet.
SME	Generic SME	The Dial Plan Model for SME is defined in the Generic SME spreadsheet.
Cisco PGW mml	Generic Cisco PGWmml	The Dial Plan Model for Cisco PGW is defined in the Generic Cisco PGWmml spreadsheet.
Cisco PGW x10	Generic Cisco PGWx10	The Dial Plan Model for Cisco PGW Times Ten Database is defined in the Generic Cisco PGW Times Ten Database spreadsheet.

The preceding directories and files are described in the following sections.

Base Data

The Base Data directory consists of two files:

- Dial Plan Specific Base Data
- Platform Specific Base Data

The Base Data files are loaded using the Bulk Loader in Unified Communications Domain Manager.



Note

Be sure that you are using the latest Bulk Loader files. Download the base data from <http://software.cisco.com/download/navigator.html?mdfid>. To locate the latest files for this release, navigate as follows: **Downloads Home > Cisco Products > Unified Communications > Call Control > Hosted Collaboration > Cisco Hosted Collaboration Solution (HCS) > Cisco Hosted Collaboration Solution Version 10.0 > Unified Communications Domain Manager (CUCDM) Bulk Loaders**.

When you load new base data, existing base data is *not* overwritten.

Platform Specific Base Data

The Platform Specific Base Data workbook consists of the following worksheets:

Table 3: Platform Specific Base Data Worksheets

Worksheet	Description
Notes	This worksheet is used to specify revision history and changes made to the workbook.
Add Brands	This worksheet is used to define all brands that are supported by the Cisco HCS deployment.
Add Phone Types	This worksheet is used to define all the phone types that are supported by the Cisco HCS deployment.
Add Expansion Module Types	This worksheet is used to define all the expansion modules that are supported by the Cisco HCS deployment.
Associate Phone Expansion	This worksheet is used to associate phone types with the expansion modules that are supported by the Cisco HCS deployment.
Set System Preferences	This worksheet is used to define Cisco Unified Communications Domain Manager level preferences such as time zone, auditing, banners, and so on.

Worksheet	Description
Add Hardware Sets	<p>This worksheet is used to define the hardware set that is used in a Cisco HCS deployment. The generic hardware set (Cisco HCS-Basic) consists of:</p> <ul style="list-style-type: none"> • Unified Communications Manager • Cisco36xx Series Router (CUBE) • IOS Device (local gateways) • ISC interface • Technician (Legacy PBX) • Cisco Unity (voicemail) • Cisco Emergency Responder • Session Management Edition • Cisco PGW and Cisco PGW TimesTen database
Associate Hardware Sets	This worksheet is used to associate the hardware set to a dial plan. The generic hardware set Cisco HCS-Basic is linked to Cisco HCS Dial Plan Cisco HCS-G1.
Add Feature Display Policies	This worksheet is used to define Feature Display Policies.
Raw Data-Security Profiles	Not used
Prev FDPolicies	Not used

Dial Plan Specific Base Data

The Dial Plan Specific Base Data workbook consists of the following worksheets:

Table 4: Dial Plan Specific Base Data Worksheets

Worksheet	Description
Notes	This worksheet is used to specify revision history and changes made to the workbook.
Add Service Types	This worksheet is used to define service types (Classes of Service) that can be assigned to end users. The service types are used to define outbound and call forwarding restrictions.

Worksheet	Description
Add Number Construction	This worksheet is used to define the Dial Plan name (Cisco HCS-G1) and number construction rules for both Unified Communications Manager and internal use for Unified Communications Domain Manager. These rules are applied globally to all the enterprises.
Set Dial plan Preferences	This worksheet is used to define preferences for both the Internal and PSTN published numbers.
Add Countries	This worksheet is used to define all the countries supported by the Cisco HCS.

Predefined Telephone Class of Service Types

Cisco Unified Communications Domain Manager uses class of service to assign calling restrictions to an end user. The class of service is mapped by Dial Plan Model to a calling search space and partitions that are understood by Unified Communications Manager.

The classes of service in the following table are used in Unified Communications Domain Manager. These class of service types are loaded without loading the AddOn features (described later in this guide in [Additional Features, on page 11](#)).

Table 5: Class of Service Types

Class of Service	Calling Search Space	Description
TempOutOfService	TempOutOfService-CSS	Temporary Out of Service Class of Service - Only allows emergency dialing
International24Hrs-Enhanced	Intl24HrsEnh-CSS	International 24 hours Enhanced - No restrictions
International24Hrs-Standard	Intl24HrsStd-CSS	International 24 hours Standard - Following calls are blocked: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls
InternationalWrkHrs-Enhanced	IntlWrkHrsEnh-CSS	International Working Hours Enhanced - No restrictions during standard working hours
InternationalWrkHrs-Standard	IntlWrkHrsStd-CSS	International Working Hours Standard - Following calls are blocked during standard working hours: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls

Class of Service	Calling Search Space	Description
National24Hrs-Enhanced	Natl24HrsEnh-CSS	National 24 Hours Enhanced - Following calls are blocked: <ul style="list-style-type: none"> • International calls
National24Hrs-Standard	Natl24HrsStd-CSS	National 24 Hours Standard - Following calls are blocked: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls
National24Hrs-Restricted	Natl24HrsRst-CSS	National 24 hours Restricted - Following calls are blocked: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls • Mobile calls
NationalWrkHrs-Enhanced	NatlWrkHrsEnh-CSS	National Working Hours Enhanced - Following calls are blocked during standard working hours: <ul style="list-style-type: none"> • International calls
NationalWrkHrs-Standard	NatlWrkHrsStd-CSS	National Working hours Standard - Following calls are blocked during standard working hours: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls
NationalWrkHrs-Restricted	NatlWrkHrsRst-CSS	National Working hours Restricted - Following calls are blocked during standard working hours: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls • Mobile calls

Class of Service	Calling Search Space	Description
Local24Hrs-Enhanced	Local24HrsEnh-CSS	Local 24 hours Enhanced - Following calls are blocked: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls • Mobile calls • National calls
Internal Only	Internal-CSS	Internal - Only on-net calls are allowed
Internal CLIR	InternalCLIR-CSS	Internal Calls with CLIR - Caller ID is not sent
CLIRInternational24Hrs-Enhanced	CLIRIntl24HrsEnh-CSS	International 24 hours Enhanced - No restrictions Caller ID is not sent
CLIRInternational24Hrs-Standard	CLIRIntl24HrsStd-CSS	International 24 hours Standard - Following calls are blocked: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls Caller ID is not sent
CLIRInternationalWrkHrs-Enhanced	CLIRIntlWrkHrsEnh-CSS	International Working Hours Enhanced - No restrictions during standard working hours Caller ID is not sent
CLIRInternationalWrkHrs-Standard	CLIRIntlWrkHrsStd-CSS	International Working Hours Standard - Following calls are blocked during standard working hours: Caller ID is not sent
CLIRIntl24Hrs-FAC	CLIRIntl24HrsFAC-CSS	International 24 Hours Standard - Following calls are blocked during standard working hours: <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls Caller ID is not sent and Forced Authorization Code is required
CLIRNational24Hrs-Enhanced	CLIRNatl24HrsEnh-CSS	National 24 Hours Enhanced - Following calls are blocked: <ul style="list-style-type: none"> • International calls Caller ID is not sent

Class of Service	Calling Search Space	Description
CLIRNational24Hrs-Restricted	CLIRNatl24HrsRst-CSS	<p>National 24 hours Restricted - Following calls are blocked:</p> <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls • Mobile calls <p>Caller ID is not sent</p>
CLIRNational24Hrs-Standard	CLIRNatl24HrsStd-CSS	<p>National 24 Hours Standard - Following calls are blocked during standard working hours:</p> <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls <p>Caller ID is not sent</p>
CLIRNationalWrkHrs-Enhanced	CLIRNatlWrkHrsEnh-CSS	<p>National Working Hours Enhanced - Following calls are blocked during standard working hours:</p> <ul style="list-style-type: none"> • International calls <p>Caller ID is not sent</p>
CLIRNationalWrkHrs-Restricted	CLIRNatlWrkHrsRst-CSS	<p>National Working hours Restricted - Following calls are blocked during standard working hours:</p> <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls • Mobile calls <p>Caller ID is not sent</p>
CLIRNationalWrkHrs-Standard	CLIRNatlWrkHrsStd-CSS	<p>National Working hours Standard - Following calls are blocked during standard working hours:</p> <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls <p>Caller ID is not sent</p>

Class of Service	Calling Search Space	Description
CLIRNatl24Hrs-FAC	CLIRNatl24Hrs-FAC	<p>National 24 Hours - Following calls are blocked:</p> <ul style="list-style-type: none"> • Premium Rate calls • Personal Communication Service (PCS) calls • International calls <p>Caller ID is not sent and Forced Authorization Code is required</p>

These classes of service map to partitions, calling service spaces, and time periods defined in an Excel spreadsheet.

Unified Communications Manager Model

The Unified Communications Manager of the leaf cluster model consists of several files and directories:

- Generic Leaf Cluster
- Country Dial Plans
- AddOn Features

Additional Features

These features are not optional, but are classified as Additional because the features are available in the release but can be decoupled from the generic model, or the features are selectable as part of a deployed Dial Plan.

The following features are classified as Additional features:

- Analog Line class of service (referred to as EmergencyCallsSupport for Analog Gateways)
- Cisco Emergency Responder
- Calling Line Identification Restriction (CLIR)
- Forced Authorization Codes (FAC)
- Cisco Unified Contact Center Enterprise (Unified CCE)
- Redirecting, Connected, Called and Calling Transformation Support (RCC-Transformation)
- Extension Mobility Cross Cluster (EMCC)
- Generic SIP Trunk (GSIP-Trunk)
- Forced On-Net
- Cisco IP Manager Assistant (IPMA)

This document does not cover provisioning but describes the role of the feature in the Dial Plan Model.

Analog Line Class of Service

This feature enables analog ports on H.323 and SIP gateways to be configured with a per-port calling search space when the gateway is activated. The ALineCOS directory contains all the definitions that are required to support this feature; provisioning of this feature is out of scope of this document.

The ALineCOS AddOn contains the following definitions to support this feature:

- A global definition, AnalogGWCSS, in the Add Service Types of the Base Data Bulk Loader file. Assign this service type as the calling search space of the Inbound Calls of the gateway.
- For each location, create a new partition, AnalogLineCOS-PT and associate it to the new calling search space, AnalogGWCSS. (This calling search space must be the same name as the service type and is hard coded as AnalogGWCSS.)
- Map the calling search space to the service type with the same name.
- In the COS-CSS mappings worksheet, add a new column, where a class of service code is assigned to each existing COS-CSS mapping the feature uses.
- A new translation pattern, #COSCODE#!, is added to the Translate Pattern Worksheet. Create this translation pattern in Cisco Unified Communications Manager when a user (analog line) is associated to a class of service defined above. The variable is replaced with the Analog Class Of Service Code value that is associated to the class of service and the calling search space is replaced with what is defined in the COS-CSS mapping worksheet.
- Part of this feature is to support emergency dialing through analog line. For each location within a country, add the following translation pattern to the AnalogLineCOS-PT partition:
 - XX.<Country Emergency Number>
 - XX#EXT#.<CountryEmergencyNumber>

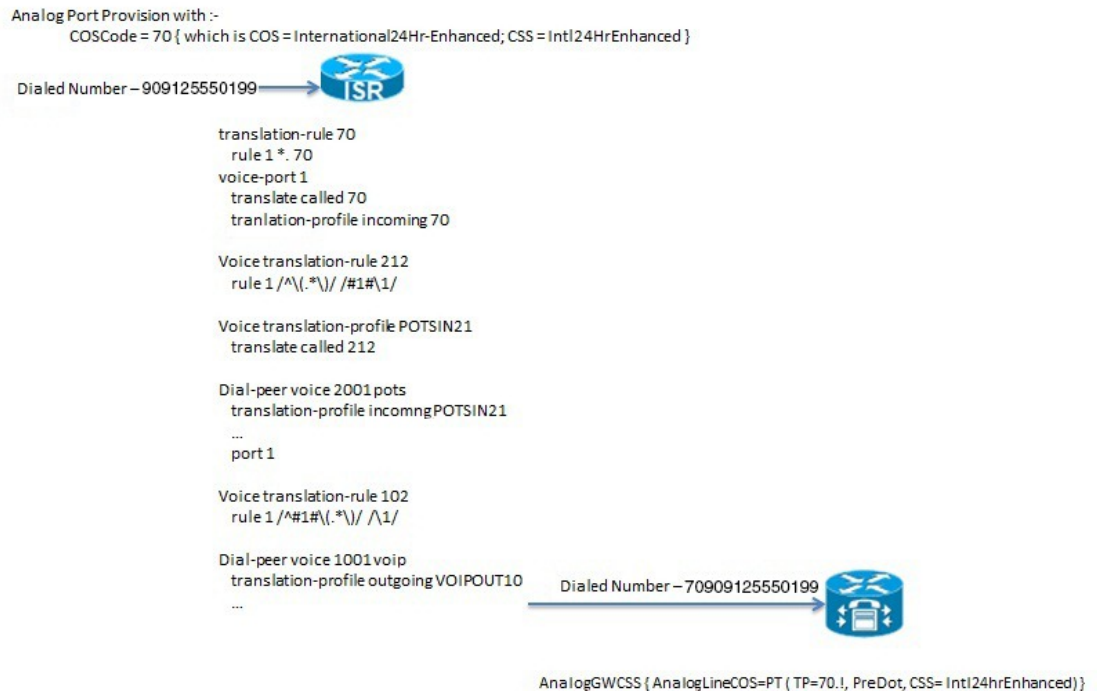
Where XX and XX#EXT# is replaced with +02<CountryCode> and the Calling Party Number is prefixed with '*#LRID#' before the translation pattern goes to the emergency routing calling search space.

In the case where Cisco Emergency Responder is used, remove only XX and XX.#EXT# before the translation pattern goes to E#ISO#CSS.

- H.323 and SIP IOS gateway model contains the following new transactions and definitions:
 - [Add/Del]COSRule—To add or delete class of service code that is supported on the Gateway.
 - [App/Unapply]COSRule—To assign or unassign a class of service to the Analog port/line.

The following call flow shows how class of service is supported for each analog port that is provisioned with this feature:

Figure 1: Analog Line Class of Service



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Cisco Emergency Responder

Cisco Emergency Responder is specified for United States deployment where Emergency Responder is used to support enhanced emergency call handling. The following definition is added to the model to support this feature:

- When a Cisco Emergency Responder server is connected:
 - Partition—EUS
 - Calling search space—EUSCSS
 - Partition-CSS Map—EUS and InterSiteRoutingPT partitions map to EUSCSS
 - Route pattern to handle Default ERL and Default OnSite number in the EUS partition
 - Route pattern to handle enhanced emergency calls with Calling Party Number set as the ELIN number in the EUS partition
 - CTI Route Point to handle 911, 912, and 913, where 912 is for fallback if 911 is unavailable and 913 is to handle callback from the PSAP
 - CTI Port for internal alerting

- When a location is added two translation patterns, 911 and #EXT#.911 are added to the AllowEmerCalls partition of that location and the handover calling search space is set to be EUSCSS.
- When a line is added to the ERL (for example ELIN) to handle callback from the PSAP through the ELIN number a translation pattern, +1<ELIN number>, is added to the E.164LookUp partition, and the handover calling search space is set to EUSCSS.

Calling Line Identification Restriction

The Calling Line Identification Restriction (CLIR) setting in the model is based on the system default. In Cisco HCS, the system default should be set to Allowed. This AddOn feature enables per line calling line identification presentation setting to be restricted.

The following definition is included in the model to support this feature:

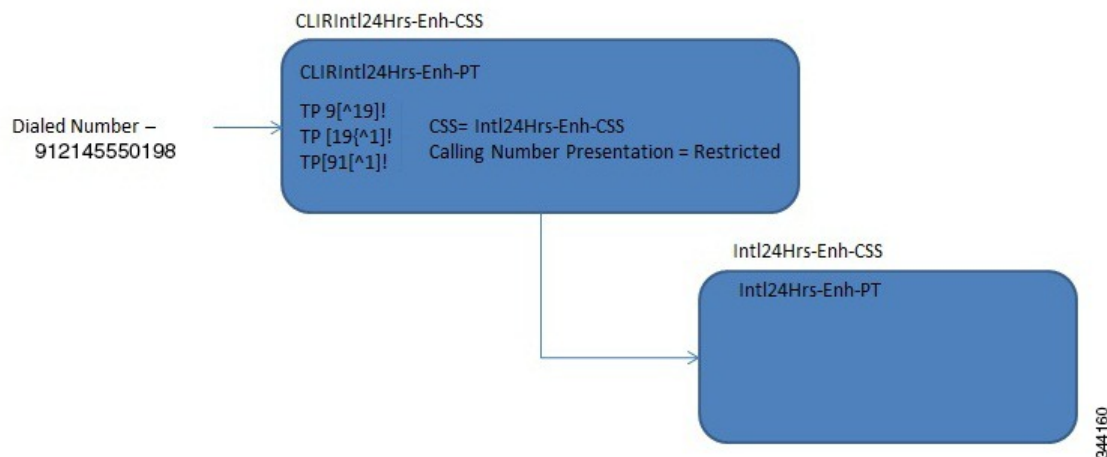
- Additional service types—to set CLIR as the default for the line (for example CLIRInternational24Hrs-Enhanced, CLIRInternational24Hrs-Standard, CLIRNational24Hrs-Enhanced, CLIRNational24Hrs-Standard and also for Working Hours).
- Addition to the Cisco Unified Communications Manager model—Partition, Calling Search Space, Partition-CSS Map, and COS-CSS mapping to support the preceding service type.
- The following translation patterns are added to the per-country translate pattern worksheet:
 - Translation pattern to handle intrasite calls
 - Translation pattern to handle intersite calls
 - Translation pattern to handle all nonemergency PSTN numbers

The preceding translation patterns basically set the calling line to Restricted and handed over to the standard calling search space with the similar name but without CLIR prefix.

Example of a call flow for the United States:

A phone line that is associated to CLIRInternational24Hrs-Enhanced services with the CLIRIntl24Hrs-Enh-CSS dial uses the 9011[^0]![0-9#] pattern (nonemergency PSTN number), has its Calling Line Restriction set to Restricted and call processing passed to Intl24Hrs-Enh-CSS.

Figure 2: Calling Line Identification Restriction



Forced Authorization Code

This feature is used to enable Forced Authorization Code (FAC) in conjunction with route patterns to restrict access to long distance and international calls for certain groups of users.



Note

FAC is supported in deployments that use Shared Instance but the Forced Authorization Codes are global in nature, and not customer-specific.

In the Cisco HCS, add the following to the generic model for this feature:

- Additional service types for FAC (for example, International24Hrs-FAC and National24Hrs-FAC)
- New partitions associated to Central and Local PSTN call handling

When a provider country is added, create the following partitions to handle call handling through the aggregation: FACIntl24Hrs-<CC>, FACMobl24Hrs-<CC>, FACNatl24Hrs-<CC>, and a FAC route selection partition FACRteSelPT-<CC>.

When a local gateway is added to a location, create the following partitions: FACILBO24Hrs-<CC>, FACMLBO24Hrs-<CC>, FACNLBO24Hrs-<CC>, and a LBO route selection partition FACRetSelPT-LBO.

Add the following partitions to support plus dialing: FACPlusIntl24Hrs-<CC> and FACPlusNatl24Hrs-<CC>.

- Two new FAC CSS (for example, Intl24HrsFAC-CSS and Natl24HrsFAC-CSS) are added and associated with the preceding item FAC service type.
- The FAC Calling Search Space contains the same partitions as its equivalent non-FAC Calling Search Space except for the following:

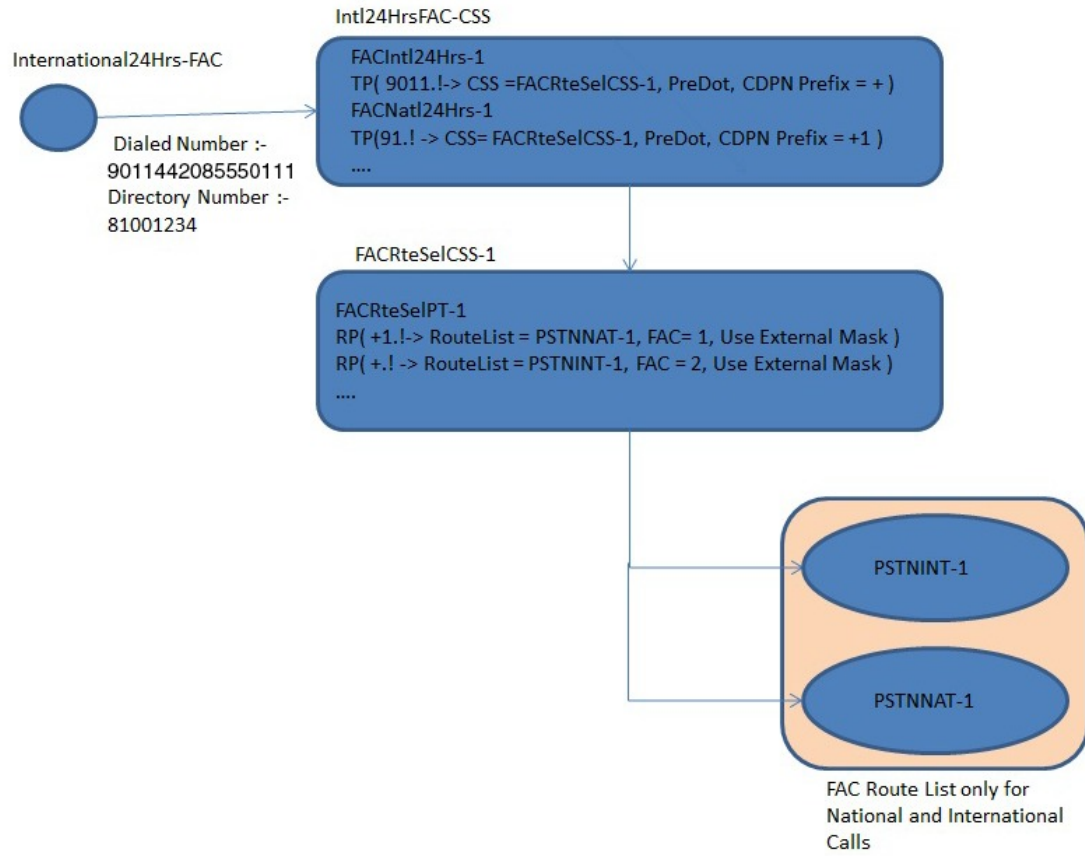
- For Handling of International Calls, use FACIntl24Hrs-`<CC>` instead of AllowIntl24Hrs-`<CC>` and FACILBO24Hrs-`<CC>` instead of AllowILBO24Hr-`<CC>`.
 - For Handling of National Calls, use FACNat124Hrs-`<CC>` instead of AllowNat124Hrs-`<CC>` and FACNLBO24Hrs-`<CC>` instead of AllowNLBO24Hr-`<CC>`.
 - For Handling of Mobile Calls, use FACMobl24Hrs-`<CC>` instead of AllowMobl24Hrs-`<CC>` and FACMLBO24Hrs-`<CC>` instead of AllowMLBO24Hr-`<CC>`.
- Add two additional calling search spaces to handle call routing, FACRteSelCSS-`<CC>` that contains the FACRteSelPT-`<CC>`, and FACRteSelCSS-LBO, that contains the FACRteSelPT-LBO.
 - For each country added by the Provider Country transaction, add the same route patterns as those defined for non-FAC, except that the FAC column is populated with the following:
 - For International Calls routing pattern, set the FAC column to 2.
 - For National Calls routing pattern, set the FAC column to 1.
 - For Mobile Calls routing pattern, set the FAC column to 3.

The same call handling is applied to the route pattern for Local Breakout through the Location LocalGateway.

- For each country that is added by the Provider Country transaction, add translation patterns to handle International, National, and Mobile calls to the appropriate FAC partitions. These translation patterns have the same characteristics as those defined for non-FAC, except that the call is handled by

FACRteSelCSS-<CC>. The same is applied to the translation patterns that are added when Location LocalGateway is added.

Figure 3: FAC International United States Call Flow



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Cisco Unified Contact Center Enterprise

The dial plan AddOn supports Cisco Unified Contact Center Enterprise (Unified CCE) integration with the following functions:

- After Unified Communications Manager is added, a partition AllowUCCEXferPT is created. This partition contains the route patterns that are assigned to route calls to the Unified Contact Center server when one of the DNs that is assigned to the CTI route point is dialed.
- Class of service for Unified Contact Center Agent Line.
- Provide routing of ingress call based on the assigned Contact Center PSTN Pilot Number to Cisco Unified Border Element (Cisco UBE) from the Cisco PGW through a SBC. Only Cisco PGW routing is provisioned.
- Translate the Contact Center PSTN Pilot Number associated to a local gateway of a location to an internal Pilot Number (for example Contact Center Pilot DN).
- Provide routing of Internal Pilot Number (that is, Contact Center Pilot DN) to the Cisco UBE.

- Provide routing of VRU number to the Cisco Unified Customer Voice Portal (Unified CVP) server.
- Handling incoming call from the Unified CVP server.
- Provide connection to the Unified CVP server and Cisco UBE from the Unified Communications Manager. This leverages the Generic SIP Trunk AddOn feature.

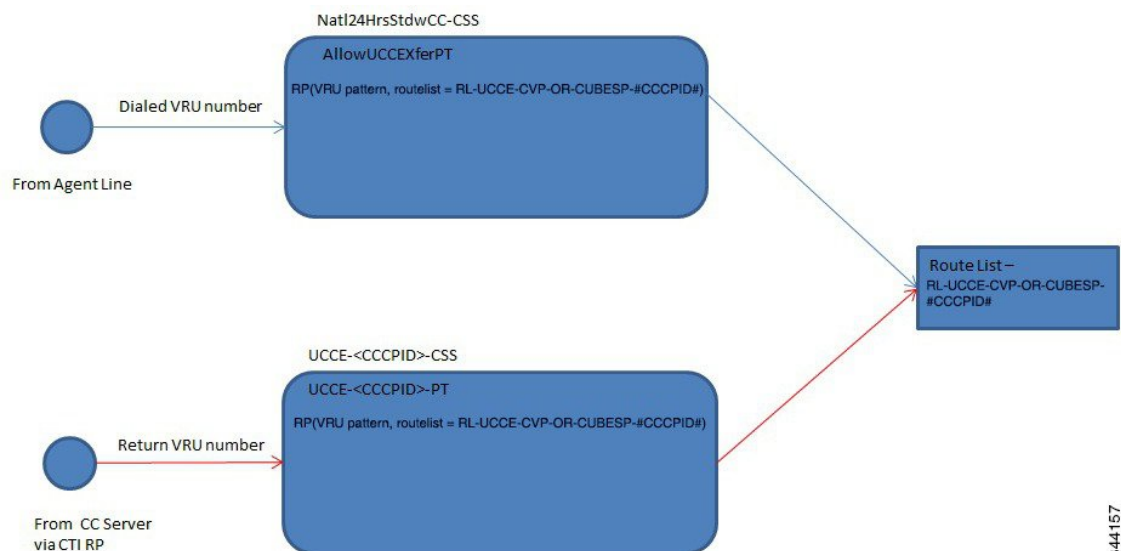
All other integration needed to support the Unified Contact Center Enterprise is out of scope of this AddOn. For more information on Unified Contact Center Enterprise, see http://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html.

Before the Contact Center is provisioned through Unified Communications Domain Manager, you must create the SIP Connection between the Unified CVP server and Cisco UBE with the Generic SIP Trunk feature (refer to the Generic SIP Trunk (GSIP) section).

When the Contact Center Enterprise Server is connected to Unified Communications Manager by Unified Communications Domain Manager, the following dial plan is added:

- On the Cisco PGW, the AddCCCIP transaction is executed, which creates a dial plan similar to ConnectIPPX but associates it to the Unified Contact Center. The route list used by this dial plan is statically configured.
- On Unified Communications Manager, the following is created:
 - Routing of VRU number that is returned from CC-UCCE-<CCCPID>-CSS, which contains UCCE-<CCCPID>-PT with the VRU number as the route pattern to route the call to the Unified CVP through the RL-UCCE-CVP-OR-CUBESP-#CCCPID# route list. This route list and its associated route group and trunk are created through the Generic SIP Trunk feature.
 - Routing of VRU number dialed by the Agent—AllowUCCEXferPT is populated with the VRU number as a route pattern to route the call to the Unified CVP through the RL-UCCE-CVP-OR-CUBESP-#CCCPID# route list.

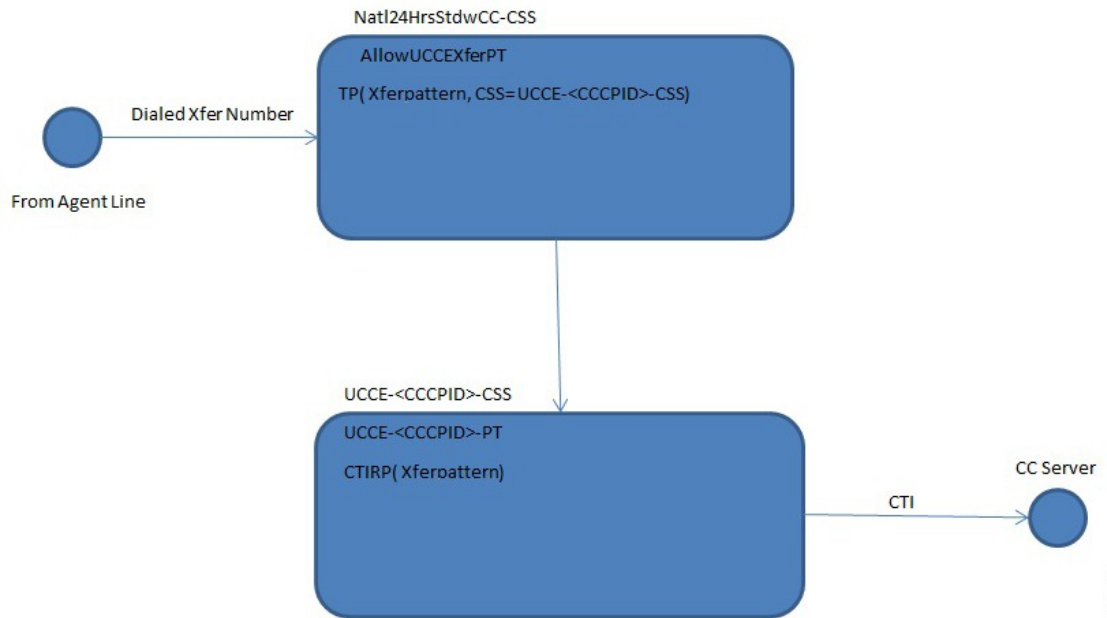
Figure 4: Call Flow for VRU



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- Routing of Call Transfer or Conference Call from the Agent—AllowUCCEXferPT is populated with the Transfer pattern that was created by Unified Communications Domain Manager as a translation pattern with the handover calling search space set to UCCE-<CCCPID>-CSS.
- Routing of Transfer or Conference Call to Contact Center Enterprise Server through CTI Route Point—A CTI Route Point with the Transfer Pattern (equated to DN and is created by the Unified Communications Domain Manager) and calling search space set to UCCE-<CCCPID>-CSS.

Figure 5: Call Flow for Transfer and Conference



When Contact Center Service is created by Unified Communications Domain Manager for Unified Communications Manager, an Internal CC Pilot Number Pattern is added to the InterSiteRoutingPT as a route pattern with route list set to RL-UCCE-CUBEE-OR-CUBESP-#CCCPID#. This is to route CC Pilot Number to the Cisco UBE.

When a location is created, the following dial plan is added:

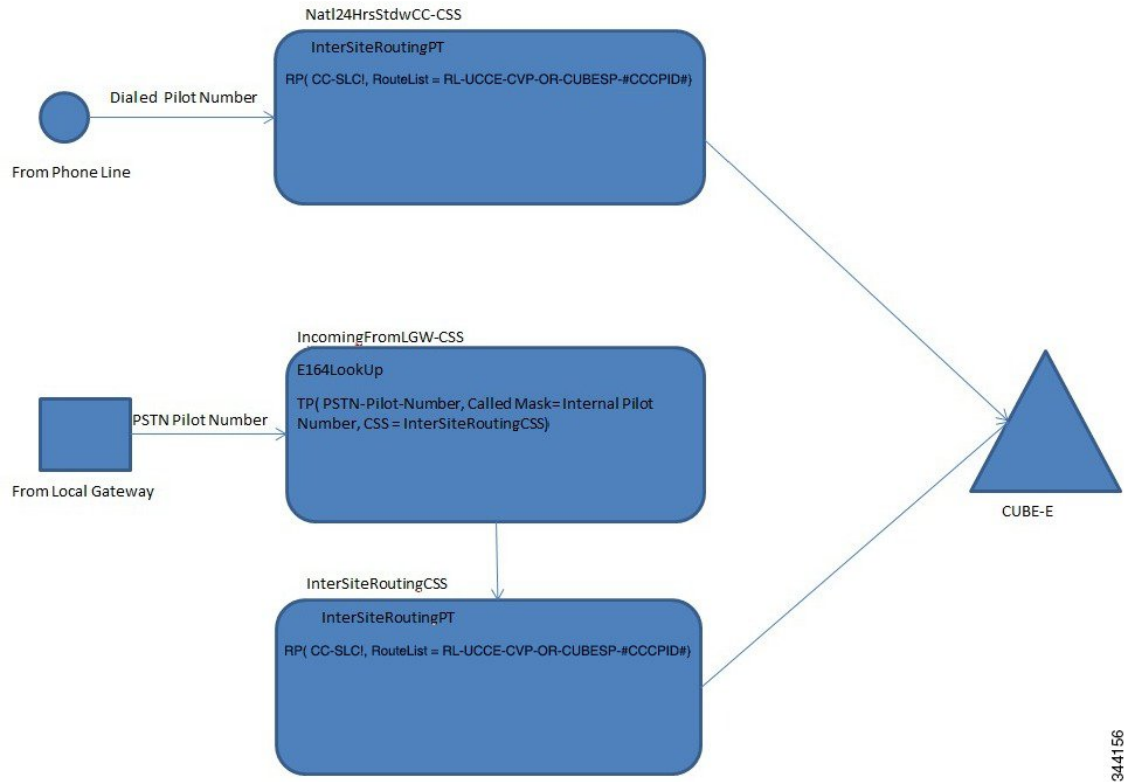
- Two classes of service for Agent Line support - National24Hrs-Standard-wCC and NationalWHrs-Standard-wCC.
- Calling search spaces - Natl24HrsStdwCC-CSS, and NatlWHrsStdwCC-CSS that contains the same partitions as Natl24HrsStd-CSS and NatlWrkHrsStd-CSS respectively, with the addition of the AllowUCCEXferPT.

When Contact Center Internal Pilot number is associated with a PSTN Number, the following is added:

- On Times Ten Database—Add an entry to map the PSTN number to the Unified Contact Center Enterprise server dial plan on the Cisco PGW.
- On Unified Communications Manager—Add as a translation pattern, that transforms PSTN to DN with the handover calling search space set to InterSiteRoutingCSS.

- On IOS gateway (H.323 and SIP)—Add as a rule in voice translation-rule 9121, 9122, and 802.

Figure 6: Call Flow for Pilot Number



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RCC-Transformation

The Redirecting Connected Called (RCC) AddOn feature enables you to perform a number transformation on the redirecting, called, and connected number. Unified Communications Domain Manager uses service type to associate transformation calling search space to the outbound trunk. The following service types are defined:

- ClusterW-Redirecting-Transformation
- ClusterW-Connected-Transformation
- ClusterW-Called-Transformation

For ClusterW-Redirecting-Transformation and ClusterW-Connected-Transformation, the following are created:

- ClusterWDN2DDIMapping-CSS is associated to both service types and contains ClusterWDN2DDIMapping-PT.
- When a single DN or range of DNs is associated to the DDI, a calling number transformation pattern is added to the ClusterWDN2DDIMapping-PT. For Generic Dial Plan (G1) and Flat Dial Plan (G2) Models, when an outgoing call is made toward PSTN, the Calling Party DN is transformed to DDI. If there is no corresponding DDI number (DN without a DDI number), then

- For Generic Dial Plan (G1) Model – Site Published Number is sent.
- For Flat Dial Plan (G2) Model – External Mask of the Calling Line is sent.
- For Shared Instance Dial Plan (G3) Model, when an outgoing call is made toward PSTN, the external mask of the calling line is sent in all cases.

For ClusterW-Called-Transformation, the following are created:

- ClusterWCalledTranf-CSS, which contains ClusterWCalledTranf-PT and FMCCalledTransf-PT.
- Currently FMC uses the Called Number Transformation. When Unified Communications Domain Manager executes AssociateFMC, a called number transformation pattern is added to the FMCCalledTransf-PT.

The Redirecting, Calling, Called and Connected Party Transformation CSS for the Shared Instance Dial Plan (G3) is defined in the following table:

Table 6: RCC Party Transformation for Shared Instance Dial Plan (G3)

	Calling Search Space	Transformation Pattern	Partition	Description
Calling Party Transformation	CallingT2AggregCSS	\+. Multiple !	CallingT4CFwdCallPT CallingT4EmerCallPT ClusterWDN2DDIMapping-PT	The Transformation Pattern is defined to use External Mask.
Called Party Transformation	ClusterWCalledTransf-CSS	NULL \+.#COUNTRY##MOBILE#	ClusterWCalledTransf-PT FMCCalledTransf-PT	There is no transformation defined for Called Party.
Connected Party Transformation	ClusterWDN2DDIMapping-CSS	!	ClusterWDN2DDiMapping-PT	The Transformation Pattern is defined to use External Mask.
Redirecting Party Transformation	ClusterWDN2DDIMapping-CSS	!	ClusterWDN2DDiMapping-PT	



Note The external mask for each line is defined as the +E.164 number.

Based on the Transformation Patterns defined in the preceding table:

- For Redirecting Party Transformation: Use External Mask
- For Calling Party Transformation: Use External Mask
- For Called Party Transformation: No Transformation

- For Connected Party Transformation: Use External Mask

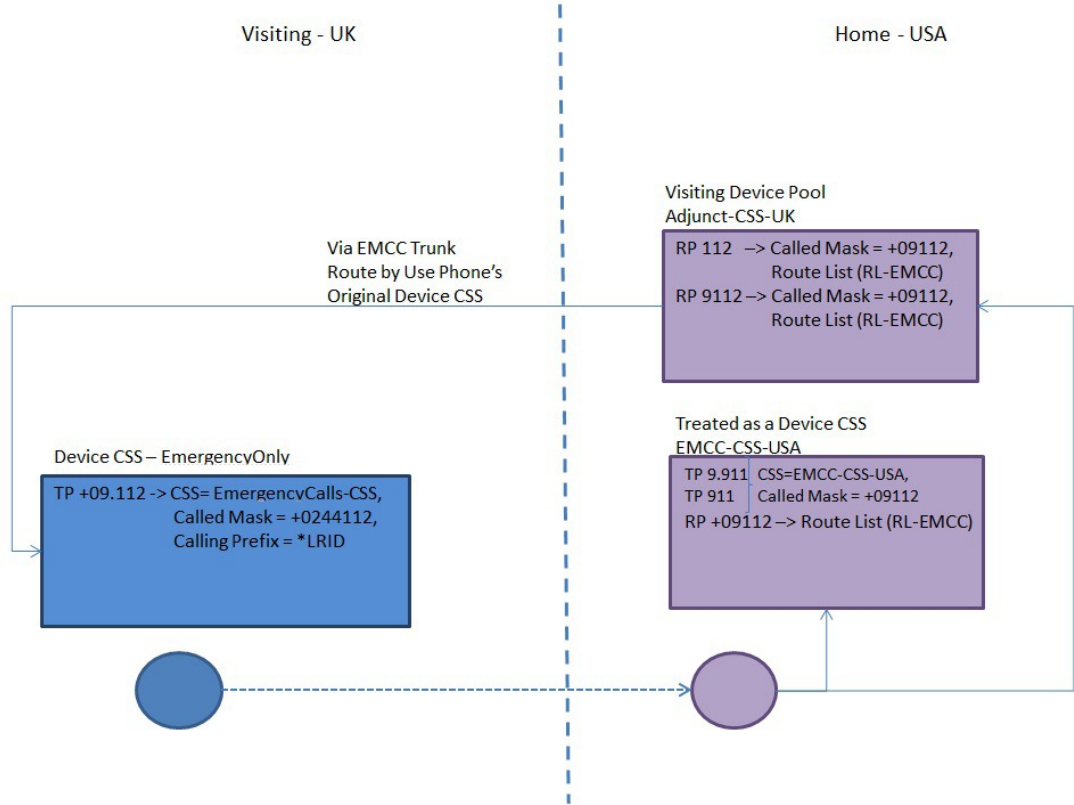
Extension Mobility Cross Cluster

The EMCC model AddOn is a small part of Extension Mobility Cross Cluster (EMCC), to ensure that emergency calls egress from the originating country where the device resides. To achieve this, the following is added to the model:

- As a prerequisite, set the calling search space for PSTN Access SIP trunk to use phone's original Device Calling Search Space.
- When ActiveEMCC is executed, add the following to Unified Communications Manager:
 - EMCC-CSS-<EMCC-CC> containing the EMCC-PT-<EMCC-CC>.
 - Adjunct-CSS-<EMCC-CC> containing the Adjunct-PT-<EMCC-CC>.
 - RL-EMCC, SLRG for route group and their associated RL-RG mapping.
 - SIP trunk with no destination address.
 - EMCC Country Emergency Number as a translation pattern in EMCC-PT-<EMCC-CC>, where EMCC Country is the home country. This translation pattern transforms the Called Emergency to a Global Generic Emergency Number, that is, +09112.
 - The Global Generic Emergency Number as a route pattern in the EMCC-PT-<EMCC-CC> with route list set to RL-EMCC.
 - Adjunct Country Emergency Number as a route pattern with Called Number Mask set to +09112 and route list set to RL-EMCC. An Adjunct Country is the Visiting Country.

- Each country dial plan is enhanced to handle the Global Generic Emergency Number.

Figure 7: Call Flow for Extension Mobility Cross Cluster



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Interconnect Unified Communications Manager Clusters (Optional)

This procedure is only applicable where a customer has multiple clusters.



Note

This step can be added at a later date, when additional clusters are added. Cisco recommends that you conduct this step using the Cisco Unified Communications Domain Manager GUI.

Procedure

-
- Step 1** Go to **Network > PBX Devices > CUCM ClusterName > Connectivity > PBX=> PBX** for example select Connectivity for **VSNetwork > PBX Devices > CUCM ClusterName > Connectivity > PBX=> PBX**
- Step 2** (For example) select **Connectivity for VSC-CL1**.
- Step 3** Select required extra clusters, for example **VSC-CL2**.
- Step 4** Select **Connect IPPBX**.
- Step 5** Select **Trunk Protocol = SIP**, and **Topology Type = Full Mesh** or **Star**.
- Step 6** Modify Trunk Descriptions, SIP Profile, Normalization Script and Script Parameters as required.
- Step 7** Select **Confirm**.
- Step 8** Monitor the Cisco Unified Communications Domain Manager Transaction logs and Device Logs and confirm that Cisco Unified Communications Domain Manager creates the required InterClusterSIP trunks, Route Groups and Route Lists on each cluster. For example, on VSC-CL1: ICT-SIP-1102, RG-IPPBX-SIP-1102, RL-IPPBX-1102 (where 1102 = CPID of VSC-CL2) on VSC-CL2: ICT-SIP-1101, RG-IPPBX-SIP-1101, RL-IPPBX-1101 (where 1101 = CPID of VSC-CL1).
- Note** When adding connections to another cluster (if customer locations already exist), confirm that Cisco Unified Communications Domain Manager adds the required SLC Route Pattern routing in the remote clusters.
-

Generic SIP Trunk

The Generic SIP Trunk (GSIP) feature provides the ability to create, modify, or delete trunks, route groups, route lists and route patterns associated with a connection for SIP.

Templates are provided to create elements within the connection (for example, trunks, RL-RG mapping, and route patterns). The naming convention for the template is as follows:

AddConnection-<ProtocolType>-<TemplateName>.

The only ProtocolType supported is SIP.

Within the model the following templates are supported:

- Unified CCE support:
 - ToCUBE for creating trunks and RL-RG Mappings connection to Cisco Unified Border Element (Cisco UBE).
 - ToCVP for creating trunks and RL-RG Mapping connection to Unified CVP server.
- Cisco Unity Connection support: ToCisco Unity for creating trunks and RL-RG Mappings connection to Cisco Unity Connection.
- Generic Aggregation: ToAggregation for creating route pattern, trunks and RL-RG Mappings connection to the aggregation.
- Aggregation country specific:
 - <ISO CC>_NATL_wPlus, <ISO CC>_INTL_wPlus and <ISO CC>_SVC_wPlus - for <ISO CC>, using a trunk that is created with the ToAggregation template, route pattern and RL-RG Mappings where the External Mask is a National Number and requires +44 to be the prefix to the Mask.

- <ISO CC>_NATL_woPlus, <ISO CC>_INTL_woPlus and <ISO CC>_SVC_woPlus using a trunk that is created with the ToAggregation template, route pattern and RL-RG Mappings where the External Mask is in plus E.164 format.
- <ISO CC>_EMR for route pattern and RL-RG Mapping for Emergency call routing (where <ISO CC> is the ISO Country Code, for example GBR for Great Britain).

Forced On-Net

You can configure all gateways or trunks as Off-Net (external) or On-Net (internal) in Cisco Unified Communications Domain Manager. When an end user dials a PSTN number to another corporate location in the network, the Forced On-Net feature automatically routes the call on-net, maximizing savings by directing traffic over the customer's IP VPN and avoiding international toll charges.

There is no transaction on Unified Communications Domain Manager to enable or disable this feature. Forced On-Net is enabled by adding the E.164LookUp partition to the routing calling search space, that is, RouteSelCSS-<CC>.

When enabled, Forced On-Net is applicable to all the provider customers.



Note

On the Cisco PGW, the default setting is Forced On-Net. If you do not require Forced On-Net, on the Provider Country page of the Unified Communications Domain Manager you can configure a set of E.164 ranges to be Forced Off-Net.



Note

The Forced On-Net feature is not available to Shared Instance Dial Plan (G3) subscribers.

IPMA (Model and Cisco Unified Communications Domain Manager)

The Cisco IP Manager Assistant (IPMA) feature allows managers and their assistants to work together effectively. This feature comprises a call routing service that enhances the phone capabilities for the manager and the desktop interfaces for both the manager and the assistant. This service intercepts calls that are made to managers and routes them to selected assistants, managers, or other targets based on preconfigured call filters. The manager can change the call routing dynamically. For example, by pressing a soft key press on the phone, the manager can instruct the service to route all calls to the assistant and can receive status on these calls.

IPMA can be provisioned in one of two ways:

- 1 Shared line mode
- 2 Proxy mode

Transactional Model

Cisco Unified Communications Domain Manager operates on a transactional model that is called on every user action whether through the web or bulk loading interface. These transactions occur at key steps of building

the providers and services, and then with Cisco Unified Communications Manager individual activations of customers, locations, phones, and features. For example, when a provider adds a new Cisco Unified Communications Manager to the system, the transaction InitIPPBX must be called to load all the base configurations (namely partitions, calling search spaces, translation patterns, time schedules, so on) as defined in the Dial Plan Model.

Administrators and users execute functions or operations on the Unified Communications Domain Manager to carry out certain tasks. For example, the task may be to add a new customer configuration into the network components or to add a new E.164 number range into the Unified Communications Domain Manager database. In Unified Communications Domain Manager, these functions or operations are named "Transactions."

A transaction may be a single operation, to add a number into the database for example, or it may include many subtransactions that are executed with a single operation. Every operation, or transaction, is kept in the Unified Communications Domain Manager Transaction log and can be used for searching the status of previous transactions and to even stop or replay individual entries. To summarize, against every action that a user performs on Unified Communications Domain Manager, there is a transaction that runs as a result of this action. The details of the transactions are specified in the model. The model tells the Unified Communications Domain Manager what configuration needs to be executed against a specific transaction.

Table 7: Commonly Used Transactions

Transactions	Description
InitIPPBX	Called at the initialization of the Unified Communications Manager by Unified Communications Domain Manager, either by the bulk loading spreadsheet or Static Load Config button on the GUI when adding a Unified Communications Manager.
AddProviderCountry	Called when a new country support is needed by the customer.
AddLocation	Called when a new location is added.
AssociateFNN(Range)	Called to associate Full National Number with internal DN.
ConnectIPPBXIPPBX	Called to connect one Unified Communications Manager Cluster with another.
AddLocationLocalGateway	Called when local gateway is added to support local PSTN breakout.
AddSNR	Called when Single Number Reach feature is added to a location.

The dial plan also makes use of variables that are assigned at runtime during a transaction.

Model Variables

The model must use variables on certain occasions to get runtime information at the time of a transaction execution. A list of the most common variables that apply to Dial Plan follows. The complete list of model variables can be found in the Unified Communications Domain Manager product documentation.

Table 8: Model Variables

Variable Name	Description
#COUNTRY#	Country Code
#CRID#	Customer Route ID
#CUSTID#	The Customer ID as provisioned for the customer
#EXT#	External line access prefix (from the Location)
#ICPID#	IPBX Call Processor ID
#INT#	The DN to contact the location
#LOCATION-ID#	The Location ID
#LRID#	The Location Route ID
#NAT#	National number prefix per country (for example, 0 for Great Britain before nationalcode)
#POSTTRANSLATEDNUM#	The posttranslated number as captured in the front-end
#PRETRANSLATEDNUM#	The pretranslated number (shortcode) as captured in the front-end
#SITE#	Location number within customer
#SITECODE#	The Site Location Code (SLC), an enterprise-based site code
#SITEMASK#	The Site Extension Mask, a variable site translation mask to match the number of digits in the extensions of a location
#TRANSID#	The incremented number for every number translation added
#TRANSPARTITION#	The partition that is mapped to the descriptive name from the front-end

InitIPPBX Transaction

Cisco Unified Communications Domain Manager uses a once-only transaction called InitIPPBX to load static Cisco Unified Communications Manager configuration on each Cisco Unified Communications Manager cluster.

Time Periods and Time Schedules

The following time periods, time schedules, and their mapping is created during InitIPPBX transaction.

The generic Cisco HCS model supports two time periods:

- AllDay Monday to Sunday: 00:00 to 24:00
- StandardHours Monday to Friday: 07:00 to 18:00

The generic Cisco HCS model supports two time schedules:

- AllDay
- StandardHours

The generic Cisco HCS model maps Time Periods to Time Schedules as follows:

- Time Period AllDay is mapped to Time Schedule AllDay
- Time Period StandardHours is mapped to Time Schedule StandardHours

Calling Search Spaces, Partitions, and Transformation Pattern

Cluster-wide partitions are added during the InitIPPBX transaction. The translation patterns associated with these partitions are added while executing other transactions.

Table 9: Partitions

Partition	Description
E.164LookUp	Partition containing translation patterns to convert incoming E.164 numbers to a directory number (DN) format
FMCLookUp	Plus E.164 FMC to DN
CallingT4EmerCallPT	Partition to map calling party DN to DDI mapping for emergency calls
CallingT4CFwdCallPT	Plus handling for call forward calls
InterSiteRoutingPT	Handles intersite routing
NullPartition	Not used For routing
IncomingFromCisco Unity	Incoming from Cisco Unity (not used)
CustSC-RLSel-PT	Route list Selection for Short Code Dialing

The following cluster-wide calling search spaces are added, and mapped to above partitions during InitIPPBX transaction:

Table 10: Calling Search Spaces

CSS	Partitions	Description
IncomingFromAggreg	E.164LookUp	

CSS	Partitions	Description
FMCLookUp	E.164LookUp	CSS assigned to inbound trunk from aggregation layer
InterSiteRoutingCSS	InterSiteRoutingPT	Intersite routing calling search space
CallingT2AggregCSS	CallingT4EmerCallPT	
CallingT2AggregCSS	CallingT4CFwdCallPT	Calling Party Transformation Calling Search Space for calls toward aggregation layer
IncomingFromCisco Unity	InterSiteRoutingPT	Calling search space assigned to incoming trunk from Cisco Unity Connection
CustSC-RLSel-CSS	CustSC-RLSel-PT	Route list selection for short code dialing

The following transformation pattern is added to handle incoming PSTN number with + and to override route pattern Calling Party transformation when a call is forwarded toward aggregation:

Table 11: Transformation Pattern

Partition	Transformation Pattern	Description
CallingT4CFwdCallPT	PlusCGPNoverrideRP \\+.	Remove + if it exists in the calling party number else do nothing and then prefix + to the calling party number. This is to avoid prefixing another + to the calling party number.

Countries

The InitIPPBX transaction applies to those countries that are already associated with the customer. Depending on what countries are added at the service provider level in Unified Communications Domain Manager the country relevant model elements are provisioned with the InitIPPBX transaction.

Initialize the Unified Communications Manager Clusters (InitIPPBX)

Complete this procedure to activate the InitIPPBX and AddProviderIPPBXCountry functions and push the cluster-wide and country-level dial plan models settings to the Cisco Unified Communications Manager cluster. The InitIPPBX step can be run using the Cisco Unified Communications Domain Manager GUI for each cluster.

Procedure

- Step 1** Browse to **Network > PBX Devices > ClusterName**.
- Step 2** Scroll to the bottom of the CCM Cluster Management Page and select **Load Static Configuration**.
- Step 3** Alternatively, configure the **C1 CUCDM81x VS P1 NetworkElements vy(Single Customer)(VSC CL1 CL2) loader** sheet as follows (where x is the Cisco Unified Communications Domain Manager version, and y is the sheet version number):
- Hash columns **A** and **B**
 - Unhash Column **C** (lines 8 and 9 as required).
 - Click **Save**.
 - Rerun the Network Elements loader.
 - Confirm that the InitIPPBX load is successful.
-

What to Do Next

Review the InitIPPBX transaction device log or log in to the Unified Communications Manager cluster to verify that the cluster-wide and country-level dial plan has been loaded into the Unified Communications Manager cluster. Check for the addition of Partitions, CSSs, RPs, TPs, and so on. Successful completion of the InitIPPBX step is an important milestone in configuring a Cisco HCS Unified Communications Manager cluster, indicating the static configuration has been added correctly.

Bulk-Load Extension Mobility Cross Cluster Settings (Optional)

This is an optional procedure that is only required for the Extension Mobility Cross Cluster (EMCC) feature where a customer requires EMCC support across multiple clusters, for example between VSC-CL1 and VSC-CL2.

Procedure

- Step 1** Configure the **C7 CUCDM81x VS P3 NetworkElements-MultiCustomerClusters-MCC-CL1-CL2-vy loader** sheet as follows (where x is the Cisco Unified Communications Domain Manager version, and y is the sheet version number):
- Hash columns **A**, **B**, **C**, **D**, **E**, and **F**.
 - Unhash column **G** (lines 8 and 9 as required).
 - Click **Save**.
 - Rerun the Network Elements loader.
- Step 2** Monitor the Cisco Unified Communications Domain Manager Transaction logs and Device Logs and confirm the required EMCC settings have been added, for example:
- Addition of EMCC countries
 - Addition of EMCC Remote Clusters
 - Addition of GeoLocation Filters
 - Addition of EMCC Feature Parameters
-

AddProviderCountryIPPBXs

Cisco Unified Communications Domain Manager uses the AddCountryIPPBX transaction when a new country is added to the customer. The configuration consists of the following worksheets:

Table 12: AddCountryIPPBX Transaction

Worksheet	Description
CCM 6.1.x—Partitions	Creates Country Level Partitions
CCM 6.1.x—CSS	Creates Country Level CSS
CCM 6.1.x—Partition-CSS Map	Maps Calling Search Space to partition
CCM 6.1.x—Route Patterns	Creates route patterns for National, International, and Service Calls
CCM 6.1.x—Translate Patterns	Creates country-specific translation patterns to allow and restrict calls
CCM 6.1.x—Route Lists	Creates country-specific route lists for National, International, Emergency, and Service Calls
CCM 6.1.x—Country Details	Provides Country Details

Calling search spaces are added for a specific country. These calling search spaces include Per-Country Calling Search Space for Emergency Handling, Per-Country Calling Search Space PSTN Route Selection, and Per-Country Calling Search Space FAC PSTN Route Selection.

Route patterns are added using country specific route filters for emergency, national, and international calls. Same route patterns exist for calls to aggregation layer and also to local breakout gateway.

Route lists are added for National, International, Emergency, and Service calls on per-country basis.

Partitions

The following country-specific partitions are added during AddProviderCountryIPPBX transaction. The variable #COUNTRY# is replaced with the country code. If the country being added is the United States, Cisco Unified Communications Domain Manager replaces #COUNTRY# with a 1. Therefore partition BlkIntl-#COUNTRY# is provisioned as BlkIntl-1.

Table 13: Country-Specific Partitions

Partition	Time Schedules	Description
RouteSelPT-#COUNTRY#	AllDay	Country-Specific Route Selection Partition

Partition	Time Schedules	Description
BlkIntl-#COUNTRY#	AllDay	Block International from #COUNTRY#
BlkNatl-#COUNTRY#	AllDay	Block National from #COUNTRY#
BlkMobl-#COUNTRY#	AllDay	Block Mobile from #COUNTRY#
BlkPRS-#COUNTRY#	AllDay	Block Premium from #COUNTRY#
BlkFPH-#COUNTRY#	AllDay	Block FreePhone from #COUNTRY#
BlkPCS-#COUNTRY#	AllDay	Block Personal Com Service #COUNTRY#
BlkSVC-#COUNTRY#	AllDay	Block Service calls from #COUNTRY#
BlkSPR-#COUNTRY#	AllDay	Block Special Rate #COUNTRY#
ConVC-#COUNTRY#	AllDay	Convert Vertical Code
AllowIntl24Hr-#COUNTRY#	AllDay	Allow International calls from #COUNTRY#
AllowMobl24Hr-#COUNTRY#	AllDay	Allow Mobile calls from #COUNTRY#
AllowNatl24Hr-#COUNTRY#	AllDay	Allow National calls from #COUNTRY#
AllowSVC24Hr-#COUNTRY#	AllDay	Allow Service calls from #COUNTRY#
AllowFPN24Hr-#COUNTRY#	AllDay	Allow Freephone (paid by called party) calls from #COUNTRY# (missing in the model)
AllowIntlStd-#COUNTRY#	StandardHours	Allow International calls from #COUNTRY# during standard working hours
AllowMoblStd-#COUNTRY#	StandardHours	Allow Mobile calls from #COUNTRY# during standard working hours
AllowNatlStd-#COUNTRY#	StandardHours	Allow National calls from #COUNTRY# during standard working hours
AllowSVCStd-#COUNTRY#	StandardHours	Allow Service calls from #COUNTRY# during standard working hours
AllowFPNStd-#COUNTRY#	StandardHours	Allow Freephone (paid by called party) calls from #COUNTRY# during standard working hours (missing in the model)

Country-Specific Calling Search Spaces

The following country-specific route pattern is added during the AddProviderCountryIPPBX transaction:

- RouteSelCSS-#COUNTRY#

and is mapped to the following partition:

- RouteSelPT-#COUNTRY#

Route Patterns

The following country-specific route pattern calling search spaces are added during AddProviderCountryIPPBX transaction:

Table 14: Country-Specific Route Patterns

Route Pattern Name	Route Pattern	Partition	Description
NatlCall-#COUNTRY#	\+#COUNTRY#!	RouteSelPT-#COUNTRY#	Route pattern for National Calls
IntlCall-#COUNTRY#	\+.!	RouteSelPT-#COUNTRY#	Route pattern for International Calls
SVCCall-#COUNTRY#	\+01#COUNTRY#!	RouteSelPT-#COUNTRY#	Route pattern for Service Calls
SC-NatlCall-#COUNTRY#	\+#COUNTRY#!	CustSC-RLSel-PT	Route pattern for National calls dialed using Customer Short Code Dialing

Translate Patterns

The country-specific translation patterns to allow or block calls are added during AddProviderCountryIPPBX Transaction. The following table lists all the translation patterns associated with United States:

Table 15: U.S. Translation Patterns

Translation Pattern Name	Translation Pattern	Partition Name	Description
US-Block-International-AIA264	#EXT#.1264[2-9]XXXXXX	BlkIntl-1	Block 1+ calls to Canada and other countries outside of the United States
US-Block-International-ANT721	#EXT#.1721[2-9]XXXXXX	BlkIntl-1	
US-Block-International-ATG268	#EXT#.1268[2-9]XXXXXX	BlkIntl-1	
US-Block-International-BHS242	#EXT#.1242[2-9]XXXXXX	BlkIntl-1	
US-Block-International-BMU441	#EXT#.1441[2-9]XXXXXX	BlkIntl-1	
US-Block-International-BRB246	#EXT#.1246[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN204	#EXT#.1204[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN226	#EXT#.1226[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN249	#EXT#.1249[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN250	#EXT#.1250[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN289	#EXT#.1289[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN306	#EXT#.1306[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN343	#EXT#.1343[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN403	#EXT#.1403[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN416	#EXT#.1416[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN418	#EXT#.1418[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN438	#EXT#.1438[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN450	#EXT#.1450[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN506	#EXT#.1506[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN514	#EXT#.1514[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN519	#EXT#.1519[2-9]XXXXXX	BlkIntl-1	

Translation Pattern Name	Translation Pattern	Partition Name	Description
US-Block-International-CAN579	#EXT#.1579[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN581	#EXT#.1581[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN587	#EXT#.1587[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN604	#EXT#.1604[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN613	#EXT#.1613[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN647	#EXT#.1647[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN705	#EXT#.1705[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN709	#EXT#.1709[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN778	#EXT#.1778[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN780	#EXT#.1780[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN807	#EXT#.1807[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN819	#EXT#.1819[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN867	#EXT#.1867[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN873	#EXT#.1873[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN902	#EXT#.1902[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CAN905	#EXT#.1905[2-9]XXXXXX	BlkIntl-1	
US-Block-International-CYM345	#EXT#.1345[2-9]XXXXXX	BlkIntl-1	
US-Block-International-DMA767	#EXT#.1767[2-9]XXXXXX	BlkIntl-1	
US-Block-International-DOM809	#EXT#.1809[2-9]XXXXXX	BlkIntl-1	
US-Block-International-DOM829	#EXT#.1829[2-9]XXXXXX	BlkIntl-1	
US-Block-International-DOM849	#EXT#.1849[2-9]XXXXXX	BlkIntl-1	
US-Block-International-GRD473	#EXT#.1473[2-9]XXXXXX	BlkIntl-1	
US-Block-International-JAM876	#EXT#.1876[2-9]XXXXXX	BlkIntl-1	
US-Block-International-KNA869	#EXT#.1869[2-9]XXXXXX	BlkIntl-1	

AddProviderCountryIPPBXs

Translation Pattern Name	Translation Pattern	Partition Name	Description
US-Block-International-LCA758	#EXT#.1758[2-9]XXXXXX	BlkIntl-1	
US-Block-International-MSR664	#EXT#.1664[2-9]XXXXXX	BlkIntl-1	
US-Block-International-TCA649	#EXT#.1649[2-9]XXXXXX	BlkIntl-1	
US-Block-International-TTO868	#EXT#.1868[2-9]XXXXXX	BlkIntl-1	
US-Block-International-VCT784	#EXT#.1784[2-9]XXXXXX	BlkIntl-1	
US-Block-International-VGB284	#EXT#.1284[2-9]XXXXXX	BlkIntl-1	
US-Block-PRS1	#EXT#.1700[2-9]XXXXXX	BlkPRS-1	Block Premium Rate calls to 900, 700, and 976 numbers
US-Block-PRS2	#EXT#.1900[2-9]XXXXXX	BlkPRS-1	
US-Block-PRS9	#EXT#.196X[2-9]XXXXXX	BlkPRS-1	
US-Block-PRS10	#EXT#.1976[2-9]XXXXXX	BlkPRS-1	
US-Block-PRS11	#EXT#.1[2-9]XX976XXXX	BlkPRS-1	
US-Block-PCS1	#EXT#.1500[2-9]XXXXXX	BlkPCS-1	Block Personal Communication Service calls
US-Block-PCS2	#EXT#.1533[2-9]XXXXXX	BlkPCS-1	
US-Block-PCS3	#EXT#.1544[2-9]XXXXXX	BlkPCS-1	
US-Block-FPN24Hr1	#EXT#.1800[2-9]XXXXXX	BlkFPH-1	Block calls to Freephone (paid by called party) numbers
US-Block-FPN24Hr2	#EXT#.1855[2-9]XXXXXX	BlkFPH-1	
US-Block-FPN24Hr3	#EXT#.1866[2-9]XXXXXX	BlkFPH-1	
US-Block-FPN24Hr4	#EXT#.1877[2-9]XXXXXX	BlkFPH-1	
US-Block-FPN24Hr5	#EXT#.1888[2-9]XXXXXX	BlkFPH-1	
US-Allow-Intl24Hr1	#EXT#011.!	AllowIntl24Hr-1	Allow direct and operator dialed calls to international numbers
US-Allow-Intl24Hr2	#EXT#011.!#	AllowIntl24Hr-1	
US-Allow-Intl24Hr3	#EXT#.01!	AllowIntl24Hr-1	
US-Allow-Intl24Hr4	#EXT#.01!#	AllowIntl24Hr-1	

Translation Pattern Name	Translation Pattern	Partition Name	Description
US-Allow-IntlStd1	#EXT#011.!	AllowIntlStd-1	Allow direct and operator dialed calls to international numbers during standard working hours
US-Allow-IntlStd2	#EXT#011.!#	AllowIntlStd-1	
US-Allow-IntlStd3	#EXT#.01!	AllowIntlStd-1	
US-Allow-IntlStd4	#EXT#.01!#	AllowIntlStd-1	
US-Allow-Natl24Hr	#EXT#.1[2-9]XX[2-9]XXXXXX	AllowNatl24Hr-1	Allow national calls
US-Allow-NatlStd	#EXT#.1[2-9]XX[2-9]XXXXXX	AllowNatlStd-1	Allow national calls during standard working hours
US-Allow-SVC24Hr1	#EXT#.[2-8]11	AllowSVC24Hr-1	Allow calls to Service Numbers, operators, and Directory Assistance
US-Allow-SVC24Hr2	#EXT#.00!	AllowSVC24Hr-1	
US-Allow-SVC24Hr3	#EXT#.00!#	AllowSVC24Hr-1	
US-Allow-SVC24Hr4	#EXT#.0	AllowSVC24Hr-1	
US-Allow-SVC24Hr5	#EXT#.0#	AllowSVC24Hr-1	
US-Allow-SVC24Hr6	#EXT#.1[2-9]XX5551212	AllowSVC24Hr-1	
US-Allow-SVCStd1	#EXT#.[2-8]11	AllowSVCStd-1	Allow calls to Service Numbers, operators, and Directory Assistance during standard working hours
US-Allow-SVCStd2	#EXT#.00!	AllowSVCStd-1	
US-Allow-SVCStd3	#EXT#.00!#	AllowSVCStd-1	
US-Allow-SVCStd4	#EXT#.0	AllowSVCStd-1	
US-Allow-SVCStd5	#EXT#.0#	AllowSVCStd-1	
US-Allow-SVCStd6	#EXT#.1[2-9]XX5551212	AllowSVCStd-1	
US-Allow-FPN24Hr1	#EXT#.1800[2-9]XXXXXX	AllowFPN24Hr-1	Allow calls to Freephone (paid by called party) numbers
US-Allow-FPN24Hr2	#EXT#.1855[2-9]XXXXXX	AllowFPN24Hr-1	
US-Allow-FPN24Hr3	#EXT#.1866[2-9]XXXXXX	AllowFPN24Hr-1	
US-Allow-FPN24Hr4	#EXT#.1877[2-9]XXXXXX	AllowFPN24Hr-1	
US-Allow-FPN24Hr5	#EXT#.1888[2-9]XXXXXX	AllowFPN24Hr-1	

Translation Pattern Name	Translation Pattern	Partition Name	Description
US-Allow-FPNStd1	#EXT#.1800[2-9]XXXXXX	AllowFPNStd-1	Allow calls to Freephone (paid by called party) numbers during standard working hours
US-Allow-FPNStd2	#EXT#.1855[2-9]XXXXXX	AllowFPNStd-1	
US-Allow-FPNStd3	#EXT#.1866[2-9]XXXXXX	AllowFPNStd-1	
US-Allow-FPNStd4	#EXT#.1877[2-9]XXXXXX	AllowFPNStd-1	
US-Allow-FPNStd5	#EXT#.1888[2-9]XXXXXX	AllowFPNStd-1	

Route Lists

The AddCountry transaction adds country-specific route lists to route national, international, service, and emergency calls.

Table 16: AddCountry Transaction

Route List	Examples	Description
PSTNNAT#COUNTRY#	PSTNNAT1 (for US)	National Calls route list
PSTNINT#COUNTRY#	PSTNINT44 (for UK)	International Calls route list
EMERGENCY#COUNTRY#	EMERGENCY1 (for US)	Emergency calls route list
SERVICE#COUNTRY#	SERVICE91 (for India)	Service Calls route list

Add Location

Cisco Unified Communications Domain Manager uses the AddLocation transaction every time a location is added. The following worksheets are invoked for the AddLocation transaction:

Table 17: AddLocation Transaction

Worksheet	Description
CCM 6.1.x—Partitions	Creates Site Specific Partitions
CCM 6.1.x—CSS	Creates Site Specific calling search spaces
CCM 6.1.x—Partition-CSS Map	Maps Site Specific CSSs and Partitions
CCM 6.1.x—Route Patterns	Adds Emergency route pattern for each site

Worksheet	Description
CCM 6.1.x—Translate Patterns	Adds translation patterns for Intrasite Calls, Intersite Calls, E.164 Calls, Country Specific National and emergency calls

Partitions

The AddLocation transaction creates the following site specific partitions. The site ID is appended to each partition.

Table 18: AddLocation Partitions

Partition Name	Time Schedule	Description
AllowEmerCalls<site>	AllDay	Allow EMERGENCY#COUNTRY# Calls
EmerCalls<site>	AllDay	Allow EMERGENCY Calls
AllowInternal<site>	AllDay	Allow Internal
InternalCallsCLIR<site>	AllDay	Intra and intersite Calls Calling Line Identification Restriction (CLIR)
Site<site>	AllDay	Site partition
OutOfService<site>	AllDay	Out of Service Partition
AllowLocal24Hr-#COUNTRY#<site>	AllDay	Allow Local calls from #COUNTRY#
AllowLLBO24Hr-#COUNTRY#<site>	AllDay	Allow Local calls from #COUNTRY# using local breakout (LBO)
AllowILBO24Hr-#COUNTRY#<site>	AllDay	Allow International calls* from #COUNTRY# using LBO
AllowMLBO24Hr-#COUNTRY#<site>	AllDay	Allow Mobile calls from #COUNTRY# using LBO
AllowNLBO24Hr-#COUNTRY#<site>	AllDay	Allow National calls* from #COUNTRY# using LBO
AllowSLBO24Hr-#COUNTRY#<site>	AllDay	Allow Service calls from #COUNTRY# using LBO
AllowLocalStd-#COUNTRY#<site>	StandardHours	Allow Local calls from #COUNTRY#
AllowLLBOSTd-#COUNTRY#<site>	StandardHours	Allow Local calls from #COUNTRY# using LBO

Partition Name	Time Schedule	Description
AllowILBOSD-#COUNTRY#<site>	StandardHours	Allow International calls from #COUNTRY# using LBO
AllowMLBOSD-#COUNTRY#<site>	StandardHours	Allow Mobile calls from #COUNTRY# using LBO
AllowNLBOSD-#COUNTRY#<site>	StandardHours	Allow National calls from #COUNTRY# using LBO
AllowSLBOSD-#COUNTRY#<site>	StandardHours	Allow Service calls from #COUNTRY# using LBO
AllowVMCalls<site>	AllDay	Allow Voicemail calls
PlusIntl24Hrs-Enh#COUNTRY#<site>	AllDay	Allow Plus Dialing for International Enhanced calls* from #COUNTRY#
PlusIntl24Hrs-Std#COUNTRY#<site>	AllDay	Allow Plus Dialing for International Standard calls* from #COUNTRY#
PlusNatl24Hrs-Enh#COUNTRY#<site>	AllDay	Allow Plus Dialing for National Enhanced calls* from #COUNTRY#
PlusNatl24Hrs-Std#COUNTRY#<site>	AllDay	Allow Plus Dialing for National Standard COS* from #COUNTRY#
PlusNatl24Hrs-Rst#COUNTRY#<site>	AllDay	Allow Plus Dialing for National Restricted COS* from #COUNTRY#
PlusIntlWrkHrs-Enh#COUNTRY#<site>	StandardHours	Allow Plus Dialing for International Enhanced calls* from #COUNTRY#
PlusIntlWrkHrs-Std#COUNTRY#<site>	StandardHours	Allow Plus Dialing for International Standard calls* from #COUNTRY#
PlusNatlWrkHrs-Enh#COUNTRY#<site>	StandardHours	Allow Plus Dialing for National Enhanced calls* from #COUNTRY#
PlusNatlWrkHrs-Std#COUNTRY#<site>	StandardHours	Allow Plus Dialing for National Standard COS* from #COUNTRY#
PlusNatlWrkHrs-Rst#COUNTRY#<site>	StandardHours	Allow Plus Dialing for National Restricted COS* from #COUNTRY#
LocSCode24Hrs-PT<site>	AllDay	Location Short Code
LocSCodeWrkHrs-PT<site>	StandardHours	Location Short Code
*For definition, see Predefined Telephone Class of Service Types , on page 7		

Calling Search Spaces

The following site specific calling search spaces are created during the AddLocation transaction:

Note The following table is based on HCS Software Release 8.6(2) and may not include all Calling search spaces. Refer to the latest dial plan model for a complete list of available CSSs.

Table 19: Calling Search Spaces

Calling Search Space Name	Description
TempOutOfService-CSS<site>	Calling search spaces used for TOS
IncomingToSite-CSS<site>	IncomingToSite
EmergencyOnly-CSS<site>	EmergencyOnly
EmergencyCalls-CSS<site>	EmergencyCalls
Intl24HrsEnh-CSS<site>	International 24 Hours - Enhanced
Intl24HrsStd-CSS<site>	International 24 Hours - Standard
IntlWrkHrsEnh-CSS<site>	International Working Hours - Enhanced
IntlWrkHrsStd-CSS<site>	International Working Hours - Standard
Natl24HrsEnh-CSS<site>	National 24 Hours - Enhanced
Natl24HrsStd-CSS<site>	National 24 Hours - Standard
Natl24HrsRst-CSS<site>	National 24 Hours - Restricted
NatlWrkHrsEnh-CSS<site>	National Working Hours - Enhanced
NatlWrkHrsStd-CSS<site>	National Working Hours - Standard
NatlWrkHrsRst-CSS<site>	National Working Hours - Restricted
Local24HrsEnh-CSS<site>	Local 24 Hours - Enhanced
Local24HrsRst-CSS<site>	Local 24 Hours - Restricted
Internal-CSS<site>	Intra and intersite calls only (Calling Line Identification Presentation (CLIP) is default)
InternalCLIR-CSS<site>	Intra and intersite calls only with Calling Line Identification Restriction (CLIR)
BlockAllCF-CSS<site>	BlockAllCF-CSS

Calling Search Space Name	Description
PSTNIntMobCF<site>	PSTNIntMobCF
PSTNMobCF<site>	PSTNMobCF
PSTNCF<site>	PSTNCF
InternalCF<site>	InternalCF
InternalCLIRCF<site>	InternalCLIRCF
NoRestrictionsCF<site>	NoRestrictionsCF
SUBSCRIBE<site>	Cisco IM and Presence Subscribe CSS
Voicemail-CSS<site>	Voicemail
IncomingFromLGW-CSS<site>	IncomingFromLGW-CSS
CallingT2LGW-CSS<site>	CallingTransformation To Local Gateway (LGW)

Calling Search Space to Partition Mapping

The AddLocation transaction maps the following calling search spaces and partitions based on each class of service that is associated with the calling search space:

Note The following table is based on HCS Software Release 8.6(2) and may not include all Calling search spaces. Refer to the latest dial plan model for a complete list of available CSSs.

Table 20: Calling Search Space to Partition Mapping

Calling Search Space Name	Order	Partition Name
BlockAllCF-CSS	0	NullPartition
EmergencyCalls-CSS	0	EmerCalls
EmergencyOnly-CSS	0	AllowEmerCalls
IncomingToSite-CSS	1	Site
InternalCLIR-CSS	0	InternalCallsCLIR
Internal-CSS	32	InterSiteRoutingPT
Internal-CSS	33	AllowVMCalls
Internal-CSS	34	AllowInternal
Internal-CSS	35	Site

Calling Search Space Name	Order	Partition Name
Intl24HrsEnh-CSS	7	CustSCode24Hrs-PT
Intl24HrsEnh-CSS	8	LocSCode24Hrs-PT
Intl24HrsEnh-CSS	10	AllowLLBO24Hr-#COUNTRY#
Intl24HrsEnh-CSS	11	AllowILBO24Hr-#COUNTRY#
Intl24HrsEnh-CSS	12	AllowMLBO24Hr-#COUNTRY#
Intl24HrsEnh-CSS	13	AllowNLBO24Hr-#COUNTRY#
Intl24HrsEnh-CSS	14	AllowSLBO24Hr-#COUNTRY#
Intl24HrsEnh-CSS	20	AllowLocal24Hr-#COUNTRY#
Intl24HrsEnh-CSS	21	AllowIntl24Hr-#COUNTRY#
Intl24HrsEnh-CSS	22	AllowMobl24Hr-#COUNTRY#
Intl24HrsEnh-CSS	23	AllowNatl24Hr-#COUNTRY#
Intl24HrsEnh-CSS	24	AllowSVC24Hr-#COUNTRY#
Intl24HrsEnh-CSS	29	PlusIntl24Hrs-Enh#COUNTRY#
Intl24HrsEnh-CSS	32	InterSiteRoutingPT
Intl24HrsEnh-CSS	33	AllowVMCalls
Intl24HrsEnh-CSS	34	AllowInternal
Intl24HrsEnh-CSS	35	Site
Intl24HrsStd-CSS	1	BlkPRS-#COUNTRY#
Intl24HrsStd-CSS	2	BlkPCS-#COUNTRY#
Intl24HrsStd-CSS	7	CustSCode24Hrs-PT
Intl24HrsStd-CSS	8	LocSCode24Hrs-PT
Intl24HrsStd-CSS	10	AllowLLBO24Hr-#COUNTRY#
Intl24HrsStd-CSS	11	AllowILBO24Hr-#COUNTRY#
Intl24HrsStd-CSS	12	AllowMLBO24Hr-#COUNTRY#

Calling Search Space Name	Order	Partition Name
Intl24HrsStd-CSS	13	AllowNLBO24Hr-#COUNTRY#
Intl24HrsStd-CSS	14	AllowSLBO24Hr-#COUNTRY#
Intl24HrsStd-CSS	20	AllowLocal24Hr-#COUNTRY#
Intl24HrsStd-CSS	21	AllowIntl24Hr-#COUNTRY#
Intl24HrsStd-CSS	22	AllowMobl24Hr-#COUNTRY#
Intl24HrsStd-CSS	23	AllowNatl24Hr-#COUNTRY#
Intl24HrsStd-CSS	24	AllowSVC24Hr-#COUNTRY#
Intl24HrsStd-CSS	29	PlusIntl24Hrs-Std#COUNTRY#
Intl24HrsStd-CSS	32	InterSiteRoutingPT
Intl24HrsStd-CSS	33	AllowVMCalls
Intl24HrsStd-CSS	34	AllowInternal
Intl24HrsStd-CSS	35	Site
IntlWrkHrsEnh-CSS	7	CustSCodeWrkHrs-PT
IntlWrkHrsEnh-CSS	8	LocSCodeWrkHrs-PT
IntlWrkHrsEnh-CSS	10	AllowLLBOStd-#COUNTRY#
IntlWrkHrsEnh-CSS	11	AllowILBOStd-#COUNTRY#
IntlWrkHrsEnh-CSS	12	AllowMLBOStd-#COUNTRY#
IntlWrkHrsEnh-CSS	13	AllowNLBOStd-#COUNTRY#
IntlWrkHrsEnh-CSS	14	AllowSLBOStd-#COUNTRY#
IntlWrkHrsEnh-CSS	20	AllowLocalStd-#COUNTRY#
IntlWrkHrsEnh-CSS	21	AllowIntlStd-#COUNTRY#
IntlWrkHrsEnh-CSS	22	AllowMoblStd-#COUNTRY#
IntlWrkHrsEnh-CSS	23	AllowNatlStd-#COUNTRY#
IntlWrkHrsEnh-CSS	24	AllowSVCStd-#COUNTRY#

Calling Search Space Name	Order	Partition Name
IntlWrkHrsEnh-CSS	29	PlusIntlWrkHrs-Enh#COUNTRY#
IntlWrkHrsEnh-CSS	32	InterSiteRoutingPT
IntlWrkHrsEnh-CSS	33	AllowVMCalls
IntlWrkHrsEnh-CSS	34	AllowInternal
IntlWrkHrsEnh-CSS	35	Site
IntlWrkHrsStd-CSS	1	BlkPRS-#COUNTRY#
IntlWrkHrsStd-CSS	2	BlkPCS-#COUNTRY#
IntlWrkHrsStd-CSS	7	CustSCodeWrkHrs-PT
IntlWrkHrsStd-CSS	8	LocSCodeWrkHrs-PT
IntlWrkHrsStd-CSS	10	AllowLLBOSTd-#COUNTRY#
IntlWrkHrsStd-CSS	11	AllowILBOSTd-#COUNTRY#
IntlWrkHrsStd-CSS	12	AllowMLBOSTd-#COUNTRY#
IntlWrkHrsStd-CSS	13	AllowNLBOSTd-#COUNTRY#
IntlWrkHrsStd-CSS	14	AllowSLBOSTd-#COUNTRY#
IntlWrkHrsStd-CSS	20	AllowLocalStd-#COUNTRY#
IntlWrkHrsStd-CSS	21	AllowIntlStd-#COUNTRY#
IntlWrkHrsStd-CSS	22	AllowMoblStd-#COUNTRY#
IntlWrkHrsStd-CSS	23	AllowNatlStd-#COUNTRY#
IntlWrkHrsStd-CSS	24	AllowSVCStd-#COUNTRY#
IntlWrkHrsStd-CSS	29	PlusIntlWrkHrs-Std#COUNTRY#
IntlWrkHrsStd-CSS	32	InterSiteRoutingPT
IntlWrkHrsStd-CSS	33	AllowVMCalls
IntlWrkHrsStd-CSS	34	AllowInternal
IntlWrkHrsStd-CSS	35	Site

Calling Search Space Name	Order	Partition Name
Local24HrsEnh-CSS	1	BlkPRS-#COUNTRY#
Local24HrsEnh-CSS	2	BlkIntl-#COUNTRY#
Local24HrsEnh-CSS	3	BlkPCS-#COUNTRY#
Local24HrsEnh-CSS	4	BlkMobl-#COUNTRY#
Local24HrsEnh-CSS	5	BlkNatl-#COUNTRY#
Local24HrsEnh-CSS	10	AllowLLBO24Hr-#COUNTRY#
Local24HrsEnh-CSS	11	AllowSLBO24Hr-#COUNTRY#
Local24HrsEnh-CSS	20	AllowLocal24Hr-#COUNTRY#
Local24HrsEnh-CSS	21	AllowSVC24Hr-#COUNTRY#
Local24HrsEnh-CSS	32	InterSiteRoutingPT
Local24HrsEnh-CSS	33	AllowVMCalls
Local24HrsEnh-CSS	34	AllowInternal
Local24HrsEnh-CSS	35	Site
Natl24HrsEnh-CSS	1	BlkIntl-#COUNTRY#
Natl24HrsEnh-CSS	7	CustSCode24Hrs-PT
Natl24HrsEnh-CSS	8	LocSCode24Hrs-PT
Natl24HrsEnh-CSS	10	AllowLLBO24Hr-#COUNTRY#
Natl24HrsEnh-CSS	11	AllowMLBO24Hr-#COUNTRY#
Natl24HrsEnh-CSS	12	AllowNLBO24Hr-#COUNTRY#
Natl24HrsEnh-CSS	13	AllowSLBO24Hr-#COUNTRY#
Natl24HrsEnh-CSS	20	AllowLocal24Hr-#COUNTRY#
Natl24HrsEnh-CSS	21	AllowMobl24Hr-#COUNTRY#
Natl24HrsEnh-CSS	22	AllowNatl24Hr-#COUNTRY#
Natl24HrsEnh-CSS	23	AllowSVC24Hr-#COUNTRY#

Calling Search Space Name	Order	Partition Name
Natl24HrsEnh-CSS	29	PlusNatl24Hrs-Enh#COUNTRY#
Natl24HrsEnh-CSS	32	InterSiteRoutingPT
Natl24HrsEnh-CSS	33	AllowVMCalls
Natl24HrsEnh-CSS	34	AllowInternal
Natl24HrsEnh-CSS	35	Site
Natl24HrsRst-CSS	1	BlkPRS-#COUNTRY#
Natl24HrsRst-CSS	2	BlkIntl-#COUNTRY#
Natl24HrsRst-CSS	3	BlkPCS-#COUNTRY#
Natl24HrsRst-CSS	4	BlkMobl-#COUNTRY#
Natl24HrsRst-CSS	7	CustSCode24Hrs-PT
Natl24HrsRst-CSS	8	LocSCode24Hrs-PT
Natl24HrsRst-CSS	10	AllowLLBO24Hr-#COUNTRY#
Natl24HrsRst-CSS	11	AllowNLBO24Hr-#COUNTRY#
Natl24HrsRst-CSS	12	AllowSLBO24Hr-#COUNTRY#
Natl24HrsRst-CSS	20	AllowLocal24Hr-#COUNTRY#
Natl24HrsRst-CSS	21	AllowNatl24Hr-#COUNTRY#
Natl24HrsRst-CSS	22	AllowSVC24Hr-#COUNTRY#
Natl24HrsRst-CSS	29	PlusNatl24Hrs-Rst#COUNTRY#
Natl24HrsRst-CSS	32	InterSiteRoutingPT
Natl24HrsRst-CSS	33	AllowVMCalls
Natl24HrsRst-CSS	34	AllowInternal
Natl24HrsRst-CSS	35	Site
Natl24HrsStd-CSS	1	BlkPRS-#COUNTRY#
Natl24HrsStd-CSS	2	BlkIntl-#COUNTRY#

Calling Search Space Name	Order	Partition Name
Natl24HrsStd-CSS	3	BlkPCS-#COUNTRY#
Natl24HrsStd-CSS	7	CustSCode24Hrs-PT
Natl24HrsStd-CSS	8	LocSCode24Hrs-PT
Natl24HrsStd-CSS	10	AllowLLBO24Hr-#COUNTRY#
Natl24HrsStd-CSS	11	AllowMLBO24Hr-#COUNTRY#
Natl24HrsStd-CSS	12	AllowNLBO24Hr-#COUNTRY#
Natl24HrsStd-CSS	13	AllowSLBO24Hr-#COUNTRY#
Natl24HrsStd-CSS	20	AllowLocal24Hr-#COUNTRY#
Natl24HrsStd-CSS	21	AllowMobl24Hr-#COUNTRY#
Natl24HrsStd-CSS	22	AllowNatl24Hr-#COUNTRY#
Natl24HrsStd-CSS	23	AllowSVC24Hr-#COUNTRY#
Natl24HrsStd-CSS	29	PlusNatl24Hrs-Std#COUNTRY#
Natl24HrsStd-CSS	32	InterSiteRoutingPT
Natl24HrsStd-CSS	33	AllowVMCalls
Natl24HrsStd-CSS	34	AllowInternal
Natl24HrsStd-CSS	35	Site
NatlWrkHrsEnh-CSS	1	BlkIntl-#COUNTRY#
NatlWrkHrsEnh-CSS	7	CustSCodeWrkHrs-PT
NatlWrkHrsEnh-CSS	8	LocSCodeWrkHrs-PT
NatlWrkHrsEnh-CSS	10	AllowLLBOStd-#COUNTRY#
NatlWrkHrsEnh-CSS	11	AllowMLBOStd-#COUNTRY#
NatlWrkHrsEnh-CSS	12	AllowNLBOStd-#COUNTRY#
NatlWrkHrsEnh-CSS	13	AllowSLBOStd-#COUNTRY#
NatlWrkHrsEnh-CSS	20	AllowLocalStd-#COUNTRY#

Calling Search Space Name	Order	Partition Name
NatlWrkHrsEnh-CSS	21	AllowMoblStd-#COUNTRY#
NatlWrkHrsEnh-CSS	22	AllowNatlStd-#COUNTRY#
NatlWrkHrsEnh-CSS	23	AllowSVCStd-#COUNTRY#
NatlWrkHrsEnh-CSS	29	PlusNatlWrkHrs-Enh#COUNTRY#
NatlWrkHrsEnh-CSS	32	InterSiteRoutingPT
NatlWrkHrsEnh-CSS	33	AllowVMCalls
NatlWrkHrsEnh-CSS	34	AllowInternal
NatlWrkHrsEnh-CSS	35	Site
NatlWrkHrsRst-CSS	1	BlkPRS-#COUNTRY#
NatlWrkHrsRst-CSS	2	BlkIntl-#COUNTRY#
NatlWrkHrsRst-CSS	3	BlkPCS-#COUNTRY#
NatlWrkHrsRst-CSS	4	BlkMobl-#COUNTRY#
NatlWrkHrsRst-CSS	7	CustSCodeWrkHrs-PT
NatlWrkHrsRst-CSS	8	LocSCodeWrkHrs-PT
NatlWrkHrsRst-CSS	10	AllowLLBOSD-#COUNTRY#
NatlWrkHrsRst-CSS	11	AllowNLBOSD-#COUNTRY#
NatlWrkHrsRst-CSS	12	AllowSLBOSD-#COUNTRY#
NatlWrkHrsRst-CSS	20	AllowLocalStd-#COUNTRY#
NatlWrkHrsRst-CSS	21	AllowNatlStd-#COUNTRY#
NatlWrkHrsRst-CSS	22	AllowSVCStd-#COUNTRY#
NatlWrkHrsRst-CSS	29	PlusNatlWrkHrs-Rst#COUNTRY#
NatlWrkHrsRst-CSS	32	InterSiteRoutingPT
NatlWrkHrsRst-CSS	33	AllowVMCalls
NatlWrkHrsRst-CSS	34	AllowInternal

Calling Search Space Name	Order	Partition Name
NatlWrkHrsRst-CSS	35	Site
NatlWrkHrsStd-CSS	1	BlkPRS-#COUNTRY#
NatlWrkHrsStd-CSS	2	BlkIntl-#COUNTRY#
NatlWrkHrsStd-CSS	3	BlkPCS-#COUNTRY#
NatlWrkHrsStd-CSS	7	CustSCodeWrkHrs-PT
NatlWrkHrsStd-CSS	8	LocSCodeWrkHrs-PT
NatlWrkHrsStd-CSS	10	AllowLLBOStd-#COUNTRY#
NatlWrkHrsStd-CSS	11	AllowMLBOStd-#COUNTRY#
NatlWrkHrsStd-CSS	12	AllowNLBOStd-#COUNTRY#
NatlWrkHrsStd-CSS	13	AllowSLBOStd-#COUNTRY#
NatlWrkHrsStd-CSS	20	AllowLocalStd-#COUNTRY#
NatlWrkHrsStd-CSS	21	AllowMoblStd-#COUNTRY#
NatlWrkHrsStd-CSS	22	AllowNatlStd-#COUNTRY#
NatlWrkHrsStd-CSS	23	AllowSVCSd-#COUNTRY#
NatlWrkHrsStd-CSS	29	PlusNatlWrkHrs-Std#COUNTRY#
NatlWrkHrsStd-CSS	32	InterSiteRoutingPT
NatlWrkHrsStd-CSS	33	AllowVMCalls
NatlWrkHrsStd-CSS	34	AllowInternal
NatlWrkHrsStd-CSS	35	Site
TempOutOfService-CSS	0	AllowEmerCalls
TempOutOfService-CSS	1	OutOfService
Voicemail-CSS	0	AllowVMCalls

Route Patterns

The AddLocation transaction is used in the Country Dial Plan to create site-specific route patterns to route emergency calls. For the United States, the AddLocation creates following route pattern:

Table 21: U.S. Emergency Call Routing

Route Pattern Name	USEmerCalls911
Route Pattern	\+021.911
Partition Name	EmerCalls
Route List Name	EMERGENCY#COUNTRY#
Local Gateway Route List	EMERGENCY-LBO-#LOCATION-ID#
Description	Route US emergency calls

Translate Patterns

In Cisco HCS 8.6(2) and earlier, the following Translation Patterns were created by the AddLocation Transaction to route intrasite and intersite calls. As of Cisco HCS Release 9.0(1), the IntraSite and InterSite translation patterns are created using ENT Templates. This table applies to the Generic Dial Plan (G1) only.

Table 22: Intrasite and Intersite Call Routing

Translation Pattern Name	Translation Pattern	Partition Name	Calling Search Space Name	Calling Mask	Called Mask
IntraSite	[^#FIRSTSLCDIGIT##EXT#] #SITEMASKMINUSONE#	AllowInternal	IncomingToSite-CSS	#SITECODE# #SITEMASK#	#SITECODE# #SITEMASK#
InterSite	#SITECODE# #SITEMASK#	InterSiteRoutingPT	IncomingToSite-CSS		

In addition, site-specific country-based translation patterns are created.

Bulk-Load Customer and Division-Level Settings

Procedure

-
- Step 1** Unhash Column A (Add Customer Flag) in the #CUSTOMER-LOCATIONS-INPUT sheet (normally cell A20).
- Step 2** Click **Save**.
- Step 3** Browse to **CUCDM - General Tools > Bulk Load Tools > Schedule new job > Browse**.
- Step 4** Load the Customer-Divisions-Locations loader.
- Step 5** Monitor the Cisco Unified Communications Domain Manager Transaction and Device Logs and confirm the following required settings have been added:
- a) Customers and Divisions
 - b) Customer-level and Division-level administrators
 - c) Hardware Groups associated with the customer

Note This will trigger AddCustomer dialplan loading in the PGW and SME transit switches if in use.
 - d) Customer Feature Groups
 - e) Customer preference settings
 - f) Customer WebEx service
 - g) Customer Media Services
-

Bulk-Load Location Settings

Procedure

-
- Step 1** Unhash Column B (Add Customer Flag) in the #CUSTOMER-LOCATIONS-INPUT sheet (lines 20 to 41 as required).
- Step 2** Click **Save**.
- Step 3** Browse to **CUCDM - General Tools > Bulk Load Tools > Schedule new job > Browse**.
- Step 4** Load the **Customer-Divisions-Locations** loader.
- Step 5** Monitor the Cisco Unified Communications Domain Manager Transaction logs and Device Logs and confirm the required settings have been added, for example:
- a) Feature Configuration Templates added
 - b) All-Location InterSite and IntraSite ENT patterns loaded
 - c) Bandwidth Groups loaded (where sites are sharing CAC bandwidth)
 - d) Managed IP Subnets loaded (only for Cisco Unified Communications Domain Manager DHCP-managed subnets)
 - e) Site-Codes
 - f) PSTN Area Codes
 - g) PSTN Numbers for Location Emergency Number

- h) Directory Partition (for Cisco Unified Communications Domain Manager Corporate Directory partitioning, if required)
- i) Locations added plus associated Location-level Dial Plan
- j) Location custom-device pools
- k) Location preference settings
- l) Location subnets (Unmanaged or Managed) (for Cisco HCS, this should normally be an “Unmanaged Subnet”)
- m) Location PSTN Number association with Location extension (if required)
- n) GeoLocation added (recommended if multicountry call-routing control is required)
- o) Customer-Level Voicemail Service settings (when first location is added)
- p) Location-Level Voicemail settings
- q) Voicemail PSTN pilot numbers
- r) Customer Attendant Console and Contact Center settings (as required)

What to Do Next

On completion of loading the Customer-, Division-, and Location-level settings, the Cisco HCS platform will be primed and ready for the addition of users, phones, and services into Customer-Locations. These can either be loaded using the Cisco Unified Communications Domain Manager GUI or in bulk using the LocationAdmin loader.

The VS-P1 LocationAdmin loader provides reference examples of the loader worksheets: C3-CUCDM81x-VS-P1-LocationAdmin(Extended Formula-Loader)vy(VS-Corp)(where x is the Cisco Unified Communications Domain Manager version number and y is the worksheet version number).

Refer to the Cisco Unified Communications Domain Manager Bulk loader and Training Documentation for more information on bulk loading user and phone services.

Associate Full National Number Transaction

The AssociateFNN or FNN-Range transaction is used to create translation patterns to map Direct Dialed Inward (DDI) numbers to internal DNs.

It is also used to create transformation patterns to convert the Internal DN to a DDI Number and is used to add route patterns and route lists for voicemail.

Table 23: FNN Transaction

Worksheet	Description
CCM 6.1.x—Route Patterns	Adds VM-related route patterns, route lists.
CCM 6.1.x—Translate Patterns	Adds translation pattern for DDI to DN Mapping.
CCM 6.1.x—Transform Patterns	Adds transformation patterns for DN to DDI Mapping.

Route Patterns

The following site-specific route patterns are created by the AssociateFNN transaction.

Table 24: AssociateFNN Transaction

Route Pattern Name	Route Pattern	Partition Name	Route List Name
AllowVMCallsExt	\+#COUNTRY##NATCODE##FNN#	E.164LookUp	RL-UNITY#VMCPID#
AllowLGWVMCallsExt	\+#COUNTRY##NATCODE##FNN#	E.164LookUp	RL-UNITY#VMCPID#

The following site-specific route patterns using country dial plan are created by the AssociateFNN-Range transaction. The table shows specific route patterns for the United States.

Table 25: U.S.-Specific Route Patterns

Route Pattern Name	Route Pattern	Partition Name	Route List Name	Description
AllowRVMCallsUS	\+1#NATCODE##E.164RANGEPREFIX##E.164RANGEMASK#	E.164LookUp	RL-UNITY#VMCPID#	Route PSTN Calls to voice mail - Cisco Unity
AllowLGWRVMCallsUS	\+1#NATCODE##E.164RANGEPREFIX##E.164RANGEMASK#	E.164LookUp	RL-UNITY#VMCPID#	Route PSTN Calls to voice mail - Cisco Unity Connection - via LGW

Translate Patterns

The following site-specific translation patterns using Generic leaf cluster dial plans are created by the AssociateFNN and AssociateFNN-Range transactions.

Table 26: Site-Specific Translation Patterns

Translation Pattern Name	Translation Pattern	Partition Name
DDI2DNmapping	\+#COUNTRY##NATCODE##FNN#	E.164LookUp
DDI2DNrangemapping	\+#COUNTRY##NATCODE##E.164RANGEPREFIX##E.164RANGEMASK#	E.164LookUp
E.164-IncomingLGWH.323	\+#COUNTRY##NATCODE##FNN#	E.164LookUp
E.164-IncomingLGWH.323-Range	\+#COUNTRY##E.164RANGEPREFIX##E.164RANGEMASK#	E.164LookUp
E.164-IncomingLGWMGCP	\+#COUNTRY##NATCODE##FNN#	E.164LookUp

Translation Pattern Name	Translation Pattern	Partition Name
E.164-IncomingLGWMGCP-Range	\+#COUNTRY##E.164RANGEPREFIX##E.164RANGEMASK#	E.164LookUp

Transformation Patterns

The following site-specific Calling Party Transformation patterns using the generic leaf cluster dial plan are created by the AssociateFNN and AssociateFNN-Range transactions.

Table 27: Calling Party Transformation Patterns

Translation Pattern Name	Translation Pattern	Partition Name	Calling Mask
DN2DDIRange4 EmerCallsP	*#LRID##PBXFINRANGEPREFIX##EXTRANGEMASK#	CallingT4Emer CallPT	#NATCODE##E.164RANGEPREFIX# #E.164RANGEMASK#
LBODN2DDIR4 EmerCallsP	*#LRID##PBXFINRANGEPREFIX##EXTRANGEMASK#	CallingT4Emer CallPT	#NATCODE##E.164RANGEPREFIX# #E.164RANGEMASK#
DN2DDI4Emer CallsP	*#LRID##SITECODE##EXTENSION#	CallingT4Emer CallPT	#NATCODE##FNN#
LBODN2DDI4Emer CallsP	*#LRID##SITECODE##EXTENSION#	CallingT4Emer CallPT	#NATCODE##FNN#

ConnectIPPBXIPPBX Transaction

Cisco Unified Communications Domain Manager uses the Connect IPPBX transaction to connect:

- Cisco Unified Communications Manager to other Cisco Unified Communications Managers
- Cisco Unified Communications Manager to unmanaged PBX

Cisco Unified Communications Domain Manager uses the following transaction to create the H.323 trunk:

Table 28: H.323 Trunk

Transaction Name	Trunk Name	Partition Name
ConnectIPPBXIPPBX-Unmanaged	TR-UNMANPBX-H.323-#RICPID#	Intercluster H.323 trunk (non-gatekeeper controlled)

Cisco Unified Communications Domain Manager uses the following transactions to create SIP trunks.

Table 29: SIP Trunks

Transaction Name	Trunk Name	Description
ConnectIPPBXIPPBX	ICT-SIP-#RICPID#	SIP trunk to another Cisco Unified Communications Manager (intercluster trunk)
ConnectIPPBXIPPBX-Unmanaged	TR-UNMANPBX-SIP-#RICPID#	SIP trunk to unmanaged PBX

Cisco Unified Communications Domain Manager uses the following transactions to create route lists.

Table 30: Route Lists

Transaction Name	Route List Name	Description
ConnectIPPBXIPPBX	RL-IPPBX-SIP-#RICPID#	ICT route list
	RG-IPPBX-SIP-#RICPID#	Intercluster route group to other intercluster
ConnectIPPBXIPPBX-Unmanaged	RL-UNMANPBX-H.323-#RICPID#	Route list to unmanaged PBX (H.323).
	RG-UNMANPBX-H.323-#RICPID#	Route group to unmanaged PBX (H.323)
ConnectIPPBXIPPBX-Unmanaged	RL-UNMANPBX-SIP-#RICPID#	Route list to unmanaged PBX (SIP)
	RG-UNMANPBX-SIP-#RICPID#	Route group to unmanaged PBX (SIP)

Table 31: Route Lists and Route Group Names

Transaction Name	Route List Name	Route Group Name	Description
ConnectIPPBXIPPBX	RL-IPPBX-SIP-#RICPID#	RG-IPPBX-SIP-#RICPID#	Routing for ICT traffic
ConnectIPPBXIPPBX-Unmanaged	RL-UNMANPBX-H.323-#RICPID#	RG-UNMANPBX-H.323-#RICPID#	RL-RG Unmanaged PBX mapping
ConnectIPPBXIPPBX-Unmanaged	RL-UNMANPBX-SIP-#RICPID#	RG-UNMANPBX-SIP-#RICPID#	RL-RG Unmanaged PBX mapping

AddLocationLocalGateway

Cisco Unified Communications Domain Manager uses the AddLocationLocalGateway transaction when a local gateway is added to a location to handle Local PSTN breakout. The configuration consists of the following:

- IOS gateway configuration

- Trunk, route group and route list associated with the IOS gateway
- CSS, partition to handle incoming calls from the IOS gateway
- Translation and route patterns to handle outgoing and incoming calls from the IOS gateway

Table 32: AddLocationLocalGateway Transaction

Filename	Worksheet	Description
Generic LC	CCM 6.1.x— Partitions	Adds the following partitions: <ul style="list-style-type: none"> • RouteSelPT-LBO - Route Selection Partition for LBO • AddPlus - Insertion of Plus • LBOCallingT4CFwdCallPT - LBO Plus Handling for Call Forward Calls • LBODN2DDIMapping-PT • LBOCalledTransf-PT • FACRteSelPT-LBO
	CCM 6.1.x—CSS	Adds the following calling search spaces: <ul style="list-style-type: none"> • RouteSelCSS-LBO - Route Selection CSS for LBO • IncomingFromLGW-CSS - IncomingFromLGW-CSS • CallingT2LGW-CSS - CallingTransformation To LGW • LBODN2DDIMapping-CSS • LBOCalledTransf-CSS • FACRteSelCSS-LBO
	CCM 6.1.x— Partition—CSS Map	Maps partitions to calling search space
	CCM 6.1.x—Route Patterns	Adds Country-specific National, International and Service Route patterns for LBO routing. It also maps Route patterns to LBO route lists.
	CCM 6.1.x—Translate Patterns	Adds translation pattern EXTNAT-IncomingLGW (#EXT##NAT#!) to add + for calls incoming from local gateway.
	CCM 6.1.x— Transform Patterns	Provides Calling Number Transformation for Handling Incoming PSTN number with +. During Call Forwarding replace + with * so that it can be transported across SIP or H.323. In IOS, replaces the whole number with the Site Published Number.
	CCM 6.1.x—Route Lists	Adds route lists to route National, International, Service and emergency calls through LBO. Adds route lists for Tail End Hop Off towards LBO - #LOCATION-ID#

Filename	Worksheet	Description
	CCM 6.1.x—Route Groups	Adds route group toward local gateway.
	CCM 6.1.x—RL-RG Mappings	Maps previous route group to route lists toward LBO.
Country Routing (U.S., GBR)	CCM 6.1.x—Translate Patterns	Adds country-specific translation patterns to route local, national, international, service, and emergency calls through LBO.

AddSNR

Unified Communications Domain Manager uses the AddSNR transaction when the Single Number Reach (SNR) feature (part of Cisco Unified Mobility) is enabled for a specified location. The following worksheets are invoked.

Table 33: AddSNR Transaction

Filename	Worksheet	Description
Generic LC	CCM 6.1.x—Partitions	Adds SNRRRPT partition.
	CCM 6.1.x—CSS	SNRRRCSS—Mobile Connect ReRouting CSS.
	CCM 6.1.x—Partition-CSS Map	Maps preceding partition to CSS.
Country Routing (for example, US or GBR)	CCM 6.1.x—Route Patterns	Country-specific national and international route patterns for SNR mobile connect routing.

Emergency Calling Line Identification

Emergency Calling Line Identification (CLI) is a Cisco Unified Communications Domain Manager enhancement for the Hosted Collaboration Solution Dial Plan that allows a site to send either the Device CLI or the Site Emergency Published Number to Cisco Unified Communications Manager when an emergency call is made. This feature was previously available in Cisco Hosted Unified Communications Services (HUCS).

This feature is useful to send a callback from the Emergency Service to the device that made the original emergency call (Device CLI) or a Published Number (for example, Security desk or Attendant), on either a customer or location basis.

The Cisco Unified Communications Manager performs the number transformations for Emergency CLI using the following transactions:

- EmergencyCLI (ipt_emergencycli.pl)
- AssociateFNN (ipt_associatefnn.pl)
- DisassociateFNN (ipt_disassociatefnn.pl)
- ModPrimaryFNN (ipt_modprimaryfnn.pl - for Hosted Unified Communications Services only)

If you are an existing customer, you can add Emergency CLI functionality by using the DPMIG Tool. See [Using the Dial Plan Model Migration Tool](#).

Changing Emergency CLI Preference From Published Number to Device CLI (Customer Level)

For all locations of a particular customer, you can change the Emergency Calling Line Identification (CLI) preference from “Published Number” to “Device CLI” in order to have callbacks routed to the device that made the emergency call.

Procedure

-
- Step 1** Select **General Administration > Customers**.
 - Step 2** Click **Advanced Management**.
 - Step 3** Click **Advanced Telephony Settings**.
 - Step 4** Select **Device CLI** from the **Emergency CLI Preference** drop-down menu and select **Modify**.
-

This procedure submits a new EmergencyCLI transaction for each location belonging to the customer if the preference for that locations is to “Derived from Customer.” The following Cisco Hosted Collaboration Solution dial plan transactions are run for each of the customer locations:

- Driver_EmergencyCLI
- Driver_ApplyConfig_FNNIPPBXs
- Driver_IPPBX

What to Do Next

To view the current setting of Driver_ApplyConfig_FNNIPPBXs, see [Viewing AssociateFNN Emergency CLI Preference](#), on page 62 or [Viewing DisassociateFNN Emergency CLI Preference](#), on page 63.

Changing Emergency CLI Preference From Published Number to Device CLI (Location Level)

For a specific location, you can change the Emergency Calling Line Identification (CLI) preference from “Published Number” to “Device CLI” in order to have callbacks routed to the device that made the emergency call.

Procedure

- Step 1** Select **General Administration > Locations**.
 - Step 2** Click **Advanced Management**.
 - Step 3** Click **Advanced Telephony Settings**.
 - Step 4** Select **Device CLI** from the **Emergency CLI Preference** drop-down menu and select **Modify**.
-

This procedure submits a new EmergencyCLI transaction for this location. The following Cisco Hosted Collaboration Solution dial plan transactions are run for the location:

- Driver_EmergencyCLI
- Driver_ApplyConfig_FNNIPPBXs
- Driver_IPPBX

What to Do Next

To view the current setting of Driver_ApplyConfig_FNNIPPBXs, see [Viewing AssociateFNN Emergency CLI Preference](#), on page 62 or [Viewing DisassociateFNN Emergency CLI Preference](#), on page 63.

Changing Emergency CLI Preference From Device CLI to Published Number (Customer Level)

You can change the Emergency Calling Line Identification (CLI) preference from “Device CLI” to “Published Number” in order to have callbacks routed to a single published number for a specific customer (for example, to a Security department or Attendant). When performed at the customer level, the system applies this change through all locations of the customer. Selecting the Published Number results in the removal of the outbound FNN mapping for emergency numbers using the DisassociateFNN transaction.

Procedure

- Step 1** Select **General Administration > Customers**.
 - Step 2** Click **Advanced Management**.
 - Step 3** Click **Advanced Telephony Settings**.
 - Step 4** Select **Published Number** from the **Emergency CLI Preference** drop-down menu and select **Modify**.
-

The following Cisco Hosted Collaboration Solution dial plan transactions are run for each of the customer locations:

- Driver_EmergencyCLI
- Driver_ApplyConfig_FNNIPPBXs
- Driver_IPPBX

What to Do Next

To view the current setting of Driver_ApplyConfig_FNNIPPBXs, see [Viewing AssociateFNN Emergency CLI Preference](#), on page 62 or [Viewing DisassociateFNN Emergency CLI Preference](#), on page 63.

Changing Emergency Preference From Device CLI to Published Number (Location Level)

You can change the Emergency Calling Line Identification (CLI) preference from “Device CLI” to “Published Number” in order to have callbacks routed to a single published number for a specific location (for example, to a Security department). When performed at the location level, the system iterates the change to the location. Selecting the Published Number results in the removal of the outbound FNN mapping for emergency numbers using the DisassociateFNN transaction.

Procedure

-
- Step 1** Select **General Administration > Locations**.
 - Step 2** Click **Advanced Management**.
 - Step 3** Click **Advanced Telephony Settings**.
 - Step 4** Select **Published Number** from the **Emergency CLI Preference** drop-down menu and select **Modify**.
-

The following Cisco Hosted Collaboration Solution dial plan transactions are run for the location:

- Driver_EmergencyCLI
- Driver_ApplyConfig_FNNIPPBXs
- Driver_IPPBX

What to Do Next

To view the current setting of Driver_ApplyConfig_FNNIPPBXs, see [Viewing AssociateFNN Emergency CLI Preference](#), on page 62 or [Viewing DisassociateFNN Emergency CLI Preference](#), on page 63.

Viewing AssociateFNN Emergency CLI Preference

View the current setting of the AssociateFNN Emergency CLI Preference. Default is “Published Number.”

Procedure

-
- Step 1** Select **Location Administration > External Numbers**.
 - Step 2** Click **Associate Range**.
 - Step 3** Click **Next**.
-

If the Emergency CLI preference of the location is set to “Device CLI,” the AssociateFNN transactions are executed. If the Emergency CLI preference of the location is set to “Published Number” the AssociateFNN transaction is not executed. The workflow for Cisco Hosted Collaboration Solution AssociateFNN transaction is as follows:

- Driver_AssociateFNN
- Driver_ApplyConfig_FNNTransits
- Driver_ApplyConfig_FNNPSTNs
- Driver_ApplyConfig_FNNIPPBXs
- Driver_Conference
- Driver_ApplyConfig_FNNIPPBXs (Emergency CLI)

Viewing DisassociateFNN Emergency CLI Preference

View the current setting of the DisassociateFNN Emergency CLI Preference. Default is “Published Number.”

Procedure

-
- Step 1** Select **Location Administration > External Numbers**.
 - Step 2** Click **Dissociate Range**.
 - Step 3** Click **Next**.
-

If the Emergency CLI preference of the location is set to “Published Number” no AssociateFNN is sent to Cisco Unified Communications Manager and the location Emergency CLI uses the Published Emergency Number. If the location was previously provisioned to use “Device CLI” and changed using either [Changing Emergency CLI Preference From Published Number to Device CLI \(Customer Level\)](#), on page 60 or [Changing Emergency CLI Preference From Published Number to Device CLI \(Location Level\)](#), on page 60, the Cisco Unified Communications Domain Manager executes DisassociateFNN transactions (which removes the Device CLI for each device in Cisco Unified Communications Manager). The workflow for Cisco Hosted Collaboration Solution DisassociateFNN locations is as follows:

- Driver_ApplyConfig_FNNTransits
- Driver_ApplyConfig_FNNIPPBXs
- Driver_Conference
- Driver_ApplyConfig_FNNPSTNs
- Driver_DisassociateFNN
- Driver_ApplyConfig_FNNIPPBXs (Emergency CLI)

External Group Command Line Interface

The External Group Command Line Interface (CLI) feature provides the capability to define a Direct Inward Dialing (DDI) number, also known as a Direct Dial-In (DDI) number, that can be used as the Group CLI number associated to one or more directory numbers. The Group CLI is used as the Calling Party Number when one of those directory numbers makes a PSTN call.

For Cisco Unified Communications Manager, the model name is AddGCLI-External and it is used to map the DN to the external number (GCLI) in the Transform Patterns worksheet. The variables supported are the

same as those provided for the AddGCLI transaction. The Group CLI Number can be entered in Free Form in National Format (that is, not from the DDI range allocated to a Location) or from one of the DDIs allocated to a Location.

The following variables are used:

- SITEPREFIX
- EXTENSION
- COUNTRY
- EXTERNALNUMBER

External Group CLI for Shared Instance (G3) Dial Plan Model

The External Group CLI feature for the Shared Instance Dial Plan (G3) requires per-customer Calling Party Transformation Calling Search Spaces (CSS). In addition, SMB SIP Trunk Groups are required to support this feature.

To create per-SMB trunks:

- 1 Open the following file from the BaseDP directory of Shared Instance (G3) Models:
G3-PerSMB-SIP-TRK_814_G3Modelvxx
- 2 Change the Customer ID (CID) on the Notes worksheet and load the file using the Dial Plan Loader.
- 3 Create SIP Trunk.
- 4 Repeat for other customers.

Set Up External Group CLI



Note When you add an External Group CLI, you must load the models first in Cisco Unified Communications Domain Manager for any of the transactions described in this procedure to have an effect on Cisco Unified Communications Manager. The model information for the Model Name AddGCLI-External must be loaded once.

Procedure

-
- Step 1** Navigate to **General Administration>Customer>Advanced Management>CLI Group Management**.

Example:**Figure 8: Set Up External Group CLI**

The screenshot displays the 'CLI Group Management' web interface. At the top, there is a navigation bar with 'Help' and the title 'CLI Group Management'. Below this is a breadcrumb trail: Provider (HCSArcLab) > Reseller (HCSArcReseller) > Customer (HCSArcCustomer) > Division (Architecture) > Location (USA-2) > User (bvsm Voss) > Role (Internal).

The main content area is titled 'Manage Customer CLI Groups'. It features a form for creating or editing a CLI Group. The 'CLI Group Name' field is empty, and the 'Type' is set to 'Location'. The 'Division' dropdown is set to 'Architecture' and the 'Location' dropdown is set to 'USA-2'. A search field is present with a 'Number starts with' dropdown.

Below the search field are two list boxes: 'Extensions' and 'Selected Extensions in CLI Group'. The 'Extensions' list shows a grid of numbers (2000-2009). The 'Selected Extensions in CLI Group' list shows a grid of numbers (2000-2004) with the text 'USA-2 Architecture' next to each. Between these lists are buttons for 'Add >', '< Remove', 'Page >', 'All >', and '< All'. A 'Select page' link is also present.

At the bottom of the form, there are three configuration sections:

- External CLI configuration:** Includes a radio button for 'Free text' (selected) with a text field containing '4092551234', and a radio button for 'Associated E164'. To the right, there is a 'Location available E164 numbers' dropdown set to 'Architecture, USA-2' and a 'None' dropdown.
- Internal CLI configuration:** Includes a radio button for 'Free text', a radio button for 'Extension Number', and a checkbox for 'Number to display for Call Forwarded Calls to PSTN'. To the right, there are two dropdowns: 'Location Primary extension (optional)' set to 'Architecture, USA-2' and 'Location available extension numbers' set to 'Architecture, USA-2', both with 'None' dropdowns.

At the bottom of the form, there is an 'Apply CLI Group Configuration' button and a 'Return to Manage Customer CLI Groups' link.

Step 2 Enter **CLI Group Name**. This is a unique name for the External Group CLI.

Step 3 From the dropdown menu, select **Division**.

Step 4 From the dropdown menu, select **Location**.

When Location is selected, a list of numbers is displayed in the Extensions list box as shown in the preceding figure.

Step 5 Choose one of the following:

- **Free Text**—Select the radio button to allow a number to be entered in the text field. Enter the number for the external number for the CLI Group without + in the form Country Code + Area Code + Subscriber Number.
- **Associated E.164**—Select the radio button to allow a primary E.164 number to be selected from the Location available E.164 numbers dropdown list. Note that only primary E.164 numbers are available from the dropdown list. The available Extensions for the selected location are displayed in the list box. Click on specific extensions and click the **Add>>** button to move the selected extensions in the CLI Group list box. You can also click **Select page** (active text link) to select all extensions displayed on the

current page or select the **Page>>** button to move all the available extensions on the current page to the Selected Extensions in the CLI Group list box.

- Step 6** To search for specific extensions, select either the 'Number starts with' or 'Number ends with' option from the dropdown list and enter a relevant digit or digits in the text field. As the search criteria are entered, the Extensions list box is repopulated with only relevant numbers based on the search criteria.
- Step 7** When all required extensions for the External CLI Group are selected, click **Apply CLI Group Configuration**.
- Note** For a CLI Group being added to a Customer, you can add numbers from different divisions and locations to the same CLI group. Move numbers to the Selected Extensions in CLI Group as described in the steps above and then reselect another division and location so that the Extensions list box is repopulated with the newly-selected location's available numbers. The numbers that you select move from the Extensions list box and are added to the already existing list of numbers in the Selected Extensions in CLI Group.

The AddGCLI transaction (and subtransaction Driver_AddGCLI) uses PGW TimesTen models to add the CLI Group to the system. For more information on the models, refer to the PGW Model Guide. The Driver_PGW_TimesTen subtransaction is triggered to provision the relevant PGW devices with the CLI Group configuration settings. The Dial Plan Model prefixes + to the External Number.

Modify External CLI Group

Procedure

- Step 1** Navigate to **General Administration>CLI Groups**.
- Step 2** Click the External CLI Group Name to be modified (active text link).
- Step 3** Complete the required fields.
- Step 4** Click **Apply CLI Group Configuration**.
-

Delete a CLI Group

Procedure

- Step 1** Navigate to **General Administration>CLI Groups**.
- Step 2** Click the External CLI Group Name to be deleted (active text link).
- Step 3** Click **Delete CLI Group Configuration**.
-

Bulk Load CLI Groups

You can bulk load CLI Groups by loading the Add CLI Group sheet (in the LocAdmin sample workbook). For more information on bulk loading, see *Bulk Loader Guide for Cisco Unified Communications Domain Manager 8.1.4*.

Connect Location

The Cisco HCS Dial Plan uses the Connect Location feature to allow customers to provision sites (locations) while “offline” and then use the Connect button to activate the sites later. Once a location is connected, billing starts. This feature is particularly useful when migrating the Dial Plan model from legacy systems to Cisco HCS.

**Note**

When deploying a new location, it is a good practice to first verify all the IP phones work with calls within the location, assign all the DDIs, hunt groups, and so on, and if everything works, then connect to the PSTN as the last step.

This feature provides the following:

- Adds Route and Translation patterns on the Cisco Unified Communications Manager for the location
- Provides the ability to select the location from a dropdown menu in order to add the model after initial configuration of the Cisco HCS system.
- The SI file contains a field to indicate if the location is “Connected” or “Not Connected”
- The SI file's Configuration Profile identifies the connected location for billing purposes.

These changes are optional and can be accessed from both the Operations Tools and Telephony GUI screens.

Activate the Connect Location Feature

The Connect feature is not activated in the Dial Plan models by default. To activate the feature:

Procedure

- Step 1** Open the LeafCluster file in the BaseDP directory (02-LeafCluster-814-G1Modelvxx).
- Step 2** Locate the CLOC variable and change the value from #no_CLOC to CLOC.

Connect to PSTN

To connect to the PSTN, perform the following:

Procedure

- Step 1** Browse to **Location Administration>Telephony**.
- Step 2** Click **Telephony**.
- Step 3** Click **Connect**.
-