

Forced Authorization Codes (FAC) Configuration Example

Document ID: 81541

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Introduction

This document provides a sample configuration on how you can use Forced Authorization Codes (FAC) in conjunction with route patterns to restrict the access to long distance calls for certain groups of users.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco CallManager configuration
- Route pattern configuration
- Cisco IP phone configuration

Components Used

The information in this document is based on Cisco CallManager 3.3 and later.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Background Information

FAC and Client Matter Codes (CMC) allow you to manage call access and accounting. CMC assists with call accounting and billing for billable clients, while FACs regulate the types of calls that certain users can place. The FAC feature forces the user to enter a valid authorization code before the call connects. The FAC process is defined here:

1. A user dials a number that goes to a FAC-enabled route pattern.
2. Cisco CallManager tells the phone to play a special tone.
3. The user enters the authorization code. The system then either waits for the FAC Timer (T302/ or interdigit timer) to expire (default 15 seconds) or for the user to press the "#" key.

Note: Since the FAC timer affects T302 timer, bear in mind that if you adjust this timer to permit more time for FAC input, it extends the time for normal calls as well.

4. If the code is correct, the call is extended to the exiting gateway and Cisco CallManager generates a Call Detail Record (CDR) flagged with the FAC number.

This document illustrates how a company can restrict call routing for a certain group of users using the FAC. For illustration purposes, consider an organization with these two types of IP phone users:

1. Employees
2. Managers

This is the requirement:

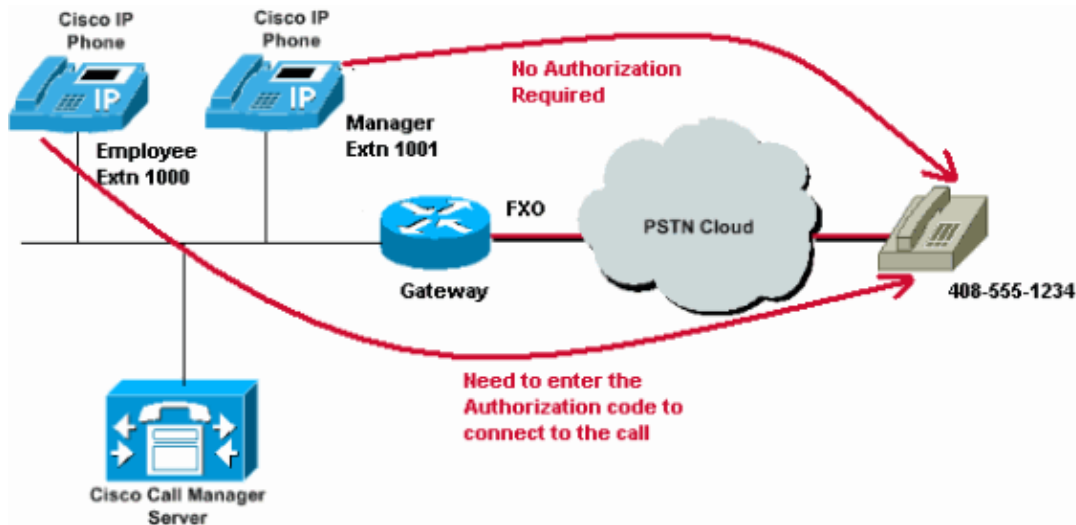
1. The Employee IP phones should be granted access to long distance calls only if the caller enters a FAC with the adequate access level.
2. The organization managers should be able to make long distance calls from their IP phones without the need to enter a code.

Configure

Perform the configuration procedures in this section in order to meet the requirements mentioned under the Background Information section.

Network Diagram

This document uses this network setup:



Configure Forced Authorization Code

Before you enable the FAC through the route patterns, you need to define the FACs in Cisco CallManager Administration. Complete these steps in order to accomplish this.

1. In Cisco CallManager Administration, choose **Feature > Forced Authorization Code**.
2. In the upper, right corner of the window, click **Add a New Forced Authorization Code**.
3. Configure these parameters in the FAC Configuration window and click **Insert**.
 - ◆ **Authorization Code Name** Enter a unique name that is no more than 50 characters. This name ties the authorization code to a specific user or group of users.
 - ◆ **Authorization Code** Enter a unique authorization code that is no more than 16 digits. In our example, this code is configured as **12345**. The user enters this code when the user places a call through a FAC-enabled route pattern.
 - ◆ **Authorization Level** Enter a three-digit authorization level that exists in the range of 0 to 255; the default equals 0. The level that you assign to the authorization code determines whether the user can route calls through FAC-enabled route patterns. In order to successfully route a call, the user authorization level must equal or be greater than the authorization level that is specified for the route pattern for the call.

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Forced Authorization Code Configuration

[Add a New Forced Authorization Code](#)
[Back to Find/List Forced Authorization Codes](#)

Forced Authorization Code: New

Status :Ready

Forced Authorization Code Information

Authorization Code Name*	<input type="text" value="Employees_Access"/>
Authorization Code*	<input type="text" value="12345"/>
Authorization Level*	<input type="text" value="10"/>

* indicates required item

Configure the Route Pattern

Complete these steps in order to enable FAC for the long distance route pattern:

1. In the Cisco CallManager Administration window, create two different partitions. For example, **LongDistanceEmployees** and **LongDistanceManager**.

Refer to Understanding and Using Partitions and Calling Search Spaces with Cisco CallManager for information on how to create partitions.

2. Create two different Calling Search Spaces (CSSs) named **Employees** and **Manager**.

Include the partition **LongDistanceEmployees** in the Employees CSS and include the partition **LongDistanceManager** in the the Manager CSS. Refer to Calling Search Space Configuration for more information on how to configure a CSS.

Calling Search Space Configuration

[Add New Calling Search Space](#)
[Back to Find/List Calling Search Spaces](#)
[Dependency Records](#)

Calling Search Space: Employees
 Status: Update completed

Calling Search Space Information

Calling Search Space Name* Employees

Description Employees CSS

Route Partitions for this Calling Search Space

Find Partitions containing

Available Partitions

- External_Numbers_for_Agent
- External_Numbers_for_Executives
- Greeshma
- Internal_Numbers
- IPMA

▼ ▲

Selected Partitions*
(ordered by highest priority)

- LongDistanceEmployees

Calling Search Space Configuration

[Add New Calling Search Space](#)
[Back to Find/List Calling Search Spaces](#)
[Dependency Records](#)

Calling Search Space: Manager
 Status: Ready

Calling Search Space Information

Calling Search Space Name* Manager

Description access to manager

Route Partitions for this Calling Search Space

Find Partitions containing

Available Partitions

- LongDistanceEmployees
- MWI
- Paul
- Rej
- LDB

▼ ▲

Selected Partitions*
(ordered by highest priority)

- LongDistanceManager

3. You need to create two separate long distance route patterns, one that uses the partition **LongDistanceEmployees** and another that uses the partition **LongDistanceManager**. Configure the route pattern that uses the LongDistanceEmployees partition to use FAC. Complete these steps:
 - a. In the CallManager Administration window, choose **Route Plan > Route/Hunt > Route Pattern** and click **Add a New Route Pattern**.
 - b. In the Route Pattern Configuration window, enter the long distance route pattern and select the **LongDistanceEmployees** partition for this route pattern.

Also select the correct Gateway or Route List along with any other desired configuration. Check **Require Forced Authorization Code** and enter the Authorization Level. The number

that you specify in this field determines the minimum authorization level that is needed to successfully route a call through this route pattern. Click **Insert**.

Route Pattern Configuration

[Add a New Route Pattern](#)
[Back to Find/List Route Patterns](#)

Route Pattern: New
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Insert

Pattern Definition

Route Pattern*	406XXXXXXXX
Partition	LongDistanceEmployees
Description	Long Distance Route Pattern for Employee
Numbering Plan*	North American Numbering Plan
Route Filter	< None >
MLPP Precedence	Default
Gateway or Route List*	172.16.2.210
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern — Not Selected —
Call Classification*	OffNet <input type="checkbox"/> Allow Device Override
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending <input type="checkbox"/> Urgent Priority
<input checked="" type="checkbox"/> Require Forced Authorization Code	Authorization Level: 10
<input type="checkbox"/> Require Client Matter Code	

- c. Click **Add a New Route Pattern** in order to add the long distance route pattern that uses the LongDistanceManager partition.

In the Route Pattern Configuration window, enter the same long distance route pattern (as in step 3b) and select the **LongDistanceManager** partition for this route pattern. Ensure that the correct Gateway or Route List is selected for this configuration. Also, this route pattern should *not* be configured to use FAC.

Route Pattern Configuration

[Add a New Route Pattern](#)
[Back to Find/List Route Patterns](#)

Route Pattern: New

Status: Ready

Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*	<input type="text" value="408XXXXXX"/>	
Partition	<input type="text" value="LongDistanceManager"/>	
Description	<input type="text" value="Long Distance Route Pattern for Manager"/>	
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>	
Route Filter	<input type="text" value=" < None >"/>	
MLPP Precedence	<input type="text" value="Default"/>	
Gateway or Route List*	<input type="text" value="172.16.2.210"/>	
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value=" — Not Selected —"/>	
Call Classification*	<input type="text" value="OffNet"/> <input type="checkbox"/> Allow Device Override	
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending	<input type="checkbox"/> Urgent Priority
<input type="checkbox"/> Require Forced Authorization Code		
Authorization Level	<input type="text" value="0"/>	
<input type="checkbox"/> Require Client Matter Code		

4. Under the IP Phone Configuration window, include the Employee IP Phone Directory Number to the LongDistanceEmployees partition and to the Employees CSS. Also, include the Manager IP Phone Directory Number to the LongDistanceManager partition and to the Manager CSS.

Note: The CSS used by the Employee IP phones must *not* include the LongDistanceManager partition, and the CSS used by the manager's IP phone must *not* include the LongDistanceEmployees partition.

Restrict Only One Phone to Use FAC

Complete these steps in order to restrict only one phone to use FAC to make long distance calls.

1. Copy the route pattern configuration for that LD pattern and put it in a new partition that can be only accessed by that phone.
2. Create a separate Calling Search Space specific for that phone, which also includes the LD partition.
3. Enable FAC for that route pattern so only the phone in question is required to enter the code.

Verify

Complete these steps in order to verify if your configurations work properly:

1. From Employee Extension 1000, call the long distance number **4085551234**.

The system should play a tone that prompts for the authorization code. Once the authorization code is entered, the call is connected.

- Note:** In order to immediately route the call after the user enters the code, the users can press # on the phone. Otherwise the call occurs after the interdigit timer expires, which equals 15 seconds by default.
2. From the Manager's Extension 1001, call the long distance number **4085551234**.

The call should be connected without prompting for any authorization code.

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Forced Authorization Codes Randomly Stop to Work

When you dial the number that matches a route pattern with FAC configured, you hear the tone to enter the FAC. But when you enter the FAC, you receive a reorder tone and the call is released.

As a temporary workaround for this issue, go to the FAC Configuration page and click **Update**.

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Voice & Video: Voice over IP
Voice & Video: IP Telephony
Voice & Video: IP Phone Services for End Users
Voice & Video: Unified Communications
Voice & Video: IP Phone Services for Developers
Voice & Video: General

Related Information

- **Cisco CallManager Administration Guide, Release 4.1(3)**
- **Client Matter Codes and Forced Authorization Codes**
- **Voice Technology Support**
- **Voice and Unified Communications Product Support**
- **Recommended Reading: Troubleshooting Cisco IP Telephony**
- **Technical Support & Documentation – Cisco Systems**

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Updated: Aug 08, 2008

Document ID: 81541
