# 在CUCM(基于URL)上配置自调配功能

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## 简介

本文档介绍如何在Cisco Unified Communications Manager(CUCM)(基于URL)上配置自调配功能。

## 先决条件

### 要求

Cisco 建议您了解以下主题:

- 思科统一通信管理器。
- 互联网语音协议(VoIP)
- 电话注册流程.

### 使用的组件

本文档中的信息基于Cisco Unified Communications Manager 10.5

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您使用的是真实网络,请确保您已经了解所有命令的潜在影响。

### 什么是自助调配?

自助调配是思科统一通信管理器(CUCM)10.x版中引入的一项功能。 它提供一**种即插即用**功能,可 简化电话部署过程。CUCM管理**员使用自动注册**、某些模板和配置文件配置以及IVR服务,能够以 最少的前期配置部署电话。 **注意**:自助调配仅适用于自动注册的电话。

## 配置

1. 创建通用设备模板(UDT)

步骤1.导航至**User management > User Phone add > Universal Device Template**和Add New Template。

CISCO Unified CM Administration For Cisco Unified Communications Solutions						
System • Call Routing • Media Resources • Advanced Features • Device • Application •	Us	er Management 🔻 Bulk Administrat	ion	Help		
		Application User				
		End User				
Cisco Unified CM Administration		User/Phone Add	•	Page Layout Preference		
System version: 10.5.2.13901-2 VMware Installation: 2 vCPU Intel(R) Xeon(R) Platinum 8176 CPU @ 2.10GHz, WARNING: DNS unreachable		SIP Realm		Universal Device Template		
		User Settings	•	Universal Line Template		
		Self-Provisioning		Feature Group Template		
		Assign Presence Users		Quick User/Phone Add		
Last Successful Backup: 513 day(s) ago			1			
Cisco Unified CM Administration Cisco Unified Communications Solutions						
Add ham - Call Routing - Media Resources - Advanced Feat	ure	es 🕶 Device 🕶 Appl	ica	tion 👻 User Management	✓ Bulk Administration ✓ Help ✓	
Find and List Universal Device Templates						
Add New Elect All Clear All 💥 Delete Select	cte	d				

步骤2.将您希望电话在自动注册后采用的配置应用到新的UDT(设备池/SIP配置文件/设备安全配置 文件/电话按钮模板)

System  Call Routing	Media Resources  Advanced	Features -	Device -	Application -	User Management 🔻	Bulk Administration 🔻	Help 🔻
Universal Device Templa	te Configuration						
🔚 Save X Delete Expa	and All 🕂 Add New						
<ul> <li>Template Information</li> </ul>							
Name * Auto-registration	ו Template						
<ul> <li>Required and Frequently En</li> </ul>	tered Settings						
Device Description	#FirstName# #LastName# (#	Pro 🥖					
Device Pool *	Default	• View [	Details				
Device Security Profile *	Universal Device Template - M	oc 🖛					
SIP Profile *	Standard SIP Profile	*					
Phone Button Template *	Universal Device Template But	to 🔻					

步骤3.将Self Provisioning URL添加到CUCM,如图所示。

System  Call Routing  N	Media Resources	✓ Advanced Features ▼	Device 🔻 A	Application -	User Manageme	ent 🔻	Bulk Administration 👻	Help 🔻
Universal Device Templat	e Configurat	tion						
🔚 Save X Delete Expar	nd All 🕂 Ado	l New						
<ul> <li>Device Settings</li> </ul>								
Device Routing								
Phone Settings								
<ul> <li>Protocol Settings</li> </ul>								
▶ Phone Buttons Configuration								
► IP Phone Services Subscriptio	n							
<ul> <li>Security Settings</li> </ul>						_		
<ul> <li>Service Configuration Settings</li> </ul>	S							
Information	Default 🔻							
Directory	Default 🔻							
Messages	Default 🔻							
Services	Default 🔻							
Authentication Server	Default 🔻							
Proxy Server	Default 🔻							
Idle	Override 🔻	https://10.106.114.151/cu	cm-uds/private	e/self				
Idle Timer (seconds)	Override 🔻	1						
Secure Authentication URL	Default 🔻							
Secure Directory URL	Default 🔻							
Secure Idle URL	Default 🔻							
Secure Information URL	Default 🔻							
Secure Messages URL	Default 🔻							
Secure Services URL	Default 🔻							
Services Provisioning *		Default		*				

注意:自助调配URL格式为:https://<callManager>/cucm-uds/private/selfProvision

### 2.创建通**用线路**模板(ULT)

#### 步骤1.导航至User management >> User/Phone Add >> User Line Template。



步骤2.在自动注册后,在电话上添加预期的路由分区和CSS。

System - Call Routing - Media Resour	ces - Advanced Features -	Device - Applic	ation 👻 User Management 👻	Bulk Administration 👻	Help 👻
Universal Line Template Configurat	tion				
🔚 Save 🗙 Delete Expand A	II 🕂 Add New				
<ul> <li>Template Information</li> </ul>					
Name * Sample Line Temp	late with TA Urgent Pr	iority			
<ul> <li>Required and Frequently</li> </ul>	y Entered Settings				
Line Description:	#FirstName# #LastNam	ne# (# 🦯			
Route Partition:	PT-Intra	-			
Voice Mail Profile:		-			
Calling Search Space:	CSS-Inter	-			
Alerting Name:	#FirstName# #LastNam	ne# 🦯	_		
External Call Control Profile:		-			

步骤3.此通用设备模板和通用线路模板应与自动注册链接,以便电话在自动注册时可以进行配置。

3.将"模板"添加到CUCM节点以**进行自**动注册配**置,并导航至System > Cisco Unified CM**,如图所 示。

cisco	Cisco Unified For Cisco Unified Co	d CM Admi	nistration					
System 👻	Call Routing - Media	Resources 👻 Adv	anced Features - De	vice 🔻 Applicatio	n 👻 User Manage	ement 👻 Bulk Administrati	ion 🕶 Help 🕶	
Server								
Cisco U	nified CM							
Cisco U	nified CM Group	Admin	istration					
System 🔻	Call Routing 👻 M	edia Resources	<ul> <li>Advanced Feature</li> </ul>	es 🔻 Device 🔻	Application 🔻	User Management 🔻	Bulk Administration 🔻	Help 🔻
Cisco Un	ified CM Configur	ation						
Save	e 省 Reset 🥖	Apply Config						
- Status-								
(i) Stat	tus: Ready							
r Cisco Ur	nified Communicat	ions Manager	Information —					
Cisco Un	ified Communication	s Manager: CM	_UCM-PUB10 (used	by 74 devices)				
∟ Server I	Information ———							
CTI ID			1					
Cisco Un	ified Communication	s Manager Serv	er* 10.106.114.15	1				
Cisco Un	ified Communication	is Manager Nam		10				
Descripti	ion		10.106.114.1	51				
Location	Bandwidth Manager	Group	< None >			0		
-Auto-re	gistration Informa	tion						
Universa	Device Template*	Auto-registrat	ion Template		0			
Universa	l Line Template*	Sample Line T	emplate with TAG u	sage examples	0			
Starting	Directory Number*	1000						

### 4.为自助调配添**加新用**户配置文件。

#### 步骤1.导航至User Management > User Settings > User Profile,如图所示。

CISCO Unified CM Administration For Cisco Unified Communications Solutions						
System   Call Routing   Media Resources   Advanced Features   Device	Application -	User Management 👻	Bulk Administratio	n <del>v</del>	Help 👻	
		Application User				
		End User				
Cisco Unified CM Administration		User/Phone Add	•			
		SIP Realm				
System version: 10.5.2.13901-2		User Settings	•		Credential Policy Default	
VMware Installation: 2 vCPU Intel(R) Xeon(R) Platinum 8176 CPU	@ 2.10GHz,	Self-Provisioning		1	Credential Policy	
WARNING: DNS unreachable		Assign Presence Users			Role	
Last Successful Backup: 514 day(s) ago					Access Control Group	
					Application User CAPF Profile	
Iser administrator last logged in to this cluster on Friday, February 15, 2019 8:57:	30 PM CST, to n	ode 10.106.114.151	, from 10.142.18	8	End User CAPF Profile	
anvright © 1999 - 2015 Cisco Systems, Inc.					UC Service	
Il rights reserved.					Service Profile	
his product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use, isers are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regule					User Profile	oes not imply third-party authority S. and local laws, return this proc

# 步骤2.添加User Device Template、User Line Template,并选中Allow End User to Provision Theyl Phone 复选框。

System 🔻	Call Routing 👻 N	Media Resources	÷ /	Advanced Features 🔻	Device 🔻	Application <b>•</b>	User Managem	ient 🔻	Bulk Administration 🔻	Help 🔻
User Profil	e Configuratio	n								
🔚 Save	🗙 Dələtə 🕂	Add New								
<b>- S</b> tatus —										
(i) Status	: Ready									
User Profi	le									
Name*	selfpro									
Description										
🗹 Make th	is the default Us	er Profile for th	e syst	tem						
- Universal	Device Templat	te						7		
Desk Phone	es	Auto-	regist	tration Template		0 V	iew Details			
Mobile and	Desktop Devices	Auto-	regist	tration Template		0 V	iew Details			
Remote De	stination/Device	Profiles Auto-	regist	tration Template		<u></u> v	iew Details			
- Universal	Line Template -									
Universal L	ine Template S	ample Line Ten	plate	with TAG usage exa	amples ᅌ	View Details				
- Self-Provi	sioning									
🛃 Allow Ei	nd User to Provis	ion their own p	hones	5						
Limit Provis	sioning once End	User has this r	nany (	phones 10						

**注意:**当用户尝试使用自己的分机自行调配设备时,会应用这些设置。

**注意:**您还可以为用户设置设备数量的最大限制,在此之后,自助调配将不适用于用户。 例如:如果用户已分配9台设备,因为上面屏幕截图中的"最大限制"设置为10,则用户只能自 行调配一台设备。

注意:如果未选中"允许最终用户调配其自己的电话"复选框。自助调配对用户不起作用。

5. 创建功**能组模板**并分配用**户配置文件**。导航至User Management > User/Phone Add > Feature Group Template,然后单击Add New。

CISCO For Cisco Unified C	d CM Administration		
System - Call Routing - Media	Resources - Advanced Features - Device - Application -	User Management 👻 Bulk Administration	n 🕶 Help 🕶
		Application User	
		End User	
<b>Cisco Unified C</b>	M Administration	User/Phone Add	Page Layout Preference
System version: 10.5.2.13	901-2	SIP Realm	Universal Device Template
VIII		User Settings	Universal Line Template
WARNING: DNS unreachal	ble	Self-Provisioning	Feature Group Template
Last Successful Backup: 5	14 day(s) ago	Assign Presence Users	Quick User/Phone Add
System  Call I	Routing 👻 Media Resources 👻 A	dvanced Features 🔻	Device  Application
Feature Group	Template Configuration		
🔚 Save 🗶 🛛	Delete 🕂 Add New		
Feature Group	Template		
Name * sel	f_fg		
Description			
Features			
Home Cluster	•		
	or Unified CM IM and Procence (Cor	afigura IM and Drocon	so in the accepted LIC Service
	or onlined CM IM and Presence (Cor		
Include meet	ing information in Presence(Require	s Exchange Presence	Gateway to be configured on
		-	
Services Profile	Use System Default	View Details	
User Profile	selfpro	View Details	
	Scipio		
Allow Control	of Dovice from CTI		
Enable Exten	sion Mobility Cross Cluster		
Enable Mobili	ty		
Enable Mobile	e Voice Access		
Maximum Wait T	ime for Desk Pickup * 10000		
	10000		
6.从"快速用户/电	<b>话添加"页创建</b> 用户,然后添加功 <b>俞</b>	<b>尨组模板</b> 。	

步骤1.导航至User management > User Phone Add > Quick User /Phone Add,如图所示。



### 步骤2.在Access Control Group成员资格下添加Standard CCM End Users。

System   Call Routing  Media Resources  Advanced Features  Device  Application  User Management  Bulk Administration  Help	
Quick User/Phone Add	
Save	
User Information	
First Name akash	
Middle Name	
Last Name * sethi	
User ID * aksethi	
Feature Group Template self_fg View Details	
Access Control Group Membership	
User is a member of:	
Access Control Group Membership	
User is a member of: Standard CCM End Users	

步骤3.在分机字段中向用户添加分机,单击"操作"**下的**+图标以启用该字段。

Access Control Group	1embership			
User is a member of:	itandard CCM End Users	▼ ‡ =		
Credentials				
✓ Use default credential				
Password				
Confirm Password				
PIN				
Confirm PIN				
				,
Extensions				
Order Extension		Line Primary URI/Partition		Acti
	* New		1	÷

步骤3.如果要创建新扩展,请单击**New**并添加新DN。(如图像选项1所示)。 如果CUCM上已存在 分机并要分配给用户,请从图像的选项2中显示的下拉菜单中选择该分机。

Access Control Group Membership
User is a member of: Standard CCM End Users
Credentials
Use default credential Password
Confirm Password
PIN Confirm PIN
Extensions
Order Extension 2 1 Line Primary URI/Partition Action

注意:创建用户后,默认情况下将主行用作自助服务用户ID。

7.验证最终用户是否已收到主**分机、自助服务用户ID、用户简档**和**标准CCM最终用户角色**。 导航 至**用户管理>最终用**户并访问新创建的用户,如图所示。

CISCO Unified CM Admin For Cisco Unified Communications Sol	istration utions
System - Call Routing - Media Resources - Advar	nced Features • Device • Application • User Management • Bulk Administration • Help •
	Application User
Cieco Unified CM Admini	End User
System  Call Routing  Addia Resources  Addia	vanced Features   Device   Application   User Management   Eulk Administration   Help
End User Configuration	
Save 🗙 Delete 🕂 Add New	
-User Information	
User Status	Enabled Local User
User 1D*	aksethi
Password	Edit Credential
Confirm Password	
Self-Service User ID	1004
PIN	Edit Credential
Confirm PIN	•••••
Last name*	sethi
Middle name	
First name	akash
Title	
System      Call Routing      Media Resources      A	dvanced Features   Device   Application   User Management   Bulk Administration   Help
End User Configuration	
🔚 Save 🗶 Delete 🕂 Add New	
User Locale	< None >
Associated PC	
Digest Credentials	
Confirm Digest Credentials	
Licer Profile	celfore View Detaile
Name Dialing	
	sethiakash
Number of Digits needed for the Unique AA Name	.2

System 👻 Call Routing 👻 Media Resources 👻 Advanced Features 👻 Device 👻 Application 👻 User Management 👻 Bulk Administration 👻 Help 👻
End User Configuration
Save 🗶 Delete 🕂 Add New
Allow Control of Device from CTI
Enable Extension Mobility Cross Cluster
- Directory Number Associations
Primary Extension 1004
IPCC Extension < None >

**注意:**用户必须具有主分机和自助服务用户ID(标准CCM最**终用户角色)**,才能使自助调配工作 。

8.可在系统级别设置自助调配服务以使用安全模式,并可设置密码。

此功能已设置为**非身份验**证所需模式,**不需**要任何PIN才能使用自助调配。导航至**用户管理>自助调 配** 

Self-Provisioning
Save
_ Status
J Status: Ready
r Authentication Mode
Require Authentication
Allow authentication for users only(via Password/PIN)
Allow authentication for users(via Password/PIN) and Administrators(via Authentication Code)
Authentication Code
S No Authentication Required
In this mode, authentication is disabled during device self-provisioning. The administrator or end user can enter a user ID or self-provisioning ID into an endpoint and the endpoint will associate

注意:即使步骤8未配置,自调配仍然有效,因为它选择默认值为"无需身份验证"。

### 与自助调配相关的服务

• 思科呼叫管理器

此服务与电话注册关联,必须在尝试注册的节点上启用。

• 思科用户数据服务

此服务默认启用,无法禁用。

### 最终用户在电话上的体验

1. 超时1秒后,电话将访问IDLE URL,该URL将提示登录窗口。



2.用户输入用户ID和PIN(非密码)。



3.用户显示"登录成功"屏幕和要调配的号码,该号码将是添加到用户的主行。



单击"继续"后,设备将重新启动,并使用"模板中指定的设置"以及与用户关联的主行。

### 故障排除

以下是电话客户端返回的常见错误消息:

错误代码 解决方案/原因
 SELFPROV\_NOT\_ALLOWED 选中Self-Provisioning复选框是否已选中用户的User Profile,
 SELFPROV\_DEVICE\_LIMIT 用户拥有的设备已达到限制。
 INVALID\_DEVICE\_MODEL 提供的设备型号无效。
 MODEL\_PHONETEMPELATE\_NOT\_FOUND 未配置所需的UDT。

#### 要收集的日志

要进一步排除UDS(用户数据服务)故障,请从RTMT收集"Cisco User Data Services"日志。

文件名的格式为cucm-uds####.log。 (#表示数字。)

默认情况下,跟踪设置为信息级别。

默认情况下,最大文件大小为1 MB。存储文件的最大数量默认为250。

**注意:**在"跟踪配置"窗口中更改"最大文件数"或"最大文件大小"设置时,系统会删除除当前文件 (即,如果服务运行)之外的所有服务日志文件。 如果服务尚未激活,系统会在激活服务后立即删除文件。

#### UDS日志及其解决方案中出现的常见错误:

# 2013-07-23 23:47:43,016 ERROR [http-bio-443-exec-177] handlers.SelfProvisionHandler - Model phone template is not available.

Solution: Ensure the User Profile has a UDT assigned (the default sample is fine)

# 2013-07-23 23:48:25,852 ERROR [http-bio-443-exec-181] handlers.SelfProvisionHandler - Device Self-Provision is not allowed.

Solution: Ensure the User Profile has "Allow End User to Provision their own phones" checked.

#### 2013-07-23 23:54:06,039 ERROR [http-bio-443-exec-220] handlers.SelfProvisionHandler - Device Self-Provision has reached its device limit.

Solution: Ensure the Usure Profile has a non-zero value in "Limit Provisioning once End User has this many phones" field.

- <u>CSCuq00358</u>
- <u>CSCve52657</u>
- <u>CSCun77515</u>
- <u>CSCun13382</u>

# 相关信息

• <u>技术支持和文档 - Cisco Systems</u>