

Saga aplikativna rešenja kao ekstenzija Cisco IP telefonskog sistema

Viktor Varga
SAGA DOO



- SAGA
- O aplikativnim rešenjima / UC API
- Tarifiranje
- Snimanje poziva
- Proširenje za *Extension Mobility*
- *CU Routing Rules Interface*
- *P&O*

- **Najveći Sistem Integrator u Srbiji**
- **Osnovana: 1989**
20 godina od osnivanja
- **Broj zaposlenih: 300+**
- **Cisco GOLD Partner**

Saga - Cisco partner

Predstavljanje preduzeća



Member of
New
Frontier
Group

Cisco Solution Innovation Partner za 2008



STANDARDNA REŠENJA

VS

PRILAGOĐENA REŠENJA

Standardna rešenja:

- konfekcija
- zadovoljava potrebe proseka
- dijapazon u kvalitetu
- lako dostupna

Prilagođena rešenja:

- krojeno po meri
- zadovoljava individualne potrebe
- dijapazon u kvalitetu
- nisu lako dostupna

Cisco UC Solution Elements

+

Cisco UC APIs

+

SAGA App Solutions

=

**KVALITETNO, VISOKO
PRILAGOĐENO REŠENJE**

Neki APIi iz UC porodice:

- Cisco JTAPI / Windows TAPI & Wave Driver
- Cisco Routing Rules (CURRI) *
- Cisco WebDialer
- UC Express Services Interface
- IP Phone Services XML API
- Administration XML

Neki APIi iz UC porodice (2):

- Serviceability XML
- Extension Mobility API *
- TCL IVR/Voice XML API
- Cisco Unified Presence APIs

Tarifiranje i informacije o pozivu



Member of
New
Frontier
Group

- Telefonski sistem je izdatak (infrastruktura) i stalni trošak (telco usluge + održavanje)
- Neophodno je poznavati *specifikaciju* troškova
- Smanjenje troškova
- Informacije o pozivima mogu biti bitne za poslovanje

- CUCM pruža osnovne mogućnosti za pregled CDR-a
- Detaljan uvid ponekad može da bude komplikovan
- Tarifiranje nije upotrebljivo u našim uslovima
- Cisco pruža 3rd Party aplikacijama da prošire funkcionalnost

1. Izlaz preko Voice Gateway-a na više trunk-ova:

- Telekom PSTN
- BizLink
- VoIP provajder – inostranstvo

2. Pozivi iz više celina:

- Transfer
- Konferencije

3. Ispad WAN linka (veza ka centralnoj lokaciji) - SRST

Problem 1.

Izlaz preko Voice Gateway-a na više trunk-ova

REŠENJE:

Nisu dovoljne informacije samo sa CUCM-a

Prikupljanje CDR informacija sa Voice Gatewaya

Problem 2.

Pozivi iz više celina – šta tarifirati

Primer:

1. Poziv sa Lok 1001 na spoljni broj 0641234567
2. Konsultativni poziv na Lok 1002
3. Transfer pozvanog broja 0641234567 na Lok 1002

REŠENJE:

Uzeti u obzir sve karakteristike poziva i izračunati pravo vreme trajanja poziva

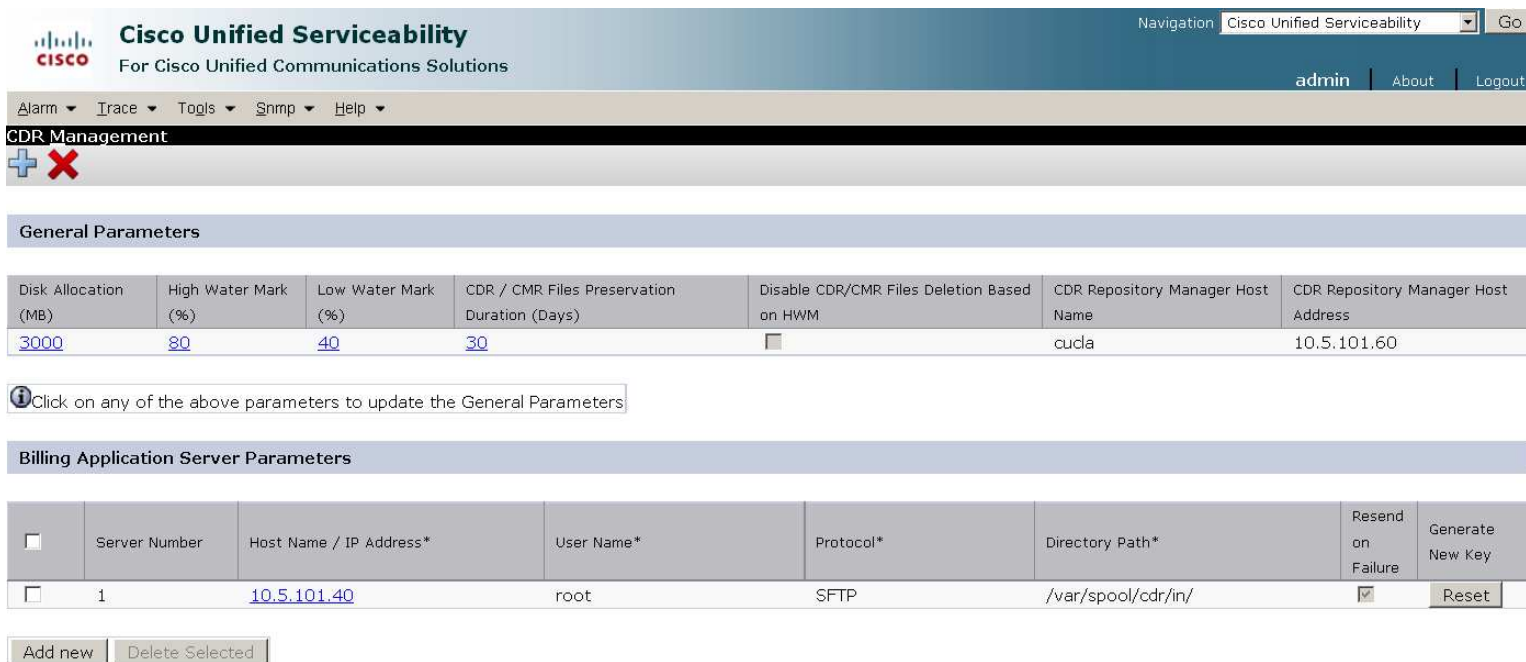
Problem 3.

Ispad WAN linka

REŠENJE:

Prikupljanje podataka lokalno sa Voice Gateway-a u slučaju ispada i isporuka informacija u centralni sistem po povratku linka

Prikupljanje CDR informacija sa CUCM-a preko SFTP-a na Billing sistem



The screenshot shows the Cisco Unified Serviceability web interface. At the top, there's a navigation bar with the Cisco logo and the text "Cisco Unified Serviceability For Cisco Unified Communications Solutions". A navigation dropdown menu is set to "Cisco Unified Serviceability" with a "Go" button. Below this, there's a user menu showing "admin" and links for "About" and "Logout". A secondary menu bar contains "Alarm", "Trace", "Tools", "Shmp", and "Help". The main section is titled "CDR Management" and includes a sub-header "General Parameters". Below this is a table with various parameters for CDR/CMR files. A message below the table states: "Click on any of the above parameters to update the General Parameters". The next section is "Billing Application Server Parameters", which contains a table with columns for selection, server number, host name, user name, protocol, directory path, and actions (Resend on Failure, Generate New Key). At the bottom, there are "Add new" and "Delete Selected" buttons.

Disk Allocation (MB)	High Water Mark (%)	Low Water Mark (%)	CDR / CMR Files Preservation Duration (Days)	Disable CDR/CMR Files Deletion Based on HWM	CDR Repository Manager Host Name	CDR Repository Manager Host Address
3000	80	40	30	☐	cucla	10.5.101.60

Click on any of the above parameters to update the General Parameters

☐	Server Number	Host Name / IP Address*	User Name*	Protocol*	Directory Path*	Resend on Failure	Generate New Key
☐	1	10.5.101.40	root	SFTP	/var/spool/cdr/in/	☒	Reset

Prikupljanje CDR informacija sa Voice Gateway-a

Preko RADIUS-a

```
aaa accounting connection h323 start-stop group radius
```

```
gw-accounting aaa
```

```
acct-template callhistory-detail
```

```
radius-server host 10.5.101.40 auth-port 1812 acct-port 1813 key rfc3311
```

```
radius-server host 10.5.101.113 auth-port 1812 acct-port 1813 key rfc3311
```

```
radius-server vsa send accounting
```

Prikupljanje CDR informacija sa Voice Gateway-a

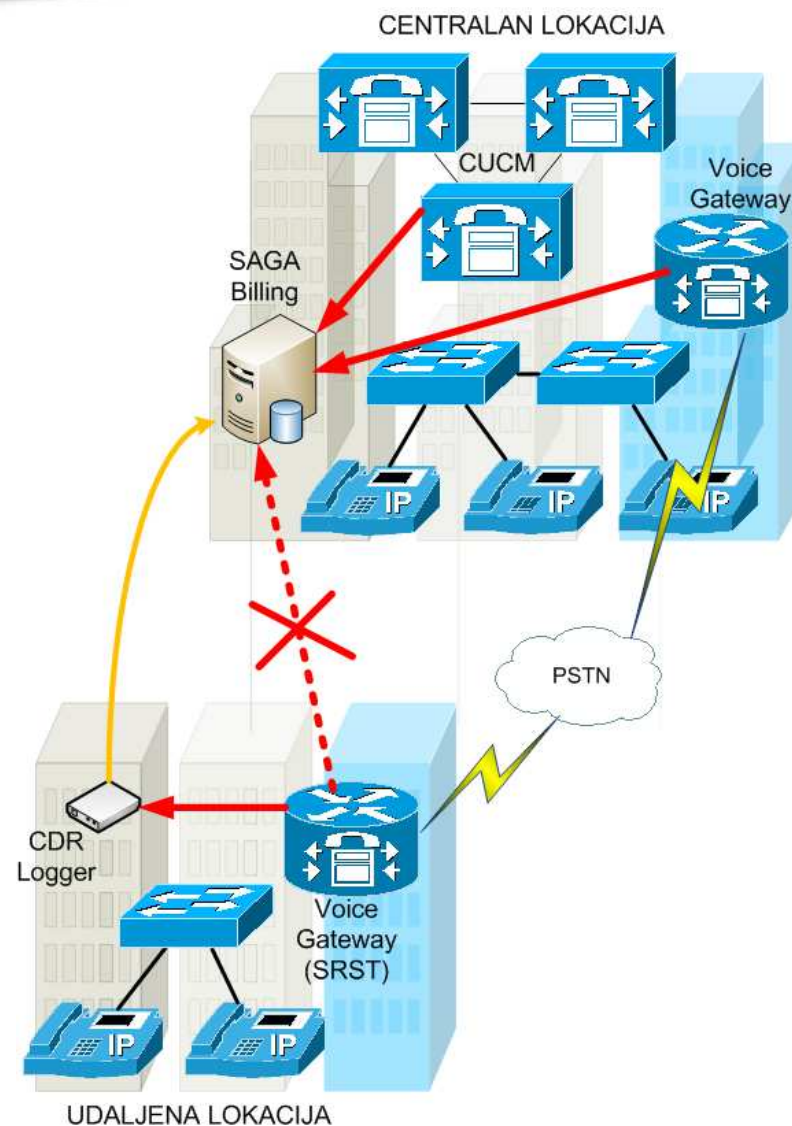
1. Primarni RADIUS server na centralnoj Billing aplikaciji

2. Sekundarni RADIUS server na udaljenoj lokaciji prikuplja podatke u slučaju ispada WAN-a i šalje po povratku linka na centralnu Billing platformu

Sagin sistem tarifiranja



Member of
New
Frontier
Group



Sagin sistem tarifiranja



Member of
New
Frontier
Group

Izgled korisničkog interfejsa - pozivi

SAGA Unified Billing and Recording System - Viktor Varga odjava

Pozivi **Profil**

Parametri

Od datum: 01.12.10
Od vreme: 14:33
Do datum: 07.12.10
Do vreme: 14:33
Pozivalac:
Odredište: viktorv

Uput

Detalji

3009 - 00:00 00:01
Pozivalac: 3009
Odredište: 2020 (viktorv)
Trajanje: 2
Vreme: 2010-12-05 20:24:46
Cena: 0.000
Tip: Lokalni

Lista

Vreme	Pozivalac	Odredište	Trajanje	GR	X	Redirekciji	Cena	Tip	Snimak
2010-12-07 10:37:03	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-07 10:37:03	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-07 10:35:57	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-07 10:35:57	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-07 10:29:59	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-07 10:29:59	3005 (dzida)	2020 (viktorv)	1				---	Lokalni	
2010-12-06 17:43:46	SagaApps	2020 (viktorv)	3				---	Lokalni	
2010-12-06 17:34:04	SagaApps	2020 (viktorv)	12				---	Lokalni	
2010-12-06 17:27:58	SagaApps	2020 (viktorv)	3				---	Lokalni	
2010-12-06 17:27:52	SagaApps	2020 (viktorv)	2				---	Lokalni	
2010-12-06 17:27:40	SagaApps	2020 (viktorv)	3				---	Lokalni	
2010-12-06 17:25:29	SagaApps	2020 (viktorv)	2				---	Lokalni	
2010-12-06 17:25:27	SagaApps	2020 (viktorv)	1				---	Lokalni	
2010-12-06 14:17:02	3009	2020 (viktorv)	2				---	Lokalni	
2010-12-05 20:24:46	3009	2020 (viktorv)	2			3005	---	Lokalni	
2010-12-05 20:16:23	3009	2020 (viktorv)	3			3005	---	Lokalni	
2010-12-05 19:04:57	3005 (dzida)	2020 (viktorv)	1				---		✗
2010-12-05 19:04:57	3005 (dzida)	2020 (viktorv)	1				---		✗

Izgled administratorskog interfejsa - pozivi

SAGA Unified Billing and Recording System - Saga odjava

Administracija **Pozivi**

Parametri

Od datum: 05.12.10

Od vreme: 14:17

Do datum: 06.12.10

Do vreme: 17:00

Pozivalac:

Odredište:

Upit

Detalji

3009 - 00:01 00:02

Pozivalac: 3009

Odredište: 2020 (viktorv)

Trajanje: 3

Vreme: 2010-12-05 20:16:23

Cena: 0.000

Tip: Lokalni

Lista

Vreme	Pozivalac	Odredište	Trajanje	GR	X	Redirekcija	Cena	Tip	Snimak
2010-12-06 16:40:26	3005 (dzida)	3010	2				---	Lokalni	
2010-12-06 16:19:09	3005 (dzida)	90648606331	0				---		
2010-12-06 15:41:53	3005 (dzida)	3010	2				---	Lokalni	
2010-12-06 14:17:02	3009	2020 (viktorv)	2				---	Lokalni	
2010-12-06 14:16:46	2020 (viktorv)	3005	0				---	Lokalni	
2010-12-06 14:09:13	3010	3009	9				---	Lokalni	
2010-12-05 21:14:31	3009	90607167421#	56				---		
2010-12-05 20:24:46	3009	2020 (viktorv)	2			3005	---	Lokalni	
2010-12-05 20:16:23	3009	2020 (viktorv)	3			3005	---	Lokalni	
2010-12-05 19:04:57	3005 (dzida)	2020 (viktorv)	1				---		
2010-12-05 18:46:07	3005 (dzida)	0648606331	2				0.502	Mobilni	
2010-12-05 18:41:13	3009	90648606331	4			3005	---		
2010-12-05 18:40:51	3005 (dzida)	0648606331	4				1.004	Mobilni	
2010-12-05 18:40:48	3009	3005 (dzida)	24				---	Lokalni	
2010-12-05 18:34:55	90648606331	3009	4			3005	---		
2010-12-05 18:34:49	3005 (dzida)	3009	2				---	Lokalni	

Korisnici

SAGA Unified Billing and Recording System - Saga odjava

Administracija **Pozivi**

Administracija

- Korisnici
- Telefoni
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi
- Veze (peer)
- Sektori
- Kvota
- Profil
- Konfiguracija

Korisnici

Pretraga:    Novi korisnik

Korisničko ime	Ime i prezime	Sektor	Privilegije	Prijava	Kvota	Lozinka	Brisanje
dzida	Marko Džida	Prodaja	Korisnik	CUCM	hiljadu din / mesec		
goca	Gordana Miladinović	Telekomunikacije - Telco	Sve	CUCM	---		
viktorv	Viktor Varga	Prodaja	Odeljenje	CUCM	---		

Novi korisnik

Korisničko ime:

Ime i prezime:

Lozinka:

Potvrda lozinke:

Odeljenje:

Prijava:

Privilegije:

Kvota:

Telefoni

SAGA Unified Billing and Recording System - Saga odjava

Administracija **Pozivi**

Administracija

- Korisnici
- Telefoni**
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi
- Veze (peer)
- Sektori
- Kvota
- Profil
- Konfiguracija

Telefoni

Pretraga:   Osveži  Novi telefon  Excel

Telefon	Lokal	Korisnik	Snimanje	Brisanje
SEP001A4B8C3526	2002	Marko Džida	✗ NE	
SEP0021A0D82EAF	2020	Viktor Varga	✗ NE	
SEP0021A0D81B5F	3005	Marko Džida	✗ NE	
SEP2693FE12AB05	3009	Gordana Miladinović	✓ DA	

Sagin sistem tarifiranja



Member of
New
Frontier
Group

Tarife

SAGA Unified Billing and Recording System - Saga odjava

Administracija Pozivi

Administracija

Korisnici

Telefoni

Vremenski faktori

Praznici

Klase poziva

Tarifne grupe

Tarife

Nodovi

Veze (peer)

Sektori

Kvota

Profil

Konfiguracija

Tarife - Telekom Fiksna

Izbor tarifne grupe: Telekom Fiksna Pretraga: Osveži Nova tarifa Excel

Naziv	Prefiks	Duž.prefi	Klasa	Vrem.faktor	Inic.cena	Cena	Inic.interv	Interval	Brisanje
Kirgistan	*00996	5	Međunarodni	---	0.0000	46.0500	0.0000	0.6540	
Kiribati	*00686	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Kolumbija	*0057	4	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Komori	*00269	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Koreja, Južna	*0082	4	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Koreja, Severna	*00850	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Kostarika	*00506	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Kuba	*0053	4	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Kuvajt	*00965	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Laos	*00856	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Lesoto	*00266	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Letonija	*00371	5	Međunarodni	---	0.0000	25.3500	0.0000	1.1880	
Liban	*00961	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Liberija	*00231	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Libija	*00218	5	Međunarodni	---	0.0000	25.3500	0.0000	1.1880	
Lihtenštajn	*00423	5	Međunarodni	---	0.0000	21.5100	0.0000	1.4000	
Litvanija	*00370	5	Međunarodni	---	0.0000	25.3500	0.0000	1.1880	
Luksemburg	*00352	5	Međunarodni	---	0.0000	21.5100	0.0000	1.4000	
Madagaskar	*00261	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Madarska	*0036	4	Međunarodni	---	0.0000	17.4400	0.0000	1.7270	
Makao	*00853	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	
Makedonija	*00389	5	Međunarodni	---	0.0000	17.4400	0.0000	1.7270	
Malavi	*00265	5	Međunarodni	---	0.0000	55.2600	0.0000	0.5450	

Page 1 of 2

Vremenski faktori

SAGA Unified Billing and Recording System - Saga odjava

Administracija Pozivi

Administracija

- Korisnici
- Telefoni
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi
- Veze (peer)
- Sektori
- Kvota
- Profil
- Konfiguracija

Vremenski faktori

Pretraga:    

Vremenski faktor Od Do Pon Uto Sre Čet Pet Sub Ned Pra: Brisanje

Vremenski faktor: Slab Saobraćaj (8)

Slab Saobraćaj	15:00	16:59	☐	☐	☐	☐	☐	☒	☐	☐	
Slab Saobraćaj	15:00	16:59	☒	☒	☒	☒	☒	☐	☐	☐	
Slab Saobraćaj	00:00	23:59	☐	☐	☐	☐	☐	☐	☒	☐	
Slab Saobraćaj	21:00	23:59	☐	☐	☐	☐	☐	☒	☐	☐	
Slab Saobraćaj	21:00	23:59	☒	☒	☒	☒	☒	☐	☐	☐	
Slab Saobraćaj	00:00	06:59	☐	☐	☐	☐	☐	☒	☐	☐	
Slab Saobraćaj	00:00	06:59	☒	☒	☒	☒	☒	☐	☐	☐	
Slab Saobraćaj	00:00	23:59	☐	☐	☐	☐	☐	☐	☒	☐	

Nodovi

SAGA Unified Billing and Recording System - Saga odjava

Administracija **Pozivi**

Administracija

- Korisnici
- Telefoni
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi**
- Veze (peer)
- Sektori
- Kvota
- Profil
- Konfiguracija

Nodovi

Pretraga:   Osveži  Novi nod  Excel

Nod	Tip	IP	Uloga	Cluster ID	Node ID	Radius secret	Brisanje
2811	Cisco Gateway	10.5.101.45	Slave			rfc3311	
CUCM	CU Call Manager	10.5.101.60	Master	StandAloneCluster	01		

Page 1 of 1 

Sagin sistem tarifiranja



Member of
New
Frontier
Group

Peer

SAGA Unified Billing and Recording System - Saga odjava

Administracija Pozivi

Administracija

- Korisnici
- Telefoni
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi
- Veze (peer)**
- Sektori
- Kvota
- Profil
- Konfiguracija

Veze

Pretraga: Osveži Nova veza Excel

Naziv	Tip	Nod	Ključni naziv	Povezani nod	Tarifna grupa	Brisanje
CGW 2811 Self	Interna	2811		2811	Lokal	
CUCM Self	Interna	CUCM		CUCM	Lokal	
CUCM from GW2811	VoIP	2811	10.5.101.60	CUCM	---	
Gateway 2811 form CUCM	VoIP	CUCM	2811	2811	Telekom Fiksna	
Telekom BRI	POTS	2811	BRI 0/0/0*	---	Telekom Fiksna	

Page 1 of 1

Lista poziva – IP Phone



Cisco IP telefonski sistem omogućava dva načina snimanja razgovora:

1.Passive - SPAN

2.Active - BuiltInBridge

1. Passive – SPAN

- komplikovana konfiguracija
- zahteva upotrebu SPAN-a na switchevima
- komplikacije u razgranatoj mreži
- udaljene lokacije

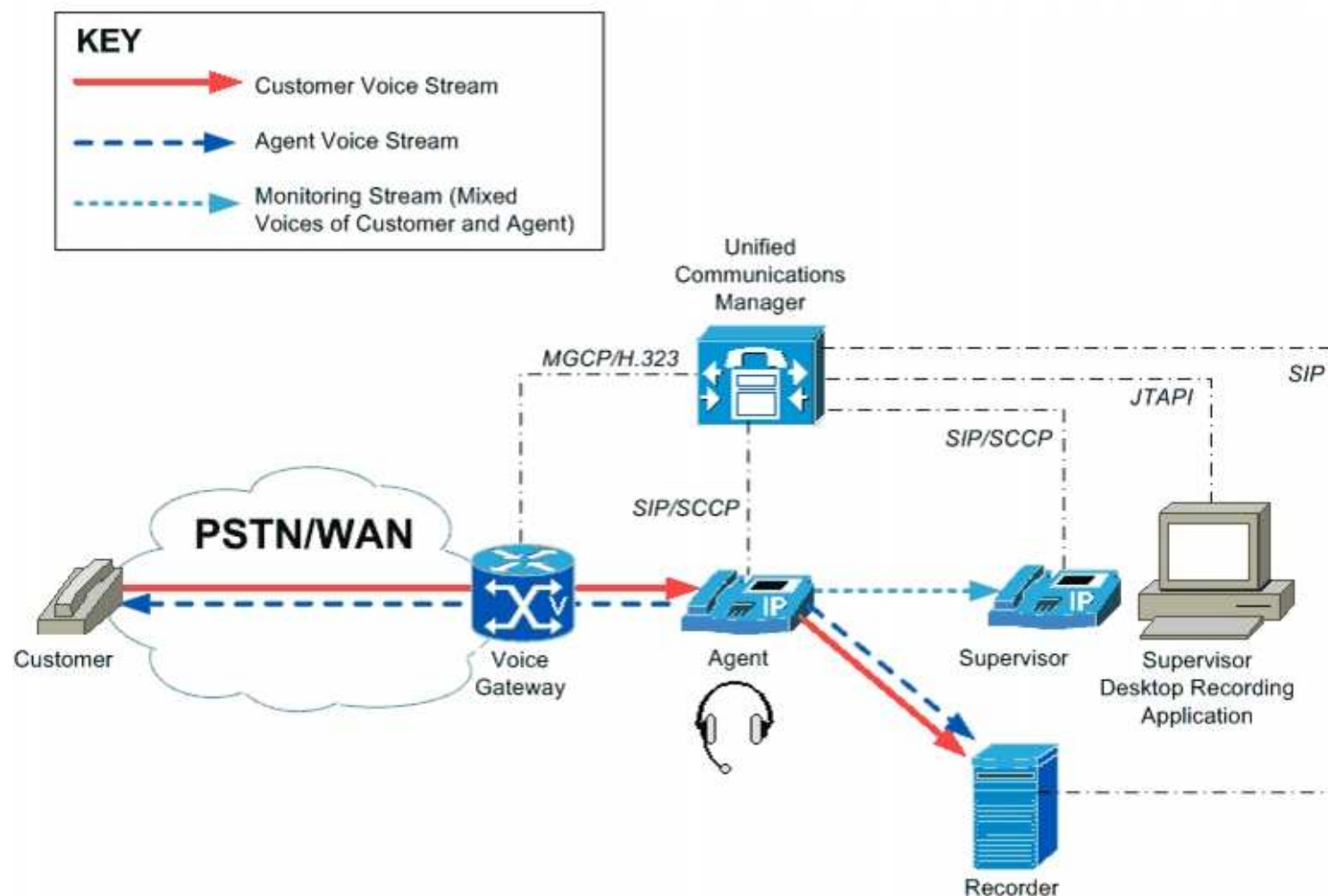
2. Active – Silent Monitoring

- jednostavnija konfiguracija
- ne zavisi od topologije
- mogućnost snimanja udaljenih lokacija
- od CUCM 6.0
- treća generacija telefona (7911G, 7931G, 7941G ...)

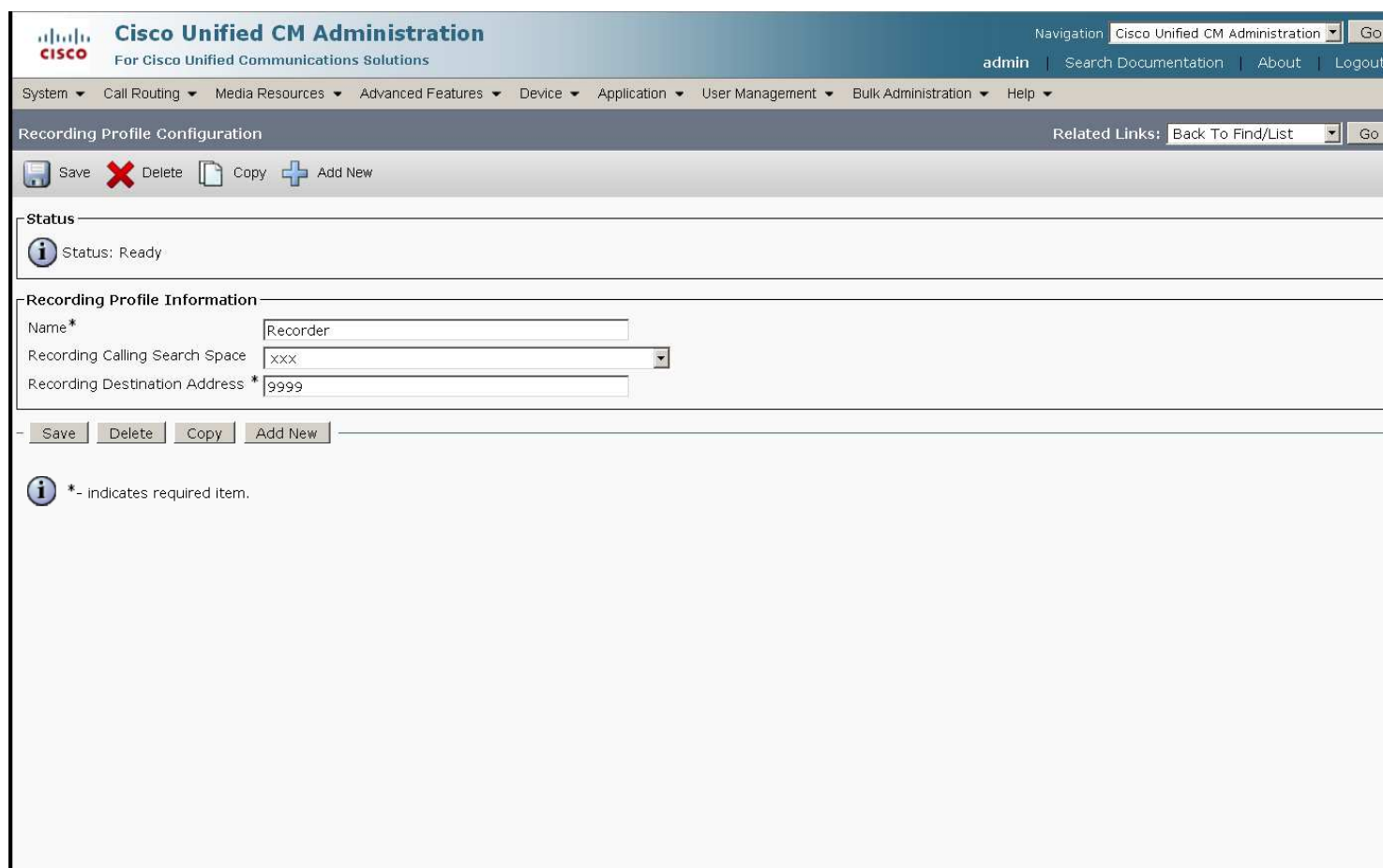
Snimanje poziva



Member of
New
Frontier
Group



Podešavanje – Recording Profile



The screenshot displays the Cisco Unified CM Administration web interface. At the top, the header includes the Cisco logo and the text "Cisco Unified CM Administration For Cisco Unified Communications Solutions". A navigation bar contains links for "admin", "Search Documentation", "About", and "Logout". Below this, a menu bar lists various system components: System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main content area is titled "Recording Profile Configuration" and includes a "Related Links" section with a "Back To Find/List" link. A toolbar at the top of the configuration area contains icons for Save, Delete, Copy, and Add New. The configuration form itself has a "Status" section showing "Status: Ready". Below this is the "Recording Profile Information" section, which contains three input fields: "Name*" (with the value "Recorder"), "Recording Calling Search Space" (with the value "xxx"), and "Recording Destination Address*" (with the value "9999"). At the bottom of the form, there is a legend indicating that an asterisk (*) denotes a required item.

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration Go

admin | Search Documentation | About | Logout

System | Call Routing | Media Resources | Advanced Features | Device | Application | User Management | Bulk Administration | Help

Recording Profile Configuration Related Links: Back To Find/List Go

Save Delete Copy Add New

Status
Status: Ready

Recording Profile Information

Name* Recorder

Recording Calling Search Space xxx

Recording Destination Address* 9999

Save Delete Copy Add New

* - indicates required item.

Podešavanje – BuiltInBridge

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration Go

admin | Search Documentation | About | Logout

System | Call Routing | Media Resources | Advanced Features | Device | Application | User Management | Bulk Administration | Help

Phone Configuration Related Links: Back To Find/List Go

Save Delete Copy Reset Apply Config Add New

7	Add a new SD	MAC Address*	0021A0D81B5F
8	None	Description	Dzida
----- Add On Module(s) -----		Device Pool*	Default View Details
9	None	Common Device Configuration	< None > View Details
10	None	Phone Button Template*	SEP0021A0D81B5F-SCCP-Individual Template
11	None	Softkey Template	Standard User
12	None	Common Phone Profile*	Standard Common Phone Profile
13	None	Calling Search Space	LocalIP
14	None	AAR Calling Search Space	< None >
15	None	Media Resource Group List	< None >
16	None	User Hold MOH Audio Source	< None >
17	None	Network Hold MOH Audio Source	< None >
18	None	Location*	Hub_None
19	None	AAR Group	< None >
20	None	User Locale	< None >
21	None	Network Locale	< None >
22	None	Built In Bridge*	On
23	None	Privacy*	Default
24	None	Device Mobility Mode*	Default View Current Device Mobility Settings
25	None	Owner User ID	dzida
26	None	Phone Personalization*	Default
27	None	Services Provisioning*	Default
28	None	Phone Load Name	
29	None	Single Button Barge	Default
30	None		
31	None		

Podešavanje – Directory Number

**Cisco Unified CM Administration**
For Cisco Unified Communications Solutions

Navigation Cisco Unified CM Administration Go

[admin](#) | [Search Documentation](#) | [About](#) | [Logout](#)

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾ User Management ▾ Bulk Administration ▾ Help ▾

Directory Number Configuration Related Links: Configure Device (SEP0021A0D81B5F) Go

 Save  Delete  Reset  Apply Config  Add New

Visual Message Waiting Indicator Policy*

Use System Policy

Audible Message Waiting Indicator Policy*

Default

Ring Setting (Phone Idle)*

Ring

Ring Setting (Phone Active)

Use System Default

Applies to this line when any line on the phone has a call in progress.

Call Pickup Group Audio Alert Setting(Phone Idle)

Use System Default

Call Pickup Group Audio Alert Setting(Phone Active)

Use System Default

Recording Option*

Automatic Call Recording Enabled

Recording Profile

Recorder

Monitoring Calling Search Space

< None >

☒ Log Missed Calls

Multiple Call/Call Waiting Settings on Device SEP0021A0D81B5F

Note:The range to select the Max Number of calls is: 1-200

Maximum Number of Calls*

Busy Trigger* (Less than or equal to Max. Calls)

Forwarded Call Information Display on Device SEP0021A0D81B5F

☒ Caller Name

☐ Caller Number

☐ Redirected Number

☒ Dialed Number

- Podržano je aktivno snimanje
- Konfiguriše se snimanje poziva po telefonu preko administrativnog web interfejsa
- Preslušavanje i download preko Web 2.0 interfejsa
- U sklopu sa sistemom za tarifiranje omogućena je laka pretraga i preslušavanje
- Moguće je preslušavanje poziva i preko IP telefona sa osnovnim komandama (pauza, premotavanje)

Upotreba:

- nalazi veliku primenu u okruženjima gde je deljeno radno mesto (rotirajuće smene)
- efikasnije se prate pozivi svakog agenta
- svaki agent ima svoju jedinstvenu konfiguraciju telefona bez obzira na isti fizički telefon

Način rada:

- definišu se *device profili* koje nose konfiguraciju (linije, tasteri, servisi)
- definišu se korisnici i vezuju se profili za njih
- korisnik se posredstvom servisa na telefonu prijavljuje sa svojim kredencijalima
- telefon preuzima novu konfiguraciju definisanu profilom vezanog za korisnika
- korisnik se odjavljuje i telefon preuzima svoju staru konfiguraciju

Extension Mobility API



Member of
New
Frontier
Group

- XML bazirani HTTP interfejs koji omogućava 3rd party aplikaciji da uloguje/odloguje korisnika
- vezuje se sa kredencijalima *Application User*-a sa pravima prijave korisnika

Pregled metoda

- Login – prijava korisnika na uređaj
- Logout – odjava korisnika sa uređaja
- Logout All – odjava svih korisnika sa uređaja
- User Query – vraća informaciju o uređajima na kojima je korisnik prijavljen
- Device Query – vraća korisničke ID-ove koji su prijavljeni na uređaj
- Device Profile Query – vraća profile pridružene korisničkom ID-u

Primer Login

```
<request>
<appInfo>
<appId>posrednik</appId>
<appCertificate>sifra_posrednika</appCertificate>
</appInfo>
  <login>
    <deviceName>SEP003094C25B15</deviceName>
    <userID>petar</userID>
    <deviceProfile>petar</deviceProfile>
  </login>
</request>

<response>
<success>
</response>
```

Primer Logout

```
<request>  
<appInfo>  
<appId>posrednik</appId>  
<appCertificate>sifra_posrednika</appCertificate>  
</appInfo>  
<logout>  
<deviceName>SEP003094C25B15</deviceName>  
</logout>  
</request>  
  
<response>  
<success>  
</response>
```

- omogućava jedinstvenu prijavu samo na računaru, aplikacija automatski loguje korisnika na telefon
- kod odjave sa računara automatski se odjavljuje i sa telefona
- u slučaju zaključavanja desktopa vrši se odjava sa telefona

Zahtevi:

- jedinstveni kredencijali na računaru ili telefonu (AD)
- računar na PC portu telefona
- Microsoft Windows XP/Windows 7

Način rada:

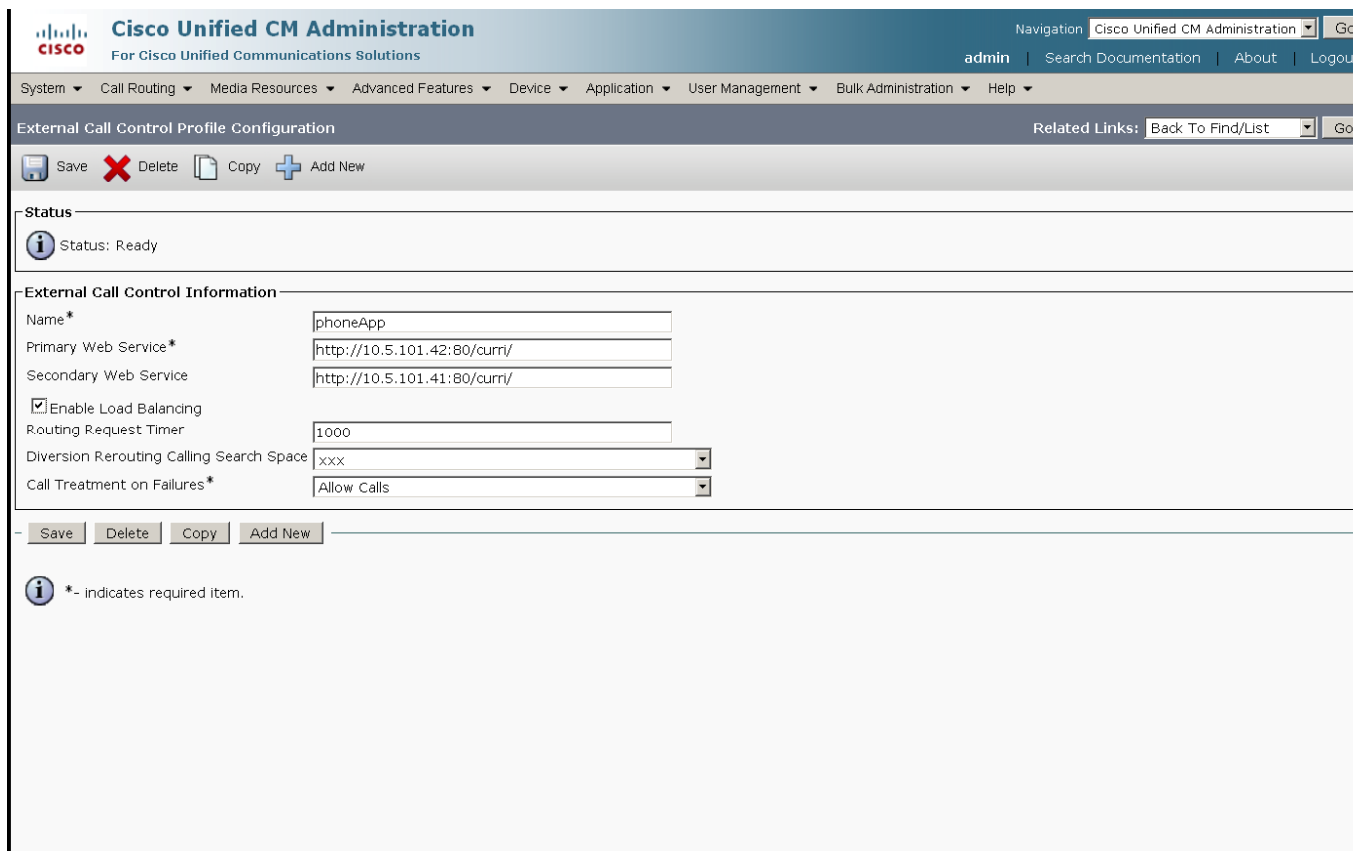
- aplikacija se vrti kao servis na računaru
- aplikacija posredstvom CDP-a prepoznaje telefon za koji je vezan
- prilikom logovanja na računar šalje se zahtev preko EM API-a za logovanje (korisničko ime, telefon)
- prilikom odjave ili zaključavanja šalje se EM API zahtev za odjavom

Cisco Unified Routing Rules Interface

- XML tj XACML (eXtensible Access Control Markup Language) baziran HTTP/HTTPS interfejs
- omogućava udaljenoj aplikaciji da *Dozvoli*, *Zabrani* ili *Redirektuje* pozive na osnovu zahtevane biznis logike
- Primeri
 - Dozvola i zabrana zvanja određenih brojeva
 - Least-Cost Routing
 - Rutiranje poziva baziran na datumu/vremenu/prezensu
 - Dozvola poziva u odnosu na dodeljenu kvotu
 - korisnički definisani profili

Kako radi?

Administrator definiše *External Call Control Profile*
(ECCP)



The screenshot shows the Cisco Unified CM Administration interface for configuring an External Call Control Profile (ECCP). The page title is "External Call Control Profile Configuration". The navigation bar includes links for System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main content area displays the configuration details for a profile named "phoneApp".

External Call Control Profile Configuration

Navigation: Cisco Unified CM Administration Go
admin | Search Documentation | About | Logout

System Call Routing Media Resources Advanced Features Device Application User Management Bulk Administration Help

Related Links: Back To Find/List Go

Save Delete Copy Add New

Status

Status: Ready

External Call Control Information

Name* phoneApp

Primary Web Service* http://10.5.101.42:80/curr/

Secondary Web Service http://10.5.101.41:80/curr/

☒ Enable Load Balancing

Routing Request Timer 1000

Diversion Rerouting Calling Search Space xxx

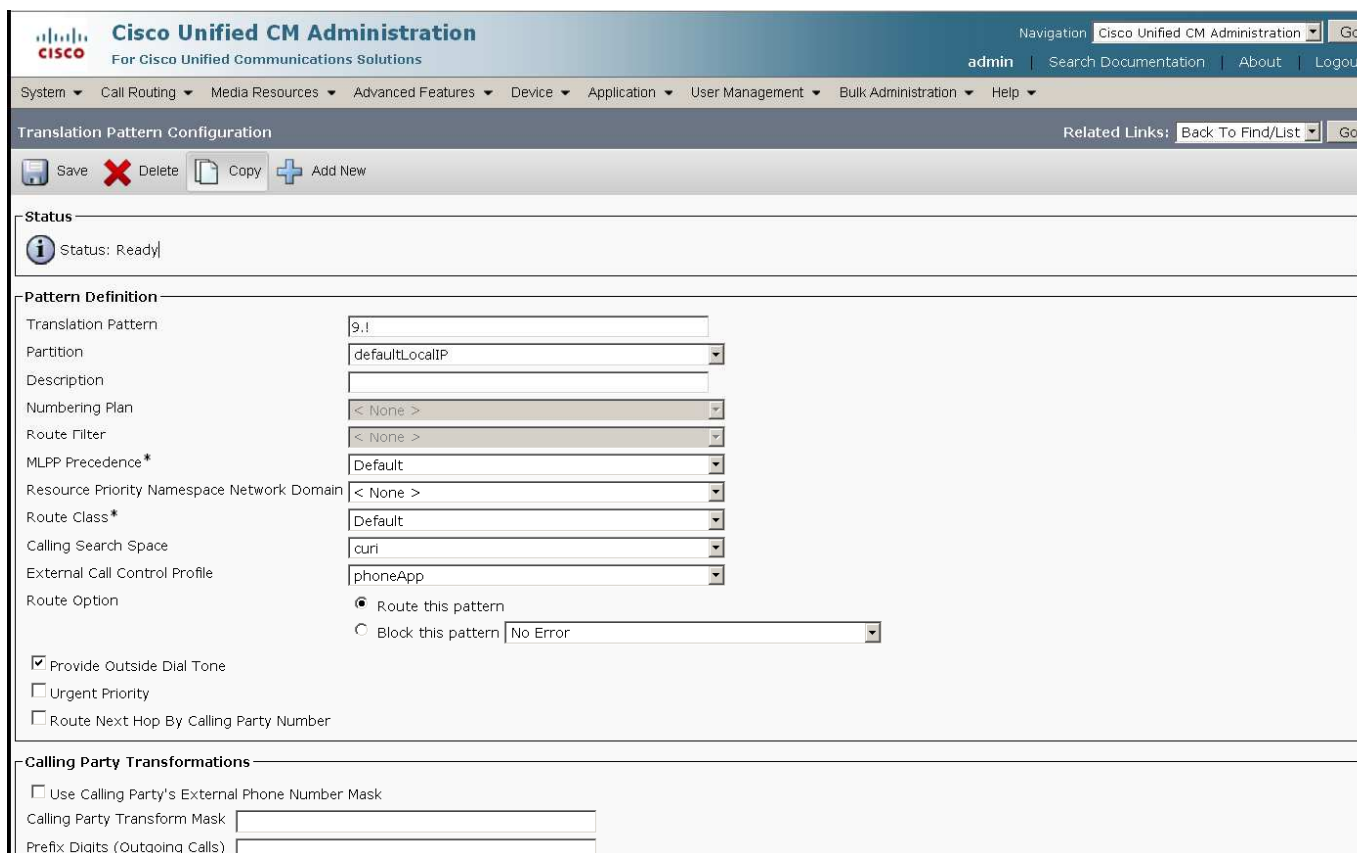
Call Treatment on Failures* Allow Calls

Save Delete Copy Add New

*- indicates required item.

Kako radi?

Administrator pridružuje *ECCP* na CUCM *Translation Pattern*



The screenshot displays the Cisco Unified CM Administration web interface. The top navigation bar includes the Cisco logo, the title "Cisco Unified CM Administration", and a navigation menu with options like System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main content area is titled "Translation Pattern Configuration" and includes a "Related Links" section with a "Back To Find/List" link. Below this, there are buttons for Save, Delete, Copy, and Add New. The "Status" section shows "Status: Ready". The "Pattern Definition" section contains several fields and dropdown menus: Translation Pattern (9.), Partition (defaultLocalIP), Description, Numbering Plan (< None >), Route Filter (< None >), MLPP Precedence* (Default), Resource Priority Namespace Network Domain (< None >), Route Class* (Default), Calling Search Space (curi), External Call Control Profile (phoneApp), and Route Option (Route this pattern). There are also checkboxes for "Provide Outside Dial Tone", "Urgent Priority", and "Route Next Hop By Calling Party Number". The "Calling Party Transformations" section includes a checkbox for "Use Calling Party's External Phone Number Mask" and fields for "Calling Party Transform Mask" and "Prefix Digits (Outgoing Calls)".

Kako radi?

- Pozvani broj *match*-uje *pattern*
- *CUCM* šalje CURRI zahtev definisanom web servisu (Route Request)
- Web servis na osnovu interne logike vraća odgovor sa
 - “odlukom” **DECISION**
 - i “obavezom” **OBLIGATION**

Kako radi?

DECISION – PERMIT ili DENY

OBLIGATION:

- *Continue* – normalno rutiranje poziva uz moguću promenu pozvanog ili pozivajućeg broja
- *Divert* – rutiranje poziva na drugo odredište uz moguću promenu pozvanog ili pozivajućeg broja
- *Reject* – onemogućiti poziv uz opciono puštanje glasovne poruke

Sadržaj zahteva

- Calling number
- Transformed calling number
- Called number or dialed digits
- Transformed called number
- Type of the triggering point, i.e., translation pattern

Primer PERMIT

```
<?xml encoding="UTF-8" version="1.0"?>
<Response>
  <Result>
    <Decision>Permit</Decision>
    <Obligations>
      <Obligation FulfillOn="Permit" ObligationId="continue.simple">
        <AttributeAssignment AttributeId="Route:continue.simple"
          <AttributeValue DataType="http://www.w3.org/2001/XMLSchema#string"
            <cixml version="1.0"divertdestination+19725550100destinationdivertcixml
```

CONTINUE

```
<cixml version="1.0">  
  <continue></continue>  
</cixml>
```

CONTINUE sa modifikacijom

```
<cixml version="1.0">  
  <continue>  
    <modify callingnumber=[number]callednumber=[number] />  
  </continue>  
</cixml>
```

CONTINUE sa najavom

```
<cixml version="1.0">  
  <continue >  
    <greeting identification=[id] />  
  </continue>  
</cixml>
```

DIVERT

```
<cixml version="1.0">  
  <divert>  
    <destination>[number] | voicemail</destination>  
  </divert>  
</cixml>
```

DIVERT sa modifikacijom

```
<cixml version="1.0">  
  <divert >  
    <destination>[number]</destination>  
    <modify callingnumber=[number] callednumber=[number] />  
  </divert>  
</cixml>
```

REJECT

```
<cixml version="1.0">  
  <reject> </reject>  
</cixml>
```

REJECT sa najavom

```
<cixml version="1.0">  
  <reject>  
    <announce identification="CUSTOM_0501" />  
  </reject>  
</cixml>
```

Najave

Cisco Unified CM Administration	
For Cisco Unified Communications Solutions	
Upload File	
 Upload File  Close	
(i) Status: Ready	
Identifier:	Custom_05001 ▼
Title:	900 area code not allowed
Language Locale:	English, United States ▼
Upload File:	Browse
Upload File Close	

1. KORISNIČKE KVOTE

- Sistem za tarifiranje poseduje informaciju o trenutnoj potrošnji korisnika
- Definišu se tipovi kvota (godišnja, mesečna, nedeljna, dnevna) sa dozvoljenim iznosima
- Kvote se pridružuju korisnicima
- Prilikom pokušaja poziva preko CURRI-ja daje se dozvola za zvanje ili se onemogućava zvanje (sa i bez objave) u odnosu na stanje računa prema kvoti

SAGA primena CURRI-ja



Member of
New
Frontier
Group

KVOTE

SAGA Unified Billing and Recording System - Saga odjava

Administracija **Pozivi**

Administracija

- Korisnici
- Telefoni
- Vremenski faktori
- Praznici
- Klase poziva
- Tarifne grupe
- Tarife
- Nodovi
- Veze (peer)
- Sektori
- Kvota
- Profil
- Konfiguracija

Sektori

Pretraga: Osveži Nova kvota Excel

Naziv kvote	Tip	Kvota	Akcija	Brisanje
hiljadu din / mesec	Mesečna	1000 RSD	Objava + onemogući	
nula test	Godišnja	1 RSD	Samo objava	

KVOTE – IP Phone



15:33 12/07/10 3005

Kvota za tekuceg korisnika

1	Ukupno ostvareni saobraćaj: 1.506 RSD
2	Konfigurisana kvota: 1000
3	Neiskoriscen saobraćaj: 998.494

Obracunato tekuci mesec

Info Back Exit

2. KORISNIČKI PROFILI

- korisnik preko web interfejsa definiše različite profile
- u sklopu profila definišu se pravila sa kog/kojih brojeva se dozvoljava / odbija ili preusmerava poziv
- korisnik preko servisnog interfejsa na telefonu definiše tj. menja koji je profil aktivan

SAGA primena CURRI-ja



Member of
New
Frontier
Group

PROFILI

SAGA Unified Billing and Recording System - Viktor Varga odjava

Pozivi **Profili**

Pretraga: Osveži Novi profile Excel

Profil	Broj	Odredište	Pravilo	Brisanje
Profil: viktor1 (3)				
viktor1	1234	5678	Prihvatiti	
viktor1	4567	9999	Preusmeri	
viktor1	111	222	Odbiti	

PROFILI – IP Phone



CALL FOR SERVICE...



Member of
New
Frontier
Group