



Using TAPS with +E.164 Directory Numbers



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Introduction

The Tool for Auto-Registered Phone Support (TAPS) loads a preconfigured phone setting on a phone. The TAPS works in conjunction with the Bulk Administration Tool (BAT) to minimize installer effort during phone placement. After the BAT is used to bulk add phones with dummy MAC addresses to Cisco Unified Communications Manager, you can plug the phones into the network.

The administrator or the phones' user can then dial a TAPS directory number, enter their extension and that causes the phone to download its' configuration. At the same time, the phone gets updated in the Unified CM database with the correct MAC address of the phone.

Cisco Unified Communications Manager started to support a leading "+" as part of routeable patterns and as such also directory numbers with release 7.0. Customers intending to use TAPS (Tool for Auto-Registered Phones) to provision phones with a "+" in the directory number hit a problem in that phones can not send "+" as DTMF which would be required as part of the TAPS call flow to instruct the TAPS application which phone configuration to apply to the calling phones.

This application note will describe how to modify the TAPS application to resolve that issue and deploy phones with +E.164 directory numbers using TAPS.

Installing Cisco Unified Contact Center Express

Cisco Unified CCX is a requirement to use TAPS. The TAPS application can be downloaded from Cisco Unified Communications Manager and has to be installed on Cisco Unified CCX.

The procedure to install Cisco Unified CCX is described in the "Installation Guide for Cisco Unified CCX and Cisco Unified IP IVR" which can be found here: http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html.



Follow the standard installation procedure and make sure that you set the IVR default language to “en_US” in the initial setup for the first node after completing the install:

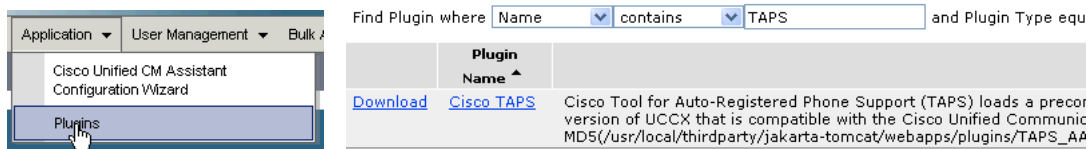
Language Group	Group Default	Country Specific
en_AU	<input type="radio"/>	<input type="checkbox"/>
en_CA	<input type="radio"/>	<input type="checkbox"/>
en_GB	<input type="radio"/>	<input type="checkbox"/>
en_US	<input checked="" type="radio"/>	<input checked="" type="checkbox"/>

Installing TAPS on Cisco Unified Contact Center Express

The installation process of TAPS is described in the “Cisco Unified Communications Manager Bulk Administration Guide” which can be found here: http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html.

You also might want to refer to the “Administration Guide for Cisco Unified CCX and Cisco Unified IP IVR” which is located here: http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html

The TAPS application can be downloaded from the Cisco Unified Communications Manager administration interface. It is located in the “Plugins” item under the “Application” menu of Cisco Unified Communications Manager:



Before changing the script

Please make sure to install TAPS following the instructions previously mentioned. Be sure to test TAPS to ensure it is working properly with non + DNs prior to making any scripting modifications. When modifying UCCX scripts, always be sure to keep a backup of the original script.

Installing the Cisco Unified CCX Editor

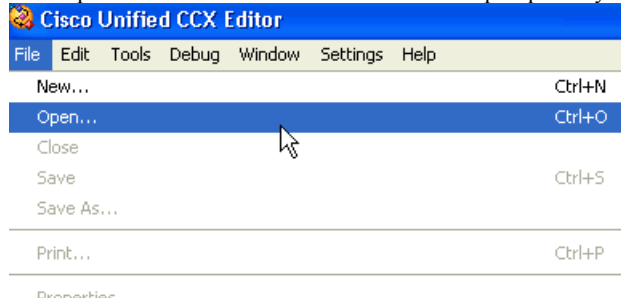
The TAPS script previously installed has to be modified to accept users dialing the +E.164 extensions using a “*” instead of the “+”. To be able to modify the script you first have to install the Cisco Unified CCX Editor. The Cisco Unified CCX Editor installer can be downloaded as a plugin from the Cisco Unified CCX administration under the “Tools”, “Plug-ins” menu.

Changing the TAPS script to provision +E.164 Directory Numbers

The TAPS script asks users dialing into the TAPS route point to enter the directory number that should be provisioned. Since it’s not possible enter “+” as DTMF digit, the TAPS script that got installed during the installation process needs to be changed. We will describe the steps required to change the script. The general idea is that the user dialing into TAPS enters a “*” instead of the “+”. The digit string entered will be changed accordingly in the script before actually initiating the TAPS provisioning process.




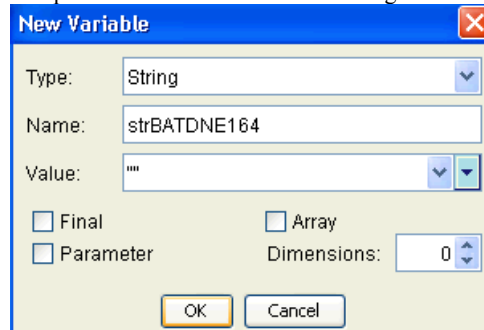
Start the CCX editor and open the TAPS script from the Cisco Unified CCX server script repository:



The script can be found in the “default” folder.

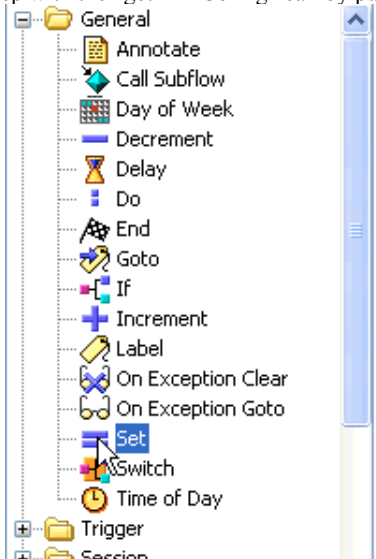
Save a local copy of the script under a different name (e.g. TAPS E164.aef)

Add a new variable “strBATDNE164” by clicking on  in the bottom left window and name it strBATDNE164. This variable will be used to hold the modified digit string that will be passed to the TAPS service running on Cisco Unified Communications Manager:



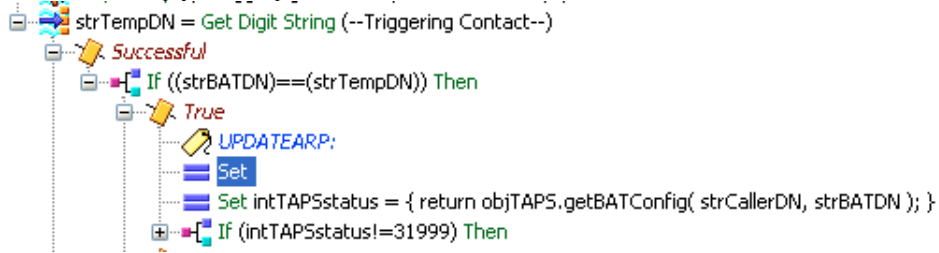
In the script search for “getBATConfig” to find the location where the actual phone provisioning is initiated.

Add a new SET step to the script just before the step with the “getBATConfig” call by pulling a SET step from the top left window:

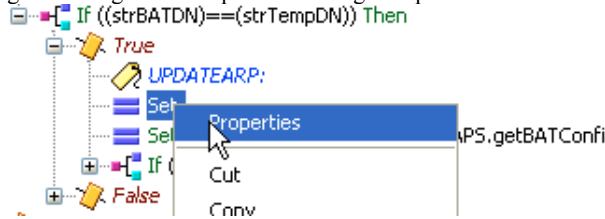




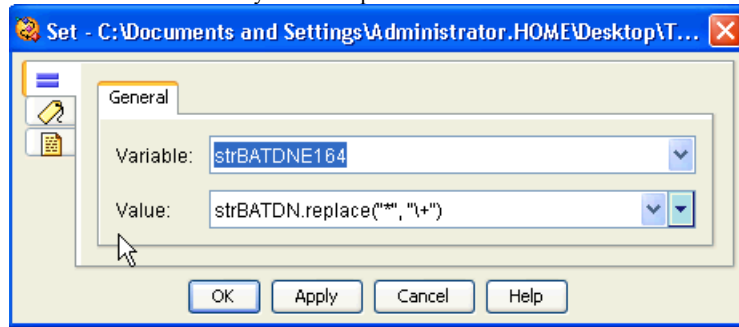
The script should now have a new empty, SET step:



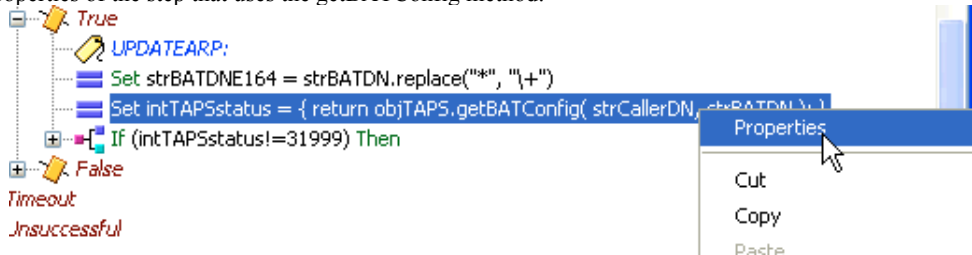
Edit the properties of the new step by right-clicking on the step and selecting “Properties”:



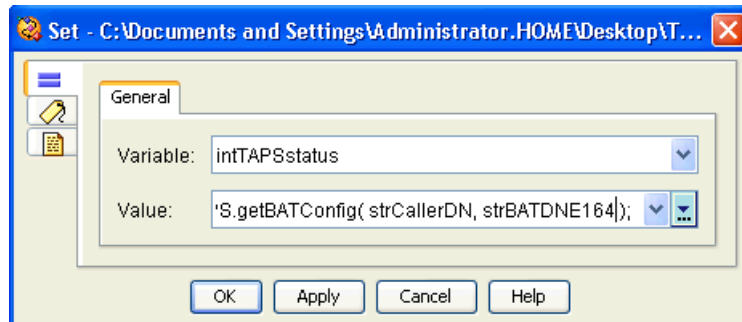
Set the variable to strBATDNE164 (the variable just created) and the value to strBATDN.replace(“*”, “\+”) to replace a star entered by the user to “\+”. The “\+” correlates with the +E.164 directory numbers provisioned in Cisco Unified Communications Manager:



Now change the properties of the step that uses the getBATConfig method:



Replace the reference to variable strBATDN with strBATDNE164. This will make sure that the actual provisioning process will use the modified directory number:

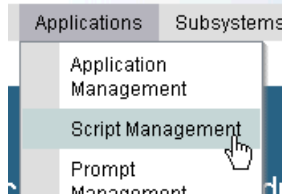




The script should now look like this:

```
UPDATEARP;  
Set strBATDNE164 = strBATDN.replace("*", "+")  
Set intTAPSstatus = { return objTAPS.getBATConfig( strCallerDN, strBATDNE164 ); }  
If (intTAPSstatus!=31999) Then
```

Save the script locally and then upload the script to the Cisco Unified CCX server:



After uploading the script change the TAPS application to use the modified script:



Cisco Script Application

Update Delete Cancel Back to Application List

Status
Status : Ready

Unified CM Telephony
Trigger: 9000
Add new trigger

Name	TAPS
ID*	777
Maximum Number of Sessions*	4
Script*	SCRIPT[TAPS E164.aef] Edit
<input checked="" type="checkbox"/> Cisco_Unified_CM_IP_Address	"192.168.10.74"

Instructions for Use

The modified script will now allow users to enter a * before their extension if they have a +E.164 DN. Extension "+1 408 555 1234" for example has to be entered as "**1 408 555 1234". Please make sure to distribute this instruction to your users.



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