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## Introduction

This document describes how macros are used to return the data from a system in various formats. They not only test the conditions and map the data from GUI or bulk loader input to various elements in the system (in conjunction with configuration templates) but are also used to access the data in workflow and wizard steps.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

The information in this document is based on these software and hardware versions:

- Cisco Unified Communications Domain Manager (Unified CDM) 10.6.X
- Cisco Unified Communications Managers (CUCM) 10.5.2 or 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.

## Which model supports macros?

In general all the Cisco Unified CDM models use macros within their workflows. Any Configuration Template (CFT), Feature Display Policy (FDP), etc that are already available in the Cisco Hosted Collaboration Solution (HCS) admin or provider admin account can be changed in the production system, this includes the usage of macros in these FDP/CFT. The CFTs can be cloned from **sys** to **sys.hcs.Provider** and modified in order to meet the customer requirements. Any changes done without the clone creation at lower hierarchy, are lost during an upgrade.

Not every model accepts the macros' input through API/ bulk load sheets unless the CFT's value are specified as **fn.evaluate**, as then CFT evaluates the macro and uses the value. Moreover, a customer can implement a macro with or without the evaluation in order to meet the customer

requirements

## Configuration Example: CFT field without field Macro Evaluation

- Log in as hcsadmin user
- Bread crumb to your provider hierarchy
- As shown in the image, navigate to **Role Manager > Configuration Template** and then search for a CFT template that needs to be customized

The screenshot shows the Cisco Configuration Manager interface. The left sidebar has 'Role Management' and 'Configuration Templates' highlighted. The main content area shows a table of Configuration Templates. A filter dialog is open, showing the following filters:

Column	Filter Type	Value
Name	Contains	CUCM
Name	Contains	User
Name	Starts With	

- As shown in the image, select the CFT and clone it to show it up at a provider level
- Open the new CFT

The screenshot shows the Cisco Configuration Manager interface. The left sidebar has 'Role Management' and 'Configuration Templates' highlighted. The main content area shows a table of Configuration Templates. The second row is highlighted in red:

Name	Description	Target Model Type	Hierarchy
Default CUCM User Template	Default CUCM User Template	device/cucm/User	sys
Default CUCM User Template	Default CUCM User Template	device/cucm/User	sys.hcs.p1

- Now as shown in the image, add your Macro without evaluation. In the example, a macro in the Ldap Directory Name is applied

The screenshot shows a web interface for configuring templates. The title is "Configuration Templates [Default CUCM User Template]". There are several input fields: "Extension" with a plus icon, "User Identity" with a text box, "Ldap Directory Name" with a dropdown menu containing the text "{{macro.HcsDpCustomerName}}-LDAP" (highlighted with a red box), "Remote Destination Limit" with a text box, and "Custom User Field" with a plus icon.

In this scenario, the field is simply evaluated on the basis of macro contents. For example, the Ldap Directory Name in the Cisco Unified Communications Manager (CUCM) User Template CFT: {{ macro.HcsDpCustomerName }}-LDAP, it takes the CustomerName field from the appropriate BaseCustomerDAT tuple (HcsDpCustomerName) and tack –LDAP on it regardless of what is passed in the input context (from API/bulk load) for that field.

## Configuration Example: CFT field with field Macro Evaluation

Macro evaluation is input through API's/ bulk load sheets, it is supported by certain fields within the most CFT. Moreover, this evaluation is further supported only if the CFT attribute includes embedded **fn.evaluate** in the input context.

For example, the Description field of HcsCucPartitionCFT from the compiled xls list supports the evaluation as **fn.evaluate** command is passed in the input test.

The screenshot shows a search results page for "HcsCucPartitionCFT [HcsCucPartitionCFT]". The search results are displayed in a table-like format. The "Name" field is "HcsCucPartitionCFT". The "Description" field is empty. The "Foreach Elements" and "Schema Defaults" fields have plus icons. The "Target Model Type\*" field is "device/cuc/Partition". The "Merge Strategy" field is empty. Below the search results, there is a section titled "device/cuc/Partition" with several fields: "Name" with value "{{ input.PartitionName.DATA }}", "Object Id", "URI", "Location Object Id", "Location URI", and "Description" with value "{{ fn.evaluate input.PartitionItem.description }}" (highlighted with a red box).



# How to check the Macro function correctly?

- Log in as sysadmin
- Launch the macro evaluator

The macro evaluator can be used to evaluate macros while executing the macro to the correct hierarchy. For example, the phone macro at site level shows the phones provisioned in the site, as shown in the image.

The screenshot displays the 'Macro Evaluator' interface. On the left, a sidebar menu includes 'Hierarchy', 'Theme', 'Transaction', 'Settings', 'Macro Evaluator' (highlighted with a red box), and 'About'. The main area is titled 'Macro Evaluator' and contains the following fields:

- Context Hierarchy:** sys.hcs.p1.c1.KRK (highlighted with a red box)
- Location Hierarchy:** (empty)
- Macro:** {#device.cucm.Phone.name#} (highlighted with a red box)
- Output:** A list of phone names in quotes: ["BOTANDREA", "SEP000B4BA04A1", "SEP000B4BA04AA", "SEP000B4BA04AB", "SEP000B4BA04D4", "TCTANDREA"] (highlighted with a black box)
- Context Data:** {}
- Show Context:**