

Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Components Used](#)

[Which model supports macros?](#)

[Configuration Example: CFT field without field Macro Evaluation](#)

[Configuration Example: CFT field with field Macro Evaluation](#)

[How to check the Macro function correctly?](#)

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

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 HCS Configuration Templates page. The left sidebar has 'Role Management' and 'Configuration Templates' highlighted. The main table lists 'Default CUCM User Template'. A filter modal is open, showing filters for 'Name' containing 'CUCM' and 'User'.

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 HCS Configuration Templates page with two templates listed. The second template, 'Default CUCM User Template', is highlighted with a red box, showing its hierarchy as 'sys.hcs.p1'.

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 the 'Configuration Templates [Default CUCM User Template]' interface. The 'Ldap Directory Name' field is highlighted with a red box and contains the macro `{{macro.HcsDpCustomerName}}-LDAP`. Other fields visible include 'Extension', 'User Identity', 'Remote Destination Limit', and 'Custom User Field'.

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 the 'Search results for HcsCucPartitionCFT [HcsCucPartitionCFT]' interface. The 'Description' field is highlighted with a red box and contains the macro `{{ fn.evaluate input.PartitionItem.description }}`. Other fields visible include 'Name*', 'Description', 'Foreach Elements', 'Schema Defaults', 'Target Model Type*', 'Merge Strategy', and a section for 'device/cuc/Partition' with fields for 'Name', 'Object Id', 'URI', 'Location Object Id', 'Location URI', and 'Description'.

In this case, an API invoker populates this field with an embedded macro such as: `Description for {{ input.PartitionItem.description }}`; resulting in a value of `Description for ThisExamplePartitionItem` assuming `PartitionItem.description == "ThisExamplePartitionName"`.

Without the embedded **fn.evaluate** (the crucial piece in supporting the embedded macros), the value field simply resolves as originally seen -- Description for {{ input.PartitionItem.description }}.

In the previous example, if one wants to enable the evaluation in the Name field it will be necessary to modify the macro in `{{ fn.evaluate input.PartitionName.Data }}`.

This image shows the CFT(s) list and attributes with the evaluation already enabled macro.

[illegible]

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 is a sidebar menu with options: Hierarchy, Theme, Transaction, Settings, Macro Evaluator (highlighted with a red box), and About. The main area is titled 'Macro Evaluator' and contains several fields and sections:

- Context Hierarchy:** A text field containing 'sys.hcs.p1.c1.KRK' (highlighted with a red box).
- Location Hierarchy:** A text field that is currently empty.
- Macro:** A text field containing the macro definition '{#device.cucm.Phone.name#}' (highlighted with a red box).
- Output:** A large text area displaying the evaluated output as an array:

```
[  
  "BOTANDREA",  
  "SEPB000B4BA04A1",  
  "SEPB000B4BA04AA",  
  "SEPB000B4BA04AB",  
  "SEPB000B4BA04D4",  
  "TCTANDREA"  
]
```

 (The entire output array is enclosed in a black rectangular box).
- Context Data:** A text field showing an empty object '{}'. Below this field is a 'Show Context' checkbox, which is checked.