



HCS Intelligent Loader

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HCS Intelligent Loader Introduction

The HCS Intelligent Loader (HIL) is used to perform bulk operations like bulk add, delete, and update on Cisco Unified Communications Domain Manager. Using the HIL, you can map the user data information to the Cisco Unified Communications Domain Manager information. When the data is loaded, HIL mapping is used to translate data between the source (user data) and destination (Cisco Unified Communications Domain Manager) formats. HIL validates the user data and corrects errors, if any.



Note

HIL relies on Cisco Unified Communications Domain Manager for user authentication. If a user is configured on Cisco Unified Communication Domain Manager, the same credentials are required to access HIL. In Cisco Unified Communications Domain Manager, users can only use Single Sign-On to access the GUI.



Note

To use HIL, the Cisco Unified Communications Domain Manager version you are using must support it.

Table 1: Common HIL Terminology

Term	Definition
Model	The models are derived from Cisco Unified Communications Domain Manager and conform to the customized display policies for the hierarchy.
Mapper	The mapper file is the bridge between the HCS Intelligent Loader column and the Cisco Unified Communications Domain Manager GUI field.
Loader	The loader file contains the data.

Term	Definition
Hierarchy	The HCS Intelligent Loader uses the same hierarchy as Cisco Unified Communications Domain Manager. For more information, see <i>Cisco Unified Communications Domain Manager, Release 11.5(1) Planning and Install Guide</i> or Control Row , on page 2.

Loader File Introduction

Control Column

The first column of the loader is the **Control Column**.

The control column can use the following values at the start of the column:

- # - Comments out a row. You can have a dedicated control column, ideally the first column. When the row's first column has # or starts with #, HIL will consider it as commented row and does not validate nor load the row.
- *<#> - Multiple rows are grouped together using * followed by an integer . The number next to * indicates the no of rows starting the current row, that needs to be grouped together. . This means the next rows (the number specified after *, minus one) will not be used for validation, but only for loading. The rows will be grouped together with the master row, and loaded as one transaction. For example:
 - *2 = group the current row with the next row.
 - *3 = group the current row with the next two rows.
 - *1 = only the current row.

Control Row

The control row can be any row after the column headers or titles. At each control row, HIL sets the hierarchy to the hierarchy designated in the control row. The data in the following rows is loaded to the hierarchy specified.

You can use the control row to load data to multiple hierarchies, for example **\$hierarchy:sys.hcs.provider.customer.**

Primary Key Identification

Primary Key Identification is a unique key for each record. The key is automatically generated, when records are successfully loaded in Cisco Unified Communications Domain Manager.

Macro Support

The HCS Intelligent Loader supports macros in any column, except the columns headers or titles in the loader sheet.

- If you prefix the data with “?”, the Cisco Unified Communications Domain Manager macro value is evaluated and replaced with the result of evaluation, and then the replaced value gets loaded into the loader.
- If you don't prefix the data with “?”, then the Cisco Unified Communications Domain Manager existing macro value is loaded into the loader.

Set Up HCS Intelligent Loader

Set up the HCS Intelligent Loader platform through an HCM-F service.

Before You Begin

- Ensure Cisco Hosted Collaboration Mediation Fulfillment is installed.
- Ensure that the DNS and domain are set correctly on the HCMF node (APP/WS) where HIL is running, as HIL should be able to resolve the hostname of the CUCDM.

Procedure

- Step 1** Log in to the HCM-F CLI as admin.
HIL can be run on the WS node or the APP node.
- Step 2** To activate the service, enter the command **utils service activate Cisco HCS Intelligent Loader Service**.
- Step 3** To configure the HIL to communicate with the CUCDM server, enter the command **set hcs hil target config**.
- Step 4** When prompted, enter the following details:

Option	Description
target type	CUCDM
Target Server Hostname	<cucdm-hostname> In case of Multi-Node deployment use the proxy node details, for example the same details you use to access the CUCDM user interface.
IP Address	<cucdm ip address> The IP address is selected by default based on the DNS settings, or you can also reenter the IP address.
Would you like to update the node information [yes/no]?	Yes

The “Target successfully updated in the Properties File” message is displayed.

- Step 5** Verify that the target setup is complete by entering the **show hcs hil target config** command.
The HIL Target Node Configuration Details are displayed.
- Step 6** (Optional) Set the HTTP timeout parameter by entering the **set hcs hil target timeout** command. The system then prompt you for a value between 90 seconds and 30 minutes.

HIL performs synchronous transactions while waiting for one transaction to be completed before starting another. If the wait is beyond the timeout value that is configured, a timeout occurs and HIL marks that row/record as appropriate in the "trans_status" column for that row.

- Step 7** Navigate to the following URL: <https://<hostname>/HIL>.
Use your Cisco Unified Communications Domain Manager credentials to log in.

HCS Intelligent Loader Common Tasks

This section describes common tasks used in HIL.

HCS Intelligent Loader Provisioning Workflow

The following workflow outlines the tasks for bulk-adding operations.

Before You Begin

Create at least one customer and site in the Cisco Unified Communications Domain Manager before you start using the HIL to create mappers.

Procedure

- Step 1** Navigate to <https://<host name>/HIL> and sign in to HIL using your Cisco Unified Communications Domain Manager email id as your username.
- Step 2** Select the model from the menu on the left.
- Step 3** Select the required hierarchy at the top of the page.
- Step 4** Create mapper, see [Create Model Mapper, on page 6](#) or [Create Multi Model Mapper, on page 8](#).
- Step 5** Add field values to source file by choosing one of these options:

Option	Description
HIL Edit	You can use the HIL interface to view or edit the source file. Note Do not change the Primary Key Identification column, to avoid corrupting the data.
Spreadsheet Edit	You can edit the source file directly by following these steps: 1 Download to desktop the source file. 2 Add or Edit the values into the source file spreadsheet. 3 Upload from desktop the source file back into HIL. Note To edit a particular field, search for the field by using control rows. For more information, see Edit or Delete Using search_field, on page 5

For more information, see [Loader Tab Reference, on page 15](#).

- Step 6** Validate the source file, see [Validate a File, on page 8](#). You must validate files before adding, editing, or deleting data in Cisco Unified Communications Domain Manager.
- Step 7** Submit the source file to Cisco Unified Communications Domain Manager, see [Submit to CUCDM, on page 9](#).

HCS Intelligent Loader Updating Workflow

The following workflow outlines the normal tasks with bulk updating.

Procedure

- Step 1** Navigate to the following URL <https://<host name>/HIL> and login with your CUCDM credentials
- Step 2** Select the model from the menu on the left.
- Step 3** Select the required hierarchy at the top of the page.
- Step 4** Select the **Loader** tab.
- Step 5** Select the file in the table.
- Step 6** Edit field values to source file.

Option	Description
HIL Edit	You can use the HIL interface to View/Edit the source file.
Spreadsheet Edit	You can edit the source file directly by: <ol style="list-style-type: none"> 1 Download to desktop the source file. 2 Adding/Editing the values into the source file spreadsheet. 3 Upload from desktop the source file back into HIL.

For more information, refer to [Loader Tab Reference, on page 15](#).

- Step 7** Validate the source file, refer to [Validate a File, on page 8](#). You must perform validation before adding, editing, or deleting data in Cisco Unified Communications Domain Manager.
- Step 8** Submit to CUCDM, refer to [Submit to CUCDM, on page 9](#).

Edit or Delete Using search_field

The following table outlines how to specify a search_field in the Control Row.

Options	Description
\$search_field: field_name	Field_name is the name of the field in the Cisco Unified Communications Domain Manager. Note HIL sequentially searches the existing source file, defined in the search_field. If HIL finds multiple results for a search, then HIL marks it as a Record Not Found for that row.
\$search_field: userid	HIL searches for the user ids and it compares with the user ids available in Cisco Unified Communications Domain Manager. When the user ids match, HIL retrieves the corresponding Primary Key Identifications and then you can edit or delete the matching record.
\$search_field: userid&lastname	You can search for multiple field values using “&” between the field values.
\$hierarchy:sys.hcs.p1.c1; search_field: userid	You can specify a search_field in the same Control Row along with other Control Row properties, using a semicolon (;) between the two properties.
\$hierarchy:sys.hcs.p1.c1 \$search_field: userid	You can specify a hierarchy and search_field in separate Control Rows, that is, each property can reside in its own Control Row. The hierarchy can be specified in one row and the search_field can be specified in another row. Note HIL allows you to use the latest search field, in case there are two different search_fields used in the Control Row.
Order_by	When Primary Key Identification and the search_field are not available (or the field specified in the search_field is not valid), then HIL uses the order_by field. Order_by field is used by Cisco Unified Communications Domain Manager to get the list of the source files. Note In the case of a relation or subscriber, the default order_by field is userid.

Create Model Mapper

Procedure

-
- Step 1** Select the model from the menu on the left.
 - Step 2** Select the required hierarchy at the top of the page.
 - Step 3** Select the **Mapper** tab.
 - Step 4** Click **Create**.

The **Create Mapper: <Model Name>** window opens

Step 5 Enter a **Name** and **Description** for the mapper.

Step 6 Select a **Source File**, either by selecting **Choose from uploaded files** or **Upload new file from desktop**. You create the source file on the Loader tab, by performing an **Import from CUCDM** or **Upload from Desktop** prior to creating the map.

The mandatory fields for the model selected load automatically. To load all fields click **Map All** or **Add Row**. If you add a row, you will need to select the Target Field and Default value.

Important

- **Source Fields:** Populated by the first line of the import file / loader (can be any string).
- **Target Fields:** The actual field as it appears in Cisco Unified Communications Domain Manager.
- **Default Values:** This value will be used to populate the field in Cisco Unified Communications Domain Manager, if it is empty. If you want to override the value, select the checkbox.

Step 7 Click **Save Changes** to save the changes or click **Close** to close without saving the changes.

Example:

When you create a mapper for subscriber model, by default, the mapper displays minimum mandatory fields that are required for adding a subscriber. If user adds any fields related to phone, the mapper will automatically populate, a set of dependent fields (phone) that are required to successfully add phone along with subscriber.

- The mandatory fields that are populated automatically for mapping are not driven by the HIL's field values but by the field values of the Cisco Unified Communications Domain Manager. That is you may notice same source and target fields maps automatically. If there are any changes in the source field then you must select the field values from the drop-down list.

Example:

In Cisco Unified Communications Domain Manager Quick Add Subscriber, when you check the checkbox for voice, additional fields such as phone type and phones are displayed. In HIL, if you want to add voice, the fields voice, phone type, and phones must mapped manually. When you add a row for specific models, all the dependent fields appears in target field. While mapping them with the source field, you must select the fields values from the drop-down list.

- For specific models, HIL mapper displays more fields than Cisco Unified Communications Domain Manager, because HIL does not hide the fields, while Cisco Unified Communications Domain Manager hides the fields with some default values. The hidden values from Cisco Unified Communications Domain Manager shows in HIL as default values.

Create Multi Model Mapper

Procedure

- Step 1** Select **HIL Menus > Multi Model Mapper**.
- Step 2** Select the required hierarchy at the top of the page.
- Step 3** Click **Create**.
The **Create Mapper: Multi Model Mapper** window opens
- Step 4** Enter a **Name** and **Description** for the mapper.
- Step 5** Select a **Source File**, either by selecting **Choose from uploaded files** or **Upload new file from desktop**.
- Step 6** Select a **Source Sheet**.
- Step 7** Select a **Model**.
- Step 8** Click **Load**.
The mandatory fields for the model selected load automatically. To load all fields click **Map All** or **Add Row**. If you add a row, you will need to select the Target Field and Default value.
- Important**
- **Source Fields:** Populated by the first line of the import file / loader (can be any string).
 - **Target Fields:** The actual field as it appears in Cisco Unified Communications Domain Manager.
 - **Default Values:** This value will be used to populate the field in Cisco Unified Communications Domain Manager, if it is empty. If you want to override the value, select the checkbox.
- Step 9** Click **Save & Close**, to close the window, or **Save & Continue**, to load another mapper.
-

Validate a File

You must validate the source file before adding, editing, or deleting data in Cisco Unified Communications Domain Manager. Validation varies based on the operation:

- When you add data into Cisco Unified Communications Domain Manager, HIL will validate all data in the selected source data sheet.
- When you edit data in Cisco Unified Communications Domain Manager, HIL will validate the selected fields from the spreadsheets.
- when you delete data from Cisco Unified Communications Domain Manager, HIL will validate only the selected fields from the spreadsheets.



Note Add, edit, and delete operations are disabled or enabled based on the permissions in Cisco Unified Communications Domain Manager.

Procedure

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- Step 1** Select the model from the menu on the left.
- Step 2** Select the required hierarchy at the top of the page.
- Step 3** Select the **Loader** tab.
- Step 4** Select the file name you want to validate.
- Step 5** Click **Validate**, and then select the type of validation.
- Step 6** The validate window will open. Click **Validate**.
- Step 7** Click **OK** on the validation status window.
- Step 8** Check the **File Status** for validation status message.
- **VALIDATION IN PROGRESS:** When validation of file is in progress (full or partial validation)
 - Note Full Validation:** When all the fields of Excel spreadsheet are validated.
 - Partial Validation:** When some of the fields of Excel spreadsheet are validated.
 - **VALIDATION ERRORS:** When validation is complete and have errors (full or partial validation)
 - **VALIDATION FAILED:** When validation fails to kick off or exceptions (full or partial validation)
 - **VALIDATION COMPLETED:** When validation is complete successfully (full or partial validation)
 - **VALIDATION PROLONGS:** When validation status does not change withing 5 seconds. Click on Refresh Table icon to update the validation status
-

Submit to CUCDM

You can load the Excel spreadsheet into Cisco Unified Communications Domain Manager. You can perform add, edit, or delete functionality while submitting a file in Cisco Unified Communications Domain Manager.

Before You Begin

Files must be validated with the status "VALIDATION COMPLETED"

Procedure

-
- Step 1** Select the **Loader** tab.
- Step 2** Select the file you want to submit.
- Step 3** Click **Submit to CUCDM**, and select one of the following:

Option	Description
Add	To add field values in CUCDM.

Option	Description
Edit	To edit field values in CUCDM. Note While updating the subscriber you can add new services to the subscriber (such as EM, RDP, WebEx, VM etc.), when HIL detects a new service is being added to the subscriber, the new service is added through a separate child transaction and though this transaction fails, HIL does not capture the result of this transaction and only accounts the status of the parent transaction. For example; while updating a subscriber, if you add VM to the subscriber, along with modifying the subscriber itself, then adding VM will be a separate child transaction, and even if adding VM fails, and the update of Subscriber succeeds the "trans_status" in the loader file is shows as Success.
Delete	To delete field values in CUCDM.

To delete a model, delete associated models in the reverse order of the Add operation.

Example:

To delete the associated SIP trunk, follow the order as mentioned:

- 1 Disassociate the analog gateway from the site.
- 2 Delete the analog gateway.
- 3 Delete the SIP trunk.

Note Delete is disabled for Site Management and Customer Management, because they have Delete Site and Delete Customer options.

Step 4 Select the sheets you want to submit.

Step 5 Click **Load**.

After the loading begins, an icon is displayed at the extreme right of the File Status message. You can click this icon to see the progress status of the file. When the file is loaded, a success message is displayed

Graphical User Interface Reference

This section describes the HCS Intelligent Loader.

Cisco Unified Communications Domain Manager and HCS Intelligent Loader Models

The HCS Intelligent Loader home page displays the various Cisco Unified Communications Domain Manager and HIL models. The models that are displayed are based on the user permissions and display policies that are associated with the administrator's account on the Cisco Unified Communications Domain Manager.

The following table contains a sample model list:

Cisco Unified Communications Domain Manager Models	
Customer Management	Customers
	Delete Customer
	Network Device Lists
Site Management	Sites
	Defaults
	Delete Sites
Device Management	CUCM Servers
	CUCM SIP Trunks
	CUCM Route Groups
	CUCM Route Lists
	CUCM Device Pools
	CUCM Regions
	CUCM Route Patterns
	CUCM Translation Patterns
	CUC Servers
	CUP Servers
	WebEx Servers
	Prime Collab Servers
	IOS IOS Devices
	IOS Analog Gateways
	IOS SIP Local Gateways
	IOS Command Builder

LDAP Management	LDAP Server
	LDAP User Sync
	LDAP Schedule
Entitlement	Device Types
	Device Groups
	Catalogs
	Profiles
User Management	Users
	Provisioning Status
	Sync & Purge LDAP Users
	Sync & Purge CUCM Users, Lines, Phones
	Manage Filters Define Filters
	Manage Filters Filter Order
	Self Provisioning User Profile
	Self Provisioning Line Mask
	Self Provisioning Universal Device Template
	Self Provisioning Universal Line Template
	Move Users
	Manage Users
	Local Admins

Dial Plan Management	Customer Dial Plan
	Customer Add Directory Number Inventory
	Customer Add E164 Inventory
	Site Dial Plan
	Site Class of Service
	Site Short Code
	Site Directory Number Routing
	Site Sip Route Pattern
	Advanced Configuration Dial Plan Schema
	Advanced Configuration Dial Plan Schema Group
	Advanced Configuration Associate Custom Dial Plan Schema Group

Subscriber Management	Lines
	Agent Lines
	Directory Number Inventory
	E164 Inventory
	E164 Associations (N to DN)
	E164 Associations (N to 1 DN)
	Phones
	Subscriber
	Quick Add Subscriber
	Quick Add Subscriber Groups
	Voicemail
	WebEx
	PLAR (Hotdial)
	Hunt Groups
	Call Pickup Groups
Services	Voice Mail Voice Mail Service
	Voice Mail Associate Voice Mail Service to Customer
	Voice Mail Pilot Numbers
	Voice Mail Associate Pilot Number to Site
	Contact Center Servers
	Contact Center Service
HIL Models	
HIL Menus	Multi Model Mapper

Loader Tab Reference

The following table outlines the functions available on the loader tab.

Item	Description
Select Template	Drop down to select the available mapper templates.
Preview	Displays a preview of the selected mapper template.
Upload from desktop	Allows the user to upload a file from their computer.
Download to desktop	Allows the user to download a file to their desktop. Users can then edit the spreadsheet and then upload.
Delete	Deletes the file from HIL.
Rename	Renames the file.
Import from CUCDM	Allows the user to select to import the content from CUCDM. The model schema will determine what information is available in the spreadsheet.
Copy	Copies the file
View/Edit	Allows the user to view and edit the file in HIL.
Submit to CUCDM	Allows the user to select to export the loader file into CUCDM. Users can select Add, Edit, Delete.
Validate	Allows the user to validate the content in the file before, and must be completed before submitting to CUCDM. Note Add, edit, delete operations are enabled based on the permissions of the user.
Search	Allows the user to search for a file.
File	Displays the file name.
Last Used Template	Displays the mapper template last used for the loader file.
File Status	Displays the status of the last action performed with the file.

File Status

The following table describes the file status.

Status	Description
FILE IMPORTED	When data is imported successfully from Cisco Unified Communications Domain Manager.
FILE IMPORT FAILED	When file import from Cisco Unified Communications Domain Manager fails.
FILE IMPORT IN PROGRESS	When file import from Cisco Unified Communications Domain Manager is in progress.
FILE MODIFIED	When a file is modified from the View or Edit.
LOAD COMPLETE WITH ERRORS	When loading of a file is complete but record shows error in loading the file.
LOAD FAILED	Load failed due to network issues or exceptions.
LOAD IN PROGRESS	When load is in progress.
LOAD SUCCESSFUL	When load completed successfully without errors.
NEW FILE	When a new file is uploaded from desktop.
NO STATUS FOUND	When no status for the file is available.
VALIDATION COMPLETED	When validation is complete successfully (full or partial validation).
VALIDATION ERRORS	When validation is complete and have errors (full or partial validation).
VALIDATION FAILED	When validation fails to kick off or exceptions (full or partial validation).
VALIDATION IN PROGRESS	When validation of file is in progress (full or partial validation): <ul style="list-style-type: none"> • Full Validation: When all the fields of Excel spreadsheet are validated. • Partial Validation: When some of the fields of Excel spreadsheet are validated.
VALIDATION PROLONGS	When validation status does not change withing 5 seconds. Click on Refresh Table icon to update the validation status.

Mapper Tab Reference

The following table outlines the functions available on the loader tab.

Item	Description
Create	Opens the create window.

Item	Description
Delete	Deletes the file from HIL.
Edit	Allows the user to edit the file.
Download to desktop	Allows the user to download a file to their desktop. Users can then edit the spreadsheet and then upload.
Upload from desktop	Allows the user to upload a file from their computer.
Copy	Copies the file
Rename	Renames the file.
View	Allows the user to view the file.
Name	Displays the name of the file.
Owner	Displays the owner of the file.
Modified	Displays the date the file was last modified.
Last Modified by	Displays the name of the user that last modified the file.

Config Tab Reference

After you click the config tab, you can view or edit the configured target system's (Cisco Unified Communications Domain Manager) host name and host ID.

Field	Description
Target System	Displays the name of the target system (CUCDM)
Target System Host	Displays the name of the target system host
Target System IP	Displays the IP address of the target system

