Subscriber Manager Fundamentals
Avaya Communication Server 1000

Contents

Chapter 1: New in this Release

The following sections detail what is new in *Subscriber Manager Fundamentals, NN43001-120* for Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5.

Navigation

Feature changes

See the following sections for information about feature changes:

Subscriber Manager data migration to System Manager

For CS 1000 Release 7.5, Avaya Aura® System Manager 6.1 is required for managing systems with Avaya Aura® Session Manager or Avaya Aura® Presence Services. The functionality of UCM and Subscriber Manager is now available in System Manager. You must migrate subscriber data to the System Manager platform.

For more information about migrating subscriber data, see Migrate Subscriber Manager data to System Manager on page 60.

> ✱ **Note:**
> On systems where System Manager is available, the term System Manager in the documentation refers to Subscriber Manager in System Manager; on systems where System Manager is not available, the term System Manager in the documentation remains unchanged.

In networks that do not use Avaya Session Manager or Avaya Presence Services, you can continue to use UCM and Subscriber Manager without migrating to System Manager for CS 1000 Release 7.5.

Other changes

Subscriber Manager licensing

Subscriber Manager license is no longer required for CS 1000 Release 7.5. Therefore, you no longer need to export a system ID file from Subscriber Manager, or generate a license.

Flow-Through Provisioning

When configuring Flow-Through Provisioning in CS 1000 Release 7.5, you can specify the order in which requests are processed for a subscriber.

Revision History

September 2011	Standard 04.07. This document is up-issued to reflect changes in technical content for rules for CPND names in Subscriber telephony accounts on page 50.
August 2011	Standard 04.06. This document is published to support Avaya Communication Server 1000 Release 7.5.
December 2010	Standard 04.05. This document is published to support Avaya Communication Server 1000 Release 7.5.
November 2010	Standard 04.04. This document is published to support Avaya Communication Server 1000 Release 7.5.
June 2010	Standard 03.02. Up-issued to reflect changes in technical content.
June 2010	Standard 03.01. This document is up-issued to support Avaya Communication Server 1000 Release 7.0.
June 2009	Standard 02.05. Up-issued to reflect changes in technical content.
June 2009	Standard 02.04. Up-issued to reflect changes in technical content.
May 2009	Standard 02.03. Up-issued to reflect changes in technical content.
May 2009	Standard 02.02. Up-issued to reflect changes in technical content.
May 2009	Standard 02.01. This document is up-issued to support Communication Server 1000 Release 6.0 Subscriber Manager Release 2.0.

February 2008	Standard 01.04. Up-issued to reflect changes in technical content.
January 2008	Standard 01.03. Up-issued to reflect changes in technical content.
December 2007	Standard 01.02. Up-issued to reflect changes in technical content.
December 2007	Standard 01.01. This is a new document created to support Communication Server 1000 Release 5.5.

Chapter 2: Customer service

Visit the Avaya Web site to access the complete range of services and support that Avaya provides. Go to www.avaya.com or go to one of the pages listed in the following sections.

Navigation

Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, go to www.avaya.com/support. From this Web site, locate the Training link on the left-hand navigation pane.

Getting help from a distributor or reseller

If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at www.avaya.com/support.

Chapter 3: Introduction

Purpose

This document contains the information you need to use Subscriber Manager. This document describes the benefits, features, and functions of Subscriber Manager and provides information to perform the following tasks:

- install and configure Subscriber Manager
- manage subscribers
- manage accounts
- synchronize accounts

Navigation

Chapter 4: Fundamentals of Subscriber Manager

This chapter contains information to help you understand the benefits, features, and functions of Subscriber Manager. This chapter also discusses navigation, security, subscribers, and subscriber accounts.

Navigation

Introduction

Subscriber Manager is an intuitive and user-friendly Web-based interface that is deployed as a plug-in application to the Avaya Unified Communication Management Common Services

(UCM Common Services). Subscriber Manager provides a centralized location for the management of subscriber information for enterprise services.

With Subscriber Manager, you can:

- easily manage subscribers and subscriber accounts within your network
- quickly search, sort, and update single and multiple subscribers and subscriber accounts within a single application interface

Prior to Subscriber Manager, subscribers and accounts were managed by individual element managers or element management systems. Subscriber Manager eliminates the need to configure and manage separate subscriber management applications for specific products in a management system.

Subscriber Manager provides security, user access control, simplified management tasks, and improved workflow efficiency.

Feature dependencies and restrictions

Subscriber Manager Release 2.0 plug-in application is installed on the UCM Common Services. Subscriber Manager 1.0 uses the Common Network Directory (CND) as its subscriber repository. Subscriber Manager 2.0 continues to use the CND. However, the CND is now an embedded component (that is, UCM directory services) deployed as part of the UCM Common Services in Avaya Communication Server 1000 (Avaya CS 1000) Release 6.0, or later. The user interface to configure tasks such as Lightweight Directory Access Protocol (LDAP) synchronization, CSV Synchronization, and CSV Export are now part of the Subscriber Manager application. The repository for subscriber and account data is a fundamental feature provided by UCM directory services.

Subscriber Manager components

The Subscriber Manager plug-in application is installed on the UCM Common Services. Subscriber Manager uses the UCM Common Services logging facility, including the log viewer interface, the security framework, and the Web server. Each UCM Common Services is installed with specific requirements for hardware platforms and operating systems that are applicable to Subscriber Manager.

⚠ **Warning:**

Demoting a UCM Primary server to a Member server will remove all data from a Subscriber Manager installed on the server.

Prior to demoting a UCM Primary server, which has Subscriber Manager installed, to a Member server export the subscriber data into a CSV file. See Exporting subscribers on page 136. After demoting a UCM Primary server to a Member server import the subscriber data. See Synchronizing subscribers on page 123.

Refer to *Avaya Linux Platform Base and Applications Installation and Commissioning (NN43001-315)*, for detailed information on installing the Linux operating system, the UCM Common Services and Subscriber Manager. Refer to *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116), for detailed information on adding a managed element to the UCM Common Services, creating user accounts, and assigning roles and permissions for access to the Subscriber Manager from the UCM Common Services.

Users access the UCM Common Services and Subscriber Manager through Microsoft Internet Explorer 6.02600, or later.

For more information on installing Subscriber Manager, see <u>Install Subscriber Manager</u> on page 65.

For more information about UCM Common Services, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

Subscriber Manager client capacity

<u>Table 1: Subscriber Manager client capacity</u> on page 19 lists the maximum number of subscribers, accounts, elements, and simultaneous users supported in Subscriber Manager.

Table 1: Subscriber Manager client capacity

Subscriber Manager thresholds	Maximum capacity
The maximum number of subscribers supported in one Subscriber Manager	200,000
The maximum number of accounts supported in one Subscriber Manager	350,000
The maximum number of accounts supported for a subscriber	100

Benefits and features of Subscriber Manager

Subscriber Manager has many benefits and features to help administrators perform subscriber operations with greater efficiency. Examples are as follows:

- central location to manage subscribers and subscriber accounts
- common Web based interface within a management system
- common terminology used by elements that interwork with Subscriber Manager

- security that includes Authentication, Authorization, and Auditing (AAA)
- secure communication that uses private certificate authority and X.509 certificate management
- Single Sign On (SSO), password authentication, and role- and instance-based access control
- backup and restore capabilities
- logs for all Subscriber Manager transactions
- synchronization between subscriber data and a customer corporate LDAP server
- basic and advanced search options to find a subscriber or a set of subscribers

Security

The UCM Common Services manages secure access to Web applications and provides security for Web interfaces and Web utilities. The UCM Common Services security domain provides the central point for Authentication, Authorization, and Auditing (AAA); open, standards-based authentication; and policy-based authorization with a single, unified framework.

With UCM Common Services, the authorization process, also known as access control, determines and enforces assigned privileges for an authenticated user of UCM Common Services. Therefore, access control for Subscriber Manager is managed in the UCM Common Services security framework.

For more information about UCM Common Services security, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116) and *Avaya Security Management Fundamentals* (NN43001-604).

Table 2: Built-in permission assignments for Subscriber Manager on page 20 shows the built-in role permission assignments for Subscriber Manager that are installed with Subscriber Manager.

Table 2: Built-in permission assignments for Subscriber Manager

Built-in permission	Description
Subscriber Manager Read Write	The user can access Subscriber Manager, change the configuration of Subscriber Manager, and edit subscriber data.

Important:
The security administrator must assign Subscriber Manager Read Write permission to existing roles before a user can access Subscriber Manager.

Functionality

The UCM Common Services security domain provides the launch point for Subscriber Manager. You can access Subscriber Manager when you log on to the UCM Common Services or through a direct Web link. When Subscriber Manager is installed in the UCM Common Services, the Subscriber Manager link is provided in the UCM Common Services navigator.

From the Subscriber Manager link in the UCM Common Services navigator, you can access the various functions to configure the required subscribers and subscriber accounts for subscribers within a network.

The Subscriber Manager navigator, located on the left side of the Subscriber Manager web pages, contains links to other web pages. UCM Network services, the root of the Subscriber Manager navigator, is a link to the UCM Common Services web page. The main branches of the Subscriber Manager navigator are:

- Subscribers: Use this link to perform the following tasks:

    - search for subscribers

    - view and update subscriber information

    - add a new subscriber

    - delete a subscriber

    - add and delete a subscriber account

    - view, update, and publish subscriber phone properties

- Account Synchronization: Use this link to synchronize account information between Subscriber Manager and Avaya CS 1000 Element Manager and to assign or delete anonymous accounts.

- Flow Through Provisioning: Flow Through Provisioning is an automation service that processes subscriber changes and provisioning requests by third party applications. Use this link to manage Flow Through Provisioning.

- Locations: Locations are used as an alternate way to specify the element and target when creating an account. Use this link to manage locations.

- Scheduler: Use this link to manage scheduled jobs.

The Subscribers branch contains links to

- LDAP Synchronization: Use this link to manage synchronization between an Lightweight Directory Access Protocol (LDAP) server and Subscriber Manager.
- CSV Synchronization: Use this link to manage importing new subscribers or updating existing subscribers using data in a CSV file.
- CSV Export: Use this link to manage exporting subscribers from Subscriber Manager into a CSV file.

Session timeout

After 30 minutes of inactivity, Subscriber Manager times out and you are logged out without any warning from all Subscriber Manager Web pages. The session is cancelled, and you must log on again. Any data modifications made on screen, but not submitted to the system, are lost.

Closing the browser window and logging out If you close the browser window or log out of Subscriber Manager when a request submitted to the system is in progress, the request continues to process and completes.

Log files

Subscriber Manager log files are incorporated into the OA&M logging system. UCM Common Services provides log viewer and file download functionality for retrieving log files. The log viewer is available from the UCM Common Services navigator. Subscriber Manager transactions and error logs are formatted in accordance with W3C extended log format by the UCM Common Services.

For more information about the OA&M logging system, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116). For information on how to view and download log files, see View and download UCM Common Services audit log files on page 59.

LDAP synchronization logs and CSV subscriber synchronization logs are not incorporated into the OA&M logging system.

The LDAP synchronization logs are stored in the `/opt/cs1000/cnd/log/LDAP_Sync` directory on the primary UCM Common Services server. For more information about LDAP synchronization log files, see Logs on page 112.

Each time a CSV subscriber synchronization job is run, the summary details for the job are recorded in the LDAP synchronization summary log. For every CSV subscriber synchronization job run, a transaction log (Transaction.log) file is created and stored in the `/opt/cs1000/cnd/log/LDAP_Sync/CSV_Sync_[date]_[time]/` directory on the

primary UCM Common Services server. `[date]` and `[time]` are generated based on the date and time that the synchronization job started. For example, for a synchronization job started on January 7, 2007 at 10:05:47 am, the generated folder is named `CSV_Sync_20070107_100547` . For more information about CSV subscriber synchronization logs, see Logs on page 127.

Subscribers

A subscriber is a person, location, or project that uses services within a network. Most often a subscriber is an employee of a company or organization. An example of a location subscriber is an elevator with telephone services.

Subscriber properties are divided into five sections in the New Subscriber Web page as described in Table 3: Subscriber property sections on page 23.

The only required property for a subscriber is last name.

Table 3: Subscriber property sections

Section	Description
Identification	Use this section to enter the Last name, First name, Middle Name, Preferred Name, Employee ID, Subscriber type and Language for a new subscriber. Notes can also be recorded.
Localized names	Use this section to enter localized names. Subscriber names are displayed in a localized language based on user preferences. For example, a telephone call originating from Canada and destined for a person in Russia displays the originator's name in Russian at the destination.
Directory and Phone Numbers	Use this section to enter the extension number, external number, ESN number, national number, international number. cell number, pager number, and fax number for a new subscriber.
Unified Communications	Use this section to enter username, domain and password.
Address	Use this section to enter a subscriber's e-mail, office location, and mailing address information.

Section	Description
Organization	Use this section to enter a subscriber's job title, department, company, and service start and end dates.

For information on how to add a new subscriber, see Manage subscribers on page 71.

Validation errors

Subscriber Manager validates service start date and service end date.

The comment field on the Figure 27: New Subscriber Web page on page 72 can have a maximum of 1000 characters. All other fields on the New Subscriber Web page can have a maximum of 256 characters.

Search subscribers

Subscriber Manager provides three options to find subscribers within a network: (1) basic search, (2) advanced search, and (3) unique ID search. The basic search page is the default search page. Table 4: Subscriber Manager basic search options on page 24 shows the search criteria for basic search options. Table 5: Subscriber Manager advanced search options on page 24 shows the search criteria for advanced search options. The unique ID search uses the universal unique ID (UUID) of the subscriber.

Table 4: Subscriber Manager basic search options

Type of search	Search criteria
Basic	With the basic search feature, you can search for a subscriber only by: • Last Name • First Name

Table 5: Subscriber Manager advanced search options

Type of search	Search criteria
Advanced	With the advanced search feature, you can search for a subscriber by: • Last Name • First Name • Employee ID

Type of search	Search criteria

	• Department
	
	• Date
	
	  - Service end date
	
	  - Service start date

Advanced (Continued)	Miscellaneous
	
	 - Miscellaneous
	
	   • Cell phone number
	
	   • City
	
	   • Company
	
	   • Country
	
	   • ESN phone number
	
	   • Email
	
	   • Employee Id
	
	   • Extension phone number
	
	   • External phone number
	
	   • International phone number
	
	   • Job title
	
	   • Language
	
	   • Location
	
	   • Middle name
	
	   • National phone number
	
	   • Notes
	
	 - Pager number
	
	 - Post office box
	
	 - Postal code/ZIP
	
	 - Preferred name
	
	 - Province/state
	
	 - Street
	
	 - Type
	
	 - Username

	With the advanced search feature, you can choose to search only for subscribers whose deletion is pending or failed, if desired.

Important:

When a user leaves the advanced search Web page, all information that was entered for the advanced search is lost except the subscriber name.

Wild cards

Subscriber Manager supports the asterisk (*) wild card that is used to return specific search criteria.

Table 6: Search wild card on page 26 shows how the asterisk (*) wild card is used in Subscriber Manager.

Note:

The asterisk (*) wild card can not be used to search for Service start date or for Service end date. Unique ID search does not support wild cards.

Table 6: Search wild card

Search wild card examples	Search results
abc*	Returns all values that begin with abc.
* or blank	Returns all values.
*abc	Returns all values that end with abc.
abc	Returns all values that contain abc.

Search results

The maximum number of entries that can be returned for a search is 1000. If a search result exceeds 1000, the search is cancelled and the user is asked to refine the search.

Users can choose the number of search results to be displayed on the search results page from the following values in the results per page list.

- 100
- 250
- 500

By default, search results are sorted in ascending order by last name and first name. Users can change the search result order by clicking the name heading in the Name column.

Users can sort the search results for each column by clicking the column heading. When users first click the column heading, the data is sorted in ascending order. When the user clicks the column heading a second time, the data is sorted in descending order.

Subscriber deletion

When one or more subscribers are deleted, the subscriber entries in Subscriber Manager are removed. However, these subscribers are not removed from a customer's corporate directory.

A subscriber cannot be deleted from the directory until all accounts are deleted. The accounts for a subscriber must first be deleted and then the subscriber deleted.

Deletion status

Table 7: Deletion status on page 27 describes the types of status that occur when a user deletes a subscriber.

Table 7: Deletion status

Deletion status types	Description
Pending deletion	A subscriber with pending deletion status is automatically removed from the directory when all accounts have been successfully deleted.
Failed deletion	A subscriber with failed deletion status is displayed in red with an asterisk beside the subscriber name field.

To resolve a failed deletion, check the logs in the element or click on the failed account to go to the account details page in the element. A subscriber fails deletion if the accounts cannot be removed from the Subscriber Manager data store. When this occurs, the Subscriber Manager application log displays the following error message:

"Failed to delete account [account information] for subscriber [subscriber information]."

To delete a subscriber with failed deletion status, errors must be resolved in the elements.

Subscribers with Pending deletion status can have accounts added to them. When an account is added to a subscriber with Pending deletion status, the Pending deletion status is removed from the subscriber.

Accounts

An account is a provisioned service, available through an element, for a subscriber. A subscriber can have more than one account, such as an account for a telephone service, conferencing service, and voice mail service.

Required subscriber account properties

Subscriber Manager only requires the subscriber's last name to create a new subscriber. Individual elements have specific requirements for required subscriber properties for the creation of accounts.

Table 8: Subscriber account properties on page 28 lists the required properties for creating an account.

Table 8: Subscriber account properties

Account properties	Required property	Description	Action
Service	Yes	Lists the services that are available, based on the elements in the UCM Common Services element table.	Select a service.
Element	Yes	Lists the element that is providing the service (for example, CS 1000).	Select an element.
Target	Yes	Lists all targets managed by the selected element (for example, for CS 1000 element, targets are the customer numbers configured in the call server).	Select a target.
Template	Yes	Lists all templates available in management applications for the selected target.	Select a template.
Location	No	Locations are used as an alternate way to specify the element and target when creating an account.	Select a location.

Account status

Table 9: Account operation and task status on page 29 describes the types of account status that occur for operations and tasks performed in Subscriber Manager.

Table 9: Account operation and task status

Status	Description
Active	A configured account that is activated by the element. The service is available for the subscriber.
Pending Activation	There is a delay in activating the account. The reasons for the delay are dependent on the element. For example, the element may have the account activation scheduled to occur at a later time.
Pending Deletion	There is a delay in deactivating or deleting the account.
Pending Update	An update to the account has not been activated in the system or an account in the element is changed but the changes take effect to the element at a later time.
Failed Deletion	This status is similar to the failed activation status, but occurs during a deletion operation.
Failed Update	An update operation has failed. Normally, this account has a pending update status prior to the failed update status.
Invalid	An account does not have a valid Element in the Elements table in UCM Common Services. Invalid accounts are automatically removed from Subscriber Manager as they are discovered.

Accounts hidden based on access rights

Accounts that a user does not have access to are not displayed in the Subscriber Details Web page. A user does not have access to an account, if the account is on an element that is not mapped to a security role the user is assigned. The number displayed in the Accounts column on the Subscriber search page includes all accounts, not just the accounts to which the user has access rights.

Account deletion

With Subscriber Manager, the following conditions apply for account deletions:

- Multiple accounts can be deleted at the same time.
- Accounts can be deleted between different elements and service types.
- If a deletion fails for an account, the process logs the failure and continues with the deletion of the remaining accounts.

Account deletion status

During the deletion process, the deleted account can still be listed in the Subscriber Detail page. However, the status of each account is changed to pending deletion. The accounts remain at pending deletion until one of the following occurs:

- The element updates the account due to an error when deleting the account. The status is changed to failed deletion.
- The element deletes the account through the Subscriber Manager Web service.
- The element aborts the deletion of the account. The account status returns to active status.

Publish account properties

When account properties are published, account information is copied to specific subscriber properties within the system.

Publishing account specific information allows the user to synchronize account specific information in the corporate directory through LDAP synchronization.

By default, the first account created for any distinct service type is automatically published.

The following conditions apply when publishing accounts:

- Only one account for each service type can be published to the subscriber data.
- When a new account is selected for publishing, it overwrites any data already present in the particular subscriber attribute.
- If an existing account is published and the user needs to publish a different account, publishing the different account removes the publish flag from the old account in the account list.
- Applications such as LDAP subscriber synchronization and CSV subscriber synchronization can result in data mismatch between the subscriber properties and the published account properties.

If a data mismatch occurs, users must do one of the following:

- update the account

- manually update the subscriber properties

- select the account and click Publish

- synchronize the affected accounts with the element

> 🛈 **Important:**
> Account synchronization with the element only happens if the account information in Subscriber Manager becomes out of sync with the data in the element.

- If a published account is deleted, the published data is cleared from the subscriber properties. To publish the data for a different account of the same service type, select the desired account and click the publish button.

- Account status does not impact the publishing of account information.

- If two accounts of different service types publish to the same subscriber property, the last account published overwrites the previously published value.

- If a user attempts to publish an account that does not have any data that can be published, a message is displayed on the Web page indicating that the selected account has no data to publish. The Published status is set to No.

Contact details rules

1. The subscriber External, National and International telephone numbers are auto-populated when the published account Contact Details are generated. Contact Details of an account are generated by the Numbering Groups feature and do not necessarily apply to all accounts or account service types.

2. The subscriber External, National and International telephone numbers are never deleted when the account is deleted.

Account synchronization

Subscriber accounts in the directory can become out of sync with the accounts in the elements due to a network outage or database corruption. Subscriber Manager provides an account synchronization feature to synchronize account information between Subscriber Manager and the elements.

The account data in the elements is considered the master data during the synchronization process. When a subscriber account in Subscriber Manager becomes out of sync with the element, the account data from the element is copied to the account data in Subscriber Manager.

When a Messaging Account is synchronized using the Subscriber Manager Account Synchronization feature, the template information for that account is lost since CallPilot

Manager does not store this information. As a result, the Template cell in the Accounts table is empty after the synchronization.

Synchronization rules

lists the various rules and operations for the synchronization process for different scenarios.

Table 10: Synchronization scenarios

Scenario	Action
An account exists in the element that does not exist in Subscriber Manager. Also, the subscriber ID for the account in the element is either invalid (does not exist in the directory) or empty.	A subscriber must be manually assigned to the account. The account is known to Subscriber Manager as an anonymous account.
An account exists in the element that does not exist in Subscriber Manager, but the account has a subscriber ID that exists in the directory.	The account is automatically created in Subscriber Manager.
An account exists in Subscriber Manager but does not exist in the element.	The account is automatically removed from Subscriber Manager.
An account exists in Subscriber Manager and the element. However, the data in the account is not the same in Subscriber Manager and the element.	The account is automatically updated in Subscriber Manager to match the element.
An account in Subscriber Manager and element match.	No action.
A subscriber is pending deletion and has only one account that does not exist in the element.	The account and subscriber are automatically deleted from Subscriber Manager.
When synchronizing CallPilot (Messaging) accounts the first and last name of the account match an existing subscriber. Note that the first and last name must match exactly, including case.	The account is automatically added to the subscriber.

Only one synchronization process can occur at one time. The synchronization process queues all selected elements. When the synchronization process starts, the user cannot modify the process until the synchronization process is completed or stopped.

⊛ **Note:**

The account synchronization process and the FTPROV engine can not run at the same time. If the FTPROV engine and account synchronization start up simultaneously, then the FTPROV engine finishes its already in progress task and shut down.

Anonymous accounts

When a synchronization process completes, a summary page is displayed that shows up to a maximum of 100 anonymous element accounts in Subscriber Manager. The user can assign the anonymous accounts to subscribers in Subscriber Manager or delete the accounts from the element.

To assign less than 100 anonymous accounts to subscribers, see Assigning an anonymous account on page 92. Use the Phone Migration Tool in CS 1000 Element Manager to assign 100 or more anonymous accounts to subscribers. For more information on the Phone Migration Tool, see Phone Migration Tool on page 102.

To delete the accounts from the element, see Deleting an anonymous account on page 93.

Locations

Locations are used as an alternate way to specify the element and target when creating an account.

Location name mapping to element and target

Location name mapping simplifies the selection of element and target when creating an account. Users provide a list of locations that have a predefined element and target. When creating a new account, the user selects the location or a particular subscriber attribute is used to infer the location.

Flow Through Provisioning

Flow Through Provisioning (FTPROV) provides a level of automation to manage subscriber telephony accounts. This reduces the need for a Network Administrator to manage the accounts using the Subscriber Manager UI or CS 1000 Element Manager. FTPROV replaces the Subscriber Change Notification feature in Subscriber Manager 1.0.

Provisioning requests are used to drive the automated provisioning in the system. The requests must be created by the Network Administrator or by Customer premise scripts that build the provisioning requests. The requests are constructed as XML strings and are stored in the following new subscriber properties:

- flowThroughProvisioningRequest
- flowThroughProvisioningResponse

These two new properties of the subscriber can only be managed with Subscriber Manager CSV Subscriber Synchronization and LDAP Subscriber Synchronization features – they are not available in the Subscriber Manager UI.

XML Schema for the new properties

The flowThroughProvisioningRequest property contains an XML document that describes the request. The figures in this section assume that you have knowledge of XML Schema. If you are not familiar with XML Schema, then the examples in Example provisioning requests and responses on page 37 may be more useful.

The XML schema for the flowThroughProvisioningRequest property is shown in Figure 1: Schema for the flowThroughProvisioningRequest property on page 34.

```
<xs:element name="provRequest" type="provRequestType"/>

    <xs:complexType name="provRequestType">

      <xs:sequence>
       <xs:any minOccurs="0"/>
      </xs:sequence>

       <xs:attribute name="uuid" minOccurs="1" maxOccurs="1" type="xs:string"/>

       <xs:attribute name="action" minOccurs="1" maxOccurs="1" type="xs:string"/>

       <xs:attribute name="entity" minOccurs="1" maxOccurs="1" type="xs:string"/>

       <xs:attribute name="username" minOccurs="0" maxOccurs="1" type="xs:string"/>

    </xs:complexType>
```

Figure 1: Schema for the flowThroughProvisioningRequest property

Table 11: Attributes in schema for the flowThroughProvisioningRequest property on page 35 describes each attribute in the XML element in Figure 1: Schema for the flowThroughProvisioningRequest property on page 34.

Example workflow of the order option in Flow Through Provisioning

1. **Account created from 1230 template**<provRequest uuid='test' entity='account' action='add' order='3'><provRequestAccount serviceType='Telephony' element='EM on hp1' target='Customer9' template='1230'/></provRequest>

2. **Account created from 1165 template**

   <provRequest uuid='dupe' entity='account' action='add' order='2'><provRequestAccount serviceType='Telephony' element='EM on hp1' target='Customer9' template='1165'/></provRequest>

3. **Account created from 1230 template on target customer 19**

   <provRequest uuid='dupe' entity='account' action='add' order='1'><provRequestAccount serviceType='Telephony' element='EM on hp1' target='Customer19' template='1230'/></provRequest>

If your CSV file contains many provision requests, you can set order values to permit which action is priority and must done first.

Table 11: Attributes in schema for the flowThroughProvisioningRequest property

Attribute	Description
uuid	Unique id for the request.
action	The action for the request, add, delete or update.
order	The order of the request.
servicetype	The type of account. You can select one from the following. Telephony Mailbox Present Account
entity	The entity name. Currently, only "account" is supported.
username	The login name of the user that created the request

There is a child element of the root element that describes the specific account level information as illustrated in Figure 2: Child element describing account on page 35.

```
<xs:element name="account" type="provRequestAccountType"/>

<xs:complexType name="ftprovAccountType">

  <xs:sequence>
     <xs:any minOccurs="0"/>   This is used for any additional detailed information that
  </xs:sequence>                          can be forwarded to the element manager.


   <xs:attribute name="serviceType" minOccurs="1" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="location" minOccurs="0" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="element" minOccurs="0" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="target" minOccurs="0" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="uniqueId" minOccurs="0" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="template" minOccurs="0" maxOccurs="1" type="xs:string"/>

   <xs:attribute name="subscriberId" minOccurs="0" maxOccurs="1" type="xs:string"/>

</xs:complexType>
```

Figure 2: Child element describing account

Table 12: Attributes in child element describing account on page 36 describes each attribute in the XML element shown in Figure 2: Child element describing account on page 35.

Table 12: Attributes in child element describing account

Attribute	Description
Service type	The type of account, You can select one from the following. Telephony Mailbox Present Account
Location	Location name as defined in the Locations feature.
element	An element name as defined in the Elements table of UCM Common Services.
target	In the context of CS 1000 this is the customer number configured in the call server.
uniqueId	The unique account id as defined by Subscriber Manager.
template	The template name as defined in CS 1000 phone templates.
subscriberId	The subscriber id as defined by Subscriber Manager.

The child element describing the specific account level information contains a child element for providing specific telephone details as shown in Figure 3: Child element for providing specific telephone details on page 36.

```
<xs:element name="phoneDetails" type="phoneDetailsType"/>

<xs:complexType name="phoneDetailsType">

  <xs:sequence>
     <xs:element name="primeDn" type="xs:string" minOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

Figure 3: Child element for providing specific telephone details

The child element for providing specific telephone details is used to provide the telephone prime DN if desired.

The schema for the flowThroughProvisioningResponse property is illustrated in Figure 4: Schema for the flowThroughProvisioningResponse property on page 37.

```
<xs:element name="provResponse" type="provResponseType"/>
        <xs:complexType name="provResponseType">
                <xs:sequence>
                                <xs:any minOccurs="0"/> - This is used for providing any detail
                                                        information about the entity or
                                                        to provide failure messages.
                </xs:sequence>
                        <xs:attribute name="uuid" minOccurs="1" maxOccurs="1" type="xs:string"/>
                         <xs:attribute name="status" minOccurs="1" maxOccurs="1" type="xs:string"/>
        </xs:complexType>
```

Figure 4: Schema for the flowThroughProvisioningResponse property

Table 13: Attributes in schema for the flowThroughProvisioningResponse property on page 37 describes each attribute in the XML element shown in Figure 4: Schema for the flowThroughProvisioningResponse property on page 37.

Table 13: Attributes in schema for the flowThroughProvisioningResponse property

Attribute	Description
uuid	The unique id associated with the provisioning request.
status	Indicates if the request passed or failed. If it failed there is additional failure information provided in the XML. If it passed, the account details are provided.

⚙ **Note:**

The attributes in an external LDAP server must support at least 2000 characters to successfully synchronize the flowThroughProvisioningResponse value from Subscriber Manager. If the attributes in an external LDAP server support less than 2000 characters, the user may need to extend the schema to successfully synchronize the flowThroughProvisioningResponse value from Subscriber Manager.

Example provisioning requests and responses

The following examples illustrate the use of the provRequest attribute for a number of scenarios.

1. The provisioning request in Figure 5: Account created from premium template provRequest on page 38 is requesting that an account be created for an existing subscriber. The account is using the premium template and is a telephony account. Implied in this request is that the location for the new account is taken from one of the subscriber attributes. The DN is automatically assigned.

```
<provRequest uuid="1" action="add" entity="account">
    <provRequestAccount template="premium" serviceType="telephony" />
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 5: Account created from premium template provRequest

2. The provisioning request in Figure 6: Template based on subscriber attribute provRequest on page 38 is requesting that an account be created for an existing subscriber. The account is a telephone account. Implied in this request is that the location for the new account is taken from one of the subscriber attributes. The template is based on an attribute of the subscriber. The DN is automatically assigned.

```
<provRequest uuid="1" action="add" entity="account">
    <provRequestAccount serviceType="telephony" />
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 6: Template based on subscriber attribute provRequest

3. The provisioning request in Figure 7: Create account in belleville provRequest on page 38 is requesting that an account be created for an existing subscriber. The account is a telephone account. The account is created in the "belleville" location. The template used is based on an attribute of the subscriber. The DN is automatically assigned in the element.

```
<provRequest uuid="1" action="add" entity="account">
    <provrequestAccount location="belleville" serviceType"telephony" />
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 7: Create account in belleville provRequest

4. The provisioning request in Figure 8: Location from subscriber attribute provRequest on page 39 is requesting that an account be created for an existing subscriber. The account has a premium template and is a telephone account. Implied in this request is that the location for the new account is taken from one of

the subscriber attributes. The DN is 5125. DN information is not interpreted at the Flow Through Provisioning level. DN information is interpreted by CS 1000 Element Manager.

```
<provRequest uuid="1" action="add" entity="account">
        <provRequestAccount template="premium" serviceType="telephony">
            <phoneDetails><primeDn>5125</primeDn></phoneDetails>
        </provRequestAccount>
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 8: Location from subscriber attribute provRequest

5. The provisioning request in Figure 9: Update account with new DN provRequest on page 39 is requesting that an account be updated with a new DN.

```
<provRequest uuid="1" action="update" entity="account">
        <provRequestAccount uniqueId="a3e6021b-5589-44f0-a07d-8f7dcdb0de48"
            serviceType="telephony" >
            <phoneDetails><primeDn>5653</primeDn></phoneDetails>
        </provRequestAccount>
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 9: Update account with new DN provRequest

6. The provisioning request in Figure 10: Account delete provRequest on page 39 is requesting that an account be deleted.

```
<provRequest uuid="1" action="delete" entity="account">
        <provRequestAccount uniqueId="a3e6021b-5589-44f0-a07d-8f7dcdb0de48" />
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS" />
```

Figure 10: Account delete provRequest

7. The provisioning request in Figure 11: Account add provRequest on page 40 is requesting that an account be added.

```
<provRequest uuid="1" action="add" entity="account">
    <provRequestAccount element="Call Server A" target="Customer0" serviceType="telephony" />
<provRequest>
.
.
.
<provResponse uuid="1" status="PASS">
.
. account details
.
</provResponse>
```

Figure 11: Account add provRequest

For all of these provRequests an associated provResponse is provided once the request is handled. Account details are embedded in the provResponse. The provResponse includes the unique account id from the directory. This unique account id is used in delete and update FTPROV action requests. The schema for the subMgrAccountType is shown in Figure 12: subMgrAccountType provResponse on page 40.

```
<xs:complexType name="subMgrAccountType">
    <xs:sequence>
        <xs:element name="providerId" type="xs:string" minOccurs="1" />
        <xs:element name="providerAccountId" type="xs:string" minOccurs="1" />
        <xs:element name="target" type="targetType" minOccurs="1" />
        <xs:element name="transId" type="xs:string" minOccurs="1" />
        <xs:element name="accountDescription" type="xs:string" minOccurs="0" />
        <xs:element name="accountDetails" type="xs:string" minOccurs="0" />
        <xs:element name="featurePackage" type="featurePackageType"
            minOccurs="0" />
        <xs:element name="publishData" type="publishableSubscriberType"
            minOccurs="0" />
        <xs:element name="serviceInfo" type="xs:string" minOccurs="0" />
        <xs:element name="serviceType" type="xs:string" minOccurs="0" />
        <xs:element name="status" type="statusType" minOccurs="0" />
        <xs:element name="subscriberId" type="xs:string" minOccurs="0" />
        <xs:element name="uniqueId" type="xs:string" minOccurs="0" />
    </xs:sequence>
</xs:complexType>
```

Figure 12: subMgrAccountType provResponse

Transaction Management

FTPROV transactions are asynchronous. There are two main asynchronous touch points in the overall FTPROV lifecycle.

- The LDAP synchronization process between the customer LDAP directory and the Subscriber Manager.
- The FTPROV engine polls the directory every ten minutes for provisioning requests.

As a result a transaction management strategy is required and is explained in Transaction Rules on page 41 and Transaction Rule Scenarios on page 41.

Attribute properties

The LDAP attributes provRequest and provResponse have the following properties:

- Type: String
- Length: 2000 characters
- Multivalued: true

Transaction Rules

To ensure system integrity of the overall transaction the following data and system rules must be followed by FTPROV participants

- LDAP synchronization must be setup to include the following

  - The customer directory is setup to be the master of the provRequest attribute.

  - Subscriber Manager is setup to be the master of the provResponse attribute.

- The customer IT system never removes a provRequest until the provResponse appears for the associated request.

- When the FTPROV engine handles a provRequest, it creates a provResponse with the same id as the request.

- The FTPROV engine removes any provResponses that no longer have a matching provRequest.

- If a new account is added to a subscriber that is in Failed Deletion/Pending Deletion status, its Failed Deletion/Pending Deletion status is removed.

- If provisioning requests are added to subscribers when the FTPROV engine is disabled, these requests are processed when the engine is enabled again.

- If an error is encountered during a provisioning request, the error is logged and the provisioning engine continues processing subsequent provisioning requests.

- If an error is encountered when sending a change notification, the error is logged and the subsequent notifications are sent.

A subscriber can have multiple requests. A maximum of 100 requests are supported per subscriber. If more than 100 requests exist for a subscriber, all of the requests are ignored and a warning message is printed to the logs.

Transaction Rule Scenarios

This section contains several transaction scenarios which illustrate the implementation details of FTPROV transaction management. For illustration purposes Customer Directory attribute

avayaRequestAttribute is mapped to provRequest attribute in Subscriber Manager and avayaResponseAttribute is mapped to provResponse attribute in Subscriber Manager.

Figure 13: Provisioning request basic flow on page 42 shows the sequencing of a provisioning request for a normal flow.
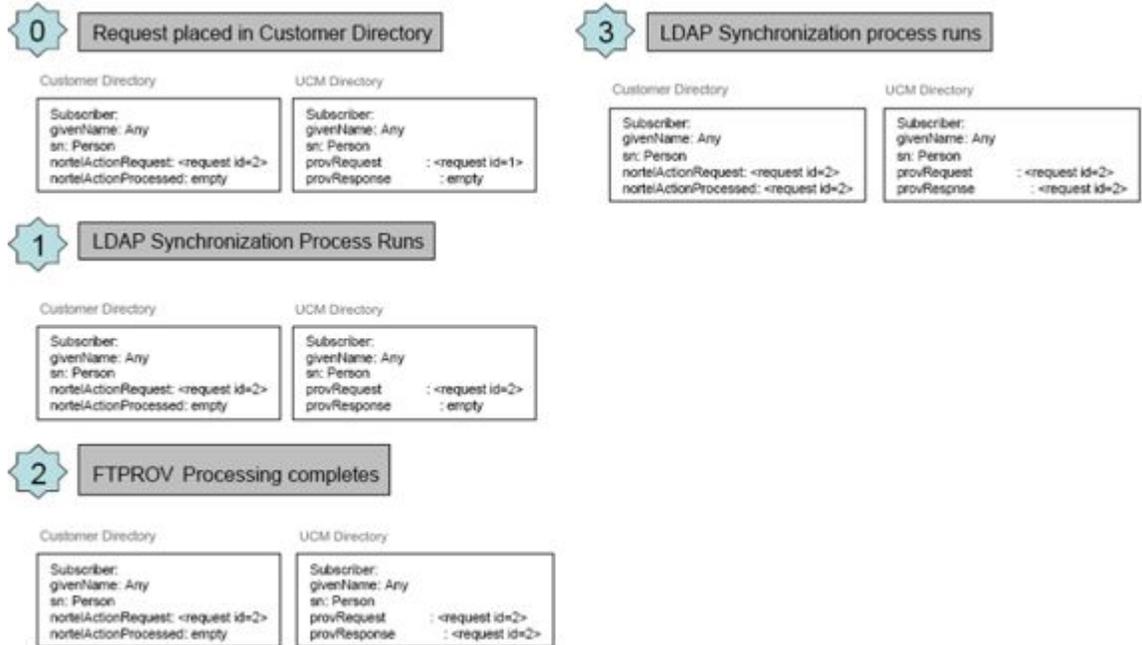
Figure 13: Provisioning request basic flow

Figure 14: Provisioning request gets overwritten on page 43 shows an example where the customer overwrites a request before it is processed.
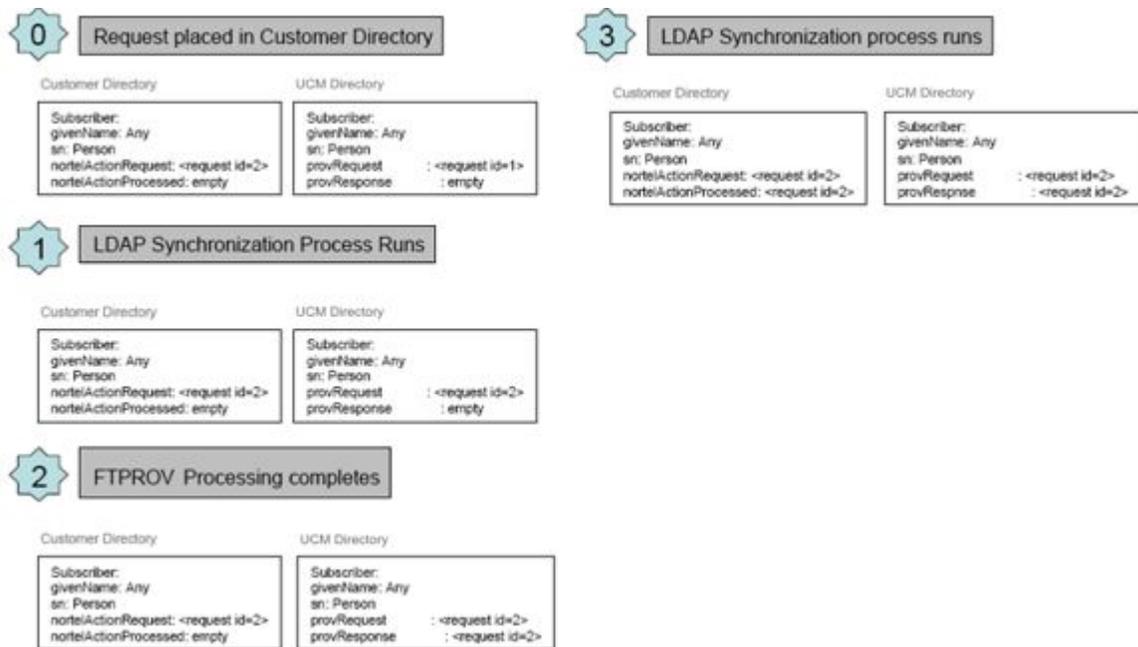
Figure 14: Provisioning request gets overwritten

⊛ **Note:**

In this use case, Subscriber Manager initially had an action request with an id = 1. This request had not been handled by the FTPROV processor when the LDAP synchronization process started. The LDAP synchronization process then overwrites the action request in Subscriber Manager with the one from the customer directory. As a result, action request number 1 is not handled since it has been deleted before the request was handled by the FTPROV processor.

Figure 15: Provisioning requests multiple requests on page 44 shows an example of how several requests are handled.
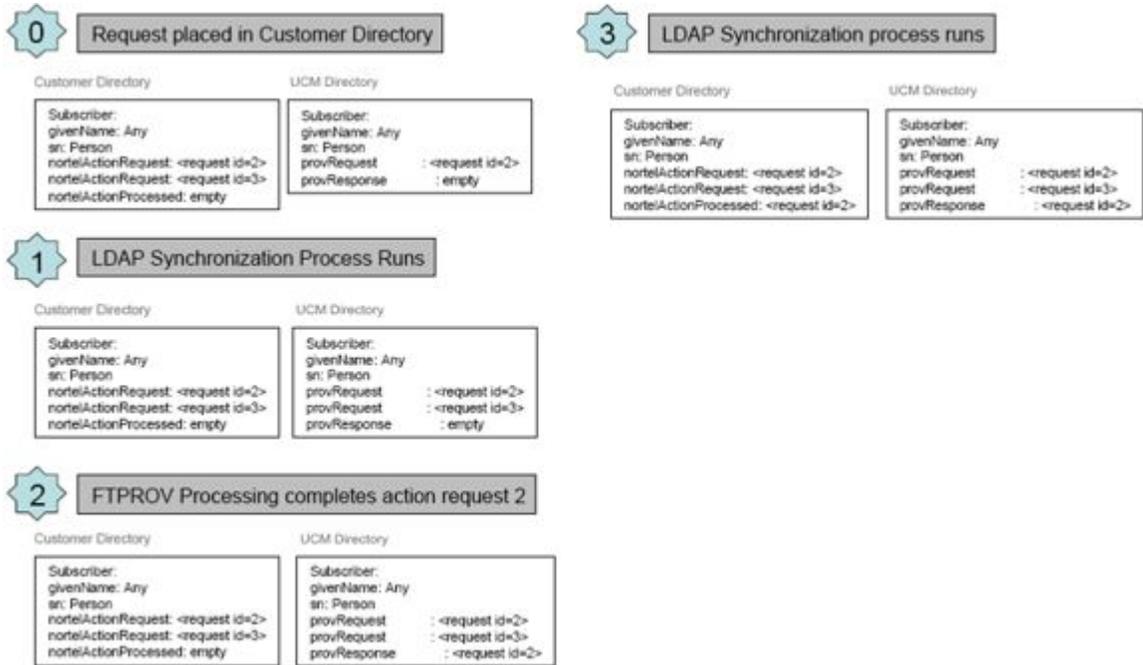
Figure 15: Provisioning requests multiple requests

> **Note:**
> In this use case, Subscriber Manager initially had a action request with an id = 2. This request had not been handled by the FTPROV processor when the LDAP synchronization process started. The LDAP synchronization process then overwrites all the action requests in Subscriber Manager. However, since the old action request was not removed from the customer directory, the LDAP synchronization process simply copies it back into Subscriber Manager again, but this time with the added action request 3.

Figure 16: Provisioning requests remove completed requests on page 45 shows an example of how completed requests are removed.
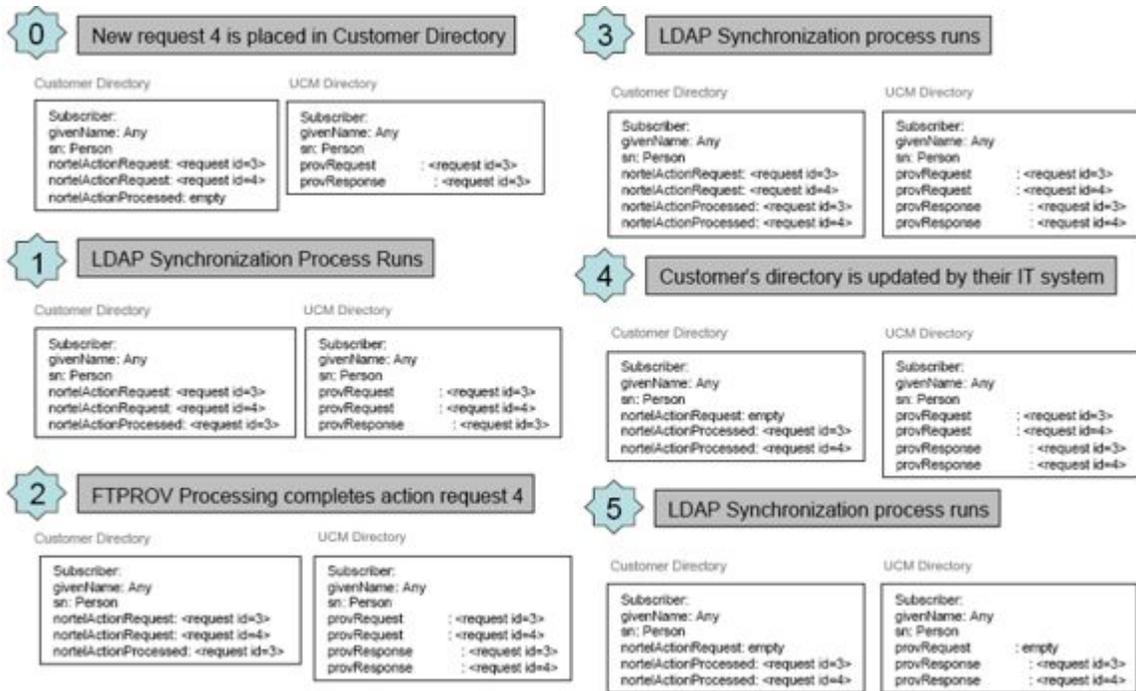
Figure 16: Provisioning requests remove completed requests
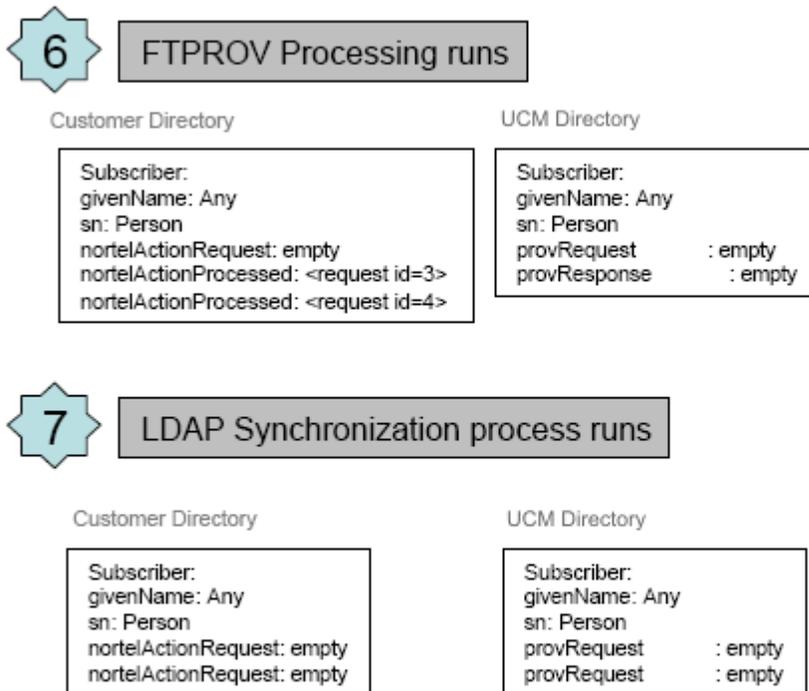
Figure 17: Provisioning requests remove completed requests continued

★ **Note:**

In this use case, Subscriber Manager initially had an action request with an id = 2 and completed action 2. The LDAP synchronization process overwrote the action request 2 with action request 3. The FTPROV processor then removes completed action 2 from the complete action list since there is no action requests matching the ids of actions in the completed list.

★ **Note:**

Normally, the customer directory would not remove avayaActionRequests until the request was completed. It knows that the request was completed.

User Interfaces

To configure the mapping for the LDAP synchronization jobs between the customer LDAP directory and Subscriber Manager, see LDAP subscriber synchronization on page 105.

To configure FTPROV, see Configuring Flow Through Provisioning on page 100.

To monitor FTPROV, see [Monitoring Flow Through Provisioning](#) on page 101.

Flow Through Provisioning engine

The FTPROV engine runs every ten minutes. All jobs which are queued are processed when the FTPROV engine runs.

Note:

The account synchronization process and the FTPROV engine can not run at the same time.

Unicode Name Directory support

The Unicode Name Directory uses the localized name support functionality and the numbering group functionality. For more information on the numbering group feature see *Signaling Server IP Line Applications Fundamentals (NN43001-125)*.

Localized name support

Variations on a name based on locale can be stored in Subscriber Manager.

The localized name feature in Subscriber Manager has the following specifications:

- UTF8 encoding is used for storage of the localized names.

- A maximum of 7 localized names can be provisioned for each subscriber.

- If more than 7 localized names are present in the directory, a warning log message is printed to the centralized logs indicating that more than 7 localized names are present in the directory when the subscriber is accessed via Subscriber Manager. The additional localized names are deleted from the directory if the user saves the subscriber data via Subscriber Manager.

  See [Log files](#) on page 22 for a summary of the log file format.

- Language representation is based on the IANA registry for language tags. In this case the IANA registry to represent Portuguese and the ISO standard ISO3166 is used for the country - Brazil.

- The following languages, as represented by their English names, are supported (the standard international language representation based on the IANA registry is shown in parentheses):

  - English (en)
  - French (fr)

- Swedish (sv)

- Danish (da)

- Norwegian (nn)

- German (de)

- Dutch (nl)

- Portuguese (pt)

- Czech (cs)

- Finnish (fi)

- Hungarian (hu)

- Latvian (lv)

- Italian (it)

- Polish (pl)

- Russian (ru)

- Spanish (es)

- Turkish (tr)

- Japanese Katakana (kana)

- Japanese Kanji (hani)

- Chinese simplified (zh-hans)

- Chinese traditional (zh-hant)

- Arabic (ar)

- Korean (ko)

- Hebrew (he)

- Greek (el)

• While the data for subscribers can be entered in any language supported with UTF8 encoding, the user interface labels in Subscriber Manager are displayed only in English.

The same language selection can be made for multiple names. Avaya recommends that there be only one localized name for each selected language. If there is more than one localized name for a selected language, only the first localized name in Unicode ascending order is displayed on the terminal.

Subscriber Manager CSV and LDAP synchronization

Subscribers can be synchronized with a customer's LDAP directory or with a CSV file. When using either of these approaches, the user must provide localized names in a format consistent with the specification of the "localizedName" attribute summarized in the following CSV file examples. The "localizedName" attribute can have to 256 characters.

CSV file to add a localized name to an existing subscriber

entryUUID,localizedName 8f863bb0-29f5-4af2-a68d-4b7c105df104,en.Joe

CSV file for a new subscriber with one localized name

sn, localizedName Smith, en.Smith

CSV file for a new subscriber with two localized names

sn, localizedName Smith, en.Smith;fr.Smith

CSV file for a new subscriber with invalid localized names

sn, localizedName Smith, eng.Smith;frdhd.Smith;french.Smith

CSV file for a new subscriber with a malformed localized name

sn, localizedName Smith, en:Smith;fr_Smithh

> **Note:**
>
> Use a unicode compatible editor, such as OpenOffice.org 2.4.0 (or greater), to edit CSV files. Other unicode compatible editors can be used. However, they have not been tested.

To interoperate with the LDAP subscriber synchronization tool, a customer's LDAP directory must format localized names as shown in the CSV file examples above.

The subscriber synchronization features do not validate language abbreviations, country abbreviations, number of localized names, the name length or format of the language and name. The user is responsible for properly formatting the localized name data when using the CSV and LDAP subscriber synchronization features. For example, if the CSV subscriber synchronization feature is used with a CSV file containing an invalid localized name such as "zz-hjs:John Smith" for a subscriber "John Smith", the localized name is imported into the directory. No error messages is displayed to the user. However, when the details of John Smith are viewed in Subscriber Manager, the localized name is identified as invalid and the user has the opportunity to fix the name.

Any malformed localized names from LDAP subscriber synchronization or CSV subscriber synchronization are displayed verbose in the UI. The user is responsible to fix the format or delete the malformed name. A log message is provided to inform the user that a malformed localized name is encountered. The log message is as follows:

Level: WARNING Message: [Subscriber first name] [Subscriber last name] [Subscriber Employee ID] has malformed data for localized names.

Any invalid language code is displayed verbose in the UI. The user is responsible to fix the invalid information. A log message is provided to inform the user that an invalid language abbreviation is encountered. The log message is as follows:

Level: WARNING Message: [Subscriber first name] [Subscriber last name] [Subscriber Employee ID] has an invalid language abbreviation as follows [language abbreviation] [name].

See for a summary of the log file format.

Username property

The username property is used by an element manager, if a username is required as part of creating an account. It is not necessary for the element manager to take this username. It is simply a preferred name (or recommended name). The user can specify a different username by clicking the "Advanced" link in the Add Account page of Subscriber Manager. The username property must be unique.

In Subscriber Manager the username property has a limit of 256 characters in length. (This restriction is not enforced by Subscriber Manager.) An element manager may require shorter username lengths. The element manager should ensure that the username is valid for its use. If the username is not valid, element manager has the option to reject the account creation and notify Subscriber Manager. If CS 1000 Element Manager rejects the account creation because the username does not conform to Element Manager length restrictions, Subscriber Manager alerts the user and creates a log message.

There are three ways to add a username to a subscriber in Subscriber Manager

- Subscriber Manager CSV synchronization. See CSV subscriber synchronization on page 119.
- Subscriber Manager LDAP synchronization. See LDAP subscriber synchronization on page 105.
- Subscriber Manager Web UI. See Adding a new subscriber on page 71.

Note:
Usernames entered through the Subscriber Manager Web UI have leading and trailing spaces removed. Spaces that appear inside the username are not removed

Subscriber telephony accounts

Subscriber Manager provides a functionality to publish phone properties for subscribers from a CS 1000 telephony account into the subscriber. This allows the phone-specific attributes in an enterprise corporate directory to be synchronized.

When configuring telephony accounts for subscribers, the subscriber names are sent to the Call Party Name Display (CPND) in CS 1000 Element Manager. The subscriber name is linked to the CPND name of the phone prime Directory Number (DN). Table 14: Rules for CPND names on page 51 describes the rules used in CS 1000 Element Manager for configuring the CPND name. The rules are listed in order of preference.

Table 14: Rules for CPND names

Subscriber name used	Rules for setting the CPND name
Preferred name	The preferred name is configured as the CPND first name, and the subscriber last name is configured as the CPND last name..
First name and last name	The subscriber first name is configured as the CPND first name, and the subscriber last name is configured as the CPND last name.
Last name	The subscriber last name is configured as the CPND last name.

When a phone is assigned to a subscriber, the following phone attributes are published in Subscriber Manager:

- Extension
- ESN telephone number

The Prime DN is used as the Extension value.

Subscriber Manager publishes the attributes to the to the corporate LDAP server.

Configuration for subscriber accounts

Subscriber Manager allows users to add and configure accounts for subscribers with templates available in management applications such as Element Manager and CallPilot Manager. When configuring subscriber accounts, the user is redirected from Subscriber Manager to the management application providing the template.

A template contains attributes that are common to a CS 1000 phone type. Once a template is created, you can use it to apply these common attributes to a group of phones, without having to repetitively define the same value for each phone. In general, using a template is a more efficient method of adding large numbers of phones than maintaining each phone individually.

For more information on creating templates in CS 1000 Element Manager, see *Avaya Element Manager System Reference - Administration* (NN43001-632).

For information on configuring subscriber accounts, see Manage subscriber accounts on page 77.

Avaya CallPilot Templates

There are two Avaya CallPilot templates which behave differently than other templates and require some special attention to use correctly:

- Remote User Template. This template is intended to be used to add a mailbox for a user on a remote CallPilot server. As such, this template requires a special mailbox number, which is prefixed with the location code of the remote server as configured in CallPilot network management. What this means to Subscriber Manager is that for basic add the extension number must be prefixed with the appropriate Location Code. For example, if the desired mailbox number is 7654 and the Location Code is 6323, then the extension must be 63237654. If the extension is not prefixed with the correct location code, then a basic add returns the error message: "An error occurred when creating the account. Error code: 60606, Description: Failed to create mailbox: Mailbox Number attribute contains an invalid value"

  If the subscriber extension cannot be prefixed with the Location Code, then the mailbox using the Remote User Template must be added using an Advanced Add Account in Subscriber Manager, where the mailbox number can be updated as required allowing the Subscriber extension to be different than the mailbox number. See <u>Performing an advanced add account for a subscriber</u> on page 79.

- Directory End User Template. Mailboxes added using this template do not require any special workflow. However, the CallPilot does not store the mailbox number for mailboxes added using this template. As a result, the entry in the Accounts list for the subscriber contains the text "Mailbox=". That is, there is no mailbox number displayed.

Chapter 5: Common procedures

The following sections in this chapter describe common procedures that you can use for Avaya Subscriber Manager.

Navigation

Launch Subscriber Manager

Use the steps in the following procedure to launch Subscriber Manager.

Launching Subscriber Manager

1. Open the Web browser.
2. Enter one of the following in the Address bar and press **Enter**.

   - UCM Common Services IP address

     When you enter the UCM Common Services IP address, a Web page opens stating that you must access UCM Common Services using the Fully Qualified Domain Name (FQDN) for the UCM Common Services server. Click the link on this Web page to use the FQDN for the UCM Common Services server.

   - Fully Qualified Domain name (FQDN) for the UCM Common Services server

   The **UCM Common Services Logon** Web page opens.

WARNING2

WARNING! This computer system and network is PRIVATE and PROPRIETARY of [company name] and may only be accessed by authorized users. Unauthorized use of this computer system or network is strictly prohibited and may be subject to criminal prosecution, employee discipline up to and including discharge, or the termination of the vendor/service contracts. The owner, or its agents, may monitor any activity or communication on the computer system or network.

Figure 18: Logon Web page

3. In the **User ID** field, type your user ID.

4. In the **Password** field, type your password.

5. Click **Login**.

   The default navigation Web page for UCM Common Services opens.

6. From the UCM Common Services navigator, click **Subscriber Manager** to launch Subscriber Manager.

   ⚹ **Note:**

   The security administrator must assign one or both of the built-in permissions (summarized in Table 2: Built-in permission assignments for Subscriber Manager on page 20) to existing roles for a user to access Subscriber Manager. For more information about Subscriber Manager permissions, see Security on page 20.

Use the steps in the following procedure to launch Subscriber Manager from System Manager.

Launching Subscriber Manager from System Manager

1. Open the **System Manager** page.
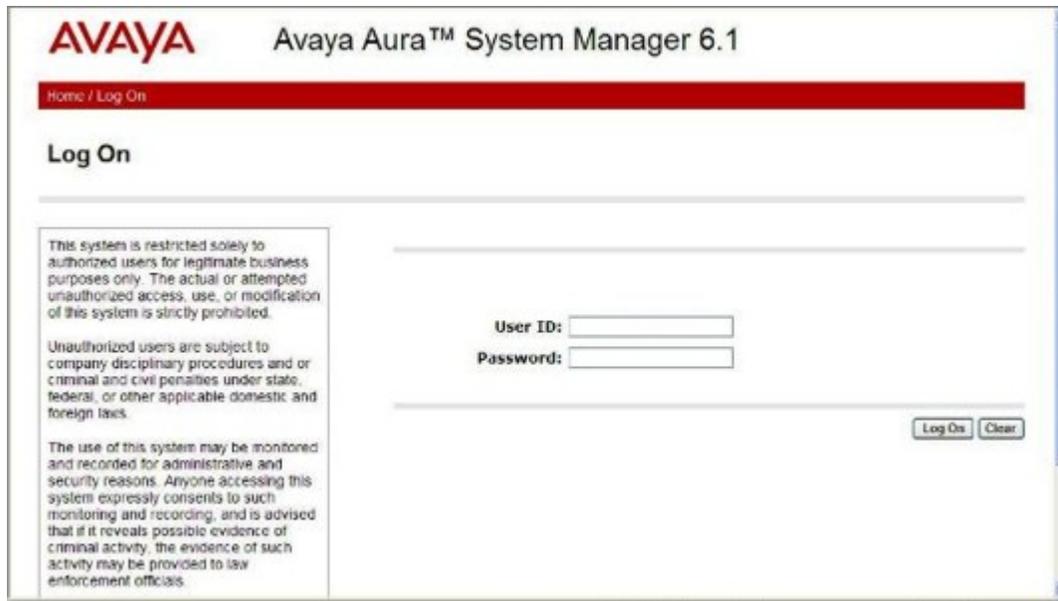
Figure 19: Log On web page

2. In the **User ID** field, enter the user ID.

3. In the **Password** field, enter your password.

4. Click **Log On**.

    The following **Users Elements Services** page appears.

5. Click on **Administrators** link.

    The UCM **Administrative Users** page opens.

Figure 20: Administrative Users

6. In the **Administrative Users** left pane, click **Subscriber Manager** to launch Subscriber Manager.

   The **Subscriber Manager** page opens.
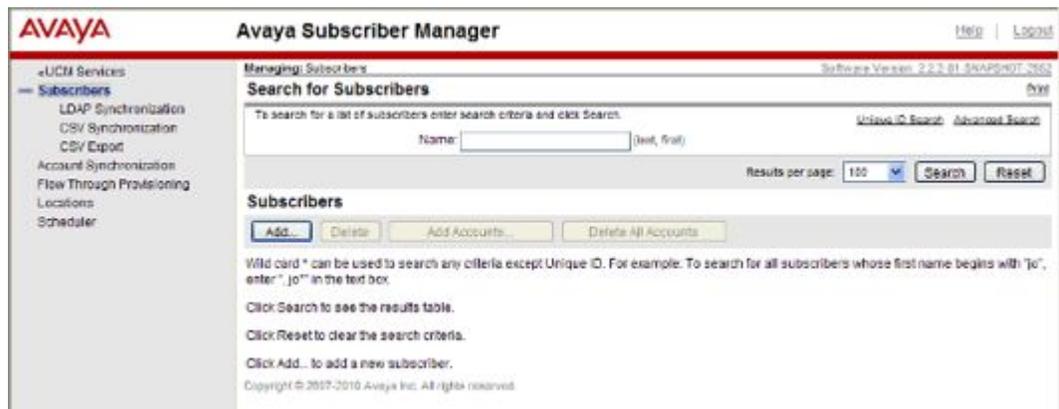
Figure 21: Subscriber Manager

Help and Logout links

The **Help** and **Logout** links are located on the right side of the Subscriber Manager Web page header.

Help link

Click the **Help** link to access the Subscriber Manager Help File. The Subscriber Manager Help File opens in a new Web page.

Subscriber Manager provides context-sensitive help. That is, the help page displayed depends on the Subscriber Manager Web page from which it is opened. Once a help page is opened,

click the **Show** link in the upper left corner of the page to display the Contents and an Index of the Subscriber Manager Help File.

For more information on accessing and navigating the Subscriber Manager Help File see

Logout link

Click the **Logout** link to terminate the current Enterprise Common Manager session. See

UCM Network Services link

Click the **UCM Network Services** link on the **Subscriber Manager navigator** to return to the UCM Common Services Web page without terminating the current UCM Common Services session..

Get help

You can receive online assistance for the current Web page you are viewing in Subscriber Manager.

Use the steps in the following procedure to get help for Subscriber Manager.

Getting help

1. Click the **Help** link located at the right side of the Subscriber Manager web page header.

   A Help web page, related to the contents of the current web page in Subscriber Manager, opens in a new browser window.

Delete a subscriber

You can delete a subscriber that is no longer required in your system.

Use the steps in the following procedure to delete a subscriber with or without accounts.

Deleting a subscriber

Step	Action
1	Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber, or Performing an advanced search for a subscriber.
2	From the **Subscribers found** section, select the check box beside the name of the subscriber or subscribers you wish to delete.
3	Click **Delete**. A confirmation dialog box opens.
4	Click **OK** to proceed with the deletion or **Cancel** to cancel the deletion.

--End--

Figure 22: Help web page example

2. Click the **Show Navigation** link in the upper left corner of the Help web page. The Subscriber Manager **Help File Navigator** pane appears.
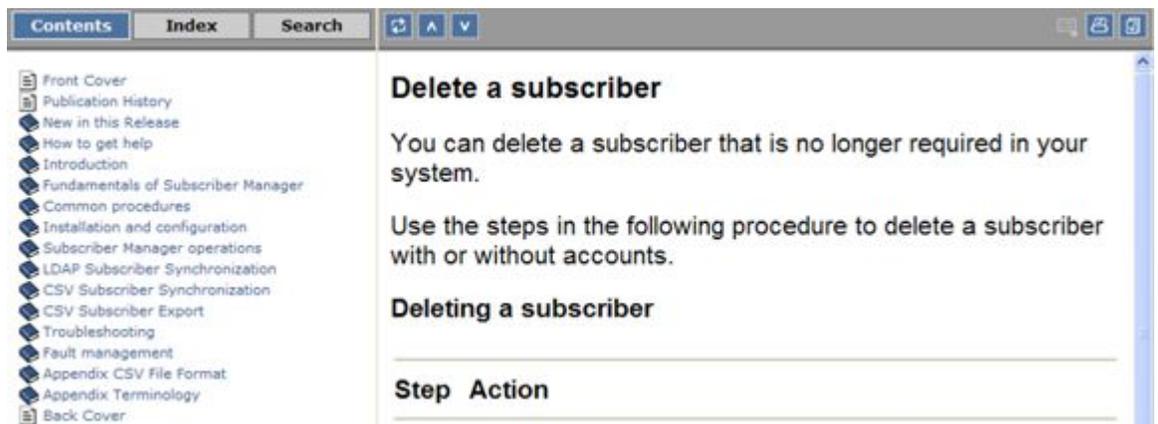
Figure 23: Subscriber Manager Help File Navigator

3. From the Help File navigator, perform one of the following actions:

- Click a topic to view the help content for the topic.
- Click **Index** to view a list of topics in alphabetical order.
- Click **Contents** to view the Help File Navigator.
- Click **Search**.

  In the **Search** field, type in the word or words you wish to search for and click **Go**.

Topics that contain the entered word or words appear below the field in the Help File Navigator pane.

- Click the up or down arrows to scroll through the Subscriber Manager Help file.

Log out of UCM Common Services

See [Logging out of UCM Common Services](#) on page 59 to log out of the UCM Common Services. Logging out of the UCM Common Services terminates the current session.

Logging out of UCM Common Services

1. Click the **Logout** link on the right side of the Subscriber Manager Web page header.

   The UCM Common Services Logon Web page opens.

2. Close the browser window.

UCM Common Services audit log files

Users with the administrator role can review or download audit log files with the UCM Common Services log viewer. To view or download security log files, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

View and download UCM Common Services audit log files

The following procedure describes how to view and download UCM Common Services audit log files when logged on with the administrator role.

Viewing and downloading audit log files

1. From the UCM Common Services navigator, click **Tools** > **Logs**.

   The Logs Web page opens.
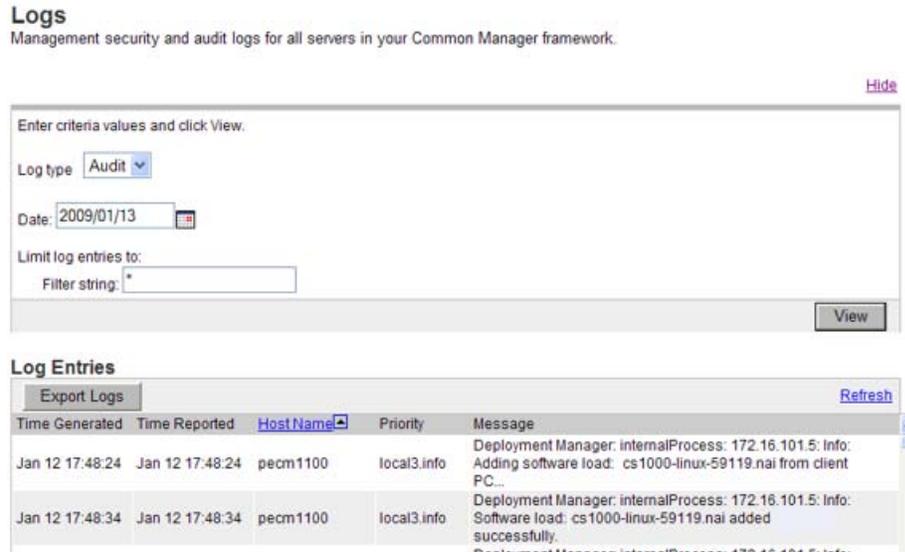
Figure 24: Logs Web page

2. In the **Date** field, enter a date within the last 30 days using the format YYYY/DD/MM. or click on the **calendar** icon to select a date.

3. In the **Limit log entries to** section, enter a search string in the **Filter string** field to filter the Log Entries summary.

4. Click on **View**. The **Log entries** panel refreshes with a list of log messages for the requested date.

5. Click on **Export Logs**. The File Download dialog box opens.

6. Click **Save**.

   The Save As dialog box opens.

7. Specify a path and filename for the Log Summary CSV file and click **Save**.

   The File Download and Save As dialog boxes close.

Migrate Subscriber Manager data to System Manager

This section contains the details required to migrate Subscriber Manager data from a Unified Communications Management (UCM) server to an Avaya Aura® System Manager server.

Subscriber Manager data migration task flow

The following task flow provides a high-level task flow to assist you with migrating your Subscriber Manager data to System Manager.

Migrate Subscriber Manager data to System Manager

Avaya provides the following two options for migrating Subscriber Manager data to System Manager:

1. For release 4.x – 7.0 CS 1000 systems that have upgraded to CS 1000 7.5 prior to migrating to Avaya Aura® System Manager and Session Manager.

2. For release 4.x – 7.0 CS 1000 systems that are migrating to Avaya Aura® System Manager and Session Manager before upgrading the CS 1000 Call Servers and registered elements to release 7.5.

Option 1 is for systems upgraded to CS 1000 Release 7.5 prior to migrating to System Manager.

For option 1, a CS 1000 UCM Data Migration Tool and UCM patches are available to support the migration of the UCM Common Network Directory and Subscriber Manager to System Manager/UCM for CS 1000 7.5 systems. For additional information see *Planning the Network-wide Upgrade* NN43001-406. For procedure steps see *Unified Communications Management Common Services Fundamentals* NN43001-116.

For option 2, use the procedures in this section to manually migrate Subscriber data from a CS 1000/UCM server to an Avaya System Manager server.

Option 2 data migration task flow

On the source system:

1. Log on to the primary CS1000/UCM server command line using one of the following user names:

   • admin2 for CS 1000 Release 7.5 systems

   • nortel for CS 1000 Release 7.0 and older systems

2. Switch to super user (su).

3. Enter `cd /opt/nortel/cnd`

4. Enter `./cnd.sh stop_service`

5. Enter `./slapcat -f slapd.conf -s ou=subscribers,dc=nortel,dc=com -a objectclass=nortelsubscriber -l subscriberData.ldif`

6. Enter `./cnd.sh start_service`

7. Using a secure ftp client, connect to the Linux base using the same credentials you used in step 1.

8. Copy the file `/opt/nortel/cnd/subscriberData.ldif` to your local PC.

On the destination system:

1. Using a secure ftp client, connect to the primary System Manager server using the admin login.

2. Copy the file `subscriberData.ldif` into the`/opt/nortel/cnd` folder on the System Manager server.

3. Log on to the primary System Manager server command line.

4. Switch to super user (su).

5. Enter `cd /opt/nortel/cnd`

6. Enter `./cnd.sh stop_service`

7. Enter `./slapadd -f slapd.conf -l subscriberData.ldif -c`

8. Enter `./cnd.sh start_service`

Synchronize the accounts

1. On the System Manager server, open Subscriber Manager.

2. Click **Account Synchronization** in the navigator.

3. Select all elements and click **Start**.

Chapter 6: Installation

This chapter provides information to install Subscriber Manager in the UCM Common Services.

Navigation

Communication Server 1000 task flow

This section provides a high-level task flow for the installation or upgrade of an Avaya Communication Server 1000 (Avaya CS 1000) system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the document number that contains the detailed procedures required for the task.

For more information, refer to the following publications, which are referenced in the task flow diagram:

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN43001-125)
- *Avaya Network Routing Service Fundamentals* (NN43001-130)
- *Avaya Branch Office Installation and Commissioning* (NN43001-314)
- *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Avaya SIP Line Fundamentals* (NN43001-508)
- *Avaya Security Management Fundamentals* (NN43001-604)
- *Avaya Element Manager System Reference — Administration* (NN43001-632)
- *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)
- *Avaya CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458)

- *Avaya Communication Server 1000E Installation and Commissioning* (NN43041-310)
- *Avaya Communication Server 1000E Software Upgrades* (NN43041-458)
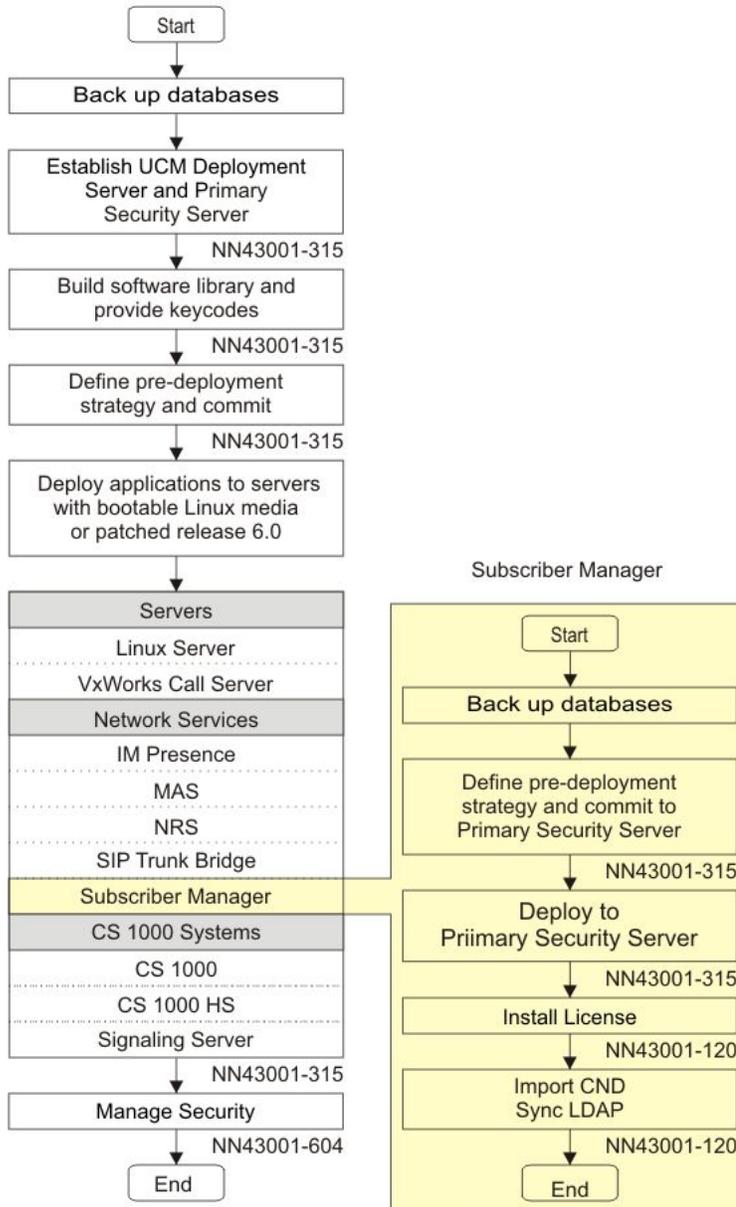
Figure 25: Task flow

Install Subscriber Manager

Subscriber Manager is a component of the Avaya Unified Communications Management Common Services (UCM Common Services). The UCM Common Services provides security and navigation infrastructure services for the following Web-based management applications:

- Avaya CS 1000 Element Manager (EM)
- Network Routing Service (NRS) Manager
- Subscriber Manager (SubM)

It is best practice to configure both a Primary and a Backup Security Server per UCM Common Services security domain. This assures a highly available authentication and authorization service for:

- OAM users who need to access managed systems/elements in the UCM Common Services security domain
- auxiliary applications that rely on continuous availability of the UCM Common Services Web services API to monitor and control the CS 1000

Refer to *Avaya Linux Platform Base and Applications Installation and Commissioning (NN43001-315)*, for detailed information on installing the Linux operating system, the UCM Common Services and Subscriber Manager. Refer to *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116), for detailed information on adding a managed element to the UCM Common Services, creating user accounts, and assigning roles and permissions for access to the Subscriber Manager from the UCM Common Services.

Linux platform uses Centralized Deployment Manager to remotely deploy Avaya application software from the UCM Common Services Primary Security server to other Linux servers located in the same security domain.

When Deployment Manager installs Subscriber Manager, all the properties, script, war files required for Subscriber Manager are stored in a particular directory in the UCM Common Services server. The user can see the Subscriber Manager link in the navigation tree of the UCM Common Services. This is used as a launch point for Subscriber Manager.

Users access the UCM Common Services and Subscriber Manager through Microsoft Internet Explorer 6.02600, or later.

For more information about UCM Common Services, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

Prerequisites

Before subscribers can be added and accounts provisioned using Subscriber Manager:

1. UCM Common Services and the Primary Security Service must be installed. Optionally a Backup Security Service may be installed. It is best practice to

configure a Backup Security Service when one or more Linux-based servers are joined as members of an existing UCM Common Services Security Domain, to ensure continued access to UCM Common Services-based system management applications in case of failure of the UCM Common Services Primary Security service.

For more information on UCM Common Services and the UCM Common Services security domain, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116) and *Avaya Security Management Fundamentals* (NN43001-604).

2. Linux platform uses Centralized Deployment Manager to remotely deploy Avaya application software from the UCM Common Services Primary Security server to other Linux servers located in the same security domain.

   The UCM Common Services base application provides necessary system functionality and must be successfully installed in order for the EM and Subscriber Manager applications to function. The UCM Common Services base application resides on the Linux base installation media and is installed automatically the first time the system boots up after base installation. The success or failure of the base applications installation is shown in an on-screen message. If the base application installation fails, the Linux base must be reinstalled.

   For more information on installing the Linux platform and using Centralized Deployment Manager, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

3. Administrative user accounts must be created and roles and permissions for accessing EM and Subscriber Manager from UCM Common Services must be assigned.

   For more information on creating Administrative user accounts and assigning roles and permissions, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

4. Templates must be created in a CS 1000 management application such as EM or CallPilot Manager.

   For more information on creating templates in EM, see *Avaya Element Manager System Reference - Administration* (NN43001-632).

Uninstall Subscriber Manager

Deployment Manager is used to uninstall Subscriber Manager. When Subscriber Manager is uninstalled, the subscriber data that is contained in the UCM Common Services embedded directory remains in the directory. Data in the UCM Common Services embedded directory is accessed by other applications in the network and uninstalling Subscriber Manager does not mean that the other applications, such as Unicode Directory Server, no longer need to access this data.

When Subscriber Manager is uninstalled, all the properties files, script files, war files and log files related to Subscriber Manager are removed from the UCM Common Services. The

Subscriber Manager link is not in the UCM Common Services navigation tree once the application is uninstalled.

Migrate Subscriber Manager data to System Manager

This section contains the details required to migrate Subscriber Manager data from a Unified Communications Management (UCM) server to an Avaya Aura® System Manager server.

Subscriber Manager data migration task flow

The following task flow provides a high-level task flow to assist you with migrating your Subscriber Manager data to System Manager.

Migrate Subscriber Manager data to System Manager

Avaya provides the following two options for migrating Subscriber Manager data to System Manager:

1. For release 4.x – 7.0 CS 1000 systems that have upgraded to CS 1000 7.5 prior to migrating to Avaya Aura® System Manager and Session Manager.

2. For release 4.x – 7.0 CS 1000 systems that are migrating to Avaya Aura® System Manager and Session Manager before upgrading the CS 1000 Call Servers and registered elements to release 7.5.

Option 1 is for systems upgraded to CS 1000 Release 7.5 prior to migrating to System Manager.

For option 1, a CS 1000 UCM Data Migration Tool and UCM patches are available to support the migration of the UCM Common Network Directory and Subscriber Manager to System Manager/UCM for CS 1000 7.5 systems. For additional information see *Planning the Network-wide Upgrade* NN43001-406. For procedure steps see *Unified Communications Management Common Services Fundamentals* NN43001-116.

For option 2, use the procedures in this section to manually migrate Subscriber data from a CS 1000/UCM server to an Avaya System Manager server.

Option 2 data migration task flow

```
                    Start
                      |
                      v
Migrate Subscriber Manager      Copy subscriber data from
                                the CS 1000/UCM server
        NN43001-120                        NN43001-120
                                Import subscriber data
                                on the System Manager server
                                           NN43001-120
                                Synchronize account data
                                on the System Manager server
                                           NN43001-120
                      |
                      v
                     End
```

On the source system:

1. Log on to the primary CS1000/UCM server command line using one of the following user names:

   • admin2 for CS 1000 Release 7.5 systems

   • nortel for CS 1000 Release 7.0 and older systems

2. Switch to super user (su).

3. Enter `cd /opt/nortel/cnd`

4. Enter `./cnd.sh stop_service`

5. Enter `./slapcat -f slapd.conf -s ou=subscribers,dc=nortel,dc=com -a objectclass=nortelsubscriber -l subscriberData.ldif`

6. Enter `./cnd.sh start_service`

7. Using a secure ftp client, connect to the Linux base using the same credentials you used in step 1.

8. Copy the file `/opt/nortel/cnd/subscriberData.ldif` to your local PC.

On the destination system:

1. Using a secure ftp client, connect to the primary System Manager server using the admin login.

2. Copy the file `subscriberData.ldif` into the `/opt/nortel/cnd` folder on the System Manager server.

3. Log on to the primary System Manager server command line.

4. Switch to super user (su).

5. Enter `cd /opt/nortel/cnd`

6. Enter `./cnd.sh stop_service`

7. Enter `./slapadd -f slapd.conf -l subscriberData.ldif -c`

8. Enter `./cnd.sh start_service`

Synchronize the accounts

1. On the System Manager server, open Subscriber Manager.
2. Click **Account Synchronization** in the navigator.
3. Select all elements and click **Start**.

Software upgrades and patches

Upon installing a software upgrade patch, the properties, script, war and log files are updated.

September 2011

Chapter 7: Subscriber Manager operations

This chapter provides information about how to configure subscribers and subscriber accounts for subscribers within your management system.

Navigation

Manage subscribers

The procedures in this section describe the functions available in Subscriber Manager to manage subscribers within your network.

The Managing Subscribers Web page is the default Web page that opens when you click the Subscriber link in the UCM Common Services left navigation pane. From the Managing Subscribers Web page, you can view, add, edit, delete, or search for subscribers.

Add a new subscriber

Use the steps in the following procedure to add a new subscriber in Subscriber Manager.

Adding a new subscriber

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Managing Subscribers Web page opens, as shown in
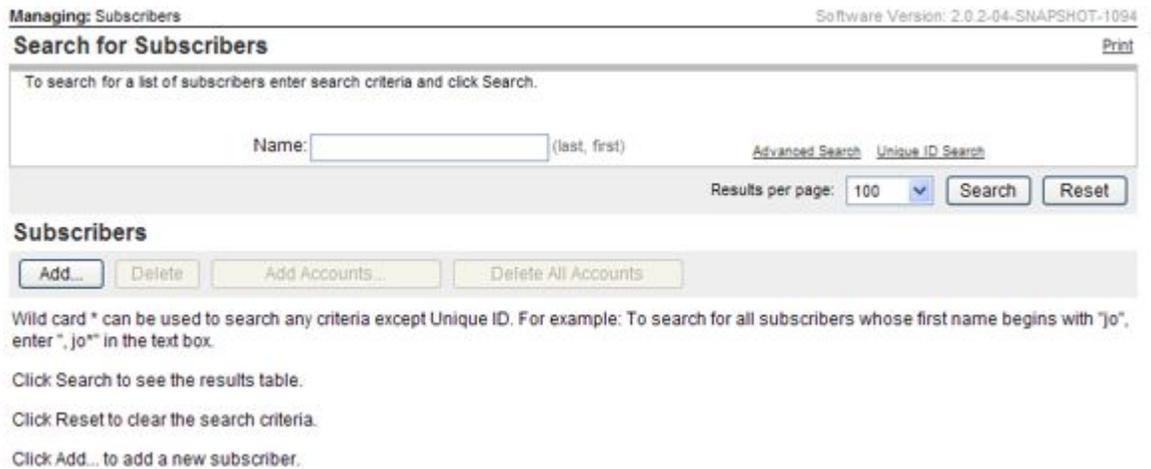
Figure 26: Managing Subscribers Web page

2. From the **Subscribers** section, click **Add**.

   The New Subscriber Web page opens, as shown in
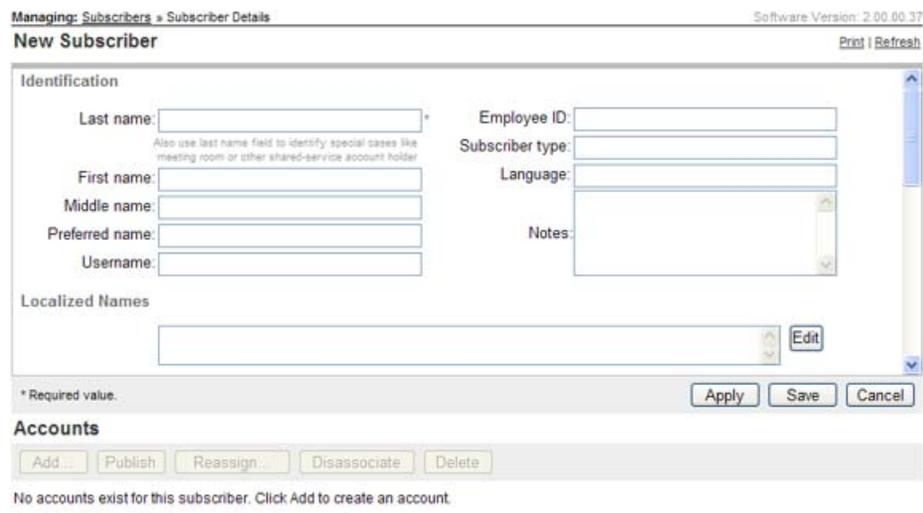
Figure 27: New Subscriber Web page

3. Enter the subscriber properties, summarized in , for the new subscriber in the following sections:

   • **Identification**

   ⊛ **Note:**
   Last name is a mandatory field.

- **Localized Names**

  - This section is collapsed if no localized names exist and expanded if localized names exist.
  - By default the list is shown in read only mode.
  - The names are displayed sorted in alphabetical order by language.

    Click the **Edit** button, to edit the list of localized names.

- **Directory and Phone Numbers**
- **Unified Communications**
- **Address**
- **Organization**

  To enter a service start or end date, you can perform one of the following actions:

  - Type the service start date as YYYY-MM-DD.
  - Click the calendar icon beside the **Service start date** field and select a date.

4. Click **Save** to apply the changes, or click **Cancel** to return to the Managing Subscriber Web page.

   If all mandatory fields have been completed, the Search for Subscribers Web page opens and the newly added subscriber is listed in the **Subscribers found** section.

   Note:

   The newly added subscriber is the only subscriber listed in the **Subscribers found** section.

   If all mandatory fields have not been completed, the New Subscriber Web page refreshes with a message indicating missing mandatory fields.

   Note:

   When adding a new subscriber, if the subscriber's first and last name match an existing subscriber in the directory, a warning message is displayed such as "A subscriber exists with the same name Smith. Click "Save" or "Apply" to continue, "Cancel" to Abort".

When a new subscriber is added to the system, an account can be added for the new subscriber. For more information about how to add a subscriber account, see <u>Add an account for a subscriber</u> on page 78 .

Search subscribers

There are three features in Subscriber Manager to quickly and easily search for subscribers within your network: (1) basic search, (2) advanced search, and (3) unique ID search. The

Unique Id Search link is available beside the Advanced Search link when doing a basic search, as shown in Figure 26: Managing Subscribers Web page on page 72, or beside the Basic Search link when doing an advanced search.

Searching for a unique ID results in either a single subscriber found or no subscriber found. If no subscriber is found, a message is displayed indicating that no subscriber matching the unique user ID can be found. Unique ID search does not support wild cards.

If the user has created a list of subscribers from the search criteria, toggling between the three search types does not refresh the search results. The search results are modified only when the Search button is clicked, which generates a new list of matching subscribers, or when a new subscriber is added, which adds the new subscriber to the subscriber list.

Perform a basic search for a subscriber

Use the steps in the following procedure to perform a basic search to find subscribers within your management system. With the basic search, you can search for a subscriber only by last name, first name, or last and first name.

Performing a basic search for a subscriber

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscribers Web page opens.

2. From the **Search for Subscribers** section, in the **Name** field, perform one of the following actions:

   • type the last name of the subscriber

   • type the last name and first name of the subscriber

   • type the first name of the subscriber

   > 🛈 **Important:**
   > When searching for a subscriber with both last and first names, a comma is required after the last name (smith, john).
   >
   > When searching for a subscriber with the first name, a comma is required before the name (, john).
   >
   > You can also use the asterisk (*) wild card to return specific search results, as described in Table 6: Search wild card on page 26.

3. Select a value from the **Results per page** drop down list.

4. Click **Search**.

   The search results are displayed in the **Subscribers found** section of the Managing Subscribers Web page.

5. Click **Reset** to clear the search values and to perform a new search.

Perform an advanced search for a subscriber

To perform an advanced search for a subscriber within your management system, see Performing an advanced search for a subscriber on page 75. With the advanced search feature, you can search for a subscriber by the criteria summarized in Table 5: Subscriber Manager advanced search options on page 24.

Performing an advanced search for a subscriber

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscribers Web page opens.

2. From the **Search for Subscribers** section, next to the **Name** field, click **Advanced Search**.

   The Subscribers Web page refreshes.

3. From the **Search for Subscribers** section of the Subscribers Web page, enter information for the following advanced search fields:

   • **Name**

   • **Employee ID**

   • **Department**

   • From the first drop down list (of miscellaneous fields), select one of the criteria summarized in Table 5: Subscriber Manager advanced search options on page 24.

   • From the date drop down list select **Service end date** or **Service start date** including the **From** and **To** fields.

   To enter a date in the **From** and **To** fields, click the calendar icon beside them or type the date as YYYY-MM-DD in the appropriate fields.

4. Select **Only search for subscribers whose deletion is pending or failed**, if desired.

5. From the **Results per page** list, select a value.

6. Click **Search**.

   The search results are displayed in the **Subscribers found** section of the Subscribers Web page.

7. Click **Reset** to clear the search values and perform a new search.

Important:

When you perform a basic or advanced search, you can use the asterisk (*) wild card to return specific search results. For more information about the asterisk (*) wild card, see Table 6: Search wild card on page 26.

Perform a search for a subscriber by unique ID

Use the steps in the following procedure to perform a search for a subscriber by a unique ID.

Performing a search for a subscriber by unique ID

1. Click on the **Unique Id Search** link beside the **Advanced Search** link when doing a basic search, or beside the **Basic Search** link when doing an advanced search.

    The Subscribers Web page refreshes.

2. Enter the universal unique ID (UUID) of the subscriber in the **UUID** field.

3. Click **Search**.

    The search results are displayed in the **Subscribers found** section of the Subscribers Web page.

4. Click **Reset** to clear the search values and perform a new search.

5. Click the **Basic Search** or **Advanced Search** link to perform either a basic or advanced search.

View or update subscriber properties

You can view or update subscriber properties in your system to ensure the information is accurate and up-to-date.

Use the steps in the following procedure to view or update the properties for a selected subscriber.

Viewing or updating subscriber properties

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section, click the subscriber's name.

    The Subscriber Details Web page for the selected subscriber opens.

3. View or edit the properties as required.

4. When changes are made to the subscriber properties, perform one of the following actions:

    • Click **Apply** to save the changes. Or,

    • Click **Save** to save the changes to the target.

      The Subscribers Web page opens. Or,

    • Click **Cancel** to discard the changes.

The Subscribers Web page opens.

Delete a subscriber

You can delete a subscriber that is no longer required in your system.

Use the steps in the following procedure to delete a subscriber with or without accounts.

Deleting a subscriber

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section, select the check box beside the name of the subscriber or subscribers you wish to delete.

3. Click **Delete**.

   A confirmation dialog box opens.

4. Click **OK** to proceed with the deletion or **Cancel** to cancel the deletion.

⊛ **Note:**

If a subscriber is deleted, then the telephony account of that subscriber is also deleted.

Manage subscriber accounts

The procedures in this section provide information about managing accounts for subscribers within your network.

The Managing Subscribers Web page is the default Web page that opens when you click the Subscriber Manager link in the UCM Common Services left navigation pane. From the Search for Subscribers Web page, you can view, add, edit, or delete subscriber accounts. From the Subscribers found section of the Search for Subscribers Web page you can update subscriber properties. To update subscriber properties, see Viewing or updating subscriber properties on page 76.

Accounts for a subscriber are listed on the Subscriber Detail Web page. To open the Subscriber Detail Web page for a subscriber, click the name of the subscriber in the Subscribers found section of the Subscribers Web page. Subscriber Manager supports a maximum of 100 accounts per subscriber. Even though the guideline is a maximum of 100 accounts, a user can view and manage up to 150 accounts. There is no restriction on creating more than 150 accounts. However the 151st plus accounts are not listed in the accounts list on the Subscriber Detail page. Hence, a user can not manage the additional accounts from Subscriber Manager.

Add an account for a subscriber

When adding a SIP Line telephone for a subscriber on Subscriber Manager, the SIP Username of the SIP Line telephone is updated from the Username, Preferred name, First name or Last name of the subscriber following the rules summarized in *Avaya SIP Line Fundamentals (NN43001-508)*.

There are two procedures for adding an account for a subscriber: a basic add account and an advanced add account.

As part of the add account functionality, the Subscriber Manager application provides the Subscriber details:

- First name
- Last name
- Middle name (known as initials in CallPilot Manager)
- Notes (know as Comments in CallPilot Manager)
- Job title (known as Title in CallPilot Manager)
- Department
- Extension (known as mailbox number in CallPilot Manager)

If the **Now** option is chosen to schedule the date and time of adding an account for a subscriber, then all error messages are displayed near the top of the Web page and not logged in the OAM logs of UCM Common Services. This is because the **Now** option is synchronous from a user point of view, and the expectation is that the user is online and waiting for the account to be created.

Performing a basic add account for a subscriber

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section of the **Subscribers** Web page, click the name of the subscriber.

   The **Subscriber Details** Web page opens for the selected subscriber.

3. From the **Accounts** section, click **Add**.

   The **Add Account** Web page opens for the selected subscriber.

4. Select an option from the drop down list for each of the following properties:

   - **Service type**
   - **Location** (optional)
   - **Element**
   - **Target**

- **Template**

5. Select **Now** or **On** in the **Schedule details** section of the **Add Account** Web page.

   If **ON** is selected, choose the date and time.

   ⊛ **Note:**

   Advanced Add does not support scheduling at this time and so when scheduling an Add Account,the **Advanced** link is disabled.

6. Perform one of the following actions:

   - Click **Save** to save the account information and accept the default values for the account in the system and to return to the **Subscriber Detail** Web page.

     If the **Now** option was selected in scheduling the add account job, the new account is displayed in the **Accounts** list for the subscriber. If the **On** option was selected in scheduling the add account job, the new account is not displayed until after the scheduled job completes.

   - Click **Cancel** to discard the account creation and to return to the **Subscriber Details** Web page.

Performing an advanced add account for a subscriber

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section of the **Subscribers** Web page, click the name of the subscriber.

   The **Subscriber Detail** Web page opens for the selected subscriber.

3. From the **Accounts** section, click **Add**.

   The **Add Account** Web page opens for the selected subscriber.

4. Select an option from the drop down list for each of the following properties:

   - **Service type**
   - **Location** (optional)
   - **Element**
   - **Target**
   - **Template**

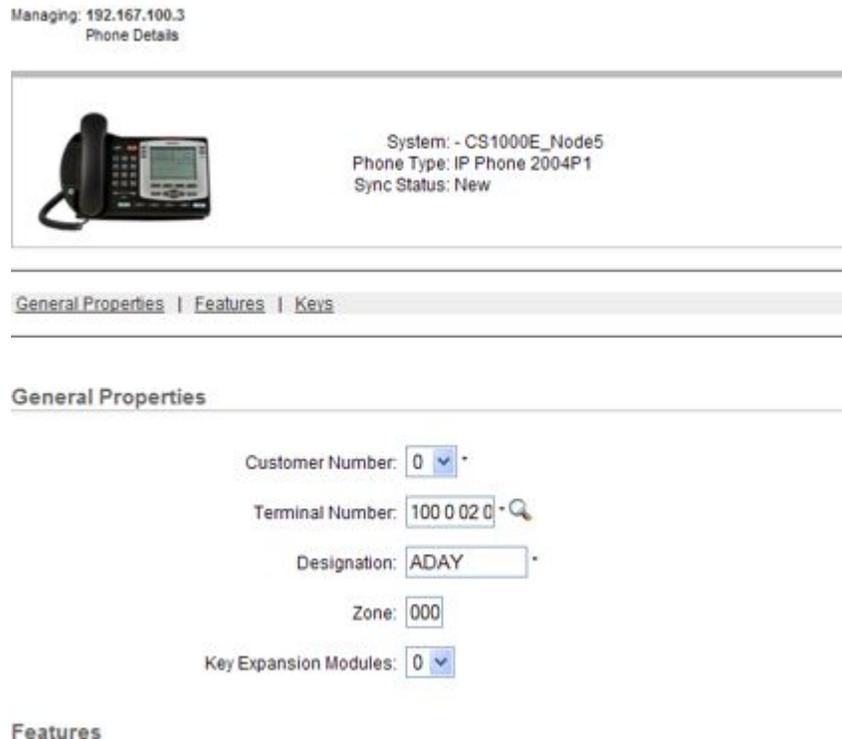5. Click **Advanced** to configure additional properties for the account.

   ⊛ **Note:**

   An advanced add account job can not be scheduled.

😊 **Note:**

In IE8, the **SUBSCRIBER MANAGER** Web page refreshes with a message indicating that Internet Explorer has blocked the web site. Click the Yellow bar at the top of the **SUBSCRIBER MANAGER** Web page and allow the blocked content to be displayed.

If Service type **Telephony** was chosen, the **Phone Details** page for the new account opens, as shown in . (A similar Web page is opened for other Service types, such as CallPilot Messaging.)

Managing: 192.167.100.3
Phone Details

System: - CS1000E_Node5
Phone Type: IP Phone 2004P1
Sync Status: New

General Properties | Features | Keys

General Properties

Customer Number: 0
Terminal Number: 100 0 02 0
Designation: ADAY
Zone: 000
Key Expansion Modules: 0

Features

Figure 28: Phone Details Web page

❗ **Important:**

The **Phone Details** page is provided by Communication Server 1000 (CS 1000) Element Manager.

6. Enter the additional properties for the account.

7. Perform one of the following actions:

   • Click the **Finish** button to save the account information in the element and return to the **Subscriber Details** web page.

     The new account is displayed in the **Accounts** list for the subscriber.

   • Click the **Cancel** button to discard the account creation and return to the **Accounts** web page.

- Click **Validate** to validate the phone details against the Call Server to ensure there are no errors.

  The validation results are displayed on the **Phone details** web page.

    - If no validation errors are found, the following message appears: "No validation error(s) were found."

    - If validation errors are found, the following type of message(s) appears: "Validation Errors: *Field: ACD Description: Contains a blank Directory Number Severity: Error *Field: ACD Description: DN Only Numeric entries allowed Severity: Error"

- Click the **Print** button to initiate a print of the **Phone details** web page.

  The **Print** window appears.

- Click the **Print** button to print the **Phone details** web page to the chosen printer destination.

Bulk account creation

Bulk add accounts creates an account for each subscriber in a selected list of subscribers.

If an add account fails for a subscriber, the process logs the failure, displays a message to check the log files and continues with the account addition for the remaining subscribers.

Logging information is captured for each provisioning request as follows:

Successful creation of an account

Level: INFO Message: Account created for John Wilson, Employee number: 2902837 + [account details].

Unsuccessful creation of an account

Level: ERROR Message: Failed to create an account for John Wilson, Employee number: 2902837 + diagnostics information.

See Log files on page 22 for a summary of the log file format.

Add bulk accounts

Use the following procedure to add an account for each subscriber in a group of subscribers.

Adding bulk accounts

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. Check the box beside the name of one or more subscribers.

The Subscribers web page refreshes.

3. Click **Add Accounts** in the **Subscribers Found** panel of the web page.

   The Add Account Web page opens.

4. Select an option from the drop down list for each of the following properties:

   - **Service type**
   - **Location** (optional)
   - **Element**
   - **Target**
   - **Template**

5. Select **Now** or **On** in the **Schedule details** section of the Add Account Web page.

   If **On** is selected, choose the date and time.

6. Click **Save**.

   The Subscribers web page opens.

View or update a subscriber account

You can view or update the properties of an account to ensure the required or new information for a subscriber is entered in your system. Use the steps in the following procedure to view or edit the properties for a subscriber account.

Viewing or updating a subscriber account

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section, click the name of the subscriber.

   The Subscriber Detail Web page opens for the selected subscriber, as shown in Figure 29: Subscriber Detail Web page on page 83.

Figure 29: Subscriber Detail Web page

3. In the **Accounts** section, from the **Service Type** list, click the service type that you wish to view or update.

   The Phone Details Web page opens for the selected service type.

4. View or edit the properties as required.

5. When changes are made to account properties, perform one of the following actions:

   • Click **Save** to save the account information in Subscriber Manager and in the element and to return to the Subscriber Detail Web page.

      The **Accounts** list in the Subscriber Detail Web page is refreshed.

   > ✱ **Note:**
   >
   > Avaya CallPilot does not store the Template used for a CallPilot account. When a CallPilot account is updated the Template name is removed from the account.

      Or

   • Click **Cancel** to discard the account creation and to return to the Subscriber Detail Web page.

Account reassignment and account disassociation

Moving an account from one subscriber to another subscriber is account reassignment; moving an account from a subscriber to the anonymous account pool is account disassociation.

During account disassociation, the account information is deleted from the subscriber. Once an account is disassociated from a subscriber, the user can use the anonymous account functionality to assign the account to another subscriber. The main advantage of account reassignment is that the account need not be deleted and then recreated. Account dissociation and account reassignment are depicted in
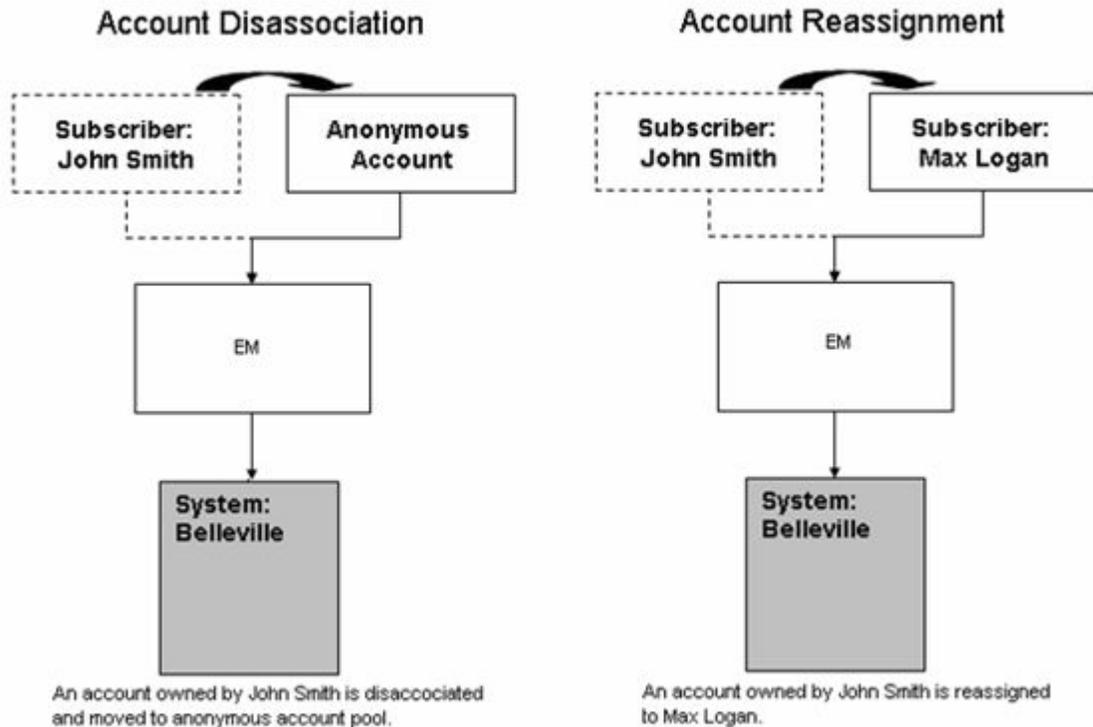
Figure 30: Account dissociation versus account reassignment

Log messages

Logging information is captured for account reassignment requests as follows:

Successful account reassignment

```
Level: INFO
```

Example Message: Account reassigned to aaa from kijal parekh. The
account details are: accountDetails = null; description = "DN =
5555";featurePackage = premium; location = Bellville;
operationalStatus = Active; publishableSubscriber = <?xml
version="1.0" encoding="UTF-8"standalone="yes"?
><publishData><preferredDirectoryNumber>1200</
preferredDirectoryNumber></preferredEsnTelephoneNumber>0-1200</
preferredEsnTelephoneNumber><cpndName>kijal,parekn</cpndName></
publishData>;published = true; serviceInformation = DN=1200(Marped),
TN=096 0 00 00; serviceType = TELEPHONY; subscriberId =
4ea10d8e-49fd-102d-9813-d9b6dd40f7c6; systemId = 0;
systemMgrAccountId = 096 0 00 00; systemMgrId = f77013cd-b0cb-11dd-
ae34-dbfc0f3c96b6; systemName = 0; taskStatus = null; transactionId =
Mon Nov 17 17:00:06 EST 2008; uniqueId =
9b243a14-453e-102d-9447-81eb6b39501e; (AccountReassignment.java:141)
[AccountReassignment]

Unsuccessful account reassignment

Level: ERROR

Message: Account reassignment fail for account: "Account information…."

Account reassignment warning

Level: WARNING

Message: Account reassignment Warning

Logging information is captured for account dissociation requests as follows:

Successful account disassociation

Level: INFO Example Message: 2008-11-20 15:47:35,442 INFO [subMgr] Account disassociated from subscriber: 4ea10d8e-49fd-102d-9813-d9b6dd40f7c6. The account details are: accountDetails = null; description = "DN = 5555";featurePackage = test1; location = Bellville; operationalStatus = Active;publishableSubscriber = <?xml version="1.0" encoding="UTF-8"standalone="yes"?><publishData><preferredDirectoryNumber><preferredEsnTelephoneNumber>0-</preferredEsnTelephoneNumber><cpndName></cpndName></publishData>;published = true; serviceInformation = DN=, TN=096 0 00 08; serviceType = TELEPHONY; subscriberId = null; systemId = 0; systemMgrAccountId = 096 0 00 08; systemMgrId = f77013cd-b0cb-11dd-ae34-dbfc0f3c96b6;systemName = 0; taskStatus = null; transactionId = Wed Nov 19 17:30:08 EST 2008; uniqueId = 12a8cdac-49fe-102d-82ab-693109ee8080; (SubscriberProperties.java: 1299) [SubscriberProperties]

Unsuccessful account disassociation

Level: ERROR

Message: Account disassociation fail for account: - "Account information…."

Account disassociation warning

Level: WARNING

Message: Account disassociation Warning

See Log files on page 22 for a summary of the log file format.

See Table 15: Account disassociate and reassign support on page 85 for a summary of account dissociation and reassignment support.

Table 15: Account disassociate and reassign support

Account Status	Is Disassociate supported?	Is Reassign supported?
Active	Yes	Yes

Account Status	Is Disassociate supported?	Is Reassign supported?
Inactive	Yes	Yes
Pending Deletion	No	No
Failed Deletion	Yes	Yes

Account reassignment

Use the following procedure to reassign an account from a subscriber to another subscriber.

😊 **Note:**

- Multiple accounts can be reassigned to a subscriber during account reassignment
- Accounts can be reassigned across service types and elements
- If reassignment for an account fails during a request for multiple account reassignment, the failure is logged and the process continues with reassignment of the remaining accounts
- When a Messaging Account is reassigned to a subscriber only the first name, last name and subscriber ID are updated in CallPilot. The mailbox number, extension DN and callback DN fields are not changed.

Reassigning an account

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section, click the name of the subscriber.

   The Subscriber Details Web page opens for the selected subscriber.

3. In the **Accounts** pane, place a check box beside the account to be reassigned.

4. Click **Reassign**.

   The Reassign Accounts Web page opens, as shown in Figure 31: Reassign Accounts Web page on page 87.

Figure 31: Reassign Accounts Web page

5. In the **Reassign** pane enter the name of a Subscriber in the text box.

6. Click **Save**.

   The Account Reassignment Summary Web page opens, as shown in

Figure 32: Account Reassignment Summary Web page

Account disassociation

Use the following procedure to move an account from a subscriber to the anonymous account pool.

Disassociating an account

1. Search for a Subscriber. To search for a subscriber see , or , or to find the desired subscriber.

2. From the **Subscribers found** section, click the name of the subscriber.

   The Subscriber Details Web page opens for the selected subscriber.

3. In the **Accounts** pane, place a check box beside the account to be disassociated

4. Click **Disassociate**.

The Subscriber Details Web page opens for the selected subscriber.

Account disassociation moves an account from a subscriber to the anonymous account pool. To assign an anonymous account to a subscriber, see Assigning an anonymous account on page 92.

Delete subscriber accounts

Use the steps in the following procedure to delete one or more accounts that are no longer required for a subscriber.

Deleting subscriber accounts

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. To delete all accounts for a subscriber, select the check box beside the name of the subscriber in the **Subscribers found** section of the Subscribers Web page and click **Delete All Accounts**.

   A confirmation dialog box opens.

3. Perform one of the following actions:

   • Click **Now**.

     The Subscribers Web page refreshes.

   • Click **Schedule** and the Schedule Delete Accounts Web page opens.

     Choose the date and time and click **Save**.

     The Subscribers Web page opens.

   • Click **No** to cancel the deletion.

     The Subscribers Web page refreshes.

4. To delete one or more accounts for a subscriber, click the name of the subscriber in the **Subscribers found** section of the Subscribers Web page.

   The Subscriber Details Web page opens for the selected subscriber.

5. In the **Accounts** section, select the check box beside a service type to delete the account for the selected subscriber.

   😊 **Note:**

   You can select one or more accounts to delete.

6. Click **Delete**.

A confirmation dialog box opens.

7. Perform one of the following actions:

   • Click **Now**.

     The Subscriber Details Web page opens.

   • Click **Schedule** and the Schedule Delete Accounts Web page opens.

     Choose the date and time and click **Save**.

     The Subscriber Details Web page opens.

   • Click **No** to cancel the deletion.

     The Subscriber Details Web page refreshes.

Publish account properties

Use the steps in the following procedure to copy information to specific subscriber properties within your system, and to synchronize account specific information in the corporate directory.

Publishing account properties

1. Search for a Subscriber. To search for a subscriber see Performing a basic search for a subscriber on page 74, or Performing an advanced search for a subscriber on page 75, or Performing a search for a subscriber by unique ID on page 76 to find the desired subscriber.

2. From the **Subscribers found** section, click the name of the subscriber.

   The Subscriber Detail Web page opens for the selected subscriber, as shown in Figure 29: Subscriber Detail Web page on page 83.

3. In the **Accounts** section, select the check box beside a service type.

4. Click **Publish**.

   If a user attempts to publish an account that does not have any data that can be published, the message "The account has no data to publish" is displayed on the Web page.

   The account properties are copied to specific subscriber properties in your system. Only certain account properties are published. See Subscriber telephony accounts on page 50 for details about the publishing rules between Avaya CS 1000 Element Manager and Subscriber Manager.

Synchronize accounts

Information in Subscriber Manager and the elements can sometimes become out-of-sync. The synchronization process can synchronize one element, and queue all other selected elements. The state of the synchronization process is the same for all users. When the synchronization

process starts, you cannot modify the process until the synchronization process is completed or stopped.

When synchronizing CallPilot (Messaging) accounts, if the first and last name of the account match an existing subscriber, that account is automatically added to that subscriber. Note that the first and last name must match exactly, including case.

Use the steps in the following procedure to synchronize account information between Subscriber Manager and the elements.

Synchronizing accounts

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Account Synchronization** .

   The Synchronize Accounts Web page opens.

3. Select the check box beside one or more elements, and then click **Start** to begin the synchronization process.

   Once the synchronization process is started, the only action you can take is to click the **Stop** button to stop the synchronization process. The **Start**, **Clear**, and **Reload** buttons are disabled.

   ## Note:
   When you click the **Stop** button, the tasks in progress are stopped when the required processes are completed.

During the synchronization process, the Status column for each element indicates the current status of the synchronization process. Statuses include:

- QUEUED

  The synchronization task is queued and runs automatically once other synchronization tasks have completed.

- RUNNING

  The synchronization task is running.

- STOPPING

  The synchronization task is stopping. In this case, a user clicked the Stop button. Tasks that are running stop only once certain critical processes are complete.

- ABORTED

  The synchronization task aborted before the task completed. This is the final result of the user clicking the Stop button.

Each refresh of the Synchronize Accounts web page by the user provides a real-time status update when the synchronization job is in the "Running" state. The runtime status information includes:

- Retrieving all accounts from the element
- Retrieving all accounts from the directory
- x of y accounts processed from the element
- x of y accounts processed from the directory

When the synchronization process is complete, the Status column is updated for each element with either a PASS or FAIL entry. A PASS status indicates that the synchronization task finished to completion. A FAIL status indicates that the synchronization task failed to complete. Check logs for information as to why the failure occurred.

The Summary column displays the number of accounts processed, the number of anonymous accounts, the number of accounts added, the number of accounts updated, and the number of accounts deleted.

While the synchronization is in progress, if the synchronization fails for one account, the process continues to synchronize the next account. If the synchronization fails for three consecutive accounts, the process is aborted and the status is set to failed.

When there are no accounts processed and the account synchronization fails for any reason, the summary field contains "0 account(s) processed"

From the Summary column, you can click on the number of anonymous accounts to assign or delete the anonymous accounts. For more information, see <u>Assign or delete anonymous accounts</u> on page 91.

Assign or delete anonymous accounts

When a synchronization process completes, a summary shows any anonymous element accounts in Subscriber Manager. You can assign the anonymous account to subscribers in Subscriber Manager or delete the accounts from the element.

To assign less than 100 anonymous accounts to subscribers, see <u>Assigning an anonymous account</u> on page 92. Use the Phone Migration Tool in CS 1000 Element Manager to assign 100 or more anonymous accounts to subscribers. For more information on the Phone Migration Tool, see <u>Phone Migration Tool</u> on page 102.

To delete the accounts from the element, see <u>Deleting an anonymous account</u> on page 93.

Assign an anonymous account

Use the steps in the following procedure to assign an anonymous account to a subscriber in your system.

⊛ **Note:**

- Only one user can process anonymous accounts at any given time. If two users attempt to run assignments and/or deletions at approximately the same time, one user is prevented from processing the accounts.
- When a Messaging Account is assigned to a subscriber only the first name, last name and subscriber ID are updated in Avaya CallPilot. The mailbox number, extension DN and callback DN fields are not changed.

Assigning an anonymous account

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscribers Web page of Subscriber Manager opens.

2. From the Subscriber Manager navigator, click **Account Synchronization**.

   The Synchronize Accounts Web page opens.

3. From the Synchronize Accounts Web page, in the **Summary** column, click the link for the number of anonymous accounts.

   The Anonymous Account Web page opens, as shown in

Figure 33: Anonymous Account Web page

4. Select the check box beside one of the anonymous accounts.

5. Type the subscriber name in the **Name (Last, First)** text field.

   ⊛ **Note:**
   If the last name is not unique, a drop down list of Subscribers appears. Select a Subscriber from the list and the **Name (Last, First)** text field auto fills.

6. Click **Assign**.

   The Anonymous Account Web page refreshes with an update of the **Status** of the assigned account.

Delete an anonymous account

Use the steps in the following procedure to delete anonymous accounts in your system.

⊛ **Note:**

Only one user can process anonymous accounts at any given time. If two users attempt to run assignments and/or deletions at approximately the same time, one user is prevented from processing the accounts.

Deleting an anonymous account

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscribers Web page of Subscriber Manager opens.

2. From the Subscriber Manager navigator, click **Accounts** > **Synchronization**.

   The Synchronize Accounts Web page opens.

3. From the Synchronize Accounts Web page, in the **Summary** column, click the link for the number of anonymous accounts.

   The Anonymous Accounts Web page opens for the anonymous accounts, as shown in .

4. Select the check box beside one of the anonymous accounts.

5. Click **Delete**.

   A confirmation dialog box opens.

6. Click **OK** to proceed with the deletion.

   The Anonymous Account Web page refreshes with an update of the **Status** of the assigned account.

   Or

   Click **Cancel** to cancel the deletion.

Manage Locations

The procedures in this section describe the functions available in Subscriber Manager to manage locations within your network.

Subscriber Manager installs with a sample location.csv file so that users can export the sample and use it as a locations file template. Subscriber Manager supports CSV files saved using OpenOffice.org 2.4.0 (or greater). Other CSV editors can be used. However, they have not been tested with Subscriber Manager. Unicode characters are not supported for locations.

To add a new location the user first exports the location.csv file. The exported file is opened in a CSV editor and updated. The updated file is imported back into Subscriber Manager using

the import locations functionality. No element validation is performed while importing the locations.

See <u>Table 16: Access rights and button states for Locations web page</u> on page 94 for a summary of user access rights for the Locations web page.

Table 16: Access rights and button states for Locations web page

Button Name	Access permission	Function
Export	Enabled for users with Subscriber Manager Read Write permission. Disabled for users with Subscriber Manager Read Only permission.	Download the locations file to user machine.
Import	Enabled for users with Subscriber Manager Read Write permission. Disabled for users with Subscriber Manager Read Only permission.	Upload the modified location file.
Restore	Enabled for users with Subscriber Manager Read Write permission. Disabled for users with Subscriber Manager Read Only permission.	Restore the previous locations.

The key specifications of the locations feature are:

- Table scrolling is not supported in this web page. Instead the whole web page uses scrolling. This is beneficial when printing the locations, since the user can select print once and get all locations printed.

- Locations are not validated during import. Locations are validated only when creating an account.

- User can restore previous locations. To restore previous locations, see <u>Restoring locations</u> on page 96.

- No protection is provided to prevent multiple users from importing or exporting the data simultaneously with the exception that data does not become corrupted.

- Maximum of 3000 locations can be imported.

- This table supports sorting by location name, service type, element name and target name. If there are two locations with the same name, the sorting does not then sort by other properties of the location.

- Location names are not case sensitive. For example, a location of "Belleville" is considered the same as "belleville".

- Elements and targets are stored as names only. Hence name changes require the user to manually update the location data by exporting the CSV file, updating the data and them importing the new file. The list of elements shown in the locations table is not validated against the UCM Common Services elements table until an account is added for a particular location and then only the particular location is validated.

- Comments embedded in the CSV file are treated as errors.

- Additional fields in the CSV file are treated as errors.

Export locations into a CSV file

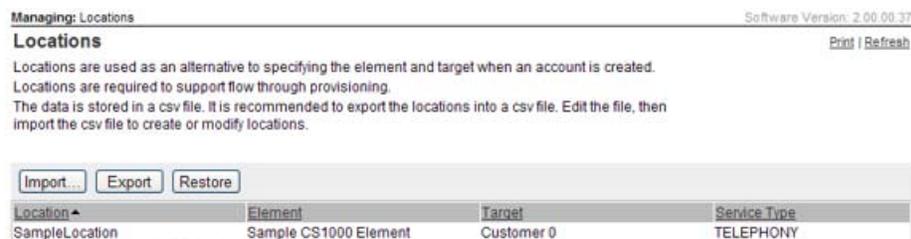Use the steps in the following procedure to export one or more locations into a CSV file.

Exporting locations into a CSV file

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manger navigator, click **Locations**.

   The Locations Web page opens, as shown in

   Managing: Locations   Software Version: 2.00.00.37
   Locations   Print | Refresh
   Locations are used as an alternative to specifying the element and target when an account is created.
   Locations are required to support flow through provisioning.
   The data is stored in a csv file. It is recommended to export the locations into a csv file. Edit the file, then
   import the csv file to create or modify locations.

   [Import...] [Export] [Restore]

Location ▲	Element	Target	Service Type
SampleLocation	Sample CS1000 Element	Customer 0	TELEPHONY

Figure 34: Locations Web page

3. Click **Export**.

   The File Download dialog box opens.

4. Click **Save**.

   The Save As dialog box opens.

5. Specify a path and filename for the CSV file and click **Save**.

   The Download complete dialog box opens.

6. Click **Close**.

Import locations from a CSV file

Use the steps in the following procedure to import one or more locations from a CSV file.

Importing locations from a CSV file

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Locations**.

   The Locations Web page opens, as shown in

3. Click **Import**.

The Import Locations Web page opens, as shown in

Figure 35: Import Locations Web page

4. Click **Browse**.

The Choose file dialog box opens.

5. Specify a path and filename for the CSV file and click **Open**.

The Import Locations Web page refreshes, and fills the path to the CSV file in the **File name** box.

6. Click **Import**.

The Locations Web page opens.

Restore locations

Use the steps in the following procedure to restore one or more locations.

Restoring locations

1. From the UCM Common Services navigator, click **Subscriber Manager**.

The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Locations**.

The Locations Web page opens, as shown in

3. Click **Restore**.

The Locations Web page refreshes.

Unicode Name Directory support

The Unicode Name Directory is configured in CS 1000 Element Manager. For more information on configuring Unicode Name Directory, see *Avaya Signaling Server IP Line Applications Fundamentals (NN43001-125)*.

Localized names are configured using Subscriber Manager. For more information see [Configure localized names](#) on page 97.

Manage localized names

There are three ways to enter localized names into Subscriber Manager

- Subscriber Manager CSV synchronization. See [CSV subscriber synchronization](#) on page 119.
- Subscriber Manager LDAP synchronization. See [LDAP subscriber synchronization](#) on page 105.
- Subscriber Manager Web UI. See [Configuring localized names](#) on page 97.

Configure localized names

Use the steps in the following procedure to configure localized names with the Subscriber Manager Web UI.

Configuring localized names

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

   The Subscribers Web page opens.

2. From the **Subscribers** section, click **Add**.

   The Subscriber Details Web page opens.

3. Type the required information for the new subscriber in the **Identification** section. For more information, see [Adding a new subscriber](#) on page 71.

4. The **Localized Names** section is collapsed if no localized names exist and expanded if localized names exist. By default the list is shown in read only mode. The names are displayed sorted in alphabetical order by language.

   Click the **Edit** button, to edit the list of localized names. The **Localized Names** section expands.

5. Select a language from the drop down list and enter a localized name in the text box.

6. Click the **Apply** button, to save the Localized names.

   The Subscriber Details page refreshes.

7. To remove a localized name

   - Click the **Edit** button.

   - Delete the text from the **Name (last, first)** column or select the "Select a language" option from the drop down list in the **Language** column.

- Click the **Apply** button.

8. Type the required information for the new subscriber in the following sections:

    - **Directory and Phone Numbers**

    - **Unified Communications**

    - **Address**

    - **Organization**

    For more information, see [Adding a new subscriber](#) on page 71.

9. Perform one of the following:

    - Click **Apply** to save the changes and refresh the Subscriber Details Web page. If all mandatory fields have not been completed, the Subscriber Details Web page refreshes with a message indicating missing mandatory fields.

    - Click **Save** to save the changes and return to the Subscribers Web page. If all mandatory fields have been completed, the added subscriber is listed in the **Subscribers found** section.

    - Click **Cancel** to return to the Subscribers Web page

    😊 **Note:**

    When adding a new subscriber, if the subscriber's first and last name match an existing subscriber in the directory, a warning message such as "A subscriber exists with same name Smith . Click "Save" or "Apply" to continue, "Cancel" to Abort" is displayed.

Configure external entity localized names

There is no account provisioning required for external entities since they do not belong to an internal organization. Use the steps in the following procedure to configure external entity localized names with the Subscriber Manager Web UI.

Configuring external entity localized names

1. From the UCM Common Services Navigator, click **Subscriber Manager**.

    The Subscribers Web page opens.

2. From the **Subscribers** section, click **Add**.

    The Subscriber Detiails Web page opens.

3. Type the required information for the new subscriber in the following sections:

    Identification

    - **Last name**

⊛ **Note:**

Last name is a mandatory field.

- **Preferred name**

- **Localized Names**

- This section is collapsed if no localized names exist and expanded if localized names exist.

- By default the list is shown in read only mode.

- The names are displayed sorted in alphabetical order by language.

Click the **Edit** button, to edit the list of localized names.

The **Localized Names** section expands.

4. Select a language from the drop down list and enter a localized name in the text box.

5. Click the **Apply** button, to save the Localized names.

The Subscriber Details page refreshes.

6. To remove a localized name

- Click the **Edit** button.

- Delete the text from the **Name (last, first)** column or select the "Select a language" option from the drop down list in the **Language** column.

- Click the **Apply** button.

7. Type the required information for the new subscriber in the following sections:

Directory and Phone Numbers

- External

- National

- International

8. Click **Save** to apply the changes, or click **Cancel** to return to the Managing Subscriber Web page.

If all mandatory fields have been completed, the Search for Subscribers Web page opens and the added subscriber is listed in the **Subscribers found** section.

If all mandatory fields have not been completed, the New Subscriber Web page refreshes with a message indicating missing mandatory fields.

⊛ **Note:**

When adding a new subscriber, if the subscriber's first and last name match an existing subscriber in the directory, a warning message such as "A subscriber exists with same name Smith . Click "Save" or "Apply" to continue, "Cancel" to Abort" is displayed.

Manage Flow Through Provisioning

The procedures in this section describe the functions available in Subscriber Manager to configure and monitor Flow Through Provisioning.

😀 **Note:**

After an upgrade, the FTPROV engine is disabled by default. Follow the steps in Monitoring Flow Through Provisioning on page 101, to enable the FTPROV engine.

Configure Flow Through Provisioning

Use the steps in the following procedure to configure Flow Through Provisioning.

Configuring Flow Through Provisioning

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Flow Through Provisioning**.

   The Flow Through Provisioning Web page opens.

   When Subscriber Manager is installed, Flow Through Provisioning is disabled by default. Click the **Enable** button to enable Flow Through Provisioning.

3. Click **Configure**.

   The Flow Through Provisioning Configuration Web page opens.

4. Select a **Location** from the drop down list.

   😀 **Note:**

   The configured location is used only if the provisioning request has not specified a location.

5. Select a **Template** from the drop down list.

   😀 **Note:**

   The configured template is used only if the provisioning request has not specified a template.

6. Click **Save**.

   The Flow Through Provisioning web page opens, displaying the saved **Configuration Options**.

Automatic mapping of location and template based on FTPROV configuration

Flow Through Provisioning provides configuration options for the user to map location and template to any of the subscriber properties using the drop down boxes provided in the Flow Through Provisioning Configuration web page. From the perspective of Flow Through Provisioning, the subscriber properties are used only if the provisioning request has not specified a location and/or template.

Monitor Flow Through Provisioning

Use the steps in the following procedure to monitor Flow Through Provisioning.

Monitoring Flow Through Provisioning

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Flow Through Provisioning**.

   The Flow Through Provisioning web page opens.

   The following fields on the Flow Through Provisioning web page are updated every three seconds:

   • Processing status

   • Processed from directory

   • Processed subscriber change notification

   • Last run completed

   • Next run in

3. Perform one of the following actions:

   • Click **Enable** to enable the FTPROV engine. A log entry appears in the FTPROV log when a user selects this button.

   • Click **Disable** to disable the FTPROV engine. A log entry appears in the FTPROV log when a user selects this button.

   • Click **Reset** to set the FTPROV engine timestamp to the timestamp of the newest subscriber. Clicking this button allows the user to ignore all unprocessed provisioning requests and subscriber changes. A log entry appears in the FTPROV log when a user selects this button.

   • Click **Abort** to abort the FTPROV job. The current subscriber being processed is completed before the abort message is handled. A log entry appears in the FTPROV log when a user selects this button. Clicking abort does not disable

the engine; it just stops the engine from processing any additional subscribers until the next time the engine runs.

Phone Migration Tool

The Phone Migration Tool helps in migrating phone data from CS 1000 Element Manager to Subscriber Manager. The Phone Migration Tool processes only those phones which have CPND name configured. During migration, it checks with Subscriber Manager for a subscriber with the same name as the CPND name in the phone. Based on the search result, the Phone Migration Tool either adds an account under the existing subscriber or creates a new subscriber and then adds an account under the new subscriber.

Migrate phone data from CS 1000 Element Manager to Subscriber Manager

For more information on migrating phone data from CS 1000 Element Manager to Subscriber Manager, see *Avaya Element Manager System Reference - Administration* (NN43001-632).

Manage Scheduler

The procedures in this section describe the functions available in Subscriber Manager to manage scheduled jobs.

The Scheduler Web page displays

- current server date and time
- job Task
- job Description
- job Status
- scheduled job Start Time

    An "R" preceding Start Time, for example R 2010-01-15 04:15:00, denotes a recurring scheduled job. Click on the link for the recurring scheduled job in the **Task** column, for detailed information on the scheduled frequency and time.

The list of scheduled jobs can be sorted alphabetically by Task, Description, or Status, or chronologically by Start Time.

The Add Account job Description is formed by concatenating First name with Last name, Employee ID (if it exists), Service type, Element, Target and Template. The Delete Account job Description is formed by concatenating First name with Last name, Employee ID (if it exists), Element, Service type, and Service Information. If the job Description is longer than 1000 characters, it is truncated after the 1000th character.

For recurring scheduled jobs, the Start Time shown on the Scheduler Web page is the next job run time.

While there is not a limit, Avaya recommends scheduling no more than 1000 jobs.

Deleting scheduled jobs

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscribers Web page opens.

2. From the Subscriber Manager navigator, click **Scheduler**.

   The Scheduler Web page opens.

3. Select the check box beside one or more scheduled jobs.

4. Click **Delete**.

   A confirmation dialog box opens.

5. Click **Yes** to proceed with the deletion, or **No** to cancel the deletion.

   The Scheduler Web page refreshes.

Editing scheduled jobs

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscribers Web page opens.

2. From the Subscriber Manager navigator, click **Scheduler**.

   The Scheduler Web page opens.

3. Click one of the scheduled jobs in the **Task** column.

   The Schedule Details Web page opens for the selected job.

4. For nonrecurring jobs, choose the date and time.

   For recurring jobs, choose the frequency and time.

5. Click **Save**.

   The Scheduler Web page opens.

Chapter 8:   LDAP subscriber synchronization

Navigation

Introduction

Synchronization is the act of coordinating data between an external directory and Subscriber Manager. LDAP subscriber synchronization eliminates the need for duplicate data entry, which reduces administrative and support costs.

The following LDAP-enabled directory servers are supported:

- Active Directory 2003
- SunOne 5.2
- Exchange 2003
- Exchange 2007

😊 **Note:**

Additional LDAP v3 compliant directory servers may function. However, they have not been tested and are therefore not officially supported by Avaya.

The LDAP Subscriber Synchronization feature supports the following operations:

- Add a new synchronization job
- View or edit a synchronization job
- Copy a synchronization job
- Run a synchronization job now
- Delete a synchronization job
- Schedule a synchronization job to run at some time in the future, either repetitively or one time only
- Remove a synchronization job from the scheduler

LDAP subscriber synchronization terms

The information in this section defines and describes general terms related to the LDAP subscriber synchronization domain.

LDAP servers

The following sections describe the two types of servers that are involved in a LDAP subscriber synchronization job. They are:

- An external directory server
- Subscriber Manager

External directory server

The external directory server is a directory server, usually a repository of the customer's corporate directory, that is used to acquire the master set of entries from which a synchronization job is based. The server is considered the source of a synchronization operation even though the synchronization may be bidirectional in nature. For more information, see Synchronization jobs on page 108.

Subscriber Manager

Subscriber Manager is considered the destination directory server by the LDAP subscriber synchronization feature in all cases.

Terms related to entries

This section defines terms that are related to entries.

Entry mapping

Entry mapping is the process of establishing a link between an entry in the external directory server and one in Subscriber Manager. To establish the map, LDAP subscriber synchronization copies the value of a known attribute in the external directory server entry to a special operational attribute in the Subscriber Manager entry. The external directory server attribute that is used for this depends on the type of the external directory server.

The process of entry mapping can occur in two scenarios:

1. During the import of an entry from the external directory server to Subscriber Manager. (**Match and create a permanent link**.)

2. During an entry resolution operation. (**Create new entries**.)

For more information, see LDAP subscriber synchronization policies on page 108.

Master set of entries

The master set of entries, or master set, is the collection of entries that is acquired as the result of searching the external directory server. The search is defined by the search parameters configured for the particular synchronization job.

Terms related to attributes

This section defines the LDAP subscriber synchronization terms related to attributes. They are:

- Attribute map
- Attribute relations
- Bidirectional synchronization

Attribute map

An attribute map is a set of attribute relations that determines the behavior of a synchronization job with regards to the copying of data between the external directory server and Subscriber Manager.

The attribute map is used by LDAP subscriber synchronization to determine the following:

- Which attributes in the external server to ask for in the search
- The correspondence between external server attributes and Subscriber Manager attributes
- The direction of the synchronization for each attribute

Attribute relations

An attribute relation is a single entry in an attribute map. The attribute relation consists of an external directory server attribute, a Subscriber Manager attribute and the direction with which to synchronize the attributes.

Bidirectional synchronization

A bidirectional synchronization refers to the ability to choose, for each attribute, the direction for which the copying of data occurs in a synchronization job. The default direction for all attribute mappings is from the external directory server to Subscriber Manager.

Synchronization jobs

Synchronization job is the name given to the complete set of configuration parameters required to run a synchronization between an external directory server and Subscriber Manager. The degree of synchronicity between directory servers is always in relation to a particular set of rules for determining what it means for two directory servers to be 'in sync'. In the LDAP subscriber synchronization feature, these rules are packaged as synchronization jobs which are configured by the user of the system. It is possible for two directory servers to be 'in sync' according to one synchronization job, but 'out of sync' with respect to another.

A synchronization job consists of:

- The connection details of the external directory server
- The search parameters used to query the external directory server and acquire a master set of entries
- An attribute map
- Synchronization policies. For more information, see <u>LDAP subscriber synchronization policies</u> on page 108.

LDAP subscriber synchronization policies

The following options of LDAP subscriber synchronization are necessary to define the behavior of the system when it encounters an unmatched entry. An unmatched entry is an entry in the

master set that is not linked, by entry relations, to an entry in Subscriber Manager. The two options for dealing with the unmatched entries are:

Match and create a permanent link — Attempts to establish a match, using criteria outside entry mapping. The process involves first determining a match and then establishing the entry map between the two entries. The process of determining a match is based on comparing the values of a user-defined attribute in the external directory server with a user-defined attribute in Subscriber Manager. If the values of the two attributes are equal, the entries are considered a match.

Create new entries— Previously unmatched entries in the external directory are added as new Subscribers. The new Subscriber attributes are determined using the following rules:

- All attributes that are explicitly contained in the attribute map are synchronized to the new Subscriber Manager entry. This occurs regardless of the direction defined by the individual attribute relations.

- Any attributes that are not defined in the attribute map, but are required attributes as determined by the Subscriber Manager schema, are synchronized according to the default attribute map for the external directory server type.

Important:

It is also an option to ignore unmatched entries; this is the defining factor of a basic synchronization. It is also possible to turn on both Create new entries and Match and create a permanent link. In this event, the system attempts to Match and create a permanent link, and if that fails, it Creates new entries.

There are other Synchronization policies that do not affect synchronization job behavior. They are:

Security options— The use of Transport Layer Security/Secure Sockets Layer (TLS/SSL) encryption is optional but is recommended. The LDAP subscriber synchronization feature supports the use of TLS/SSL for the encryption of traffic with both the external directory server and Subscriber Manager. For more information see Adding a LDAP synchronization job on page 114.

Logs—LDAP subscriber synchronization generates up to three types of logs every time it runs a synchronization job. These logs are called:

- Summary log on page 113
- Transaction log on page 113
- Failure log on page 113

The logs are in ASCII text format.

For more information, see Logs on page 112.

Synchronization Job Details Web page

Use the New LDAP Synchronization Job Details Web page to define the parameters required by the system to perform a synchronization between an external directory server and Subscriber Manager. For more information see Adding a LDAP synchronization job on page 114.

These parameters are divided into the following categories:

- Identification
- External Directory Details
- Synchronization Policies
- Attribute Mapping

Identification

The Job name parameter identifies the LDAP Synchronization job.

External Directory Server Source Records

The following parameters describe the external directory server in a synchronization job:

- **Host**: the host name, fully qualified domain name (FQDN), or IP address of the external directory server host.

- **Port**: The port number that the external directory server is listening on. The standard LDAP ports are 389 for non-encrypted traffic and 636 for encrypted traffic.

- **Bind distinguished name**: the distinguished name of the account used to authenticate to the external server.

- **Bind password**: the password associated with the Bind distinguished name used to authenticate to the external server.

- **Base distinguished name**: The distinguished name of the entry in the external directory server to which to establish the connection. The base distinguished name determines the connection's view of the directory tree by defining the subset of entries in the tree upon which a connection can act. The base distinguished name is also used to identify the entry for basing searches.

The following parameters configure the query that the LDAP subscriber synchronization utility uses to extract a set of entries from the external server.

- **Search Scope**: selected to determine the depth of the search. The available options are:

    - **1 level below base distinguished name**—Searches only entries that are exactly one level below the base distinguished name entry.

    - **Entire subtree rooted at base distinguished name**—Start searching from the base entry (as identified by the base distinguished name) and search everything below it, including the base entry. Entire subtree rooted at base distinguished name is the default search scope.

- **Search filter**: a legal LDAP filter used to refine the search of the external server. (objectClass=Person) is the default.

    Search filter examples:

    - (&(l=Toronto)(objectclass=person)) : To select entries that have a locality of "Toronto" and an objectclass of "person".

    - (&(objectclass=person)(|(sn=Smith)(cn=Joe M*))) : To select entries that have an objectclass of "person" and a surname of "Smith" or common name that starts with "Joe M".

Synchronization Policies

The following LDAP subscriber synchronization Job options are configured in the Synchronization Policies section:

- Whether to add new entries to Subscriber Manager, if unmatched entries are found in the external directory

- Whether to attempt to resolve new entries in the external server with existing Subscriber Manager entries, and which attributes in both servers to use to resolve them

- Whether to use TLS/SSL encrypted communications with the external directory server

Attribute Mapping

For every synchronization job you must define an attribute map using the Attribute Map section of the LDAP subscriber synchronization Job window.

The attribute map is a table where each row represents one relation. To define a relation you must provide three pieces of information:

- The name of an attribute in the external directory server
- The name of the corresponding attribute in Subscriber Manager. For more information, see Appendix Subscriber attributes on page 143.
- The direction of the synchronization

Remove selected

The **Remove** button removes the selected attribute relation from the map.

Add attribute relation

The **Add** button generates a new empty row in the table for the administrator to edit.

Logs

The types of LDAP subscriber synchronization logs are:

- Summary logs
- Transaction logs
- Failure logs

Log file locations

There is only one summary log. Each job may also generate a transaction or a failure log.

LDAP synchronization logs are not incorporated into the OA&M Logging system. The LDAP synchronization logs are stored in the `/opt/cs1000/cnd/log/LDAP_Sync` directory on the primary UCM Common Services server.

For each synchronization job executed new directories are created to hold the transaction log (optional) and the failure log (if generated). The name of the directory is generated and comprised of the name of the synchronization job and an appended system timestamp. For example:

```
NightlySync_20050419120000
```

In the above example, the year is 2005, the month is April, the date is the 19th and the time is 12 noon.

Summary log

There is one summary log that contains an entry for each synchronization job executed by the system. The log contains the following details about each job:

- Synchronization job name
- External directory server host name
- Subscriber Manager server host name
- Start and completion timestamp
- Number of entries successfully synchronized
- Number of entries that failed to be synchronized
- Location of the failure log, if one exists
- Location of the transaction log, if one exists
- Status of the job (completed, interrupted during synchronization, interrupted during cleaning, aborted during synchronization, aborted during cleaning)

Transaction log

One transaction log is optionally created for every synchronization job. This optional log provides the following details for each entry synchronized by the system:

- Destination DN of the entry
- source host
- source entry DN
- source attribute modifications
- destination host
- For each synchronized attribute in the entry, the following is recorded:
    - attribute name
    - original value
    - new value

Failure log

For each synchronization job a failure log is generated, if a failure occurs during the synchronization.

> ⓘ **Important:**
> If a failure occurs, any entries that have been updated to that point remain updated.

The following details are captured for each failure:

- the location of the failure (SRC or DEST)
- the host (or IP address) where the failure occurred
- the operation that failed
- the details of the failure
- the timestamp when the error occurred

Manage LDAP subscriber synchronization

The procedures in this section describe the functions available in Subscriber Manager to manage LDAP subscriber synchronization jobs.

Add a LDAP synchronization job

Use the steps in the following procedure to add a LDAP synchronization job.

Adding a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

   The LDAP Synchronization Jobs Web page opens.

3. Click **Add**.

   The New LDAP Synchronization Job Details Web page opens.

4. Provide the required information for the new LDAP Synchronization job in the following sections:

   - **Identification**

      Job name.

      > ✱ **Note:**
      > The Job name does not have to be unique.

- **External Directory Details**

    - Host. IP address of the external directory.

    - Port

    - Bind distinguished name

    - Bind password

    - Base distinguished name

    - Search scope

    - Search filter

    Click **Test** to validate the External Directory Details.

- **Synchronization Policies**

    - Unmatched subscribers

    - TLS/SSL communication

- **Attribute Mapping**

        i. Click **Add** to add an attribute pair.

            The **Attribute Mapping** section of the Web page refreshes.

        ii. Make an appropriate selection from the three drop down lists.

5. Click **Save**.

    The LDAP Synchronization Jobs Web page opens. The newly created subscriber synchronization job appears in the Job Name list.

View or Edit a LDAP synchronization job

Use the steps in the following procedure to view or edit a LDAP synchronization job.

Viewing or editing a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

    The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

    The LDAP Synchronization Jobs Web page opens.

3. Click a link in the **Job Name** list of LDAP Synchronization jobs.

    The LDAP Synchronization Job Details for xxx Web page opens for the selected LDAP Synchronization job, where xxx is the Job Name

4. Edit the fields of the LDAP Synchronization Job Details for xxx Web page as appropriate. See Adding a LDAP synchronization job on page 114.

5. Click **Save**.

The LDAP Synchronization Jobs Web page opens.

Copy a LDAP synchronization job

Use the steps in the following procedure to copy a LDAP synchronization job.

Copying a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

The LDAP Synchronization Jobs Web page opens.

3. Check the box beside a link in the **Job Name** list of LDAP Synchronization jobs.

4. Click **Copy**.

The LDAP Synchronization Job Details for xxx Web page opens for the selected LDAP Synchronization job, where xxx is the Job Name

5. Enter a **Job name** in the **Identification** section.

6. Modify the fields of the LDAP Synchronization Job Details for xxx Web page as appropriate. See Adding a LDAP synchronization job on page 114.

7. Click **Save**.

The LDAP Synchronization Jobs Web page opens.

Run a LDAP synchronization job

Use the steps in the following procedure to run a LDAP synchronization job.

Running a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

The LDAP Synchronization Jobs Web page opens.

3. Check the box beside a link in the **Job Name** list of LDAP Synchronization jobs.

4. Click **Run Now**.

   The LDAP Synchronization Jobs Web page opens.

Delete a LDAP synchronization job

Use the steps in the following procedure to delete a LDAP synchronization job.

Deleting a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

   The LDAP Synchronization Jobs Web page opens.

3. Check the box beside one or more links in the **Job Name** list of LDAP Synchronization jobs.

4. Click **Delete**.

   ⊛ **Note:**

   The user can delete an LDAP synchronization job even though the job is running.

5. Click **OK**.

   The LDAP Synchronization Jobs Web page refreshes.

Schedule a LDAP synchronization job

Use the steps in the following procedure to schedule a LDAP Synchronization job.

Scheduling a LDAP synchronization job

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager Web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **LDAP Synchronization**.

   The LDAP Synchronization Jobs Web page opens.

3. Check the box beside a link in the **Job Name** list of LDAP Synchronization jobs.

   Only one LDAP Synchronization Job can be scheduled at a given time.

4. Click **Schedule**.

   The Schedule Details Web page opens.

5. Select **Frequency** from the drop down list.

   Once is the default option. Other options are Daily, Weekly and Monthly.

6. Subsequent options are displayed depending on the frequency selected. Select appropriate options based on frequency.

7. Click **Save**.

   The LDAP Synchronization Jobs Web page opens.

Chapter 9:   CSV subscriber synchronization

Navigation

Introduction

Comma Separated Values (CSV) subscriber synchronization imports new subscribers and updates existing subscribers using data in a CSV file.

File Format

Each row in the CSV file, other than the first row, is treated as an individual subscriber record. The first row is used to identify the fields in all the remaining records in the file. These field names correspond to Lightweight Directory Access Protocol (LDAP) attribute names.

Supported attributes

While the CSV export feature CSV subscriber export on page 133 only supports a fixed set of the legal nortelSubscriber attributes, the synchronization feature is slightly less restrictive.

CSV subscriber synchronization imports or updates nortelSubscriber attributes, with the following restrictions:

- The attribute must not be a binary type attribute, such as jpegPhoto or audioClip.
- The attribute must not be operational, such as modifyTimestamp.
- The cn (common name) attribute cannot be modified.
- The userPassword attribute cannot be modified.

Multi-valued attributes

Within the CSV file, field values are separated by commas. To facilitate the import and update of those LDAP attributes that support multiple values, each field value can be further delimited by semi-colon (;). To include a semicolon as a character in a single value for an attribute, the semicolon must be preceded by a backslash. Table 17: Semicolon interpretation on page 120 shows examples of how semicolons are interpreted.

> **Note:**
> The Subscriber Manager UI displays only one value of a multivalued attribute with the exception of the localizedName attribute.

Table 17: Semicolon interpretation

CSV field data	Interpretation
A;B	Value 1: A Value 2: B
A\;B	Value 1: A;B
A\;B;C	Value 1: A;B Value 2: C

Any attempt to import or update multiple values against an LDAP attribute that does not support multiple values is an error and causes the synchronization for that entry to fail. Any such failures are logged (see Logs on page 127).

See Table 21: Subscriber attributes on page 143 for LDAP attributes supporting multiple values.

Delete attributes

CSV subscriber synchronization supports the deletion of individual subscriber attributes. A special value is used to indicate that all current values in the current subscriber entry for the specified attribute should be deleted. The special value is

```
[DELETE]
```

Figure 36: CSV file with attribute deletion on page 121 shows a CSV file that uses attribute deletion to delete all values for the subscriberType attribute for two subscribers.

Figure 36: CSV file with attribute deletion

File encoding

The CSV synchronization feature supports reading files encoded using any of the following:

- 8-bit Unicode Transformation Format (UTF-8)
- 16-bit Unicode Transformation Format with big-endian byte order (UTF-16BE)
- 16-bit Unicode Transformation Format with little-endian byte order (UTF-16LE)
- the default encoding of the UCM Common Services server

Rather than ask its users to identify the encoding of a selected CSV file, CSV synchronization relies on the presence of the Unicode byte order mark (BOM) to identify the file's encoding. For details on the use of the byte-order mark, see Appendix Unicode byte-order mark on page 161.

If a selected CSV file starts with the BOM as encoded by UTF-8, UTF-16BE, or UTF-16LE, Subscriber Manager reads the remainder of the file using that encoding. If no BOM is detected at the start of the CSV file, Subscriber Manager reads the file using the default encoding of the machine on which its running. Note that CSV files created using the CSV export feature are always encoded using UTF-8 and always start with the BOM encoded using UTF-8 (see File encoding on page 136).

Determine the operation to perform

The CSV subscriber synchronization feature examines each record in the CSV file and determines which of the following operations to perform:

- update an existing subscriber
- import a new subscriber
- ignore the record

These operations are named update, import, and ignore, respectively. Figure 37: CSV subscriber synchronization operation decision-making algorithm on page 122 shows the algorithm used on each CSV record to determine the operation to perform.

> **Important:**
> The same subscriber can be updated by more than one record in the CSV file.
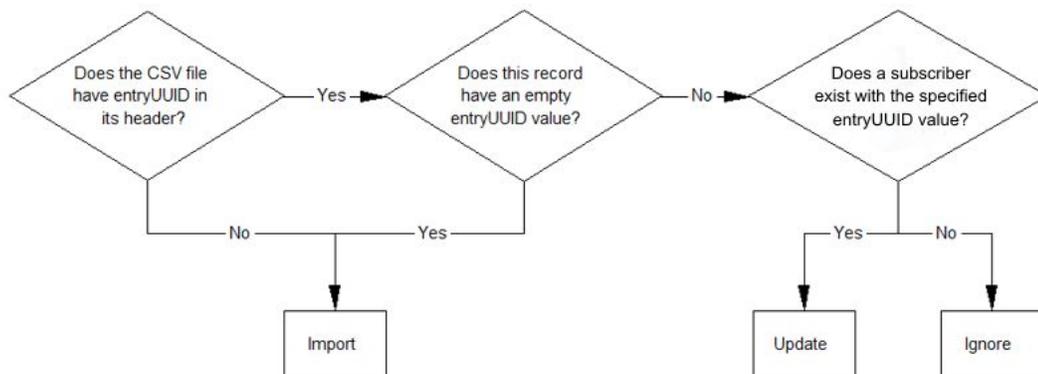
Figure 37: CSV subscriber synchronization operation decision-making algorithm

The presence of a non-empty entryUUID value determines the operation to perform:

- If a CSV record has a non-empty entryUUID value and an existing subscriber has the specified entryUUID, the operation is update; that subscriber is updated according to the details in the CSV record.
- If a CSV record has a non-empty entryUUID value but there is no subscriber that has the specified entryUUID, the operation is ignore. This is noted in the failure log.
- If entryUUID does not appear in the CSV file's header or a CSV record has an empty value for that field, the operation is import; that record is imported as a new subscriber.

Details for imported subscribers

The following details apply only to imported subscribers:

Required attributes on page 123

Required attributes

Subscribers must have a surname. Therefore, a CSV record for an imported subscriber must have a non-empty value for the sn attribute specified in the CSV file. It is an error if a subscriber being imported does not have a surname. In this situation the error is logged in the failure log (see The failure log on page 130).

Operational conditions

Following is a list of operational conditions that apply to CSV subscriber synchronization:

- Attempting to delete required attributes results in a failure to update the subscriber in question, and is logged in the failure log (see The failure log on page 130).

- Attribute deletion only works when the operation being performed is an update (see Determine the operation to perform on page 122). If the operation is an import, any [DELETE] directives are ignored.

- Attempting to delete an attribute that has no values does nothing and is not considered an error.

- Deleting an attribute deletes all of its values.

- Modifying an attribute replaces all of its existing values.

Synchronize subscribers

To synchronize subscribers, see Synchronizing subscribers on page 123.

Synchronizing subscribers

1. From the UCM Common Services navigator, click **Subscriber Manager**.

The Subscriber Manager web page opens.

2. From the **Subscriber Manager** navigator, click **Subscribers** > **CSV Synchronization**.

The CSV Synchronization Web page opens, as shown in [Figure 38: CSV Synchronization Web page](#) on page 124.
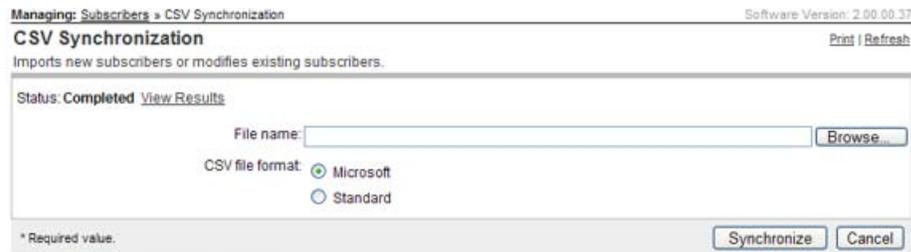
Figure 38: CSV Synchronization Web page

3. Click **Browse**.

The Choose file dialog box opens.

4. Specify a path and filename for the CSV file and click **Open**.

The CSV Synchronization Web page refreshes, and fills the path to the CSV file in the **File name** box.

5. For **CSV file format**, select the **Standard** radio button. Note that CSV files generated with the CSV subscriber export feature use the Microsoft CSV format.

6. Click **Synchronize**.

The CSV Synchronization Web page refreshes.

7. Click **View Results** link.

The CSV Synchronization Results Web page opens, as shown in [Figure 39: CSV Synchronization Results Web page](#) on page 124.
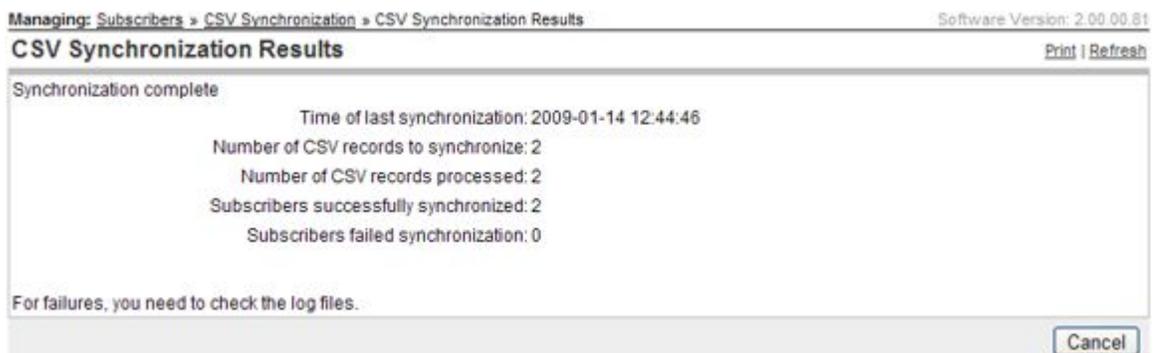
Figure 39: CSV Synchronization Results Web page

CSV subscriber synchronization limitations

Following is a list of CSV subscriber synchronization limitations:

- Synchronization of accounts is not supported.
- Synchronization of binary attributes (for example, jpegPhoto and audioClip) is not supported.
- Deletion of subscribers is not supported.
- Statistics that differentiate between imported entries and updated entries are not collected or displayed.
- Subscribers that are not direct children of the ou=Subscribers, dc=Nortel, dc=com container are not synchronized.
- Transaction logging is non-configurable.

Error handling

shows how error conditions are handled:

Table 18: Error handling in CSV subscriber synchronization

Error condition	System response	Troubleshooting
No file is specified.	A standard error dialog is displayed. The text on the dialog is: "ResourceNotDefined"	Use the Browse… button to select a CSV file.
The file does not exist.	A standard error dialog is displayed. The text on the dialog is: "Failed to start CSV Synchronization for the following reason: caused by Failed to read CSV headers"	Use the Browse… button to select a CSV file.
The file is empty.	A standard error dialog is displayed. The text on the dialog is: "Failed to start CSV Synchronization for the	Use the Browse… button to select a CSV file that is not empty.

Error condition	System response	Troubleshooting
	following reason: caused by Failed to read CSV headers"	
The file has a header, but has no records.	A standard error dialog is displayed. The text on the dialog is: "Failed to start CSV Synchronization for the following reason: caused by No entries in source file"	Use the Browse… button to select a CSV file that has records.
The system is unable to read the file.	A standard error dialog is displayed. The text on the dialog is: "Unable to read CSV file."	Ensure that the CSV file: • exists • is readable • isn't locked by another process, for example Microsof Excel
The CSV file has no sn in its header.	A standard error dialog is displayed. The text on the dialog is: "Failed to start CSV Synchronization for the following reason: caused by CSV synchronization attribute exception"	Add either an sn column or entryUUID column to the CSV file.
There is an unsupported attribute in the CSV file's header.	A standard error dialog is displayed. The text on the dialog is: "Field <field number> (<attribute name>) in the header of <file name> is unsupported" (If the unsupported attribute's name is too long, it is abbreviated with ellipsis ("…") to ensure that the error dialog is readable.)	Remove the column with the unsupported attribute.
An attribute is duplicated in the CSV file's header.	A standard error dialog is displayed. The text on the dialog is: "<attribute name> is duplicated in the file's header."	Remove the duplicate column or rename the header.

Logs

For each synchronization job the following logs are generated:

- The summary log on page 127
- The transaction log on page 129
- The failure log on page 130 (potentially)

⓵ Important:
Log files are not automatically cleaned by the system. It is recommended that you periodically remove unwanted log files.

The summary log

Each time a CSV subscriber synchronization job is run, the summary details for the job are recorded in the LDAP synchronization summary log.

The summary log holds summaries of all synchronization-related tasks, including:

- LDAP subscriber synchronization jobs
- CSV subscriber synchronization

LDAP synchronization logs are not incorporated into the OA&M Logging system. The LDAP synchronization logs are stored in the `/opt/cs1000/cnd/log/LDAP_Sync` directory on the primary UCM Common Services server.

The details in the summary log are:

- Sync Job Name: For CSV subscriber synchronization jobs, the name is always "CSV_Sync".
- External directory server host: For CSV subscriber synchronization jobs, the host is the path and filename of the CSV file used in the job.
- Destination host: For CSV subscriber synchronization jobs, the destination shows the IP address of Subscriber Manager.
- Job Status: Is one of:
  - COMPLETED – the job completed normally
  - ABORTED_DURING_SYNCING – the job failed to complete due to an exceptional circumstance
  - INTERRUPTED_DURING_SYNCING – the job failed to complete because you cancelled it

- Sync started at: The time the job started.

- Sync ended at: The time the job finished.

- User account name: This is the Windows user ID of the currently logged in user on the PC where the synchronization was run.

- Sync stats: The statistics of the job, which includes:

  - Source host: For CSV subscriber synchronization job, this is always "CSV_SYNC".

  - CSV_SYNC: Is one of:

    - SYNC_COMPLETE_NORMAL – the synchronization was completed normally

    - SYNC_COMPLETE_ABORT – the synchronization was terminated before it finished due to an exceptional circumstance

    - SYNC_COMPLETE_NO_ENTRIES – the synchronization was completed, but there are no records in the CSV file

    - SYNC_INTERRUPTED – the synchronization was cancelled by the user

  - TOTAL: The number of entries synchronized. The number of entries that failed to synchronize.

- Cleaning stats: Not applicable to CSV subscriber synchronization.

- Failure log path: If a failure log is generated, this field displays the path in the file system to that log file. Otherwise, "N/A" is displayed.

- Transaction log path: The path in the file system to the transaction log.

See Figure 40: CSV subscriber synchronization summary log on page 129 for an example of a summary log.
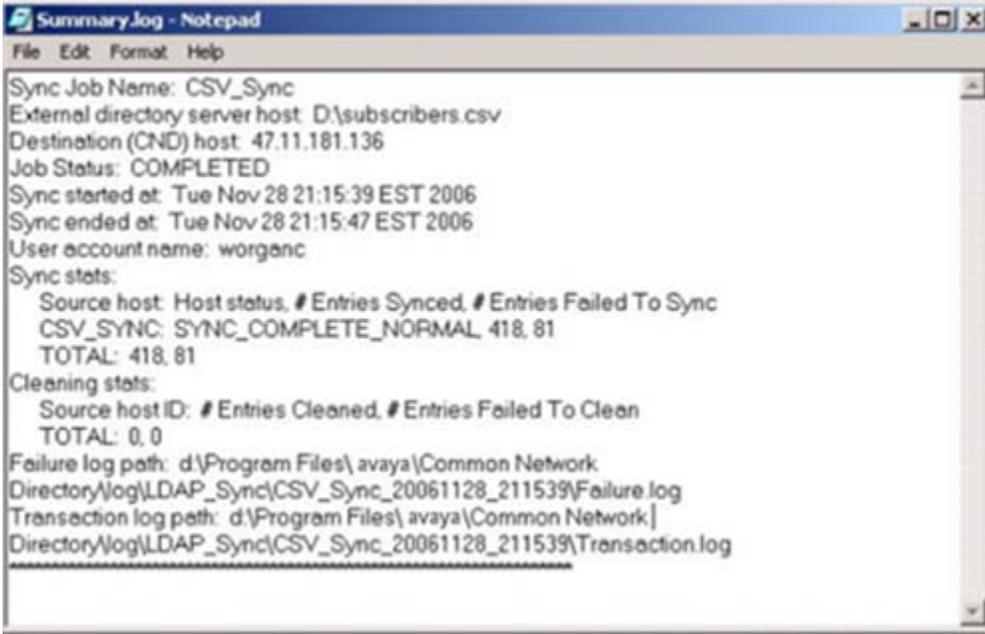
Figure 40: CSV subscriber synchronization summary log

The transaction log

For every CSV subscriber synchronization job run, a transaction log (Transaction.log) file is created and stored in the `/opt/cs1000/cnd/log/LDAP_Sync/` `CSV_Sync_[date]_[time]/` directory on the primary UCM Common Services server. `[date]` and `[time]` are generated based on the date and time that the synchronization job started. For example, for a synchronization job started on January 7, 2007 at 10:05:47 am, the generated folder is named `CSV_Sync_20070107_100547` .

The CSV subscriber transaction log contains the following details:

- DN:

- Attributes:

See Figure 41: CSV subscriber synchronization transaction log on page 130 for an example of a transaction log.
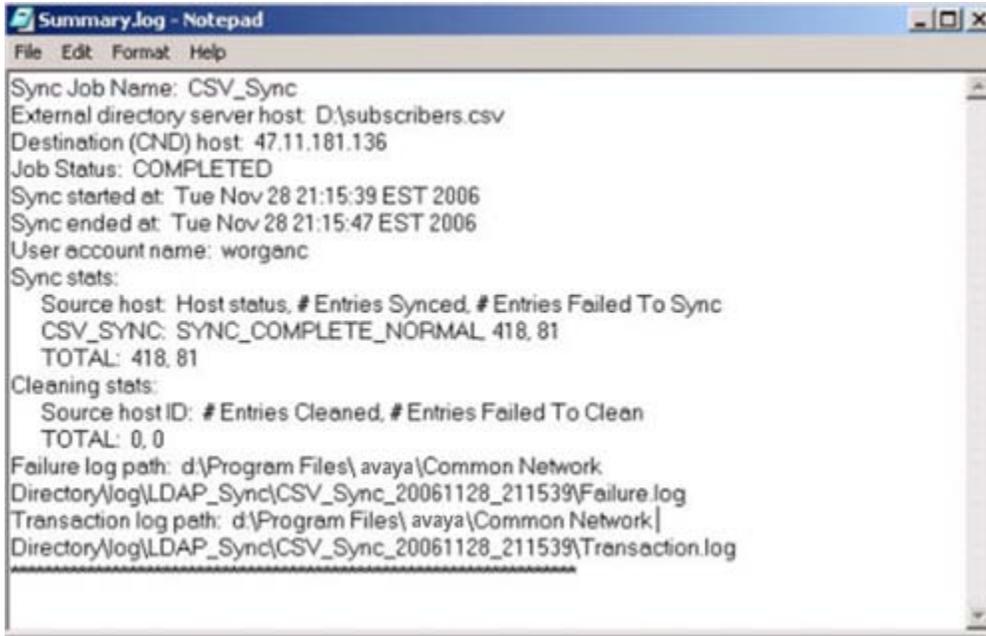
Figure 41: CSV subscriber synchronization transaction log

The failure log

For every CSV subscriber synchronization job run that has failures, a failure log (Failure.log) file is created and stored in the following directory:

`/opt/cs1000/cnd/log/LDAP_Sync/CSV_Sync_[date]_[time]/`

Where `[date]` and `[time]` are generated based on the date and time that the synchronization job started. For example, for a synchronization job started on January 7, 2007 at 10:05:47 am, the generated folder is named `CSV_Sync_20070107_100547`

The failure log contains the following details:

• The location of the failure. In a CSV subscriber synchronization job, the location is either the destination (DEST) if the error occurred in Subscriber Manager, or source (SRC) if the error is caused by the CSV file.

• Location: In a CSV subscriber synchronization job, the host is always the IP address of Subscriber Manager.

• Host: The IP address.

• Entry DN: The cn, ou, and dc of the job.

• Operation: The operation that failed.

• Details: The details of the failure.

• Time: The date and time that the failure occurred.

See [Figure 42: CSV subscriber synchronization failure log](#) on page 131 for an example of a failure log.
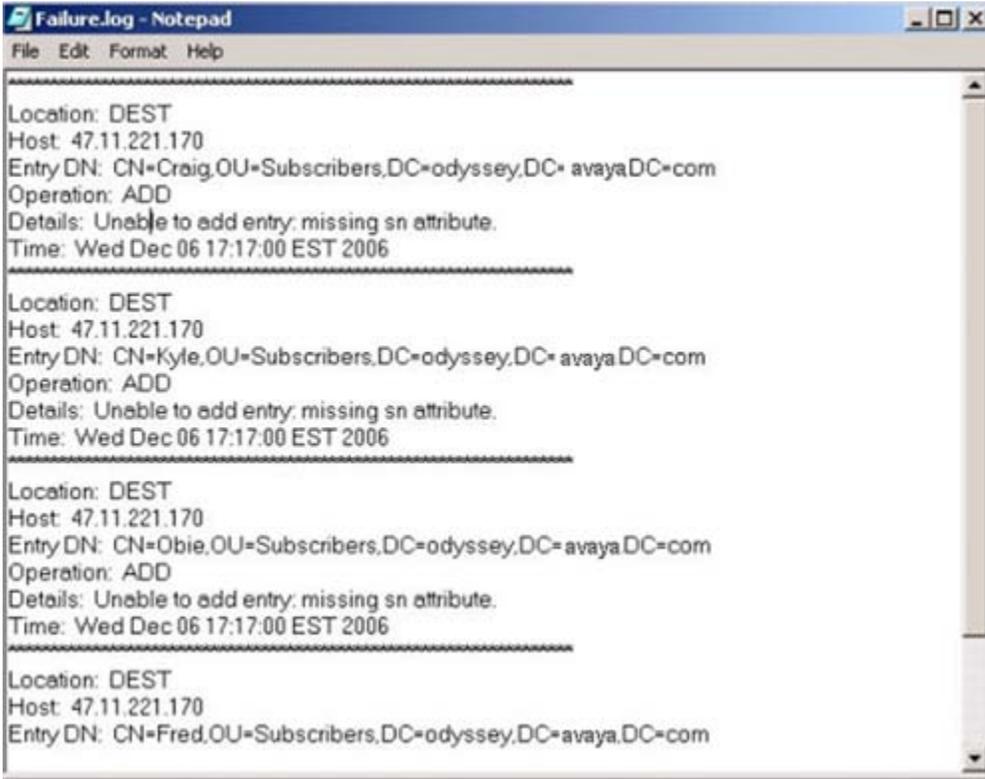
Figure 42: CSV subscriber synchronization failure log

Chapter 10: CSV subscriber export

Navigation

Introduction

The CSV subscriber export feature exports subscribers from Subscriber Manager into a CSV file.

Only one generate can be run at one time. The status of a current generate is displayed to the user. The user is prevented from executing a second generate. The user is shown the timestamp of the last created file in order to determine whether a new subscriber list needs to be generated.

Exported attributes

A fixed set of attributes for each subscriber is exported (see Table 19: Supported subscriber attributes in CSV subscriber export feature on page 133).

Table 19: Supported subscriber attributes in CSV subscriber export feature

Column	LDAP Attribute	Description	Syntax
1	entryUUID	Entry's unique identifier	UUID
2	givenName	Official First Name	DirectoryString
3	initials	Official Middle Name	DirectoryString

CSV subscriber export

Column	LDAP Attribute	Description	Syntax
4	sn	Official Last Name	DirectoryString
5	preferredName	Preferred Name	DirectoryString
6	nickname	Nickname	DirectoryString
7	localizedName		
8	uid		
9	subscriberType	Type	DirectoryString
10	officeLocation	Location	DirectoryString
11	roomNumber	Room Number	DirectoryString
12	serviceStartDate	Service Start Date	DirectoryString
13	serviceEndDate	Service End Date	DirectoryString
14	preferredLanguage	Language	DirectoryString
15	postOfficeBox	Post Office Box	DirectoryString
16	street	Street No	DirectoryString
17	l	City	DirectoryString
18	st	Province/State	DirectoryString
19	country	Country	DirectoryString
20	postalCode	Postal Code/Zip	DirectoryString
21	mail	Email	IA5 String
22	preferredDirectoryNumber	Preferred DN	DirectoryString
23	preferredEsnTelephoneNumber	Preferred ESN	DirectoryString
24	preferredExternalTelephoneNumber	Preferred External DN	DirectoryString
25	preferredNationalTelephoneNumber		
26	preferredInternationalTelephoneNumber		
27	facsimileTelephoneNumber	Fax	Facsimile Telephone Number
28	homePostalAddress	Home Address	TelephoneNumber
29	homePhone	Home Phone	TelephoneNumber
30	mobile	Mobile Phone	TelephoneNumber
31	pager	Pager	TelephoneNumber

Column	LDAP Attribute	Description	Syntax
32	o	Company	DirectoryString
33	ou	Organization Unit Name	DirectoryString
34	orgOwner	Organization Owner	DirectoryString
35	orgCategory	Organization Category	DirectoryString
36	orgDescription	Organization Description	DirectoryString
37	employeeNumber	Employee Number	DirectoryString
38	description	Description	DirectoryString
39	title	Job Title	DirectoryString
40	departmentNumber	Department number	DirectoryString
41	preferredExtension	Preferred Extension	DirectoryString
42	subMgrTaskStatus	Subscriber Manager task status	DirectoryString
43	billingAccountCode	Billing account code	DirectoryString
44	billingAuthorizationCode	Billing authorization code	DirectoryString
45	cpndName	Call Party Name Display name	DirectoryString
46	flowThroughProvisioningRequest		
47	flowThroughProvisioningResponse		
48	aceHomeDomainEntryUuid	ACE Home Domain Entry UUID	DirectoryString

File Format

The first row in the exported CSV file is the file header, and contains the LDAP attribute names for the exported attributes. A complete list of the attribute names is shown in Table 19: Supported subscriber attributes in CSV subscriber export feature on page 133. Each row in the file is a complete record, with attribute values corresponding to the attribute names in the header row. If a value does not exist for an attribute, none is given in the file, and this is represented with no characters. A simple example is shown in Figure 43: Example of CSV export file on page 136. Note that all attributes are not visible in the figure.

Figure 43: Example of CSV export file

The file created by CSV subscriber export conforms to the Microsoft CSV format. For a detailed discussion of Standard and Microsoft CSV formats see Appendix CSV file format on page 153.

File encoding

Files written by the CSV export feature are encoded using 8-bit Unicode Transformation Format (UTF-8) and include the Unicode byte-order mark (see Appendix Unicode byte-order mark on page 161) to indicate the file's encoding. This allows exported CSV files to be modified and then properly read by the CSV synchronization feature.

When opening files written by the CSV export feature ensure that Unicode UTF-8 is selected as the file encoding. Avaya recommends using OpenOffice 2.4.0 (or greater) spreadsheet application to open this file.

Export CSV subscriber data

To export subscriber data see Exporting subscribers on page 136.

Exporting subscribers

1. From the UCM Common Services navigator, click **Subscriber Manager**.

   The Subscriber Manager web page opens.

2. From the Subscriber Manager navigator, click **Subscribers** > **CSV Export**.

   The CSV Export Web page opens, as shown in Figure 44: CSV Export Web page on page 137.

Figure 44: CSV Export Web page

3. Click on **Generate** to generate a new subscriber CSV file.

   The "CSV Export" Web page refreshes with a timestamp shown when the CSV file was last generated.

4. Click on **Download** to download the subscriber CSV file.

   The File Download dialog box opens.

5. Click **Save**.

   The Save As dialog box opens.

6. Specify a path and filename for the CSV file and click **Save**.

   The Download complete dialog box opens.

7. Click **Close**.

Error Handling

Table 20: Handled error conditions on page 137 shows how error conditions are handled:

Table 20: Handled error conditions

Error condition	System response
You select an existing file as the target.	A confirmation dialog is displayed, asking if you want to replace the file.
You select a file without an extension, and when the .csv extension is appended to the file, the resulting file exists.	A confirmation dialog is displayed, asking you if you want to replace the file.
The system is unable to complete the export operation.	A standard error dialog is displayed. The text on the dialog is: `Unable to export to <filename> .`

 Important:

If the system is unable to complete the export operation for any reason, a CSV file is not created, even if one with partial results could be created.

Chapter 11: Troubleshooting

Ensure that the prerequisites for adding subscribers and provisioning accounts in Subscriber Manager, summarized in [Prerequisites](#) on page 65 are verified and validated by the UCM Common Services administrator.

Navigation

Problems and course of action to resolve them

Perform the indicated actions to resolve the following problems:

1. Unable to access Subscriber Manager from UCM Common Services

    a. Error Message indicates that you don't have access to Subscriber Manager.

    The UCM Common Services Administrative user account is assigned a Role that does not include access to Subscriber Manager. You must have an UCM Common Services Administrator change your Role to one that does have access to Subscriber Manager. For more information on creating UCM Common Services Administrative user accounts and assigning roles and permissions, see *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

    b. Error Message - Web site can't be found.

    Subscriber Manager Link is not working, which indicates Subscriber Manager did not get installed correctly. For information on installing UCM Common Services, EM and Subscriber Manager, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

2. An error page is displayed when first logged into Subscriber Manager

    The problem is related to either "a" or "b" in item 1.

3. Trouble creating subscriber accounts

    Error message - Element Manager can't be accessed

    Have the UCM Common Services administrator check the access to Avaya Communication Server 1000 (Avaya CS 1000) Element Manager. If the

problem still exists, verify that the Element is on the network with an IP ping. Then have the UCM Common Services administrator "Edit" the Element and verify the connection parameters.

4. Trouble creating a subscriber account on an Avaya CallPilot Element, if the subscriber Extension property is undefined.

   If the subscriber Extension property is undefined, an error message similar to the following is displayed on the Add Account Web page when attempting to create a subscriber account on a CallPilot Element: "An error occurred when creating the account. Error code: 36053, Description: Input parameter 'mailboxNumber' doesn't match regular expression /^\d+$/.". To resolve this problem, enter an Extension (known as mailbox number in CallPilot Manager) for the subscriber on the Subscriber Details Web page. To enter an Extension for a subscriber, see Viewing or updating subscriber properties on page 76.

5. Printed Subscriber Manager web pages can be truncated on the right hand side of the print out, if the print margins are set too high.

   The Subscriber Manager web pages are designed to fit on 8.5 inch wide paper with left and right hand print margins set to: 0.166 inches. If this does not help, another option is to use the Fit to Page feature of Internet Explorer 7.0 or higher.

6. Flow provisioning engine remains locked after account synchronization process is finished.

   This can happen if the server shut down part way through an account synchronization process. Try running the account synchronization process again and verify that it completes successfully.

7. Unable to add accounts using Subscriber Manager when EM is on a UCM Common Services member server.

   Log in to the UCM Common Services primary server and ping the member server using the member server's FQDN. If the UCM Common Services member server can not be reached, add the member server FQDN and IP address to the host table. Once the member server FQDN is added to the host table, and member server can be pinged from the primary server (using FQDN), the Subscriber Manager Add account and Account synchronization features work.

8. If the CallPilot SSL certificate has not been installed on the UCM Common Services server, an error message similar to the following is displayed when attempting to get a list of targets on the Add Account page: "An error occurred when creating the account. An error occured while communicating with the CallPilot: serverIpAddress: 47.11.218.59, managerUrl: 47.11.218.59, Administrator mailbox: 000000". The following message is also written to the log file: "No trusted certificate found".

   To resolve this problem, add the CallPilot certificate as a truststore in UCM Common Services. For more information, refer to *Avaya Unified Communications Management Common Services Fundamentals* (NN43001-116).

Chapter 12:   Fault management

This chapter contains information about the types of log files recorded for Subscriber Manager.

Subscriber Manager transaction and error logs are formatted in accordance with W3C extended log format by the UCM Common Services.

Navigation

Overview

Log files are created when data is added, changed, or deleted in Subscriber Manager. Subscriber Manager creates log files only for changes performed through the Subscriber Manager Web service interface or the Subscriber Manager Web user interface.

Logs are also created for any errors that occur during a session of Subscriber Manager.

The Operation, Administration and Maintenance Transaction Audit Log is a secure record of all system administrator Operation, Administration and Maintenance (OA&M) activities and security related events. The OA&M Transaction Audit Log is maintained in a centralized location on the Avaya Unified Communications Management Common Services (UCM Common Services). It can be forwarded to an external Operational Support System (OSS) using the Linux syslog daemon.

In Subscriber Manager Release 2.0 there are separate log files for

- Subscriber Change Notification for all the Flow Through Provisioning features and all actions.
- Account Synchronization

Further information

For further information on the installation of OA&M Transaction Audit and Security Event Logging, refer to *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315). For further information on configuration of OA&M Transaction Audit and

Security Event Logging, refer to *Avaya Security Management Fundamentals* (NN43001-604).

Chapter 13:   Appendix Subscriber attributes

Navigation

Subscriber attributes

The "*inetOrgPerson*" schema is extended with additional attributes for subscribers. Table 21: Subscriber attributes on page 143 provides a complete list.

Table 21: Subscriber attributes

Attribute Name	Req-uired?	Syntax Object Identifier (OID)	Can be imported using CSV subscriber synchronization?	Can store multiple values?
audio	No	1.3.6.1.4.1.1466.115.121.1.4	No	Yes
billingAccount Code	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
billingAuthoriz ationCode	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
billingWebRe portingAcces sRights	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
businessCate gory	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
carLicense	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
cn	Yes	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
combinedNa me	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No

Attribute Name	Req-uired?	Syntax Object Identifier (OID)	Can be imported using CSV subscriber synchronization?	Can store multiple values?
country	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
cpndName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
departmentNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
description	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
destinationIndicator	No	1.3.6.1.4.1.1466.115.121.1.44	Yes	Yes
displayName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
employeeNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
employeeType	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
esmGUID	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
facsimileTelephoneNumber	No	1.3.6.1.4.1.1466.115.121.1.22	Yes	Yes
givenName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
homePhone	No	1.3.6.1.4.1.1466.115.121.1.50	Yes	Yes
homePostalAddress	No	1.3.6.1.4.1.1466.115.121.1.41	Yes	Yes
initials	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
internationaliSDNNumber	No	1.3.6.1.4.1.1466.115.121.1.36	Yes	Yes
jpegPhoto	No	1.3.6.1.4.1.1466.115.121.1.28	No	Yes
l	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
labeledURI	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
mail	No	1.3.6.1.4.1.1466.115.121.1.26	Yes	Yes
manager	No	1.3.6.1.4.1.1466.115.121.1.12	No	Yes
messagingHostSerialNum	No	1.3.6.1.4.1.1466.115.121.1.15	No	No
messagingScrEntryUuid	No	1.3.6.1.4.1.1466.115.121.1.15	No	No

Attribute Name	Req-uired?	Syntax Object Identifier (OID)	Can be imported using CSV subscriber synchronization?	Can store multiple values?
messagingTelephoneNumber	No	1.3.6.1.4.1.1466.115.121.1.15	No	No
messagingUseEsnAccessCode	No	1.3.6.1.4.1.1466.115.121.1.7	No	No
messagingVpimAddress	No	1.3.6.1.4.1.1466.115.121.1.15	No	No
mobile	No	1.3.6.1.4.1.1466.115.121.1.50	Yes	Yes
nortelUserDefinedField	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
o	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
officeLocation	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
officialName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
ou	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
pager	No	1.3.6.1.4.1.1466.115.121.1.50	Yes	Yes
photo	No	1.3.6.1.4.1.1466.115.121.1.23	No	Yes
physicalDeliveryOfficeName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
postalAddress	No	1.3.6.1.4.1.1466.115.121.1.41	Yes	Yes
postalCode	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
postOfficeBox	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
preferredDeliveryMethod	No	1.3.6.1.4.1.1466.115.121.1.14	No	No
preferredDirectoryNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
preferredEsnTelephoneNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
preferredExtension	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No

Attribute Name	Req-uired?	Syntax Object Identifier (OID)	Can be imported using CSV subscriber synchronization?	Can store multiple values?
preferredExternalTelephoneNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
preferredLanguage	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
preferredName	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
registeredAddress	No	1.3.6.1.4.1.1466.115.121.1.41	Yes	Yes
roomNumber	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
secretary	No	1.3.6.1.4.1.1466.115.121.1.12	No	Yes
refer to Also	No	1.3.6.1.4.1.1466.115.121.1.12	No	Yes
serviceEndDate	No	1.3.6.1.4.1.1466.115.121.1.24	Yes	No
serviceStartDate	No	1.3.6.1.4.1.1466.115.121.1.24	Yes	No
sn	Yes	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
st	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
street	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
subMgrTaskStatus	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
subscriberType	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
telephoneNumber	No	1.3.6.1.4.1.1466.115.121.1.50	Yes	Yes
teletexTerminalIdentifier	No	1.3.6.1.4.1.1466.115.121.1.51	No	Yes
telexNumber	No	1.3.6.1.4.1.1466.115.121.1.52	Yes	Yes
title	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
tmUserGroup	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	No
uid	No	1.3.6.1.4.1.1466.115.121.1.15	Yes	Yes
userCertificate	No	1.3.6.1.4.1.1466.115.121.1.8	No	Yes

Attribute Name	Req-uired?	Syntax Object Identifier (OID)	Can be imported using CSV subscriber synchronization?	Can store multiple values?
userPassword	No	1.3.6.1.4.1.1466.115.121.1.40	No	Yes
userPKCS12	No	1.3.6.1.4.1.1466.115.121.1.5	No	Yes
userSMIMECertificate	No	1.3.6.1.4.1.1466.115.121.1.5	No	Yes
x121Address	No	1.3.6.1.4.1.1466.115.121.1.36	Yes	Yes
x500uniqueIdentifier	No	1.3.6.1.4.1.1466.115.121.1.6	No	Yes

Subscriber schema attributes

Table 22: Subscriber schema attributes on page 147 provides the subscriber schema attribute name, origin, and whether or not it is required.

Table 22: Subscriber schema attributes

Attribute Name	Origin	Required?
sn	person	Yes
cn	person	Yes
userPassword	person	No
telephoneNumber	person	No
seeAlso	person	No
description	person	No
title	organizationalPerson	No
x121Address	organizationalPerson	No
registeredAddress	organizationalPerson	No
destinationIndicator	organizationalPerson	No
preferredDeliveryMethod	organizationalPerson	No
telexNumber	organizationalPerson	No
teletexTerminalIdentifier	organizationalPerson	No
internationaliSDNNumber	organizationalPerson	No

Attribute Name	Origin	Required?
facsimileTelephoneNumber	organizationalPerson	No
street	organizationalPerson	No
postOfficeBox	organizationalPerson	No
postalCode	organizationalPerson	No
postalAddress	organizationalPerson	No
physicalDeliveryOfficeName	organizationalPerson	No
ou	organizationalPerson	No
st	organizationalPerson	No
l	organizationalPerson	No
audio	inetOrgPerson	No
businessCategory	inetOrgPerson	No
carLicense	inetOrgPerson	No
departmentNumber	inetOrgPerson	No
displayName	inetOrgPerson	No
employeeNumber	inetOrgPerson	No
employeeType	inetOrgPerson	No
givenName	inetOrgPerson	No
homePhone	inetOrgPerson	No
homePostalAddress	inetOrgPerson	No
initials	inetOrgPerson	No
jpegPhoto	inetOrgPerson	No
labelledURI	inetOrgPerson	No
mail	inetOrgPerson	No
manager	inetOrgPerson	No
mobile	inetOrgPerson	No
o	inetOrgPerson	No
pager	inetOrgPerson	No
photo	inetOrgPerson	No
roomNumber	inetOrgPerson	No
secretary	inetOrgPerson	No
uid	inetOrgPerson	No

Attribute Name	Origin	Required?
userCertificate	inetOrgPerson	No
x500uniqueIdentifier	inetOrgPerson	No
preferredLanguage	inetOrgPerson	No
userSMIMECertificate	inetOrgPerson	No
userPKCS12	inetOrgPerson	No
officeLocation	CND 1.0	No
country	CND 1.0	No
esmGUID	CND 1.0	No
serviceStartDate	CND 1.0	No
serviceEndDate	CND 1.0	No
subscriberType	CND 1.0	No
officialName	CND 1.0	No
preferredName	CND 1.0	No
combinedName	CND 1.0	No
cpndName	CND 1.0	No
nortelUserDefinedField	CND 1.0	No
tmUserGroup	CND 2.0	No
billingWebReportingAccessRights	CND 2.0	No
preferredDirectoryNumber	CND 2.0	No
preferredExternalTelephoneNumber	CND 2.0	No
preferredESNTelephoneNumber	CND 2.0	No
billingAccountCode	CND 2.0	No
billingAuthorizationCode	CND 2.0	No
messagingTelephoneNumber	CND 2.1	No
messagingVpimAddress	CND 2.1	No
messagingHostSerialNumber	CND 2.1	No
messagingSrcEntryUUID	CND 2.1	No
messagingUseEsnAccessCode	CND 2.1	No
preferredExtension	CND 2.1	No

Directory schema

Table 23: LDAP NortelSubscriber Schema use by Subscriber Manager for Subscribers on page 150 shows which UCM Directory nortelSubscriber attributes for the UCM Directory Schema version 2.3 are used by Subscriber Manager and which attributes are not used by Subscriber Manager.

Table 23: LDAP NortelSubscriber Schema use by Subscriber Manager for Subscribers

nortelSubscriber (UCM Directory schema version 4)	Subscriber Manager Properties
audio	
billingAccountCode	
billingAuthorizationCode	
billingWebReportingAccessRights	
businessCategory	
carLicense	
cn	
combinedName	
country	Country
cpndName	
departmentNumber	Department
description	Notes
destinationIndicator	
displayName	
employeeNumber	Employee ID
employeeType	
esmGUID	
facsimileTelephoneNumber	Fax
flowThroughProvisioningRequest	provRequest
flowThroughProvisioningResponse	provResponse
givenName	First name
homePhone	
homePostalAddress	

nortelSubscriber (UCM Directory schema version 4)	Subscriber Manager Properties
initials	Middle name
internationaliSDNNumber	
jpegPhoto	
l	City
labelledURI	
localizedName	localizedNames
mail	Email
manager	
messagingHostSerialNumber	
messagingSrcEntryUUID	
messagingTelephoneNumber	
messagingUseEsnAccessCode	
messagingVpimAddress	
mobile	Cell
nortelUserDefinedField	
o	Company
officeLocation	Office Location
officialName	
ou	
pager	Pager
photo	
physicalDeliveryOfficeName	
postalAddress	
postalCode	Postal/ZIP Code
postOfficeBox	
preferredDeliveryMethod	
preferredDirectoryNumber	Extension
preferredEsnTelephoneNumber	ESN
preferredExtension	
preferredExternalTelephoneNumber	External

nortelSubscriber (UCM Directory schema version 4)	Subscriber Manager Properties
preferredInternationalTelephoneNumber	international
preferredLanguage	Language
preferredName	Preferred name
preferredNationalTelephoneNumber	national
registeredAddress	
roomNumber	
secretary	
seeAlso	
serviceEndDate	Service end date
serviceStartDate	Service start date
sn	Last name
st	Province/State
street	Street
subMgrTaskStatus	Status (Not displayed on the UI)
subscriberType	Subscriber type
telephoneNumber	
teletexTerminalIdentifier	
telexNumber	
title	Job Title
tmUserGroup	
ucDomain	domain
uid	username
userCertificate	
userPassword	password
userPKCS12	
userSMIMECertificate	
x121Address	
x500uniqueIdentifier	

Chapter 14:   Appendix CSV file format

Navigation

CSV file format

When users synchronize a Comma Separated Values (CSV) file into Subscriber Manager, they are asked to specify the format of the file, either standard CSV or Microsoft CSV. This appendix explains the rules of each format and the Subscriber Manager-specific rules that imported and exported files must follow.

Rules that apply to both formats

Records and field values

CSV files are text files that contain a list of records separated by new-line characters.

Each record contains field values separated by commas. For example, consider a CSV file with the following contents:

```
a,b,c,d,e
f,g,h,i,j
```

This file has two records, each with five field values.

Field values with commas, semi-colons, and newlines

If a field value contains a comma or new-line, the entire field value must be surrounded by double quotes. For example, consider a CSV file with the following contents:

```
a,b,"c,d",e
"f,g",h,i,j
```

This file has three records, each with four field values. The first record's third field value has an embedded comma as does the second record's first field value.

Quoted field values

Any field value can be surrounded by double quotes; they are only required when the field value contains an embedded comma or new-line.

Text after a field value's closing double quote but before the next comma is ignored. For example, consider a CSV file with the following contents:

```
a,b,"c"XXX,d
"a"XXX,b,c,d
```

This file has two records, each with the same four field values (a, b, c, d). XXX is ignored in both cases.

Empty field values

Empty field values are indicated by consecutive commas. For example, consider a CSV file with the following contents:

```
a,,b,,c
a,b,,,,c
```

This file has two records. The first record has five field values where the second and fourth are empty. The second record has six field values where the third, fourth, and fifth are empty.

Empty lines

Empty lines and lines that only contain spaces and tabs are ignored. For example, consider a CSV file with the following contents:

```
a,b,c,d,e


f,g,h,i,j


k,l,m,n,o
```

This file only has three records, even though it has five lines.

Differences between standard CSV format and Microsoft CSV format

Standard CSV format and Microsoft CSV format differ in their handling of:

- [Embedded quotes in quoted field values](#) on page 155
- [Backslashes in quoted field values](#) on page 156
- [Leading and trailing white space between field values](#) on page 156

Embedded quotes in quoted field values

Standard CSV and Microsoft CSV use a different character to escape quotes embedded in quoted field values; standard CSV uses a backslash while Microsoft CSV uses a second quote. For example, consider a CSV file with the following contents:

```
"He said ""Hello""",b,c
```

If this file is parsed with a standard CSV parser, it reads the first field value as "He said ", ignoring the quoted Hello. If this file is parsed with a Microsoft™ CSV parser, it reads the first field value as "He said "Hello"".

Backslashes in quoted field values

In standard CSV, backslashes are special characters used to escape quotes. Therefore, embedded backslashes must be escaped with a second backslash. Backslashes that are not followed by a quote or backslash are ignored. In Microsoft CSV, backslashes have no special significance. For example, consider a CSV file with the following contents:

```
"C:\data\file.txt",a,b,c
```

A standard CSV parser reads the first field value as C:datafile.txt. A Microsoft CSV parser reads the first field value as C:\data\file.txt.

Leading and trailing white space between field values

In standard CSV, leading and trailing white space between field values is ignored. In Microsoft CSV, it is significant. For example, consider a CSV file with the following contents:

```
a,               b            ,
c      ,                    d
```

A standard CSV parser reads each field value as a single character, ignoring the spaces. A Microsoft CSV parser includes the spaces in the field values.

Subscriber Manager-specific rules

Records with different numbers of fields

Records are allowed to have any number of fields. If a record has fewer fields than the header, the remaining fields are taken as null. If a record has more fields than the header, the extra fields are ignored. For example, consider a CSV file with the following contents:

```
cn,sn,givenName
johndoe, doe, john
lyndasmythe, smythe, lynda
fredflintstone,flintstone
barneyrubble,rubble,barney,fatherofbambam
```

Using Subscriber Manager CSV subscriber import feature on this file results in four entries being added to Subscriber Manager:

- `cn=johndoe, sn=doe, givenName=john`
- `cn=lyndasmythe, sn=smythe, givenName=lynda`
- `cn=fredflintstone, sn=flintstone`
- `cn=barneyrubble, sn=rubble, givenName=barney`

Note that Fred Flintstone's givenName attribute does not exist because his given name was not specified in the CSV file. Also note that Barney Rubble's additional information (fatherofbambam) is ignored.

Summary of CSV rules

Table 24: CSV rules on page 157 summarizes the CSV rules.

Table 24: CSV rules

CSV file content	Subscriber Manager interpretation (Microsoft format)	Subscriber Manager interpretation (standard format)

Record
Field values in a record are separated by commas
 	
`a,b,c,d,e`
	`field1: a`
	`field2: b`
	`field3: c`
	`field4: d`
	`field5: e`
		`field1: a`
		`field2: b`
		`field3: c`
		`field4: d`
		`field5: e`

Field values with embedded comma
A value in quotes is one field value, even if the value contains a comma
 	
`a,b,"c,d",e`
	`field1: a`
	`field2: b`
	`field3: c,d`
	`field4: e`
		`field1: a`
		`field2: b`
		`field3: c,d`
		`field4: e`

Field values with embedded newline
A value in quotes is one field value, even if the value contains a newline
 	
`a,b,"c`
`d",e`
	`field1: a`
	`field2: b`
	`field3: c`
	`d`
	`field4: e`
		`field1: a`
		`field2: b`
		`field3: c`
		`d`
		`field4: e`

Field values with quotes In field values that start with a quote, text after the end quote	`Record1`	`Record1`

CSV file content	Subscriber Manager interpretation (Microsoft format)	Subscriber Manager interpretation (standard format)

is ignored. In field values that contain quotes but do not start with a quote, quotes are part of the field value
 	
`a,b,"c"XXX,d`
`"e"XXX,f,g,h`
`i,j"k"l,m`
	`field1: a`
	`field2: b`
	`field3: c`
	`field4: d`
	`Record2`
	`field1: e`
	`field2: f`
	`field3: g`
	`field4: h`
	`Record3`
	`field1: i`
	`field2: j"k"l`
	`field3: m`
		`field1: a`
		`field2: b`
		`field3: c`
		`field4: d`
		`Record2`
		`field1: e`
		`field2: f`
		`field3: g`
		`field4: h`
		`Record3`
		`field1: i`
		`field2: j"k"l`
		`field3: m`

Empty field values
Consecutive commas denote empty field values
 	
`a,b,,,,c`
	`field1: a`
	`field2: b`
	`field3:`
	`field4:`
	`field5:`
	`field6: c`
		`field1: a`
		`field2: b`
		`field3:`
		`field4:`
		`field5:`
		`field6: c`

Empty lines
Empty lines and lines that only contain spaces and tabs are ignored:
 	
`a,b,c,d`
`e,f,g,h`
	`Record1`
	`field1: a`
	`field2: b`
	`field3: c`
	`field4: d`
	`Record2`
	`field1: e`
	`field2: f`
	`field3: g`
	`field4: h`
		`Record1`
		`field1: a`
		`field2: b`
		`field3: c`
		`field4: d`
		`Record2`
		`field1: e`
		`field2: f`
		`field3: g`
		`field4: h`

Embedded quotes in quoted fields
Microsoft CSV uses a second quote to escape embedded quotes; generic CSV uses a backslash
 	
`"Say""Hello""",b`
`"Say\"Hello\"",b`
	`Record1`
	`field1: Say"Hello"`
	`field2: b`
	`Record2`
	`field1: Say\`
	`field2: b`
		`Record1`
		`field1: Say`
		`field2: b`
		`Record2`
		`field1: Say"Hello"`
		`field2: b`

Backslashes in quoted fields In Microsoft CSV, backslashes have no special significance; in standard CSV, backslashes are special characters used to escape quotes `"C:\ab\cd.tx",a`	`field1: C:\ab\cd.tx` `field2: a`	`field1: C:abcd.tx` `field2: a`

CSV file content	Subscriber Manager interpretation (Microsoft format)	Subscriber Manager interpretation (standard format)

Leading and trailing white space
In Microsoft CSV, leading and trailing white space between field values is significant; in standard CSV, it is ignored
 	
`a, b    ,    c`
	`field1: a`
	`field2: b`
	`field3: c`
		`field1: a`
		`field2: b`
		`field3: c`

Chapter 15: Appendix Unicode byte-order mark

The Unicode byte-order mark (BOM) is the Unicode character at code point U+FEFF ("zero-width no-break space"), when that character is used to denote the endianness of a string of UCS/Unicode characters encoded in 16-bit Unicode Transformation Format (UTF-16) or 32-bit Unicode Transformation Format (UTF-32) and/or as a marker to indicate that text is encoded in 8-bit Unicode Transformation Format (UTF-8), UTF-16 or UTF-32.

Table 25: Encodings of the BOM by encoding scheme on page 161 displays the encodings of the byte-order marks by encoding scheme.

Table 25: Encodings of the BOM by encoding scheme

Encoding scheme	Encoding of BOM
UTF-8	EF BB BF
UTF-16 Big Endian	FE FF
UTF-16 Little Endian	FF FE

Chapter 16: Appendix CS 1000 Release 5.5 Unicode Name Data Migration

Subscriber Manager 1.0 uses the Common Network Directory (CND) as its subscriber repository. Subscriber Manager 2.0 continues to use the CND. However, the CND is now an embedded component (that is, UCM directory services) deployed as part of the Avaya Unified Communications Management Common Services in Avaya Communication Server 1000 (Avaya CS 1000) Release 6.0, or later. The repository for subscriber and account data is a fundamental feature provided by UCM directory services.

Prerequisites for Unicode name data migration

- Location of file to translate (device / path / file name)
- OpenOffice.org 2.4.0 (or greater) Calc application installed

Migrate CS 1000 Release 5.5 Unicode name data and create new subscribers

If there are no subscribers configured in Subscriber Manager, use the steps in Migrating Unicode name data if no subscribers are configured in Subscriber Manager on page 163 to migrate Avaya CS 1000 Release 5.5 Unicode name data into Subscriber Manager. This procedure creates new subscribers.

Migrating Unicode name data if no subscribers are configured in Subscriber Manager

1. Use **Find & Replace** in the OpenOffice.org Calc application to change all language names to supported abbreviations. See Localized name support on page 47 for a list of supported abbreviations.

Figure 45: Example CS 1000 Release 5.5 Unicode name file

Figure 46: Change all language names to supported abbreviations

2. Remove all digit columns.
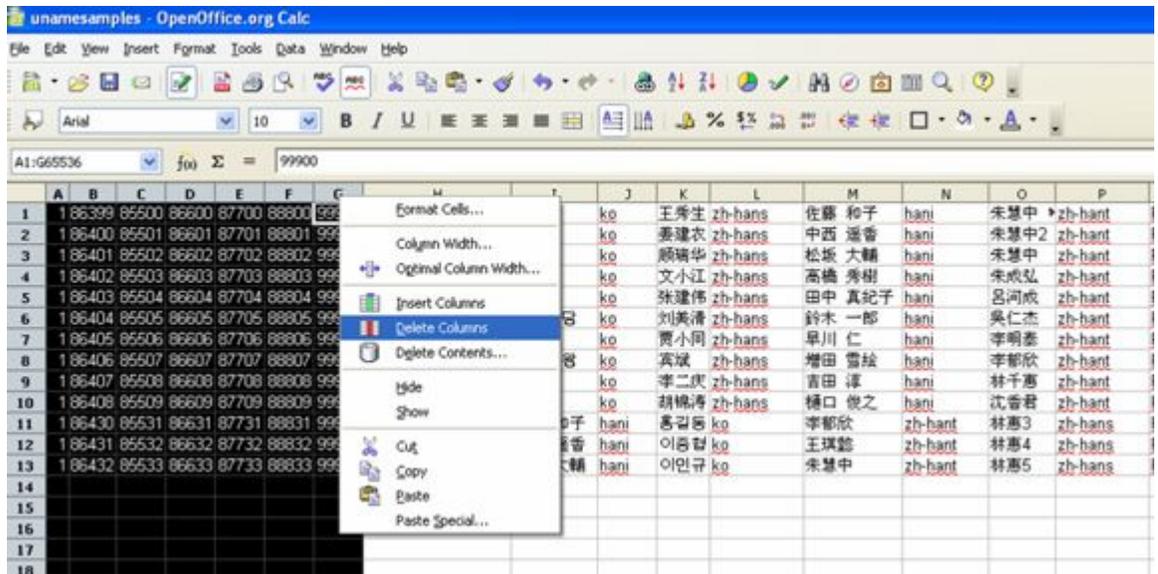
Figure 47: Remove all digit columns

3. Insert en after the English language column.
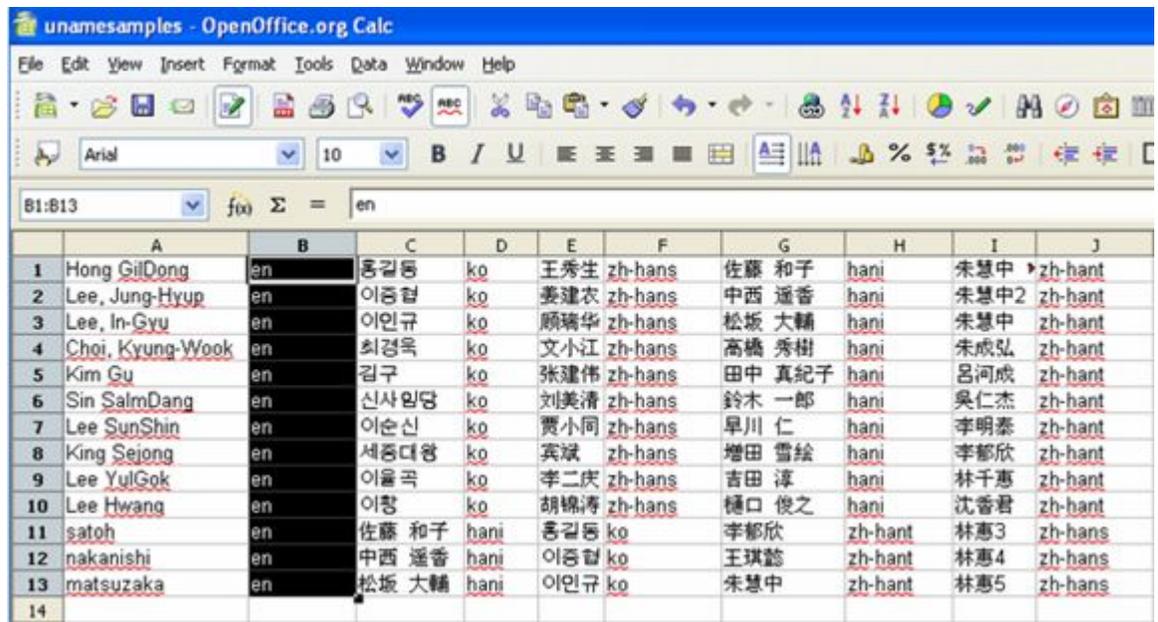
Figure 48: Insert English abbreviation

4. Insert two new columns for the surname (sn) and the given name (givenName).
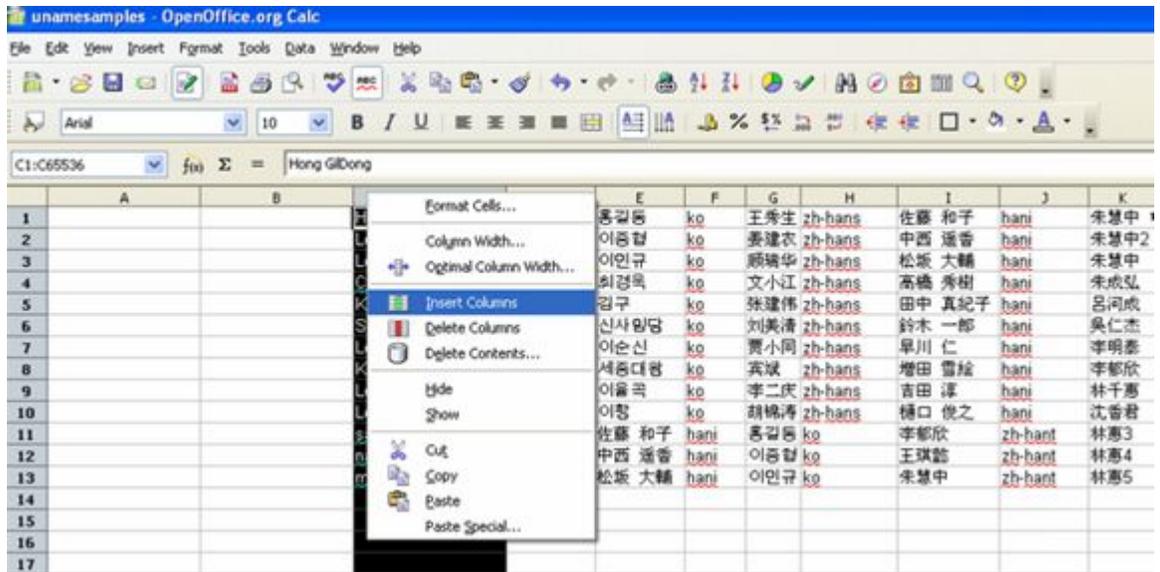
Figure 49: Insert two new columns

5. In the surname column, insert the spreadsheet formula MID(C1; 1;FIND(" "; C1)). This formula assumes the English names are not longer than 100 characters.

Figure 50: Obtain sn column values

⊛ **Note:**

If the English language name only has a single string value, an error occurs using the spreadsheet formula, "#VALUE!". Leave the given name column empty or manually enter the appropriate name.

6. In the given name column, insert the spreadsheet formula MID(C1;FIND(" "; C1) + 1; 100).

Figure 51: Obtain givenName column values

⊛ **Note:**

If the English language name only has a single string value, an error occurs using the spreadsheet formula, "#VALUE!". Leave the given name column empty or manually enter the appropriate name.

⊛ **Note:**

The spreadsheet formulas for the surname column and the given name column may be interchangeable. In the example in Figure 50: Obtain sn column values on page 166 and Figure 51: Obtain givenName column values on page 167 the first string value in the English language column is the surname and the second string value in the English language column is the given name. For example, "Hong" is the surname and "GilDong" is the given name.

7. Copy and paste the two new columns to replace the spreadsheet formula values with text. Use the **Paste Special** option in the OpenOffice.org Calc application and check only **Text**.

Figure 52: Copy sn and givenName column values

8. Click **Yes** to copy the sn and givenName column values.
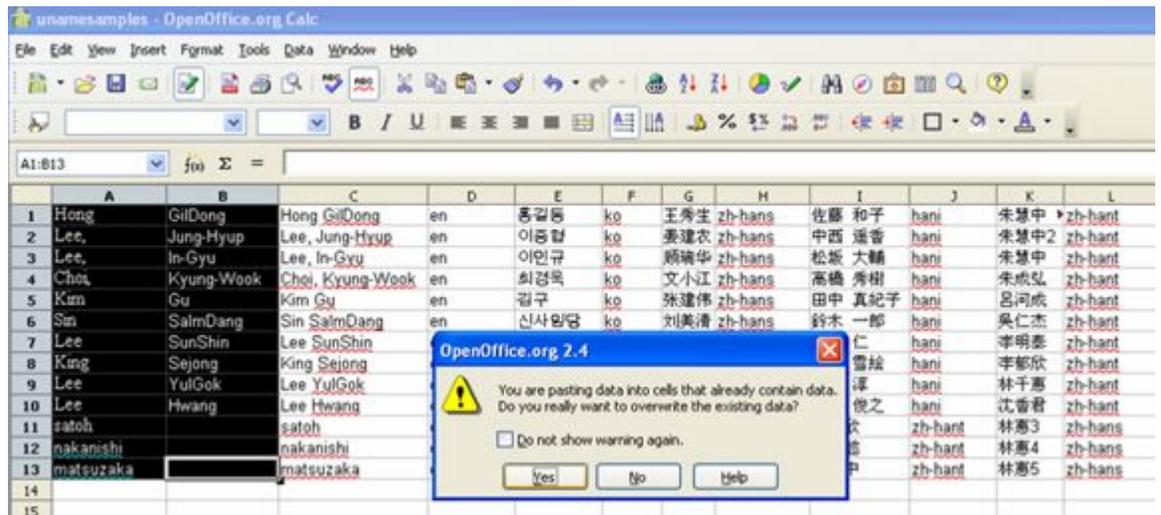
Figure 53: Click Yes to copy the sn and givenName column values

9. Insert a new column for all localized names. It must be the third column. The new column contains all localized names concatenated together. The text in this column is formatted in accordance with the Subscriber Manager documentation. Assuming there are seven localized names, a spreadsheet formula for this is =E1&"."&D1&";"&G1&"."&F1&";"&I1&"."&H1&";"&K1&"."&J1&";"&M1&"."&L1&";"& O1&"."&N1&";"&Q1&"."&P1

⊛ **Note:**

The spreadsheet formula assumes there are seven localized names. Customize the formula to reflect the number of localized names in use.

Figure 54: Concatenate the localized names

10. Copy and paste the two new columns to replace the spreadsheet formula values with text. Use the **Paste Special** option in the OpenOffice.org Calc application and check only **Text**. See

11. Delete all the localized name columns.

Figure 55: Delete all localized name columns

Figure 56: Updated localized names

12. Insert a new row and name the columns sn, givenName, localizedName.

Figure 57: Add the customized localized name columns titles

13. Select **Text CSV (.csv)** in the **Save as type:** drop down list.
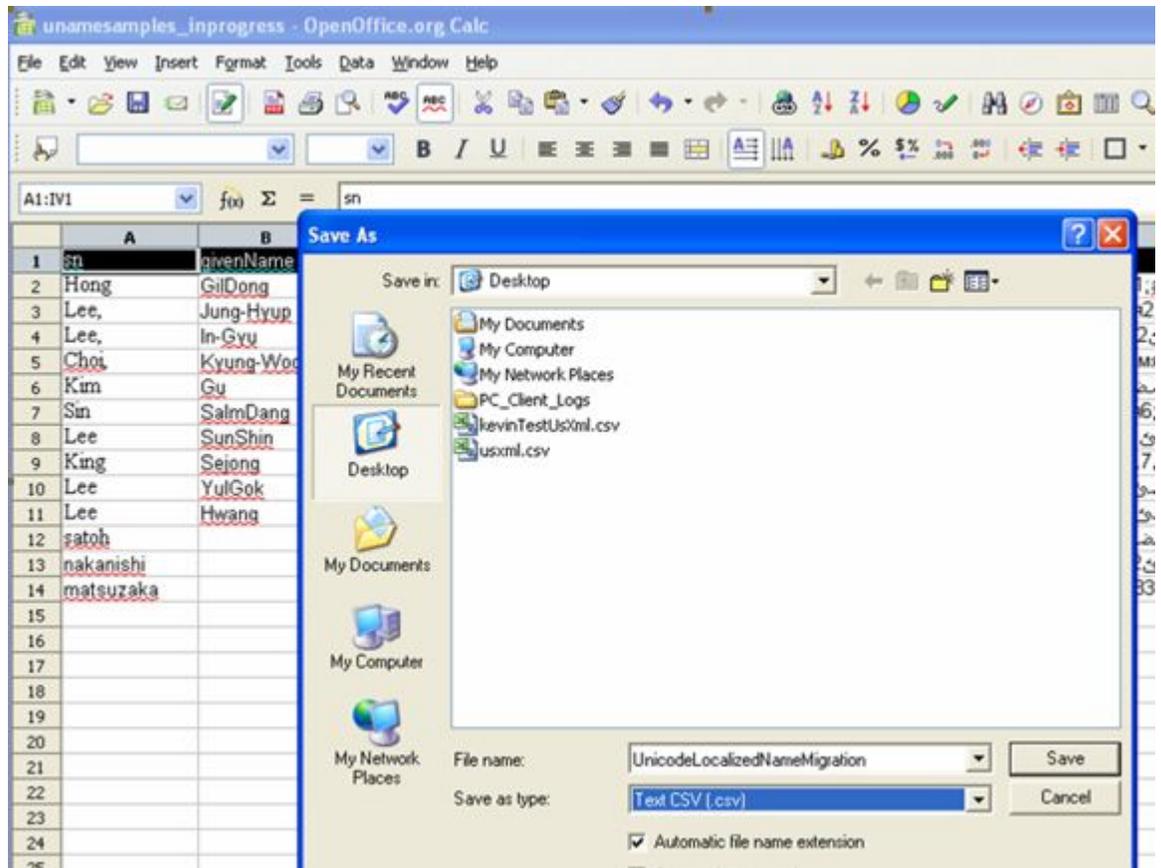
Figure 58: Save the customized localized name file

14. Select **Yes** to save the Text CSV (.csv) file format.
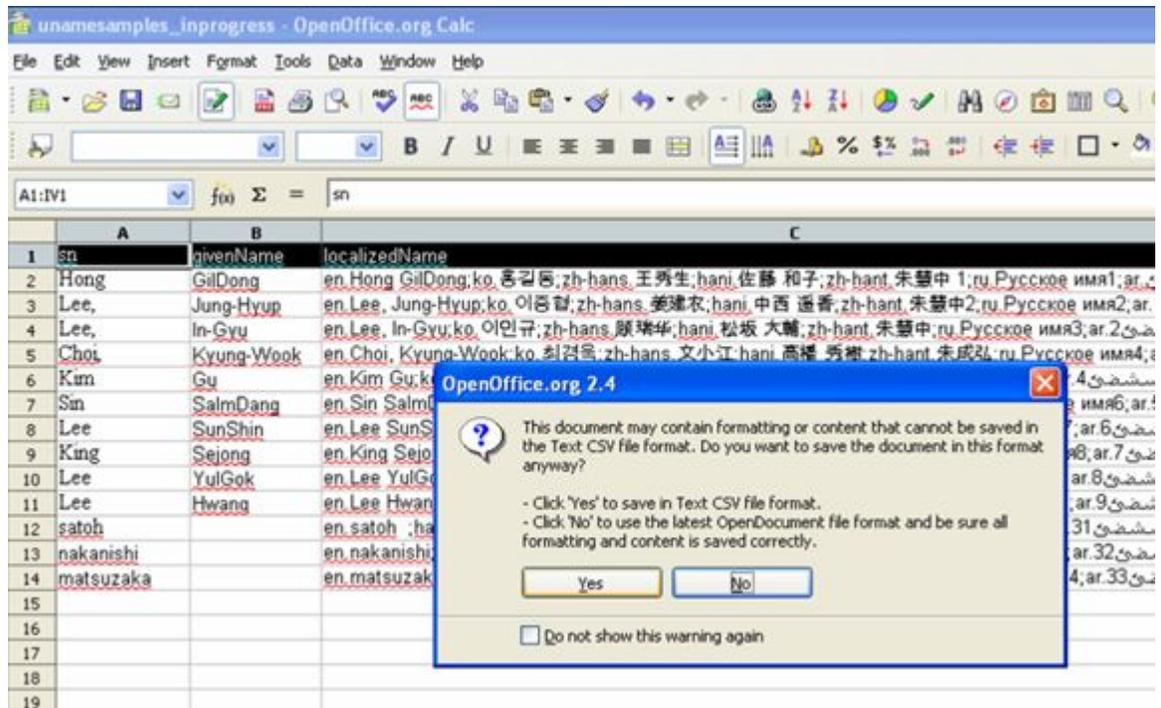
Figure 59: Select Yes to save the Text CSV (.csv) file format

15. In the Export of text files dialog box, select **Unicode** in the **Character set** drop down list, select "," in the **Field delimiter** drop down list, select """ in the **Text delimiter** drop down list and check the **Save cell content as shown** check box.

    Note:
    Do not select Unicode (UTF8).
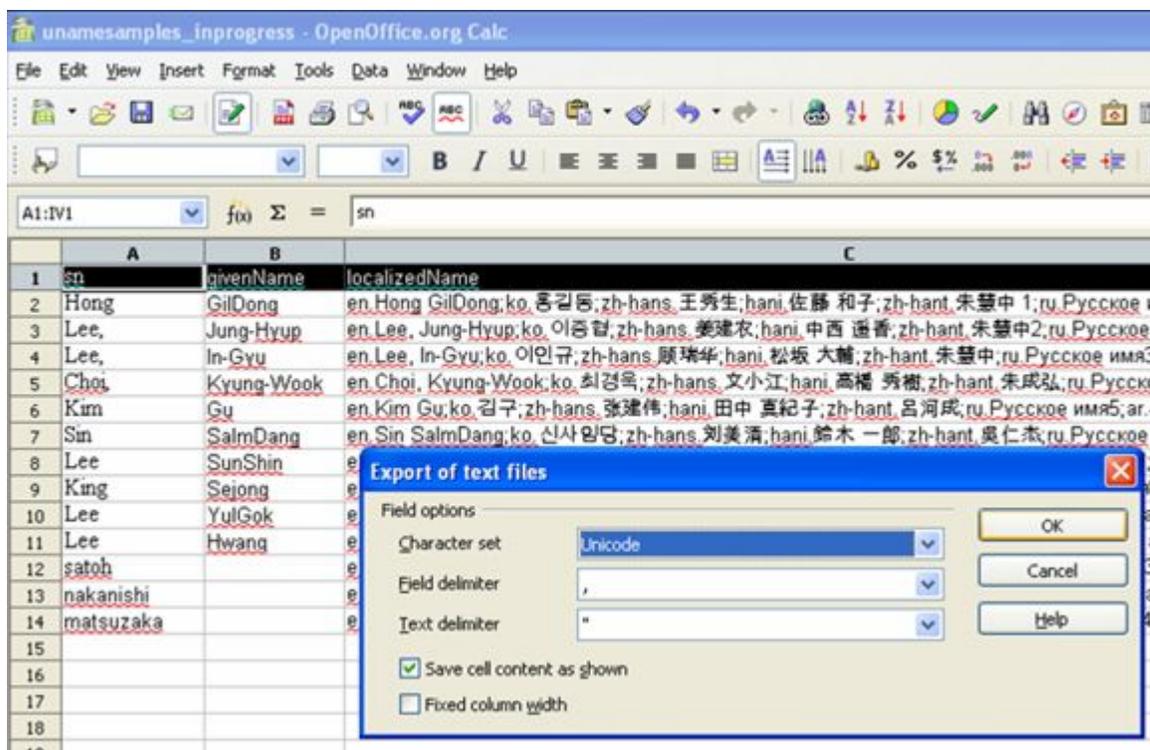
Figure 60: Select attributes for Export of text files

16. Verify the migrated file in a text editor.

Figure 61: Verify the migrated file

17. Follow the steps in Synchronizing subscribers on page 123 to import the new subscribers into the directory.

18. Follow the steps in Performing a basic search for a subscriber on page 74 or in Performing an advanced search for a subscriber on page 75 to verify that the subscribers have been imported into the directory.

Migrate CS 1000 Release 5.5 Unicode name data and update existing subscribers

If subscribers are already configured in Subscriber Manager, use the steps in Migrating Unicode name data if subscribers are configured in Subscriber Manager on page 174 to migrate CS 1000 Release 5.5 Unicode name data into Subscriber Manager. This procedure appends the Unicode name data to matching subscribers or creates new subscribers.

Migrating Unicode name data if subscribers are configured in Subscriber Manager

1. Use **Find & Replace** in the OpenOffice.org Calc application to change all language names to supported abbreviations. See Localized name support on page 47 for a list of supported abbreviations.

   See Figure 45: Example CS 1000 Release 5.5 Unicode name file on page 164 and Figure 46: Change all language names to supported abbreviations on page 164.

2. Remove all digit columns.

   See Figure 47: Remove all digit columns on page 165.

3. Insert en after the English language column.

   See Figure 48: Insert English abbreviation on page 165.

4. Insert two new columns for the surname (sn) and the given name (givenName).

   See Figure 49: Insert two new columns on page 166.

5. In the surname column, insert the spreadsheet formula MID(C1; 1;FIND(" "; C1)). This formula assumes the English names are not longer than 100 characters.

   See Figure 50: Obtain sn column values on page 166.

   > ⊛ **Note:**
   > If the English language name only has a single string value, an error occurs using the spreadsheet formula, "#VALUE!". Leave the given name column empty or manually enter the appropriate name.

6. In the given name column, insert the spreadsheet formula MID(C1;FIND(" "; C1) + 1; 100).

   See Figure 51: Obtain givenName column values on page 167 .

   > ⊛ **Note:**
   > If the English language name only has a single string value, an error occurs using the spreadsheet formula, "#VALUE!". Leave the given name column empty or manually enter the appropriate name.

Note:

The spreadsheet formulas for the surname column and the given name column may be interchangeable. In the example in <u>Figure 50: Obtain sn column values</u> on page 166 and <u>Figure 51: Obtain givenName column values</u> on page 167 the first string value in the English language column is the surname and the second string value in the English language column is the given name. For example, "Hong" is the surname and "GilDong" is the given name.

7. Copy and paste the two new columns to replace the spreadsheet formula values with text. Use the **Paste Special** option in the OpenOffice.org Calc application and check only **Text**.

   See <u>Figure 52: Copy sn and givenName column values</u> on page 168.

8. Click **Yes** to copy the sn and givenName column values.

   See <u>Figure 53: Click Yes to copy the sn and givenName column values</u> on page 168.

9. Insert a new column for all localized names. It must be the third column. The new column contains all localized names concatenated together. The text in this column is formatted in accordance with the Subscriber Manager documentation. Assuming there are seven localized names, a spreadsheet formula for this is =E1&"."&D1&";"&G1&"."&F1&";"&I1&"."&H1&";"&K1&"."&J1&";"&M1&"."&L1&";"& O1&"."&N1&";"&Q1&"."&P1

   ### Note:

   The spreadsheet formula assumes there are seven localized names. Customize the formula to reflect the number of localized names in use.

   See <u>Figure 54: Concatenate the localized names</u> on page 169.

10. Copy and paste the two new columns to replace the spreadsheet formula values with text. Use the **Paste Special** option in the OpenOffice.org Calc application and check only **Text**. See <u>Figure 52: Copy sn and givenName column values</u> on page 168.

11. Delete all the localized name columns.

    See <u>Figure 55: Delete all localized name columns</u> on page 169 and <u>Figure 56: Updated localized names</u> on page 170.

12. Insert a new row and name the columns sn, givenName, localizedName.

    See <u>Figure 57: Add the customized localized name columns titles</u> on page 170.

13. Insert a new column for entryUUID at the beginning of the file.
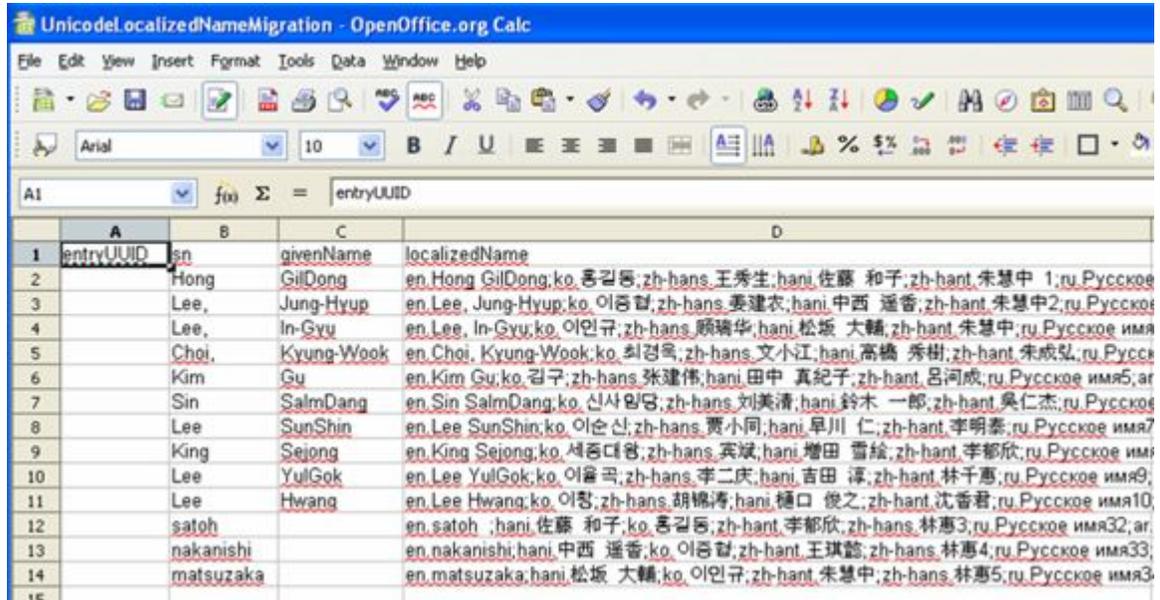
Figure 62: Insert a new column for entryUUID

14. Follow the steps in Exporting subscribers on page 136 to export the configured subscribers into a CSV file.

15. View the configured subscribers in the exported CSV file.
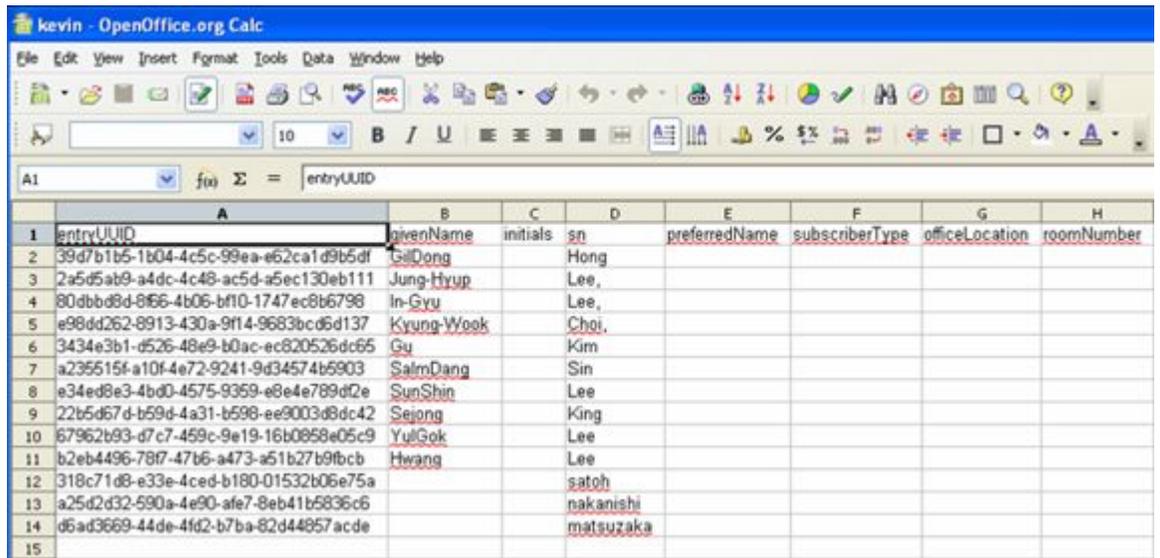
Figure 63: View the configured subscribers in the exported CSV file

16. Copy the configured subscribers entryUUID from the exported CSV file into the customized CSV file.
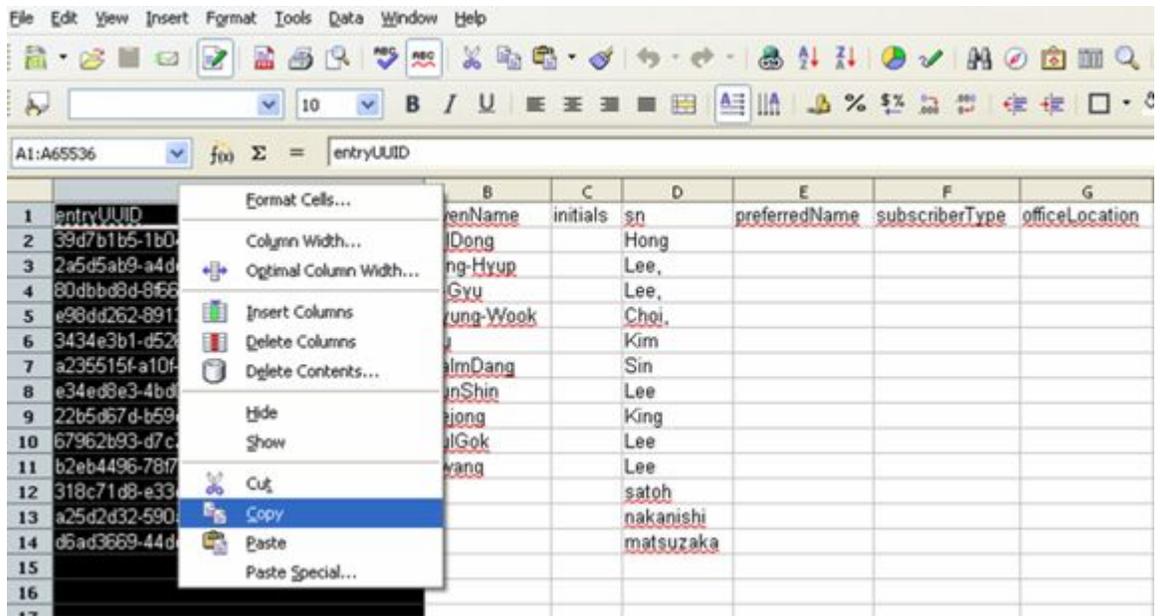
Figure 64: Copy the configured subscribers entryUUID from the exported CSV file
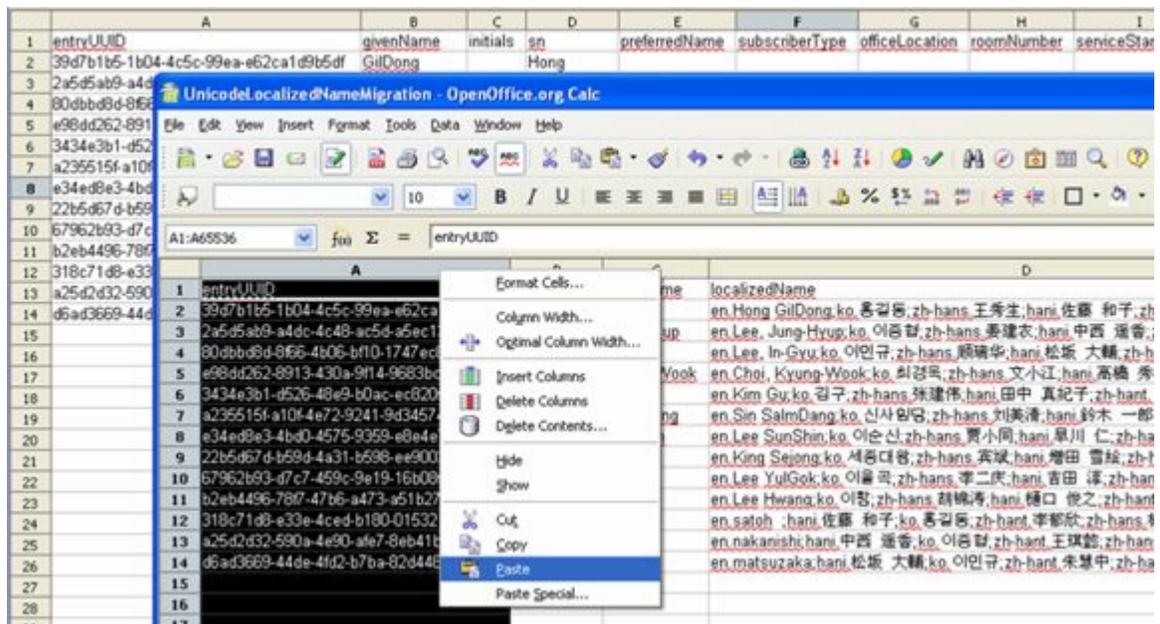
Figure 65: Paste the configured subscribers entryUUID into the customized CSV file

17. Select **Text CSV (.csv)** in the **Save as type:** drop down list.

   See Figure 58: Save the customized localized name file on page 171.

18. Select **Yes** to save the Text CSV (.csv) file format.

   See Figure 59: Select Yes to save the Text CSV (.csv) file format on page 172.

19. In the **Export of text files** dialog box, select **Unicode** in the **Character set** drop down list, select "," in the **Field delimiter** drop down list, select """ in the **Text delimiter** drop down list and check the **Save cell content as shown** check box.

   ⊛ **Note:**
   Do not select Unicode (UTF8).

   See Figure 60: Select attributes for Export of text files on page 173.

20. Verify the migrated file in a text editor.

   See Figure 61: Verify the migrated file on page 173.

21. Follow the steps in Synchronizing subscribers on page 123 to import the new subscribers into the directory.

22. Follow the steps in Performing a basic search for a subscriber on page 74 or in Performing an advanced search for a subscriber on page 75 to verify that the subscribers have been imported into the directory.

Chapter 17: Appendix Terminology

User

Administrator using the Subscriber Manager application.

Subscriber

A subscriber is a person, location, or project that uses services within a network. Most often a subscriber is an employee of a company or organization. An example of a location subscriber is an elevator with telephone services.

Element

The Call Server as listed in the Elements table in the UCM Common Services.

Account

An account is a provisioned service, available through an element, for a subscriber. A subscriber can have more than one account, such as an account for a telephone service, conferencing service, and voice mail service.

Target

Each element can further break down where an account is provisioned through the use of a target. In an Avaya Communication Server 1000 (Avaya CS 1000) system customer numbers are targets.

Service type

The type of service being provided to the Subscriber such as Telephony, Mailbox, and Present accounts.

Template

A template contains attributes common to a CS 1000 phone type. Once a template is created, you can use it to apply these common attributes to a group of phones, without having to repetitively define the same value for each phone. In general, using a template is a more efficient method of adding large numbers of phones than maintaining each phone individually. A template is created on an element.

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