



# Cisco TelePresence VCS Starter Pack Express

## Deployment Guide

---

Cisco VCS X8.1

D14618.08

December 2013

---

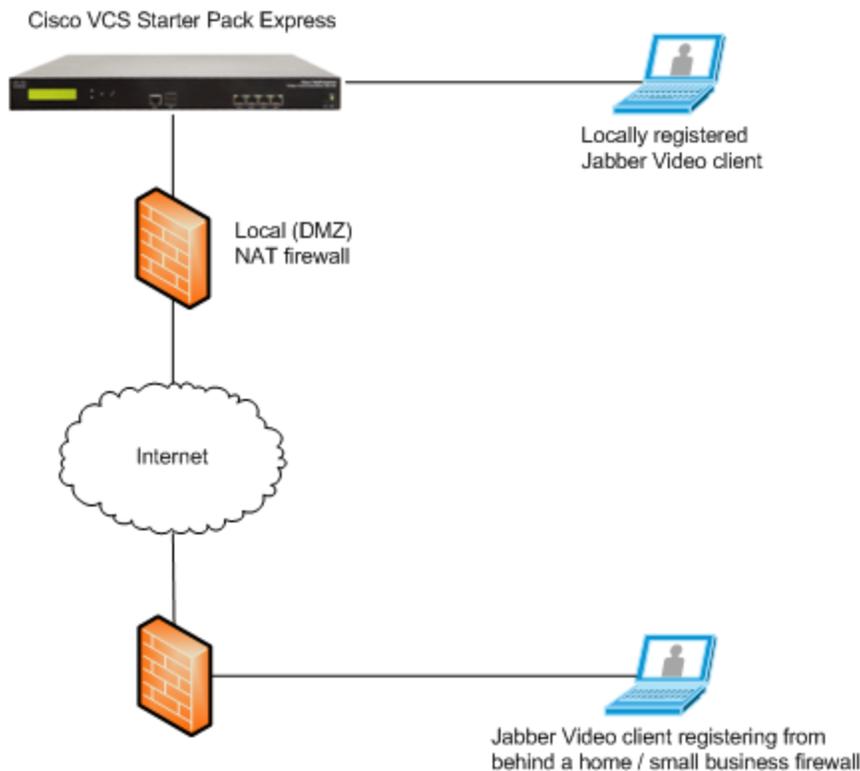
# Contents

<b>Introduction</b> .....	<b>3</b>
Purpose of this guide .....	4
<b>Configuring the VCS</b> .....	<b>5</b>
Opening firewall ports .....	5
Verifying the option key .....	5
Configuring the routable address of the VCS .....	6
Configuring a SIP domain .....	6
Enabling FindMe .....	7
Configuring device authentication .....	7
Enabling Presence Server (optional) .....	9
Creating user accounts .....	10
Creating authentication credentials for the user .....	11
Configuring bandwidths provisioned to endpoints (optional) .....	12
<b>Installing and configuring Jabber Video</b> .....	<b>14</b>
<b>Testing the Starter Pack installation</b> .....	<b>16</b>
Local system testing .....	16
Public network testing .....	16
Behind home/hotel firewall testing .....	17
<b>Checking the status of the Provisioning Server</b> .....	<b>18</b>
<b>Appendix 1: Troubleshooting</b> .....	<b>19</b>
Jabber Video sign in messaging .....	19
Signaling level troubleshooting .....	21
<b>Appendix 2: Basic VCS configuration</b> .....	<b>25</b>
<b>Appendix 3: Additional information</b> .....	<b>26</b>
Characters allowed in SIP URIs .....	26
Determining the FindMe ID for a caller .....	26
Known limitations .....	26
Modifying a user's display name .....	26
<b>Appendix 4: Jabber Video and Active Directory (NTLM) authentication</b> .....	<b>27</b>
<b>Appendix 5: Starter Pack and Cisco TMSPE provisioning comparison</b> .....	<b>29</b>
<b>Related documents</b> .....	<b>31</b>
<b>Document revision history</b> .....	<b>32</b>

# Introduction

A Cisco TelePresence Video Communication Server (VCS) with the Starter Pack option key creates a VCS Starter Pack Express which acts as a standalone provisioning server, registrar and proxy server for endpoint devices, such as Jabber Video and Cisco Jabber for iPad.

The VCS Starter Pack Express may have endpoints register to it locally or register to it from behind a home, small business or hotel firewall.



If the VCS Starter Pack Express services endpoints that are behind a firewall, the VCS could be configured with a public IP address and the local (DMZ) firewall would have to be configured to pass the specific public IP address traffic to the VCS.

However, it is usually preferable to deploy the VCS in a NATed DMZ, rather than having the VCS configured with a publicly routable IP address. This can be achieved by enabling static NAT mode on selected network interfaces on the VCS. To use the static NAT mode feature you must install the **Dual Network Interfaces** option key. You can then enable static NAT mode on the externally-facing LAN port and configure it with a private address and a static NAT address (the public IP address of the DMZ NAT firewall). This means that when the VCS communicates with other devices it appears as an Internet routable device despite being behind the local NAT firewall.

Note that the **Dual Network Interfaces** option key allows the use of two network interfaces (LAN1 and LAN2), and allows static NAT mode to be enabled on one or both of these interfaces. It is not compulsory to use both interfaces, even though they have been enabled; you may use only a single interface and enable Static NAT mode on that single interface.

You must ensure that sufficient bandwidth is available when making calls through firewalls and other infrastructure. For example, five simultaneous calls using 512kbps in each direction will require 2.5Mbps bandwidth for this video traffic on top of its normal operation.

## Purpose of this guide

This deployment guide describes the configuration steps required to configure a VCS Starter Pack Express, including basic configuration, provisioning, device authentication and also how to configure user accounts so that Jabber Video clients are provisioned when users sign on to them.

# Configuring the VCS

This deployment guide assumes that the VCS is accessible on an IP network and has had a basic configuration implemented. This means that the VCS has been configured with:

- IP details
- DNS details
- NTP server details

Brief instructions about how to perform this configuration are available in [Appendix 2: Basic VCS configuration \[p.25\]](#).

If the system needs to support calling to non-registered endpoints, configure a DNS zone with a search rule that sends any calls that are not for the VCS's local SIP domain to that DNS zone.

## Opening firewall ports

If the VCS is placed in a DMZ, to enable SIP calls to be received the following IP ports must be open to the VCS through the firewall:

- 5060 (if basic SIP connection is required)
- 5061 (for SIP over TLS)
- 36000 to 59999 (for media)

## Verifying the option key

Ensure that the **Starter Pack** option key is listed on the **Option keys** page (**Maintenance > Option keys**):

**Option keys** You are here: [Maintenance](#) > [Option keys](#)

Key	Description
<input type="checkbox"/> 116341S00-1-653CD1B6	Starter Pack

[Delete](#) [Select all](#) [Unselect all](#)

**System information**

Hardware serial number: XXXXXXXXXX

Active options: 0 Non Traversal Calls, 5 Traversal Calls, 50 Registrations, 900 TURN Relays, Expressway, Encryption, FindMe, Starter Pack.

**Software option**

Add option key: \*  [i](#)

[Add option](#)

## Call licenses

By default, the Starter Pack supports up to 5 simultaneous calls. Extra traversal call license option keys can be added if required; however the Starter Pack has a maximum limit of 25 simultaneous calls.

The Starter Pack can only be licensed for traversal calls. It does support non-traversal calls but will consume a traversal license when a non-traversal call occurs.

## Configuring the routable address of the VCS

The routable address of the VCS (its FQDN) is the address supplied by the provisioning system to the provisioned device for it to use as its SIP registrar (the address to which it sends registration requests).

1. Go to **System > Clustering**.
2. Configure the **Cluster name** to the routable address of the VCS: ideally the DNS SRV address of the VCS, alternatively a DNS A record or an IP address.  
Typically your IT department will supply the FQDN for this VCS and ensure that the network is configured to route SIP calls, HTTPS and other IP traffic to this VCS when addressed to the FQDN.  
You must configure the **Cluster name** regardless of whether the VCS is part of a cluster.
3. Click **Save**.

### Clustering

You are here: [System](#) > [Clustering](#)

**Configuration**

Cluster name (FQDN for Provisioning)	<input type="text" value="vcs.example.com"/>	
Cluster pre-shared key	<input type="password"/>	
Configuration master	<input type="text" value="1"/>	
Peer 1 IP address	<input type="text"/>	
Peer 2 IP address	<input type="text"/>	
Peer 3 IP address	<input type="text"/>	
Peer 4 IP address	<input type="text"/>	
Peer 5 IP address	<input type="text"/>	
Peer 6 IP address	<input type="text"/>	

## Configuring a SIP domain

The VCS must be configured with the SIP domain to be used for this installation.

To configure a SIP domain:

1. Go to **Configuration > Domains**.
2. Click **New**.
3. Enter the domain name into the **Name** field, such as **example.com**.
4. Click **Create domain**.
5. The **Domains** page displays all configured SIP domain names.

### Domains

You are here: [Configuration](#) > [Domains](#) > [New](#)

**Configuration**

Domain name	<input type="text" value="example.com"/>	
-------------	--	--

## Enabling FindMe

FindMe must be enabled and configured for use.

1. Go to **Applications > FindMe**.
2. Configure the fields as follows:

<b>FindMe mode</b>	<i>On</i>
<b>Caller ID</b>	<i>FindMe ID</i> : the caller ID of a call being made through this VCS is replaced with the relevant FindMe ID.
<b>Restrict users from configuring their devices</b>	<p>Controls if users are restricted from adding, deleting or modifying their own devices. The default is <i>Off</i>.</p> <p>By default FindMe users are allowed to configure further devices in addition to any principal or provisioned devices assigned to them by the system administrator. This setting can be used to stop users from adding their own devices and restrict them to being able to only maintain their locations and their associated devices.</p>
<b>Device creation message</b>	<p>Only visible when <b>FindMe mode</b> is <i>On</i>. The text entered here is displayed to users when they add a device to their FindMe configuration. A limited set of HTML markup is supported in the message which is previewed in the window at the bottom of the page when you click <b>Save</b>. Refer to the online help for more information on the tags supported.</p> <p>An example message might be:          Phone numbers: use the prefix <code>&lt;b&gt;9&lt;/b&gt;</code></p>

3. Click **Save**.

**FindMe configuration** You are here: [Applications](#) > [FindMe](#)

**Configuration**

FindMe mode:  ⓘ

Caller ID:  ⓘ

Restrict users from configuring their devices:  ⓘ

Device creation message:  ⓘ

Cluster name (FGDN for Provisioning): vcs.example.com

For more details on the use of Caller ID and FindMe ID, see [Determining the FindMe ID for a caller \[p.26\]](#).

## Configuring device authentication

You are recommended to use device authentication – verifying that endpoints can identify themselves with a username and password known to the VCS.

The VCS supports 3 different methods of verifying authentication credentials:

- against an on-box local database
- via an LDAP connection to an external H.350 directory service
- via direct access to an Active Directory server using a Kerberos connection (NTLM challenges only)

The VCS attempts to verify the credentials presented to it by first checking against its on-box local database of usernames and passwords. If the username is not found in the local database, the VCS may then attempt to verify the credentials via a real-time LDAP connection to an external H.350 directory service. The directory service, if configured, must have an H.350 directory schema for either a Microsoft Active Directory LDAP server or an OpenLDAP server.

Along with one of the above methods, for those devices that support NTLM challenges, the VCS can alternatively verify credentials via direct access to an Active Directory server using a Kerberos connection. The direct Active Directory authentication via Kerberos method is only supported by a limited range of endpoints – at the time of writing, only Cisco Jabber for iPad and Jabber Video. If used, other non-supported endpoint devices will continue to authenticate using one of the other two authentication methods. See [Appendix 4: Jabber Video and Active Directory \(NTLM\) authentication \[p.27\]](#) for more information.

Note that appropriate prompts are given to set up the user's endpoint authentication credentials in the local database when configuring user accounts.

See [Device Authentication on VCS Deployment Guide](#) for more information about device authentication in general.

### Configure the Default Zone to check credentials

This ensures that the VCS checks the credentials of provisioning requests, and call requests from unregistered endpoints.

1. Go to **Configuration > Zones > Zones**.
2. Click on **DefaultZone** to go to the **Default Zone** page.
3. Set **Authentication policy** to *Check credentials*.  
Note that Jabber Video users will not be able to sign in if the **Authentication policy** setting is *Do not check credentials*
4. Click **Save**.

**Default zone** You are here: [Configuration](#) > [Zones](#) > [Zones](#) > [Default zone](#)

**Policy**

Authentication policy:  ⓘ

**SIP**

Media encryption mode:  ⓘ

ICE support:  ⓘ

Use Default Zone access rules:  ⓘ

### Configure the Default Subzone to check credentials

This ensures that the VCS checks the credentials of messages received through the Default Subzone. This includes registration requests, phone book requests and presence messages.

1. Go to **Configuration > Local Zone > Default Subzone**.
2. Set **Authentication policy** to *Check credentials*.  
Note that endpoints will not be able to publish presence or use phone books if the **Authentication policy** setting is *Do not check credentials*.
3. Click **Save**.

If you configure additional subzones, you are recommended to set the authentication policy of each of those subzones to also check credentials.

**Default Subzone** You are here: [Configuration](#) > [Local Zone](#) > [Default Subzone](#)

**Policy**

Registration policy:  ⓘ

Authentication policy:  ⓘ

**SIP**

Media encryption mode:  ⓘ

ICE support:  ⓘ

**Total bandwidth available**

Bandwidth restriction:  ⓘ

Total bandwidth limit (kbps): \*  ⓘ

**Calls into or out of the Default Subzone**

Bandwidth restriction:  ⓘ

Per call bandwidth limit (kbps): \*  ⓘ

**Calls entirely within the Default Subzone**

Bandwidth restriction:  ⓘ

Per call bandwidth limit (kbps): \*  ⓘ

## Enabling Presence Server (optional)

The Presence Server allows provisioned clients to see the presence status (Online, Away, Busy in a call and Offline) of other clients.

1. Go to **Applications > Presence**.
2. Configure **SIP SIMPLE Presence Server** to *On*.
3. Click **Save**.

**Presence** You are here: [Applications](#) > Presence

**PUA**

SIP SIMPLE Presence User Agent  ⓘ

Default published status for registered endpoints  ⓘ

**Presence Server**

SIP SIMPLE Presence Server  ⓘ

## Creating user accounts

You must configure an account for each user:

1. Go to **Users > FindMe accounts** and click **New**.
2. Configure the fields as follows:

<b>Username</b>	<p>The username for logging into this user account, for example name.surname.</p> <p>Note that from X7.1 and later, the username is case insensitive. This same username must be used as the name in the local authentication database if device authentication is enabled.</p> <p>This username is also used to create the FindMe default device URI and the provisioned device URI. To create these as a valid SIP URI, the username must consist of alphanumeric characters but not spaces, the @ sign or extended characters (such as ö or â). For the full set of allowed characters, see <a href="#">Characters allowed in SIP URIs [p.26]</a>.</p>
<b>Display name</b>	<p>The user's name without formatting restrictions. It is displayed on the user search page and used in phone books. For example Name Surname</p>
<b>Phone number (optional)</b>	<p>The E.164 caller ID to be presented on outdialed H.323 calls, e.g. to ISDN gateways. It must only contain digits – do not include any spaces, hyphens or brackets.</p> <p>If calls may be placed to an ISDN gateway, ensure that the format of this phone number matches the requirements of the ISDN provider.</p>
<b>FindMe ID</b>	<p>The FindMe ID is a unique alias through which the user can be contacted on all of their endpoints. It can be a URI, an H.323 ID or an E.164 number.</p> <p>For use with SIP devices such as Jabber Video, the FindMe ID must be in the form of a SIP URI, for example, name.surname@example.com.</p>
<b>Initial and Confirm password</b>	<p>The password to log into the user's account on the VCS.</p> <p>The password entries are only displayed if <b>FindMe authentication source</b> is set to <i>Local</i> (<b>Users &gt; LDAP configuration</b>).</p>
<b>Principal devices</b>	<p>This section identifies the principal devices that can be provisioned for this user. These are also the devices that can be called when somebody dials the user's FindMe ID.</p> <p>Enable (set to <i>On</i>) all of the device types that apply to this user.</p> <p>The URI of each selected device is generated automatically based on a combination of the <b>Username</b>, <b>FindMe ID</b> and device type. It takes the format &lt;username&gt;.&lt;device type&gt;@&lt;domain portion of FindMe ID&gt;.</p> <p>You can also specify the URI of an additional <b>Other device</b>, such as a cell phone, to include in the user's FindMe.</p>

- When a principle device is selected (set to *On*), an **Authentication** field is displayed with a link to the **Local authentication database** page. If you are using the local database as the authentication credentials store, click on the link to add or edit the user's credentials in the local authentication database. See [Creating authentication credentials for the user \[p.11\]](#) below for details.
- Click **Save**.
- Repeat these steps to create accounts for all users.

**Create user account**
You are here: [Users](#) > [FindMe accounts](#) > Create user account

**User details**

Username	*	<input type="text" value="name.surname"/>	i
Display name	*	<input type="text" value="Name Surname"/>	i
Phone number		<input type="text"/>	i

**FindMe**

FindMe ID (dialable address)	*	<input type="text" value="name.surname@example.com"/>	i
Initial password	*	<input type="password" value="•••••"/>	i
Confirm password	*	<input type="password" value="•••••"/>	i

**Principal devices**

Jabber Video device	On	i	URI:name.surname.movi@example.com
Cisco Jabber for iPad device	Off	i	
E20 device	Off	i	
EX60 device	Off	i	
EX90 device	Off	i	
MX200 device	Off	i	
SX20 device	Off	i	
Other device	Off	i	
Authentication	<a href="#">Add/edit user account in local database (if user is not authenticated via H.350 directory)</a> for username name.surname and their sign in password		

Additional users can be added later, as and when required, by returning to the User accounts page and clicking New.

The VCS Starter Pack Express supports a maximum of 50 registered users.

After an account has been set up, its details (except the Username) can be edited by selecting the user on the [Users > FindMe accounts](#) page and then clicking **View/Edit**.

## Creating authentication credentials for the user

When device authentication (credential checking) has been enabled, the credentials entered into the VCS's local database must exactly match those used to sign on to Jabber Video – otherwise provisioning requests, registration requests, call requests and phone book requests will be rejected.

In a typical installation you are recommended to use the same password for both the user's Jabber Video authentication credentials and for their user account login (where users access their FindMe details).

1. From near the bottom of the **Create user account** or **Edit user account** pages, click on **Add/Edit user account in local authentication database**. Alternatively using the menu go to **Configuration > Authentication > Devices > Local database**.
2. Click **New**.
3. Configure the fields as follows:

<b>Name</b>	The credential name must be the same as the user account username – as indicated by the link on the <b>Create user account</b> and <b>Edit user account pages</b> . It is also the same as the Jabber Video sign in username. All the usernames must match. Note that from X7.1 and later, usernames are case insensitive.
<b>Password</b>	The password must be the same as the Jabber Video sign in password. (Typically this is also the same as the user account password used for accessing FindMe details.)

4. Click **Create credential**.
5. If appropriate, close any new window or tab that was opened to create this credential.

## Configuring bandwidths provisioned to endpoints (optional)

The VCS can provision bandwidth limits to Jabber Video clients and other endpoints. This configures the client with default values for it to use for incoming and outgoing bandwidth control.

1. Go to **Applications > Provisioning**.
2. Set **Movi bandwidth** to *On*.
  - a. Check and set the maximum incoming bandwidth to, for example, 512kbps.
  - a. Check and set the maximum outgoing bandwidth to, for example, 384kbps.
3. Enable bandwidth provisioning for other device types as required.
4. Set **Movi ClearPath** to *On*.
5. Click **Save**.

### Provisioning

You are here: [Applications](#) > Provisioning

#### Bandwidth limits

Jabber Video bandwidth	On	<input type="text" value="512"/>	Out	<input type="text" value="384"/>
Cisco Jabber for iPad bandwidth	Off			
E20 bandwidth	Off			
Ex60 bandwidth	Off			
Ex90 bandwidth	Off			
MX200 bandwidth	Off			
SX20 bandwidth	Off			

#### ClearPath

Jabber Video ClearPath	Off
------------------------	-----

Save

Note that VCS links and pipes can also be used for more advanced bandwidth control.

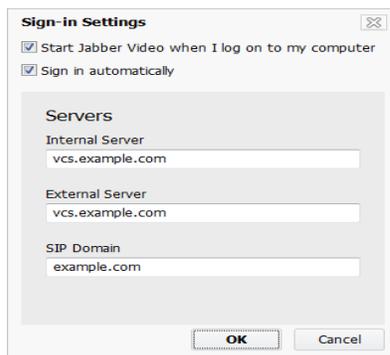
# Installing and configuring Jabber Video

As part of the VCS Starter Pack Express solution, the latest version of the Cisco Jabber Video for TelePresence software client can be downloaded from [www.cisco.com](http://www.cisco.com). Jabber Video can be installed by IT administrators, or more typically will be supplied to end users for them to install.

After Jabber Video has been installed, it must be configured with user credentials and connection details for the VCS Starter Pack Express:

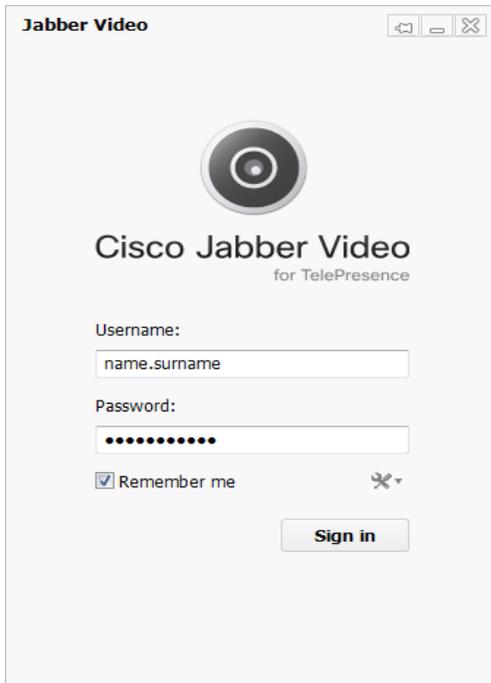
1. Start Jabber Video.
2. Click on the tools menu (above the Sign in button) and select **Sign-in settings**.
3. Configure the fields as follows:

<b>Start Jabber Video when I log on to my computer</b>	Select this if you want Jabber Video to run automatically when you log on to your computer.
<b>Sign in automatically</b>	Select this if you want Jabber Video to sign in automatically when the application starts.
<b>Internal Server</b>	The DNS name or IP address of the private side of the VCS.
<b>External Server</b>	The DNS name or IP address of the public side of the VCS.
<b>SIP Domain</b>	The SIP domain should be the same as configured on the VCS's <a href="#">Configuration &gt; Domains</a> page.



4. Click **OK** to return to the sign in page.
5. Configure the fields as follows:

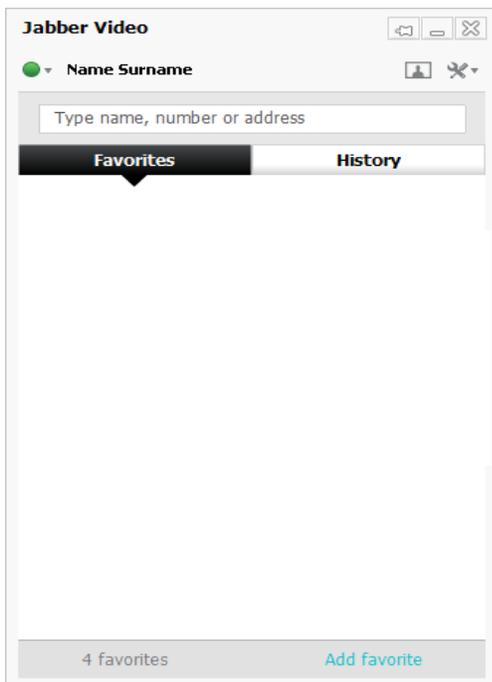
<b>Username</b>	The same username as entered on the VCS in the <a href="#">Create user account</a> page ( <a href="#">Users &gt; FindMe accounts</a> ) and as stored in the local database ( <a href="#">Configuration &gt; Authentication &gt; Devices &gt; Local database</a> ).
<b>Password</b>	This must be the same password as the authentication credential password entered for this user ( <a href="#">Configuration &gt; Authentication &gt; Devices &gt; Local database</a> ). Typically this will be the same as the user's account password on the VCS.
<b>Remember me</b>	Select this to save you from typing in your username and password every time you start Jabber Video.



6. Click **Sign in**.

### Making calls

When you are signed in to Jabber Video, calls can be made by entering the FindMe ID of another user in the **Type name, number or address** field and then pressing **Enter**.



# Testing the Starter Pack installation

## Local system testing

Start by testing Jabber Video devices locally registered to the VCS Starter Pack Express.

1. Configure three users, including their associated credentials.
2. Install three Jabber Video clients.
3. Connect the three Jabber Video PCs to the same network as the VCS Starter Pack Express.
4. With each of the Jabber Video clients, sign in as a different user (for example User1, User2 and User3):
  - a. Ensure that sign in is successful.
  - b. Ensure that each Jabber Video user can call the others by entering another user's FindMe ID in the **Type name, number or address** field and then pressing **Enter**.

Result matrix – local only		Receiving Jabber Video		
		User1 (local)	User2 (local)	User3 (local)
Calling Jabber Video	User1 (local)	n/a		
	User2 (local)		n/a	
	User3 (local)			n/a

## Public network testing

When local system testing is successful, test Jabber Video in the public network.

1. Sign out of two of the Jabber Video clients (User2 and User3) and connect these two Jabber Video PCs to the public internet.
2. With the public internet Jabber Video clients, sign in as User2 and User3:
  - a. Ensure that sign in is successful.
  - b. Ensure that each Jabber Video user can call the others by entering another user's FindMe ID in the **Type name, number or address** field and then pressing **Enter**.

Result matrix – local and internet		Receiving Jabber Video		
		User1 (local)	User2 (internet)	User3 (internet)
Calling Jabber Video	User1 (local)	n/a		
	User2 (internet)		n/a	
	User3 (internet)			n/a

## Behind home/hotel firewall testing

When public network testing is successful, test Jabber Video behind a firewall.

1. Sign out of the two Jabber Video clients in the public network and connect them behind a home/hotel firewall.
2. With the Jabber Video clients connected behind the firewall, sign in as User2 and User3:
  - a. Ensure that sign in is successful.
  - b. Ensure that each Jabber Video user can call the others by entering another user's FindMe ID in the **Type name, number or address** field and then pressing **Enter**.

Result matrix – local and behind firewall		Receiving Jabber Video		
		User1 (local)	User2 (firewall)	User3 (firewall)
Calling Jabber Video	User1 (local)	n/a		
	User2 (firewall)		n/a	
	User3 (firewall)			n/a

# Checking the status of the Provisioning Server

You can check the status of the Provisioning Server to monitor the provisioning requests received, and to see a list of the devices that have been provisioned.

## Checking the Provisioning Server

Go to **Status > Applications > Starter Pack > Starter Pack status** to check on the status of the Provisioning Server and to view how many devices are currently being provisioned (per device type).

**Starter Pack status** You are here: [Status](#) > [Applications](#) > [Starter Pack](#) > Starter Pack status

Provisioning server	
Status	Active
Total requests received	31
Successful provisioning responses sent	31
Failed: account not found	0
Failed: account has no provisioned devices	0
Failed: other	0
Model licenses	
e20	0 used
ex80	0 used
ex90	1 used
jabbtablett	0 used
movi	4 used
mx200	0 used
sx20	0 used
Phone book server	
Status	Active
Search requests received	0

## Checking provisioned devices

Go to **Status > Applications > Starter Pack > Provisioned device status** to see a list of all of the devices that have submitted provisioning requests to the Provisioning Server.

**Provisioned device status** You are here: [Status](#) > [Applications](#) > [Starter Pack](#) > Provisioned device status

**Filter**

Dial string

Active (licensed) <all>

Model

Version

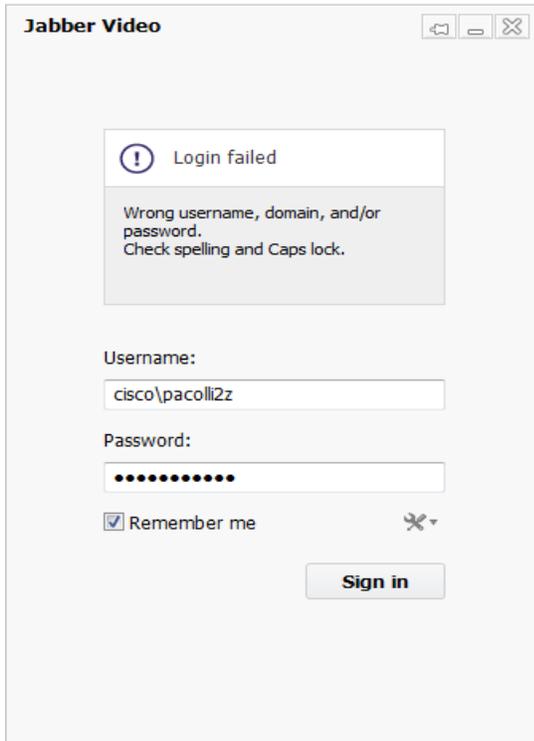
Records: 5 Page 1 of 1

Dial string	First provisioning request	Most recent request	Active (licensed)	Reason	Model	Version	Actions
<a href="#">alice.movi@example.com</a>	2012-02-02 12:01:52	2012-02-02 13:02:05	Yes		movi	4.2.0.10318	<a href="#">View</a>
<a href="#">bob.movi@example.com</a>	2012-01-19 09:22:30	2012-01-26 10:25:13	Yes		movi	4.2.0.10318	<a href="#">View</a>
<a href="#">chris.movi@example.com</a>	2012-01-20 17:19:28	2012-01-31 01:14:50	Yes		movi	4.2.0.10318	<a href="#">View</a>
<a href="#">dave.ex90@example.com</a>	2012-01-13 18:42:42	2012-02-02 10:43:40	Yes		ex90	TC5.0.1.2752	<a href="#">View</a>
<a href="#">jim.movi@example.com</a>	2012-02-02 11:26:33	2012-02-02 12:39:05	No	Timeout	movi	4.2.0.10318	<a href="#">View</a>

# Appendix 1: Troubleshooting

## Jabber Video sign in messaging

If there are problems signing in to Jabber Video, a status message is displayed, for example:



Possible messages include:

### Login failed – Wrong username, domain, and / or password

- Check and correct these items either at the Jabber Video sign in, or on the VCS. Mistyped domain names are a common cause of this problem (see [Configuration > Domains](#)). The Jabber Video SIP domain must match a SIP domain on the VCS that is provisioning the Jabber Video and to which Jabber Video will register.
- Check that VCS allow / deny lists are not preventing the registration.
- Check that the Default Zone is configured with an **Authentication policy** of *Check credentials* or *Treat as authenticated*.
  - Jabber Video sign ins will fail if the **Authentication policy** is *Do not check credentials*.
  - If authentication is set to *Check credentials* (recommended) the appropriate username and password must be configured in the local authentication database.
- Check that the account username, the authentication credential name, and the Jabber Video sign in username all match (note that from X7.1 or later, usernames are case insensitive).
  - If the Jabber Video sign in username and the authentication credential name do not match then the initial Subscribe will be rejected as unauthorized.
  - If the Jabber Video sign in username and the account username do not match then the Subscribe is authenticated but the Notify is sent with Reason: rejected; Content length: 0.

### Login failed – Out of licenses

- Check the number of registered users; a maximum of 50 simultaneous registrations is supported.
- Make sure that Jabber Video is trying to connect to the correct IP address for the VCS.

### Login failed – The server did not respond in time

This means the provisioning request was acknowledged by the server, but no provisioning message was received by Jabber Video.

- Make sure that no firewalls are blocking communication from the VCS to Jabber Video.
- Make sure that the VCS can contact the IP address of Jabber Video (or if behind a home, small business or hotel firewall, the outside IP address of that firewall).

### Login failed – Could not find server in DNS

The term “server” refers to the provisioning server before Jabber Video is provisioned, and the VCS after Jabber Video is provisioned.

- Check that the **Internal Server** and **External Server** names on the Jabber Video **Sign-in Settings** dialog are resolvable by the Jabber Video PC, for example by attempting to ping the DNS names. (These are the addresses Jabber Video uses when requesting to be provisioned.)
- Check that the **Cluster name (FQDN for provisioning)** on the **System > Clustering** page of VCS is resolvable by the Jabber Video PC, for example by attempting to ping the DNS name.

### Login failed – Unable to connect to server

The term “server” refers to the provisioning server before Jabber Video is provisioned, and the VCS after Jabber Video is provisioned.

- Check that the **Internal Server** and **External Server** names on the Jabber Video **Sign-in Settings** dialog are resolvable by the Jabber Video PC and resolve to the VCS Starter Pack Express address, for example by attempting to ping the DNS names. (These are the addresses Jabber Video uses when requesting to be provisioned.)
- Check that the **Cluster name** on the **System > Clustering** page of VCS is resolvable by the Jabber Video PC and resolves to the VCS Starter Pack Express address, for example by attempting to ping the DNS name.
- Check that **TCP mode** and **TLS mode** are both set to *On*. (Check this on the **Configuration > Protocols > SIP** page.)
- Make sure the VCS is configured to listen on the ports Jabber Video is trying to access, by default **TCP port = 5060** and **TLS port = 5061**. (Check this on the **Configuration > Protocols > SIP** page.)

### Call failed – The user could not be found. The user is offline or does not exist.

Check the called ID entered in the **Type name, number or address** field (past entries are available under the **Recent calls** tab).

If this is correct, check:

- Is the called party offline?
- Is the called party dialable on this network?

### Call failed – The user could not be found

Check the called ID entered in the **Type name, number or address** field (past entries are available under the **Recent calls** tab).

If this is correct, check:

- Is the called party offline?
- Is the called party dialable on this network?

### Call failed – The user could not be reached. Please try again later.

The user did not respond.

### Call failed – An error was received from the server

The call was rejected by the VCS. The error message received from the server is in the user's Audit.log.

### Call failed – Not enough call licenses

All available licenses may be in use. Check the call licenses usage on the VCS **Overview** page.

### Phone book searches do not return any entries

Phone book search requests are rejected if the Default Subzone is configured with an **Authentication policy** of *Do not check credentials*.

You are recommended to set the Default Subzone authentication to *Check credentials* and configure the appropriate usernames and passwords in the local authentication database.

### Failed to update presence

Jabber Video displays a “Failed to update Presence” message if the Default Subzone is configured with an **Authentication policy** of *Do not check credentials*.

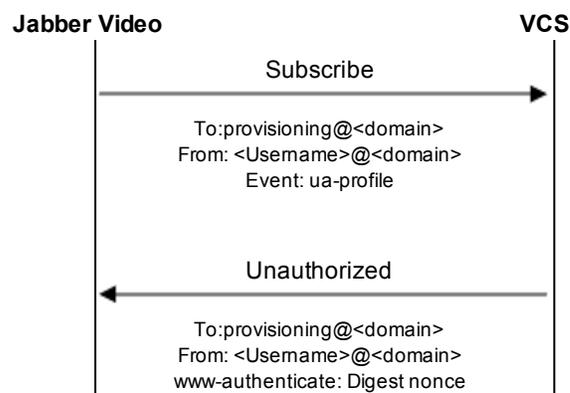
You are recommended to set the Default Subzone authentication to *Check credentials* and configure the appropriate usernames and passwords in the local authentication database.

## Signaling level troubleshooting

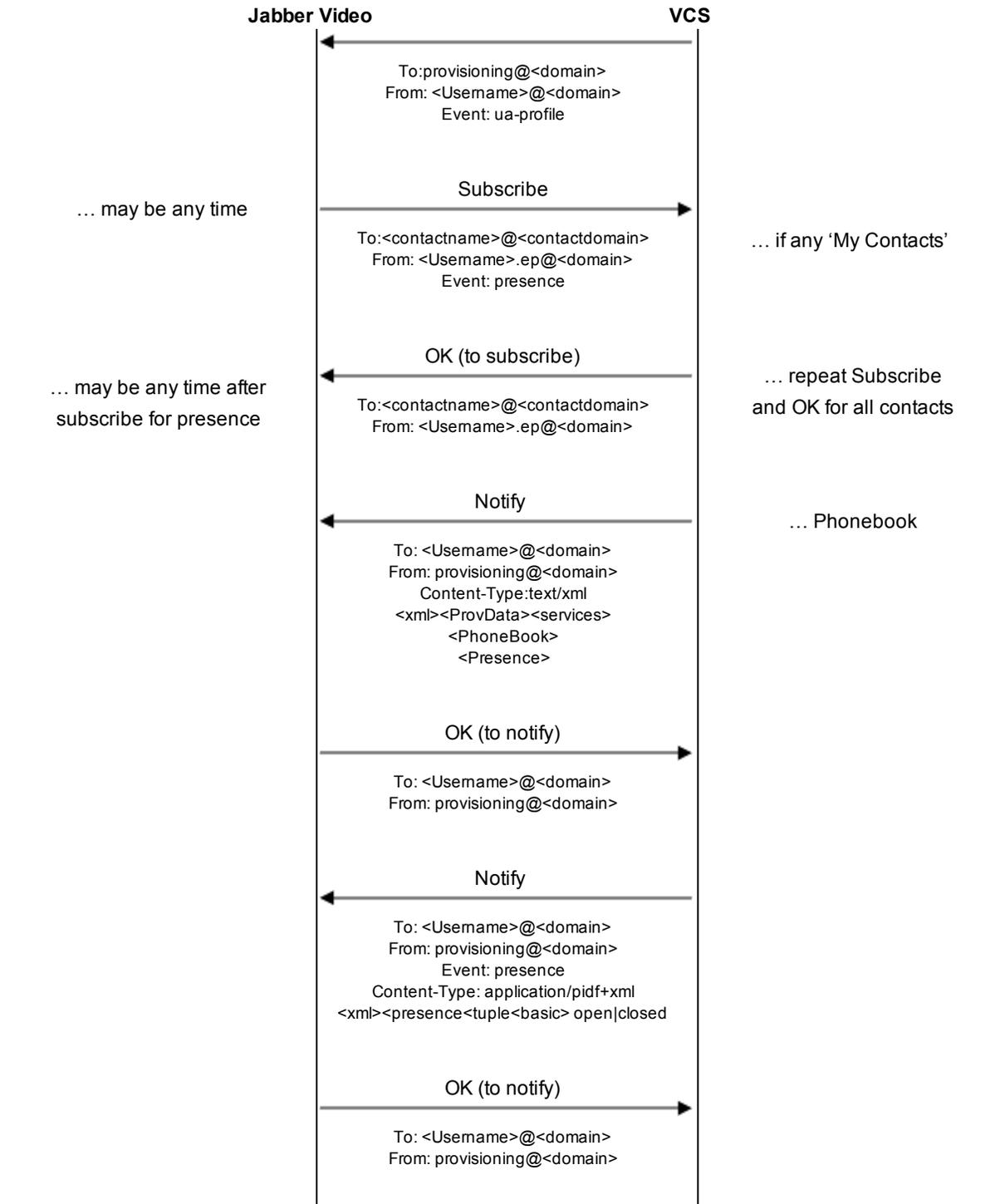
Troubleshooting is usually best carried out in the first instance by taking a Wireshark (a free, open-source packet analyzer) trace on the PC running Jabber Video.

Note, however, that if Jabber Video is communicating over TLS, then messages will be encrypted and not decodable. If possible, turn off TLS or use SIP logging.

On the Wireshark trace check that the following sequence is observed:

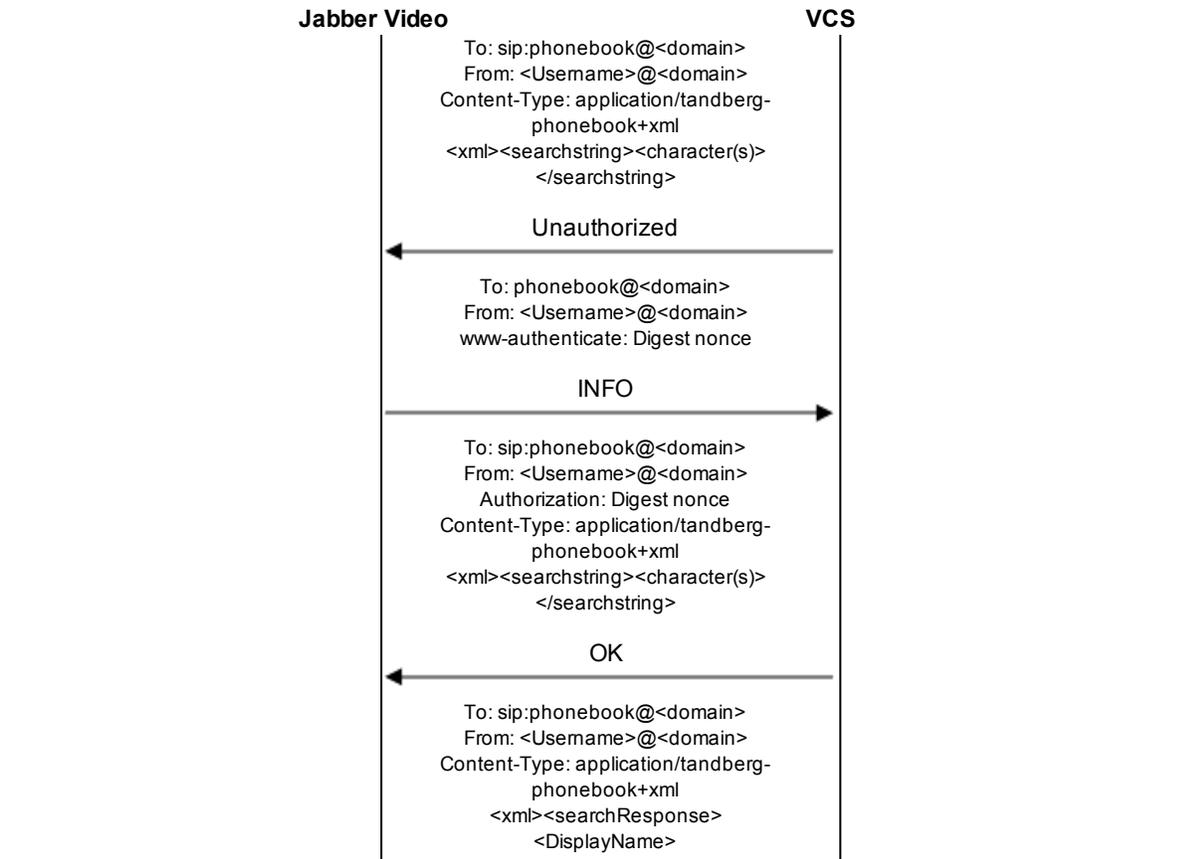






When Jabber Video requests phone book information the message flow is:





As more characters are typed in Jabber Video's **Type name, number or address** field, further INFO messages (with Authorization header) are sent with more searchstring characters specified. For each INFO message an OK comes back with the first 10 phone book entries that match that searchstring.

Note that: 401 Unauthorized or 407 Proxy authentication required responses may extend the trace.

- Failure to get any response to the initial subscribe: the wrong **Internal Server / External Server** values may have been configured (or DNS is wrongly converting the name to IP address).
- 401 Unauthorized for a second time to the initial subscribe: the Username / Password credentials on Jabber Video do not match those configured in the authentication page of VCS.
- No OK to Register: check that the SIP domain configured in Jabber Video matches the SIP domain configured on VCS.
  - Check that Allow and Deny lists are not blocking this registration.
  - Check the VCS Event Log ([Status > Logs > Event Log](#)).

## Appendix 2: Basic VCS configuration

Follow the process specified in *VCS Getting Started Guide* to connect, power up, configure the IP address, change passwords and gain access to the VCS via the web browser.

### System name

1. Go to **System > Administration** and set **System name** to a name that represents this VCS, for example "VCS server".
2. Enable or disable Telnet, SSH, HTTP and HTTPS as required.

Note that HTTP is just a redirect to HTTPS; turning off HTTPS will prevent web access to the VCS.

### DNS

1. Go to **System > DNS** and configure a default DNS server address in the Default DNS server **Address 1** field. If other DNS servers are available, they can be added for DNS server resilience.
2. Set **Local host name** to be the DNS hostname for this VCS; this name must not have any spaces in it.
3. Set **Domain name** to be the suffix which when added to an unqualified DNS name makes it into an FQDN.

Note that <Local host name>.<DNS domain name> = FQDN of this VCS.

### NTP

1. Go to **System > Time** and configure the **NTP server 1** address and **Time zone** in which the VCS is located.
2. Check that after clicking **Save** and returning to this page the **State** shows Synchronized.

### Further information

For further details on the configuration and operation of VCS, see *VCS Administrator Guide*.

## Appendix 3: Additional information

### Characters allowed in SIP URIs

The following character set is allowed in SIP URIs (further details may be found in RFC 3261):

a-z / A-Z / 0-9 / "-" / "\_" / "." / "!" / "~" / "\*" / "" / "(" / ")" / "&" / "=" / "+" / "\$" / "," / ";" / "?" / "/"

If other characters are needed they must be “escaped” using “%” followed by a pair of hexadecimal digits that represents the ASCII value for the required character.

For example, "alice smith@example.com" must be encoded as alice%20smith@example.com (where %20 represents the space character).

### Determining the FindMe ID for a caller

VCS can only overwrite the Caller ID with a FindMe ID if:

- the call signaling passes through the VCS (or VCS cluster) where the FindMe data is held
- the VCS can identify a FindMe as the owner of the endpoint caller ID

If either of these conditions are not met, the incoming caller ID will be passed through unchanged.

The VCS identifies a FindMe as the owner of the endpoint caller ID if the incoming caller ID provided in the call:

- matches a FindMe device which is only found in a single FindMe account

or

- matches a single principal FindMe device (if the same device address is associated with more than one FindMe profile)

#### Principal devices

Note that principal devices are designed to be key devices for the user who owns them:

- A device is identified as a principal device if it has been configured by the VCS administrator in the **Principal devices** section of the user account page (**Users > FindMe accounts**), then select or create an account).
- Users cannot delete principal devices from the list of FindMe devices in an account.

### Known limitations

#### Modifying a user's display name

Any change to a user account **Display name** is immediately reflected in phone books and the display name returned in FindMe searches.

However, the caller ID display name in SIP messaging is only updated after the relevant Jabber Video is re-provisioned (for example, after signing out and signing back in again).

## Appendix 4: Jabber Video and Active Directory (NTLM) authentication

This section provides summary details about how to configure the VCS so that Jabber Video can authenticate via direct access to an Active Directory server (using NTLM challenges).

It also configures the VCS user account (FindMe) authentication source to use an LDAP connection to the remote directory service.

Note that this section only provides summary details. For full information, see:

- *Device Authentication on VCS Deployment Guide*
- *Authenticating VCS Accounts using LDAP Deployment Guide*

### Configure Active Directory server details in Cisco VCS

1. Go to **Configuration > Authentication > Devices > Active Directory Service**.
2. Set **Connect to Active Directory Service** to *On*.
3. Set **NTLM protocol challenges** to *Auto*.
4. Enter the configuration details for the Active Directory Service:

<b>AD domain</b>	This must be the fully qualified domain name (FQDN) of the AD domain.
<b>Short domain name</b>	This is also known as the NetBIOS domain name.
<b>Username and Password</b>	Enter the AD domain administrator username and password. The password is case sensitive.

5. Click **Save** to store the configuration and join the AD domain.  
The VCS should join the AD domain. If you receive an error message, check the following:
  - the configuration settings on this page, including the username and password
  - the VCS's CA certificate, private key and server certificate
 You can also check the **Status** area at the bottom of the **Active Directory Service** page for more information about the status of the connection to the AD domain.

### Configure the user login account (FindMe) authentication source

1. Go to **Users > LDAP configuration**.
2. Set **FindMe authentication source** to *Remote*.  
This means that when users log in to the VCS to configure their FindMe account, they will be authenticated against a remote directory service over LDAP.
3. Configure the details of the LDAP connection to the remote directory service.  
See *Authenticating VCS Accounts using LDAP Deployment Guide* for more information.

### Create user accounts

Set up a user account as described in "[Creating user accounts \[p. 10\]](#)" for each user in Active Directory that requires a Jabber Video account: Note that:

- The **Username** must be the same name as configured in Active Directory.  
(Account password details are not requested because the login account **FindMe authentication source** is set to *Remote*.)

- The **FindMe ID** must be in the form of a SIP URI, such as name.surname@example.com.
- In the **Principal devices** section, set **Jabber Video device** to *On*.
- It is not necessary to configure each user's FindMe user account / authentication credentials in the local authentication database (if the login account **FindMe authentication source** is set to *Remote*).

### Sign in to Jabber Video

Users should now be able to sign in to Jabber Video using their Active Directory credentials. Ensure that their Jabber Video is set up as described in [Installing and configuring Jabber Video \[p.14\]](#).

1. Sign in to Jabber Video:
  - a. In the **Username** field, configure <AD Short Domain Name>\username (this field is not case sensitive).
  - b. In the **Password** field, enter the password as configured in the Active Directory database for the chosen user.
2. Click **Sign in**.

A successful registration confirms that authentication of provisioning and registration of Jabber Video to a VCS now works using Active Directory database (direct) authentication.

## Appendix 5: Starter Pack and Cisco TMSPE provisioning comparison

The following table provides a feature comparison between Starter Pack provisioning and Cisco TMSPE provisioning.

	VCS Starter Pack Express	VCS with Cisco TMSPE
Jabber Video provisioning	✓	✓
Cisco Jabber for iPad provisioning	✓	✓
E20 provisioning	✓	✓
Ex60 / Ex90 provisioning	✓	✓
MX200 provisioning	✓	✓
Architecture	Centralized	Centralized/Distributed
Registrations	50	2500 per VCS
Cluster support	X	✓
Failover	X	✓
No of concurrent calls	5 (but additional traversal call licenses can be added)	Up to 500 non-traversal and 100 traversal calls per VCS
Registration capacity	50	2,500 per VCS, 10,000 per cluster
Presence Server	50 registrations	10,000 registrations
Interworking gateway	X	✓
FindMe™	50 users	Optional
Group FindMe™	X	✓
Multiway support	X	✓
SIP support	✓	✓
ICE support	✓	✓
Provisioning of Jabber Video	Basic	Advanced
Cisco TMS management	X	✓
AD import of user details	X	✓
Individual settings per user (bandwidth, phone books, encryption setting)	X	✓ (Global, Group and/or User)
Phone books	Local only	✓
Multiple user groups	X	✓

	<b>VCS Starter Pack Express</b>	<b>VCS with Cisco TMSPE</b>
Reporting	X	✓
Scheduling and booking	X	✓
Endpoint management	X	✓
Automatic Jabber Video software update alert	X	✓

## Related documents

Document number	Title
D14049	VCS Administrator Guide
D14088	FindMe Express User Guide
D14525	VCS FindMe Deployment Guide
D14819	VCS Authenticating Devices Deployment Guide
D14410	Cisco TelePresence Jabber Video Administrator Guide
D14526	Authenticating VCS Accounts Using LDAP Deployment Guide

## Document revision history

The following table summarizes the changes that have been applied to this document.

Revision	Date	Description
8	December 2013	Updated for VCS X8.1.
7	November 2012	Updated for VCS X7.2.1. Added support for Cisco Jabber for iPad.
6	August 2012	Updated for VCS X7.2.
5	June 2012	Updated for VCS X7.1.
4	January 2012	Updated for VCS X7.0.
3	November 2011	Updated for VCS X6.1.
2	November 2010	New document styles applied.
1	March 2010	Initial release.

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

© 2013 Cisco Systems, Inc. All rights reserved.