



FindMe™

Cisco TelePresence Deployment Guide

Cisco VCS X6

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Document revision history

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

Revision	Date	Description
1	March 2010	Initial release.
2	October 2010	New document styles applied.
3	February 2011	Updated for Cisco VCS X6.

Introduction

FindMe provides the ability to easily specify which endpoints (video and audio-only) should ring when someone calls a user's FindMe ID. FindMe also allows a user to specify fallback devices which will be rung if any of the primary devices are busy, and to specify fallback devices which will be rung if none of the primary devices are answered.

This deployment guide specifies the administrator level configuration required on the Cisco TelePresence Video Communication Server (Cisco VCS) for FindMe. Details of the user configuration are available in the "FindMe User Guide".

The administrator can configure Caller ID to be the user's FindMe ID. This means that called parties will see the FindMe ID of the caller, not the ID of the endpoint that they are calling from, and more importantly when that call is returned the call will be to the FindMe ID, resulting in all that user's active FindMe location phones ringing rather than just ringing the endpoint that happened to be the one they were at when they made the original call.

This guide assumes that the Cisco VCS has already been configured so that endpoints can register and video calls can be made between them. This guide specifies how to set up FindMe on the Cisco VCS, create user accounts with FindMe profiles and optionally mass provision FindMe using Cisco TelePresence Management Suite (Cisco TMS).

Note:

- ▶ If VCS is managed by TMS, it is recommended that you enable TMS Agent replication between VCS and TMS before configuring FindMe accounts.
 - ▶ If TMS Agent replication is enabled and a new VCS is used to make or extend the cluster, FindMe data on the existing VCSs will be copied to the new VCS.
 - ▶ If TMS Agent replication is not enabled and a new VCS is used to make or extend the cluster, if replication is subsequently enabled the FindMe data on all VCSs in the cluster will be lost and all user accounts will need to be re-created
-

Related documents

Document no.	Title
D14049	Cisco VCS Administrator Guide
D14088	FindMe™ User Guide
D14269	Cisco VCS Deployment Guide - Microsoft OCS 2007 (R1 and R2) and Cisco VCS Control (X5)
D14367	Cisco VCS Deployment Guide – Cluster creation and maintenance
D14368	Cisco TMS Provisioning Deployment Guide
D14526	Cisco VCS Deployment Guide – Authenticating Cisco VCS accounts using LDAP

Set up FindMe

To enable FindMe on the Cisco VCS:

1. Ensure that the VCS has the **FindMe** option key installed (**Maintenance > Option keys**). If it does not, contact your reseller to obtain a key.
2. Go to the **FindMe configuration** page (**Applications > FindMe > Configuration**).
3. Set **FindMe mode** to *On*.
4. You are recommended to set **Caller ID** to *FindMe ID*.
 - *FindMe ID*: the caller ID of a call being made through this Cisco VCS is replaced with the relevant FindMe ID.
 - *Incoming ID*: the caller ID is not altered; the caller ID presented to the called endpoint will be the ID of the endpoint initiating the call.

Note: For more details on the use of Caller ID and FindMe ID, see “Appendix 8 – Determining the FindMe ID for a caller” on page 23.

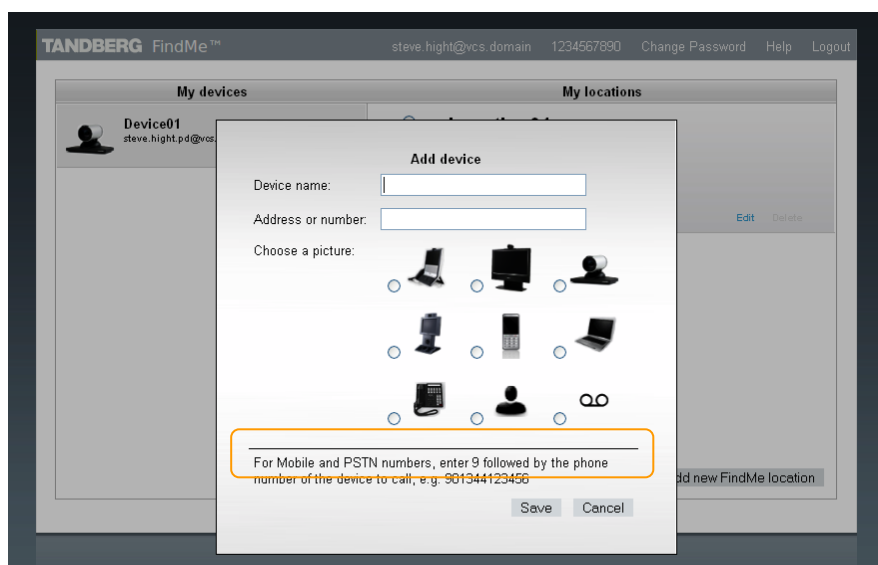
5. If you do not want users to be able to configure their own additional devices to add to their FindMe (their mobile phone number, for example) then set **Restrict users from configuring their devices** to *On*, otherwise leave it as *Off*.
6. Set up a **Device creation message**, such as “For Mobile and PSTN numbers, enter 9 followed by the phone number of the device to call, e.g. 901344123456”.

This message is displayed when a user adds a new device and is useful for specifying, for example:

- how the Cisco VCS can route calls out of a gateway to the PSTN
- the format of endpoint IDs

7. Click **Save**.

The screenshot shows the 'FindMe configuration' page in the Cisco VCS web interface. The top navigation bar includes 'Status', 'System', 'VCS configuration', 'Applications' (selected), and 'Maintenance'. There are 'Help' and 'Logout' links on the right. Below the navigation bar, the page title is 'FindMe configuration' and a breadcrumb trail shows 'You are here: Applications > FindMe > Configuration'. The main configuration area has a 'Configuration' tab selected. It contains four settings: 'FindMe mode' set to 'On', 'Caller ID' set to 'FindMe ID', 'Restrict users from configuring their devices' set to 'Off', and 'Device creation message' with a text box containing the message: 'For Mobile and PSTN numbers, enter 9 followed by the phone number of the device to call, e.g. 901344123456'. At the bottom, the 'Cluster name (FQDN for Provisioning)' is set to 'my.fqdn.company.com'. A 'Save' button is located at the bottom left of the configuration area.



The orange box above indicates example usage of the **Device creation message**.

Create user accounts and FindMe profiles

FindMe profiles are configured in user accounts. User accounts can be set up manually, one at a time through the Cisco VCS interface. Alternatively if you want to set up every user's account and their initial FindMe profile in the same format then Cisco TMS can be used to provision the accounts.

- ▶ For manual configuration see the section “Manual creation of user accounts and FindMe profiles” on page 7.
- ▶ For Cisco TMS configuration see the section “Using Cisco TMS to mass provision user accounts and FindMe” on page 8.

Manual creation of user accounts and FindMe profiles

For manual configuration, on Cisco VCS:

1. Go to the **User accounts** page (**Maintenance > Login accounts > User accounts**).
2. Click **New**.

The screenshot shows the 'Create user account' form in the Cisco VCS interface. The form is titled 'Create user account' and has a breadcrumb trail: 'You are here: Maintenance > Login accounts > User accounts > Create user account'. The form is divided into two tabs: 'User details' and 'FindMe'. The 'User details' tab contains five input fields: 'Username', 'Display name', 'Phone number', 'Initial password', and 'Confirm password'. Each field has a red asterisk indicating it is required. The 'FindMe' tab contains three input fields: 'FindMe ID (dialable address)', 'Principal device address', and 'FindMe type'. The 'FindMe type' field is a dropdown menu set to 'Individual'. At the bottom of the form are 'Save' and 'Cancel' buttons.

3. Configure the fields as follows:

Username	<p>The username for logging into this user account. For example name.surname (Username is case sensitive, and may include spaces.) If LDAP login authentication is to be used, the username must exactly match the username in the LDAP accessible database. If local database authentication is to be used, this username must be used as the name in the local authentication database. Note: the username must be different from the FindMe ID.</p>
Display name	<p>The user's name without formatting restrictions. It is displayed on the FindMe search page and used in phone books. For example Name Surname</p>
Phone number	<p>The E.164 caller ID to be presented on outdialled H.323 calls, e.g. to ISDN gateways. (It must only contain digits – do not include any spaces, hyphens or brackets.) Note: If calls may be placed to an ISDN gateway, ensure that the format of this phone number matches the requirements of the ISDN provider. If Cisco TMS provisions the user accounts, the Cisco TMS provided E.164 number will be used in preference to the value typed in here.</p>
Initial password**	The password to log into the user's account on the Cisco VCS.
Confirm password**	Repeat the password entered above.

FindMe ID	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. For example name.surname@company.com Note: the FindMe ID must be different from the username (but it can, for example, be in the format username@domain).
Principal device address	The ID of the initial device in the FindMe - specified as the URI, H.323 ID or E.164 number of the primary device of this user. Note 1: Principal devices cannot be deleted by users. Note 2: The principal device address must be different from the FindMe ID. For more details on principal devices, see “Appendix 8 – Determining the FindMe ID for a caller” on page 23.
FindMe type	Select <i>Individual</i> or <i>Group</i> (see “Appendix 6 – Individual and group FindMe types” on page 21.)

** The password entries are only displayed if **User authentication source** is set to *Local* (see “User account (FindMe) login authentication” on page 11.) If **User authentication source** is set to *Remote*, the login password will be authenticated by the LDAP connected database.

- Click **Save**.
- Repeat steps 2 to 4 to create all the required user accounts.

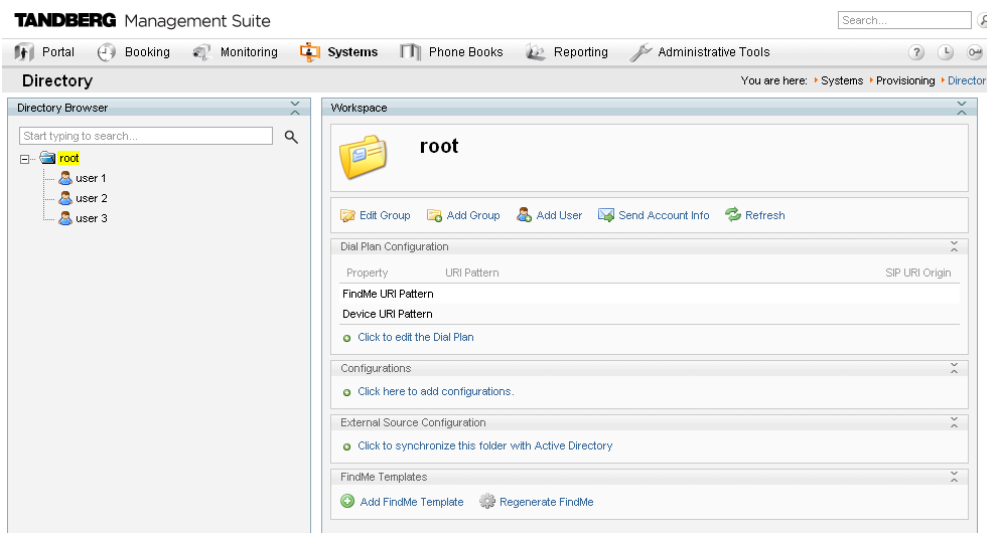
Additional FindMe devices can be added on the **Edit user account** page by following the **Edit user** link in the **Configure devices and locations** section. See the “FindMe User Guide” for more details.

Using Cisco TMS to mass provision user accounts and FindMe profiles

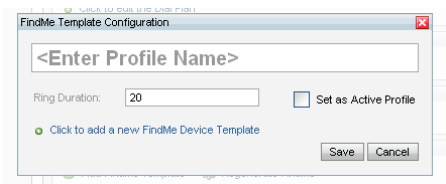
Where user accounts and their FindMe profiles are required to be in a consistent format for all users of a system, Cisco TMS can be used to create the accounts for all the users it manages.

Templates are created which are applied to a user when that user is created (or found in AD if Cisco TMS users are imported from AD).

- In Cisco TMS, go to **Systems > Provisioning > Directory**.

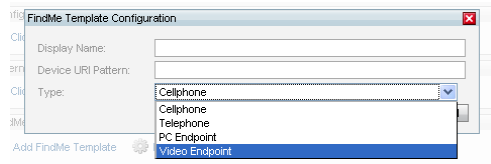


- Click **Add FindMe Template**.



3. Configure the fields as follows:

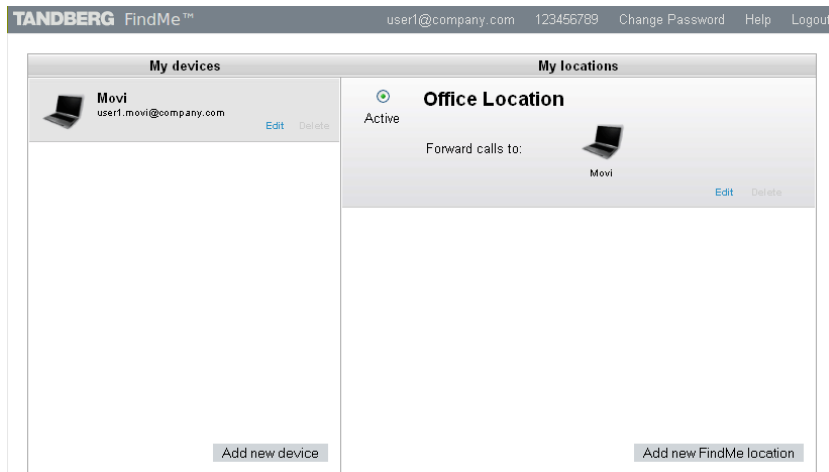
<Enter Profile Name>	The Profile Name (e.g. "Office location"). This appears as a FindMe location when a user configures their FindMe.
Ring Duration	Typically leave this set to the default value. It defines how long the devices in the current location are tried for before the call is forwarded to an alternative destination (busy or no answer – if configured), or is cleared. See "Appendix 6 – Individual and group FindMe types" on page 21.
Set as Active Profile	Select Set as Active Profile – this forces this profile location to be selected as the location to use. Note: If multiple profiles are created only set one as the Active profile.

4. Select **Click to add a new FindMe Device Template**. This is used to specify the devices that will be created for each user and associated with their FindMe location.

5. Configure the fields as follows:

Display Name	The FindMe device name, for example "Movi".
Device URI Pattern	The pattern to use to create the device address or number, for example "{username}.movi@company.com" (See "Appendix 7 – Cisco TMS device URI patterns" on page 22.)
Type	The picture to display.

The locations and devices entered here will be seen by users when they log in to their account:



- Click **Save** to save the FindMe Device template configuration.
- Click **Save** to save the FindMe Profile location configuration.
- To create the FindMe entries immediately: click **Regenerate FindMe**.

The FindMe entries created by Cisco TMS will also include each user's phone number (the E.164 caller ID to be presented on outdialed H.323 calls, for example to ISDN gateways). The value used to populate this field is the "Office phone number" field from the user's Active Directory.

Note 1: Ensure that the AD "Office phone number" field is populated with a number in the correct form to be used as a caller ID, for example for a UK type telephone number 00441189123456.

Note 2: Where user details are configured from an LDAP server, Cisco TMS will refresh the details every night. If a new user is created on the LDAP server, a new FindMe entry will be created for that user; if a user is deleted from the LDAP server, the FindMe entry will be deleted, and if the “Office phone number” changes the FindMe phone number will be updated. Any additional devices or locations added manually to the FindMe configuration are left unchanged.

Create FindMe devices automatically from provisioned devices

Provisioned endpoints can be added automatically to user accounts as FindMe devices by going to **Administrative tools > Configuration > TMS Agent Settings** and setting **FindMe Enabled** to Yes in the **Local TMS Agent (running on this TMS Server)** section.

User account (FindMe) login authentication

When a user logs in to their account (through the **User Login** screen of the Cisco VCS) to configure their FindMe profile, their password can be authenticated against either a local database stored on the Cisco VCS or against an LDAP accessible database (such as Microsoft Active Directory).

To configure how user passwords are authenticated:

1. On Cisco VCS, go to the **Login account authentication configuration** page (**Maintenance > Login accounts > Configuration**).

The screenshot shows the 'Login account authentication configuration' page in the Cisco VCS interface. The page has a breadcrumb trail: Maintenance > Login accounts > Configuration. There are two dropdown menus: 'Administrator authentication source' and 'User authentication source'. Both are currently set to 'Local'. Below these is a 'Save' button. At the bottom, there is a 'Related tasks' section with three links: 'Configure administrator accounts', 'Configure user accounts', and 'Configure session timeouts'.

- Set **FindMe authentication source** to *Local* if the VCS is to store passwords locally. The user's password is initially configured when their account is created. Users can modify their passwords by selecting the **Change Password** option at the top of the FindMe home page.
- Set **FindMe authentication source** to *Remote* if the VCS will authenticate passwords via LDAP. Users will not be able to modify their passwords through the FindMe interface.

Note: Before a *Remote* authentication source can be used, the connection details to the LDAP authentication server must be configured – see “Cisco VCS Deployment Guide – Authenticating Cisco VCS accounts using LDAP”.

Sending and returning calls via ISDN gateways

When FindMe routes a call to an ISDN gateway (e.g. to access a mobile phone, or some other ISDN accessible destination) and **Caller ID (Applications > FindMe > Configuration)** is configured to use the *FindMe ID*, the caller ID presented will be the user's E.164 **Phone number** (either entered manually when the user account was configured, or supplied by AD (from the Office Phone number) if Cisco TMS created the account for AD provisioned users).

The called party will have the E.164 phone number presented. If they return the call (and the E.164 number is routed by the network to an ISDN gateway on the video network), the call will be received by the ISDN gateway and forwarded to Cisco VCS with the E.164 **Phone number** as the called number.

Cisco VCS therefore needs to be configured to route this call to the relevant FindMe ID in order to call the user's endpoints. This can be carried out either by using another FindMe entry, or by setting up ENUM.

Using FindMe to convert E.164 numbers to FindMe IDs

Additional accounts can be used to direct E.164 dialed numbers to URIs.

For each user with both a URI-style or H.323 ID FindMe ID and an associated E.164 phone number, set up a second user account with:

- ▶ the **Username**, for example 123456-name.surname
- ▶ the **FindMe ID** set to the user's E.164 phone number
- ▶ the **Principal device address** set to the FindMe ID of their main account

This is a static mapping, so the user will not ever need to log in to this second (E.164) account. Any changes to devices associated with that user are always made in their main account.

Note: If remote account authentication is enabled and if accounts are not created on the remote database for these telephone number users, administration of these accounts will only be achievable by a Cisco VCS administrator.

Using ENUM to convert E.164 numbers to FindMe IDs

Using ENUM allows incoming E.164 numbers to be looked up in an ENUM server and the call forwarded to the URI associated with that number.

For each account set up the phone number as the ENUM address in the DNS server and map it to the FindMe ID for that account.

Configuration and implementation details for ENUM are available in the document "Cisco VCS Deployment Guide – ENUM dialing on Cisco VCS".

H.323 gateway prefix

Returning calls to PSTN / ISDN callers who have dialed through an ISDN gateway is made easier by configuring the **Gateway Caller ID (VCS configuration > Protocols > H.323)** to *Include prefix*.

The **Gateway Caller ID** options are:

- ▶ *Include prefix*: the caller ID displayed on the receiving phone is the caller's phone number prefixed by the gateway prefix. This means the recipient can directly return the call by selecting the number and pressing return call (provided that an appropriate search rule is in place to allow calls with this prefix to be routed to the ISDN gateway).

- ▶ *Exclude prefix:* the caller ID displayed on the receiving phone is just the caller's phone number. To return the call, the number must either be redialed or edited prefixing it with the gateway prefix so that the call can be routed via the gateway to the telephone network.

Note: If the Cisco VCS interworks a call from an E164 H.323 call it creates a caller ID with a domain set to the IP address of the VCS that carried out the interworking. Appropriate search rules must be created to handle the routing of these calls, or a transform implemented that converts number@IPofVCS into number@LocalSipDomain.

Replicating the FindMe database with TMS

Replicating FindMe data with TMS is mandatory for clustered VCSs and VCSs that support provisioning. Replicating FindMe data with TMS is recommended for non-clustered VCSs so that when they are extended into clusters the FindMe data can be kept and duplicated to new cluster peers.

Warning: Any FindMe data configured on your VCS **before** you enable replication with TMS will be lost and will have to be re-entered.

After replication with TMS is enabled, changes to FindMe data (made on any VCS) are replicated to TMS and any other VCSs in the cluster.

For more information on cluster configuration, and upgrading from FindMe databases held in previous versions of VCS software (X4 and earlier) to X5 see the “Cisco VCS Deployment Guide – Cluster creation and maintenance”.

Clustered VCSs or a single VCS using TMS provisioning

When a Cisco VCS is part of a cluster, or is a single Cisco VCS using Cisco TMS provisioning, the FindMe database will be replicating with Cisco TMS (in Cisco TMS, **Enable Replication** will have been enabled for this Cisco VCS).

Details of Cisco TMS provisioning can be found in the “Cisco TMS Provisioning Deployment Guide”.

Non-clustered VCS which does not use TMS provisioning

A VCS that has FindMe enabled can have replication enabled with TMS (even if provisioning is not enabled and it is not part of a cluster).

Warning: Any existing FindMe data configured on your VCS **before** you enable replication with TMS will be lost and will have to be re-entered.

Configure Cisco TMS to manage the Cisco VCS:

1. Ensure that the VCS **Cluster name** (on the **VCS configuration > Clustering** page) is configured to be the routable Fully Qualified Domain Name that addresses this Cisco VCS, for example "vcs1.example.com". If changed, click **Save**.
2. Ensure that the **Local host name** (on the **System > DNS** page) is set to be the DNS hostname for this Cisco VCS (typically the same as the **System name** in **System > System**, but excluding spaces, and unique for each Cisco VCS). If changed, click **Save**.

Note: <Local host name>.<DNS domain name> is the FQDN of this Cisco VCS.

3. Ensure that the **Host Name** of the VCS is set up in TMS:
 - a. Go to **Systems > Navigator** (and any required sub folders).
 - b. Select this Cisco VCS.
 - c. Select the **Connection** tab.
 - d. Set **Host Name** to be the FQDN of the VCS, for example vcs1.uk.company.com.
 - e. Click **Save/Try**.

You can safely ignore any error messages like “DNS config failure resolving <DNS name>: Did not find system IP address () in DNS: <Server IP>”

Ensure that Cisco TMS updates its DNS.

- f. Select the **Settings** tab.

- g. Click **Force Refresh**.
- 4. Enable FindMe database replication on this upgraded VCS:
 - a. Select the **TMS Agent** tab.
 - b. Select **Enable TMS Agent Data Replication**.
 - c. Select **Enable Authentication**.
 - d. Click **Save Settings**.

Note: This takes a while to complete (approximately 5 minutes); select the **Activity Status** page (see link at the top of the screen) to show you the list of activities: active, scheduled or in progress. Select the activity **Enable TMS Agent Data Replication for system(s) <name of system>**. This displays an activity log. Refresh this web page until the Activity **Event completed successfully** is reported.

Appendix 1 – FindMe in a VCS cluster

When FindMe is used with a VCS cluster, the FindMe option key must be enabled on every VCS peer in the cluster. The FindMe database is replicated across all peers in the cluster so that FindMe functionality can be performed on any peer that a call traverses.

OCS Relay

When FindMe is used with OCS Relay, each peer in the cluster registers a portion of the FindMe users to Microsoft Office Communications Server so that call loading is shared across cluster peers. (Calls from OCS to VCS are delivered by OCS to the VCS that registered the user.)

OCS Relay algorithmically selects which FindMe user each peer will register. In this way specific FindMe users will always register to the same VCS peer – making call analysis and debugging easier. If a cluster peer becomes inaccessible then the remaining peers algorithmically take over the FindMe entries of the non-accessible peer. When the peer becomes accessible again, the other peers relinquish the registrations of the FindMe users that belong to this returning peer.

Appendix 2 – FindMe on different VCSs in a network

For FindMe to overwrite a caller ID with the caller's FindMe ID, the call signaling must pass through the VCS or VCS cluster on which the FindMe user is configured.

Care must be taken in designing system topologies to ensure that caller ID will always be overwritten.

For example, if two users have their accounts on a VCS Control, but both are working from home on endpoints that are registered to a VCS Expressway (which has a traversal zone to the VCS Control):

- ▶ If one user calls the other user's FindMe ID, their caller ID will be overwritten by their FindMe ID, as the call signaling will go via the VCS Control (where the FindMe account resides)
- ▶ If one caller calls the other user's endpoint URI directly, the call signaling will go through the VCS Expressway, but not the VCS Control. In this scenario the caller ID will not be overwritten with the FindMe ID as the signaling is not passing through the VCS Control. (It is recommended that the user's FindMe ID is always called – not individual device URIs.)

Appendix 3 – FindMe and Presence

The Cisco VCS aggregates presence for each of the devices associated with a user's current active FindMe location. However, it can only do this for devices whose presence is managed by a Presence Server that resides on the same VCS or VCS cluster that hosts the relevant user account.

Therefore, you are recommended to enable the Presence Server on the same VCS or VCS cluster that you use to manage your user accounts and FindMe profiles.

Appendix 4 – Troubleshooting

Using search history to diagnose FindMe

Looking at search history (on the VCS or VCS Cluster that hosts the account) is usually the best place to start diagnosing FindMe-related problems.

The search history shows the search for the FindMe ID and then how User Policy forks the call to look at all the devices in the currently active location. The results of the searches for each device are also shown.

Appendix 5 – Known limitations

Microsoft Office Communication Server (OCS) – MOC device IDs as FindMe devices

If **Caller ID (Applications > FindMe > Configuration)** is configured to use the *FindMe ID*, so that the FindMe ID rather than the device's own endpoint ID is presented as the caller ID when making calls, MOC device IDs must not be put in that FindMe as a device. OCS does not like the To: or From: name changing in response messages (which is how the Cisco VCS sets the Caller ID to show as the FindMe ID).

To associate video endpoints and MOC devices, OCS relay should be enabled and the FindMe ID should be made the same as the MOC URI.

For further details on configuring Cisco VCS and OCS, see "Cisco VCS Deployment Guide - Microsoft OCS 2007 (R1 and R2) and Cisco VCS Control (X5)".

Overwriting caller IDs with E.164 phone numbers for H.323 ISDN gateways

X5.0

In X5.0, if **Caller ID (Applications > FindMe > Configuration)** is configured to use the *FindMe ID*, the FindMe phone number only overwrites the E.164 Caller ID in the User to User data; the Q.931 Caller ID is not overwritten.

Depending on the implementation of the ISDN gateway, or other H.323 receiver, it may use:

the endpoint's E.164 Alias (in the Q.931 Caller ID field)

rather than

the FindMe Phone number (in the User to User data).

X5.1 and later

The limitation in X5.0 no longer exists – both the User to User data Caller ID and the Q.931 Caller ID get overwritten with the FindMe phone number.

Phone numbers from Active Directory (AD)

If VCS user accounts are configured using TMS, and TMS users are created from AD, the **Phone number** value will be sourced from the AD Office Phone number.

For the phone number to be valid for an ISDN gateway (for the ISDN gateway to use it as a caller ID) the format of the AD Office Phone number must be acceptable to the ISDN gateway.

This typically means that the AD Office Phone number must be:

- ▶ a numeric string containing no brackets, spaces, hyphens or other non-digit characters
- ▶ must be a phone number which is configured by the network to terminate on the ISDN gateway
- ▶ in the correct format for the ISDN network, for example:
 - full number including country code: 441189123456
 - local number: 123456
 - extension number: 3456

Check the acceptable format with your ISDN supplier.

Appendix 6 – Individual and group FindMe types

Every FindMe profile is configured as either *Individual* or *Group*.

Individual

Individual mode assumes that the individual can only take a call on one device at a time.

- ▶ If any device in the current active location is busy, a call to this FindMe ID will be immediately forwarded to the on-busy devices.
- ▶ If no devices (in the current active location) were busy, after the specified ring duration the call will route to the on-no-answer devices.

Group

Group mode assumes that more than one person can take calls to this FindMe.

- ▶ If any device in the current active location is not busy, the non busy devices will ring. The call will be immediately forwarded to the on-busy devices if all devices in the current active location are busy.
- ▶ If any device in the current active location is not busy, after the specified ring duration FindMe will route the call to the:
 - on-busy devices if any current active location device was busy
 - on-no-answer devices if none of the current active location device were busy

Appendix 7 – Cisco TMS device URI patterns

Cisco TMS device URI patterns specify the structure of device URIs. When the device URI pattern is applied to a user profile the dialable ID for that user's device is formed.

Patterns can be specified as a combination of fixed characters together with meta values that can be substituted with "per user" or "per device type" values.

The set of acceptable meta values includes:

Meta value	To be substituted with
{username}	The name of the user for example firstname.lastname
{mobilePhone}	The mobile phone number as configured in AD
{device.model}	The device type such as "movi" or "e20" (based on the FindMe device template)

For example to handle an office based endpoint, the device URI pattern may be configured as:

{username}.office@company.com

See the "Cisco TMS Provisioning Deployment Guide" for more information about patterns and templates.

Appendix 8 – Determining the FindMe ID for a caller

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

- ▶ the call signaling passes through the VCS or VCS cluster that the FindMe data is held on
- ▶ 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 location).

Note:

Principal devices are designed to be key devices for the user who owns them:

- ▶ A device is identified as a principal device if it is the initially configured device for the FindMe created on Cisco VCS, or the device is a FindMe device created by Cisco TMS.
 - ▶ A principal device may not be deleted from the list of FindMe devices in an account – first it must have its principal device status unset on the **Edit principal devices** page (**Maintenance > Login accounts > User accounts**, select an account, then select **Edit principal devices**).
-

Appendix 9 – 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 "%" HexDigit HexDigit
where HexDigit HexDigit is the ASCII value for the required character.

For example, firstname%20lastname@company.com - %20 is the space character.

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