TANDBERG

Administrator guide

Movi 2.1

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TANDBERG

See: performance

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1 Introduction

Movi allows users to make and receive video calls on their PCs without understanding how video conferencing works or the company's infrastructure.

This guide is the starting point for administrators. It provides an overview of Movi functionality, and then explains how the Movi client interacts with the TANDBERG infrastructure products that it relies on.

1.1 About Movi

Movi uses SIP as the communication protocol. As a SIP client, the Movi endpoint uses the SIP Registrar/Proxy capabilities of the TANDBERG VCS and can take advantage of its interworking functionality to communicate with H.323 endpoints. The standards compliant Movi client can interact with all other TANDBERG products, as well as other standards based video endpoints.

Key features

Key features are outlined in the Movi Release Notes, and the Movi User Guide provides step-by-step instructions for the end-user features of the Movi client that are available through the user interface.

The key features of Movi 2.1 are:

- MPEG4/AAC-LD, G.722.1 and G.711 support for audio and H.264 for video
- Encryption (AES-128); see Encrypted calls with Movi later in this document
- Movi 2.1 has built-in echo cancellation to improve the audio quality of a video call. It is recommended that users disable any software-enabled noise suppression and echo cancellation provided by their web camera or other sound hardware
- Automatic bandwidth adaptation – in case of high packet loss, Movi will try to adjust the bandwidth used to fit the available bandwidth
- Movi maintains details such as the localized time and date of recent outgoing, incoming and missed calls
- When users type in the Search field, Movi retrieves matching entries from the TMS Agent's LDAP and displays them as a drop-down list. Users can then select an entry to see the presence status or click  to call
- Users can maintain a My Contacts list. My Contacts are stored locally on the PC and Movi creates a separate My Contacts list on each PC for each Widows user
- Users can override their default presence status (e.g. Online). They can also see the presence of users in their My Contacts list, and users who match a search
- When in a call users can toggle fullscreen mode by clicking  or double-clicking the video picture. To exit full screen mode, double-click the video picture or press ESC.
- Users can display the "selfview", that is, how others see them by clicking  and click again to close it. This is available irrespective of whether the user is in a call or not
- Users can turn their microphones off, and also "mute" the video stream. In this way they can prevent other participants hearing or seeing them if privacy is required
- The client can send DTMF – numbers 0 – 9, # and *. When in a call, users can click  to display the DTMF keypad. When the keypad is open, number keys on the keyboard can also be used
- Users can control whether Movi starts automatically at Windows logon and whether they are automatically signed in when Movi starts
- Single Sign On – While SSO will be fully supported in future Movi versions, Movi 2.1 allows the administrator to configure the client to automatically sign in with the same username as the windows username. The feature requires disabling authentication of the Movi client.

Related documents

Movi comes with a number of documents in addition to this Administrator Guide:

- Movi User Guide

You may also need to refer to the following which are available on the TANDBERG web site:

- Provisioning Deployment Guide
- Provisioning Deployment Troubleshooting Guide
- TMS Administrators Guide
- VCS Administrators Guide
- Frequently asked questions

1.2 Pre-requisites

This release of Movi **is not** an upgrade of Movi 1. Users of Movi 1 should contact their TANDBERG reseller or Account Manager for a trade-in offer.

Video conferencing equipment

Movi requires the following video conferencing infrastructure:

- TMS v12.1 or later
- VCS v4.1 or later

See the Provisioning Deployment Guide available on the TANDBERG web site for details about how to configure them to work with Movi.

End-user system requirements

To run the Movi client, users require a PC with:

- Processor: Any processor supporting SSE2 (e.g. Pentium IV) or better
- Memory: 512MB RAM or more
- Operating System: Windows XP SP2 and later, or Windows Vista
- Connection: An IP network connection (broadband, LAN, wireless) that provides at least 64 kbps for an audio connection, or at least 128 kbps for a video connection
- Sound card: Full-duplex, 16-bit or better

Multimedia device requirements

Because camera and microphone information is updated regularly, it is maintained on our web site in a number of frequently asked questions.

2 Movi details

This section explains some aspects of how Movi works.

2.1 Movi communication with TMS and VCS

It is possible to distinguish between two types of communication in Movi: SIP and media.

- SIP communication is always between Movi and the VCS. SIP messages are sent over TCP (non-encrypted) or TLS (encrypted)

- Media communication consists of four UDP links through which the data is transferred:
  - Two links are needed for video: one for RTP packets and one for RTCP packets
  - The two remaining links are used for audio: one for RTP packets and one for RTCP packets

  The SRTP protocol is used to encrypt the media packets.

  Media links can be established directly between the two endpoints in non-traversal calls, or between Movi and the VCS in traversal calls. As a general rule, non-traversal calls are defined as calls between two participants that are on the same network and that don't require interworking. (SIP to H.323 calls require interworking and therefore are traversal calls irrespective of whether the endpoints are on the same network). For detailed information, see the latest VCS Administrators Guide.

Keep alive messages

Movi uses keep alive messages to keep both the SIP and the media links open.

- SIP keep alive messages are sent every 24 seconds by default (this can be configured through provisioning in TMS). Also see the FAQ: Why does Movi use SIP Keep Alive messages?
- STUN keep alive messages for the media links are sent every 7 seconds

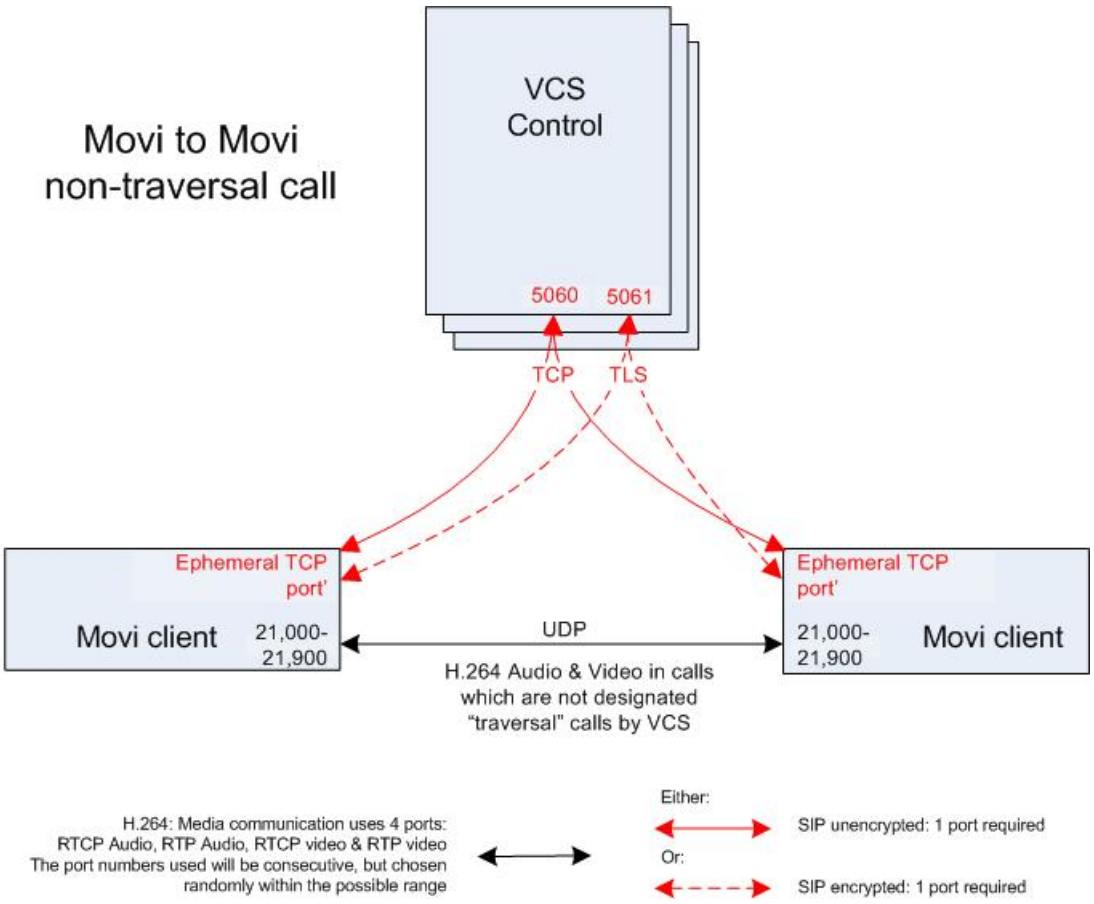
The following three diagrams illustrate communication paths in different call scenarios.

Movi to Movi call scenario

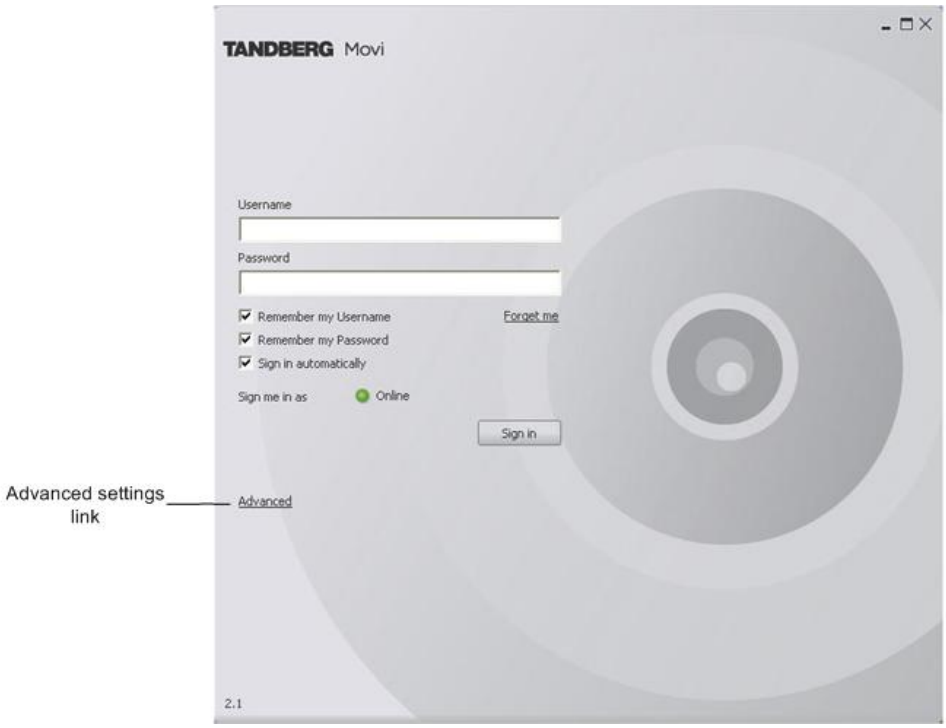
The following diagram shows a Movi to Movi call. Both Movi clients are registered to the same VCS and are in the same network; therefore the call is non-traversal, and the media communication between the two Movi clients is direct. The numbers on the Movi clients and on the VCS Control indicate the default port numbers used in such links.

While the Ephemeral TCP port is handed over to the Movi client by the TCP stack and is not configurable, it is possible to configure the ports used in the other communication links.

On the VCS it is possible to configure the SIP listening ports. Both for TCP and TLS, go to ***VCS Configurations > Protocols > SIP > Configuration*** and decide which transport layer you want to allow and which ports you want them to listen to.



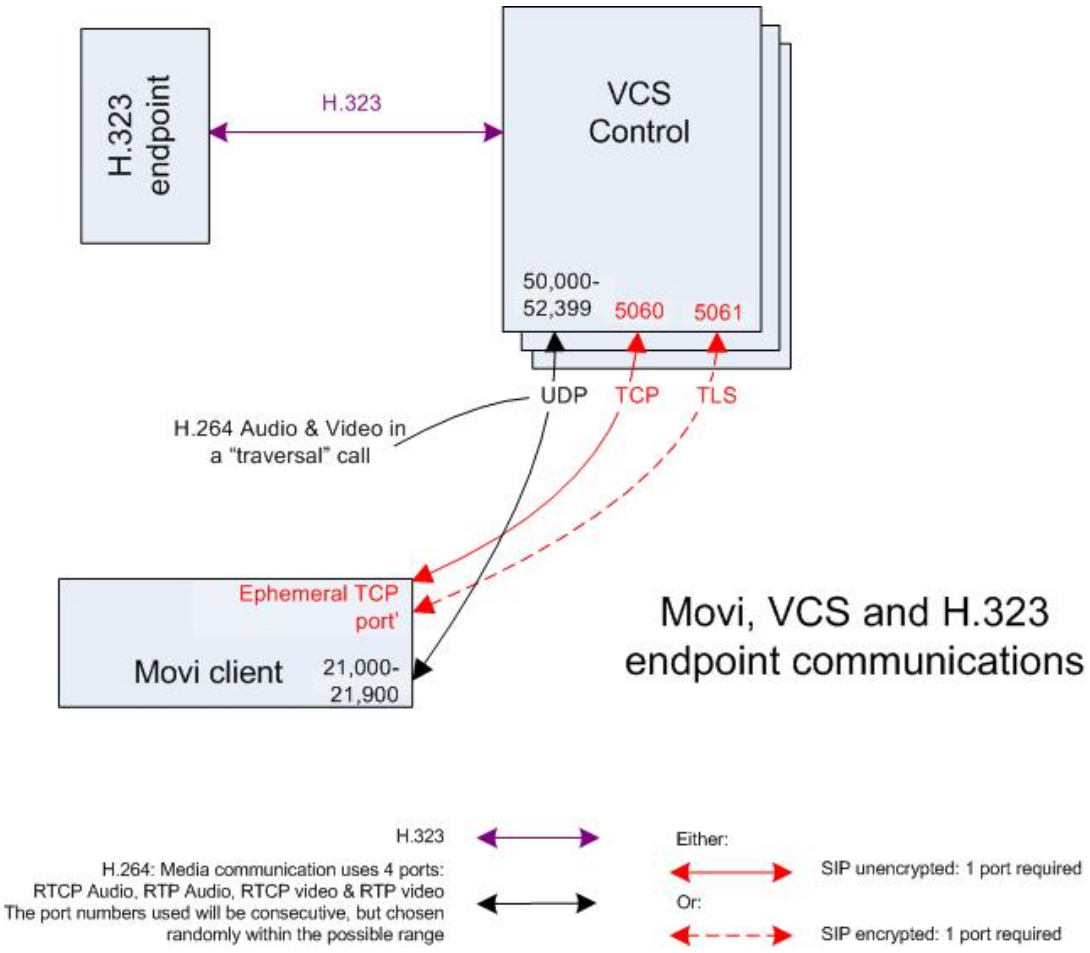
Note: If you change the SIP listening port number on the VCS, configure the Movi clients to contact the VCS on this port. To do this, go to the Movi Advanced settings, and then indicate the port number for the Internal (or External) server, for example DNS@domain.com:####.



The port numbers on which the Movi client is receiving media is configurable in TMS. Go to ***Systems > Provisioning > Directory***. Add (or select) the configuration's Media Port Range Start and Media Port Range End.

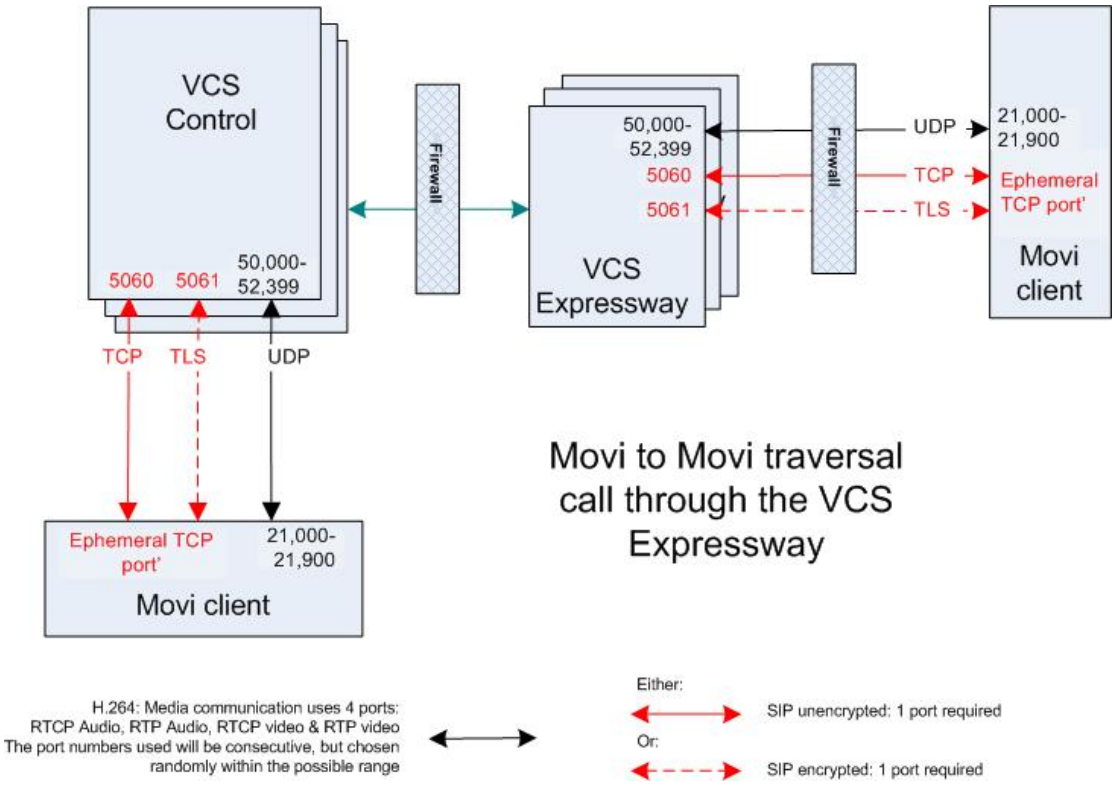
Traversal call between a Movi client and a H.323 endpoint

The diagram shows a traversal call between a Movi client and a H.323 endpoint registered to the same VCS Control and in the same network. In traversal calls, the media communication is sent through the VCS.
It is possible to configure which ports will be used by the VCS to receive media: go to VCS ***configuration > Local zone > Traversal subzone*** and set the Traversal media port start and Traversal media port end.



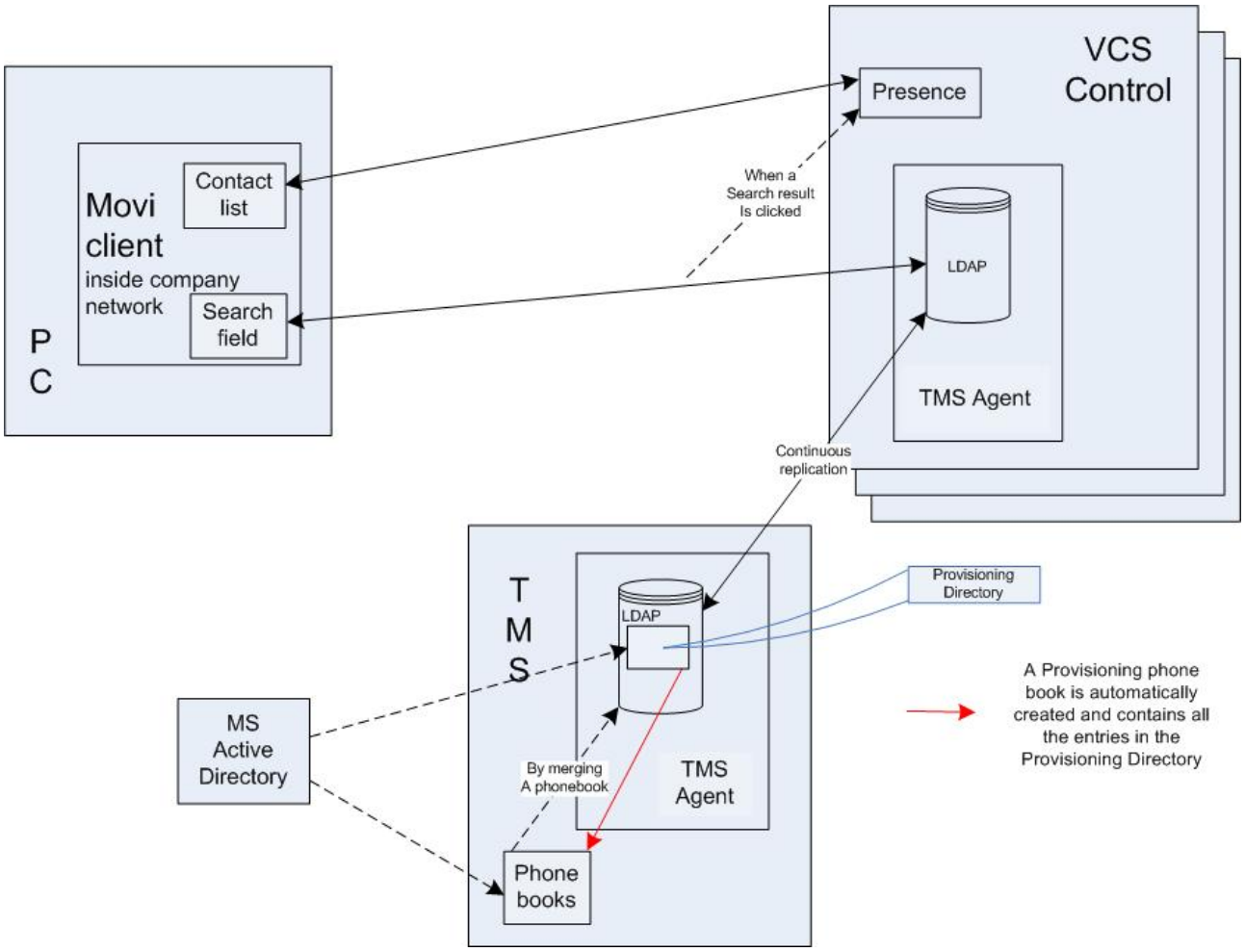
Call between an internal Movi client and a Movi client connected to the public Internet

This diagram shows a typical Movi to Movi call in which one Movi client is on the internal network and the other Movi client is using the public Internet. In such cases, all communication goes through the internal VCS Control and the VCS Expressway. This behaviour provides maximum security for your company's network.



2.2 Databases and phone books used by Movi

This sub-section describes the databases and phonebooks used in Movi, VCS, TMS Agent and TMS for use with Movi. For information on how to configure and set up the different components in VCS, TMS and TMS Agent, see the Provisioning Deployment Guide available on the TANDBERG web site.



Movi

Movi stores the contact list and the recent calls info at %APPDATA%\TANDBERG\Movi\2.0
For each user signing in, Movi creates a new folder and files; therefore several people can use Movi on the same computer without having access to each others' contact list and recent calls information.

When users type in the Search field of the Movi client, a SIP query message is sent to the VCS. The VCS looks for matches in the LDAP of the TMS Agent on the VCS, and returns results with a prefix matching to the string entered by the user. Matching results are displayed in a drop-down list.

VCS Control

Enabling or disabling Presence is possible on the VCS Control at ***Applications > Presence.*** This must be done on the master VCS in the cluster because settings on all VCSs in a cluster must be identical. Any changes made on the master VCS Control, or on the TMS Agent on the master VCS Control, are replicated throughout the cluster.

TMS Agent

The TMS Agent is located both on the VCS and on the TMS. The LDAP of the TMS Agent on the VCS Control receives continuous updates from the LDAP of the TMS Agent on the TMS. The LDAPs contain both entries from the Provisioning Directory (see below) and entries from the TMS phone books that have been merged to the Provisioning Directory. (The entries in the merged phone books need to have a SIP Alias in order to be visible to Movi users).

Provisioning Directory

The provisioning directory contains all the Movi users. Access the Provisioning Directory through the TMS (go to ***Systems > Provisioning > Directory***). It is possible to insert users into the Provisioning Directory either manually or by importing entries from Active Directory (AD).

TMS

Entries in the Provisioning Directory are automatically replicated to a TMS phone book called the Provisioning Phone Book. Endpoint users can call Movi users using this phone book.

The replication is done by a TMS External Source called Provisioning Source. The Provisioning Source is configured and activated automatically after the provisioning key has been activated in the TMS. Please see the TMS Administrators Guide for more information on external sources and their configuration.

Example:

1. An IT administrator enters an account into AD.
2. An external source (preconfigured by the IT administrator) on the TMS automatically checks the AD for updates every five minutes, and replicates the new entry from the AD to the Provisioning Directory. The new entry in the Provisioning Directory is replicated to the Provisioning Phone Book on the TMS by the Provisioning Source (automatically configured). In addition the entry is replicated immediately from the Provisioning Directory to the LDAP of the TMS Agent on the VCS Control.
3. The entry is replicated immediately from the LDAP of the TMS Agent on the VCS Control to the LDAP of the TMS Agent on the other VCSs in the VCS cluster.
4. A Movi user types in the Search Field and a SIP query message is sent to the VCS that the Movi client is registered to.
5. Matching results are sent back to the Movi client and displayed in a drop-down list.

2.3 Encrypted calls with Movi

Movi adheres to the Advanced Encryption Standard (AES). For a call to be identified as "encrypted", both SIP and media communication has to be encrypted. Users can see whether a call is encrypted by the icon in the Call status information;  (encrypted) and  (unencrypted).

The default setting for encryption in Movi is Auto both for SIP and for media communication. The default can be changed in the Advanced settings dialog (unless disabled by the administrator). Furthermore, the encryption policy can be configured in TMS, and will override settings in Movi. The TMS-setting will be put in effect immediately when Movi receives provision settings upon signing in.

There are six encryption provisioning options in TMS covering the valid combinations of SIP and media encryption. Encrypted SIP communications are sent over TLS (instead of TCP) and encrypted media communications are sent using the Secure Real-time Transport Protocol (SRTP) with a 128-bit Advanced Encryption Standard (AES). TMS will not allow you to simultaneously set TCP for the transport layer and to have SRTP (set to either Auto or Force) because encryption of the media is pointless without encrypting the SIP messages. For more information about the encryption provisioning settings, see the Provisioning Deployment Guide.

If media encryption is set to Auto, Movi will try to encrypt media (that is, use SRTP), but if this is not possible, Movi will send the media unencrypted. Similarly, if the encryption for the transport layer is set to Auto, Movi will try to send SIP communications over TLS (encrypted SIP communications), but will use TCP (unencrypted) if necessary. If one of the participants in a call is set to forced encryption, but encryption is not possible, the call will not be set up.

Setting the Transport field in the Advanced settings in Movi to:

- Auto is equivalent to the Auto provisioning option
- TLS is equivalent to the ForceTlsAutoSrtp provisioning option
- TCP is equivalent to the ForceTcpNoSrtp provisioning option

Note: For encryption to work, a TLS link must be enabled throughout the call route. For more information about enabling TLS on the VCS, see the VCS Administrators Guide.

3 Deploying and upgrading Movi

This section describes the process of deploying the Movi client so that users can log in and also upgrading it.

It is expected that prior to this stage, the TMS and VCS have been set up and configured appropriately for provisioning: see the Provisioning Deployment Guide available on the TANDBERG web site for more information about configuring TMS and VCS to provision Movi.

3.1 Obtaining Movi

When a new version of Movi is available you get a TMS ticket if you have set Automatically Check for Updates to Yes in TMS. (To do this, go ***Administrative Tools > Configuration > Network Settings > Automatic Software Update***).

The description field of the TMS ticket includes a link to download a zip file containing a Movi.msi and a MoviSetup.exe file. The Movi.msi is supplied for companies that would like to make their own installer. The MoviSetup.exe file is a ready-made installer containing the Movi.msi file.

3.2 Preparing to deploy

TANDBERG recommends deploying the Movi client such that after installation users are able to sign in to Movi by providing a username and password only; that is, some settings are already supplied (such as the internal VCS).

Pre-setting the Movi client with registry files

It is possible to pre-set the Movi client by setting the Movi registry files, which are located at:

- HKEY_LOCAL_MACHINE\Software\TANDBERG\Movi\2.0 – default settings for all users of a specific computer
- HKEY_CURRENT_USER\Software\TANDBERG\Movi\2.0 – settings for a specific user on a specific computer

Two registry files are required to allow the user to sign in: Domain and InternalVcs. The following is an example of how to set the registry files:

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\Software\TANDBERG\Movi\2.0]

"InternalVcs"="internal.provserver.com"
"ExternalVcs"="external.provserver.com”
"Domain"="example.com"
```

Pre-setting the Movi client by running MsiExec.exe with special arguments

Any installer needs to run MsiExec.exe with instructions to install the Movi client. Special arguments can be given to MsiExec.exe in order to pre-set the Movi client — see the table below.

Argument	Affect	Additional information
DOMAIN	Sets the Domain field in the Advanced settings of the Movi client	Should be identical to the SIP domain configured on the VCS. ***VCS configuration > Protocols > SIP > Domains***
EXTERNALVCS	Sets the External VCS field in the Advanced settings of the Movi client	The DNS address of the VCS Expressway cluster

INTERNALVCS	Sets the Internal VCS field in the Advanced settings of the Movi client	The DNS address of the internal VCS cluster.
ENCRYPTIONPOLICY	Determines the encryption behaviour of the Movi client	Encryption provisioning will override this setting.
HIDEADVANCEDLOGIN	A value of 1 hides the Advanced settings link in the Movi client	Users will not be able to configure Advanced settings from within the client
USEWINDOWSUSERNAME	A value of 1 has the following effects: • Movi uses the current Windows user's logon name as user name • Disables the 'Username' and 'password' input fields • Selects and disables the 'Remember my Username/Password' check boxes in the login window • Disables the 'Forget me' link	For information on how to disable authentication on the VCS and TMS Agent, contact your TANDBERG support agent

The MoviSetup.exe file supplied by TANDBERG is a simple InstallShield-generated installer. It is possible to run MoviSetup.exe with standard InstallShield arguments, such as /s for a silent install and /x for performing an "uninstall". It is also possible to run MoviSetup.exe with /v"args". MoviSetup.exe will run MsiExec.exe with 'args' as arguments. Any /v option argument of the form UPPERCASE=value will set the property UPPERCASE to value.

For example, from the command line or script, run:

```
start /wait MoviSetup.exe /s /v"/qn DOMAIN=example.com HIDEADVANCEDLOGIN=1"
```

`/wait` makes the shell/script wait for the completion of the installer, and is necessary because the installer is running as a Windows application even when started from the command line - and the shell normally does not wait for the completion of Windows applications.

/s hides the initialization dialog.

/v"args" passes args to the MsiExec.exe that is actually performing the install.

/qn is a standard instruction for the MsiExec.exe to run silently.

DOMAIN=example.com sets the domain field in the Movi client to example.com.

HIDEADVANCEDLOGIN=1 hides the Advanced settings link in the Movi client.

3.3 Distributing the setup file to users

Users require admin rights on their computers in order to install Movi. By default, Movi will be installed to %ProgramFiles%\TANDBERG\Movi\.

New deployment

TANDBERG recommends you deploy Movi for the first time using your own deployment tools. It is possible to send users a customized email with their individual username and password. In TMS go to ***Systems > Provisioning > Directory*** and use the option: Send Account Info in the Workspace pane.

Upgrading the Movi client

Users can upgrade their Movi client by clicking a link in the Movi application that downloads the setup file for the new Movi version.

The process of upgrading is controlled by the IT administrator through two provisioning options in TMS: Software URL and Software Version. (More information about provisioning options, see the Provisioning Deployment Guide).

4 Troubleshooting Movi

This section provides information about general known issues. More information concerning troubleshooting is available:

- Movi User Guide contains information about what to do if calls are of poor audio/video quality.
- Provisioning Deployment Troubleshooting Guide – The zip file contains a troubleshooting guide and a troubleshooting tool. The guide contains case scenarios for the administrator to troubleshoot communication issues between Movi and VCS, TMS and TMS Agent. It includes references to the troubleshooting tool which can be used to perform more complicated diagnostics.
- Frequently asked questions (KnowledgeBase) site contains known issues as well as answers to frequently asked questions.

While all documents are updated on a regular basis, the FAQ site contains the most recent information and is used as a holding place for troubleshooting information until the other documents are released.

4.1 Movi logs

Movi has a logging system that can be configured and used for debugging, if necessary. By default, Movi logs very little information. The logs are stored on the client at
<*CSIDL_LOCAL_APPDATA*>\TANDBERG\Movi\2.0\Logs\
The <*CSIDL_LOCAL_APPDATA*> folder is typically:

- On Windows XP: %USERPROFILE%\Local Settings\Application Data\
- On Windows Vista: %LOCALAPPDATA% (typically %USERPROFILE%\AppData\Local)

This directory is hidden by default in both operating systems.

4.2 Bandwidth issues

In a new installation and if no provisioning is provided, Movi is set to send a maximum of 384 kbps and receive a maximum of 512 kbps. Through settings in the client, the user is able to change these figures to send and receive up to 2048 kbps.

In case of a Movi client sending or receiving bandwidth which exceeds the network capabilities, high packet loss may occur and the user may experience poor call quality. Movi uses automatic bandwidth adaptation mechanisms to tackle bandwidth issues. However, TANDBERG recommends configuring the client to match the network bandwidth capabilities.

4.3 CPU issues

Running Movi with the highest video quality on a less powerful computer might result in 100% CPU usage and a poor call quality. Lowering the video resolution is the easiest solution that has a big affect on CPU load. Lowering video resolution can be done either from the client's settings (Settings > Video > Resolution), or by forcing low resolution through provisioning.

In addition to lowering resolution, be aware of other methods to lower the CPU usage:

- While using Movi only run other applications that are essential
- Always upgrade to the latest Movi software version because we continuously optimize it.
- Always use the latest driver for your camera. Also, different cameras vary in CPU usage. If possible, try different cameras and compare their performance.

- Use good lighting conditions in your work setting, and disable light compensation options (such as RightLight™) in your camera driver.