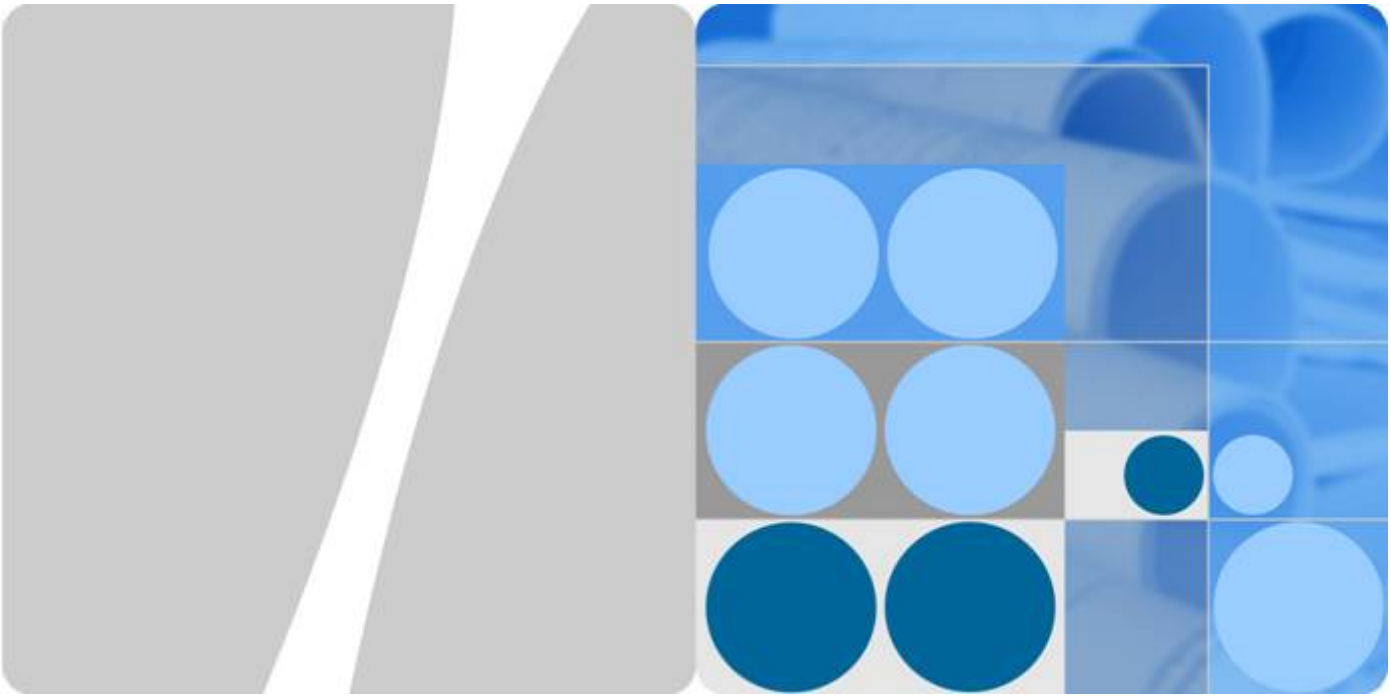


TE Desktop&TE Mobile&TE WebClient

Product Overview

Issue 04

Date 2017-10-30

HUAWEI TECHNOLOGIES CO., LTD.

Trademarks and Permissions


and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.
All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: http://e.huawei.com

About This Document

Purpose

This document describes the product positioning, product highlights, application scenarios, functions and features, security, reliability, and technical specifications of HUAWEI TE Desktop, TE Desktop for Mac, TE Mobile, and TE WebClient in detail.

The models are described as follows:

- TE Desktop: It is the model applicable to Windows PCs.
- TE Desktop for Mac: It is the model applicable to Mac computers.
- TE Mobile
  - The TE Mobile that is applicable to iPhone is named TE Mobile for iPhone.
  - The TE Mobile that is applicable to iPad is named TE Mobile for iPad.
  - The TE Mobile that is applicable to Android smartphones is named TE Mobile for Android Phone.
  - The TE Mobile that is applicable to Android tablets is named TE Mobile for Android Pad.
  - TE Mobile is used if what you describe is available for all the preceding four TE Mobile models.
- TE WebClient: It is a web conference client, which can be used separately or together with TE Desktop.
- TE Desktop, TE Desktop for Mac, and TE Mobile are collectively called TE Desktop&TE Mobile.
- All the preceding models are collectively called TE Desktop&TE Mobile&TE WebClient.

Intended Audience

This document is intended for:

- Huawei agents
- End users

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in earlier issues.

Issue 04 (2017-10-30)

This issue is the fourth official release.

Added section **4.1 Automatically Connecting to Huawei Public Cloud**.

Modified section **3.2 Interconnecting with eSight**.

Modified chapter **2 Product Highlights**.

Modified section **4.2 Joining a Conference**.

Modified section **4.4 Data Conferencing**.

Modified section **4.7 Superb Voice and Video Experience**.

Modified section **8 Technical Specifications**.

Issue 03 (2017-06-26)

This issue is the third official release. It has the following updates:

Modified chapter **2 Product Highlights**.

Modified section **3.2 Interconnecting with eSight**.

Modified section **4.6 Conference Control and Data Collaboration**.

Modified section **4.10 Switching Between Display Layouts**.

Modified section **4.16 Local Camera Control**.

Modified section **5.2 HTTPS Encryption**.

Modified chapter **8 Technical Specifications**.

Issue 02 (2017-04-12)

This issue is the second official release. It has the following updates:

Added section **4.4 Data Conferencing**.

Added section **4.12 Data Sharing**.

Added section **5.5 Key Management Using the KMC**.

Added section **5.6 Encrypted Download of the Network Address Book Using the FTPS/LDAPS Protocol**.

Added section **5.7 Encrypted Transmission of Conference Operation and Presentation Sharing Data**.

Modified chapter **2 Product Highlights**.

Modified chapter **3 Application Scenarios**.

Modified section **4.3 Creating a Conference**.

Modified section **4.5 Multi-Stream Conferencing** .

Modified section **4.11 Presentation Sharing**.

Modified chapter **6 Reliability**.

Modified section **7.2 UI**.

Modified chapter **8 Technical Specifications**.

Issue 01 (2016-10-30)

This issue is the first official release.

Contents

1 Product Positioning

TE Desktop&TE Mobile&TE WebClient is secure and stable conferencing software that Huawei designs for enterprise users. TE Desktop&TE Mobile runs on iOS, Android, and Windows to provide videoconferencing services, while TE WebClient is a kind of data conference client software that runs only on Windows.

TE Desktop&TE Mobile&TE WebClient is easy to install and configure. It is cost-effective and efficient, allows users to join conferences anytime, anywhere, and is an ideal personal terminal for videoconferencing.

- TE Desktop and TE Desktop for Mac: It can be installed on Windows PCs and Mac computers. The only extra device that you need to prepare is a camera. You can use it to connect to a videoconferencing system and join voice or video conferences over Ethernet or Wi-Fi. Further, you can use TE Desktop and TE Desktop for Mac to initiate point-to-point (P2P) and multipoint conferences.
- TE Mobile: It can be installed on iPhone, iPad, Android smartphones, and Android tablets. You can use it to connect to a videoconferencing system and join voice or video conferences over 3G/4G or Wi-Fi. Further, you can use TE Mobile to initiate P2P and multipoint conferences. When you are in a multipoint conference, you can start data conferencing. Then you can view the desktop, document, or whiteboard shared by the remote party.
- TE WebClient: It works on Windows PCs. You can use it to connect to a videoconferencing system and join data conferences over Ethernet or Wi-Fi. If a Windows PC where TE WebClient is installed also has a TE Desktop, you can start TE WebClient through TE Desktop to hold data conferences.

2 Product Highlights

Compatibility with Multiple Platforms

Multiple platforms are supported, including Windows, Mac, iOS, and Android. Additionally, TE WebClient, a web-based data conference client, is provided.

Multipoint Conference and Rich Conference Control Operations for the Moderator

- You can initiate a conference locally and join a conference by dialing the conference ID and password or clicking the link in a conference notification email.
- Conference control as the moderator is supported.
- P2P calls can be manually switched to a conference with three or more participants.
- TE WebClient supports conference control as the moderator or presenter.

HD Dual-Stream Presentation Sharing

With support for the Binary Floor Control Protocol (BFCP) over Transport Layer Security (TLS), TE Desktop&TE Mobile can share and receive a presentation from remote parties during a video call.

Efficient Collaboration with Data Conferencing

Besides conference control functions, data conferencing provides a number of exclusive data collaboration functions, including desktop, document, whiteboard, application, and media sharing. Interoperability has been implemented between data collaboration and presentation sharing, making communication more convenient and efficient.

Multi-Stream Conference, Delivering a Better Experience

TE Desktop and TE WebClient, which are used with the CloudMCU, support multi-stream conferences. You can choose to view specified sites or continuous presence that consists of one large pane and several small panes.

Account Authorization

- Accounts (passwords included) used on TE Desktop&TE Mobile are uniformly allocated by the Switch Center (SC) and MediaX.

- With zero configuration, TE Desktop&TE Mobile can access a Huawei videoconferencing system after the account name and password are entered. This allows users to join conferences on the go.

High Network Adaptability

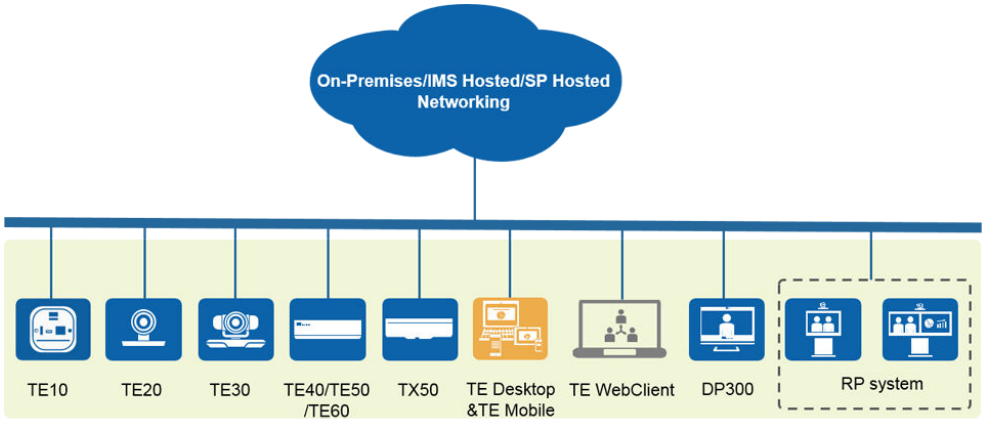
- Super Error Concealment (SEC), Hybrid Automatic Repeat Request (HARQ) for video, and automatic deceleration ensure smooth and clear video even under a packet loss rate of 20%.
- TE Desktop&TE Mobile ensures excellent audio quality using the packet loss compensation (PLC) algorithm.
- TE Desktop&TE Mobile utilizes the Opus codec and supports Net Automatic-Transfer-Enhancement (NetATE) and Audio Jitter Buffer (AJB) based on the Opus codec to reduce the packet loss rate and improve audio quality.

3 Application Scenarios

3.1 On-Premises/IMS Hosted/SP Hosted Network

TE Desktop&TE Mobile&TE WebClient supports the CloudEC on-premises, IMS hosted, and SP hosted networks, meeting enterprise users' and carriers' requirements for videoconferencing anytime, anywhere. **Figure 3-1** shows the networking diagram.

Figure 3-1 Networking diagram



On this network:

- TE Desktop&TE Mobile automatically identifies the networking mode based on the registration server address.
- TE Desktop&TE Mobile&TE WebClient uses the Session Initiation Protocol (SIP) to connect to the on-premises, IMS hosted, and SP hosted networks.
- If the CloudMCU is deployed on the network, TE Desktop and TE WebClient can join voice, video, data, and multi-stream conferences held on the CloudMCU.
- Video, data, and presentation sharing can be implemented between TE Desktop&TE Mobile&TE WebClient and various kinds of terminals and clients to deliver the optimal communications experience.

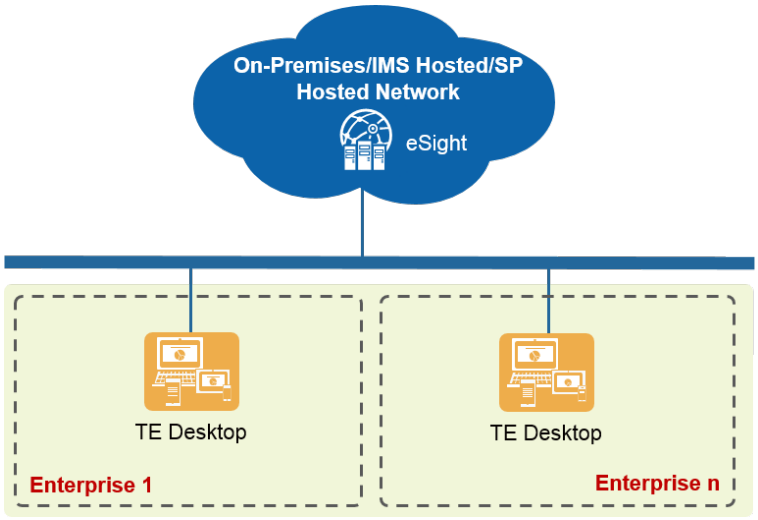
- TE Desktop&TE Mobile&TE WebClient collaborates with the Session Border Controller (SBC) to implement network traversal through the Security Traversing Gateway (STG), ensuring high security of signaling, LDAP address book data, and media data.

3.2 Interconnecting with eSight

TE Desktop supports the CPE WAN Management Protocol (CWMP), a standard device management protocol numbered TR-069. TE Desktop can be connected to eSight and upgraded by it.

Figure 3-2 shows the network where TE Desktop interconnects with eSight.

Figure 3-2 Interconnecting with eSight



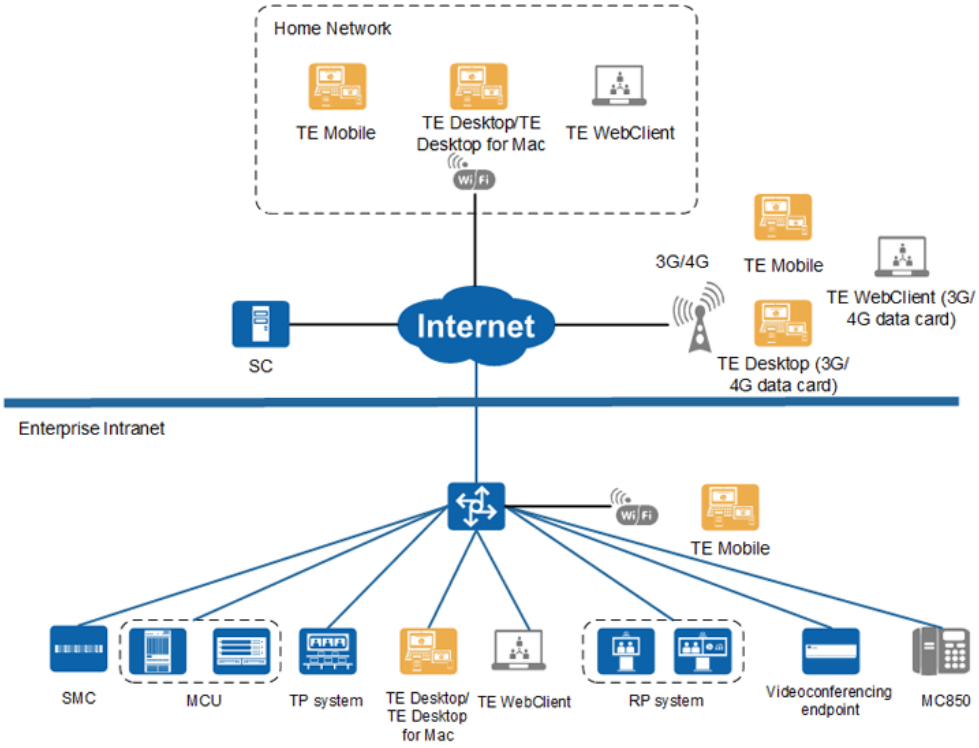
On this network:

- eSight is deployed in the server zone on the intranet. TE Desktop is deployed on the extranet. The TR-111 protocol is used to implement interactions between the intranet and extranet.
- TE Desktop connects to eSight through the HTTPS.
- The new-version installation package of TE Desktop needs to be uploaded to eSight.
- The eSight address needs to be configured on the MediaX.
- After a user logs in, TE Desktop reports its version information to eSight. If the version is earlier than the version uploaded to eSight, eSight will push the upgrade file to TE Desktop and ask the user whether to start the upgrade now.

3.3 Wireless Network

TE Desktop&TE Mobile&TE WebClient connects to a videoconferencing system over Wi-Fi or 3G/4G, enabling users to have conferences anytime, anywhere, as shown in **Figure 3-3**.

Figure 3-3 Wireless network



4 Functions and Features

4.1 Automatically Connecting to Huawei Public Cloud

If you are a Huawei public cloud user, you can set the server address to Huawei public cloud when logging in to TE Desktop&TE Mobile. After you enter the user name and password, the system automatically completes the configuration and connects to Huawei public cloud.

4.2 Joining a Conference

- Using TE Desktop&TE Mobile&TE WebClient, you can use the conference access number, conference ID, or link in a conference notification email to join a scheduled Huawei telepresence conference with one click.
- On the IMS hosted and SP hosted networks, you can use TE Desktop to join virtual meeting room (VMR) conferences and join a conference with one click from the scheduled conference list.

  The VMR conference can be set up instantly and provide a fixed conference ID and URL. Using TE Desktop, you can join your own VMR conferences with just one click or join others' VMR conferences by dialing the conference ID.
- Using TE Mobile, you can dial the conference access number or click the link in a conference notification email to join a data conference.
- Using TE WebClient, you can click the link in a conference notification email to join a data conference as a participant or moderator. You can also dial the conference access number on the keypad of TE Desktop to join a data conference. On the IMS hosted and SP hosted networks, you can also log in to the MediaX convergent conference system and use the conference ID and password to join a data conference.

  If you use TE WebClient to join a data conference as the moderator, you can invite other users to the data conference.

4.3 Creating a Conference

Using TE Desktop&TE Mobile, you can place a call to a remote party from your local contacts list or corporate directory or by dialing its number or IP address. You can also initiate a P2P voice or video conference from your call history.

Using TE Desktop&TE Mobile, you can add contacts from your local contacts list or corporate directory as participants in a multipoint voice or video conference. In a multipoint voice or video conference on TE Desktop, TE WebClient will be automatically started if you attempt to start data conferencing.

4.4 Data Conferencing

TE WebClient provides data collaboration functions, such as sharing whiteboards, documents, desktops, applications, or media, conducting polls, releasing bulletins, and taking minutes. Voice and video conferences have the moderator and participant roles, while data conferences still have another role known as presenter, which has the most data collaboration rights.

On the IMS hosted and SP hosted network, the moderator of a voice or video conference can switch the conference to a data conference on TE Desktop.

4.5 Multi-Stream Conferencing

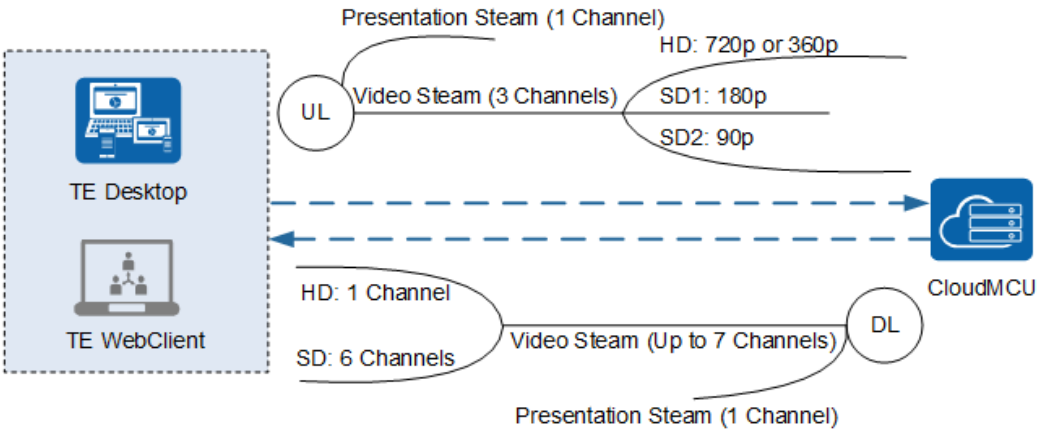
On the on-premises, IMS hosted, and SP hosted networks, TE Desktop and TE WebClient can join multi-stream conferences. In the conferences, you can choose to view continuous presence that consists of one large pane and several small panes. Besides, various conference control functions are available, such as voice activation, site broadcasting, and recording.

In multi-stream conferences, the CloudMCU utilizes the Scalable Video Coding (SVC) technology to forward video streams of different frame rates or resolutions. TE Desktop and TE WebClient provide video codec and continuous presence layout (one large pane + several small panes), relieving service load and reducing latency.

A TE Desktop or TE WebClient can send 1-channel HD video and 2-channel SD video to the CloudMCU and receive 1-channel HD video and 6-channel SD video from the CloudMCU. However, only one channel of presentation can be sent and received at a time.

Figure 4-1 shows the capabilities of sending and receiving video and presentations for TE Desktop for Windows and TE WebClient.

Figure 4-1 Capabilities of sending and receiving video and presentations



4.6 Conference Control and Data Collaboration

Video Conference

In multipoint conferences set up by TE Desktop&TE Mobile, the moderator role (also called chair site) has more conference control rights than the participant role (also called non-chair site). Audio-only sites do not have any conference control rights.

Table 4-1 lists conference control rights that are available for the moderator and participant roles.

Table 4-1 Conference control rights

Role	Conference Control Right
Moderator	● Extend a conference. ● Invite a contact to a conference. ● View a specified site or continuous presence. ● Broadcast a specified site or continuous presence. ● Disconnect or delete a site. ● Leave or end a conference. ● Mute or unmute the local microphone. ● Switch on or off the local speaker or headset. ● Turn on or off the local camera. ● Request or release chair control rights. ● Display speakers. ● Switch a voice or video conference to a data conference. (This function is supported only by TE Desktop for Windows on the IMS hosted or SP hosted network.) ● Lock or unlock the meeting (allowed only on the IMS hosted and SP hosted networks).
Participant	● Request or release chair control rights. ● View a specified site or continuous presence. ● Mute or unmute the local microphone. ● Switch on or off the local speaker or headset. ● Turn on or off the local camera. ● Leave a conference.

Data Conference

In a data conference, the presenter has more conference control and data collaboration rights than the moderator. Both the moderator and the presenter can share documents, take minutes, release bulletins, and transfer files, while only the presenter can share whiteboards, desktops, applications, and media and conduct polls.

Table 4-2 lists conference control and data collaboration rights that are available for the moderator, presenter, and participant roles.

NOTE

In data conferences, conference control functions are determined by the network environment and capabilities of NEs

Table 4-2 Conference control and data collaboration rights

Role	Exclusive Right	Common Right
Conference Control		

Role	Exclusive Right	Common Right
Moderator	● Change participant names. **NOTE** This operation can be performed only on TE WebClient in the CloudPBX on-premises networking scheme. ● Set the meeting presenter and specify a participant as the chair or presenter. **NOTE** This operation can be performed only on TE WebClient in the CloudPBX on-premises networking scheme. ● Release a moderator. ● Set the meeting mode. ● Invite and remove participants. ● Hang up participant (allowed only on the on-premises network). ● Redial. ● Set participants' rights. ● Mute or unmute the conference. **NOTE** TE Desktop for Windows and TE WebClient do not support this function. ● Broadcast site videos. ● Cancel hand raising. **NOTE** TE Desktop for Windows does not support this function. ● Prolong the conference (allowed only on the CloudVC and CloudEC networks). ● End the conference. ● Lock or unlock the meeting (allowed only on the IMS hosted and SP hosted networks).	● View the participant list. ● Call my other numbers. **NOTE** This operation can be performed only on TE WebClient in any on-premises networking scheme. ● Mute or unmute the local site. ● Display or close the local video. ● Select and view site videos. ● Display speakers (2 parties). TE Desktop for Mac and TE Mobile do not support this function. ● Leave the conference.
Presenter	● Apply for the moderator role. ● Release the presenter.	

Role	Exclusive Right	Common Right
Participant	● Apply for the moderator role. ● Apply for the presenter role. ● Raise hand (apply to speak).	
Data Collaboration		
Moderator	● Share documents. ● Record meetings, release bulletins, and transfer files.	● Send IMs. ● Take minutes.
Presenter	● Initiate data collaboration such as sharing a document, whiteboard, the desktop, an application, or a media file. ● Invite another participant to share his/her desktop or application. ● Record meetings, release bulletins, and transfer files. ● Initiate a poll.	
Participant	-	

4.7 Superb Voice and Video Experience

TE Desktop&TE Mobile&TE WebClient delivers hi-fi audio and HD video experience with the following features:

- TE Desktop&TE Mobile uses the SIP protocol to set up P2P voice and video calls.
- Calls other sites to invite them to join a conference as the chair site.
- Answers a video call in video or audio-only mode.
- Uses the H.264 BP or H.264 HP protocol to send or receive video.
- Supports full-duplex digital audio and high-fidelity conference voice with:
  - Audio protocols: G.711A, G.711U, G.722, G.729AB, and iLBC
  - Opus codec with NetATE and AJB
  - Audio processing technology: AEC, ANS, and AGC
- Allows Picture in Picture (PiP) for simultaneous display of local and remote video.
- Turns off the camera during a video call to protect privacy.

4.8 Switch Between Voice and Video Calls

TE Desktop&TE Mobile allows you to:

- Switch a video call to a voice call. After that, your local camera is turned off, and the remote party cannot see you.

- Sends a video request in a voice call to switch it to a video call. The video call will be set up once the remote party accepts the video request.

4.9 Two-Stage Dialing

HUAWEI TE Desktop&TE Mobile provides RFC 2833 and DTMF two-stage dialing.

During interoperation with a network device, such as an MCU or gateway, a TE Desktop&TE Mobile user can perform two-stage dialing to implement the interactive voice response (IVR) service and join a multipoint conference.

Specifically, a TE Desktop&TE Mobile user dials a unified access number to initiate a video call, accesses the keypad in the call window, and follows the voice instructions to join a conference.

4.10 Switching Between Display Layouts

In video calls on TE Desktop&TE Mobile, you can choose to view local video, remote video, presentation, or continuous presence.

- When no presentation is being shared in a video call on TE Desktop&TE Mobile, the local or remote video can be displayed in a PiP window.
- In a video call on TE Mobile, the presentation sender and recipient have different video switch rights.

  Using TE Mobile for iPad or TE Mobile for Android Pad, you can send or receive presentations, while using TE Mobile for iPhone or TE Mobile for Android Phone, you can only receive presentations.

  On the presentation sender side, the presentation is displayed on the larger part of the screen, while the local or remote video is displayed in a PiP window. By default, the PiP window shows the remote video.

  On the presentation recipient side, the presentation is displayed in full-screen mode by default. You can switch the screen to display on the local or remote video.
- When presentation sharing is under way in a video call on TE Desktop and TE Desktop for Mac, three panes are provided for displaying presentation and video. By default, presentation is displayed in the large pane, and the local and remote video is displayed in the two small panes. TE Desktop for Mac allows you to switch the presentation, local video, and remote video among the three panes. TE Desktop allows you to switch the presentation and remote video between the large and small panes.

4.11 Presentation Sharing

Using TE Desktop&TE Mobile&TE WebClient, you can send or receive presentations in a video conference for smoother communication. **Table 4-3** describes the presentation functions supported by each TE Desktop or TE Mobile model and TE WebClient.

Table 4-3 Presentation functions supported by each TE Desktop or TE Mobile model and TE WebClient

Model	Sending Presentations	Receiving Presentations	Description	GUI Example
TE Desktop and TE Desktop for Mac	Supported	Supported	TE Desktop allows you to share your computer desktop, documents, applications, and video.	Receive a presentation on TE Desktop, as shown in **Figure 4-2**.
TE Mobile for iPad	Supported	Supported	TE Mobile for iPad allows you to share Word, Excel, PPT, and PDF documents as well as BMP and PNG images.	Send a presentation on TE Mobile for iPad, as shown in **Figure 4-3**.
TE Mobile for Android Pad	Supported	Supported	TE Mobile Android Pad allows you to share PDF documents as well as BMP, PNG, and JPG images.	
TE Mobile for Android Phone	Not supported	Supported	None	Receive a presentation on TE Mobile for iPhone, as shown in **Figure 4-4**.
TE Mobile for iPhone	Not supported	Supported		
TE WebClient	Not supported	Supported	TE WebClient can receive presentations shared by Huawei TE series videoconferencing endpoints and TE Desktop for Mac.	Receive a presentation on TE WebClient, as shown in **Figure 4-5**.

Figure 4-2 Presentation receiving on TE Desktop

Figure 4-3 Presentation sharing from TE Mobile for iPad

Figure 4-4 Presentation receiving on TE Mobile for iPhone

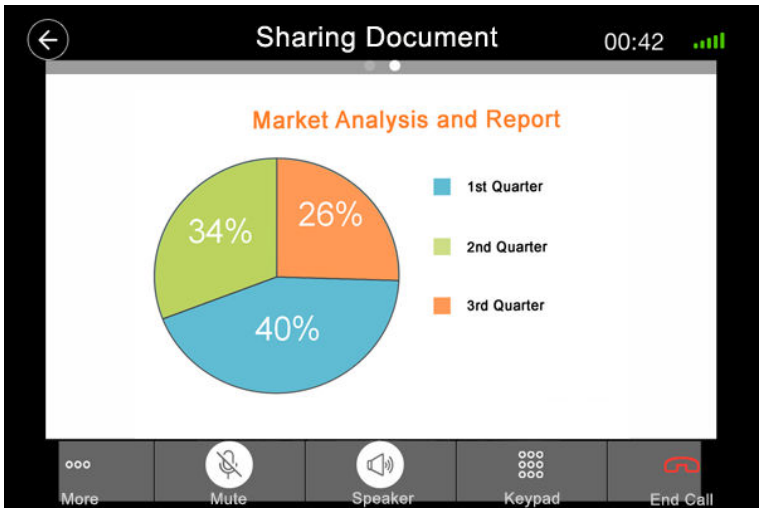
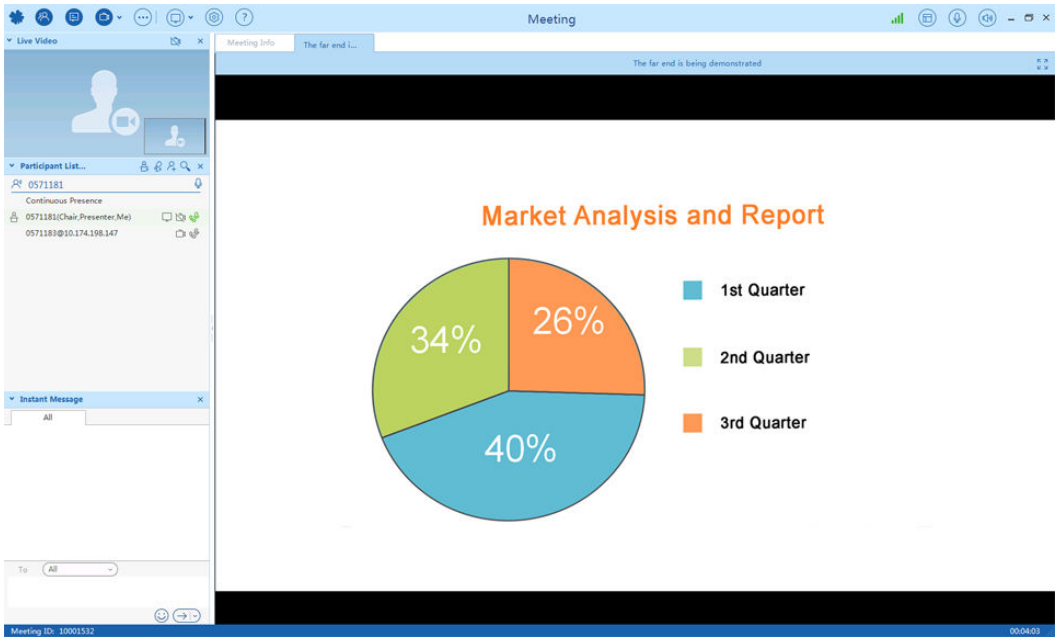


Figure 4-5 Presentation receiving on TE WebClient



4.12 Data Sharing

With TE WebClient, you can share your computer desktop, document, whiteboard, application, and media and freely switch among the shared things.

In a multipoint conference on TE Desktop, TE WebClient can be started to provide data sharing.

TE Mobile that has data conferencing enabled can receive the desktop, document, or whiteboard shared by the remote party.

- The presenter can share his or her desktop to all participants, including the active application, window, and file directory on the desktop.

- If you are the moderator, the presenter, or a participant who has the document sharing right, you can share any printable document, such as Word, Excel, PDF, PPT, text, JPEG, BMP, or WPS file.
- A whiteboard allows users to write or draw. With whiteboard sharing, the presenter can conveniently have a discussion with others.
- If you want to demonstrate an application or show others how to use this application and at the same time protect your privacy on your PC, you can use the application sharing function.
- You can use the media sharing function to share a product promotion video or an inspirational speech, giving others resonance. The client supports audio and video files in .wmv, .wma, and .asf formats.

4.13 Interoperability Between Data Collaboration and Presentation Sharing

The CloudMCU implements interoperability between data collaboration and presentation sharing.

In a data conference, participants who use videoconferencing endpoints and telepresence systems view the desktop shared by TE Desktop and TE WebClient as a presentation. Participants who use TE WebClient also can view the desktop or application shared by the TE series videoconferencing endpoint or TE Desktop for Mac.

4.14 Video and Data Separately Displayed on Two Screens

If the Windows PC where TE WebClient is installed has two network adapters and two screens are available, WebClient pushes video to the main screen (generally the left screen) and data to the auxiliary screen (generally the right screen). If only one network adapter is enabled, both video and data are displayed on the main screen.

4.15 Window Layout

In a data conference, you can specify the window layout on TE WebClient. The window layout set by the presenter and participants takes effect locally. The window layout set by the moderator can be synchronized to the presenter and other participants.

- **Data Sharing**: used in data-based (for example, document, screen, voting, and IM) communications and collaboration scenarios, for example, traditional conferences (voice and data).
- **Collaboration**: used in scenarios such as distance education and training. It provides the presenter's video in addition to data sharing.

  The instant conference created using the TE Desktop and the scheduled conference joined using the TE Desktop only support the collaboration layout.
- **Discussion**: used in open conferences. Data sharing and participants' video are available, facilitating discussion in the conferences.
- **Lecture**: used in video-based training scenarios. The large screen displays the presenter's video, while the small window displays the participants' video at the same time.

- **Video Display**: used to display the presenter's and your own video in video conferences.
- **Video Interaction**: used for point-to-point communications in video conferences. In the video window, the left side displays the presenter's video, and the right side displays the video of the participant who is currently speaking in the conference.
- **Full View**: displays the video of all participants in video conferences.

4.16 Local Camera Control

- In a video call on TE Desktop&TE Mobile&TE WebClient, you can turn on or off your camera simply by one click or tap.
- From a device with TE Mobile installed, a user can also toggle between front and rear cameras if the device has two cameras.

4.17 Corporate Directory

On an on-premises network, TE Desktop&TE Mobile obtains address book services from the FTPS server on the SMC. The on-premises network, IMS hosted network, and SP hosted network adopt the EUA as an LDAP server to provide TE Desktop&TE Mobile&TE WebClient with address book services. Records in the LDAP address book obtained by TE Desktop for Windows can be displayed by group.

You can view the site status in the corporate directory locally and place voice or video calls to these sites. In a conference, you can invite other sites in the corporate directory.

4.18 Local Contacts List

TE Desktop and TE Mobile can import and export contacts lists, facilitating synchronization of contacts across devices.

A contacts list can be imported from or exported in the following file formats:

- TE Desktop: *.xlsx, *.xls, and *.csv formats
- TE Desktop for Mac and TE Mobile: *.csv formats

During an import:

- A maximum of 1000 contacts can be imported.
- A TE Desktop user can specify which contacts to import.

4.19 Interoperability

TE Desktop&TE Mobile&TE WebClient can interoperate with various kinds of devices or systems, including the TE10/TE20/DP300/TE60 videoconferencing endpoint, TP3106-70&TP3206-55 tri-screen telepresence system, SMC2.0, VP96X0 series MCU, CloudMCU, and RSE6500. Due to its high interoperability, TE Desktop&TE Mobile&TE WebClient enables you to join any conferences, anytime, anywhere.

4.20 Third-Party APIs

TE Desktop&TE Mobile&TE WebClient provides HTTP-based third-party APIs, using which various functions can be implemented, such as voice and video calling, voice and video conference control, voice and video device management, address book management, and desktop collaboration. Users can choose necessary APIs based on their actual needs to develop required functions and integrate them into other products or applications.

5 Security Features

5.1 Encryption Using the TLS, SRTP, FTPS, or LDAPS Protocol

TE Desktop&TE Mobile&TE WebClient supports the following encryption protocols:

- Transport Layer Security (TLS)

  SIP-based registration data is encrypted through the TLS protocol.
- SRTP

  Using SRTP, parties of a call negotiate the algorithms and keys for media stream encryption and decryption. The sender encrypts media streams using the negotiated encryption algorithm and key, and transmits the streams. The recipient decrypts the received streams using the negotiated decryption algorithm and key, and sends the streams to a decoder.
- FTPS
- LDAPS

5.2 HTTPS Encryption

Conferences set up by TE Desktop&TE Mobile and command demands delivered from TE Desktop&TE Mobile are encrypted through the Hypertext Transfer Protocol over Secure Socket Layer (HTTPS) protocol.

TE Desktop connects to eSight and receives the upgrade file pushed by eSight over HTTPS, fortifying security of the upgrade file and the upgrade process.

5.3 T.120-based Encryption for Data Conferences

Media and signaling streams transmitted in data conferences are encrypted through the **T.120** protocol.

5.4 AES for Local Storage

The Advanced Encryption Standard (AES) is used when user information, such as the login password and contacts information, is saved. This helps prevent unauthorized changes and theft.

5.5 Key Management Using the KMC

The key management CBB (KMC) is used for key management, ensuring data security and integrity.

5.6 Encrypted Download of the Network Address Book Using the FTPS/LDAPS Protocol

The network address book is downloaded in encrypted mode through the FTPS or LDAPS protocol, ensuring confidentiality and integrity of contacts data.

5.7 Encrypted Transmission of Conference Operation and Presentation Sharing Data

Conference operation and presentation sharing data is encrypted through BFCP over TLS to ensure data confidentiality and integrity.

5.8 STG-based Traversal Supported by the SBC

In the on-premises, IMS hosted, and SP hosted networking schemes, TE Desktop&TE Mobile&TE WebClient can be deployed on the public network. To ensure secure access from TE Desktop&TE Mobile&TE WebClient to the internal network, firewalls should be deployed on the network border. TE Desktop&TE Mobile&TE WebClient relies on the SBC to traverse the firewalls and HTTP proxy through the STG, ensuring high security of signaling, LDAP address book data, and media data.

6 Reliability

On the IMS hosted and SP hosted networks, the EUA/MediaX/USM two-node cluster can be deployed in active/standby mode to implement disaster recovery (DR) backup. Then you can configure the IP addresses or domain names of both EUA/MediaX/USM nodes on TE Desktop&TE Mobile&TE WebClient. If the connection to the active EUA/MediaX/USM node fails, TE Desktop&TE Mobile&TE WebClient will switch to the standby EUA/MediaX/USM node for data synchronization. The switchover takes 10 minutes or less.

7 Operation and Maintenance

7.1 Unified Account Authorization and Management

- TE Desktop&TE Mobile needs to register with an SC or MediaX to obtain an account.
- TE Desktop&TE Mobile can be added to the SMC2.0 as unmanageable participants and be scheduled to join Huawei video conferences from the SMC2.0.

7.2 UI

TE Desktop&TE Mobile&TE WebClient provides simple, friendly user interface (UI).

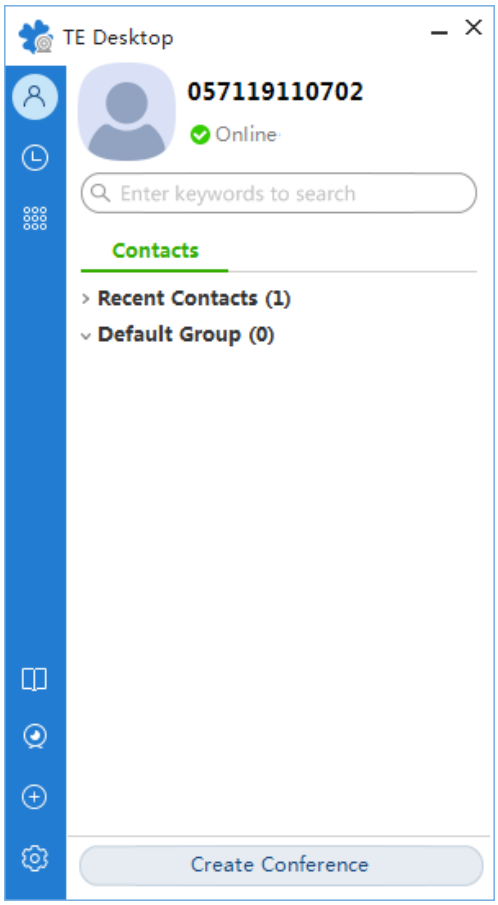
You can use TE Desktop&TE Mobile to place P2P calls, create and control multipoint conferences, switch between voice and video calls, manage the local contacts list and corporate directory, send or receive presentations, and define system settings. You can also start TE WebClient through TE Desktop to hold data conferences. TE Mobile also allows data conferencing.

With TE WebClient or TE Desktop, you can apply for the moderator or presenter role. Both conference control and data collaboration are available for the two roles.

TE Desktop

Figure 7-1 shows the main window of TE Desktop.

Figure 7-1 Main window of TE Desktop



TE Desktop for Mac

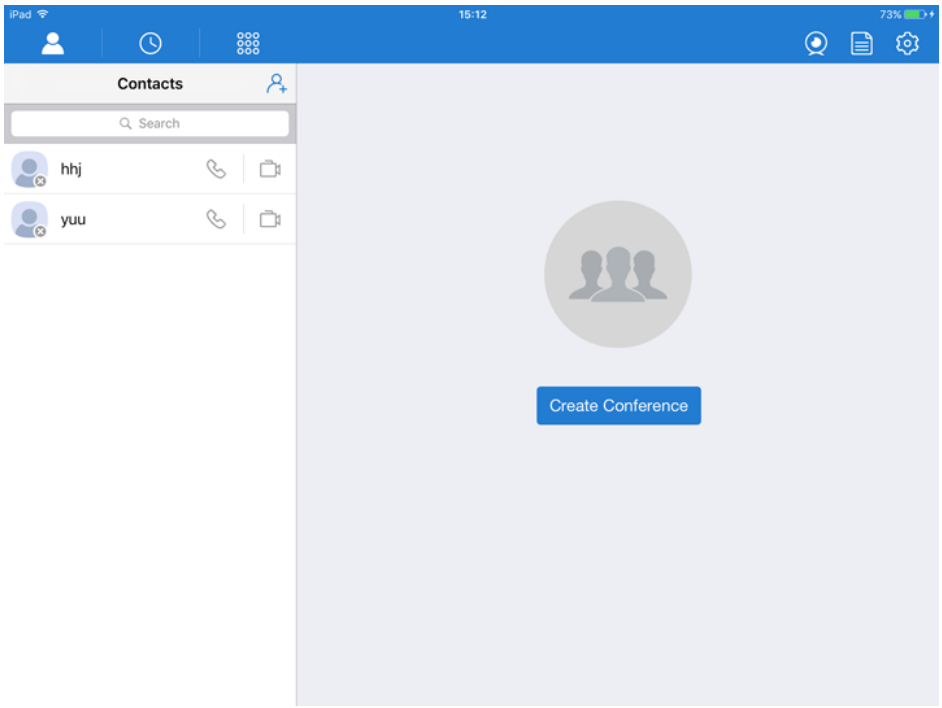
Figure 7-2 shows the main window of TE Desktop for Mac.

Figure 7-2 Main window of TE Desktop for Mac

TE Mobile for iPad

Figure 7-3 shows the home screen of TE Mobile for iPad.

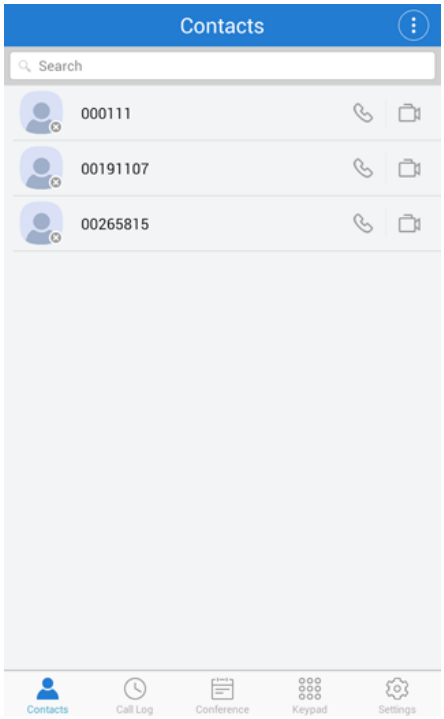
Figure 7-3 Home screen of TE Mobile for iPad



TE Mobile for iPhone

Figure 7-4 shows the home screen of TE Mobile for iPhone.

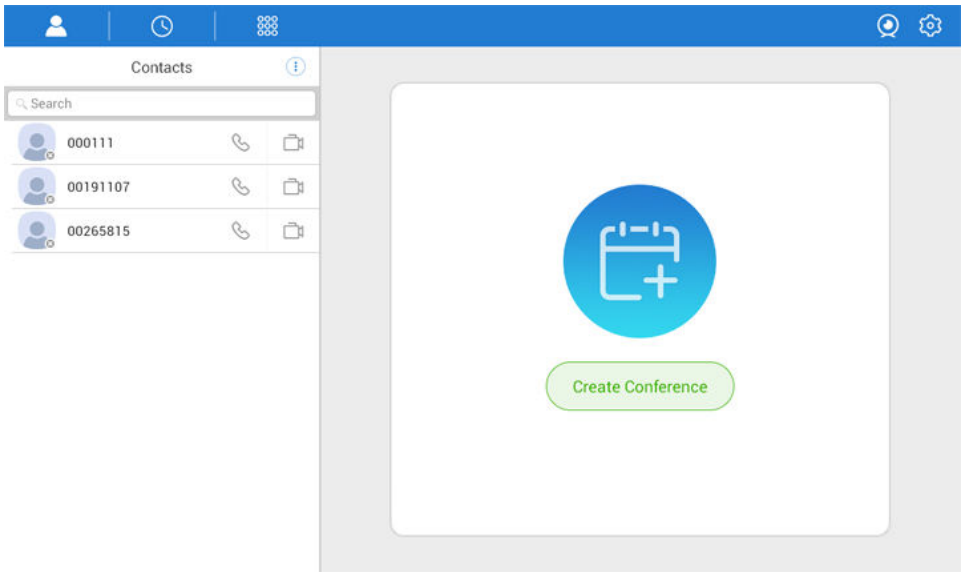
Figure 7-4 Home screen of TE Mobile for iPhone



TE Mobile for Android Pad

Figure 7-5 shows the home screen of TE Mobile for Android Pad.

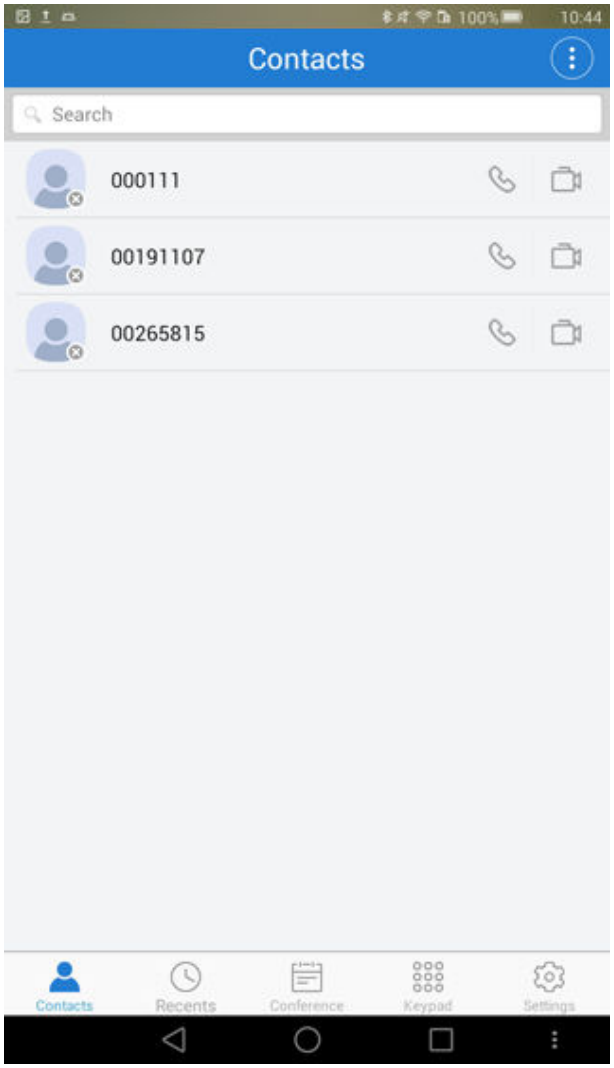
Figure 7-5 Home screen of TE Mobile for Android Pad



TE Mobile for Android Phone

Figure 7-6 shows the home screen of TE Mobile for Android Phone.

Figure 7-6 Home screen of TE Mobile for Android Phone

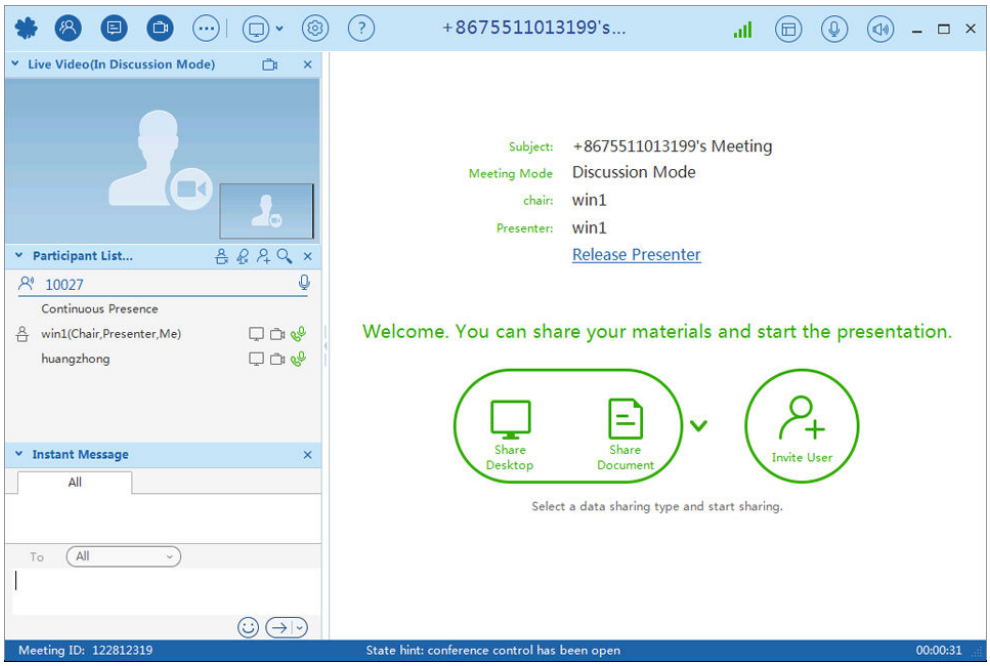


TE WebClient

Figure 7-7 shows the main window of TE WebClient invoked by TE Desktop running on the IMS or SP hosted network. The TE WebClient UI running on the on-premises network has slight differences.

TE WebClient can be installed on a PC with a touchscreen. In this case, it supports both the mouse clicking and touch operation modes. TE WebClient provides some touch-enabled UIs for data sharing operations, for example, sharing the desktop, a whiteboard, an application, or a document.

Figure 7-7 Main window of TE WebClient



7.3 Log Management

TE Desktop&TE Mobile&TE WebClient logs all non-query events in real time, including user activities and commands. The logs help you with TE Desktop&TE Mobile&TE WebClient maintenance.

7.4 Online Upgrade

By upgrading the system software to the latest version, users can enjoy enhanced and the latest features and functions. Online upgrade does not affect existing data, eliminating the need to back up data and the worry associated with potential data loss.

You can download TE Desktop&TE Mobile&TE WebClient and follow the onscreen instructions to install it easily.

- TE Desktop and TE Desktop for Mac are downloaded from the Huawei enterprise business website or the SMC web interface.
- TE Desktop can be upgraded using the upgrade file pushed by eSight.
- TE Mobile for iPhone and TE Mobile for iPad are downloaded and upgraded from App Store.
- TE Mobile for Android Phone and TE Mobile for Android Pad are downloaded and upgraded from Google Play or Huawei app market.
- TE WebClient is downloaded and upgraded together with TE Desktop. If a new version of TE WebClient is detected, the system will prompt you when you want to join a conference by clicking its link. On the IMS hosted or SP hosted network, you can download or upgrade TE WebClient from the software download page provided by the MediaX.

8 Technical Specifications

Table 8-1 HUAWEI TE Desktop&TE Mobile technical specifications

Category	Specifications
Model	● TE Desktop ● TE Desktop for Mac ● TE Mobile for iPhone ● TE Mobile for iPad ● TE Mobile for Android Phone ● TE Mobile for Android Pad ● TE WebClient
Recommended configuration for TE Desktop for Windows and TE WebClient	● CPU: Intel i5-2400 CPU @ 3.10 GHz or higher ● Memory: 4 GB or larger ● Available hard disk space: 8 GB or larger
Operating systems supported by TE Desktop&TE Mobile	● Windows 7 (32- or 64-bit), Windows 8 (32- or 64-bit), or Windows 10 (32- or 64-bit); x86 hardware ● Mac OS X 10.7/10.8/10.9/10.10/10.11/10.12/10.13 (32- or 64-bit); x86 hardware ● iPhone8 Plus, iPhone8, iPhone7 Plus, iPhone7, iPhone6s Plus, iPhone6s, iPhone6 Plus, iPhone6, iPhone SE, iPhone5s, iPhone5c, iPhone5; iOS 8.0 to iOS 11 ● iPad Pro, iPad Air2, iPad Air, iPad mini, iPad mini2, iPad mini3, iPad3, iPad4, iPad5; iOS 8.0 to iOS 11 ● TE Mobile for Android Pad: Android V4.0 to Android V8.0; TE Mobile for Android Phone: Android V4.0 to Android V8.0; CPU with the ARMv7 Neon chip; dominant frequency: 1.5 GHz or above
Operating systems supported by TE WebClient	Windows 7 (32- or 64-bit), Windows 8 (32- or 64-bit), or Windows 10 (32- or 64-bit); x86 hardware

Category	Specifications
Web browsers supported by TE WebClient	● Internet Explorer 8/9/10/11 with the Trident engine ● Firefox 43 to 51 ● Google Chrome 38 to 59
Communication protocols	SIP, RTP, RTCP and BFCP over TLS
Audio standards	G.711A, G.711U, G.722, G.729A, iLBC and Opus
Audio processing	AEC, ANS, and AGC
Audio packet loss concealment	PLC
Video packet loss concealment	SEC 2.0, SEC 3.0, RTCP and HARQ
Two-stage dialing	DTMF and RFC 2833
Video codec	H.264 BP and H.264 HP
Video resolution	● TE Desktop and TE Desktop for Mac Encoding: 720p 30 fps Decoding: 1080p 30 fps ● TE Mobile for iPhone and TE Mobile for iPad Encoding: 720p 20 fps, 768 x 432 20 fps, 640 x 368 20 fps, 480 x 272 20 fps, 320 x 176 20 fps, 176 x 96 20 fps Decoding: 720p 20 fps ● TE Mobile for Android Phone Encoding: 720p Huawei Mate7/Mate 8/MateS/P8/P9, Android 7.0 or earlier), 768 x 432 (8-core CPU), 640 x 368, 320 x 176, 176 x 96 20 fps Decoding: 720p 20 fps (Huawei Mate7/Mate 8/ MateS/P8/P9, Android 7.0 or earlier), 768 x 432 20 fps (8-core CPU), 640 x 368 20 fps ● TE Mobile for Android Pad Encoding: 640 x 368 20 fps, 480 x 272 20 fps, 320 x 176 20 fps, 176 x 96 20 fps Decoding: 640 x 368 20 fps ● TE WebClient: up to 720p 30 fps

Category	Specifications
Presentation resolution	● TE Desktop and TE Desktop for Mac: 1920 x 1200 5 fps presentation sharing and 1920 x 1200 10 fps presentation receiving ● TE Mobile for iPhone: 1920 x 1200 3 fps presentation receiving ● TE Mobile for iPad: XGA (1024×768) 3 fps presentation sharing and 1920 x 1200 3 fps presentation receiving ● TE Mobile for Android Phone: 1920 x 1200 3 fps presentation receiving ● TE Mobile for Android Pad: 720p 3 fps presentation sharing and 1920 x 1200 3 fps presentation receiving ● TE WebClient: 1920 x 1200 10 fps presentation receiving from Huawei's TE series videoconferencing endpoints and TE Desktop for Mac
Security protocols	● SIP OVER TLS ● SRTP ● FTPS ● LDAPS ● HTTPS ● BFCP over TLS
Supported network	TE Desktop, TE Desktop for Mac and TE WebClient: Ethernet and Wi-Fi TE Mobile: 3G/4G (China Mobile TD-SCDMA 3G excluded) and Wi-Fi
Bandwidths	TE Desktop and TE WebClient: 64 kbit/s to 4 Mbit/s TE Desktop for Mac: 64 kbit/s to 2 Mbit/s TE Mobile: 64 kbit/s to 768 kbit/s
Languages	TE Desktop&TE Mobile: Chinese Simplified, Chinese Traditional, English, French, Portuguese (BR), Portuguese (EU), Spanish, Japanese, Russian and Polish TE WebClient: Chinese Simplified, Chinese Traditional, English, French, Portuguese (BR), Spanish, Russian and Polish
Recommended cameras for TE Desktop and TE Desktop for Mac	Recommended USB network camera models: Logitech Pro C930e, Logitech Pro C920, Logitech C525, and Logitech Pro9000

A Glossary

A

active/standby backup	A backup mechanism in which the same two systems are deployed to improve the reliability.
AEC	Acoustic Echo Cancellation A type of signal processing commonly used in teleconferencing. The speech from the far-end caller is broadcast by the speakerphone or the hands-free cellular phone and then repeats itself by bouncing off the inside surfaces of a room or car. This repetition of sound is called an echo. Echoes are picked up by the near-end microphone, creating a feedback loop where the far-end caller hears an echo of his or her own voice. AEC is developed to solve this problem.
AES	Advanced Encryption Standard A specification for the encryption of electronic data established by the U.S. National Institute of Standards and Technology (NIST). It supersedes the Data Encryption Standard (DES). AES adopts a symmetric-key algorithm for both encrypting and decrypting the data, where the block size is 128 bits and the key size is 128 bits, 192 bits, or 256 bits.
AGC	Automatic Gain Control
AJB	Audio Jitter Buffer
API	Application Programming Interface A source code based specification intended to be used as an interface by software components to communicate with each other.
ARQ	Automatic Repeat Request

B

Broadcast Site	All sites, except for the site being broadcast, view the site that is broadcast. On the Broadcast Site screen, users can choose between Broadcast Single and Broadcast in Turn.

C

carrier	An organization that has telecom network resources and can provide communications service.
CIF	Common Intermediate Format
CSCF	Call Session Control Function The core component of the IMS network. It performs the functions such as registration, authentication, session control, service triggering, topology hiding, QoS control, NAT traversal, and security management.
chair site	A site that has chair control rights.
contacts	Users can save the information about the IP address, number, type, and bandwidth of a remote site to a contact.

D

DMZ	Demilitarized Zone A buffer area between an insecure system and the secure system and is used to solve the problem that the external network equipped with a firewall cannot access the internal network server. The DMZ is located between the internal network and the external network. In the DMZ, some public server facilities, such as the enterprise Web server and FTP server, can be located. The DMZ effectively protects the internal network.
DTMF	Dual Tone Multiple Frequency Multi-frequency signaling technology for telephone systems. According to this technology, standard set combinations of two specific voice band frequencies, one from a group of four low frequencies and the other from a group of four high frequencies, are used.
Dual Stream	During a conference, two channels of video streams can be sent or received simultaneously. One channel is used for transmitting video (such as the video captured by a camera) and the other channel is used for transmitting presentation (such as a computer desktop).

E

EUA	Enterprise Unified Address Book A next-generation address book server launched by Huawei. It provides LDAP-based unified address book services for Huawei videoconferencing and enterprise communication solutions.

F

FTPS	File Transfer Protocol over SSL An extension to the commonly used File Transfer Protocol (FTP) that adds support for the Transport Layer Security (TLS) and the Secure Sockets Layer (SSL) cryptographic protocols.
G	
G.722	Audio codec standard that uses adaptive differential pulse-code modulation (ADPCM). Its data rate is 48 kbit/s, 56 kbit/s, or 64 kbit/s.
H	
H.264	Compared with H.263, H.264 can provide the same-quality video at half of the bit rate, with strong error resilience characteristics.
H.323 protocol	A communication control protocol defined by the International Telecommunication Union (ITU). It offers multimedia services in the packet-switched (PS) network. Call control is an essential component in H.323 and is used to establish point-to-point media sessions and multi-point media conferences.
HARQ	Hybrid Automatic Repeat Request
HD	High Definition
HTTPS	Hypertext Transfer Protocol Secure An HTTP protocol that runs on top of transport layer security (TLS) and Secure Sockets Layer (SSL). It is used to establish a reliable channel for encrypted communication and secure identification of a network web server. For details, see RFC2818.
I	
IM	Instant Messaging A form of real-time communication between two or more people based on typed text. The text is conveyed via devices connected over a network such as the Internet.
IMS	IP multimedia subsystem
L	
LDAP	Lightweight Directory Access Protocol A network protocol based on TCP/IP, which allows access to a directory system agent (DSA). It involves some reduced functionality from X.500 Directory Access Protocol (DAP) specifications.
LDAPS	LDAP over SSL An extended lightweight directory access protocol (LDAP) that supports encryption protocols Transport Layer Security (TLS) and Secure Sockets Layer (SSL).
M	

MCU	Multipoint Control Unit Data connection equipment used in a videoconferencing system. An MCU is used for terminal access, video exchange, audio mixing, data processing, and signaling exchange.
MediaX	Media Switch Server A service scheduling platform for voice and video conferences on the IMS hosted and SP Hosted network.
Media Stream	Data stream (such as audio, video and fax) between different bearer networks.
N	
NetATE	Net Automatic-Transfer-Enhancement
P	
PiP	Picture in Picture
PLC	Packet Loss Compensation
point-to-point call	A site makes a call to another site, to hold a conference that has two participants.
presentation	During a conference, the local site shares the content input from a computer with remote sites, such as an excel file, a diagram, or slides.
Q	
QoS	Quality of Service A commonly-used performance indicator of a telecommunication system or channel. Depending on the specific system and service, it may relate to jitter, delay, packet loss ratio, bit error ratio, and signal-to-noise ratio. It functions to measure the quality of the transmission system and the effectiveness of the services, as well as the capability of a service provider to meet the demands of users.
Universal Transcoding	When a conference endpoint joins a universal transcoding conference, the MCU can send specified images with any resolution and send specified images that are combined by less than 24 sites.
R	
RTCP	Real-Time Transport Control Protocol A protocol used to monitor data delivery. RTCP enables the receiver to detect if there is any packet loss and to compensate for any delay jitter.
RTP	Real-time Transport Protocol
S	
SBC	Session Border Controller

SC	A Switch Center (SC) is Huawei's new-generation network switch system that provides H.323 GK, SIP server, and media proxy functions.
SD	Standard Definition A video format with the resolution below 720p.
SEC	Super Error Concealment
SIP	Session Initiation Protocol A protocol developed by IETF MMUSIC Working Group and proposed standard for initiating, modifying, and terminating an interactive user session that involves multimedia elements.
SMC	Service Management Center A videoconferencing service management system that manages videoconferencing devices (including GKs, MCUs, and participant endpoints) and allocates videoconferencing resources.
SP	Service Provider A service provider (SP) is defined as a company or organization, making use of an electronics communications network or part thereof to provide a service or services on a commercial basis to third parties.
SRTP	Secure Real-time Transport Protocol A real time transport protocol with enhanced security and encryption mechanism-based RTP.
T	
Telepresence	The Huawei telepresence system provides users a comfortable videoconferencing environment in which they can have true-to-life and face to face remote conferences.
TLS	Transport Layer Security
two-stage dialing	An operation that is performed when an extension number must be dialed during the process of making a call, forwarding a call, and initiating external appeal.
U	
UDP	User Datagram Protocol
USM	Unified Session Manager
W	
Wi-Fi	Wireless Fidelity A short-distant wireless transmission technology. It enables wireless access to the Internet within a range of hundreds of feet wide.
X	

XGA	Extended Graphics Array