# Administration Guide for the Cisco Webex Meetings Virtual Desktop Environments

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# Installing and Configuring the Webex Meetings Virtual Desktop App 39.3

## About the Cisco Webex Meetings Virtual Desktop App

The Cisco Webex Meetings Virtual Desktop App optimizes the audio and video for the virtual desktop environment using a thin client. With supported versions of Cisco Webex for Windows, Linux, Unicon eLux, and HP ThinPro, hosts can connect to meetings and manage the lobby from their hosted virtual desktops (HVD), ensuring a great experience for both the hosts and the attendees. The software routes all audio and video streams directly between the thin client and the meeting server without going through the HVD.

**Note**     Hosts can start meetings from the Webex Meetings Virtual Desktop App if their site is managed in the Cisco Webex Control Hub, or if their site is managed in the Webex Site Administration and linked to Control Hub. For more information, see Link Cisco Webex Sites to Control Hub.

**Note**   The Webex Meetings Virtual Desktop Environments is not compatible with the current WBS40.4 Webex Meetings Virtual Desktop Software.

# The Architecture of the Cisco Webex Meetings Virtual Desktop App

The Webex Meetings Virtual Desktop App provides the same architecture components similar to a video device.
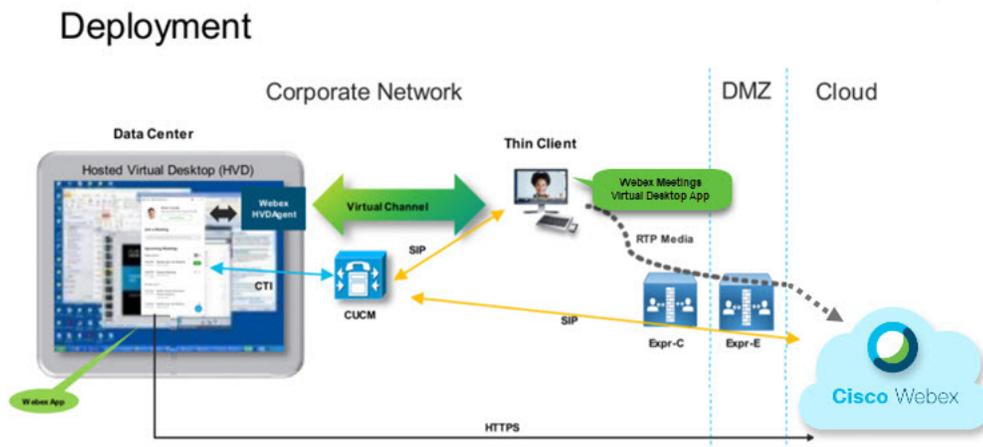
# Requirements

Before you deploy the Webex Meetings Virtual Desktop App version WBS39.3, make sure to meet that the following requirements:

- Authenticate the user on the Webex Meetings Virtual Desktop App

- User to have an account on the Webex site that is managed by Webex Control Hub, or linked with Webex Control Hub

- Cisco Unified Communications Manager (CUCM) and Cisco Expressway meets the minimum version requirements

  - CUCM version:

    - 10.5(2) and later (Minimum)

    - 11.5(1) SU3 or later (Recommended)

  - Cisco Expressway C and E version X8.11.4 and later

The following requirements are listed in the tables below:

- Windows, Windows Server, and Windows Embedded

- Ubuntu

- Unicon eLux

- HP ThinPro

*Table 1: Windows, Windows Server, and Windows Embedded*

| Component | Requirements |
|---|---|
| Microsoft Windows-based thin client hardware | • Installed RAM 2 GB<br>• Free Physical Memory 128 MB<br>• Free Disk Space 256 MB<br>• CPU Mobile AMD Sempron Processor 3600+, 2-GHz Intel Core 2 CPU, or T7400 2.16 GHz<br>• DirectX 11 compatible GPU<br>• USB 2.0 for USB camera and audio devices |
| Microsoft Windows-based thin client OS | • Microsoft Windows 7<br>• Microsoft Windows 8<br>• Microsoft Windows 8.1<br>• Microsoft Windows 10 |

| Component | Requirements |
|---|---|
| Windows Embedded Standard-based thin client hardware | • Installed RAM 2 GB<br><br>• Free Physical Memory 128 MB<br><br>• Free Disk Space 256 MB<br><br>• CPU performance affects the maximum video resolution. With Windows Embedded Standard thin clients, the expected resolution depends on the CPU:<br><br>    • Up to 720p with quad-core AMD GX-420CA SOC 2 GHz or similar<br><br>    • Up to 240p with dual-core AMD G-T56N 1.65 GHz or similar<br><br>    • Audio-only support with dual-core VIA Eden X2 U4200 1 GHz or similar CPU<br><br>**Note**    These hardware specifications are only guidelines for the expected resolutions. Other factors can affect video resolution.<br><br>• DirectX 11 compatible GPU<br><br>• USB 2.0 for USB camera and audio devices<br><br>**Note**    The Webex Meetings Virtual Desktop App for Windows does not require the Microsoft .NET Framework or any Java modules. |
| Hosted virtual desktop OS (server-side) | • Microsoft Windows 7<br><br>• Microsoft Windows 8<br><br>• Microsoft Windows 8.1<br><br>• Microsoft Windows 10 |
| Windows Embedded Standard-based thin client OS | • Windows Embedded Standard 7<br><br>• Windows Embedded Standard 8<br><br>• Windows 10 IoT Enterprise |

| Component | Requirements |
|---|---|
| Connection broker for the hosted virtual desktop | • Citrix XenDesktop 7.15, and later 7.x versions<br><br>• VMware Horizon 7.0 and later 7.x versions<br><br>**Note**     To avoid phone connection issues, perform the following steps:<br><br>       • On thin clients with 64-bit Windows, select 32-bit Core Remote Experience.<br><br>       • On the VMware Horizon installation on the 64-bit machine install the Webex Meetings Virtual Desktop App. |
| Windows Server | • Microsoft Windows 2012 R2<br><br>• Microsoft Windows 2016 |
| Windows Embedded | • Microsoft WES 7<br><br>• Microsoft WES 8<br><br>• Microsoft Windows IoT |
| Cisco Unified Communications Manager | • Recommended CUCM Release 11.5(1) SU3 or later<br><br>• Minimum CUCM Release 10.5(2) |
| Accessories | For a complete listing of supported audio and video accessories, see Unified Communications Endpoint and Client Accessories.<br><br>• Cisco Webex Meetings Virtual Desktop App does not support using accessories to start or end a meeting, or mute or unmute a meeting.<br><br>• If the host uses the end meeting button to end a meeting, the meeting will end directly, without assigning a new host |

*Table 2: Ubuntu*

| Component | Requirements |
|---|---|
| Ubuntu thin clients—Hardware | The following hardware is supported with Ubuntu 14.04 32-bit LTS:<br><br>• Installed RAM 2 GB<br><br>• Free Physical Memory 256 MB<br><br>• Free Disk Space 256 MB<br><br>• CPU: AMD G-T56N 1.65Ghz, or Intel Core 2 Duo T7500 2.2 GHz<br><br>• USB 2.0 for USB camera and audio devices |
| Ubuntu—Hardware | • Ubuntu 14.04 32-bit LTS |
| Hosted virtual desktop OS (server-side) | • Microsoft Windows 7<br><br>• Microsoft Windows 10<br><br>• Microsoft Windows Server 2016 |
| Connection broker for the hosted virtual desktop | • Citrix XenDesktop 7.15, and later 7.x versions<br><br>• VMware Horizon 7.5 and later 7.x versions |
| Citrix Receiver or VMware Horizon Client 2 [1] (Installed on the thin client) | • 13.8.0 or later (32-bit version required)<br><br>• VMware 4.4.0 or later (32-bit version required) |
| Cisco Unified Communications Manager | • Recommended CUCM Release 11.5(1) SU3 or later<br><br>• Minimum CUCM Release 10.5(2) |
| Accessories | For a complete listing of supported audio and video accessories, see Unified Communications Endpoint and Client Accessories.<br><br>• Cisco Webex Meetings Virtual Desktop App does not support using accessories to start or end a meeting, or mute or unmute a meeting.<br><br>• If the host uses the end meeting button to end a meeting, the meeting will end directly, without assigning a new host |

[1]  The Citrix Receiver or VMware Horizon Client provides a user interface for the corresponding connection broker.

(PCoIP and Blaster)

**Table 3: Unicon eLux**

| Component | Requirements |
|---|---|
| Unicon eLux thin clients—Hardware | The minimum hardware requirements for thin clients are:<br><br>• 1.6-GHz dual-core processor<br><br>• 2-GB RAM<br><br>The following client hardware is tested with eLux RP 5.7.0:<br><br>• HP T520<br><br>• HP T620 Dual Core/Quad Core<br><br>• HP T630 Dual Core/Quad Core<br><br>• HP T730 |
| Hosted virtual desktop OS (server-side) | • Microsoft Windows 7<br><br>• Microsoft Windows 10<br><br>• Microsoft Windows Server 2016 |
| Connection broker for the hosted virtual desktop | • Citrix XenDesktop 7.15, and later 7.x versions<br><br>• VMware Horizon 7.5 and later 7.x versions |
| Citrix Receiver or VMware Horizon Client [2]<br><br>(Installed on the thin client) | • 13.8.0 or later (32-bit version required)<br><br>• VMware 4.4.0 or later (32-bit version required) |
| Cisco Unified Communications Manager | • Recommended CUCM Release 11.5(1) SU3 or later<br><br>• Minimum CUCM Release 10.5(2) |
| Accessories | For a complete listing of supported audio and video accessories, see Unified Communications Endpoint and Client Accessories.<br><br>• Cisco Webex Meetings Virtual Desktop App does not support using accessories to start or end a meeting, or mute or unmute a meeting.<br><br>• If the host uses the end meeting button to end a meeting, the meeting will end directly, without assigning a new host |

[2] The Citrix Receiver or VMware Horizon Client provides a user interface for the corresponding connection broker.

(PCoIP and Blaster)

*Table 4: HP ThinPro*

| Component | Requirements |
|---|---|
| HP ThinPro 6.2 - Hardware | The minimum hardware requirements for thin clients are:<br><br>• 1.6-GHz dual-core processor<br><br>• 2-GB RAM<br><br>Supported devices, thin client with HP ThinPro 6.2<br><br>• HP T520<br><br>• HP T620 Dual Core/Quad Core<br><br>• HP T630 Dual Core/Quad Core<br><br>• HP T730 |
| HP ThinPro platform image | HP ThinPro 6.2: T7X62022 |
| Hosted virtual desktop OS (server-side) | • Microsoft Windows 7<br><br>• Microsoft Windows 10<br><br>• Microsoft Windows Server 2016 |
| Connection broker for the hosted virtual desktop | • Citrix XenDesktop 7.15, and later 7.x versions<br><br>• VMware Horizon 7.5 and later 7.x versions |
| Citrix Receiver or VMware Horizon Client 2 [3] (Installed on the thin client) | **For HP ThinPro 6.2**<br><br>The HP ThinPro image includes Citrix and VMware:<br><br>• ICA Client: 13.8.0 or later (32-bit version required)<br><br>• VMware 4.4.0 or later (32-bit version required) |
| Cisco Unified Communications Manager | • Recommended CUCM Release 11.5(1) SU3 or later<br><br>• Minimum CUCM Release 10.5(2) |
| Accessories | For a complete listing of supported audio and video accessories, see Unified Communications Endpoint and Client Accessories.<br><br>• Cisco Webex Meetings Virtual Desktop App does not support using accessories to start or end a meeting, or mute or unmute a meeting.<br><br>• If the host uses the end meeting button to end a meeting, the meeting will end directly, without assigning a new host |

[3] The Citrix Receiver or VMware Horizon Client provides a user interface for the corresponding connection broker.

(PCoIP and Blaster)

# Port Requirements

## Port Requirements

The client uses the ports and protocols listed in the following table. If you plan to deploy a firewall between the client and a server, configure the firewall to allow these ports and protocols.

**Note**   The Webex Meetings Virtual Desktop App Client installer does not add firewall rules. Disable the Windows Firewall on the endpoints, or add an exception to allow the Webex Meetings Virtual Desktop App.

## Ports and Protocols

The following table lists the ports and protocols that the client uses. If you plan to deploy a firewall between the client and a server, configure the firewall to allow these ports and protocols.

*Table 5: Ports and Protocols*

| Port | Application Layer Protocol | Transport Layer Protocol | Description |
|------|----------------------------|--------------------------|-------------|
| Configuration | | | |
| 6970 | HTTP | TCP | Connect to the TFTP server to download client configuration files. |
| 6972 | HTTPS | TCP | Connects to the TFTP server to download the client configuration files securely for Cisco Unified Communications Manager release 11.0 and later. |
| 53 | DNS | UDP | Hostname resolution. |
| 3804 | CAPF | TCP | Issues Locally Significant Certificates (LSC) to IP phones. This port is the listening port for Cisco Unified Communications Manager Certificate Authority Proxy Function (CAPF) enrollment. |

| Port | Application Layer Protocol | Transport Layer Protocol | Description |
|---|---|---|---|
| 8443 | HTTPS | | Traffic to Cisco Unified Communications Manager. |
| Communication Manager Signaling | | | |
| 2748 | CTI | TCP | Computer Telephony Interface (CTI) used for the desk phone control. |
| 5060 | SIP | TCP | Provides Session Initiation Protocol (SIP) call signaling. |
| 5061 | SIP over TLS | TCP | SIP over TCP Provides secure SIP call signaling. (Used if Secure SIP is enabled for the device.) |
| 5070 to 6070 | BFCP | UDP | Binary Floor Control Protocol (BFCP) for video screen sharing capabilities. |
| Voice or Video Media Exchange | | | |
| 16384 to 32766 | RTP/SRTP | UDP | Cisco Unified Communications Manager media port range used for audio, video, and BFCP video desktop share. |
| Cisco Webex Meetings Virtual Desktop App | | | |
| 443 | HTTPS | TCP | Connects to Cisco Webex Meetings for meetings. |

**Open Port Requirements**

Install the Webex Meetings Virtual Desktop App client on thin client. Then, open the ports list in the Configuration, Communication Manager Signaling, and Voice or Video Media Exchange.

Install the Webex Meetings Virtual Desktop Application and agent on HVD. Then, open the ports list in Configuration and Webex Meetings Virtual Desktop App.

*Table 6: VMware Unified Access Gateway Port List*

| Direction | Transport Protocol | Destination Port | Purpose |
|---|---|---|---|
| External Network => UAG | TCP/UDP | 443 | Blast Extreme |
| | | 4172 | PCoIP |
| | | 8443 | HTML Blast |
| Internal Network (Administration) => UAG | TCP | 9443 | REST API |
| | TCP | 80/443 | Edge Gateway |
| UAG => Internal Network (VDI) | TCP | 443 | Connection Server |
| | TCP/UDP | 4172 | PCoIP |
| | TCP | 32111 | USB Redirection |
| | TCP/UDP | 22443 | Blast Extreme |
| | TCP | 9427 | MMR/CDR |
| | TCP/UDP | 53 | DNS Query |

*Table 7: Citrix Netscaler VPX Port List*

| External Network => NetScaler | TCP | 80 | Connection from Citrix Receiver |
|---|---|---|---|
| | TCP/UDP | 443 | |
| Internal Network => NetScaler | TCP | 80 | Connection from Citrix Receiver |
| | TCP/UDP | 443 | Authentication callback from StoreFront Server / Connection from Citrix Receiver |
| | TCP | 22 | NetScaler Administration |
| | | 80 | |
| | | 443 | |
| | | 3010 | |
| | | 3008 | |

| NetScaler => Internal Network (VDI) | TCP/UDP | 53 | DNS Query |
|---|---|---|---|
| | UDP | 123 | NTP |
| | TCP | 389 | LDAP Query |
| | | 636 | |
| | TCP | 443 | Citrix StoreFront Server |
| | | 80 | |
| | | 808 | |
| | TCP | 80 | Citrix Delivery Controller |
| | | 443 | |
| | TCP/UDP | 1494 | HDX ICA |
| | | 2598 | |
| | UDP | 16500-16509 | |
| | | 3224-3324 | |

# Supported Codecs

*Table 8: Supported Audio and Video Codecs*

| Audio Codec | Video Codec |
|---|---|
| G.722 | H.264/AVC |
| G.722.1 (24 and 32k)<br><br>G.722.1 is supported on Cisco Unified Communications Manager 8.6.1 or later. | |
| G.711 A-law | |
| G.711 u-law | |
| G.729a | |
| Opus<br><br>Opus is supported on Cisco Unified Communications Manager 11.0 or later. | |

# Cisco Expressway

The Cisco Expressway solution comprises of Core (Expressway-C) and Edge (Expressway-E). Expressway C and E allow remote video and mobile clients to communicate with a private communications platform without a virtual private network.

Deploy the Expressway C and E using CUCM to communicate with Webex, regardless of the endpoints being registered to CUCM. To know more about configuring Cisco Expressway, see Mobile and Remote Access Through Cisco Expressway.

# Enabling Cisco Unified Communications Manager (CUCM)

1. Download the COP file from Cisco.com for:

    • Windows

    • Unicon eLux

    • ThinPro and Ubuntu

2. Enter details for the Software Location and click **Next**.

3. Enter the COP file name in **Options/Upgrade**.

4. Select the **Server** and click **Go** in the Control Center. Then, restart the services: Cisco Unified CM, Cisco CTI Manager, and Cisco TFTP.



5. **a.** Add a new WSF device for the user with device mode **Cisco Webex VDI SVC Framework**.

| Note | The steps to add the WSF device are the same as the steps to add a CSF device. |

   **b.** Select the checkbox **Allow Control of Device from CTI** for this device.

   **c.** Add CTI permission on the end user page

# Authenticating Users to Connect to CUCM

Both the meeting site and CUCM's credentials are encrypted and then cached to a local storage. At every restart, the Webex Meetings Virtual Desktop App always tries the cached credential first. Then, prompts you to do the authentication again if the cached credential becomes invalid.

**Note** Any configurations or credentials are cached in HVD only and not in the thin client.

| Deployment | User Experience |
|---|---|
| Both the meeting site and CUCM are SSO-enabled | 1. Enter the email to start the service discovery.<br>2. Enter the username and password in the browser.<br>3. The pre-meeting UI displays. |
| The meeting site is SSO-enabled but CUCM is not SSO-enabled | 1. Enter the email to start service discovery.<br>2. Enter the username and password in the browser.<br>3. The pre-meeting UI displays.<br>4. Enter the CUCM credentials in the pop-up window. |

| Deployment | User Experience |
|---|---|
| The meeting site is not SSO-enabled but CUCM can either be SSO-enabled or not SSO-enabled | 1. Enter the email to start the service discovery.<br><br>2. Enter the username and password for meeting account credentials.<br><br>3. The pre-meeting UI displays.<br><br>4. Enter CUCM credentials if it is different with meeting credentials. |

# Workflow for Deployment and Installation of the Cisco Webex Meetings Virtual Desktop App

Prerequisites:

Ensure that you install CUCM and it is operational.

> **Note** If CUCM is not installed, see Installation Guide for Cisco Unified Communications Manager for installation instructions.

1. Review the Webex Meetings Virtual Desktop App Release Notes for information about limitations or restrictions that may affect your deployment.

2. Review the system requirements to confirm that all required hardware and software meet them.

> **Note** Failure to meet all requirements can result in a non-functional deployment.

3. Review the port requirements.

4. Configure SRV Records on the DNS server. If the administrator does not configure the SRV records on DNS, then install Webex meetings at the command line to setup arguments. For more information, see Deploying the SRV Records on the DNS Server.

5. Configure CUCM (Install the COP file, restart the services: Cisco Unified CM, Cisco CTI Manager, Cisco TFTP, add users, and WSF devices). For more information on Configuring CUCM, see Enabling Cisco Unified Communications Manager (CUCM) .

> **Note** Create a dedicated directory number for WSF Device.

6. Create and set up the hosted virtual desktops in the data center. Ensure that the hosted virtual desktops (HVD) are ready for you to install the Webex Meetings Virtual Desktop App. For more information, see Setting up the Hosted Virtual Desktops Workflow.

7. Set up and configure the thin clients. For more information, see documentation available from the thin client OEM.

8. Install the Webex Meetings Virtual Desktop App Client components on the thin clients and the hosted virtual desktop. For more information, see Installing the Components Workflow. After you install the Webex Meetings Virtual Desktop App Agent and other required software on the HVD, you can clone the HVD.

# Setting up the Hosted Virtual Desktops Workflow

1. Sign in to the Microsoft Windows HVD as a new user, with administration rights.

2. Join the HVD to the corporate domain.

**Note**  You require domain administration rights.

3. Set up Citrix or VMware access to the HVDs.

4. Install the Webex Meetings Virtual Desktop App on the HVD.

**Note**  The Webex Meetings Virtual Desktop App supports the English Operating System in the current release. If you are using an Operating System other than English, install the Webex Meetings Desktop App using command line:

```
msiexec.exe /i CiscoWebexMeetingsSetup.msi CLEAR=1
```

5. Install the Webex Meetings Virtual Desktop App Agent on the HVD.

6. Clone the HVD image.

**Note**  For more information on the best practices for cloning Microsoft Windows HVD images, see the documentation for your Citrix or VMware product.

# Installing the Components Workflow

1. Download the Webex Meetings Virtual Desktop App.

2. Download the Webex Meetings Virtual Desktop App Agent and Client.

3. Install the Webex Meetings Virtual Desktop App client for HVD on thin client.

**Note** When installing the Webex Meetings Virtual Desktop client on thin client, disconnect the connection with HVD.

4. Install the Webex Meetings Virtual Desktop App on HVD.

**Note** The Webex Meetings Virtual Desktop App supports the English Operating System in the current release. If you are using an Operating System other than English, install the Webex Meetings Virtual Desktop App using command line:

```
msiexec.exe /i CiscoWebexMeetingsSetup.msi CLEAR=1
```

5. Install the Webex Meetings Virtual Desktop App Agent on the HVD.

# Deploying the SRV Records on the DNS Server

The client queries name servers for records in the services domain.

Deploy SRV records in each DNS zone for those service domains if your organization has multiple subsets of users who use different service domains.

Create the following SRV records (as required):

  • _cisco-uds._tcp.example.com (on Internal DNS)

  • _collab-edge._tls.example.com (on External DNS)

**Internal Records**

The following table lists the SRV records you can provision on internal name servers so the client can discover services:

| Service Record | Description |
|---|---|
| _cisco-uds | Provides the location of CUCM version 10 and higher.<br><br>**Important** In an environment with multiple CUCM clusters, configure the Intercluster Lookup Service (ILS). ILS enables the client to find the user home cluster and discover services. |

**Note** Use the fully qualified domain name (FQDN) as the hostname in the SRV record.

The following is an example of the _cisco-uds SRV record:

```
_cisco-uds._tcp.example.com      SRV service location:
```

```
                        priority       = 1
                        weight         = 5
                        port           = 8443
                        svr hostname   = cucm1.example.com


_cisco-uds._tcp.example.com     SRV service location:
                        priority       = 2
                        weight         = 20
                        port           = 8443
                        svr hostname   = cucm2.example.com
```

**External Records**

The following table lists the SRV record to provision on external name servers as part of the configuration for Expressway Mobile and Remote Access:

| Service Record | Description |
|---|---|
| _collab-edge | Provides the location of the Cisco VCS Expressway or Cisco Expressway-E server. |
| | Use the fully qualified domain name (FQDN) as the hostname in the SRV record. |
| | **Note**      The client requires the FQDN to use the cookie that the Cisco VCS Expressway or Cisco Expressway-E server provides. |

The following is an example of the _collab-edge SRV record:

```
_collab-edge._tls.example.com     SRV service location:
         priority       = 3
         weight         = 7
         port           = 8443
         svr hostname   = vcse1.example.com


_collab-edge._tls.example.com     SRV service location:
         priority       = 4
         weight         = 8
         port           = 8443
         svr hostname   = vcse2.example.com
```

# Installing the Webex Meetings Virtual Desktop App

## Install the Webex Meetings Virtual Desktop App on Windows

**Step 1**      Download and install the Webex Windows and the Webex Meetings Virtual Desktop App agent on your HVD.

**Step 2**      Download and install the Webex Meetings Virtual Desktop App on your thin client.

**Step 3**      Launch the Webex Meetings Virtual Desktop App on HVD.

# Install the Webex Meetings Virtual Desktop App on Ubuntu

**Step 1**    Download and install Webex Windows and the Webex Meetings Virtual Desktop App agent on your HVD.

**Step 2**    Download the Webex Meetings Virtual Desktop App Client Debian (.pkg) package and install it on Ubuntu.

**Step 3**    Launch the Webex Meetings Virtual Desktop App on HVD.

# Install the Webex Meetings Virtual Desktop App on Unicon eLux

**Step 1**    Download Webex Windows and the Webex Meetings Virtual Desktop App agent on your HVD.

**Step 2**    Download the Webex Meetings Virtual Desktop App Client. Use the Elias tool to create an image that contains the Webex Meetings Virtual Desktop App Client. Deploy the image to the thin clients. For more information about how to create an image or how to update the thin client, see the Elias documentation available from the Unicon website.

**Step 3**    Launch the Webex Meetings Virtual Desktop App on HVD.

# Install the Webex Meetings Virtual Desktop App on HP ThinPro

**Step 1**    Download and install Webex Windows and the Webex Meetings Virtual Desktop App agent on your HVD.

**Step 2**    Obtain the Webex Meetings Virtual Desktop App Client Debian (.deb) package and the Cisco-Webex Meetings Virtual Desktop App <xx.x.x> -pre-reqs.xar file from HP. The <xx.x.x> variable in the filename is the Webex Meetings Virtual Desktop App release number. For assistance locating files on the HP site, contact HP support.

**Step 3**    To manually install the Webex Meetings Virtual Desktop App Client on the thin clients, copy the files to a USB stick.

**Step 4**    On the thin client, install Webex Meetings Virtual Desktop App files in the following order, either manually from a USB stick, or use the HP Device Manager for mass deployments. Order of installation:

> • Install cisco-jvdi12.0.x-pre-reqs-thinpro6.2.0-hp1d.xar.
>
> • Install the Cisco Jabber Softphone for VDI .deb package.

For more information about mass deployment, see the documentation for HP Device Manager 4.7, available from HP.

**Step 5**    Launch the Webex Meetings Virtual Desktop App on HVD.

# Installing the Cisco Webex Meetings Virtual Desktop App When JVDI Co-Exists

**Installing the Webex Meetings Virtual Desktop App When JVDI Co-exits**

1.  Install the cop file for the WVDI on CUCM version 10.5(su2) or later.

Name of the cop file: `cmterm-WebexVDI-install-190326.k3.cop.sgn`

Link to download the cop file: https://software.cisco.com/download/home/286304684/type/283802941/release/12.6.0

2. Install the VDI agents for Jabber and Webex on HVD.

3. Install the VDI clients for Jabber and Webex on Thin Client.

*Table 9: Installing the Webex Meetings Virtual Desktop App When JVDI Co-exits*

| WVDI Version | JVDI Version | HVD installation steps | Thin-Client platform | TC installation steps | Notes |
|---|---|---|---|---|---|
| 39.3 | 12.6 | 1. Install the JVDI agent.<br><br>2. Install Jabber for windows.<br><br>3. Install the WVDI agent.<br><br>4. Install the Webex Meeting Virtual Desktop Application. | Windows | 1. Install the JVDI windows client or 64-bit client.<br><br>2. Install the WVDI windows client or 64-bit client. | |
| | | | eLux | 1. Use the Elias tool to create an image that contains the JVDI client and Webex Meeting VDI Client.<br><br>2. Deploy the image to the thin clients. | |
| | | | Ubuntu | 1. Install the JVDI client Debian (`.deb`) package.<br><br>2. Install the Webex Meetings VDI client Debian (`.deb`) package.<br><br>3. Install the `apt-get install -f` to fetch the new lib package. | |

| WVDI Version | JVDI Version | HVD installation steps | Thin-Client platform | TC installation steps | Notes |
|---|---|---|---|---|---|
| | | | ThinPro | 1. Install the ~~ctv2Dxeeijpu62ybta~~ (pre-required package for VDI).<br><br>2. Install the JVDI client Debian (`.deb`) package.<br><br>3. Install the Webex Meetings VDI client Debian (`.deb`) package. | |

| WVDI Version | JVDI Version | HVD installation steps | Thin-Client platform | TC installation steps | Notes |
|---|---|---|---|---|---|
| 39.3 | 12.5 or earlier | 1. Install the JVDI agent.<br><br>2. Install Jabber for windows.<br><br>3. Install the WVDI agent.<br><br>4. Install the Webex Meeting Virtual Desktop Application. | Windows | 1. Install the JVDI windows client or 64-bit client.<br><br>2. Install the Webex Meetings VDI windows client or 64-bit client. | |
| | | | eLux | 1. Use the Elias tool to create an image with the JVDI client and Webex Meeting VDI Client.<br><br>2. Deploy the image to the thin clients. | |
| | | | Ubuntu | | Need parameter "--force-overwrite" when installing the WVDI client. |

| WVDI Version | JVDI Version | HVD installation steps | Thin-Client platform | TC installation steps | Notes |
|---|---|---|---|---|---|
| | | | | 1. Install the JVDI client Debian (`.deb`) package. 2. Install the Webex Meetings VDI client Debian (`.deb`) package. Command: `sudo dpkg -i --force-overwrite xx.deb` 3. Install the `apt-get install -f` to fetch the new lib package. | |
| | | | ThinPro | | Need parameter "--force-overwrite" when installing the WVDI client. |

| WVDI Version | JVDI Version | HVD installation steps | Thin-Client platform | TC installation steps | Notes |
|---|---|---|---|---|---|
| | | | | 1. Install the ctools-jvdi12.6-ubuntu (per-required package for the VDI).<br><br>2. Install the JVDI client Debian (`.deb`) package.<br><br>3. Install the Webex Meetings VDI client Debian (`.deb`) package.<br><br>Command: `sudo dpkg -i —force-overwrite xx.deb.` | |

**Note**

1. Doesn't support making a call and joining a meeting at same time, as the camera and earphone will be engaged at the same time.

2. Disconnect the HVD before installing the client on thin clients on all platform.

3. When your JVDI version is 12.5 or earlier, you need to add the parameter `--force-overwirte` when installing the Webex Meetings Virtual Desktop client on Ubuntu and ThinPro. There is no need for the Webex meeting application and agent.

4. On Citrix for Linux, there are two Virtual Desktop clients that run at the same time. If the user exit Citrix Desktop or App, then the Jabber VDI phone service doesn't disconnect. As this is a Citrix issue, Citrix will fix it for the Linux version 1906 in the current release.

# Installing the Cisco Webex Meetings Virtual Desktop App from Command Line

Before you begin, sign in with local administrative rights.

1. Open a command line window.

2. Enter the following command:

    `msiexec.exe /i CiscoWebexMeetingsSetup.msi`

3. Specify command line arguments as parameter=value pairs.

4. `msiexec.exe /i CiscoWebexMeetingsSetup.msi` *argument = value*

5. Run the command to install the Webex Meetings Virtual Desktop App.

**Example of Installation Commands**

To install the Webex Meetings Virtual Desktop App, review the following examples: `msiexec.exe /I CiscoWebexMeetingsSetup.msi CLEAR=1 VOICE_SERVICES_DOMAIN=voiceservice.domain.com`

CLEAR=1 — Deletes any existing bootstrap file.

*Table 10: Authentication Arguments*

| Argument | Value | Description |
| --- | --- | --- |
| TFTP | IP address<br><br>Hostname FQDN | Specifies the address of your TFTP server. Set one of the following as the value:<br><br>• Hostname *(hostname)*<br><br>• IP address *(123.45.254.1)*<br><br>• FQDN *(hostname.domain.com)*<br><br>Specify this argument if you set Cisco Unified Communications Manager as the authenticator. |
| CTI | IP address<br><br>Hostname FQDN | Sets the address of your CTI server.<br><br>Specify this argument if you set Cisco Unified Communications Manager as the authenticator. |
| CCMCIP | IP address<br><br>Hostname FQDN | Sets the address of your CCMCIP server.<br><br>Specify this argument if:<br><br>• You set Cisco Unified Communications Manager as the authenticator.<br><br>• The address of your CCMCIP server is not the same as the TFTP server address.<br><br>The client can locate the CCMCIP server with the TFTP server address if both addresses are the same. |

| Argument | Value | Description |
|---|---|---|
| VOICE_SERVICES_DOMAIN | Domain | If this setting is specified, the client will use the value of VOICE_SERVICES_DOMAIN to lookup the following DNS records for the purposes of Service Discovery and Edge Detection: <br><br>• _cisco-uds <br><br>• _collab-edge <br><br>This setting is optional and if not specified, the DNS records are queried on email address input by the user, or cached user configuration. |
| LANGUAGE | LCID in decimal | Defines the Locale ID (LCID), in decimal, of the language that Cisco Jabber for Windows uses. The value is an LCID in decimal that corresponds to a supported language. <br><br>For example, you can specify one of the following: <br><br>• 1033 specifies English <br><br>• 1036 specifies French <br><br>See the LCID for Languages topic for a full list of the languages that you can specify. <br><br>This argument is optional. <br><br>If you do not specify a value, the Webex Meetings Virtual Desktop App uses the regional language for the current user as the default. <br><br>The regional language is set at **Control Panel** > **Region and Language** > **Change the date, time, or number format** > **Formats tab** > **Format dropdown**. |

# Starting the Cisco Webex Meetings Virtual Desktop App

Start the Webex Meetings Virtual Desktop App on HVD. The agent on HVD and client on thin client then start automatically.

CHAPTER **2**

# Installing and Configuring the Cisco Webex Meetings Web App for Virtual Desktop Environments

## About the Cisco Webex Meetings Web App for Virtual Desktop Environments (Beta)

Cisco Webex Meetings Web App for Virtual Desktop Environments (Beta) now supports Browser Content Redirection (BCR) for Citrix Visualization platforms. This allows users on virtual desktops to join meetings from the Web App and get amazing audio and video depending on the local computer and network conditions. Users can join meetings using the Web App on virtual environments without BCR, but if they join with BCR then the media traversal happens between user's local machine and Cisco Webex cloud providing the optimization. Currently, BCR is supported on Citrix Virtual Desktops and App version 7.15, 7.18, and 7.19

**Note**   Due to limitation of the Citrix's Browser Content Redirection protocol, user on Web App cannot share their screen, but can see the screen share from other users.

## Citrix Browser Content Redirection Set up

**Note**   Citrix BCR for VDI only supports Windows in the current release as Webex Meeting web client is WebRTC based. For more information, see Citrix Virtual Apps and Desktops.

Set up the environment to make the client fetch and client rendering work with VDI 7.18.

**Step 1**  Install Citrix VDI version is 7.18 or higher. Make sure that the virtual machine has Citrix Virtual Delivery Agent 1811.1 or higher, as a lower version doesn't support Google Chrome.

**Step 2**  Install the Citrix Workspace on a local machine with the version 18.12.0.12(1812) or higher.

**Note**  Don't install the Citrix Receiver.

**Step 3**  Install the BCR extension for Chrome on the remote virtual machine for Chrome. The extension is, Browser Content Redirection Extension.

**Step 4**  Enable the policy, **Browser Content Redirection** > **Policies** in Citrix Studio. By default, the BCR is set to **Allowed**.

**Step 5**  Edit the **Browser Content Redirection ACL Configuration** > **Policies** in Citrix Studio.

This is an allowed list which contains the sites that allow VDA to perform BCR. Add the meeting sites having the thin client BCR feature. For example, add https://go.webex.com/*. The wildcard '*' can't be used for protocol and domain names.
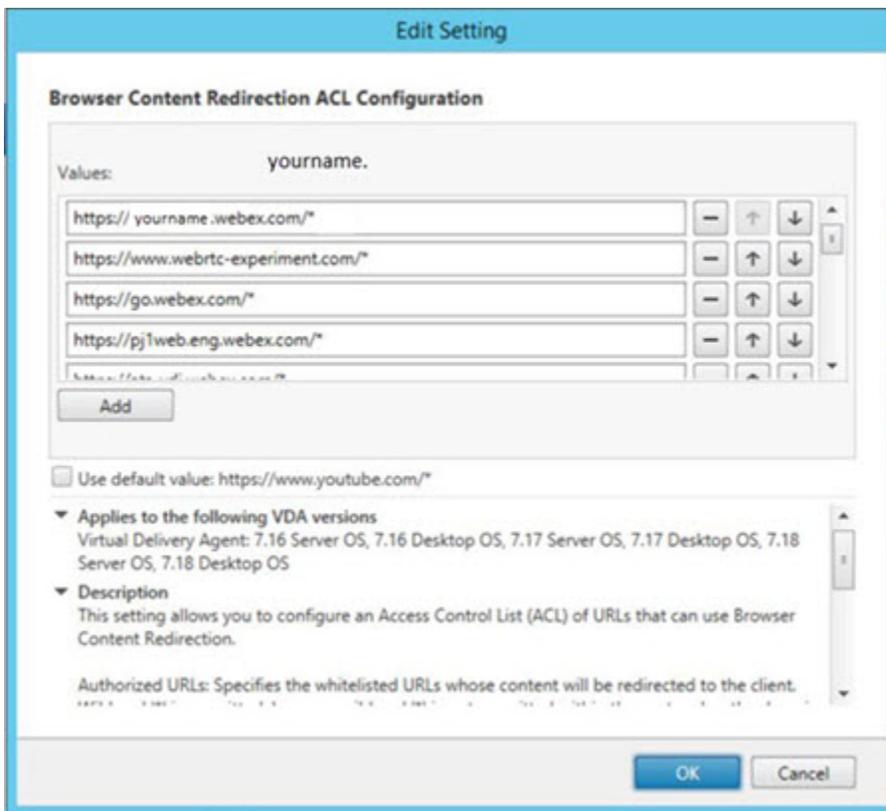


**Step 6**  Optional, allow **HTML5 Video redirection in Citrix Studio** > **Policies**.

# Set up the Environment

Set up the environment to make the client fetch and client rendering work with VDI 7.15

**Step 1**    The Citrix VDI version is 7.15 LTSR CU3 on both the Delivery Controller and VDA.

**Step 2**    Install the Citrix Workspace on a local machine with the version 18.12.0.12(1812) or higher.

> **Note**    Don't install the Citrix Receiver.

**Step 3**    Install 7.15 LTSR CU3 on VDA by using command line and disabling the HTML5 option, `VDAWorkstationsSetup_7.15.exe /FEATURE_DISABLE_HTML5`.

**Step 4**    Install `BCR.msi` that is available on the Citrix download page.

**Step 5**    Download the group policy template from Citrix here. Edit the **Group Policy** using the admin account on VDA.
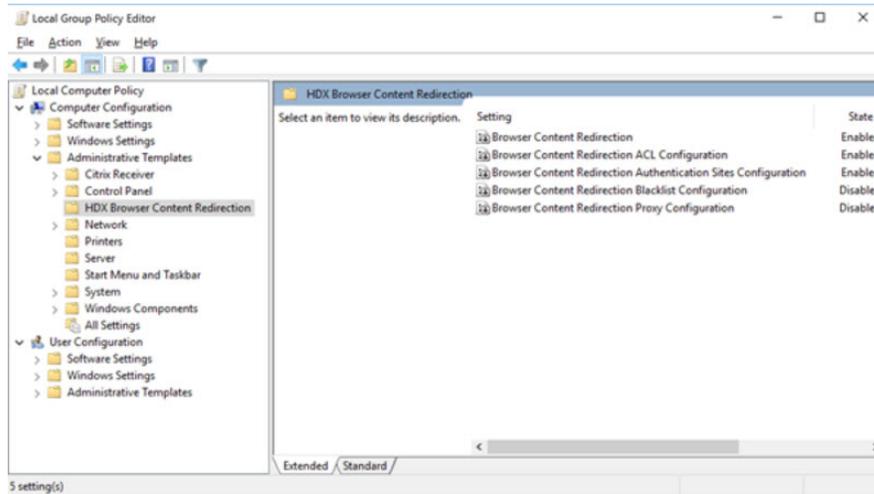


> **Note**    You can also edit the Group Policy in Windows Registry.

**Step 6**    Adding other configurations, for example: the chrome extension, `wss://127.0.0.1:9001` is the same as in VDI 7.18.

For more information about setting up the VDI 7.15 environment, see Compatible Components for VDI 7.15

# Verify that the Client Fetch and Client Render Work

**Step 1**    Connect to a VDA system from the local machine. Currently Windows is the supported operating system.

**Step 2**    Launch Chrome on VDA and join a Webex meeting using the thin client. You can send and receive audio and video.

**Step 3**    Check that the network package works on a local machine using the server address. The packages are present on the local and MMP servers and few of the control package are present local and on the VDA servers.

# Notes in the Setup

**Before you begin**

To ensure best resolution and performance:

**Step 1**      Click **Citrix Workspace** in your task bar and select **Advanced Preferences**.

**Step 2**      Select **High DPI** > **Yes** > **Save**.

**Step 3**      Check the resolution and scale ratio of your local machine.

# Limitations of the Webex Meetings Web App for Virtual Desktop Environments

- If you are using the Webex Meetings Web App for Virtual Desktop Environments client on a virtual desktop with BCR enabled, you can't switch to native client.

- The Webex Meetings Web App for Virtual Desktop Environments only works with Google Chrome on Windows.

- The Playback feature for recordings is not available for Webex Meetings Web App for Virtual Desktop Environments.

- The share functionality in not available on Webex Meetings Web App for Virtual Desktop Environments as Citrix has not implemented the related WebRTC interface.