

MICROSOFT LYNC 2013 AND SKYPE FOR BUSINESS 2015 ON VIEW IN VMWARE HORIZON 7

VMware Horizon 7

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Introduction

This document provides details about

- Software requirements
- Hardware requirements
- Configuring client devices to support Microsoft Lync and Skype for Business
- Configuring virtual machines to support Microsoft Lync and Skype for Business

This document does *not* provide

- Installation and configuration instructions for Microsoft Lync Server 2013 and Skype for Business Server 2015
- Installation and configuration instructions for VMware Horizon® 7, including View

The instructions assume that the administrator already knows how to deploy, install, and configure View and Microsoft Lync Server 2013, or Skype for Business Server 2015, and their respective components.

For more information, see [Additional Resources](#).

Note: In April 2015, Microsoft Lync 2013 was re-branded Skype for Business 2015. All references to Microsoft Lync 2013 are equally applicable to Skype for Business 2015.

View Virtual Desktops and Microsoft Lync 2013 or Skype for Business 2015

VMware and Microsoft collaborated to bring support for Lync 2013 or Skype for Business 2015, with Unified Communications (UC) VoIP and videoconferencing, to View virtual desktops. Previously, VoIP and video support in VDI environments were limited by technical issues that prevented audio and videoconferencing from working optimally in a virtual machine. These issues included

- **Heavy load on data center servers** – All processing for VoIP and video chat calls was handled on the data center servers.
- **Media hairpinning** – VoIP and videoconferencing traffic was not sent point-to-point but streamed through the data center network and server.
- **High bandwidth usage** – Audio and video traffic was not encoded with standardized codecs but was sent as raw USB traffic, resulting in extremely high bandwidth usage.
- **No quality of service (QoS)** – Audio and video traffic was sent inside the display protocol, which did not provide granular QoS policies to prioritize VoIP and videoconferencing traffic.

Benefits of Running Lync 2013 or Skype for Business 2015 Client on View Desktops

This solution from VMware and Microsoft is fully supported by both companies. Benefits of the features now available include

- **A highly scalable solution** – All media processing is offloaded from the data center server to client devices.
- **Enterprise-grade UC VoIP and video** – The solution uses industry-standard VoIP and video codecs and supports full-screen HD video.
- **QoS** – QoS can be used to prioritize and ensure proper treatment of VoIP and videoconferencing traffic.

Lync 2013 and Skype for Business 2015 Features with View Desktops

The combination of the Microsoft Lync 2013 client or Skype for Business 2015 client and View enables

- Use of a Microsoft Lync 2013 client or Skype for Business 2015 client running on a View virtual machine in the data center
- Making and receiving UC VoIP and video chat calls with microphones and webcams connected to client devices
- Support for the Lync VDI plug-in on client devices

The Lync 2013 or Skype for Business 2015 features supported in View are listed in Table 1. VDI-related improvements that differentiate Lync 2013 from Lync 2010 are marked with asterisks (*).

LYNC FEATURE	VIEW SUPPORT
Presence	Supported
Instant message	Supported
Desktop sharing	Supported in Horizon 7
Application sharing	Supported
PowerPoint sharing	Supported
Whiteboard	Supported
File transfer	Supported
Online meeting	Supported
Office integration	Supported
Audio*	Supported (Lync 2010 supported audio only with an IP phone)
Video*	Supported (Lync 2010 did not support video)
Recording audio	Not supported

Table 1: Microsoft Lync 2013 and Skype for Business 2015 Features Supported in View

Architecture

In addition to deploying Lync Server 2013 or Skype for Business Server 2015, the administrator must deploy Lync or Skype for Business software components on virtual machines and client devices. Figure 1 highlights the architectural components of the Lync VDI solution. In Figure 1, references to Lync 2013 Client also apply to Skype for Business 2015 Client. References to Lync Server 2013 also apply to Skype for Business Server 2015.

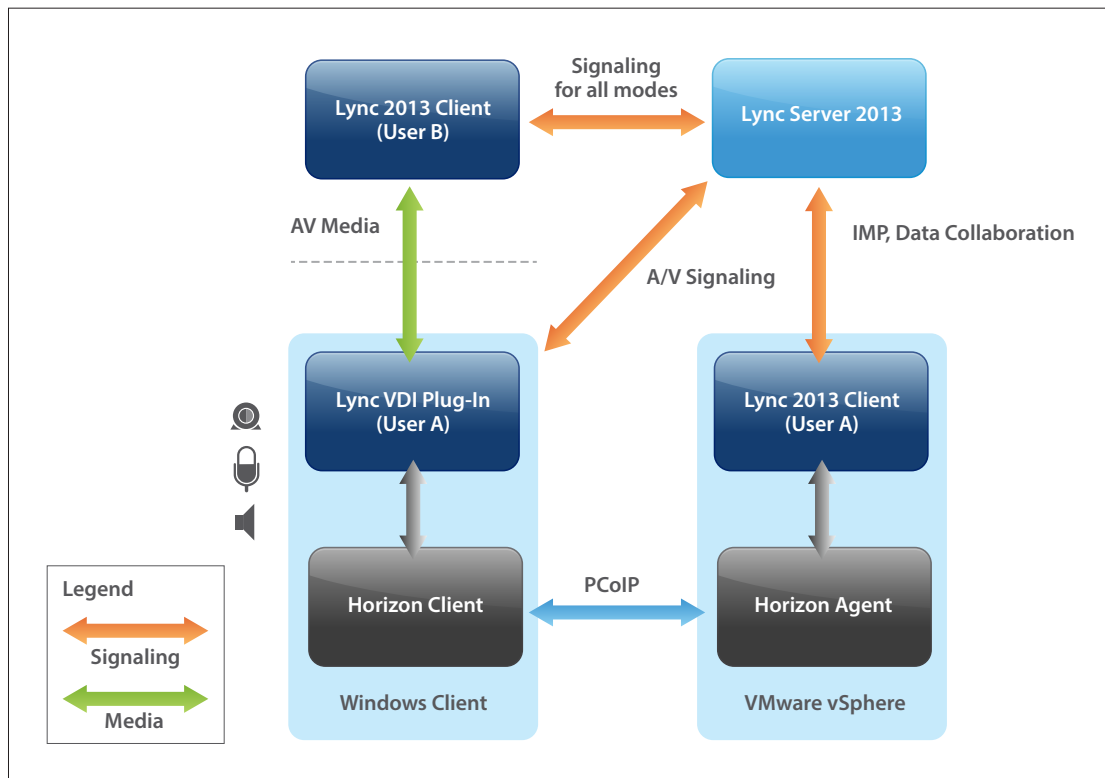


Figure 1: View and Microsoft Lync 2013 and Skype for Business 2015 Architecture

Getting Started

Before deploying this solution, become familiar with the Knowledge Base articles listed in [Additional Resources](#). The Lync or Skype for Business client is supported when deployed on RDSH desktops but not as a remote application.

To get started, you must download and install software components for View and Microsoft Lync 2013 or Skype for Business 2015. See [Requirements](#) for links to the server, client, and Lync VDI plug-in.

Table 2 shows the View Agent support matrix for client devices with the Microsoft Lync VDI plug-in using View PCoIP. This table applies to View 5.2 and 5.3.

VIEW AGENT OS	HORIZON CLIENT OS	HORIZON CLIENT (BIT LEVEL)	MICROSOFT VDI PLUG-IN (BIT LEVEL)
Windows 7 SP1 (32-bit and 64-bit)	Windows 7 SP1 (32-bit)	Horizon Client (32-bit)	Lync VDI plug-in (32-bit)
Windows 7 SP1 (32-bit and 64-bit)	Windows 7 SP1 (64-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)
Windows 7 SP1 (32-bit and 64-bit)	Windows 8 or 8.1 (32-bit)	Horizon Client (32-bit)	Lync VDI plug-in (32-bit)
Windows 7 SP1 (32-bit and 64-bit)	Windows 8 or 8.1 (64-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)

Table 2: Supported Configurations of View 5.3 on Clients with the Lync VDI Plug-In

In Horizon 6, VMware added View Agent support for Windows 8 and 8.1.

In Horizon 6 version 6.2, VMware added support for Windows 10, Windows Server 2008 R2 SP1 RDSH, Windows Server 2012 RDSH, and Windows Server 2012 R2 RDSH.

Configuration options for Horizon 6 and later are listed in Table 3.

HORIZON AGENT OS	HORIZON CLIENT OS	HORIZON CLIENT (BIT LEVEL)	MICROSOFT VDI PLUG-IN (BIT LEVEL)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> Windows 7 SP1 (32-bit and 64-bit) Windows 8 or 8.1 (32-bit and 64-bit) Windows 2008 R2 SP1 (64-bit) <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> Windows 10 (32-bit and 64-bit) Windows Server 2008 R2 SP1 x64 RDSH Windows Server 2012 RDSH, Windows Server 2012 R2 RDSH 	Windows 7 SP1 (32-bit)	Horizon Client (32-bit)	Lync VDI plug-in (32-bit)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> Windows 7 SP1 (32-bit and 64-bit) Windows 8 or 8.1 (32-bit and 64-bit) Windows 2008 R2 SP1 (64-bit) <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> Windows 10 (32-bit and 64-bit) Windows Server 2008 R2 SP1 x64 RDSH Windows Server 2012 RDSH Windows Server 2012 R2 RDSH 	Windows 7 SP1 (64-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)

HORIZON AGENT OS	HORIZON CLIENT OS	HORIZON CLIENT (BIT LEVEL)	MICROSOFT VDI PLUG-IN (BIT LEVEL)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> • Windows 7 SP1 (32-bit and 64-bit) • Windows 8 or 8.1 (32-bit and 64-bit) • Windows 2008 R2 SP1 (64-bit) <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> • Windows 10 (32-bit and 64-bit) • Windows Server 2008 R2 SP1 x64 RDSH • Windows Server 2012 RDSH • Windows Server 2012 R2 RDSH 	Windows 8 or 8.1 (32-bit)	Horizon Client (32-bit)	Lync VDI plug-in (32-bit)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> • Windows 7 SP1 (32-bit and 64-bit) • Windows 8 or 8.1 (32-bit and 64-bit) • Windows 2008 R2 SP1 x64 <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> • Windows 10 (32-bit and 64-bit) • Windows Server 2008 R2 SP1 x64 RDSH • Windows Server 2012 RDSH • Windows Server 2012 R2 RDSH 	Windows 8 or 8.1 (64-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> • Windows 7 SP1 (32-bit and 64-bit) • Windows 8 or 8.1 (32-bit and 64-bit) • Windows 2008 R2 SP1 x64 <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> • Windows 10 (32-bit and 64-bit) • Windows Server 2008 R2 SP1 x64 RDSH • Windows Server 2012 RDSH • Windows Server 2012 R2 RDSH 	Windows 10 (64-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)
<p>For Horizon 6:</p> <ul style="list-style-type: none"> • Windows 7 SP1 (32-bit and 64-bit) • Windows 8 or 8.1 (32-bit and 64-bit) • Windows 2008 R2 SP1 x64 <p>For Horizon 6 version 6.2 and Horizon 7:</p> <ul style="list-style-type: none"> • Windows 10 (32-bit and 64-bit) • Windows Server 2008 R2 SP1 x64 RDSH • Windows Server 2012 RDSH • Windows Server 2012 R2 RDSH 	Windows 10 (32-bit)	Horizon Client (64-bit)	Lync VDI plug-in (32-bit)

Table 3: Supported Configurations of View in Horizon 6 and Horizon 7 on Clients with the Lync VDI Plug-In

Known Limitations

Microsoft Lync and Skype for Business on View have the following known limitations:

- Although you can download both 32-bit and 64-bit versions of the VMware Horizon Client, the PCoIP process running on the Horizon Client operates only in 32-bit mode. Therefore, you can use only the 32-bit version of the Lync VDI plug-in on client endpoints.
- You cannot use a 32-bit version of the Microsoft Lync VDI plug-in on a machine that has the 64-bit version of Office 2013. Microsoft does not support this configuration. The bit level of the plug-in must match the bit level of the local Microsoft Office installation.
- Neither the client nor the virtual machine can support Windows 7 without SP1.

Requirements

Before you can effectively deploy Lync 2013, or Skype for Business 2015, for VoIP and video calls, your environment must meet certain software and hardware requirements.

Software Requirements

Enabling Lync 2013 client or Skype for Business 2015 client for VoIP and interactive video calls from View virtual desktops requires the software components listed in Table 4. Download links are included where applicable.

PRODUCT	DESCRIPTION
View	<p>View Agent (which is renamed Horizon Agent in Horizon 7) and Horizon Client software</p> <ul style="list-style-type: none"> • View 5.2 or later is required for Windows 7 desktop OS (agent) • Horizon 6 or later is required for Windows 8.x desktop OS (agent) • Horizon 6 version 6.0.1 or later is required for Windows 2008 R2 desktop OS (agent) • Horizon 6 version 6.2 or later is required for Windows 10 • Horizon 6 version 6.2 or later is required for RDSH desktops running on Windows 2008 R2 or Windows 2012 R2 (RDSH servers) <p>See the Download VMware Horizon page for more information. For Horizon 6 version 6.0 and earlier, see the Download Horizon (with View) page.</p>
Microsoft Lync Server 2013 or Skype for Business Server 2015	TechNet subscribers can download a copy from the TechNet Web site.
Microsoft Lync 2013 client or Skype for Business 2015 client running in virtual machines	<p>Included with Microsoft Office 2013.</p> <p>Note: You must deploy the full version of Microsoft Lync or Skype for Business. Microsoft Lync Basic 2013 is not supported inside a VDI environment.</p>
Microsoft Lync VDI plug-in running on the client device	<p>Only required for users wanting UC VoIP and video chat functionality.</p> <p>Note: View supports only the 32-bit version. A TechNet subscription is not required for this download.</p>

Table 4: Software Components for Deploying Lync 2013 Client or Skype for Business 2015 Client

Hardware Requirements

You must have servers that can host the VMware ESXi™ platform, View infrastructure, and the Microsoft Lync Server 2013 or Skype for Business Server 2015 infrastructure. Review the hardware requirements in Table 5.

To enable the VoIP and video functionality, use a VMware ESXi 5.0 or later server with Horizon Agent and Horizon Client components.

PRODUCT	HARDWARE REQUIREMENTS
VMware vSphere® and View	See ESXi hardware requirements for your ESXi version . See <i>System Requirements for Server Components</i> in View Installation .
Microsoft Lync Server 2013 infrastructure	See Microsoft Lync Server 2013 hardware requirements .
Skype for Business Server 2015 infrastructure	See Skype for Business Server 2015 hardware requirements .
Microsoft Lync 2013 client	See Microsoft Lync 2013 client information .
Skype for Business client	See Skype for Business client information .
Microsoft Lync VDI plug in	See the Lync VDI plug-in deployment information for Microsoft Lync Server 2013 or Skype for Business Server 2015 . Note: The Lync VDI plug-in requires a Windows client machine with 1.5 GHz CPU and minimum of 2 GB RAM.
Supported Microsoft Lync USB headsets and webcams	See Microsoft Lync-supported USB devices .

Table 5: Required Hardware Components

Setup and Installation

This section provides steps to make sure that you configure the correct settings to enable the Lync VDI plug-in to work with the Lync client or Skype for Business client. It covers

- Lync Server 2013 or Skype for Business Server 2015 and accounts
- Windows client device with the VDI plug-in and Horizon Client
- Windows 7 SP1, Windows 8, Windows 8.1, Windows 10, Windows Server 2008 R2 desktop, Windows Server 2008 R2 RDSH, Windows Server 2012 RDSH, or Windows Server 2012 R2 RDSH virtual machine with Lync 2013 client and Horizon Agent

After these steps are completed, users can log in to the Microsoft Lync client or Skype for Business client in View.

Set Up Lync Server 2013 or Skype for Business Server 2015 and Accounts

Follow these steps to set up Lync Server 2013 or Skype for Business Server 2015 and your accounts.

Important: As part of the Lync Server or Skype for Business Server setup, make sure you generate a certificate and add it to each Windows client device and View virtual machine. The certificate must be placed in the Trusted Root Certificate Authorities certificate store. The Lync VDI plug-in cannot pair with the Lync 2013 client or Skype for Business 2015 client running on the View virtual machine if this step is not completed.

1. Deploy Lync Server 2013 or Skype for Business Server 2015. See the [Lync Server 2013 deployment guide](#) or the [Skype for Business 2015 deployment guide](#).
2. Before installing and testing the Lync VDI plug-in, verify that the Lync Server 2013 or Skype for Business Server 2015 has been set up properly.
 - a. Install Lync 2013 client or Skype for Business 2015 client on a Windows client device.

Important: Place the Lync Server or Skype for Business Server certificate in the Trusted Root Certificate Authorities certificate store.
 - b. On the client, enter the sign-in address and click **Sign In**.
The client attempts to resolve your sign-in name and domain name with the enterprise Lync Server or Skype for Business Server.
 - c. If you cannot sign in, verify that your Lync Server 2013 or Skype for Business Server 2015 and Lync or Skype for Business accounts have been set up properly.

Note: Make sure that the DHCP servers have been configured to resolve server lookup requests during sign-in and that the Edge server is configured correctly.
3. On Lync Server 2013 or Skype for Business Server 2015, ensure that the **EnableMediaRedirection** option is set to **TRUE** for all VDI users.

Set Up the Windows Client Device with the VDI Plug-In and Horizon Client

If you have not already done so, download the Lync VDI plug-in.

1. On each Windows client device, install the plug-in by running **Lyncvdi.exe** and following the installation wizard.

Note: Install the Lync VDI plug-in on the physical Windows client devices. Do not install the plug-in in virtual machines.

2. [Install the Horizon Client.](#)
3. Import the certificate that you generated while deploying Lync Server 2013 or Skype for Business Server 2015 into the Trusted Root Certificate Authorities store on each client machine.
Video calls require either a built-in webcam or a USB webcam plugged in to the client device.

Important: Do not use USB redirection to redirect the webcam or microphone to the remote desktop.

Set Up the Windows Virtual Machine with Lync 2013 Client or Skype for Business 2015 Client and Horizon Agent

Before you begin, make sure that you have downloaded all the software listed in the Software Requirements section.

Follow these steps on each virtual machine in the data center:

1. Install the Horizon Agent that you downloaded from the [Download VMware Horizon page](#). For Horizon 6 version 6.0 and earlier, see the [Download Horizon \(with View\) page](#).
2. Install the Lync 2013 client that you downloaded with Office 2013 or install the Skype for Business 2015 client.
3. Import the certificate that you generated while deploying Lync Server 2013 or Skype for Business Server 2015 into the Trusted Root Certificate Authorities store on each virtual machine.

Use Horizon Administrator to add and configure View desktops. For instructions, see [Setting Up Desktop and Application Pools in View](#).

Log In to the Microsoft Lync or Skype for Business Client

Users must follow these steps to log in to the Microsoft Lync or Skype for Business client.

1. From the Windows client device, log in to the View desktop.
2. Open the Lync client or the Skype for Business client, enter the sign-in address provided by the system administrator and click **Sign In**.

Note: If you are the system administrator, be sure to provide this information to your end users. The client tries to resolve the sign-in name and domain name with the enterprise Lync Server or Skype for Business Server. An alert message button is displayed on the Lync 2013 client or the Skype for Business 2015 client.



Figure 2: Lync Client or Skype for Business Client Alert Message

When the Lync client or Skype for Business client connects to the Lync Server or Skype for Business Server, it initiates a handshake, using the Dynamic Virtual Channel (DVC), with the Lync VDI plug-in running on the client device. As part of the handshake procedure, a dialog box appears in which the user can enter name and password credentials for the Lync VDI plug-in.

3. Enter user credentials.

The plug-in connects to the Lync Server or Skype for Business Server. The alert message is replaced by a green circle with a check mark on the right side of the screen.



Figure 3: Successful Connection Message

Additional Resources

Review the following Knowledge Base articles before deploying the Lync VDI solution with View desktops:

[Using VMware Horizon View 5.2 and later with Microsoft Lync 2013](#)

[With Horizon View 5.3 with Microsoft Lync 2013, the bit level of the Lync 2013 client does not need to match the bit level of the virtual machine operating system](#)

[Lync VDI plugin fails to start in a VMware Horizon View session when using the PCoIP protocol](#)

[Supportability for Microsoft Lync 2013 phone integration within VMware Horizon View](#)

[Microsoft Lync 2013 does not respond with VMware Horizon View 5.2 Feature Pack 1 or 2 desktops](#)

For more information about Microsoft Lync 2013 and Skype for Business 2015, see

[Skype for Business 2015 deployment information](#)

[Microsoft Lync Server 2013 hardware requirements](#)

[Microsoft Lync 2013 general information](#)

[Planning for clients and devices in Lync Server 2013](#)

[Deploying the Lync VDI plug-in in Lync Server 2013](#)

For more information about VMware vSphere and VMware vCenter Server™ resources, see

[VMware vSphere Product Overview](#)

[VMware vSphere Documentation](#)

For more information about View installation and configuration, see

[View Installation](#)

[View Administration](#)

About the Authors

Tony Huynh, Senior Product Line Manager on the View team, VMware, updated this paper for Skype for Business 2015. Previously:

- Tony Huynh updated this document for Horizon 7.
- Karin Li, Senior Member of the Technical Staff on the Enterprise Desktop Quality Engineering team, VMware, and Tony updated the document to include support for Windows 10 and Windows Server 2012 R2 RDSH.

Tony and Karin wrote the original version of this paper.

Feedback and Questions

VMware appreciates feedback on the material included in this document, and in particular would appreciate input on the following questions:

- How useful is the information presented here?
- What other specific topics would you like to see covered?

For additional information, post questions to the [VMware View Community](#). The View team monitors the Community page and replies to queries.



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