



Thincast Workstation

User Manual for Beta release

This manual describes the installation and usage of Thincast Workstation

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Introduction

Overview

With Thincast Workstation you can turn your computer into a powerful virtualization platform and share virtualized desktops with your team, while keeping the data centralized.

Thincast Workstation is currently in Beta phase, see “Versions” below.

How does Thincast Workstation relate to VirtualBox?

The virtualization system of Thincast Workstation and the graphical user interface are derived from the [VirtualBox Open Source Edition](#).

We’ve added a bunch of new features and devices so there may be some differences between the usage and configuration of Thincast Workstation and VirtualBox. VirtualBox specific end-user documentation can be found [here](#). All differences will be covered in this user manual.

Versions

We do provide different versions:

- Stable - Official releases. Use this for production.
- Beta - Upcoming release. Beta versions are under qualification testing, and may include significant issues.
- Nightly - Development snapshot. Contains the latest features and improvements but isn’t completely tested and may include severe issues.

The beta and nightly versions are mainly for preview and evaluation purposes. Don’t use them in production!

It is the end users’ responsibility to protect their systems and data when using such beta/nightly software. It is strongly recommended that end users do back up all their data prior to using beta/nightly software.

Beta and nightly software does not carry any warranties or support services.

Requirements

Hosts that run Thincast Workstation must meet specific system requirements:

Host System

Supported Host Operating Systems

Thincast Workstation Beta requires a 64-bit Windows operating system with latest Service Packs installed:

- Windows 7* / 8 / 8.1 / 10
- Windows Server 2008 R2 / 2012 / 2012 R2 / 2016**

*: Unfortunately, there are some technical limitations on Windows 7 which decreases the performance of Thincast Workstation significantly. Therefore we highly recommend to upgrade your operating system to Windows 10!

*: Please be aware that if Microsoft Hyper-V role is installed on a Windows Server 2016, no other virtualization solution will work because Hyper-V is exclusively using the hardware virtualization layer.

Architecture

The host system must have a 64-bit Intel or AMD processor with 2.2 GHz or faster core speed. Multiprocessor systems are supported.

Memory and Storage

The minimum memory required on the host system is 2 GB. 4 GB and above is recommended. Thincast Workstation needs at least 300MB of available disk space for the application. We recommend to use a SSD hard drive for storing your virtual machines.

Graphics Cards

Thincast Workstation provides full DirectX 11.2 support inside the guest operating system. This allows you to use your 3D applications with the same smooth and visual experience as running them on physical hardware.

In order to use hardware acceleration inside the VM, your graphics card must support at least DirectX 11. Please note that the GPU software drivers must support DirectX 11 Feature Level 11.0. The following list shows supported GPUs but is subject to driver support for your operating system:

- AMD® Radeon HD 5000 series or higher
- Nvidia® GeForce 400 series or higher
- Intel® HD Graphics 4000 or higher

If your hardware doesn't meet these requirements, you are still able to run and use your VMs. Thincast Workstation will simply fall back to use software drawing for graphics operations. However, please note that this results in much lower performance and you might be unable to run certain applications in the guest.

To improve performance for remotely accessed VMs, Thincast Workstation is able to offload encoding of the remote display stream to the graphics card. The following graphics cards are supported:

- AMD® Radeon HD 7000 series (with AMF support) or higher
- Nvidia® GeForce 600/700 series (with NVENC support) or higher
- Intel® HD Graphics 4200/Haswell processors or higher

Latest graphics card drivers on the host system are required!

Please note: Do not update your host's GPU driver or disable the GPU in your host's device manager while a guest machine is running on Thincast Workstation, otherwise the guest will crash.

Network

Thincast Workstation requires a properly configured network to communicate with the Thincast Client. Any ethernet controller can be used that the host system supports. Overall bandwidth consumption depends on the amount of connected users, used applications, screen size and used frame rates.

The values in the following list will give you an approximate reference point for a single user running resource intensive applications such as games, 3D applications or watching a UHD movie:

| Screen size | Frame rate | approx. bandwidth consumption |
|-------------|------------|-------------------------------|
| 2160p (4k) | 30 frames | 40 Mbps |
| 1440p (2k) | 30 frames | 10 Mbps |
| 1080p | 30 frames | 8 Mbps |
| 720p | 30 frames | 5 Mbps |
| 480p | 30 frames | 2.5 Mbps |
| 360p | 30 frames | 1 Mbps |

Virtual Machine

Supported Guest Operating Systems

A full list of supported guest operating systems can be found [here](#). Please note, although all these operating systems are supported, [Guest Additions](#) are not available for all of them.

Installation

Prerequisites

Thincast Workstation supports Windows 64-bit operating systems. For more details please refer to [Supported Host operating systems](#). Please also make sure that you have the latest Windows updates and drivers installed.

Installing Thincast Workstation

1. To download the latest version of Thincast Workstation, please visit our website and go to the [product page](#) of Thincast Workstation.
2. Open the installation package. Setup requires administrative rights.
3. Accept the end-user license agreement and click “Next”.
4. Choose the destination folder for Thincast Workstation and click “Next”.
5. Select the features you want to install.
6. Enable or disable the shortcuts and continue with “Next”.
7. To proceed with the installation, click “Yes”. Please be aware that you will get temporarily disconnected from the network if the network feature was selected.
8. Click install to begin the installation.
9. Click finish to complete your installation.
10. Congratulations! You now have successfully installed Thincast Workstation.

Uninstallation

1. To uninstall Thincast Workstation open the Windows Control Panel and navigate to Programs -> Uninstall a program.
2. Right-click on Thincast Workstation and select Uninstall.
3. Confirm with Yes.
4. You’ve now successfully uninstalled Thincast Workstation.

Configuration

Because Thincast Workstation is based on VirtualBox’s virtualization system, most of the configuration is already covered in the VirtualBox end-user documentation which can be found [here](#). All additional settings and configuration options that are introduced in Thincast Workstation will be covered in the following sections.

Global Settings

You can reach the global settings dialog by clicking on File -> Preferences in the Thincast Workstation Manager.

General

DEFAULT MACHINE FOLDER

The default file system location for storing virtual machines is `C:\ProgramData\Thincast VMs`

VRDP CERTIFICATE

To verify your server's authenticity, a digital certificate file is used. By default, we create a self-signed certificate during the installation which is valid for 10 years. You can also use a custom certificate which is distributed by a certificate authority (CA).

VRDP PRIVATE KEY

Specifies the private key file. This must be the Private key file associated with the VRDP Certificate.

VRDP START PORT

Specifies the start port of the VRDP server. Every virtual machine gets an individual port assigned.

Input

Specifies the shortcuts for most common tasks in Thincast Workstation.

Updates

Thincast Workstation has an automatic update feature. You'll get a notification when a new version of Thincast Workstation is available. Automatic updates can be enabled or disabled here.

You can also switch between the available update channels for Thincast Workstation:

- Stable releases
Choose this, if you only wish to be notified about stable updates to Thincast Workstation
- Stable and Beta releases
Choose this to be notified about stable and beta updates to Thincast Workstation
- Stable, Beta and Nightly releases
Choose this to be notified about stable, beta and nightly updates to Thincast Workstation. Note: Nightly updates might be unstable!

Extensions

Thincast Workstation includes two default extensions:

- "TcXhci" - USB 3.0 Controller
- "Virtual3D" - Hardware-accelerated graphics in the virtual machines (supporting DirectX 9 - 11.2, hardware video decoding) and Thincast HD Audio

Creating Virtual Machines

The creation of virtual machines is just the same as in VirtualBox. Please refer to the VirtualBox user manual chapter 1.7, [Creating your first virtual machine](#).

Configuring Virtual Machines

To configure your virtual machine, click on “Settings” after you have selected a specific virtual machine.

General

ADVANCED

Thincast Workstation contains an advanced shared clipboard that also works with files. By default, the shared clipboard operates in bidirectional mode. Drag’n’Drop support is not available.

Display

SCREEN

GPU - Assign a GPU to a specific virtual machine

In order to use DirectX and hardware video decoding, a VM must be assigned to a specific GPU. Depending on the selected GPU, H.264 encoding can be fully or partly accelerated. If the GPU does not support H.264 encoding, software encoding will be used instead.

For more information please refer to the section [Graphics cards](#).

Force Software H.264 encoding - If checked, the virtual machine will use software H.264 encoding.

Force V-Sync on Remote Displays - If checked, the frame rate for remote displays will be limited to 30 frames/second.

REMOTE DISPLAY

Remote Displays are enabled on Thincast Workstation by default. Remotely connected clients access the machine via the Remote Display.

Audio

Thincast HD Audio - If Thincast HD Audio as Audio Controller is selected, remote and local HD audio playback is enabled.

USB

USB 3.0 device redirection through the TcXhci USB Controller is enabled by default.

Thincast Guest Additions

Our guest additions contain drivers and applications that enable DirectX, Audio and clipboard support in the guest operating system.

These guest additions have to be installed after the guest operating system has been installed.

The following x86/x64 Windows guest operating systems are supported:

- Windows 7 / 8 / 8.1 / 10
- Windows Server 2008 R2 / 2012 / 2012 R2 / 2012 / 2016

Virtual 3D (Direct X)

We have redesigned the graphical subsystem to provide full DirectX and hardware video decoding (Direct3D11 Video/DXVA 2) support in the virtual machines.

Thincast Workstation currently supports up to DirectX 11.2 and WDDM (Windows Display Driver Model) 1.3. DirectX 12 and WDDM 2.0 support is in the making.

USB 3.0 Device Redirection

Any USB device which is physically attached to the host can be redirected to the virtual machine. Take advantage of high-speed USB 3.0 devices in your virtualized desktops.

Unfortunately, Windows 7 and Windows Server 2008 R2 do not have built-in support for USB 3.0. Installing a third-party USB 3.0 controller driver in the guest operating system will solve this issue:

[Intel® USB 3.0 eXtensible Host Controller Driver for Intel® 8/9/100 Series](#)

Audio Playback

The Thincast HD Audio device enables guest audio playback. It also supports audio playback for remotely connected clients.

Install Thincast Guest Additions

1. To install Thincast Guest Additions, connect to a virtual machine.
2. In the menu bar of Thincast Viewer, click on “Devices” and select “Install Guest Additions”, which mounts the Guest Additions image file inside your VM.
3. Double-click on the inserted disc in your VM -> This PC.
4. Accept with “Yes” to proceed with the installation.
5. The Thincast Guest Additions Setup Wizard will be opened. Click “Next” to proceed.
6. Click “Next” to install Thincast Guest Additions in the default folder.
7. Click “Install” to install Thincast Guest Additions.
8. Select “Reboot now” and click “Finish” to complete the installation of Thincast Guest Additions.
9. Your VM will reboot and Thincast Guest Additions installation will complete.

Windows Authentication

The access to virtual machines running on Thincast Workstation is secured by Windows Authentication. By default, Administrators of the host machine have complete and unrestricted access to Thincast Workstation VMs. You can add additional users to the “Thincast Workstation Admins” group to grant them access to Thincast Workstation VMs.

Thincast Agent

The Thincast Agent service provides access to various functions of Thincast Workstation to connected clients. All Thincast Clients that connect to Thincast Agent have to authenticate using Windows Authentication. For more information about authentication, refer to [Windows Authentication](#).

The Thincast Agent service must be running at any time in order for Thincast Workstation to function properly.

Thincast Client

Thincast Client allows you to access and manage all your virtualized desktops running on Thincast Workstation. It is completely free and currently available for Windows, macOS and Linux. To install the Thincast Client for Linux or macOS refer to the [Thincast Client - User manual](#).

When installing Thincast Workstation, Thincast Client is also automatically installed on your host system. If no shortcut was created, Thincast Client can be found under:

`C:\Program Files\Thincast\Workstation\Client\TCClient.exe`

Thincast Client can be used on different machines in your network and works independently of Thincast Workstation.

Once Thincast Client is launched, all available servers/virtualized desktops in your network will be discovered automatically and shown in a list.

Please refer to the [Thincast Client - User manual](#) for further details.

Support

Please keep in mind that Thincast Client Beta and Nightly builds do not carry any warranties or support services.

However, we are eager to hear about your experience and any troubles with Thincast Client Beta! Please let us know by filling out our [contact form](#).

Upload a TSRP file

Our support staff might ask you to create a TSRP (Thincast Support Request Package).

Please run `C:/Program Files/Thincast/Workstation/Support/TCSupport.exe` on the computer where Thincast Workstation is installed and follow the instructions to upload the package. Then we can analyze your submission to find the problem.

Note: TSRP creation is currently only available for Windows.

Changelog

The [changelog](#) can be found on our website.

Third-party licenses

Thincast Workstation is based on Oracle's VirtualBox - Open Source Edition

Open-source software licenses used in this project are located under `C:\Program Files\Thincast\Workstation\Licenses\COPYING.html`