

# HP True Graphics



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## Summary

HP True Graphics<sup>1</sup> technology is included in the Citrix<sup>®</sup> protocol with the HP True Graphics 13.1.1 add-on. This technology decodes H.264 data from Citrix<sup>®</sup> sessions in the hardware, providing a low latency, high-performance experience on select HP Thin Clients.<sup>1,2</sup>

## Prerequisites

HP True Graphics requires the following environment:

<b>HP Thin Client</b>	HP t520, HP t620, HP t620 PLUS
<b>HP Thin Client OS</b>	HP ThinPro 5.0+
<b>Citrix<sup>®</sup> version</b>	Citrix <sup>®</sup> XA/XD 7.0+ or Citrix <sup>®</sup> HDX 3D Pro (not running in Lossless mode)
<b>Monitors</b>	Maximum of 2 at 1920 x1200 resolution

## Basic setup

For customers using XenDesktop, or XenApp 7 or later, the default installation is all that is required to enable the server side support for H.264 codecs. Simply update your HP Thin Client to Citrix<sup>®</sup> receiver 13.1.1 with HP True Graphics, and connect to the remote desktop. For more details on server-side and client configuration, please consult the information below.

## Server requirements

### XenDesktop / XenApp 7+

In order to take advantage of the HP True Graphics experience, the Citrix<sup>®</sup> server must support sending session data in H.264 format. Known as the Citrix<sup>®</sup> “SuperCodec” in XenDesktop/XenApp 7+ , it is enabled by default and processed using the “DeepCompressionV2” encoder, a CPU-based compression algorithm. Running XenDesktop or XenApp 7.1 or higher, do not install HDX 3D Pro in order to see the benefits of HP True Graphics.

Only full desktops or non-seamless applications are currently accelerated when using HP True Graphics. Hosted remote applications running in seamless windows do not see benefits from HP True Graphics. See the Client Configuration section for more details on how to force applications to run non-seamlessly by configuring the TWI Mode on the client.

### Citrix<sup>®</sup> HDX 3D Pro

Even on older versions of XenDesktop, HDX 3D Pro desktops will use the H.264 format and benefit from using HP True Graphics. Customers using older versions of XenDesktop may want to investigate HDX 3D Pro to provide enhanced performance. Even though HP True Graphics will enhance any XenDesktop or XenApp 7+ deployment, some customers may want to use Citrix<sup>®</sup> HDX 3D Pro to offload the server side H.264 encoding to the GPU using the “DeepCompression” encoder. Consult your Citrix<sup>®</sup> documentation for details on how to configure GPU offload using HDX 3D Pro.

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#### Note:

Using HDX 3D Pro with Visual Quality set to “Always Lossless” mode means the graphics information is not sent to the client using H.264. Customers will not see any advantages to using HP True Graphics when graphics are sent losslessly.

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## Verifying server compression options

After connecting to a Citrix<sup>®</sup> desktop, use the Citrix<sup>®</sup> HDX Monitor to determine which encoder is being used for the session by examining the information under: Graphics > Thinwire Advanced > Component\_Encoder. If the value reads “DeepCompressionV2Encoder” or “DeepCompressionEncoder”, then the server is properly sending the data in a format that will be accelerated by HP True Graphics.

If H.264 support is disabled on the HP Thin Client or forced Legacy Graphics through a server policy, “CompatibilityEncoder” or “LegacyEncoder,” this indicates the server is compressing graphics in a method that is compatible with older versions of Citrix clients and will not experience enhanced performance from HP True Graphics.

## Client configuration

### Remote applications

Using remote applications (as opposed to a full desktop) in seamless mode will not benefit from HP True Graphics enhancements. In order to see HP True Graphics benefits when using remote applications, use applications in windowed mode. Change this by setting Citrix General Settings > Window > TWI Mode to “Force Seamless Off.” This creates a separate container window for the remote applications that can be sized using the other options on the page.

Figure 1. General settings for Citrix® on HP ThinPro

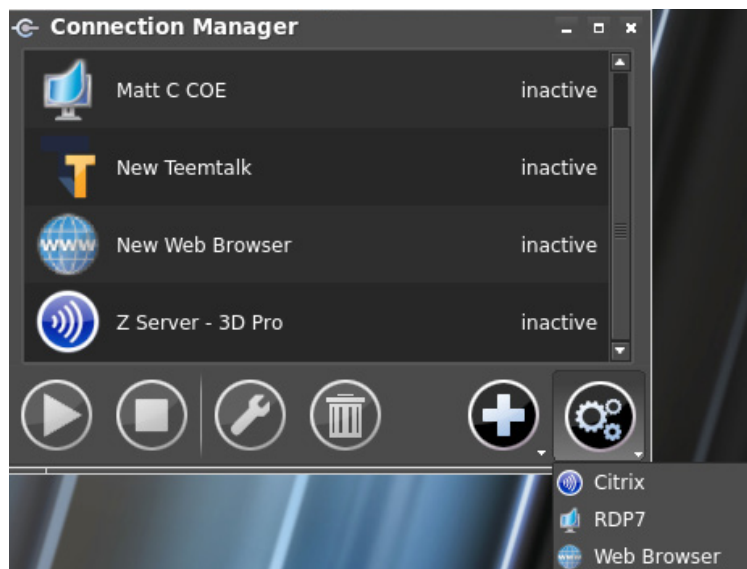


Figure 2. Force Seamless mode Off for Windows view



### HP Thin Client settings

HP True Graphics requires that the option for H.264 compression is enabled on the client. Enabled by default on Citrix® Receiver when HP True Graphics is installed, this can be confirmed by verifying that the “Enable H264 Compression” option is checked under Citrix General Settings > Options.

### Additional resources

#### XenDesktop7 Graphics:

<https://blogs.citrix.com/2013/11/06/go-supersonic-with-xendesktop-7-x-bandwidth-supercodecs/>

<https://blogs.citrix.com/2014/10/22/whats-new-with-hdx-display-in-xendesktop-xenapp-7-x/>

#### Configuring Nvidia Grid with HDX3D Pro:

[https://www.citrix.com/content/dam/citrix/en\\_us/documents/go/configuring-xenserver-to-use-nvidia-grid.pdf?accessmode=direct](https://www.citrix.com/content/dam/citrix/en_us/documents/go/configuring-xenserver-to-use-nvidia-grid.pdf?accessmode=direct)

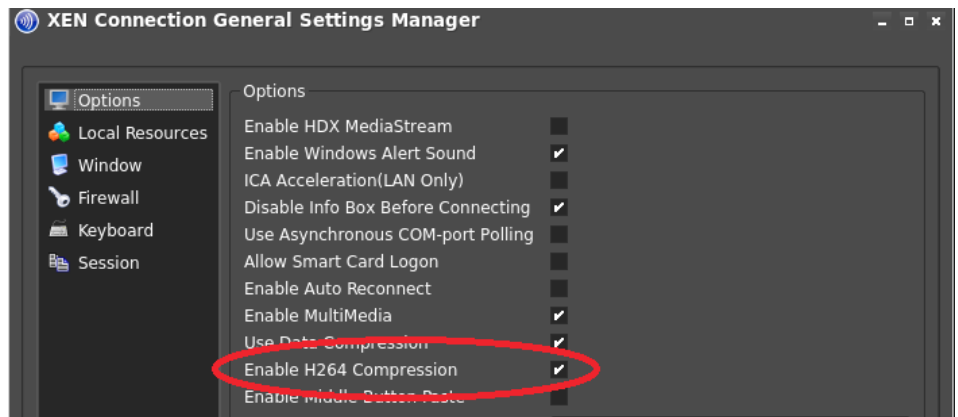
#### Forcing GPU Compression when using HDX 3D Pro:

<https://support.citrix.com/article/CTX134023>

#### Installing and Configuring HDX 3D Pro on XD5.6:

<https://support.citrix.com/proddocs/topic/xendesktop-als/hd-3d-install.html>

Figure 3. Verify “Enable H.264 Compression” is checked



When running on an HP Thin Client with an AMD processor that supports HP True Graphics (currently the HP t520 and HP t620 series), HP True Graphics hardware accelerated H.264 decoding will be used by default. To compare the benefits seen with HP True Graphics vs regular software decoding, use the following registry key to disable the HP True Graphics hardware decoding.

`root/ConnectionType/xen/coreSettings/enableHWH264 – 1 (default) enables HP True Graphics hardware decoding. 0 disables HP True Graphics and uses software decoding.`

As part of the Citrix® “SuperCodec”, some screen data such as text, may be sent using methods other than H.264. In general it is best to keep this feature enabled for best performance and visual quality, but for trouble shooting or specific use cases we have provided the two registry keys to allow admins to disable this feature.

- `root/ConnectionType/xen/coreSettings/enableTextTracking – Set to 0 to disable`
- `root/ConnectionType/xen/coreSettings/enableSmallFrames – Set to 0 to disable`

For more information on TextTracking please see the Citrix® documentation here.

<https://support.citrix.com/proddocs/topic/receiver-linux-13-0/linux-config-h264-support.html>

### Monitor layout and HW Cursor limitations


Currently, HP True Graphics support is only available on configurations using a maximum of two monitors at 1920 x 1200 resolutions. If using an HP t620 PLUS Thin Client with multiple graphics cards, these monitors must be plugged into the primary graphics card. Rotated monitors may not display correctly.

In order to use HP True Graphics, the HP Thin Client must be configured to use a HW Cursor. When installing Citrix® Receiver 13.1.1 with HP True Graphics onto an HP ThinPro 5.1 operating system, the installer will automatically switch the `root/Display/Configuration/AMDOptions/SWCursor` registry key to “0” to disable SW Cursor. Users who use multiple monitors may experience an issue where the mouse cursor becomes corrupted when moved between the two monitors. To fix this issue, install the latest AMD driver package for your HP Thin Client, which is available for download from the HP.com website.

1 HP True Graphics requires an HP Thin Client with an HP ThinPro 5.0 or higher operating system (combo OS with HP Smart Zero Core begins at v5.0), AMD processing technology, and a Citrix virtual desktop infrastructure—must be XenApp or XenDesktop v7.0 or higher. HP True Graphics is preinstalled on the OS starting with HP ThinPro 5.2. HP True Graphics will be available on HP ThinPro 5.0 or higher as an add-on through Easy Update for ThinPro or via HPDM in early 2015. See product QuickSpecs for exact compatibility.

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