

# **CONFIGURATION FOR USB RE-DIRECTION**

## **V2.0 VMware Horizon View client for Linux**

# Introduction

This is a document to describe how to install and configure for USB re-direction with the View client for Linux, version 2.0.

# What is New

The 2.0 version of the VMware View client for Linux uses a new USB component.

Key differences compared to older versions (1.5 and earlier) of the View client are:

1. usbfs is no longer required
2. Command line options to filter or split devices are no longer available. USB device configuration is done through configuration files
3. Two services need to be launched at system start-up or before the View client is launched

# Installation

1. List of files:
  - libcrypto.so.0.9.8
  - libssl.so.0.9.8
  - vmware-usbarbitrator
  - vmware-view-usbd
2. Location of files:

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- The libcrypto and libssl files need to be located in same folder as vmware-view-usbd. These files contain additional patches that are required for vmware-view-usbd.

### 3. Execution

- Launch vmware-usbarbitrator as root upon system start-up
- Launch vmware-view-usbd as root upon system start-up

**IMPORTANT: Be sure to remove the old 1.5 USB component files when you use the new USB components.**

## Logging

To enable logging for vmware-view-usbd:

- launch vmware-view-usbd with the "-o log:trace" commandline option e.g "vmware-view-usbd -o log:trace"
- Log file: /tmp/vmware-root/vmware-view-usbd-XXXX.log

Logging for vmware-usbarbitrator

- The log file location for vmware-usbarbitrator can be changed by setting the following line in /etc/vmware/config:
  - usbarb.log.filename = "/path/to/usbarb.log"
- Similarly, the log file location for vmware-view-usbd can be changed with
  - log.filename = "/path/to/usbd.log"
- View Client's log file location can be changed by setting the TMPDIR and/or USER environment variables. The file gets created as:
  - \${TMPDIR}/vmware-{\$USER}/vmware-view-{\$PID}.log
- With "TMPDIR=/home/dan vmware-view", View Client logs are saved in the "/home/dan/vmware-dan" directory.

## If all else fails

Fallback to old USB component:

- The View client will first look for /usr/bin/vmware-view-usb
- If this is available, then the View client will launch it
- Otherwise, the View client will use the new usbarbitrator and usbd components if these are available or running

## Configuration

### Parameter passing

Commandline options are no longer available for device filtering. Configuration files need to be used.

The configuration files are (listed in the order of search):

- a. /etc/vmware/config
- b. /usr/lib/vmware/config
- c. ~/.vmware/config

### Device filtering

- On the View client for Windows, the usbd device filter is configured locally via the registry. On the Linux client the device filter configuration follows the same syntax, however the configuration itself is maintained within the VMware configuration file, /etc/vmware/config, using the naming convention viewusb.<registry key> = <value>
- Examples:
  - viewusb.ExcludeVidPid = "vid-0951\_pid-1625"

## Configuration for USB Re-Direction

- viewusb.ExcludeFamily = "storage"
- viewusb.IncludePath = "bus-1\_port-04"

*Table of configuration settings*

Setting	Description	Format	Range	Default	Implied value if undefined	Use Wildcard	Example	Remote Setting - If available **
SplitExcludeVidPid	Exclude device from splitting by Vendor/Product ID	vid-XXXX_pid-XXXX[;...]	0000-ffff	Undefined	Blank	Yes	vid-0f0f_pid-****;vid-00e1_pid-****	MO
SplitVidPid	Split device with Vendor/Product ID (and exclude Interface by index number)	vid-XXXX_pid-XXXX([exintf:XX[;exintf:XX]]);...]	0000-ffff;	Undefined	Blank	Yes	vid-0f0f_pid-****(exintf:01;exintf:02);vid-00e1_pid-****(exintf:00;exintf:01)	MO
(#)ExcludePath	Exclude device at hub/port path	bus-X[/X...]port-XX[;bus-X[/X...]port-XX]	00-ff	Undefined	Blank	No	bus-1/2/3_port-02;bus-1/1/4_port-ff	NA
(#)IncludePath	Include device at hub/port path	bus-X[/X...]port-XX[;bus-X[/X...]port-XX]	00-ff	Undefined	Blank	No	bus-1/2_port-02;bus-1/7/4_port-0f	NA
ExcludeVidPid	Exclude device with Vendor/Product ID	vid-XXXX_pid-XXXX[;vid-XXXX_pid-XXXX]	0000-ffff	Undefined	Blank	Yes	vid-0f0f_pid-0001;vid-**21_pid-*8*a	FLTR/MO
IncludeVidPid	Include device with Vendor/Product ID	vid-XXXX_pid-XXXX[;vid-XXXX_pid-XXXX]	0000-ffff	Undefined	Blank	Yes	vid-****_pid-0001;vid-f000_pid-***1	FLTR/MO
ExcludeFamily	Exclude device with family	family-name[;family-name]	See Device Families table below	Undefined	Blank	No	storage;smart-card	FLTR/MO
IncludeFamily	Include device with family	family-name[;family-name]	See Device	Undefined	Blank	No	storage;smart-card	FLTR/MO

## Configuration for USB Re-Direction

			Families table below					
ExcludeAllDevices	Exclude All Devices	[true] or [false]	false-true	Undefined	false	NA	true	NA
AllowHID	Allow HID	[true] or [false]	false-true	Undefined	true	NA	true	MO
AllowHIDBootable	Allow HID-bootable	[true] or [false]	false-true	Undefined	true	NA	true	MO
AllowKeyboardMouse	Allow KeyboardMouse	[true] or [false]	false-true	Undefined	false	NA	true	MO
AllowSmartcard	Allow Smartcard	[true] or [false]	false-true	Undefined	false	NA	true	MO
AllowAudioOut	Allow Audio-out	[true] or [false]	false-true	Undefined	false	NA	true	MO
AllowAudioIn	Allow Audio-in	[true] or [false]	false-true	Undefined	true	NA	false	MO
AllowVideo	Allow Video	[true] or [false]	false-true	Undefined	true	NA	true	MO
(###)AllowDevDescFailsafe	Allow Device Descriptor Failsafe	[true] or [false]	false-true	Undefined	false	NA	true	NA
DisableRemoteConfig	Disable Remote Configuration Download	[true] or [false]	false-true	Undefined	false	NA	true	NA

- X - hex number
- [] - optional
- \* - wildcard character
- \*\* - check "Table of Filter settings" for details
- # - Bus/Port settings representation may vary depending on platforms.
- ### - If fetching of descriptor fails for a device, it would be required to include the device via Include settings on top of enabling "Allow Device Descriptor Failsafe"

### Table of Filter settings

Name	Values	Details
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## Configuration for USB Re-Direction

MO	Merge Override Ignore	merge the remote settings with the local settings. override the local settings with the remote settings.
FLTR	NA	a. Follows the precedence described in section "Device Filtering". b. If "Disable Remote Configuration Download" is false, then agent settings are downloaded. They are merged with client settings (based on MOI settings) and then they are filtered via: downloaded agent settings and the merged settings.

- remote typically indicates Agent.
- local typically indicates Client.

### *Table of Device Families*

<b>Family</b>	<b>family-name</b>
Vendor	vendor
Unknown	unknown
Other	other
Audio In	audio-in
Audio Out	audio-out
Communication (e.g. Modem)	comm
Human Interface Device	hid
Bootable HID	hid-bootable
Force Feedback Device	physical
Imaging (e.g. scanner)	imaging
Printer	printer
Mass Storage (e.g. flash drive)	storage
Smartcard Reader	smart-card

## Configuration for USB Re-Direction

Security	security
Video	video
Wireless Adapter	wireless
Bluetooth	bluetooth
Wireless USB	wusb
PDA (e.g. Active sync, Palm)	pda



## Special Use Cases

In some situations, users may want to connect to different types of VDI backends with USB redirection. If this is the case, the following methods can be used.

- a. The service vmware-usbarbitrator can be stopped with a `-kill` commandline option
- b. The service vmware-view-usbd can be stopped with a `SIGTERM` e.g. `kill -TERM `pidof vmware-view-usbd``
- c. vmware-view-usbd currently forks into several instances when launched. If there is a need to run a single instance, run it with the `-f` command line option.
- d. Note that the configuration files are read only when the vmware-usbarbitrator and vmware-view-usbd initially start up.

## Known Issues

1. USB webcams do not work with this version of the USB component.