

# DFI CS620 ISA Device User Guide

V 1.1





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# **Revision History**

Date	Revision	Description	Author
			Jack Lan, Kuowei Pai,
2020/11	0.9	Initial document. For DVT sample.	Fernando Lin, Fred
			Chou
			Jack Lan, Kuowei Pai,
2021/1	0.10	Update Ch. 2 contents, add step 13 ~ 22.	Fernando Lin, Fred
			Chou
			Jack Lan, Kuowei Pai,
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			Chou
2021/4	1 1	Add DIO function page	Jack Lan, Fernando
2021/4 1.1		Add DIO Tuffiction page	Lin



# **1** Introduction

DFI provides a virtualization solution that new X86 platform can also use ISA device. CS620 provides a host image (Ubuntu), which includes hypervisor KVM and let user install their legacy image. This document will guide user how to install legacy image and configure ISA device setting.

# 1.1 System Setup

There are two parts: Prepare VM and Add Device to VM.

Prepare VM has two cases: **New Legacy Image** and **Old Legacy Image** (image from old machine).





# **1.2 Terminology**

Acronym/Term	Definition
OS	Operating System
VM	Virtual Machine
KVM	Kernel-based Virtual Machine. <u>https://www.linux-kvm.org/</u>











#### 1. Run virt-manager

dfi@dfi-Not-Specified:~/virt-manager_2.2.1_package\$ sudo virt-manager dfi@dfi-Not-Specified:~/virt-manager_2.2.1_package\$ []										
			-	Virtual	Machine M	lanager				
File	Edit	View	Help							
<u></u>		Open		C	~					
Nam	e						•	CPU usage		
QE	MU/KVI	м								

2. Create a new virtual machine by clicking the button in the top left-hand corner





#### 3. Select Local install media (ISO image or CDROM). Then click Forward



#### 4. Upload ISO image file. Then click Forward







5. Enter the appropriate RAM and CPU settings as required. EX. Windows XP case, suggest Memory: 2048MiB, CPUs:2

Choose M	emory ar	nd CPU	sett	ings:		
Memory:	2048	MiR au	+ pilabl			
CPUs:	2		+			

6. Assign the amount of storage for legacy image.

Create a new virtual machine Step 4 of 5  Create a disk image for this virtual machine  Create a disk image for the virtual machine  10.0 - + GiB  37.3 GiB available in the default location  Select or create custom storage  Manage		Virtual Machine Manager New VM	
<ul> <li>Enable storage for this virtual machine</li> <li>Create a disk image for the virtual machine         <ol> <li>10.0 - + GiB</li> <li>37.3 GiB available in the default location</li> <li>Select or create custom storage</li> </ol> </li> <li>Manage</li> </ul>	Create a no Step 4 of 5	ew virtual machine	
Create a disk image for the virtual machine          10.0       -       +       GiB         37.3 GiB available in the default location         Select or create custom storage	🗹 Enable storage f	or this virtual machine	
10.0     -     +     GiB       37.3 GiB available in the default location       • Select or create custom storage	O Create a disk ima	age for the virtual machine	
37.3 GiB available in the default location O Select or create custom storage Manage	10.0 -	+ GiB	
O Select or create custom storage	37.3 GiB available	e in the default location	
Manage	O Select or create	custom storage	
	Manage		





7. Enter a name for your virtual machine, and check Customize configuration before install, then click Finish

File	Virtual Machine Manager O O O O O O O O O O O O O O O O O O O
Na	Create a new virtual machine Step 5 of 5
▼ ¢	Ready to begin the installation
Ę	Name: winxp
	OS: Microsoft Windows XP Install: Local CDROM/ISO Memory: 512 MiB CPUs: 2 Storage: 10.0 GiB /var/lib/libvirt/images/winxp-1.qcow2 Customize configuration before install Network selection
	Cancel Back Finish

8. Click Sound ich6. In Sound Device, select AC97. Then click Apply







### 9. Click Tablet. Then click Remove



#### 10. Select Yes







- 11. Repeat step 9 ~ 10 to remove NIC: xx:xx:xx and Console 1
- 12. After remove Tablet, NIC:xx:xx:xx, and Console 1 virtual devices, click Begin Installation
- 13. After create VM finished, QEMU/KVM list will be added a new VM (winxp)

Virtual	Machine Manager	
File Edit View Help		
🔛 💻 Open 🕨 🔝 🚺	*	
rtual machine console and details v QEMU/KVM	-	CPU usage
winxp Shutoff		

14. When Windows Setup screen is shown as below picture, please press and hold F6 immediately in VM and release after the message shown Press F2...







15. Press **S** in this step as below picture.



16. Press Enter in this step as below picture.

	al Machir		Send Key		
		0	•		
Wind	ows Set	up			
	You ha using	ive cho: a devio	sen to c ce suppo	configure a SCSI Adapter for use with Windows, ort disk provided by an adapter manufacturer.	
	Select to ret	the Si urn to	CSI Adap the pre	oter you want from the following list, or press ESC evious screen.	
				Intel(R) SATA AHCI Controller	
EN	TER=Sel	ect F	B=Exit		





### 17. Press Enter in this step as below picture.



18. Complete installing Windows XP.

Attention please. If the mouse cannot be used in VM when installing Windows XP, please use keyboard to choose setup items.

- 19. After Windows XP setup completed, shutdown it first.
- 20. Go back to hardware details, select Floppy 1, and then select Remove.







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21. Keep Delete associated storage files unchecked, and select Delete.

Remove Disk Device	8
Remove disk device 'fda'	
Delete associated storage files Keep Unchecked	
Cancel Delete	3

22. Now you can restart guest OS to use.



## Note

The online update function of host image (Ubuntu) is default turned off. Please do not turns on this function to prevent online update modify the KVM library.



# 3 Legacy Image Extraction Case 1-' New Legacy Image-' Case 2-' Old Legacy Image-' Ch 2. Create VM - New Legacy Image Case-' Ch 4. Create VM - Old Legacy Image Case-' Ch 5. Restore Legacy Image to VM-'

This section will guide you on how to carry out the legacy system image extraction starting from the system preparation tool **Sysprep** thru to the restoration of the new system. You need two USB drive for this section.

Ch 6. Add Device to VM+

Ch 7. Install Virtual Device Driver to VM+

# 3.1 Sysprep

Add Device to VM₊

**Sysprep** is a tool that comes with Windows. This is the initial step prior to cloning. This step is known as generalizing the PC. It removes PC-specific information from the Windows image, including the PC's security identifier (SID). This allows you to capture the image and apply it to other PCs.

# NOTE

**Sysprep** files for Windows XP are available in the installation CD or can be downloaded online at <u>https://www.petenetlive.com/KB/Article/0000599</u>. For other versions of Windows, the **Sysprep** is already included and can be found at C:\Windows\System32\sysprep folder.



### **Steps for Sysprep:**

1. In your legacy system, create a new folder in C: drive called Sysprep







- Locate the DEPLOY.cab .zip file. This file can be found either in the CD installation or C:\Windows\System32\ or can also be downloaded online
- 2. Double-click the DEPLOY.cab file
- Copy over the sysprep.exe file, the setupcl.exe file and the setupmgr.exe file to your C: Sysprep folder



wfinf\_guide.doc

## 4. Run sysprep.exe file

### 5. Click Reseal and OK



- 6. The system will shut down
- 7. Before booting the legacy system, plug in the **Clonezilla** USB drive and proceed to extracting the image from the legacy system

### NOTE

Please don't turn on the system before the image extraction using Clonezilla is completed. Else, the system will register the original hardware again. If you have already booted-up the system without completing extracting the image using Clonezilla, re-run the Sysprep steps again.





# 3.2 Creating a Bootable Clonezilla USB

**Clonezilla** is a disk cloning application. It is an open-source application which you can download and install on your system.

After the **Sysprep** process is done, continue with cloning the disk content by creating the bootable USB device using your preferred bootable tool. In this document, the tool used to create the bootable **Clonezilla** is **Rufus**. Prepare two USB devices. Use the first device to prepare the bootable **Clonezilla** and the second device to save the disk content to the image (.iso) file. These two devices are to be plugged in together at the same time.

## NOTE

Download Rufus at https://rufus.akeo.ie

# NOTE

Download the Clonezilla iso file at https://clonezilla.org/downloads.php Just download stable version



## Steps to create a bootable USB Clonezilla using Rufus:

- 1. Download Rufus installer
- 2. Format a USB drive that has equal or bigger size than the file you will move to (i.e clonezilla.iso)
- 3. Launch the Rufus installer application
- 4. Please refer to below settings to burn a **Clonezilla** USB boot disk

🖋 Rufus 3.12.1710 (Portable)	– 🗆 X						
Drive Properties ———							
Device							
IPC_R_FIN-I (H:) [16 GB]	~ 🗄						
Boot selection							
clonezilla-live-2.6.6-15-amd64.iso	✓ ✓ SELECT						
Persistent partition size	Select downloaded clonezilla iso file						
1	0 (No persistence)						
Partition scheme	Target system						
MBR $\sim$	BIOS or UEFI $\qquad \checkmark$						
<ul> <li>Hide advanced drive properties</li> </ul>							
List USB Hard Drives							
Add fixes for old BIOSes (extra partition, align, etc.)							
Use Rufus MBR with BIOS ID	0x80 (Default) $\vee$						
Format Options							
• Volume label							
2.6.6-15-amd64 Volume label depends or	n downloaded clonezilla version						
File system	Cluster size						
FAT32 (Default)	8192 bytes (Default) $\checkmark$						
<ul> <li>Hide advanced format options</li> </ul>							
Quick format							
Create extended label and icon files							
Check device for bad blocks	1 pass 🗸						
Status							
READY	,						
🔇 i) 🛱 🗐	START CLOSE						
Using image: clonezilla-live-2.6.6-15-amd64.iso	)						



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- 5. A warning message will appear informing you that all current information on your USB storage device will be erased. Click **OK**
- 6. Click Start, the Rufus USB Installer begins to create the bootable USB Clonezilla



# 3.3 Extracting the Legacy Image to a USB Device

### Steps to save image:

- Once the bootable Clonezilla USB device is ready, plug it to the system or machine that you want to clone via Clonezilla
- 2. Go to the **BIOS** page and boot from the USB device that has the bootable Clonezilla
- 3. The boot menu of Clonezilla will appear



- 4. Select the first option which is the **Default settings**
- 5. The Debian Linux booting process screen will appear

[ 3.568433] piix4\_smbus 0000:00:07.3: SMBus Host Controller not enabled! [ 3.585730] sd 2:0:1:0: [sdb] Assuming drive cache: write through [ 3.586064] sd 2:0:2:0: [sdc] Assuming drive cache: write through [ 3.588408] sd 2:0:4:0: [sde] Assuming drive cache: write through [ 3.588422] sd 2:0:0:0: [sda] Assuming drive cache: write through [ 3.588990] sd 2:0:3:0: [sdd] Assuming drive cache: write through Starting to prepare Clonezilla live env... Live media is in /lib/live/mount/medium Updating /etc/ocs/ocs-live.conf based on kernel parameters if found... done! Configuring keyboard...





6. Choose your preferred language



7. In keyboard layout, select Don't touch my keymap



8. Select Start\_Clonezilla



### 9. Select device-image option

*Clonezilla is free (GPL) s ///Hint! From now on, if mu your selection. An asterisk Two modes are available, yo (1) clone/restore a disk or (2) disk to disk or partit. Select mode:	Clonezilla - Opensource Clone Syst software, and comes with ABSOLUTEL' ultiple choices are available, you k (*) will be shown when the select ou can r partition using an image ion to partition clone/restore.	tem (OCS) Y NO WARRANTY* have to press space key to mark tion is done///
device-image wor device-device wor remote-source Ent remote-dest Ent lite-server Ent lite-client Ent	rk with disks or partitions using rk directly from a disk or partition ter source mode of remote device c ter destination mode of remote dev ter_Clonezilla_live_lite_server ter_Clonezilla_live_lite_client	<mark>images</mark> on to a disk or partition loning ice cloning
	<0k>	<cancel></cancel>



#### 10. Choose local\_dev

Before cloning, you have to will mount that device or to or read from /home/part Select mode:	Mount Clonezilla image directory o assign where the Clonezilla image will be saved to or read from. We remote resources as /home/partimag. The Clonezilla image will be saved imag.
local_dev	Use local device (E.g.: hard drive, USB drive)
ssh_server	Use SSH server
samba_server	Use SAMBA server (Network Neighborhood server)
nfs_server	Use NFS server
webdav_server	Use_WebDAV_server
s3_server	USE_AWS_S3_SErver
Swift_Server	DSE_UPENSIGCK_SWITL_SErVer
skin	Use existing /home/partimag (Memoru! *NOT RECOMMENDED*)
	<ok> <cancel></cancel></ok>

11. Then, you will see a message in yellow instructing you to plug in the other USB device as

shown in figure below. This is the empty device to save the image file



12. Clonezilla will scan the disks on the machine. Once your USB device appears on the list, press

#### CTRL-C to exit from the window



13. Select sdb1 as an image repository and then click OK

Clonezilla – Opensource Clone System (OCS)   Mode:
Now we need to mount a device as /home/partimag (Clonezilla image(s) repository) so that we can
read or save the image in /home/partimag.
///NOTE/// You should NOT mount the partition you want to backup as /home/partimag
The partition name is the device name in GNU/Linux. The first partition in the first disk is
"hda1" or "sda1", the 2nd partition in the first disk is "hda2" or "sda2", the first partition
in the second disk is "hdb1" or "sdb1" If the system you want to save is MS windows, normally
C: is hda1 (for PATA) or sda1 (for PATA, SATA or SCSI), and D: could be hda2 (or sda2), hda5 (or
sda5)
sdal ( <u>i_ext4(in_VMware_Virtual_S)No_disk_serial_no</u>
SODI 20G_EXT4(IN_VMWare_VIrtual_S)_No_dISK_SErial_NO
NUKZ (GAILCETZ





#### 14. Use Tab key to switch light bar on <Done>, then press Enter



#### 15. Press Enter to continue

Running: mount ——bind —o noatime,nodiratime /tmp/ocsroot_bind_root /home/partimag	
The file system disk space usage:	
***************************************	
SOURCE FSTYPE SIZE USED AVAIL USE% TARGET	
/dev/sdb1 ext4 19.6G 44M 18.5G 0% /home/partimag	
***************************************	
Press "Enter" to continue	

#### 16. Choose Beginner mode

Choose the	mode to re	ezilla – Opensource Clone System (OCS) un the following wizard about advanced parameters:	
	<mark>Beginner</mark> Expert Exit	Beginner mode: Accept the default options Expert mode: Choose your own options Exit. Enter command line prompt	
	<(	OK> <cancel></cancel>	

#### 17. Select savedisk

Clonezilla – Op *Clonezilla is free (GPL) software, This software will overwrite the da backup important files before resto ///Hint! From now on, if multiple c your selection. An asterisk (*) wil	ensource Clone System (OCS): Select mode and comes with ABSOLUTELY NO WARRANTY* ta on your hard drive when restoring! It is recommended to ring!*** noices are available, you have to press space key to mark l be shown when the selection is done///
<mark>savedisk</mark> saveparts exit	Save_local_disk_as_an_image Save_local_partitions_as_an_image Exit. Enter command line prompt
<0k>	<cancel></cancel>

18. Type in the image name. The length of image name should be less than 11 chars.







19. Select the source disk sda you want to save to

Clonezilla – Opensource Clone System (OCS)   Mode: savedisk Choose local disk as source. The disk name is the device name in GNU/Linux. The first disk in the system is "hda" or "sda", the 2nd disk is "hdb" or "sdb" Press space key to mark your selection. An asterisk (*) will be shown when the selection is done			
😰 🚺 sda 8590MB_VMware_Virtual_S_No_disk_seri	ial_no		
<0k>	<cancel></cancel>		

20. Selece zip use parallel gzip compression, for multicore/CPU

Choose the compression option. If you have no ide anything.	nameters   Mode: savedisk ⊨ a keep the default value and do NOT change
-z1p Use parallel gzip compression, for m -z9p zstdmt_compression_(Very_fast_and_sm	ulticore/CPU mall_image_like_gzip,_for_multicore/CPU)
<0k>	<cancel></cancel>

21. Choose whether the source file system needs to be checked or not. Here, we choose to skip checking



22. Choose whether you would like to check the saved image or not. Here we choose the default

 Option which is Yes, check the saved image

 Clonezilla advanced extra parameters | Mode: savedisk

 After the image is saved, do you want to check if the image is restorable? ///NOTE/// This action will only check the image is restorable, and it will not write any data to the harddrive.

 Yes, check the saved image

 -scs No, skip checking the saved image

 <0k>





23. Select if you want to encrypt the image or not. Here we choose the default option which is

#### Not to encrypt the image

Clonezilla advanced extra parameters   Mode: savedisk Do you want to encrypt the image? If yes, eCryptfs program will be used to encrypt the image. It uses industry-standard cryptographic ciphers, key generation, and passphrase protection mechanisms. Without your salt/passphrase or private key, nobody will be able to retrieve your data. //NOTE// You have to remember the passphrase, otherwise the image will _NOT_ be usable in the future. -senc Not to encrypt the image		
Cite	Energy Cric Indge	
<0k>	<cancel></cancel>	

24. Select the next action to perform when everything is finished. Here we choose the default

option which is Choose reboot/shutdown/etc when everything is finished



#### 25. Press Enter to continue



26. If you are sure about saving the image, enter 'y' for yes







27. Clonezilla is now saving the image

Partclone	
Partclone v0.2.91 http://partclone.org	
Starting to clone device (/dev/sda1) to image (–)	
Reading Super Block	
Calculating bitmap Please wait done!	
File system: EXTFS	
Device size: 7.5 GB = 1834752 Blocks	
Space in use: 1.5 GB = 375049 Blocks	
Free Space: 6.0 GB = 1459703 Blocks	
Block size: 4096 Byte	
Image Version: 0001	
Elanced: 00:00:01 Remaining: 00:01:39 Rate: 0	00bute/min
Current Block: 0 Total Block: 1834752	oobgreviiitii
our ent block. O fotul block. 1004132	
Data Block Process:	
	1.00%
Total Block Process:	
	0.00%

28. After the image has been saved, press Enter to continue



29. In this last stage, you can choose your next action from the list as shown in the figure below

Now you a	can choose to:
powerof reboot cmd rerun1 rerun2 rerun3	Foweroff Reboot Enter command line prompt Start over (image repository /home/partimag, if mounted, will be umounted) Start_over_(keep_image_repository_/home/partimag_mounted) Start_over_(Remount_subdir_in_medium_of_current_repository):_/dev/sdb1
	<0k>

30. Poweroff the system and press enter to boot



31. The image has now been successfully saved









- 1. Copy Clonezilla iso file to the Ubuntu.
- 2. Run virt-manager

dfi@dfi-Not-Specified:~/virt-manager\_2.2.1\_package\$ sudo virt-manager
dfi@dfi-Not-Specified:~/virt-manager\_2.2.1\_package\$







3. Create a new virtual machine by clicking the button in the top left-hand corner and select Local install media (ISO image or CDROM). Then click Forward



## NOTE

Download the Clonezilla iso file at https://clonezilla.org/downloads.php Just download stable version

4. Uncheck Automatically detect from installation media / source, then click Browse







### 5. Click Browse Local

	Locate ISO media volume 🛛 😣
6% default Filesystem Directory	Details XML Size: 108.55 GiB Free / 8.08 GiB In Use Location: /var/lib/libvirt/images Volumes 🔮 C S
	Volumes A Size Format Used By
	Browse Local Choose Volume

### 6. Choose Clonezilla iso file which you saved, then click Open







7. On Type to start searching..., input XP, check Include end of life operating systems, then select Microsoft Windows XP (winxp)

	New VM	8
	Create a new virtual machine Step 2 of 5	
ci 🕻	Can't find the operating system you are looking for? Try selecting the next most recent version displayed, or use the "Generic OS" entry.	
M	icrosoft Windows XP (winxp)	<u> </u>
Ge	eneric OS (generic)	
Chove	Include end of life operating systems	
Qx	p	•
Au	utomatically detect from the installation media / source Cancel Back Forw	ard

# 8. Click Forward to next step

New VM 😣
Create a new virtual machine Step 2 of 5
Choose ISO or CDROM install media:
home/dfi/Desktop/clonezilla-live-2.6.6-15-amd64.iso 💌 Browse
Choose the execution system you are installing
Q Microsoft Windows XP
$\hfill \Box$ Automatically detect from the installation media / source
Cancel Back Forward



9. Enter the appropriate RAM and CPU settings as required. Here we select 2GB of RAM and for 1 CPU. Then click Forward

NOTE

For Windows XP, we recommend up to 2 CPUs and a RAM of between 2GB and 4GB

st	reate a r ep 3 of 5	new v	virtua	al machine
Choose M	lemory ar	nd CPL	sett	ings:
Memory:	2048	-	+	)
	Up to 3847	MiB av	vailable	e on the host
CPUs:	2	-	+	

10. Assign the amount of storage for the legacy image



# NOTE

The amount of storage selected here should be equal or greater that the legacy image size



11. Enter a name for your virtual machine, and check Customize configuration before install, then click Finish

File	Virtual Machine Manager New VM 8
	Create a new virtual machine Step 5 of 5
▼ ¢	Ready to begin the installation
	Name: winxp
	OS: Microsoft Windows XP Install: Local CDROM/ISO Memory: 512 MiB CPUs: 2 Storage: 10.0 GiB /var/lib/libvirt/images/winxp-1.qcow2 Customize configuration before install Network selection
l	Cancel Back Finish

12. Click Sound ich6. In Sound Device, select AC97. Then click Apply

	winxp-2 on QEMU/KVM 🛛 😵
File Virtual Machine Vi	ew Send Key
🚽 Begin Installation 🧯	Cancel Installation
Begin Installation     Overview     OS information     CPUs     Memory     Boot Options     IDE Disk 1     IDE CDROM 1     NIC:e1:c2:73     Tablet     Display Spice     Sound ich6     Console 1     Channel spice     Video QXL     Controller USB     USB Redirector 1     USB Redirector 2	Cancel Installation Details XML Sound Device Model: AC97
Add Hardware	Remove Cancel Apply





# 13. Click Tablet. Then click Remove



#### 14. Select Yes



- 15. Repeat step 9 ~ 10 to remove NIC: xx:xx:xx and Console 1
- 16. After remove Tablet, NIC:xx:xx:, and Console 1 virtual devices, click Begin Installation





17. When you open the VM, the Clonezilla page will appear



18. Restore the old content through Clonezilla by following the steps at <u>Ch 5</u>


## **5 Restore Legacy Image to VM**



After you have created the Virtual Machine and have uploaded the **Clonezilla** iso file, you need to restore the image that you have extracted earlier in Ch 3.3.

Before proceeding to this section, plug in the USB device that contains the legacy image and add the USB device into the VM. Then only do you boot up the system.

- 1. Select the first option which is the default settings
- 2. The Debian Linux booting process will appear
- 3. Choose your preferred language
- 4. In keyboard layout, select Don't touch my keymap
- 5. Select Start\_Clonezilla
- 6. Select device-image option
- 7. Choose local\_dev
- 8. Then, you will see a message in yellow instructing you to plug in the USB device. This is device to restore the file image
- 9. Clonezilla will scan the disks on the machine. Once you see your USB device on the list, press CTRL-C to exit from the windows





- 10. Select sdb1 as image repository, then click OK
- 11. Select Docs (default) as a directory name and /dev/sdb1 as the image repository. Click Done
- 12. Press Enter to continue

#### 13. Choose Beginner mode



#### 14. Now, select restoredisk

	Clonezilla - *Clonezilla is free (GPL) softwar This software will overwrite the backup important files before res ///Hint! From now on, if multiple your selection. An asterisk (*) u	Opensource Clone System (OCS): Select mode re, and comes with ABSOLUTELY NO WARRANTY* data on your hard drive when restoring! It is recommended to storing!*** e choices are available, you have to press space key to mark will be shown when the selection is done///
I	savedisk	Save local disk as an image
L	saveparts	Save_local_partitions_as_an_image
L	restoredisk	Restore_an_image_to_local_disk
L	restoreparts	Restore_an_image_to_local_partitions
L	1–2–mdisks	Restore_an_image_to_multiple_local_disks
L	recovery-iso-zip	Create_recovery_Clonezilla_live
L	chk-img-restorable	Check_the_image_restorable_or_not
L	cvt-img-compression	Convert_image_compression_format_as_another_image
L	encrypt-img	Encrypt_an_existing_unencrypted_image
L	decrypt-img	Decrypt_an_existing_encrypted_image
L	exit	Exit. Enter command line prompt
1		
1	2045	(Concol)
1	KUK2	\GanGE1/

#### 15. Select the image name



#### 16. Select the source disk sda you want to restore

Choose the target disk(s) to be overwritten (AL REPLACED!!) The disk name is the device name in GNU/Linux. the 2nd disk is "hdb" or "sdb" Press space + be shown when the selection is done	System (OCS)   Mode: restoredisk   L DATA ON THE ENTIRE DISK WILL BE LOST AND The first disk in the system is "hda" or "sda", key to mark your selection. An asterisk (*) will							
sda 8590MB_VMware_Virtual_S_No_disk_serial_no								
<0k>	<cancel></cancel>							





17. Select if the source file system needs to be checked or not. Here, we choose to skip

#### checking

Choose if you want certain file system xfs, jfs, vfat. Not	Clonezilla advanced extra paramet to check and repair the file system s which are well supported by fsck for NTFS, HFS+	t <mark>ers   Mode: savedisk  </mark> n before saving it. This option is only for on GNU/Linux, like ext2/3/4, reiserfs,
<mark>-sfsck</mark> -fsck -fsck-y	Skip checking/repairing source fil Interactively check and repair sou Auto (Caution!) check and repair s	<mark>le system</mark> urce file system before saving source file system before saving
	<0k>	<cancel></cancel>

#### 18. Select Yes, check the image before restoring

Before restoring the image, This action will only check the harddrive.	a advanced extra parameters   Mode: restoredisk do you want to check if the image is restorable or not? ///NOTE/// the image is restorable or not, and it will not write any data to
-scr	Yes, check the image before restoring No, skip checking the image before restoring
<(	<> <cancel></cancel>

19. Select the next action to perform when everything is finished. Here we choose the default option which is Choose reboot/shutdown/etc when everything is finished



20. Press Enter to continue the restoration process



#### 21. Confirm again if you want to restore







#### 22. Now the Clonezilla starts to restore

Partclone	
Partclone v0.2.91 http://partclone.org Starting to restore image (-) to device (/dev/sda Calculating bitmap Please wait done! File system: EXTFS Device size: 7.5 GB = 1834752 Blocks Space in use: 1.5 GB = 375049 Blocks Free Space: 6.0 GB = 1459703 Blocks Block size: 4096 Byte Image Version: 0001	a1)
Elapsed: 00:00:06 Remaining: 00:00:09 Rate: ( Current Block: 564472 Total Block: 1834752	6.08GB∕min
Data Block Process:	39 59%
	00.00%
TOTAL BLOCK Process:	30.77%

#### 23. Enter to continue

жжжжж	кжжжжжж	кжжя	****	
Press	"Enter"	to	continue	

#### 24. Choose from options below

Now you c	can choose to:
poweroff reboot cmd rerun1 rerun2 rerun3	Foweroff Reboot Enter command line prompt Start over (image repository /home/partimag, if mounted, will be umounted) Start_over_(keep_image_repository_/home/partimag_mounted) Start_over_(Remount_subdir_in_medium_of_current_repository):_/dev/sdb1
	<dk></dk>

#### 25. If you choose to poweroff, this following page will appear

Please remove the live-medium, close the tray (if any) and press ENTER to continue:

#### 26. Now the image has been successfully restored





- 27. Power on the new Virtual Machine
- 28. The Windows XP front page appears
- 29. Now you can see the old system that you have restored is ready to use







# 6 Add Device to VM







## 6.1 Add ISA Device

### 6.1.1 Get IO Base

In VM OS, open Windows **Device Manager** and check used **IO**. Choose an IO address that is not be used.

Ex. 2F0





### 6.1.2 Get IRQ

In VM OS, open Windows **Device Manager** and check used **IRQ**. Choose an IRQ that is not be used.

Ex. IRQ 2



#### Note

The yellow mark device is automatically generated by VM. Do not need to modify.



### 6.1.3 Get IO Base Physical

In Physical Ubuntu, open Terminal and input cat /proc/ioports to check used IO. Choose an IO address that is over 0x5000 and not be used and set it on ISA Card by ISA Card document. Ex. The value is 0x2F0



#### Note

If IO base is fixed by request and it is conflict with other device, please contact to DFI to get further technical support.



#### Ex. ISA Card document IO setting



#### Ex. ISA Card IO Setting





## 6.1.4 Get IRQ Physical

In Physical Ubuntu, open Terminal and input cat /proc/interrupt to check used IRQ. Choose an IRQ that is not be used and set it on ISA Card by ISA Card document. Ex. IRQ 7

							dfi@c	lfi-Not-Specified	:~	e 🛙 😣
File Edit	: View Search	Terminal H	elp							
dfi@dfi	-Not-Specified	d:~\$ cat	/proc/interru	pts						
	CPU0	CPU1	CPU2	CPU3	CPU4	CPU5				
0:		Θ	0	0	Θ	Θ	IR-IO-APIC	2-edge	timer	
6:							IR-IO-APIC	6-edge	virt-isa-intx	
8:							IR-IO-APIC	8-edge	rtc0	
9:		31					IR-IO-APIC	9-fasteoi	acpi	
10:							IR-IO-APIC	10-edge	parport0	
14:							IR-IO-APIC	14-fasteoi	INT3450:00	
45:							IR-IO-APIC	45-fasteoi		
120:							DMAR-MSI	0-edge	dmar0	
121:							DMAR-MSI	1-edge	dmar1	
122:							IR-PCI-MSI	16384-edge	PCIe PME	
123:							IR-PCI-MSI	458752-edge	PCIe PME, aerdrv, pcie-dpc	
124:							IR-PCI-MSI	475136-edge	PCIe PME, aerdrv, pcie-dpc	
125:							IR-PCI-MSI	481280-edge	PCIe PME, aerdrv, pcie-dpc	
126:	7254	3422					IR-PCI-MSI	327680-edge	xhci_hcd	
127:				9545	9141		IR-PCI-MSI	376832-edge	ahci[0000:00:17.0]	
128:							IR-PCI-MSI	2097152-edge	enp4s0	
129:	36	1535					IR-PCI-MSI	2097153-edge	enp4s0-rx-0	
130:					107		IR-PCI-MSI	2097154-edge	enp4s0-rx-1	
131:			49		216	10	IR-PCI-MSI	2097155-edge	enp4s0-tx-0	
132:			997				IR-PCI-MSI	2097156-edge	enp4s0-tx-1	
133:	132						IR-PCI-MSI	520192-edge	eno1	
134:	0	4185	0	0	0	52704	IR-PCI-MSI	32768-edge	i915	

### Ex. ISA Card document IRQ setting

E S	1/0 位址 & 山	新咨酒	二	立		••••	••••		
	>將SW2調整爲你所需	要的基準	位	业。	(預	設	設定	主20	C0)
	BASE ADDRESS	I/O Address	1 A9	2 A8	3 A7	4 A6	5 A5	6 A4	
	SW2	200-20F 210-21F	Off Off	On On	On On	On On	On On	On Off	
	1 2 3 4 5 6 A9 A8 A7 A6 A5 A4	2C0-2CF (Default)	Off	On	Off	Off	On	On	
	Default DIP switch setting	3F0-3FF	Off	Off	Off	Off	Off	Off	
>	→ 設定中斷資源。								
	Default		•						
	IRQ 3 4 5 6 7 9 10	) 11 1214 1	5 N(	C					
		- 2 -							



### Ex. ISA Card IRQ Setting



#### Note

If IO base is fixed by request and it is conflict with other device, please contact to DFI to get further technical support.



## 6.1.5 Get IO Range and IO Range Physical

Please reference your ISA card document. If the document did not mention it, you can temporarily set to **16** then test the ISA card function and modify if necessary.

Revision Control. Long Product Life Cycle.



### 6.1.6 Add ISA Device

#### 1. Select VM and click Open

	Virtual	Machine Manager		000
File Edit View Help				
📮 📃 Open	U	*		
Show the virtual machine console an	d details		•	CPU usage
▼ QEMU/KVM				
Shutoff				

#### 2. Click Show virtual hardware details

File Virtual Machine View Se	winxp on QEMU/KVM	۵ 🕲
File Virtual Machine View Se Performance CrUs Showvirtual hardware details OS information Performance CrUs Boot Options DE Disk 1 DE D	winxp on QEMU/XVM       dKey       Details       XML       Bask Details       VUID:       3d37abcf-1653-486-bb43-70d65570c2e0       Status:       Shuboff (Shut Down)       Title:       Description:	
IDE CDROM 1     IDE CDROM 1     IDE CDROM 1     INC a1/12/ba     Tablet     Mouse     Kryboard     Diplay Spice     Sound ich6     Serial 1     Channel spice     Vide OXL     Controller V088 0     Controller V088 0     Controller V08 0     Controller V100 Serial 0     W USB Redirector 1     W USB Redirector 1	Description: Hypervisor Details Hypervisor: KVM Architecture: K86_64 Emulator: Uur/bin/qemu-system-x86_64 Chipset: I440FX Firmware: BIOS	
Add Hardware	Ca	ncel Apply





 Click Add Hardware to open Add New Virtual Hardware window. Then select ISA Device, fill in values to six items, including IO Base, IO Range, IRQ, IO Base Physical, IO Range Physical and IRQ Physical. Then click Finish

		Add New	Virtual Hardware		8
	Storage	ISA Device			
tı,	Controller Network	Details XML			
0	Input Graphics	IO Base:	2F0		
	Sound	IO Range:	8		
	Parallel	IRQ:	7		
4	Console Channel	IO Base Physical:	320		
20 20	USB Host Device PCI Host Device				
å.	ISA Device	IO Range Physical:	8		
	Video Watchdog	IRQ Physical:	6		
	Filesystem				
2	Smartcard				
	USB Redirection				
20	RNG				
20	Panic Notifier				
t,	VirtIO VSOCK				
				Cancel Finis	h

#### 4. ISA Device added to hardware details

		winxp on QEMU/KVM	🗢 🗉 😞
File	Virtual Machine View Se	nd Key	
	🗿 🕨 💷 👻	6	<u></u>
	Overview	Details XML	
	OS information	ISA Device	
4	Performance	Type pc-isapass-dev	
	CPUs	IO Base 0x2f0	
-	Memory	IO Range 8 IRO 7	
20	Boot Options	Physical IO Base 0x5330	
	IDE Disk 1	Physical IO Range 8 Physical IRO 6	
0	IDE CDROM 1		
ŤĻ.	NIC:a1:f2:ba		
1	Tablet		
0	Mouse		
	Keyboard		
-	Display Spice		
	Sound ich6		
6	Serial 1		
	Channel spice		
	ISA Device		
	Video QXL		
	Controller USB 0		
	Controller PCI 0		
	Controller IDE 0		
	Controller VirtiO Serial 0		
	USB Redirector 1		
(Ÿ	USB Redirector 2		
	Add Hardware		Remove Cancel Apply





## 6.2 Add Serial Device

#### 1. Click Serial

Add New Virtual Hardware 🔗		
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> </ul>	Serial Device       Details     XML       Device Type:     Pseudo TTY (pty)	
<ul> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>		
	Cancel Finish	

## 2. In Device Type, select Physical host character device (dev)

Add New Virtual Hardware 🧧		
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Sound</li> <li>Sorial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	Serial Device         Details       XML         Device Type:       Physical host character device (dev) •         Path:	
	Cancel Finish	



3. In Path, input /dev/ttyS0 (ttyS0 ~ ttyS5 mapping to COM1 ~ COM6). Click Finish

<ul> <li>Storage</li> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Path:</li> <li>/dev/ttyS0</li> </ul>	aracter device (dev) ▼
<ul> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> </ul>	
<ul> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	

4. Serial Device added to hardware details





## 6.3 Add Sound Device

#### 1. Click Sound

Add New Virtual Hardware 🛛 😣				
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>ISA Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VitlO VSOCK</li> </ul>	Sound Details XML Model: HDA (ICH6)			

## 2. In Model, select AC97. Click Finish

	Add New Virtual Hardware	8
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	Sound Details XML Model: AC97	
	Cancer	





#### 3. Sound Device added to hardware details

		winxp on QEMU/KVM	
File	Virtual Machine View Se	and Key	
	i 🕨 🚺 🗸	5	100 100 100 100 100
	Overview	Details XML	
	OS information	Sound Device	
4	Performance	Model: AC97 🔹	
	CPUs		
-	Memory		
- H	Boot Options		
E.	IDE Disk 1		
	IDE CDROM 1		
t,	NIC:35:c6:1e		
	Tablet		
$^{\circ}$	Mouse		
	Keyboard		
-	Display Spice		
	Sound ich6		
	Sound ac97		
a	Channel spice		
6	Serial 1		
	ISA Device		
	ISA Device		
-	Video QXL		
	Controller USB 0		
	Controller PCI 0		
	Controller IDE 0		
	Controller VirtIO Serial 0		
(	USB Redirector 1		
Ŷ	USB Redirector 2		
	Add Hardware	Remove Cancel	Apply





## 6.4 Add Parallel Device

#### 1. Click Parallel

_	Add New Virtual Hardware	8
Storage Controller Network Input Graphics Sound Serial Parallel Console Channel USB Host Device PCI Host Device ISA Device Video Watchdog Filesystem Smartcard USB Redirection TPM RNG Panic Notifier VitlO VSOCK	Parallel Device         Details       XML         Device Type:       Pseudo TTY (pty)	
	Cancel Finish	

## 2. In Device Type, select Physical host character device (dev)

	Add New Virtual Hardware	8
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> </ul>	Add New Virtual Hardware         Parallel Device         Details       XML         Device Type:       Physical host character device (dev) •         Path:	
<ul> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	Cancel	





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### 3. In Path, input /dev/parport0 (CS620 has only parport 0). Click Finish

	Add New Virtual Hardware	8
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> <li>PCI Host Device</li> </ul>	Add New Virtual Hardware         Parallel Device         Details       XML         Device Type:       Physical host character device (dev)          Path:       /dev/parport0	
<ul> <li>Channet</li> <li>USB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>		
	Cancel Finish	





## 6.5 Add USB Disk Device

#### 1. Click USB Host Device



#### 2. Select your USB Device. Click Finish

	Add New Virtual Hardware 🛛 😣
Storage	USB Device
<ul> <li>Network</li> </ul>	Details XML
Input	Host Device:
Sound	001:002 Terminus Technology Inc. FE 2.1 7-port Hub 001:003 Microsoft Corp. Basic Optical Mouse v2.0
🗐 Serial	001:004 Microsoft Corp. Wired Keyboard 600 (model 1576)
Console	
Channel 🔅 USB Host Device	
PCI Host Device	
Video	
Watchdog	
Smartcard	
USB Redirection	
RNG	
<ul> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	
	Cancel Finish





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#### 3. USB Device added to hardware details







## 6.6 Add PCI Host Device

#### 1. Click PCI Host Device



#### 2. Select your PCI Host Device. Click Finish

	Add New Virtual Hardware 🛛 😣		
8	Storage	PCI Device	
E.	Controller		
14	Network	Details XML	
٢	Input	Host Device:	
Ξ.	Graphics	0000:00: 16:0 Intel Corporation Cannon Lake PCH HECI Controller	
4	Sound	0000:00: 17:0 Intel Corporation Cannon Lake PCH SATA AHCI Controller	
-	Serial	0000:00: 1F:0 Intel Corporation	
	Parallel	0000:00:1F:3 Intel Corporation Cannon Lake PCH cAVS	
-	Console	0000:00: 1F:4 Intel Corporation Cannon Lake PCH SMBus Controller	
	Channel	0000:00: 1F:5 Intel Corporation Cannon Lake PCH SPI Controller	
90) 11	USB Host Device	0000:00: 1F:6 Intel Corporation Ethernet Connection (7) I219-V (Interface eno1)	
2o	PCI Host Device	0000:01:00:0 NVIDIA Corporation GF119 [GeForce GT 520]	
90) 11	ISA Device	0000:01:00:1 NVIDIA Corporation GF119 HDMI Audio Controller	
Ξ.	Video	0000:02:00:0 Asix Electronics Corporation	
	Watchdog	0000:02:00:1 Asix Electronics Corporation	
	Filesystem	0000:02:00:2 Asix Electronics Corporation	
2	Smartcard	0000:04:08:0 Integrated Technology Express, Inc. IT8888F/G PCI to ISA Bridge with SMB [Golden Gate]	
۲	USB Redirection	0000:05:00:0 Intel Corporation I211 Gigabit Network Connection (Interface enp5s0)	
	TPM	0000:07:04:0 VIA Technologies, Inc. VT6105/VT6106S [Rhine-III] (Interface enp7s4)	
20	RNG	0000:07:05:0 Intel Corporation 82541PI Gigabit Ethernet Controller (Interface enp7s5)	
20	Panic Notifier	0000:07:06:0 Realtek Semiconductor Co., Ltd. RTL-8100/8101L/8139 PCI Fast Ethernet Adapter (Interface enp7s6)	
tų.	VirtIO VSOCK	0000:07:07:0 IBM 16/4 Token ring UTP/STP controller	
		Cancel Finish	





#### 3. PCI Device added to hardware details







## 6.7 Add Network Device

There are two ways to add network device: **Network Bridge** and **PCI Passthrough**.

#### 6.7.1 Network Bridge

- 1. In Physical Ubuntu, open Terminal and input cd /home/, then enter
- 2. Input sudo chmod a+x cs620\_getnetworkname.sh, then enter
- 3. Input your password
- 4. Input sudo ./cs620\_getnetworkname.sh, then enter
- 5. There will show two Intel network devices I211 and I219. Select one you would like to do network bridge. Ex. enp4s0 if I211







6. Click Network. In Network source, select Mactap device...

Add New Virtual Hardware			
<ul> <li>Storage</li> <li>Controller</li> <li>Network</li> <li>Input</li> <li>Graphics</li> <li>Sound</li> <li>Serial</li> <li>Parallel</li> <li>Console</li> <li>Channel</li> <li>USB Host Device</li> </ul>	Add New Virtual Hardware         Network         Details       XML         Network source:       Macvtap device         Device name: <ul> <li>In most configurations, macvtap does not work for host to guest network communication.</li> </ul> MAC address: <ul> <li>S2:54:00:db:b4:2d</li> <li>Device model:</li> <li> </li></ul>		
<ul> <li>SSB Host Device</li> <li>PCI Host Device</li> <li>ISA Device</li> <li>Video</li> <li>Watchdog</li> <li>Filesystem</li> <li>Smartcard</li> <li>USB Redirection</li> <li>TPM</li> <li>RNG</li> <li>Panic Notifier</li> <li>VirtIO VSOCK</li> </ul>	Device model: • • Cancel Finish		

7. In **Device Name**, input **enp4s0**, then **MAC address** will be produced automatically. You can modify a specific mac address here. In **Device model**, select **e1000** 

Add New Virtual Hardware 😣				
·	Storage Controller Network Input Graphics Sound Serial Parallel Console Channel USB Host Device PCI Host Device ISA Device Video Watchdog Filesystem Smartcard USB Redirection TPM RNG Panic Notifier	Network         Details XML         Metwork source:         Macvtap device         Deyice name:         enp4s0         In most configurations, macvtap does not work for host to guest network communication.         MAC address:         S2:54:00:db:b4:2d         Device mode!:         e1000		
		<u>C</u> ancel <u>E</u> inish		

#### Note

After adding network bridge device, Windows will enumerate a new Ethernet device. Please refer to <u>Ch 7.1</u> to install Ethernet driver.





## 6.7.2 PCI Passthrough

#### 1. Click PCI Host Device. Select LAN Device (I211). Click Finish



#### Note

After adding Ethernet PCI host device, Windows will enumerate a new Ethernet device. Please refer to Ch 7.1 to install Ethernet driver.

#### Note

Due to lacking of Windows XP driver of Intel I219 Ethernet controller, do not passthrough Intel I219 Ethernet device.



# **7 Install Virtual Device Driver to VM**





## 7.1 Install Virtual Device Driver

- 1. Open created VM and get into Windows desktop
- 2. Click Show virtual hardware details



#### 3. Click IDE CDROM1. Then click Browse







#### 4. In next page, click Browse Local

	Locate ISO	media volum	ie (
32% default	Details XML		
Filesystem Directory 15% Desktop Filesystem Directory	Size: 39.25 GiB F Location: /var/lib/lib Volumes 🜵 🥝 (	Free / <i>18.70 Gil</i> wirt/images	B In Use
	Volumes 🔺 Size	Format	Used By
			Browse Local Cancel Choose Volume
			Browse Local Cancel Choose Volume
Controller IDE 0 Controller VirtIO Serial 0		[	Browse Local Choose Volume

### 5. Click Home. Then click Left Arrow





#### 6. Click home

Car	rcel	Locate ISO media	c	Open
Θ		< <ul> <li>♦ Mome ŵ dfi &gt;</li> </ul>		
ŵ		Name	Size	Modified
		🔲 Desktop	a an	-
D		Documents		09:47
4		Downloads		4+-
5		examples.desktop	9.0 kB	4+
0		library-IPC_Refresh-libvirt-from-github		4+
-		Music		4+-
_		Public Distance		4+
2	eh 🛕	Templates		4+
2	Filesyste	Videos		4+-
+				

7. You will see a file named virtdriver\_xxxxx.iso. Select it and click open

Can	Locate ISO media		Open
Θ	< 图 home û dfi ▶		
ŵ	Name	Size	Modified
6	cs620_getnetworkname.sh	502 bytes	Yesterday
D	a dfi	202.4140	09:56
÷	Viltariver_201116.60	393.4 MD	_
66			
۵			
-			
9	<b>▲</b>		
•	<b>▲</b>		
+			

#### Note

If you don't see this file in the folder, please contact to DFI FAE.





8. In source path, the file path will be shown on it, then click Apply



9. Back to graphical console.







- 10. Windows will open an explorer window. Just close it
- 11. On Windows Desktop, click Start, then click Run



12. Input devmgmt.msc, press enter. That will open device manager







 On device manager, you will see three devices: PCI Device, PCI Simple Communication Controller and Video Controller (VGA compatible) with yellow mark in other devices class



14. Double click PCI Device, click Reinstall Driver







#### 15. Check No, not this time, then click Next



16. Click Next, the wizard will search appropriate driver to install automatically






- 17. After installation completed, click Finish
- 18. Repeat step 12 ~ 15 to complete other two devices driver installation
- 19. If you see a message like below, just click Continue Anyway to install driver





# 7.2 Install Ethernet Controller Driver

## 7.2.1 Network Bridge: Simulate Intel e1000 Ethernet controller

1. Follow step 1 ~ 16 at <u>Ch 7.1</u> to complete installing Ethernet controller driver



## 2. Click Continue Anyway







#### 3. Click OK



#### 4. Click Browse







5. Click down arrow, then select virtio-win-0.1.1 (D:), then click Open



#### 6. Double click Net







## 7. Double click PRO1000



### 8. Double click WinXP Related







#### 9. Double click Legacy



### 10. Click E1000325, then click Open







#### 11. Click OK



#### 12. Click Finish







# 7.2.2 PCI Passthrough: onboard physical Intel I211 Ethernet controller

1. Follow step 1 ~ 16 at <u>Ch 7.1</u> to complete installing Ethernet controller driver



### 2. Click Continue Anyway







## 3. Click Finish







# 7.3 Install DIO Driver

- 1. With virtdriver\_xxxxx.iso mounted, open File Explorer.
- 2. Go into **DIO** folder in CD-ROM.
- 3. Executing setup to install DIO driver.

4. After installed DIO driver, you can use SMBUS / DIO function with proper library and tool. Note:

- 1. This driver is for Windows XP only.
- 2. Please contact FAE to get SMBUS / DIO library.

