### IBM TSM For VE 6.2

安装配置指南

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### 1 TSM For Virtual Environment v6.2 部署规划

### 1.1 硬件配置要求

参见如下 link:

 $http://publib.boulder.ibm.com/infocenter/tsminfo/v6r2/topic/com.ibm.itsm.ve.doc/r_ve_hwreqs.html$ 

## 1.2 软件配置要求

参见如下 link:

 $http://publib.boulder.ibm.com/infocenter/tsminfo/v6r2/topic/com.ibm.itsm.ve.doc/r\_ve\_os\_mount. html$ 

### 2 TSM For Virtual Environment v6.2 安装步骤

## 2.1 BA Client v6.2.3 安装

BA Client 安装包有 Windows X32,X64 位两种,安装前根据 proxy Server 的操作系统选择合适的 BA Client 安装包。

省 6.2.3.0-TIV-	TSMBAC-WinX64 Properties	X
Security General	Details Previous Versions Compatibility Digital Signatures	
2	6.2.3.0-TIV-TSMBAC-WinX64	
Type of file:	Application (.exe) Program Fix Level for the TSM BA Client	
Location:	C:\FB build\tsm BA 6.2.3 ga build	
Size:	189 MB (198,339,312 bytes)	
Size on disk:	189 MB (198,340,608 bytes)	
Created:	Today, April 14, 2011, 47 minutes ago	
Modified:	Wednesday, March 30, 2011, 11:43:26 PM	
Accessed:	Today, April 14, 2011, 47 minutes ago	
Attributes:	Read-only Hidden Advanced	
	OK Cancel Apply	

🚰 IBM Tivoli Storage Manager Backup-Archive Client - InstallShield	Wizard 🗙
Location to Save Files Where would you like to save your files?	
Please enter the folder where you want these files saved. If the folder exist, it will be created for you. To continue, click Next.	does not
Save files in folder:	
	Change
-	
InstallShield	
< Back Next >	Cancel

解压 TSM Client 安装包:

🛃 IBM Tivoli Storage Manager Backup-Archive Client - InstallShield Wizard	×
Extracting Files The contents of this package are being extracted.	
Please wait while the InstallShield Wizard extracts the files needed to install IBM Tivoli Storage Manager Backup-Archive Client on your computer. This may take a few moments.	
Extracting dsmadmc.exe	
InstallShield < Back Next > Cancel	

#### 选择安装语言:

Name 🔺 💌	Date modified 👻	Туре	▼ Size	⋆ Tags	▼
6.2.3.0-TIV-TSMBAC	3/30/2011 11:22	Application	154,269 Ki	В	
6.2.3.0-TIV-TSMBAC	3/30/2011 11:43	Application	193,691 Ki	В	
		IB	1 Tivoli Stora	ge Manager	Client - InstallShield Wizard 🛛 🔀
			Select th	ne language for	the installation from the choices below.
			English	(United States)	
					OK Cancel

开始安装:

🔂 IBM Tivoli Storage Manager Client InstallShield Wizard				
IBM.	欢迎使用 IBM Tivoli Storage Manager Client InstallShield Wizard			
	安装程序正在准备 InstallShield Wizard, InstallShield Wizard 将引导您完成程序安装过程, 诸稍候。			
	<上一步(B) 下一步(N)> 取消	]		

选择安装目录:

🔂 IBM Tive	oli Storage Manager Client InstallShield Wizard	×
<b>目的地文</b> 单击"下	<b>[件夹</b> 一步"安装到此文件夹,或单击"更改"安装到不同的文件夹。	
	将 IBM Tivoli Storage Manager Client 安装到: c:\Program Files\Tivoli\TSM\     更改(C)	
InstallShield - 自定义安装	<上一步(B) 下一步(N) > 取消	

典型安装不包含 VE 备份功能!

🙀 IBM Tivoli Storage Manager Client InstallShield Wizard	×
安装类型	
选择最适合自己需要的安装类型。	
诸选择一个安装类型。	
○ 典型(T)	
将安装最常用的程序特征部件。	
◎ 自定义(5)	
· 选择要安装的程序功能和将要安装的位置。建议高级用户使 	
InstallShield	,
<上一步(B) 下一步(N) > 取消	

至少要选择 VMware Backup Tools.

🚏 IBM Tivoli Storage Manager Client InstallShield Wiza	ard 🔀				
<b>自定义安装</b> 选择要安装的程序功能。					
单击下面列表内的图标以更改功能的安装方式。					
<ul> <li>● ◆ 备份 - 归档客户机 GUI 文件</li> <li>● ◆ 备份 - 归档客户机 Web 文件</li> <li>● ◆ 客户机 API (64-bit) 运行时文件</li> <li>× ◆ 客户机 API (32-bit) 运行时文件</li> <li>× ◆ 客户机 API SDK 文件</li> <li>● ◆ 管理客户机命令行文件</li> <li>× ◆ 逻辑卷快照代理程序</li> <li>● ◆ VMware Backup Tools</li> </ul>	管理客户机命令行文件 此功能需要硬盘驱动器上的 9461KB。				
g装到: c:\Program Files\Tīvoli\TSM\	更改(A)				
Installshield	下一步(N) > 取消				

开始安装:

🙀 IBM Tivoli Storage Manager Client InstallShield Wizard	х
已做好安装程序的准备	
向导准备开始安装。	
单击"安装"开始安装。	
要查看或更改任何安装设置,诸单击"上一步"。单击"取消"退出向导。	
InstallShield	_
<上→步(B) 安装(I) 取消	

#### 正在安装:

🚏 IBM Tivoli Storage Manager Client InstallShield Wizard							
正在安装	正在安装 IBM Tivoli Storage Manager Client						
正在安装	专您选择的程序功能。						
12	InstallShield Wizard 正在安装 IBM Tivoli Storage Manager Client , 诸稍候。 这需要几分钟的时间。						
	状态:						
	,						
InstallShield	<上一步(B) 下一步(N) > 取消						

安装完成:

🚏 IBM Tivoli Storage Manager Client InstallShield Wizard 🛛 🛛 🔀				
IBM.	InstallShield Wizard 完成			
	InstallShield Wizard 成功地安装了 IBM Tivoli Storage Manager Client 。单击"完成"退出向导。			
	<上一步(B) <b>完成(F)</b> 取消			

## 2.2 TSM for VE V6.2 安装

需要安装 TSM for VE 来启用备份 Vmware 的高级功能如:incremental backup, instant restore, iscsi mount, volume mount。

选择合适的安装包,本例采用 WIN X64 安装包:

IBM	Tivoli	Storage	Manager	for	Virtual	Environments	6.2.0
-----	--------	---------	---------	-----	---------	--------------	-------

👔 X64			
CONDUCT - Local Disk (C:) - FB build - CZWL6ML - X64	▼ 5	Search	
File Edit View Tools Help			
🕒 Organize 🔻 🏢 Views 👻 🧊 Open 💌 🚑 Print			0
Favorite Links	Name 🔺 👻	Date modified 👻 Type	▼ Size
Documents	setup	3/2/2011 12:33 AM Application 3/2/2011 12:34 AM Text Document	22,
Pictures	VEISIONS	5/2/2011 12:54 AM Text Document	
Music			
More »			
Folders	·		
Nesktop	<b>_</b>		
Administrator			
🍌 Public			
1 Computer	_		
🚽 Floppy Disk Drive (A:)			
Local Disk (C:)			
sRecycle.Bin			
J Zip			
Decuments and Settings			
EastGo windows 2.1			
FB build			
CZWL6ML			
Documents			
🚺 Extra			
LanguagePacks			
📔 X64			
\mu x86			
FastGowindows2.3			<b>F</b>

选择安装语言:

📝 X64	
COC - Computer - Local Disk (C:) - FB build - CZWL6ML - X64	👻 🔄 Search
File Edit View Tools Help	
🕘 Organize 🔻 📋 Views 👻 📄 Open	0
Favorite Links	Name A V Date modified V Type V Size
Documents	Setup 3/2/2011 12:33 AM Application 22
Pictures	versions 3/2/2011 12:34 AM Text Document
Music	
More N	
NOLE "	
Folders	
Desktop	
Administrator	
Deba Public	LiduGeend V
Computer	
Eloppy Disk Drive (A 🛛 🖳 Select the language for the installation from	om the choices below.
Local Disk (C:)	
SRecycle.Bin	
Chinese (Simplified)	
Documents and Se	
FastGo windows 2	
FB build	
CZWL6ML	
Documents	
🐌 Extra	
LanguagePacks	
📕 X64	
📕 X86	
FastGowindows2.3	



接受协议:

🚏 Tivoli Data Protection for VMware - InstallShield Wizard	
软件许可协议 诸仔细阅读下列许可协议。	
国际程序许可协议	<u> </u>
第一部分 通用条款	
下载、安装、复制、访问、单击"接受"按钮,或以其他方式修 被许可方同意本协议的条款。如果您代表被许可方接受此类条款 证您拥有完全的授权以使该被许可方接受此类条款的约束。如果 款,	使用程序,即表明 统,则您陈述并保 民您不同意此类条
- 则请勿下载、安装、复制、访问、单击"接受"按钮,或使用	目程序;并且 
<ul> <li>我接受许可协议中的全部条款。(A)</li> <li>我不接受许可协议中的任何条款。(D)</li> <li>InstallShield</li> </ul>	
English 打印 (P) <上一步(B) 下一步(N)	> 取消

选择自定义安装:

🚏 Tivoli Data Protection for VMware - InstallShield Wizard	×
<b>安装类型</b> 选择最适合自己需要的安装类型。	4
诸选择一个安装类型。	
⑦ 完整安装(0) 将安装所有的程序功能。(需要的磁盘空间最大)。	
<ul> <li>自定义(5)</li> <li>送择要安装的程序功能和将要安装的位置。建议高级用户使用。</li> </ul>	
InstallShield <上一步(B) 下一步(N)> 取消	

选择安装所有的组件:

🔀 Tivoli Data Protection for VMware - InstallShield Wiz	zard 🗙
<b>自定义安装</b> 选择要安装的程序功能。	
单击下面列表内的图标以更改功能的安装方式。	
□ ■ Data Protection for VMware 命令行 □ ■ 文档 □ ■ Data Protection for VMware 支持文件	支持 ISM BA Client 以 Data Protection for VMWare 方式运行,并对虚拟机执 行增量快照。
	此功能需要硬盘驱动器上的 56KB 。
安装到:	
C:\Program Files (x86)\Tivoli\TSM\TDPVMware\	更改(A)
InstallShield	
	1 24 (V) / AX/H

开始安装:



安装 device software:

_			
	🚏 Tivoli Data Protection for VMware - InstallShield	Wizard	
	正在安装 Tivoli Data Protection for VMware		and at a
∓ Wind	ows Security		×
Would	you like to install this device software? Name: IBM Virtual Volume Publisher: International Business Machines Corpora	t	
Alv Ma	vays trust software from "International Business Ichines Corporat". u should only install driver software from publishers you trust install?	Install [	Don't Install
CZ\ D CZ\ L L L X	InstallShield <上一步(B)	」 下一步(N) > <b>取</b>	2消

安装完成:



#### 重启机器:

📸 Tivoli 🛙	ata Protection for VMwa	are 安装程序信息	×
0	您必须先重新启动系统, Protection for VMware 做出 是"按钮可立即重新启动。 以人工方式启动。	然后才能使对 Tivoli Data 出的配置修改生效。单击" ·单击"否"按钮则可在以后	
	是(Y)	否(N)	

### 3 TSM For Virtual Environment v6.2 配置过程

## 3.1 配置 BAClient V6.2.3

选择配置向导:



新建配置文件(dsm.opt):

👼 TSM Client Configuration Wizard		×
		Options File Task
Client Options File • Choose Task TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish	Create a new options file Select this option if you do not aiready have a TSM client options file. TSM will create an options file for you based on your specifications in this wizard.	Which task do you wish to perform?  Create a new options file Update my options file Timport from an existing options file for use
		<back next=""> Apply Finish Cancel</back>

配置节点名字, nodename 需要在 TSM server 上配置:

<ul> <li>Client Options File</li> <li>Choose Task</li> <li>TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish</li> <li>TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply</li> <li>Tish</li> </ul>	📕 TSM Client Configuration Wizard			×
<ul> <li>Client Options File</li> <li>Choose Task</li> <li>TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish</li> <li>Tish</li> </ul>				
your node to the server. The length of the node name can be 1 to 64 characters.	Client Options File ✓ Choose Task → TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish	Client Node Name The node name is a unique name used to identify your client node to the server when you begin a client session. Type the name of your client node to identify your node to the server. The length of the node name can be 1 to 64 characters.	TSM Client Node Name Which is the TSM Client Node Name to use?	
< Back Next > Apply Finish Can			<back next=""> Apply Finish</back>	Cancel

#### 选择与 TSM server 的通讯方式:

📕 TSM Client Configuration Wizard		×
Client Options File Choose Task Choose Task TSM Client Node Name Communication Method Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish	TCP/IP         Transmission Control         Protocol/Internet Protocol         (ТСР/IP)	TSM Client/Server Communications         Which communication method do you want the TSM Client to use when communicating with the TSM Server?         Image: Complete the TSM Server         Image: Complete the TSM Server
		< Back Next > Apply Finish Cancel

填入 TSM server 地址与端口:



选择 include/exclude 文件列表:

TSM Client Configuration Wizard		×
		0 2
	1	Recommended Include/Exclude List
Client Options File Choose Task TSM Client Node Name Communication Method Communication Options Include/exclude list File Exclusion Domain for Backup Confirm and Apply Finish	Select All Click this button to select all the items on the list.	The following is a list of TSM recommended Include/Exclude items for files which are not normally required for system recovery. Selected items will be added to your configuration file, and excluded from backups. EXCLUDE.BACKUP **:\microsoft uam volume\\** EXCLUDE.BACKUP **:\microsoft uam volume\\** EXCLUDE.BACKUP **:\\EA DATA. SF* EXCLUDE.BACKUP **:\\EA DATA. SF* EXCLUDE.BACKUP **:\\System32\config\\** EXCLUDE.BACKUP **:\\system32\config\\** EXCLUDE.BACKUP **:\\system32\checkup\** EXCLUDE.BACKUP **:\\system32\checkup\** EXCLUDE.BACKUP **:\\system32\checkup\** EXCLUDE.BACKUP **:\\system32\checkup\** EXCLUDE.BACKUP **:\\system32\checkup\** EXCLUDE.BACKUP **:\\system32\checkup\**
		<back next=""> Apply Finish Cancel</back>



完成配置:

👼 TSM Client Configuration Wizard	×
	00
Client Options File <ul> <li>Choose Task</li> <li>TSM Client Node Name</li> <li>Communication Method</li> <li>Communication Options</li> <li>Include/exclude list</li> <li>File Exclusion</li> <li>Domain for Backup</li> <li>Confirm and Apply Finish</li> </ul>	Confirm and Apply your configuration You have completed the configuration of the TSM Client Options File. Click on the 'Apply' button to confirm your configuration. The initial basic TSM Client Options File will be saved to the disk. Please note that this operation may take a while to complete.
	<back next=""> Apply Finish Cancel</back>

🖻 TSM Client Configuration Wizard	×
	0 2
<ul> <li>Client Options File</li> <li>Choose Task</li> <li>TSM Client Node Name</li> <li>Communication Method</li> <li>Communication Options</li> <li>Include/exclude list</li> <li>File Exclusion</li> <li>Domain for Backup</li> <li>Confirm and Apply</li> <li>Finish</li> </ul>	Completing your configuration         Please wait until the operation is completed!         Isti Login         Login into a TSM server         User id:         SABIN         Password:         *******
	< Back Next > Apply Finish Cancel

TSM Client Configuration Wizard		×
Client Options File • Choose Task • TSM Client Node Name • Communication Method • Communication Options • Include/exclude list • File Exclusion • Domain for Backup • Confirm and Apply • Finish	Completing your configuration The TSM Options File has been successfully written! Press the 'Finish' button to close this wizard.	
	<back next=""> Apply Finish C</back>	Cancel

## 3.2 配置 VM 备份:

启动 TSM backup GUI,选择 Edit-> Client Preferences:



按照下图进行 vmware 的配置:

Preferences Editor		X
General		VM Backup
Backup	2	Васкир Туре
Restore		O VMWare File Level
Include-Exclude		C University Full VM
Snapshot		Domain for VM Backup
Scheduler	VM host, VM folder or VM name	Domain Backup Types
Communication	Specify a VMware host	Domain Full VM
Regional Settings	server host name, folder name, or a list of virtual	
Authorization	machine host names to process. What you specify	
Web Client	depends on what you select	
Command Line		Remove
Diagnostics		
Performance Tuning		
VM Backup		
Deduplication		VM Options VM host, VM folder or VM name ALL-VM ALL-VM ALL-VM Insert VMware Virtual Center or ESX Server Host TSMFB6402.storage.tucson.ibm.com User administrator Password Ferrer VM Full Backup Type VM Management Class VM Management Class V Storage Datastore Location

## 3.3 配置 instant restore/iscsi mount/virtual mount

## 3.3.1 Windows 平台

新建 TSM server,地址同 baclient 配置

Data Protection for V	/Mware 6.2.0.0	
Tivoli. Data Pr	otection for Virtual Environment	
- TSM Server Select TSM server Select TSM server		Help Settings
New ISM server		Close
- Select snapshot Virtual machine	Select virtual machine	Mount
Snapshot		Restore
Disk		
Mounted Volumes		Diamount
J		Dismount All
Instant Restore		
		Resume
		Abort
P		
Max. CPU		Abort All
Max. CPU		Abort All

输入 nodename, password, 同 baclient 配置

SM Server			Help
New ISM server			Settings
Refresh	Remove		Close
elect snapshot	SM Server information		×
Virtual machine	TSM address		lount
Snapshot	Server address:	CEAN.STORAGE.TUCSON.IBM.COM	petere
Disk	Server port:	1500	
	TSM credentials		
founted Volumes	Node name:	sabin	
	Password:	NHNH N	mount
	Proxy node: [optional]		nount All
nstant Restore —	ОК	Cancel	
_			Abort
Max. CPU	į		Abort All

配置 virtual volume write cache.

- Select TSM se	rver			Help Settings
Refresh	Remove			Close
Select snapshot — Virtual machine			1	Mount
Snapshot Se	ttings Virtual Volume write cache			re
Disk	Folder for temporary files; C:\ProgramData\Tivoli/TSM/TDPVN	4ware\mount\		
founted Volur	Cache size (1 - 2 GB) 1		Browse	unt
		ОК	Cancel	at All
nstant Restore				
			-	Resume Abort
				Abort All

## 3.3.2 Linux 平台

	Data protection for virtual environ	ment 6.2.0	<u>_)[_)</u>
Tivoli. Data Prote	ection for Virtual Environment		IBM.
Select TSM Server		He	lp
Connect to TSM Server		▼ Setti	nas
Select TSM Server - Connect to TSM Server	-		se
Select snapshot			
Virtual machine		<u>M</u> ou	nt
Date		Resto	re
Disk	Connect to	o TSM Server	
Mounted Volumes	TEM control address		
	IP or hostname:	9.11.90.34	
	Port:	1500	
	TSM server credentials		
	Node name:	littlebear	
nstant Restore			
Instant Restore	Password:	•••••	
Instant Restore	Password: As node name [optional]:	•••••	_
Instant Restore	Password: As node name [optional]:	•••••	

将 TDPVMware shell 配置成一台 windows 机器,该机器需安装 TSM for VE

9	Data protection for virtua	l environment 6.2.0	_ 🗆 🗙
Tivoli. Data Protec	ction for Virtual Environment		IIM.
Select TSM Server			Help
littlebear@9.11.90.34			<u>S</u> ettings
Re <u>f</u> resh	<u>R</u> emove		<u>C</u> lose
Select snapshot			
Virtual machine	Select virtual machine	<b>•</b>	<u>M</u> ount
Date		<b>•</b>	R <u>e</u> store
Disk		-	
Mounted Volumes	<b>a</b>	Settings	
	TDPVMWare Shell		
	Hostname or IP	water	
	SSH login	Administrator	
Instant Restore	TDPVMWare Mount		
	Hostname or IP	water	
		<u>0</u> K	<u>C</u> ancel
Repository was updated	successfully.		

## 3.4 配置对 Linux 虚拟机的支持:

如果要对 Linux 的虚拟机进行备份需要安装 Cygwin 1.5.25 或者更高版本。安装配置



请参考如下文档:

### 3.4.1 安装 Cygwin



Select Root Install Directory Select the directory where you want to install Cygwir installation parameters.	n. Also choose a	afew	E
Root Directory			
C:\cygwin		Brows	e
Install For			
All Users (RECOMMENDED)			
Cygwin will be available to all users of the system.			
C Just Me			
Cygwin will still be available to all users, but Deskto important Installer information are only available to t you lack Administrator privileges or if you have spe	p Icons, Cygwin the current user. cific needs.	Menu Entries, ar Only select this	nd if
	< Back	Next >	Cancel
Cygwin Setup - Select Local Package Directory			_ 🗆 ×
Select Local Package Directory Select a directory where Setup should look for down	loaded installatio	on files.	E
Select Local Package Directory Select a directory where Setup should look for down	loaded installatio	on files.	E
Select Local Package Directory Select a directory where Setup should look for down	iloaded installatio	on files.	E
Select Local Package Directory Select a directory where Setup should look for down	iloaded installatio	on files.	E
Select Local Package Directory Select a directory where Setup should look for down Local Package Directory	iloaded installatio	on files.	E
Select Local Package Directory Select a directory where Setup should look for down Local Package Directory C:\cygwin v1.7.7	iloaded installatio	on files. Brows	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for down Local Package Directory C:\cygwin v1.7.7	iloaded installatio	on files. Brows	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for dowr Local Package Directory C:\cygwin v1.7.7	loaded installatio	on files. Brows	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for dowr Local Package Directory C:\cygwin v1.7.7	loaded installatio	on files. Brows	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for dowr Local Package Directory C:Ncygwin v1.7.7	loaded installatio	on files.	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for down Local Package Directory C:\cygwin v1.7.7	iloaded installatio	on files. Brows	<b>E</b>
Select Local Package Directory Select a directory where Setup should look for dowr Local Package Directory C:\cygwin v1.7.7	loaded installatio	on files. Brows	<b>E</b>

🔄 Cygwin Setup	
<b>Progress</b> This page displays the progress of the download o	or installation.
Parsing ini file "C:∖cygwin v1.7.7/http%3a	%2f%2fcygwin.mirrors
Package:	
	< Back Next > Cancel

参照该网页:

http://pigtail.net/LRP/printsrv/cygwin-sshd.html

click the little View button for "Full" view **View Full** 

find the package "**openssh**", click on the word "**skip**" so that an  $\square$  appears in Column B,

see this illustration.

(optional) find the package "tcp\_wrappers", click on the word "skip" so that an  $\square$  appears in Column B,

if you add "tcp\_wrapper", you will most likely get "ssh-exchange-identification: Connection closed by remote host" error.

If you get that error, edit the file /etc/hosts.allow and add these two lines

#### ALL: 127.0.0.1/32 : allow

#### ALL: [::1]/128: allow

before the PARANOID line.

(optional) find the package "diffutils", click on the word "skip" so that an  $\square$  appears in Column B,

find the package "zlib", click on the word "skip" (it should be already selected) so that an  $\square$  appears in Column B.

E	Cygwin Set	up - Select F	Packages							×
	Select pa	ackages to ins	tall						E	
_	Search		Clear C	Кеер	C Prev	€ Cur	r O Ex	p View	Category	
	Category	New		B	S Siz		Package		<u> </u>	
	🗆 All 🚯 De	efault								
	🕀 Admin	😯 Default								
	🕀 Archiv	ve 😯 Default								
	🗄 Base -	📀 Default								
	🗄 Datab	ase 📀 Defau	t							
	E Devel	Default								
	🗉 Doc 🔄	Default								
	E Game	s 📀 Default								
		e 📢 Default								
	•								•	
	Hide obso	olete package	s							
										_
							. –	N	<b>C</b> 1	1
						< Bac	ж	ivext >	Cancel	

依次安装如下包:

openssh,tcp\_wrappers,diffutils,zlib

gwin Setup - S	elect Pa	ckages						
lect Packages Select package	s to install							E
arch openssh	0	Clear C Keep	O P	rev	Curr	О Ехр	View F	ull
urrent	New		B	S	Categori	es	Size	Pack 🔺
	0 5.6p1	-2	$\times$	nía	Net		748k	open
Hide obsolete pa	ickages							
						_		
					< Back	Ne	xt >	Cancel
	win Setup - Se ect Packages Select package arch openssh urrent Hide obsolete pa	win Setup - Select Packages         select packages to install         arch openssh         urrent       New	win Setup - Select Packages   ect Packages   Select packages to install   arch openssh Clear © Keep urrent New \$5.6p1-2 Hide obsolete packages	win Setup - Select Packages         ect Packages         Select packages to install         arch openssh       Clear       Keep       P         urrent       New       B	win Setup - Select Packages         ect Packages         Select packages to install         arch openssh       Clear       C Keep       Prev         urrent       New       B       S	win Setup - Select Packages         ect Packages         Select packages to install         arch openssh       Clear       Keep       Prev       Curr         urrent       New       B       S       Categoria         \$5.6p1-2       ⊠       n/o       Net         Hide obsolete packages            <	win Setup - Select Packages         ect Packages         Select packages to install         arch openssh       Clear       Keep       Prev       Cur       Exp         urrent       New       B       S       Categories         Image: Select packages       Image: Select packages       Net	win Setup - Select Packages         ect Packages         Select packages to install         arch openssh       Clear         Clear       C Keep         Imment       New         B       S         Categories       Size         Imment       New         Imment       New         B       S         Categories       Size         Imment       New         Imment       Nex         Imment

Cygwin Setup - Se Select Packages	elect Packages					
Select package	s to install					
Search tcp_wrappe	rs Clear 🔿 Keep	C Prev	Curr	О Бкр	View	Full
Current	New	B S	Categorie	es	Size	Pack 📥
	€ 7.6-21	🔀 ηία	Net		65	ik tcp_v
I Hide obsolete pa	ckages					
			< Back	Ne	4	Cancel
			< DBCK	IVE		Cancel

E 11% - Cygwin Setup						
<b>Progress</b> This page displays the progress of the download or installation.						
Installing						
coreutils-8.5-2						
/usr/bin/pwd.ex	e					
Progress:						
Total:						
Disk:						
		< Back	Next >	Cancel		

安装完毕。

## 3.4.2 配置 Cygwin

修改 Windows 环境变量:

System Properties	Environment Variables
Computer Name Hardware Advanced Remote	User variables for Administrator
You must be logged on as an Administrator to make most of these changes.	Variable Value
Performance	TEMP %USERPROFILE%\AppData\Local\Temp
Visual effects, processor scheduling, memory usage, and virtual memory	TMP %USERPROFILE%\AppData\Local\Temp
Settings	
User Profiles	New Edit Delete
Desktop settings related to your logon	System variables
Settion 1	
Settings	ComSpec C:\Windows\system32\cmd.exe
- Status and Passurar	DESTRACINGON FALSE
Sustem status, austem failure, and debugging information	FP_NO_HOST_C NO
System statup, system failure, and debugging information	OS Windows_NT
Settings	New Edit Delete
Environment Variables	OK Cancel
	computer name: water
OK Cancel Apply	Full computer name: water
	Computer description:

- a. variable name: CYGWIN
- b. variable value: ntsec tty

New System Varia	ble				×
Variable name:	CYGWIN				_
Variable value:	ntsec tty				
		OK	]_	Cancel	

edit Windows system variable PATH and append ;c:\cygwin\bin

Edit System Varia	able 🗙
Variable name:	Path
Variable value:	temRoot%\System32\Wbem;c:\cygwin\bin
	OK Cancel

open cygwin shell and run the following commands:

chmod +r /etc/passwd chmod u+w /etc/passwd chmod +r /etc/group chmod u+w /etc/group chmod 755 /var chmod 664 /var/log/sshd.log



run ssh-host-config (manuall answer Yes to questions except)

When the script stops and asks you for Enter the value of CYGWIN for the daemon: your answer is **ntsec tty** 

If the script says "This script plans to use cyg\_server, Do you want to use a different name? Answer **no**.

\_ 🗆 🗡 C:4. ~ \*\* Query: Overwrite existing /etc/sshd\_config file? (yes/no) yes \*\* Info: Creating default /etc/sshd\_config file \*\* Info: Privilege separation is set to yes by default since OpenSSH 3.3. \*\* Info: However, this requires a non-privileged account called 'sshd'. \*\* Info: For more info on privilege separation read /usr/share/doc/openssh/READ \*\*\* unequerted to the separation read /usr/share/doc/openssh/READ **\*\*\*** Info: For more info on privilege separation be used? (yes/no) yes ME.privsep. **\*\*\*** Query: Should privilege separation be used? (yes/no) yes **\*\*\*** Info: Note that creating a new user requires that the current account have **\*\*\*** Info: Administrator privileges. Should this script attempt to create a **\*\*\*** Query: new local account 'sshd'? (yes/no) yes **\*\*\*** Info: Updating /etc/sshd\_config file \*\* Warning: The following functions require administrator privileges! Query: Do you want to install sshd as a service? Query: (Say "no" if it is already installed as a service) (yes/no) yes Query: Enter the value of CYGWIN for the daemon: [] ntsec tty Info: On Windows Server 2003, Windows Vista, and above, the Info: SYSTEM account cannot setuid to other users -- a capability Info: sshd requires. You need to have or to create a privileged Info: account. This script will help you do so. Info: You appear to be running Windows 2003 Server or later. On 2003 Info: and later systems, it's not possible to use the LocalSystem Info: account for services that can change the user id without an Info: explicit password (such as passwordless logins [e.g. public key Info: authentication] via sshd). Info: If you want to enable that functionality, it's required to create Info: a new account with special privileges (unless a similar account Info: already exists). This account is then used to run these special ×× Info: servers. 🚥 Info: Note that creating a new user requires that the current account 🚥 Info: have Administrator privileges itself. \*\* Info: No privileged account could be found. Info: This script plans to use 'cyg\_server'.
Info: 'cyg\_server' will only be used by registered services.
Query: Do you want to use a different name? (yes/no) no
Query: Create new privileged user account 'cyg\_server'? (yes/no) yes
Info: Please enter a password for new user cyg\_server. Please be sure
Info: that this password matches the password rules given on your system.
Info: Entering no password will exit the configuration.
Query: Please enter the password:
Query: Reenter: Info: User 'cyg\_server' has been created with password 'cyg\_server'.
Info: If you change the password, please remember also to change the installed services which use (or will soon use)
Info: the 'cyg\_server' account. Info: Also keep in mind that the user 'cyg\_server' needs read permissions Info: on all users' relevant files for the services running as 'cyg\_server' Info: In particular, for the sshd server all users' .ssh/authorized\_keys Info: files must have appropriate permissions to allow public key Info: authentication. (Re-)running ssh-user-config for each user will set Info: these permissions corrently. [Similary restrictions apply, for Info: instance, for .rhosts files if the rshd server is running, etc].

run cyglsa-config and reboot afterwards.

\$ cyglsa-config Warning: Registering the Cygwin LSA authentication package requires administrator privileges? You also have to reboot the machine to activate the change. Are you sure you want to continue? (yes/no) yes Cygwin LSA authentication package registered. Activating Cygwin's LSA authentication package requires to reboot. Administrator@water ~ \$ \_

After reboot open cygwin shell and run net start sshd



check the connection between the Linux client machine to the Windows server machine. From the Linux machine run

#### ssh Administrator@windows\_machine

A connection is made for the first time, we need to confirm it and insert the password **use local administrator password** 

[root@Ground ~]# ssh Adm Administrator@water's pa Administrator@water ~ \$ ∎	inistrator@ ssword:	water				≡	
						~	J
Ready	ssh2: AES-256	20, 3	24 Rows, 80 Cols	VT100	CA	P NUM	2

- 1. After a valid ssh connection is made between the machines, it is time to configure the authentication keys files. The authentication between the ssh client and server is done by 2 files:
  - c. Private, public key files in the client
  - d. Public key file in the server
- 2. From the Linux client run ssh-keygen -t dsa and press Enter to all questions.

```
Use blank password when required to insert password.

Iroot@ground ~]# SSN-Keygen -t usa

Generating public/private dsa key pair.

Enter file in which to save the key (/root/.ssh/id_dsa):

/root/.ssh/id_dsa already exists.

Overwrite (y/n)? y

Enter passphrase (empty for no passphrase):

Enter same passphrase again:

Your identification has been saved in /root/.ssh/id_dsa.

Your jublic key has been saved in /root/.ssh/id_dsa.pub.

The key fingerprint is:

55:4d:6d:d8:be:97:53:31:17:eb:ee:ad:af:51:91:5c root@Ground.storage.tucson.ibm.c

om

[root@Ground ~]#
```

3. From the Linux client run

cd .ssh

scp id\_dsa.pub Administrator@windows\_machine:/home/Administrator

```
[root@Ground .ssh]# scp id_dsa.pub Administrator@water:/home/Administrator
Administrator@water's password:
id_dsa.pub 100% 624 0.6кв/s 00:00
[root@Ground .ssh]# ∎
```

4. From the Windows server cygwin shell run

```
mkdir .ssh
chmod 700 .ssh
cd .ssh
touch authorized_keys
cat ../id_dsa.pub >> authorized_keys
rm ../id_dsa.pub
```



5. In addition, the ssh server needs to be configured to use the authentication files (via the ssh server configuration file).

The ssh service configuration file is locatd in c:\cygwin\etc\sshd\_config.

Make sure you have privileges to edit the file.

Edit c:\cygwin\etc\sshd\_config and unmark the following lines:

Protocol 2

HostKey /etc/ssh\_host\_dsa\_key

**RSAAuthentication yes** 

**PubkeyAuthentication yes** 

AuthorizedKeysFile

In the AuthorizedKeysFile line edit the value to /home/Administrator/.ssh/authorized\_keys

这一步是 optioanl 的,如果可以从 linux 的机器上不需要密码登录上来,可跳过此 步。

6. restart the sshd service from the cygwin shell

net stop sshd net start sshd  Check the connection between the Linux client machine to the Windows server machine. From the Linux machine run
 ssh Administrator@windows\_machine
 A connection is made without needing to insert a password.

### 4 TSM For Virtual Environment v6.2 使用简介

### 4.1 使用 TSM for VE 来备份虚拟机:

4.1.1 全备份



🥫 Backup Virtual Machine					_ 🗆 ×
File Edit View Help					
🛚 🗸 注 🗄					8
Backup VMWare Full VM (vStora)	ge) 🔻				
Chicage		VM	Name	VM Hostname	
Displaying polarbear.storage.tucson.ibr	n.com				

从 Vsphere Client 能看到开始生成虚拟机快照:



备份过程启动:

	BM Tivo	oli Storag	je Manage	r		. 🗆 🗙
File	Edit	Actions	Utilities	View He	elp	
	Welco	ome to IE	BM Tivoli	Storage N	Manager. Click below to perform a task.	
				Backup Backup Backup Copies f prevent I	p         and Restore copies of data that are frequently updated.         Restore         files to server storage to       Restores saved files from server         loss of data.       storage.	
					🔲 Task List	
	6	C		Archive Archive a Archive	Backup ● Stop ■ Report ▼ Collapse Inspected: 1 Hard Disk 1 30 GB	
				Creates Iong-terr	r Transferring	
File	BM Tiv Edit	oli Storaç Actions	ge Manage Utilities	er View He	elp	- 🗆 X
	Welco	ome to I	BM Tivoli	Storage	Backup Report Detailed Status Report	
	1			Back Backu	Elapsed Time:00:03:38 Performance Total Bytes Inspected: 30 GB Data Experiment: 9 50 0B	
				Backı Copie prevei	LanFree Data Bytes: 0 B Compressed By: 0% Total Data Reduction: 0%	
				_	Transfer Rate Network (KB/s): Aggregate(KB/s): IT,431 IT,431 IT,122 Iapse	
		C		Arch Archiv Archiv	Object Count Inspected: 1 Backed Up: 0 Updated: 0 Rebound: 0	
				Creat Iong-t	Last Error Message	
					Help	

备份完成:

🖻 IBM Tivoli Storage Manage	r		
File Edit Actions Utilities	View Help		
Welcome to IBM Tivoli	Storage Mana	ager. Click below to perform a task.	
	Backup	🖻 Backup Report	
	Backup and I	Detailed Status Report	
	Backup Copies files f prevent loss	Elapsed Time: 00:29:22  Performance Total Bytes Inspected: 30 GB Bytes Transferred: 29.19 GB	
		тъм	
	Archive Archive and F Archive Creates an a long-term sto	ANS5014I Backup completed	
		Marked Inactive: 0 Failed: 0 View	
		Last Error Message	
2/20/2011 1:25 AM Applicat	on		
2/19/2011 9:25 PM OPT File		Help	
2/20/2011 1:26 AM Applicat	on Exte		

完成后从 TSM for Vmware Mount 菜单中能看到之前的 image 备份:

Data Protection for	VMware 6.2.0.0	
Tivoli. Data P	rotection for Virtual Environment	
TCM Conver		
I SM Server		Help
tsm: sabin@ULEAN.	STORAGE. TOCSON.IBM.COM	Settings
Refresh	Remove	Close
Select snapshot		
Virtual machine	TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
Snapshot	4/15/2011 12:49:45 AM	Restore
Disk	Hard Disk 1 (30.0 GB)	
- Mounted Volumes		
		Dismount
		Dismount All
1		
Instant Restore		
		Resume
		Abort
l		é k est é ll
Max. CPU		Abort All
finished refreshing jobs li	st	

Dsm.opt 文件: nodename SABIN commm tcpip tcpp 1500 tcps tsmservreaddress DOMAIN.VMFULL "ALL-VM;" VMBACKUPTYPE FULLVM VMFULLTYPE VSTOR VMCHOST xxx.storage.tucson.ibm.com VMCUSER administrator VMCPW \*\*\*\*

#### **QUERYSCHEDPERIOD** 1

### 4.1.2 增量备份

在虚拟机上增加一块硬盘,并修改部分数据。

启用增量备份方式:

Backup Virtual Machine				
File Edit View Help				
∎ ∢ /≣ ≣				P
Backup VMWare Full VM Increm	mental			
Windows 7 Ult	VM VM	Name	VM Hostname	
🛄 🖬 Winodws 7 Ulti	TSMFBVM05_jing	TSMFBVM05_jing	tsmfbvm05.storage.tucs	runnin
🗄 🔲 💼 polarbear.storage.				
🗄 🔚 🛅 teddybear.storage				
🛛 🛄 🛄 bee				
elpaso				
i i i i i i i i i i i i i i i i i i i				
tsmfbym02	11			
TSMFBVM04				
TSMFBVM05_ji				
- 🔲 🔂 TSMFBVM06				
TSMFBVM07				
tsmfbvm08				
tsmfbvm09				
TSMFBVM10	-			
Windows 7 Prd -	4			
Object: TSMFBVM05_jing				

新增的盘的数据会备份:而之前已经备份过的数据盘直接跳过不备。增量备份!

File Edit Actions Utilities View Help     Welcome to IBM Tivoli Storage Manager. Click     Backup   Backup   Backup   Copies files to server ste   prevent loss of data.     Total Data Reduction:   Performance   Total Data Reduction:   Descrete Data Bytes:   OB   Copies files to server ste   prevent loss of data.     Network (KB/s):   Inspected: 1   Hard Disk 2   Inspected: 1   Hard Disk 2   15 GB     Transferring     Help	🖻 IBM Tivoli Storage Manager	
Welcome to IBM Tivoli Storage Manager. Click         Backup         Backup         Backup         Copies files to server storevent loss of data.         Image: Click List         Backup         Image: Click List         Backup         Image: Click List         Image: Click List	File Edit Actions Utilities View Help	Rackup Report
Backup   Backup   Copies files to server sto   prevent loss of data.     Total Bytes Inspected: 45 GB   Backup   Copies files to server sto   prevent loss of data.     Total Bytes Inspected: 45 GB   Backup   Copies files to server sto   prevent loss of data.     Total Bytes Inspected: 45 GB   Backup   Copies files to server sto   prevent loss of data.     Total Bytes Inspected: 45 GB   Understand   Backup   Inspected: 1   Hard Disk 2   Tansferring     Total Bytes Inspected: 1   Backup   Inspected: 1   Hard Disk 2   Tansferring     Help	Welcome to IBM Tivoli Storage Manager. Click	Detailed Status Report Elapsed Time: 00:00:40 Performance
	Backup Backup and Restore cop Backup Copies files to server sto prevent loss of data.	Total Bytes Inspected:       45 GB         Bytes Transferred:       425.19 MB         LanFree Data Bytes:       0 B         Compressed By:       0%         Total Data Reduction:       0%         Transfer Rate       99.08%         Network (KB/s):       15,637         Aggregate(KB/s):       10,627         Object Count       10,627         Inspected:       1         Backed Up:       1         Updated:       0         Marked Inactive:       0         Help

备份完成:

🖬 IBM Tivoli Storage Manager 📃 🔍				
File Edit Actions Utilities View Help	Backup Report			
Welcome to IBM Tivoli Storage Manager. Click	Detailed Status Report Elapsed Time:00:00:40			
Backup Backup and Restore cop	Total Bytes Inspected: 45 GB Bytes Transferred: 425.19 MB LanFree Data Bytes: 0 B			
Backup Copies files to server st prevent loss of data.	ANS5014I Backup completed			
Archive Archive and Retrieve co	ОК			
Archive Creates an archive copy long-term storage.	Last Error Message Help			

## 4.2 使用 Instant Restore

### 4.2.1 Windows 平台

要使用 Instant Retore 功能,不许在该机器上安装 TSM for VE. 选择之前的某个备份,选择 restore:

		Help
tsm: sabin@OCEAN.S	STORAGE.TUCSON.IBM.COM	Settinas
Refresh	Remove	Close
elect snapshot		
irtual machine	TSMFBVM05_jing (Microsoft Windows XP Professior 💌	Mount
napshot	4/15/2011 1:45:32 AM	Bestore
lisk	Hard Disk 2 (15.0 GB)	
	Select disk Hard Disk 1 (30.0 GB) Hard Disk 2 (15.0 GB)	
ounted Volumes		
		Dismount
		Dismount All
	I	Distionic Par
stant Restore		
		Resume
		Abort
		Ábort Áll
		ADOL AII

本例中,我们新建了硬盘 F:\,并将之前的备份数据恢复回来。

🖰 Data Protectio	n for VMware 6.2.0.0	
Tivoli. Da	ta Protection for Virtual Environment	
- TSM Server		
terr eshin@00		Help
	EAN.STORAGE.TOCSON.IBM.COM	Settings
Refresh	Select Drive Letter for Instant Restore	X
- Select snapshot-	Perform Instant Bestore of snanshot:	
Virtual machine	TSMFBVM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	punt
Snapshot	Restore the following partition:	
Disk		store
Diak	Partition number   Size   File System   Label	
- Mounted Volume:		
		nount
	Show only restorable partitions	
	Choose destination volume for Instant Restore	EX V
- Instant Restore-	Extend the volume after restore	
Instant Trestore		Cameral
		caricei
		Abort
May CPU		Abort All
	<u> </u>	
repository tsm: sabi	n@ocean.storage.tucson.ibm.com.loa FBSM8032E_failed to unmount v	volume
	-	

覆盖 f:\数据警告:

Data Protection fo	or VMware 6.2.0.0	_ 🗆 >
Tivoli. Data	Protection for Virtual Environment	
TSM Server		Help
tsm: sabin@OCEAI	N.STORAGE.TUCSON.IBM.COM	Settings
Refresh	Remove	Close
Select snapshot		
Virtual machine	TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
Snapshot	Warning	estore
Disk Mounted Volumes -	FBSM5015W All data on target drive F:\will be lost. Note 1: Proper performance of Instant Restore is depender good network connectivity/bandwidth to repository. Note 2: Use of Instant Restore is recommended only for applications that do primarily READ I/O's. Do you want to continue ?	nt on mount
	Yes	No rount All
Instant Restore		
		Resume
		Abort
Max. CPU	ı	Abort All
repository tsm: sabin@	ocean.storage.tucson.ibm.com loa FBSM8032E_failed to unmount vo	

🖰 Data Protectio	n for VMware 6.2.0.0	
Tivoli. Da	ta Protection for Virtual Environment	
TSM Server		
tsm: sabin@00	EAN.STORAGE.TUCSON.IBM.COM	Нер
Befresh		Settings
Tellesit	Select Drive Letter for Instant Restore	× Close
- Select snapshot - Virtual machine	Perform Instant Restore of snapshot: TSMFBVM05_jing, Hard Disk 1, 4/15/2011 12:49:45 AM	punt
Snapshot Disk	Restore the following partition:	store
	Partition number   Size   File System   Label 0 29.9 GB NTFS <no label=""></no>	
- Mounted Volume:	Show only restorable partitions	nount
	Choose destination volume for Instant Restore	
– Instant Bestore –	Extend the volume after restore	
	OK Cancel	sume
		Abort
Max. CPU		Abort All
'F:V' dismounted		

覆盖掉原有数据:

😫 Data Protection	for VMware 6.2.0.0	
<b>Tivoli.</b> Data	a Protection for Virtual Environment	
TSM Server		Help
tsm: sabin@OCE/	AN.STORAGE.TUCSON.IBM.COM	Settings
Refresh	Remove	Close
- Select snapshot		
Virtual machine	TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
Snapshot	Warning	×
Disk Mounted Volumes-	FBSM5015W All data on target drive E:\will be lost. Note 1: Proper performance of Instant Restore is dependent or good network connectivity/bandwidth to repository. Note 2: Use of Instant Restore is recommended only for applications that do primarily READ I/O's. Do you want to continue ?	mount All
- Instant Restore	Yes No	
		Resume
		Abort
Max. CPU		Abort All
'F:\' dismounted		

在数据恢复过程中,如图示,恢复到29%时,已经可以访问数据。

VMware 6.2.0.0	
Protection for Virtual Environment	
	Help
STORAGE.TUCSON.IBM.COM	Settinas
Remove	Close
TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
4/15/2011 1:45:32 AM	Restore
Hard Disk 2 (15.0 GB)	
	Dismount
	Dismount
	Dismount All
	Dismount All
g, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM [27.99% compl	Dismount All Resume
g, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM [27.99% compl	Dismount All Resume Abort
	Protection for Virtual Environment          STORAGE.TUCSON.IBM.COM         Remove         TSMFBVM05_jing (Microsoft Windows XP Profession •         4/15/2011 1:45:32 AM         Hard Disk 2 (15.0 GB)

恢复完成:

🁔 New Volume (F:)				×
G - Computer - New Volume (F:) -	▼ 50 S	Search		•
File Edit View Tools Help				
Organize ▼ III Views ▼			(	2
Favorite Links	Name A	Date modified +	Type 🔹	Size
Documents	System Volume Infor	4/15/2011 1:52 AM	File Folder	
E Pictures	fstbk612_6120161	11/26/2010 2:02	Compressed (zip	170
🚯 Music				
More >>				
Folders 🗸				
🖃 📃 Desktop				
🕀 🌗 Public				
🖃 🌉 Computer				
🕀 🚽 Floppy Disk Drive (A:)				
🕀 🚣 Local Disk (C:)				
🕀 🚑 DVD Drive (D:)				
C on IBM-R8TTPEZ				
T D on IBM-R8TTPEZ				
F on IBM-R8TTPEZ				
🕀 🔮 Network				
🕀 🎆 Control Panel				
Recycle Bin				

### 4.2.2 Linux 平台

通过 VNC 连接需要做恢复的机器:



#### 运行 TSM for VE



选择 proxy server,也就是之前配置的 cgywin 的 windows 机器:

0		Settings		×
	TDPVMWare Shell			
	Hestname er ID		watar	
			Administrator	
			Administrator	
	TDPVMWare Mount			
	Hostname or IP		water	
		OK		Cancel
				<u>c</u> ancer



Data protection for virtual environment 6.2.0			
Tivoli. Data Protection for	or Virtual Environment		IBM.
Select TSM Server			Help
littlebear@9.11.90.34		<b></b>	Settings
Re <u>f</u> resh	<u>R</u> emove		<u>C</u> lose
Select snapshot			
Virtual machine	Ground	<b></b>	Mount
Date	Jan 26, 2011 3:52:30 AM		Restore
Disk	Hard disk 2 (10 GB)	▼	· · ·
-Mounted Volumes			
			<u>D</u> ismount
			D <u>i</u> smount All
-Instant Restore			
			<u>A</u> bort
			A <u>b</u> ort All
VM snapshots were updated su	ccessfully.		

Twoll.       Data Protection for Virtual Environment       IEM         Select TSM St       Choose instant restore destination       Help         Interbearder       Perform instant restore of snapshot:       Settings         R       Snapshot of Hard disk 2 from Ground, taken on Jan 26, 2011 3:52:30 AM       Settings         Select snapsh       Select partition:       Mount         Virtual machi       Number       Label       File system       Size         Date       Disk       Choose mount point for IR target:       Mount         //mnt       Choose a block device for IR target:       imount       mount All         Instant Resto       Note that total size of writes to mount point should not exceed write cache size.       Abort         VM snapshots were updated successfully.       Mounted successfully.       Encel	)	Data protection for virtual environment 6.2.0	
Select TSM S       Choose instant restore destination       Help         Intibleards       Perform instant restore of snapshot:       Settings         R       Snapshot of Hard disk 2 from Ground, taken on Jan 26, 2011 3:52:30 AM       Close         Select snapst       Select partition:       Mount         Virtual mach       Number       Label       File system       Size         Date       NONE       EXT3       10 GB       Mount         Choose mount point for IR target:       //mnt       Ismount       Ismount         Choose a block device for IR target:       //mnt       Mount All       Abort         Instant Resto       Note that total size of writes to mount point should not exceed write cache size.       Abort         VM snapshots were updated successfully.       OK       Cancel       Abort	Tivoli. [	Data Protection for Virtual Environment	IBM.
IntelDeard??       Perform instant restore of snapshot:       Settings         Snapshot of Hard disk 2 from Ground, taken on Jan 26, 2011 3:52:30 AM       Glose         Select snapsh       Select partition:       Mounter         Virtual mach       NUMber       NONE       File system       Size         Date       NUMber       NONE       BXT3       IO GB       Mount         Date       Choose mount point for IR target:       //mnt       Ismount       mount         Choose a block device for IR target:       //mnt       Ismount       mount All         Instant Resto       Note that total size of writes to mount point should not exceed write cache size.       Abort         VM snapshots were updated successfully.       QK       Cancel       YM snapshots	Select TSM Se	Choose instant restore destination	× Help
Snapshot of Hard disk 2 from Ground, taken on Jan 26, 2011 3:52:30 AM       Close         Select snapsi       Select partition:       Mounter         Virtual machi       Number       Label       File system       Size         Date       Disk       Choose mount point for IR target:       Mount         //mnt       Choose mount point for IR target:       //mnt       Ismount         //mnt       Choose a block device for IR target:       //mnt       mount All         // Show only restorable partitions       Note that total size of writes to mount point should not exceed write cache size.       Abort         // Snapshots were updated successfully.       QK       Cancel       Abort	littlebear@9.	Perform instant restore of snapshot:	Settings
Select snapst   Virtual machi   Date   Disk     Mounted Voit   Choose mount point for IR target:   /mnt   Choose a block device for IR target:   /mnt   Choose a block device for IR target:   /mnt   Choose a block device for IR target:   /mnt   Show only restorable partitions   Note that total size of writes to mount point should not exceed write cache size.     Disk     Instant Resto   Note that total size of writes to mount point should not exceed write cache size.     DK     Cancel	R	Snapshot of Hard disk 2 from Ground, taken on Jan 26, 2011 3:52:30 AM	<u>C</u> lose
Virtual mach       Number       Label       File system       Size         Date       0       NONE       EXT3       10 GB       Mount         Date       Disk       Image: Choose mount point for IR target:       Image: Choose mount point for IR target:       Image: Choose a block device for IR target:	Select snapsh	Select partition:	
Date       Disk       Restore         Disk       Choose mount point for IR target:       ismount         /mnt       Choose a block device for IR target:       ismount         /mstant Resto       Note that total size of writes to mount point should not exceed write cache size.       Abort         Instant Resto       OK       Cancel	Virtual machi	Number         Label         File system         Size           0         NONE         EXT3         10 GB	<u>M</u> ount
Disk       Image: Choose mount point for IR target:         /mnt       /mnt         Choose a block device for IR target:       /mount All         /mstant Resto       Note that total size of writes to mount point should not exceed write cache size.         Disk       QK         YM snapshots were updated successfully.	Date		R <u>e</u> store
Mounted Volt       Choose mount point for IR target:       ismount         /mnt       Choose a block device for IR target:       ismount         /mstant Resto       Note that total size of writes to mount point should not exceed write cache size.       mount All         Instant Resto       Note that total size of writes to mount point should not exceed write cache size.       Abort         Image: OK       Image: OK       Image: OK       Image: OK	Disk		
Choose mount point for IR target:       ismount         /mnt       ismount         Choose a block device for IR target:       mount All         ✓ Show only restorable partitions       Mote that total size of writes to mount point should not exceed write cache size.         ▲bort       Abort         ● Cancel       YM snapshots were updated successfully.	Mounted Volu		
Choose a block device for IR target: Show only restorable partitions Note that total size of writes to mount point should not exceed write cache size. Mont All Abort bort All W snapshots were updated successfully.		Choose mount point for IR target: /mnt	ismount
Show only restorable partitions Note that total size of writes to mount point should not exceed write cache size.  △bort △bort All  VM snapshots were updated successfully.		Choose a block device for IR target:	mount All
Instant Resto       Note that total size of writes to mount point should not exceed write cache       Abort         Abort       Abort         Image: Content of the size of writes to mount point should not exceed write cache       Image: Content of the size of		I ✓ Show only restorable partitions	
Size.  Abort  Dort All  VM snapshots were updated successfully.	Instant Resto	Note that total size of writes to mount point should not exceed write cache	
<u>QK</u> <u>Cancel</u>		size.	Abort
VM snapshots were updated successfully.		N OK Cancel	ubort All
VM snapshots were updated successfully.			<u>-</u>
	VM snapshots	were updated successfully.	

# 4.3 使用 Iscsi mount

开始菜单-> scsi initiator:

Computer					
		# TBM Toroli Stre	eans Mananae		
_		File Edit Actio	ns Utilities View Heln		
C		The Con From	Choose mount destination	x	
En Server Hanager		Data Protection	A second state to the		
Recycle Bin File Action View	nep	a d she had a she bear in	Create would device for		
	1 🗉 🗟 📾 🦱	Tivoli, Da	15MH6VM05_ang, Hard Diak 2, 4/15/2011 1:45:32 AM		<u> </u>
Ba Server Manager (WA	TER) Disk P		Mount as an SESI target		-
🗵 🔛 Roles	Volume	TSM Server	Tarrad name	Help	0
E of Peabres	G (C	tsm: sabin@0C			Type + Size
desktop	Caller Pave	Defect	target	ettings	File Folder
🖂 🚝 Storage	GISAN E	neliesh	Initiator name:	Close	File Folder
Windows Ser	iver Badup	Select enameted			Compressed (zp 170
E Disk Manage	ment P	Vehial machine			
185	,	TROUGH INDEX IN PO	computer and the initiator.	oune	
Statement European (64 bit)		Snapshot		estore	
Windows Contacts		Disk			
T Windows Update	1000		Create virtual volume from selected partition:		
2 7-Zp					
Accessories			Partition number   Size   File System   Label		
Administrative Tools	Administratox	Moursed Volumes	0 14.9 GB NTFS New Volume		
Component Services	Documents	G:V: ISMEBVM		10:2.177	
Computer Management					
Data Sources (ODBC)	Computer	<u> </u>		CON /4	
CCC1 Telester		1	Show only mountable partition:		
- Local Security Policy	Network	Instant Restore	Hours visual volume as read only		
Memory Diagnostics Tool				sune	
Reliability and Performance Monitor	Control Panel		<ul> <li>Arreducine (operand) davie (energy)</li> </ul>	1.07	
a Security Configuration Wizard	Administrative Tools		HX	SP(1	
Server Manager	NUM AN SERVICE CONTRACTOR OF CONTRACTOR	New COXI	📁 Movant an the following empty (TTPS Folder:	ort All	
G Services	Help and Support	max CPU			
1 Share and Storage Management	1				
Sustem Config valion	Run	134	Browar		
Task Scheduler	Windows Can alty				
A made a firm of the set of second former	whoows security		OK Cancel		

将 initiator name 输入到 iscsi mount 的 initiator name 栏中:

iSCST Initiator Properties	ns Utilities View Help	
	Choose mount destination	
Favorite Targets Volumes and Devices RADIUS General Discovery Targets	Create virtual device for: TSMERVAMS line Hard Diek 2 4/15/2011 1:45:32.6M	_
iSCSI devices are disk, tapes, CDs, and other storage devices on another computer on your network that you can connect to.	Mount as an iSCSI target	
Your computer is called an initiator because it initiates the connection t the iSCSI device, which is called a target.	D Target name:	Help
Initiator Name iqn. 1991-05.com.microsoft:water	Initiator name:	Close
To rename the initiator, click Change. Change	Make sure port 3260 is open on any firewall between this computer and the initiator.	ount
To use mutual CHAP authentication for verifying Secret Secret	C Create virtual volume from selected partition:	
To set up IPsec tunnel mode addresses,Set up	Partition number   Size   File System   Label 0 14.9 GB NTFS New Volume	mount
What is iSCSI ?		iount All
OK Cancel App	V         Show only mountable partitions           V         Mount virtual volume as read only	
Online	<ul> <li>Assign the following drive latter:</li> <li>HX </li> </ul>	ibort
Basic 50,00 Online Max. CF	Mount in the following empty KITES folder:	iort All
Basic 40.00	Browse	
	OK Cancel	

	Choose mount destination X	l
Data Protection	Create virtual device for: TSMFBVM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	
TSM Server	Mount as an iSCSI target     Target name:     target     Initiator name:     ions 1991 05 core priorceoftrusted	Help ettings Close
– Select snapshot – Virtual machine Snapshot Disk	Make sure port 3260 is open on any firewall between this computer and the initiator.      Create virtual volume from selected partition:	ount
- Mounted Volumes 'G:\' : TSMFBVM	Partition number Size File System Label 0 14.9 GB NTFS New Volume	mount
- Instant Restore	<ul> <li>Show only mountable partitions</li> <li>Mount virtual volume as read only</li> <li>Assign the following drive latter:</li> <li>H:</li> </ul>	sume
Max. CPU	Mount in the following empty HTF5 folder:      Browse      OK Cancel	

忽略告警:

😫 Data Protection for	VMware 6.2.0.0	_ 🗆 🗵
Tivoli. Data P	rotection for Virtual Environment	
- TSM Server		
		Help
tsin, sabine occant.		Settings
Refresh	Remove	Close
Select snapshot		
Virtual machine	TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
Snapshot	4/15/2011 1:45:32 AM	Restore
Disk 🛛	/arning	×
		t
- Mounted Volumes	should not exceed write cache size.	point
G:V: TSMFBVM05		ismount
		ОК
_		mount All
Instant Bastara		
		Besume
		i nesonite.
		Abort
Max. CPU	ţ	Abort All

Mount 成功:

		Help
sm: sabin@UUEAN.	STORAGE.TUCSON.IBM.COM	Settings
Refresh	Remove	Close
lect snapshot		
itual machine	TSMFBVM05_jing (Microsoft Windows XP Professior 💌	Mount
napshot	4/15/2011 1:45:32 AM	Restore
sk	Hard Disk 2 (15.0 GB)	
unted Volumes		
unted Volumes :V' : TSMFBVM05_ji :V' : TSMFBVM05_ji	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM	Dismount
unted Volumes :V: TSMFBVM05_jj :V: TSMFBVM05_jj iCSI:target': TSMFB	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM WM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	Dismount Dismount All
unted Volumes :V: TSMFBVM05_ji :V: TSMFBVM05_ji CSI:target': TSMFB	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM IVM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	Dismount Dismount All
unted Volumes :Y': TSMFBVM05_ji :Y': TSMFBVM05_ji iCSI:target': TSMFB tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM IVM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	Dismount Dismount All
unted Volumes :V: TSMFBVM05_ji :V: TSMFBVM05_ji CSI:target': TSMFB tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM 3VM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	Dismount Dismount All Resume
unted Volumes :V: TSMFBVM05_jj :V: TSMFBVM05_jj :CSI:target': TSMFB tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM 3VM05_jing, Hard Disk 2, 4/15/2011 1:45:32 AM	Dismount Dismount All Resume Abort

## 4.4 使用 virtual volume mount:

### 4.4.1 Windows 平台

选择某个之前时间点的备份,选择 mount,选择 create virtual volume from selected partition,并制定一个新的盘符:

🔁 Data Protection	Create virtual device for:	
Tivoli. Da	SMF6VM05_jing, Hard Disk 2, 4/19/2011 1:40:32 AM	
tsm: sabin@0C	Target name:	Help
Refresh	Initiator name:	Close
Select snapshot – Virtual machine		ount
Snapshot Disk		estore
	Create virtual volume from selected partition:	
Mounted Volumes	Partition number   Size   File System   Label 0 14.9 GB NTFS New Volume	mount
		ount All
- Instant Restore	Show only mountable partitions	
	<ul> <li>Mount virtual volume as read only</li> <li>Assign the following drive letter:</li> </ul>	esume
	G:\ C Mount in the following empty NTFS folder:	ort All
Max. CPU		
	Browse	
-	OK Cancel	

显示 mount 成功:

		Help
sm: sabin@OCEAN.		Settings
Refresh	Remove	Close
lect snapshot		
rtual machine	TSMFBVM05_jing (Microsoft Windows XP Profession 💌	Mount
napshot	4/15/2011 1:45:32 AM	Restore
isk	Hard Disk 2 (15.0 GB)	
ounted Volumes		
ounted Volumes i:V : TSMFBVM05_ji	ng, Hard Disk. 2, partition 0, 4/15/2011 1:45:32 AM	Dismount
ounted Volumes ::V : TSMFBVM05_ji	ng, Hard Disk. 2, partition 0, 4/15/2011 1:45:32 AM	Dismount
ounted Volumes i:V : TSMFBVM05_ji	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM	Dismount Dismount All
ounted Volumes ::\': TSMFBVM05_ji :tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM	Dismount. Dismount All
ounted Volumes ::V': TSMFBVM05_ji tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM	Dismount Dismount All Resume
ounted Volumes ::\': TSMFBVM05_ji tant Restore	ng, Hard Disk 2, partition 0, 4/15/2011 1:45:32 AM	Dismount Dismount All Resume Abort

之前备份的数据盘被 mount 成 G:\

G:\的数据与我们之前恢复的F:\的数据完全一致:

📮 Computer			
C C Computer -	-	Search	
File Edit View Tools Help			
Organize 💌 💷 Views 💌 📲 System properties 🗂 Uninstall or char	nge a program 🗔 Man	o network drive 📓 Onen Control Panel	
	inge a program 🚽 Map		
Favorite Links	Name Hard Disk Drives	▼ 1ype ▲ ▼	Total Size
Documents			
Pictures	Local Disk (C:)	Local Disk	
B Music	Local Disk (E:)	Local Disk	
More »	New Volume (F:)	) Local Disk	
	New Volume (G:)	) LOCAI DISK	
Folders	Devices with Rei	movable Storage (2)	
E Desktop	Floppy Disk Drive	e (A:) Floppy Disk Drive	
Administrator	DVD Drive (D:)	CD Drive	
E 1 Computer	Other (3)		
E Coral Disk (C:)	C on IBM-R8TTP	EZ System Folder	
T A DVD Drive (D:)	D on IBM-R8TTP	EZ System Folder	
⊡ Local Disk (E:)	F on IBM-R8TTP	EZ System Folder	
🗆 👝 New Volume (F:)			
🕀 🌗 \$RECYCLE.BIN			
System Volume Information			
E 🕞 New Volume (G:)			
System Volume Information			
F on IBM-R8TTPEZ			
E 2 Network	- 1		F

## 4.4.2 Linux 平台

6	Data protection	for virtual envir	onment 6.2.0		[_][ <b>]</b> [ <b>X</b>
Tivoli. Data Protection	n for Virtual Environme	nt			IBM.
Select TSM Server				Help	
littlebear@9.11.90.34			<b>_</b>	Settings	
Refresh	<b>b</b>	Choose m	ount destination		
Select snapshot	Snapshot of Hard d	isk 2 from Ground, t	aken on Jan 26, 2011	3:52:30 AM	E
Virtual machine	Number	Label	File system	Size	
Date	0	NONE	EXT3	10 GB	
Mounted Volumes	Use the following m /mnt 🗹 Show only mount	ount point: able partitions			
-Instant Restore	Note that total siz size.	e of writes to mou	nt point should not e	xceed write cache	
		ļ.	t		
			<u>o</u> k	<u>C</u> ancel	
VM snapshots were updated	successfully.				_

#### Mount 成功

<u>)</u>	ata protection for virtual environment 6.2.0	
Tivoli. Data Protection fo	r Virtual Environment	IBM.
Select TSM Server		Help
littlebear@9.11.90.34		✓ <u>Settings</u>
Re <u>f</u> resh	Remove	<u>C</u> lose
Select snapshot		
Virtual machine	Ground	▼ Mount
Date	Jan 26, 2011 3:52:30 AM	Restore
Disk	Hard disk 2 (10 GB)	
Mounted Volumes		
/mnt is mount of [9.11.90.34	]-[Ground]-[Hard disk 2]-[Partition 0]-[Jan 26, 2011	3:52: Dismount
		D <u>i</u> smount All
•	W	
Instant Restore		
		Abort
		A <u>b</u> ort All
Snapshot was mounted success	fully.	
Shapshoe was mounced success		

数据 mount 后可用:

~	×
ator ssh: windows_machine: Name or service not known lost connection [root@Ground .ssh]# scp id_dsa.pub Administrator@water:/home/Administrator Administrator@water's password: id_dsa.pub [root@Ground .ssh]# ssh Administrator@water Last login: Fri Apr 15 02:55:57 2011 from ground.storage.tucson.ibm.com	~
Administrator@water ~ \$	
Administrator@water ~ \$ exit logout Connection to water closed. [root@Ground .ssh]# cd /mnt	
hgfs [root@Ground mnt]# cd /mnt [root@Ground mnt]# ls 620537_24Jan11-cd.zip lost+found [root@Ground mnt]#	
Launch SecureFX ssh2: AES-256 24, 20 24 Rows, 80 Cols VT 100 CAP NUM	1

Dismount:

	Data protection for virtual	environment 6.2.0	
Tivoli. Data Protection	on for Virtual Environment		IBM
Select TSM Server			Help
littlebear@9.11.90.34		<b>▼</b>	Settings
Re <u>f</u> resh	<u>R</u> emove		Close
Select snapshot			
Virtual machine	Ground	<b>•</b>	<u>M</u> ount
Date	Jan 26, 2011 3:52:30 AM	<b>•</b>	R <u>e</u> store
Disk	Hard disk 2 (10 GB)	•	
Mounted Volumes	0.34]-[Ground]-[Hard disk 2]-[Pa	Dismount a TDP2002I Dismount all sessions All data will be lost.	Ali? ×
A Restore	WI	<u>인</u> 원   1	ease wait
			<u>A</u> bort
			A <u>b</u> ort All
TDP(	002E Cannot remove repository du	e to associated mount/restore	e session.