
Ignite-UX 网络安装和备份恢复

工作手册

Version 1.0



i n v e n t

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注意事项

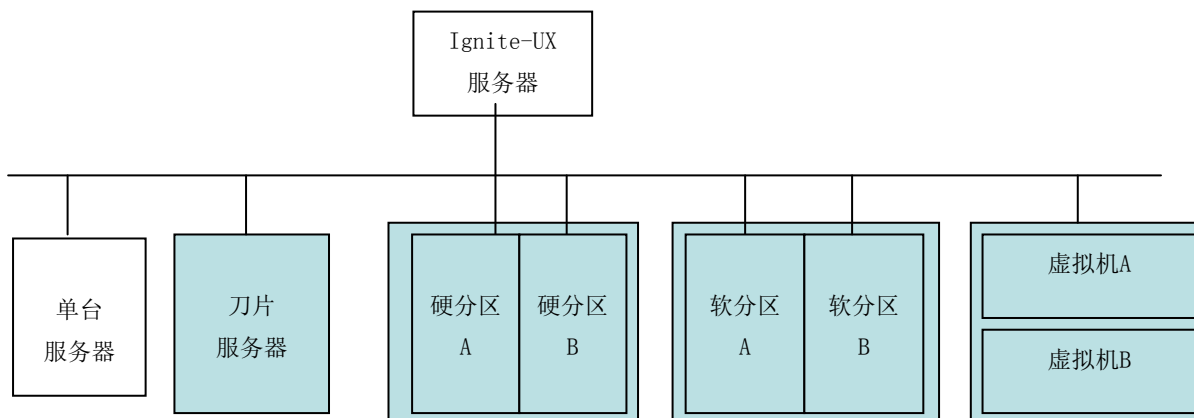
本文档的内容及观点将作为使用者提供服务的实施标准。
本文档中的所有内容和观点，仅用于交流科技信和使用。

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1.概述



Ignite-UX 产品是 HP-UX 下的一个操作系统安装、备份和恢复的管理工具，可用于：

- 客户端 HP-UX 操作系统的本地磁带备份和恢复
- 客户端 HP-UX 操作系统的网络远程安装
- 定制包含特定应用程序的 HP-UX 操作系统的安装软件包。
- 远程的 HP-UX 操作系统备份或恢复。
- 管理并监视多个客户端安装会话。

本手册详细描述如何使用 Ignite-UX 实现 HP-UX 操作系统的远程安装和远程恢复。

关于 Ignite-UX 的详细资料如： .

- 产品公告
- 白皮书
- Ignite-UX 常见问题解答 (FAQ)
- Ignite-UX 发行说明，其中包含有关 Ignite-UX 的最新更改的详细信息

可以参考：<http://www.hp.com/go/ignite-ux>

2 安装 Ignite-UX 软件

Ignite-UX 的安装介质可以从 HP-UX 的 Application 光盘上获取，也可以从下列网站下载：

<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=IGNITEUXB>

安装 Ignite 软件要求 /opt/ignite 中必须至少有 2 GB 的可用磁盘空间

```

===== SD Install - Software Selection (shrx36a0) (1)
File View Options Actions Help
Press CTRL-K for keyboard help.
Source: shrx36a0:/cdrom
Target: shrx36a0:/

Only software compatible with the target is available for selection.

Top (Bundles and Products) 0 of 76 selected

Marked? Name Revision Information
-----
Yes IGNITE -> C.7.8.201 HP-UX Installation Utili
IPsec -> A.02.01.01 HP-UX IPsec
Ignite-UX-11-11 -> C.7.8.201 HP-UX Installation Utili
Ignite-UX-11-23 -> C.7.8.201 HP-UX Installation Utili
Ignite-UX-11-31 -> C.7.8.201 HP-UX Installation Utili
J2793B -> B.11.31.02 High Performance X.25 Li
J4240AA -> B.11.31.30 Auto-Port Aggregation So
J6380AA -> R7.11.31.100 HP SNAplus2 Link
J6381AA -> R7.11.31.100 HP SNAplus2 TN3270

```

注意：

1. 从 Ignite-UX C.7.1 版开始，用于安装所有受支持的 HP-UX 版本的 Ignite-UX 完整产品软件包的名称已从 B5725AA 更改为 IGNITE
2. 可以将每个软件包安装在运行任何版本的 HP-UX 的服务器上。例如，Ignite-UX-11-23 可以安装在运行 HP-UX 11i v1 (B.11.11) 的服务器上。可以在系统中安装一个或多个单独的 Ignite-UX-11-xx 软件包。
3. 如果先前安装了某个版本的 Ignite-UX 产品需要更新，比如从 C.7.1 更新到 C.7.10，建议先删除 C.7.1 版本后再安装新的 C.7.10 版本。

2.1 添加 Itanium 客户端

Ignite-UX 服务器使用 /etc/bootptab 作为 Itanium 客户端配置文件，每个客户端的配置格式如下：

```

shrx36a0:\
tc=ignite-defaults:\
ha=0x001A4B089348:\
ip=16.157.8.74:\
sm=255.255.248.0:\
gw=16.157.8.1

```

其中 shrx36a0 是给客户端主机起的名字，ha 是客户端启动网卡的 MAC 地址，ip 是客户端启动后 Ignite-UX 服务器给它分配的 IP 地址，sm 是网络掩码，gw 是网关 IP 地址。

如果 client 和 server 在不同网段，网段间无法通过 dhcp 获得地址，则需要使用 dbprofile 方式，详细配置请参考“附录 1 不同网段的远程启动”。

批量安装时，每个客户端都要记录在/etc/bootptab 中。启动安装时，Ignite-UX 服务器根据启动网卡的 MAC 地址查找客户端记录，分配相应的 IP 地址和主机名称。

2.2 添加 PA-RISC 客户端

Ignite-UX 服务器使用 /etc/opt/ignite/instl_boottab 作为 PA-RISC 客户端配置文件，每个客户端的配置格式如下：

```
15.1.54.127:::
```

```
15.1.54.138:080009123457::reserve      # Reserve an IP-Addr for specific host
```

其中 15.1.54.138 是客户端的 IP 地址，080009123457 是 MAC 地址，reserve 指该 IP 地址是被预留的。

3. 远程安装操作系统

3.1 配置 Ignite-UX 服务器

在使用 Ignite-UX 进行操作系统的远程安装前，需要先对 Ignite-UX 服务器进行必要的配置。

Ignite-UX 服务器的硬件要求：

1. 需要运行 HP-UX 11i v1、HP-UX 11i v2 或 HP-UX 11i v3 的 HP 9000(PA-RISC) 系统，或者运行 HP-UX 11i v2 或 HP-UX 11i v3 的基于 Itanium® 的系统。
2. 建议配备 DVD 设备，简化将 HP-UX 软件从安装介质直接复制到 Ignite-UX 服务器的过程
3. 要有一个或多个支持网络引导及安装的网卡
4. Ignite-UX 服务器需要大量磁盘空间。
 - 安装 Ignite 软件要求 /opt/ignite 中必须至少有 2 GB 的可用磁盘空间
 - 要求在 /var/opt/ignite 中具有足够大的空间，以支持客户端系统、存放操作系统和应用程序的安装软件包以及保存客户端的恢复归档文件（即客户端的操作系统备份）。
 - 有关对特定 HP-UX 版本的所有操作环境所需的磁盘空间的详细说明，请参阅《HP-UX 安装与更新指南》，该文档可以从 <http://www.docs.hp.com/> 获得。

3.2 拷贝安装软件

安装完 Ignite-UX 软件后，需要将操作系统的安装包和应用程序的安装包拷贝到 Ignite-UX 服务器的指定目录。在同一台 Ignite-UX 服务器上可以存放多个版本的操作系统的安装包，如 11.23 和 11.31

的操作系统安装包可以并存。

1. 确认已经安装 Ignite-UX

```
# swlist |grep Ignite
    IGNITE          C.7.8.201    HP-UX Installation Utilities (Ignite-UX)
    Ignite-UX-11-31 C.7.8.201    HP-UX Installation Utilities for Installing 11.31 Systems
```

2. 创建一个存放操作系统映像的文件系统

```
#lvcreate -L 20G /dev/vg10 -n lvol5
#newfs -o largefiles /dev/vg10/lvol5
#mkdir -p /var/opt/ignite/depots
#chown bin:bin /var/opt/ignite/depots
#mount /dev/vg10/lvol5 /var/opt/ignite/depots
```

3. 检查添加下列 NFS 共享输出项:

如果是 11iv1 或 11iv2 将下列内容放入/etc/exports

```
/var/opt/ignite/clients -anon=2
/var/opt/ignite/depots -anon=2
```

如果是 11iv3 将下列内容放入/etc/dfs/dfstab

```
share -F nfs -o anon=2 /var/opt/ignite/clients
share -F nfs -o anon=2 /var/opt/ignite/depots
```

运行#exportfs -av

4. 拷贝操作系统软件包到 Ignite-UX 服务器:

- 检查确认/var/opt/ignite/depots 有足够的空间放置操作系统文件包。
- 将操作系统光盘插入光驱 (例如/dev/dsk/c0t1d0), 运行 make_depots 命令:
#make_depots -r B.11.31 -s /dev/dsk/c0t1d0
所需时间根据拷贝的 depot 内容, 从若干分钟到若干小时不等; 需要注意的是拷贝过程中没有其它输出显示。
- 如果/var/opt/ignite/depots/Rel_B.11.31/core 有以前拷贝的文件, 可以使用-d 选项指明新的拷贝目录
#make_depots -r B.11.31 -s /dev/dsk/c0t1d0 -d \
/var/opt/ignite/depots/Rel_B.11.31/core_0909_mc
- 如果 OS 安装盘有多张 CD/DVD, 需要对每张 CD/DVD 都进行同样的拷贝:
在光驱中放入第一张 DVD, 运行
#make_depots -r B.11.31 -s /dev/dsk/c0t1d0 -d \
/var/opt/ignite/depots/Rel_B.11.31/core_0909_mc
取出第一张DVD, 放入第二张DVD, 运行
#make_depots -r B.11.31 -s /dev/dsk/c0t1d0 -d \
/var/opt/ignite/depots/Rel_B.11.31/core_0909_mc
取出第二张DVD.

5. 生成操作系统软件包的配置文件。

- 等所有操作系统的安装光盘拷贝完毕，使用下列命令生成配置文件

```
#make_config -r B.11.31 -s core_0909_mc
```

该命令可以自动生成缺省配置文件

/var/opt/ignite/depots/Rel_B.11.31/core_0909_mc_cfg，并将配置文件添加到
/var/opt/ignite/INDEX 文件中

如果只需要操作系统的安装光盘软件包，不需要添加其他应用软件和定制，完成上述步骤后，就可以开始客户端的网络安装。

3.3 定制安装软件包

1. 如果希望将应用软件一起打包安装，则需要在完成上面步骤的基础上，自定义安装的配置模板，然后添加相关应用软件包的配置：

- 用下列命令生成一个新的配置模板

```
#manage_index -n "HP-UX B.11.31 Default" -c \  
"Template 11.31 installation"
```

- 手工生成操作系统的安装软件包的配置文件

```
#make_config -s /var/opt/ignite/depots/Rel_B.11.31/core \  
-c /var/opt/ignite/data/Rel_B.11.31/core_cfg
```

- 将配置文件/var/opt/ignite/data/Rel_B.11.31/core_cfg 添加到

/var/opt/ignite/INDEX 中。假设安装配置模板是 "Template 11.31 installation"

```
#manage_index -a -f /var/opt/ignite/data/Rel_B.11.31/core_cfg \  
-c "Template 11.31 installation"
```

2. 拷贝应用软件包并生成应用软件包的配置文件。

- 将 Application DVD 放入光驱，拷贝应用软件包

```
# make_depots -d /var/opt/ignite/depots/Rel_B.11.31/apps_1203 \  
-s /dev/dsk/c0t1d0
```

- 如果只需要某个软件，可以先将该软件做成 depot 格式，然后再拷贝该软件

```
# make_depots -d /var/opt/ignite/depots/Rel_B.11.31/Java15 \  
-s /tmp/Java15.depot
```

- 生成配置文件

```
# make_config -s /var/opt/ignite/depots/Rel_B.11.31/apps_1203 \  
-c /var/opt/ignite/data/Rel_B.11.31/apps_1203_cfg
```

- 添加配置文件到 INDEX 中

```
# manage_index -a -f /var/opt/ignite/data/Rel_B.11.31/apps_1203_cfg \  
-c " Template 11.31 installation "
```


3. 所有的软件包拷贝配置完毕后，检查 INDEX 文件确认已记录相关的配置。

```
# cat /var/opt/ignite/INDEX
cfg " Template 11.31 installation " {
    description "This selection supplies the default system configuration that
HP supplies for the B.11.31 release."
    "/var/opt/ignite/data/Rel_B.11.31/core_cfg"
    "/var/opt/ignite/data/Rel_B.11.31/apps_1203_cfg"
    "/var/opt/ignite/data/Rel_B.11.31/Java15_cfg"
    "/opt/ignite/data/Rel_B.11.31/config"
    "/opt/ignite/data/Rel_B.11.31/hw_patches_cfg"
    "/var/opt/ignite/config.local"
}
```

完成上述步骤后，配置模板 “Template 11.31 installation” 就包含有 application 和 Java1.5 的安装软件包。更详细的定制，如修改 kernel 参数，增添缺省文件系统等等，可以参考《Ignite-UX Administration Guide》

3.4 检查后台进程

Ignite-UX 服务器使用 bootps 和 tftp 完成软件的分发，需要在配置文件/etc/inetd.conf 中允许 tftp 和 bootps:

```
tftp          dgram  udp  wait   root  /usr/sbin/tftpd    tftpd\
              /opt/ignite\
              /var/opt/ignite
bootps       dgram  udp  wait   root  /usr/sbin/bootpd   bootpd
```

如果上述两行被注释，去掉注释后重启 inetd 进程。

```
#!/sbin/init.d/inetd stop
#!/sbin/init.d/inetd start
```

3.4 远程安装步骤

Ignite-UX 服务器操作系统软件包配置完毕后，可以通过网络安装操作系统。

1. 首先取得客户端启动网卡的 MAC 地址，确定其 IP 地址和主机名称后写入 Ignite-UX 服务器的 /etc/bootptab 文件，确认 Ignite-UX 服务器后台进程 inetd 工作正常。
2. 启动 Itanium 客户端停在 EFI 菜单，选择 “Boot configuration” -> “Boot from file”

```

EFI Boot Manager ver 2.00 [14.62]
OS might use only the primary console set via boot manager or conconfig command

/-----\
|          Boot Menu          |
| HP-UX Primary Boot: 0/6/1/1... |
| iL/-----\                |
| HP|   Boot Configuration   |..|
| Co| Boot From File         |..|
| EF| Add Boot Entry          |..|
| In| Edit Boot Entry         |..|
| Co| Remove Boot Entry       |..|
| --| Edit OS Boot Order     |..|
| Bo| AutoBoot Configuration  |..|
| Sy| BootNext Configuration  |..|
| Se| -----                |..|
|   | Driver Configuration    |..|
|   | Console Configuration   |..|
|   | -----                |..|
|   | v                        |..|
|   | -----                |..|
\-----/

System Overview
hp server rx3600
Serial #: SGH4824AL8

System Firmware: 4.03 [4815]
BMC Version: 5.23
MP Version: F.02.17
Installed Memory: 8192 MB

CPU Logical
Module CPUs Speed Status
0 2 1.6 GHz Active
1 2 1.6 GHz Active

Use <^|v> to scroll <ENTER> to Select <ESC> or <X/x> for Previous Menu
Boot From File

```

3. 选择相应的网卡启动，该网卡的 MAC 地址已记录在 Ignite-UX 服务器的/etc/bootptab 文件中。

```

^
File System Explore
<IA64_EFI [Acpi(HWP0002,PNP0A03,400)/Pci(1|0)/Sas(Addr5000C5000AFCBA...
<IA64_EFI [Acpi(HWP0002,PNP0A03,400)/Pci(1|0)/Sas(Addr5000C5000AFCBA...
<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2...
<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2...
<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2...
<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2...
<Removable Media Boot [Internal Bootable DVD]
<Load File [EFI Shell [Built-in]]
| Load File [Core LAN Gb A]
| Load File [Core LAN Gb B]
| Load File [Acpi(HWP0002,PNP0A03,500)/Pci(1|0)/Mac(001A4B0886CC)]
| Load File [Acpi(HWP0002,PNP0A03,500)/Pci(1|1)/Mac(001A4B0886CD)]
| v
\-----/

```

4. 如果 Ignite-UX 服务器的 inetd.conf 和 bootptab 配置正确，客户端将从 Ignite-UX 服务器下载启动文件，

```

Booting over the network

Client MAC Address: 00 1A 4B 08 93 48 ..
Client IP Address: 16.157.8.74
Subnet Mask: 255.255.248.0
BOOTP Server IP Address: 16.157.8.71
DHCP Server IP Address: 16.157.8.71
Boot file name: /opt/ignite/boot/nbp.efi

Retrieving File Size.
Retrieving File (TFTP).
@(#) HP-UX IA64 Network Bootstrap Program Revision 1.1
Downloading HPUX bootloader
Starting HPUX bootloader
Obtaining size of fpswa.efi    (328192 bytes)
Downloading file  fpswa.efi  (328192 bytes)

```

5. 进入安装选择界面，选择需要安装的操作系统版本进行安装（在 Ignite-UX 服务器可以放置多个 HPUX 操作系统版本的安装软件包，如 11.23 和 11.31）。

```

Obtaining size of AUTO    (226 bytes)
Downloading file  AUTO    (226 bytes)
  1.  target OS is B.11.31 IA
  2.  target OS is B.11.23 IA
  3.  Exit Boot Loader

Choose an operating system to install that your hardware supports:1

Obtaining size of AUTO    (226 bytes)
Downloading file  AUTO    (226 bytes)
Obtaining size of Rel_B.11.31/IINSTALL    (51685533 bytes)
Downloading file  Rel_B.11.31/IINSTALL    (51685533 bytes)
> System Memory = 8158 MB
loading section 0
.....
loading section 1
..... (complete)
loading symbol table

```

6. 选择安装 B. 11. 31 ，进入标准的安装界面后，就与普通的 DVD 安装类似，选择合适的键盘模式：

```

A USB interface has been detected on this system.
In order to use a keyboard on this interface, you must specify
a language mapping which will be used by X windows and
the Internal Terminal Emulator (ITE).
The characters "1234567890" will appear as "!@#$%^&*()"
on keyboards that use the shift key to type a number.
Your choice will be stored in the file /etc/kbdlang

  1) USB_PS2_DIN_Belgian          2) USB_PS2_DIN_Belgian_Euro
  3) USB_PS2_DIN_Danish          4) USB_PS2_DIN_Danish_Euro
  5) USB_PS2_DIN_Euro_Spanish    6) USB_PS2_DIN_Euro_Spanish_Euro
  7) USB_PS2_DIN_French          8) USB_PS2_DIN_French_Euro
  9) USB_PS2_DIN_German         10) USB_PS2_DIN_German_Euro
 11) USB_PS2_DIN_Italian        12) USB_PS2_DIN_Italian_Euro
 13) USB_PS2_DIN_JIS_109       14) USB_PS2_DIN_Korean
 15) USB_PS2_DIN_Norwegian      16) USB_PS2_DIN_Norwegian_Euro
 17) USB_PS2_DIN_S_Chinese      18) USB_PS2_DIN_Swedish
 19) USB_PS2_DIN_Swedish_Euro  20) USB_PS2_DIN_Swiss_French2_Euro
 21) USB_PS2_DIN_Swiss_German2  22) USB_PS2_DIN_Swiss_German2_Euro
 23) USB_PS2_DIN_T_Chinese     24) USB_PS2_DIN_UK_English
 25) USB_PS2_DIN_UK_English_Euro 26) USB_PS2_DIN_US_English
 27) USB_PS2_DIN_US_English_Euro

Enter the number of the language you want: 26

```

7. 选择 “Install HP-UX”

```

Welcome to Ignite-UX!

Use the <tab> key to navigate between fields, and the arrow keys
within fields. Use the <return/enter> key to select an item.
Use the <return/enter> or <space-bar> to pop-up a choices list. If the
menus are not clear, select the "Help" item for more information.

Hardware Summary:          System Model: ia64 hp server rx3600
+-----+-----+-----+-----+
| Disks: 17 ( 679.2GB) | Floppies: 0 | LAN cards: 8 |
| CD/DVDs: 1 | Tapes: 0 | Memory: 8158Mb |
| Graphics Ports: 1 | IO Buses: 13 | CPUs: 4 | [ H/W Details ]
+-----+-----+-----+-----+

[ Install HP-UX ]

[ Run an Expert Recovery Shell ]

[ Advanced Options ]

[ Reboot ] [ Help ]

```

8. 选择 “Advanced Installation”

```

User Interface and Media Options

This screen lets you pick from options that will determine if an
Ignite-UX server is used, and your user interface preference.

User Interface Options:
[ ] Guided Installation (very basic installs - deprecated mode)
[ * ] Advanced Installation (recommended for disk and filesystem management)
[ ] No user interface - setup basic networking, use defaults and go
[ ] Remote graphical interface running on the Ignite-UX server

Hint: If you need to make LVM size changes, or want to set the
final networking parameters during the install, you will
need to use the Advanced mode (or remote graphical interface).

[ OK ] [ Cancel ] [ Help ]

```

9. 在多网卡的情况下，需要记住启动网卡的 MAC 地址，选择合适的网卡：

```

LAN Interface Selection

More than one network interface was detected on the system. You
will need to select the interface to enable. Only one interface
can be enabled, and it must be the one connected to the network
that can be used in contacting the install and/or SD servers.

Use the <tab> and/or arrow keys to move to the desired LAN device
to enable, then press <Return>.

HW Path      Interface  Station Address  Description
-----
[ 0/4/2/0    lan0      0x001A4B089348  HP_AB352-60003_PCI/PCI-X_1000B ]
[ 0/4/2/1    lan1      0x001A4B089349  HP_AB352-60003_PCI/PCI-X_1000B ]
[ 0/5/1/0    lan2      0x001A4B0886CC  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/1/1    lan3      0x001A4B0886CD  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/2/0    lan4      0x001A4B08878C  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/2/1    lan5      0x001A4B08878D  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/7/1/0/6/0 lan6      0x001CC4C51B14  HP_AB290-60001_PCI/PCI-X_1000B ]
[ 0/7/1/0/6/1 lan7      0x001CC4C51B15  HP_AB290-60001_PCI/PCI-X_1000B ]

```

10. 在输入网络参数时，检查从 Ignite-UX 服务器获得的配置是否正确，如果不正确，请修改为

正确配置:

```
NETWORK CONFIGURATION

This system's hostname: shrx36a0

Internet protocol address (eg. 15.2.56.1) of this host: 16.157.8.74

Default gateway routing internet protocol address: 16.157.8.1

The subnet mask (eg. 255.255.248.0 or 0xfffff800): 255.255.248.0

IP address of the Ignite-UX server system: 16.157.8.71

Is this networking information only temporary? [ No ]

[ OK ] [ Cancel ] [ Help ]
```

11. 在选择安装的软件时，可以选择先前定义的安装模版“Template 11.31 installation”，安装客户化的软件包；也可以使用缺省的“HP-UX B.11.31 Default”。

```
/opt/ignite/bin/itool ()

Basic | Software | System | File System | Advanced
-----|-----|-----|-----|-----
Configurations: [ HP-UX B.11.31 Default
                  Template 11.31 installation Description... ]
Environments:   [ HP-UX Data Center Operatin ->] (HP-UX B.11.31)
[ Root Disk ] HP_HSV200, 0/6/1/1.0x50001fe1500d2329.0x>
File System:    [ Logical Volume Manager (LVM) with VxFS ->]
[ Root Swap (MB)... ] 8192 Physical Memory (RAM) = 8158 MB
[ Languages... ] English [ Keyboards... ] [ Additional... ]

[ Show Summary... ] [ Reset Configuration ]

[ Go! ] [ Cancel ] [ Help ]
```

12. 配置修改完毕后，选择 Go!，开始操作系统的安装。

4. 远程备份操作系统

除了通过磁带备份外，ignite 工具还可以通过网络备份操作系统。在备份前，需要在 Client 和远程存放操作系统备份的机器（Ignite-UX 服务器）上都安装 ignite 软件。

Note: 1 client 和 server 上的 ignite 软件版本建议一致，避免不必要的问题

2 建议配置 client 和 server 的 hosts 文件，让双方可以识别彼此主机名，方便以后的备份和恢复。

1. 在 Ignite-UX 服务器 Server 端为 client 建立备份目录

```
[server]#lvcreate -L 20G /dev/vg10 -n lvol6
[server]#newfs -o largefiles /dev/vg10/lvol6
[server]#mkdir -p /var/opt/ignite/recovery/archives
[server]#mount /dev/vg00/lvol6 /var/opt/ignite/recovery/archives
[server]#chown bin:bin /var/opt/ignite/recovery/archives
```

2. 在 Ignite-UX 服务器 Server 端建立与 client 主机名相关的目录

```
[server]# mkdir -p /var/opt/ignite/recovery/archives/client1
[server]# chown bin:bin /var/opt/ignite/recovery/archives/client1
```

3. 通过 NFS 导出

```
[server]# vi /etc/exports
添加/var/opt/ignite/recovery/archives -anon=2
    /var/opt/ignite/clients -anon=2
[server]#exportfs -av
```

4. 在 Server 和 Client1 的 hosts 文件中都添加 Client1 和 Server 及对应的 IP 地址

5. 进行备份

```
[client1]# make_net_recovery -s {Server_IP or hostname} -Av -n 1 (默认是 2)
即将 client1 的操作系统备份到 Server 上，VG00 全备份，只保留一份 image。
```

也可以采用交互方式进行备份，这种方式可以修改备份的内容等参数：

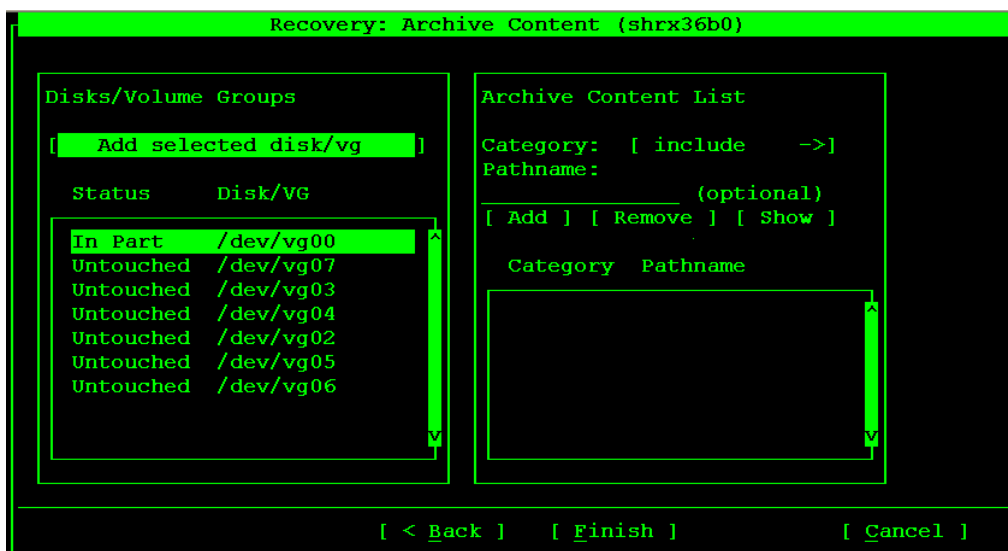
```
[client1]# make_net_recovery -s {Server_IP} -i
```

6. 在交互式界面上配置 ignite server 信息：

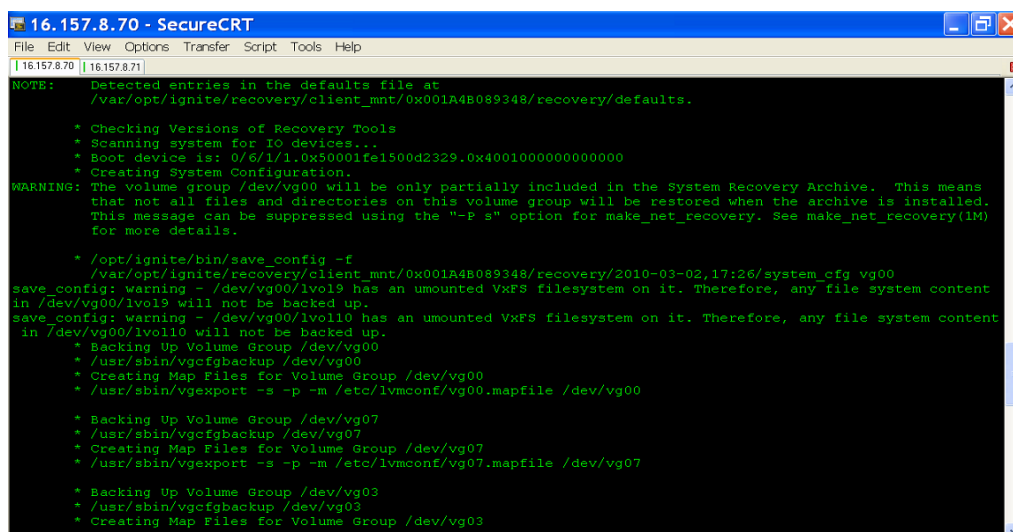
- **Destination host:** 配置 ignite server 的 IP 地址
- **Destination Directory:** 配置在 ignite server 上通过 NFS export 出的目录
- **Max Number of Archives:** 在 ignite server 保存的备份的数量，一般可设置为 1，这样新的备份会替代原来的备份
- **Long Description:** 备份描述
- **Archive Type :** 备份文件的类型



7. 选择备份的内容，选择 Add selected disk/vg 来 include 整个 vg00。



8. 选择 Finish 后，系统将开始 client1 系统的备份工作。



9. 确认备份成功

```

16.157.8.70 - SecureCRT
File Edit View Options Transfer Script Tools Help
16.157.8.70 | 16.157.8.71

* /opt/ignite/sbin/make_arch_config -c
/var/opt/ignite/recovery/client_mnt/0x001A4B089348/recovery/2010-03-02,17:26/archive_cfg -g
/var/opt/ignite/recovery/client_mnt/0x001A4B089348/recovery/2010-03-02,17:26/flist -n 2010-03-02,17:26
-r ipt -b 64 -d Recovery\ Archive -l /var/opt/ignite/recovery/arch_mnt -l
16.157.8.71:/var/opt/ignite/recovery/archives/shrx36b0 -i 1 -m t
* Saving the information about archive to /var/opt/ignite/recovery/previews
* Creating The Networking Archive

* /opt/ignite/data/scripts/make_sys_image -d /var/opt/ignite/recovery/arch_mnt -t n -s local -n
2010-03-02,17:26 -m t -w
/var/opt/ignite/recovery/client_mnt/0x001A4B089348/recovery/2010-03-02,17:26/recovery.log -u -R -g
/var/opt/ignite/recovery/client_mnt/0x001A4B089348/recovery/2010-03-02,17:26/flist -a 4418020

* Preparing to create a system archive.
* The archive is estimated to reach 2209010 kbytes.
* Free space on /var/opt/ignite/recovery/arch_mnt
after archive should be about 5020768 kbytes.

* Archiving contents of shrx36b0 via tar to
/var/opt/ignite/recovery/arch_mnt/2010-03-02,17:26.
* Creation of system archive complete.

NOTE: Could not read the /etc/resolv.conf file.
* Creating CINDEX Configuration File

* /opt/ignite/bin/manage_index -q -c 2010-03-02,17:26\ Recovery\ Archive -l
/var/opt/ignite/recovery/client_mnt/0x001A4B089348/CINDEX -u Recovery\ Archive

***** 03/03/10 10:16:13 EAT make_net_recovery completed with warnings
#

```

10. 系统备份完成后，可以在 Ignite Server 上发现如下的两个文件：

- /var/opt/ignite/recovery/archives/client1 下看到生成的以备份生成时间为文件名的 archive 文件；生成的 archive 文件的属性缺省应为：nobody:sys（或 bin:sys）
- 在/var/opt/ignite/clients 下看到以备份网卡的 MAC 地址为名字的目录，这是配置文件。目录名为：/var/opt/ignite/clients/0x{MAC_ADDRESS}
- 备份日志文件为/var/opt/ignite/clients/{hostname}/recovery/latest/recovery.log

```

16.157.8.71 - SecureCRT
File Edit View Options Transfer Script Tools Help
16.157.8.70 | 16.157.8.71

# ll /var/opt/ignite/recovery/archives/shrx36b0
total 2534694
-rw----- 1 bin sys 1297754427 Mar 3 10:20 2010-03-02,17:26
# ll /var/opt/ignite/clients/shrx36a0
lrwxr-xr-x 1 bin bin 14 Mar 2 15:51 /var/opt/ignite/clients/shrx36a0 -> 0x001A4B089348
# ll /var/opt/ignite/clients/0x001A4B089348
total 176
-rw-r--r-- 1 bin sys 789 Mar 3 10:20 CINDEX
-rw-r--r-- 1 bin sys 9 Mar 2 15:51 client_name
-rw-r--r-- 1 bin sys 0 Mar 2 16:57 client_status
-rw-r--r-- 1 bin bin 593 Mar 2 15:51 config.sys
-rw-r--r-- 1 bin sys 223 Mar 2 15:51 env.vars
-rw-r--r-- 1 bin bin 758 Mar 2 15:51 host.info
-rw-r--r-- 1 bin bin 5770 Mar 2 15:51 hw.info
-rw-r--r-- 1 bin bin 870 Mar 2 16:57 install.log
-rw-r--r-- 1 bin bin 14428 Mar 2 15:51 io.info
drwxr-xr-x 3 bin bin 8192 Mar 3 10:07 recovery
-rw-r--r-- 1 bin bin 36 Mar 2 17:18 server.state
# ll -d /var/opt/ignite/clients/0x001A4B089348
drwxr-xr-x 3 bin bin 8192 Mar 3 10:20 /var/opt/ignite/clients/0x001A4B089348
#

```


5. 远程恢复本机的备份

远程恢复的前提是通过网络备份方式，至少完成该客户端的一次网络备份。系统启动恢复步骤与远程安装操作系统类似（步骤 1-10）。

1. 取得客户端启动网卡的 MAC 地址，确定其 IP 地址和主机名称后写入 Ignite-UX 服务器的 /etc/bootptab 文件。确认 Ignite-UX 服务器后台进程 inetd 工作正常。。
2. 启动 Itanium 客户端停在 EFI 菜单， 选择 “Boot configuration” -> “Boot from file”

```
EFI Boot Manager ver 2.00 [14.62]
OS might use only the primary console set via boot manager or conconfig command

-----
|                                     |                                     |
|           Boot Menu                 |           System Overview          |
| HP-UX Primary Boot: 0/6/1/1....    | hp server rx3600                  |
| iL/-----|                         | Serial #: SGH4824AL8              |
| HP|   Boot Configuration            | System Firmware: 4.03 [4815]     |
| Co| Boot From File                 | BMC Version: 5.23                 |
| EF| Add Boot Entry                  | MP Version: F.02.17              |
| In| Edit Boot Entry                 | Installed Memory: 8192 MB        |
| Co| Remove Boot Entry               |                                     |
| --| Edit OS Boot Order              | CPU Logical                       |
| Bo| AutoBoot Configuration          | Module CPUs  Speed  Status       |
| Sy| BootNext Configuration          | 0    2    1.6 GHz Active         |
| Se|-----|                         | 1    2    1.6 GHz Active         |
|                                     |                                     |
| Driver Configuration                |                                     |
| Console Configuration               |                                     |
|-----|                         |-----|
| v                                     |                                     |
|                                     |                                     |
Use <^|v> to scroll  <ENTER> to Select  <ESC> or <X/x> for Previous Menu
Boot From File
```

3. 选择相应的网卡启动，该网卡的 MAC 地址已记录在 Ignite-UX 服务器的 /etc/bootptab 文件中。

```
-----
|                                     |
|           File System Explore       |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,400)/Pci(1|0)/Sas(Addr5000C5000AFCBA... |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,400)/Pci(1|0)/Sas(Addr5000C5000AFCBA... |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2... |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2... |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2... |
|<IA64_EFI [Acpi(HWP0002,PNP0A03,600)/Pci(1|1)/Fibre(WWN50001FE1500D2... |
|<Removable Media Boot [Internal Bootable DVD]
|<Load File [EFI Shell [Built-in]]
| Load File [Core LAN Gb A]
| Load File [Core LAN Gb B]
| Load File [Acpi(HWP0002,PNP0A03,500)/Pci(1|0)/Mac(001A4B0886CC)]
| Load File [Acpi(HWP0002,PNP0A03,500)/Pci(1|1)/Mac(001A4B0886CD)]
| v
|-----|
```

4. 客户端将从 Ignite-UX 服务器下载启动文件，

```

Booting over the network

Client MAC Address: 00 1A 4B 08 93 48 ..
Client IP Address: 16.157.8.74
Subnet Mask: 255.255.248.0
BOOTP Server IP Address: 16.157.8.71
DHCP Server IP Address: 16.157.8.71
Boot file name: /opt/ignite/boot/nbp.efi

Retrieving File Size.
Retrieving File (TFTP).
@(#) HP-UX IA64 Network Bootstrap Program Revision 1.1
Downloading HPUX bootloader
Starting HPUX bootloader
Obtaining size of fpswa.efi    (328192 bytes)
Downloading file  fpswa.efi  (328192 bytes)

```

5. 进入安装选择界面，选择需要安装的操作系统版本进行安装（在 Ignite-UX 服务器可以放置多个 HPUX 操作系统版本的安装软件包，如 11.23 和 11.31）。

```

Obtaining size of AUTO    (226 bytes)
Downloading file  AUTO    (226 bytes)
  1.  target OS is B.11.31 IA
  2.  target OS is B.11.23 IA
  3.  Exit Boot Loader

Choose an operating system to install that your hardware supports:1

Obtaining size of AUTO    (226 bytes)
Downloading file  AUTO    (226 bytes)
Obtaining size of Rel_B.11.31/IINSTALL    (51685533 bytes)
Downloading file  Rel_B.11.31/IINSTALL    (51685533 bytes)
> System Memory = 8158 MB
loading section 0
.....
loading section 1
..... (complete)
loading symbol table

```

6. 选择安装 B. 11. 31 ，进入标准的安装界面后，就与普通的 DVD 安装类似，选择合适的键盘模式：

```

A USB interface has been detected on this system.
In order to use a keyboard on this interface, you must specify
a language mapping which will be used by X windows and
the Internal Terminal Emulator (ITE).
The characters "1234567890" will appear as "!@#$%^&*()"
on keyboards that use the shift key to type a number.
Your choice will be stored in the file /etc/kbdlang

  1) USB_PS2_DIN_Belgian          2) USB_PS2_DIN_Belgian_Euro
  3) USB_PS2_DIN_Danish          4) USB_PS2_DIN_Danish_Euro
  5) USB_PS2_DIN_Euro_Spanish    6) USB_PS2_DIN_Euro_Spanish_Euro
  7) USB_PS2_DIN_French          8) USB_PS2_DIN_French_Euro
  9) USB_PS2_DIN_German         10) USB_PS2_DIN_German_Euro
 11) USB_PS2_DIN_Italian        12) USB_PS2_DIN_Italian_Euro
 13) USB_PS2_DIN_JIS_109       14) USB_PS2_DIN_Korean
 15) USB_PS2_DIN_Norwegian      16) USB_PS2_DIN_Norwegian_Euro
 17) USB_PS2_DIN_S_Chinese      18) USB_PS2_DIN_Swedish
 19) USB_PS2_DIN_Swedish_Euro  20) USB_PS2_DIN_Swiss_French2_Euro
 21) USB_PS2_DIN_Swiss_German2  22) USB_PS2_DIN_Swiss_German2_Euro
 23) USB_PS2_DIN_T_Chinese      24) USB_PS2_DIN_UK_English
 25) USB_PS2_DIN_UK_English_Euro 26) USB_PS2_DIN_US_English
 27) USB_PS2_DIN_US_English_Euro

Enter the number of the language you want: 26

```

7. 选择“Install HP-UX”

```

Welcome to Ignite-UX!

Use the <tab> key to navigate between fields, and the arrow keys
within fields. Use the <return/enter> key to select an item.
Use the <return/enter> or <space-bar> to pop-up a choices list. If the
menus are not clear, select the "Help" item for more information.

Hardware Summary:          System Model: ia64 hp server rx3600
+-----+-----+-----+-----+
| Disks: 17 ( 679.2GB) | Floppies: 0 | LAN cards: 8 |
| CD/DVDs: 1 | Tapes: 0 | Memory: 8158Mb |
| Graphics Ports: 1 | IO Buses: 13 | CPUs: 4 | [ H/W Details ]
+-----+-----+-----+-----+

[ Install HP-UX ]

[ Run an Expert Recovery Shell ]

[ Advanced Options ]

[ Reboot ] [ Help ]

```

8. 选择“Advanced Installation”

```

User Interface and Media Options

This screen lets you pick from options that will determine if an
Ignite-UX server is used, and your user interface preference.

User Interface Options:
[ ] Guided Installation (very basic installs - deprecated mode)
[ * ] Advanced Installation (recommended for disk and filesystem management)
[ ] No user interface - setup basic networking, use defaults and go
[ ] Remote graphical interface running on the Ignite-UX server

Hint: If you need to make LVM size changes, or want to set the
final networking parameters during the install, you will
need to use the Advanced mode (or remote graphical interface).

[ OK ] [ Cancel ] [ Help ]

```

9. 在多网卡的情况下，需要记住启动网卡的 MAC 地址，选择合适的网卡：

```

LAN Interface Selection

More than one network interface was detected on the system. You
will need to select the interface to enable. Only one interface
can be enabled, and it must be the one connected to the network
that can be used in contacting the install and/or SD servers.

Use the <tab> and/or arrow keys to move to the desired LAN device
to enable, then press <Return>.

HW Path      Interface  Station Address  Description
-----
[ 0/4/2/0    lan0      0x001A4B089348  HP_AB352-60003_PCI/PCI-X_1000B ]
[ 0/4/2/1    lan1      0x001A4B089349  HP_AB352-60003_PCI/PCI-X_1000B ]
[ 0/5/1/0    lan2      0x001A4B0886CC  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/1/1    lan3      0x001A4B0886CD  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/2/0    lan4      0x001A4B08878C  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/5/2/1    lan5      0x001A4B08878D  HP_A7012-60601_PCI/PCI-X_1000B ]
[ 0/7/1/0/6/0 lan6      0x001CC4C51B14  HP_AB290-60001_PCI/PCI-X_1000B ]
[ 0/7/1/0/6/1 lan7      0x001CC4C51B15  HP_AB290-60001_PCI/PCI-X_1000B ]

```

10. 在输入网络参数时，检查从 Ignite-UX 服务器获得的配置是否正确：

```
NETWORK CONFIGURATION

This system's hostname: shrx36a0
Internet protocol address (eg. 15.2.56.1) of this host: 16.157.8.74
Default gateway routing internet protocol address: 16.157.8.1
The subnet mask (eg. 255.255.248.0 or 0xfffff800): 255.255.248.0
IP address of the Ignite-UX server system: 16.157.8.71
Is this networking information only temporary? [ No ]

[ OK ] [ Cancel ] [ Help ]
```

11. 与安装操作系统不同的是，缺省的 Configuration 将选择“Recovery Archive”。如果 Ignite-UX 服务器存有该客户端的多个备份内容，可以根据备份的时间区分。

```
/opt/ignite/bin/itool ()

Basic | Software
-----|-----
Configurations: [ HP-UX B.11.31 Default
                  Template 11.31 installation
                  2010-03-02,17:26 Recovery Archive | option... ]
Environments:   [ Recovery Archive ->] (HP-UX B.11.31)
[ Root Disk ] HP_HSV200, 0/6/1/1.0x50001fe1500d2329.0x>
File System:    [ HP-UX save_config layout ->]
[ Root Swap (MB)... ] 16384 Physical Memory (RAM) = 8158 MB
[ Languages... ] English [ Keyboards... ] [ Additional... ]

[ Show Summary... ] [ Reset Configuration ]

[ Go! ] [ Cancel ] [ Help ]
```

12. 如果不需要修改系统配置，选择 Go! 开始操作系统的备份恢复。

6. 远程恢复异机的备份

也可以使用某个 client 的 OS 备份文件完成对其他机器的操作系统恢复。考虑到机器间配置的不同，并不是所有的备份都能在其它机器上成功恢复，本节仅介绍恢复的办法。

具体步骤为：

如将 Shrx36a0 备份出来的系统恢复到 shrx26a0 上面。

1. 在 server 上用 #exportfs 检查下列目录已经 NFS 共享输出：

```
/var/opt/ignite/recovery/archives -anon=2
/var/opt/ignite/clients -anon=2
```

2. 取得待恢复机器启动网卡的 MAC 地址，确定其 IP 地址和主机名称等配置信息，加入到 Ignite-UX 服务器的/etc/bootptab 文件中（假设 MAC 地址为 0x66E7EBD5D15A）：

```
shrx26a0:\
    tc=ignite-defaults:\
    ha=0x66e7ebd5d15a:\
    ip=16.157.8.75:\
    sm=255.255.248.0:\
    gw=16.157.8.1
```

3. 取得完成操作系统备份机器的主机名称（例如：shrx36a0），在 Ignite-UX 服务器上找到最近的备份情况

```
# ll /var/opt/ignite/clients
total 16
drwxr-xr-x  3 bin      bin           8192 Mar  3 15:12 0x001A4B089408
lrwxr-xr-x  1 root    sys          14 Mar  3 15:12 shrx36a0 -> 0x001A4B089408
# ll /var/opt/ignite/clients/shrx36a0/recovery
total 32
drwxr-xr-x  2 bin      bin           8192 Mar  3 15:03 2010-03-03,14:51
-rw-r--r--  1 bin      sys           288 Mar  3 15:03 client_status
lrwxr-xr-x  1 bin      bin           16 Mar  3 14:51 latest -> 2010-03-03,14:51
# ll /var/opt/ignite/recovery/archives/shrx36a0
total 2600160
-rw-----  1 bin      sys        1331207933 Mar  3 15:03 2010-03-03,14:51
# ll /var/opt/ignite/clients/shrx36a0/
total 48
-rw-r--r--  1 bin      sys           789 Mar  3 15:03 CINDEX
-rw-r--r--  1 bin      bin            9 Mar  3 14:51 client_name
-rw-r--r--  1 bin      bin           45 Mar  3 14:51 host.info
drwxr-xr-x  3 bin      bin           96 Mar  3 14:51 recovery
lrwxr-xr-x  1 root    sys            8 Mar  3 15:12 shrx36a0 -> shrx36a0
#
```

4. 在/var/opt/ignite/clients 下建立关于 0x66E7EBD5D15A（注意英文字母都是大写）和主机名称(shrx26a0)的目录并修改属性为 bin:bin

```
# cd /var/opt/ignite/clients
# mkdir -p /var/opt/ignite/clients/0x66E7EBD5D15A
# ln -s 0x66E7EBD5D15A /var/opt/ignite/clients/shrx26a0
# chown bin:bin 0x66E7EBD5D15A
# ll /var/opt/ignite/clients/
total 16
drwxr-xr-x  3 bin      bin           8192 Mar  3 15:12 0x001A4B089408
drwxr-xr-x  2 bin      bin            96 Mar  3 15:17 0x66E7EBD5D15A
lrwxr-xr-x  1 root    sys           14 Mar  3 15:17 shrx26a0 -> 0x66E7EBD5D15A
lrwxr-xr-x  1 root    sys           14 Mar  3 15:12 shrx36a0 -> 0x001A4B089408
#
```

5. 进入已知备份目录 shrx36a0，用 cpio 命令拷贝该目录下的 CINDEX 文件和 recovery 目录到新创建的目录 shrx26a0 下：

```
# cd shrx36a0
# pwd
/var/opt/ignite/clients/shrx36a0
# find CINDEX recovery | cpio -pdvma ../shrx26a0
../shrx26a0/CINDEX
../shrx26a0/recovery
```

6. 启动待安装的客户端进入 EFI 状态，选择 “Boot From a file”，从对应的网卡（MAC 地址是 0x66E7EBD5D15A）启动：

```
EFI Boot Maintenance Manager ver 1.10 [14.62]
```

```
Boot From a File. Select a Volume
```

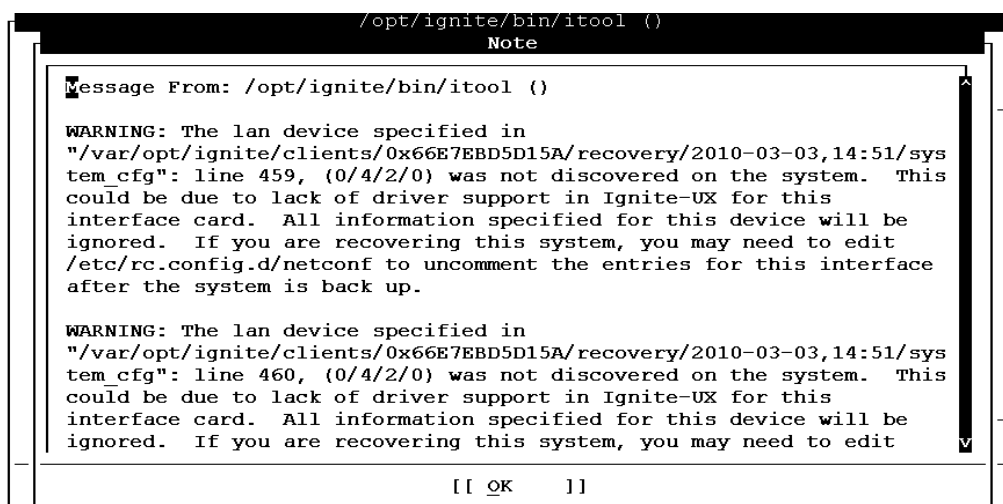
```
Load File [Acpi(PNP0A03,0)/Pci(1|0)/Mac(66E7EBD5D15A)]
Load File [EFI Shell [Built-in]]
Legacy Boot
Exit
```

7. 系统找到 Ignite-UX 服务器，下载 OS 启动文件。请选择合适的启动版本，进入操作系统恢复程序：

```
Obtaining size of AUTO (226 bytes)
Downloading file AUTO (226 bytes)
 1. target OS is B.11.31 IA
 2. target OS is B.11.23 IA
 3. Exit Boot Loader
```

```
Choose an operating system to install that your hardware supports:1
```

8. 因为是其他机器的备份，有该可能该系统的 Driver 与当前系统的硬件不匹配，选择 OK 继续：



9. 如果有多个 “Recovery Archive”，选择其中的一个进行恢复：

```

/opt/ignite/bin/itool ()

Basic | Software | System | File System | Advanced
-----|-----|-----|-----|-----
Configurations: [ 2010-03-03,14:51 Recover ->] [ Description... ]
Environments:   [ Recovery Archive           ->] (HP-UX B.11.31)
[ Root Disk ] HP_Virtual_LvDisk, 0/0/0/0.0x0.0x0, 32 M>
File System:    [ HP-UX save_config layout   ->]
[ Root Swap (MB)... ] 16384 Physical Memory (RAM) = 4090 MB
[ Languages... ] English [ Keyboards... ] [ Additional... ]

[ Show Summary... ] [ Reset Configuration ]

[ Go! ] [ Cancel ] [ Help ]

```

10. 修改系统参数，如主机名称，IP 地址，文件系统的大小等等..

```

/opt/ignite/bin/itool ()

Basic | Software | System | File System | Advanced
-----|-----|-----|-----|-----
Final System Parameters: [ Set parameters now ->]

Hostname: shrx26a0
IP Address: 16.157.8.71 Subnet Mask: 255.255.248.0
Time: 15:40 Day: 03 Month: [ March ->] Year: 2010
[ Set Time Zone (EAT-8)... ] [ Network Services... ]
[ Set Root Password... ]

[ Show Summary... ] [ Reset Configuration ]

[ Go! ] [ Cancel ] [ Help ]

```

11. 选择 Go!，系统将自动开始恢复

```

* Download_mini-system: Complete
* Loading_software: Begin
* Installing boot area on disk.
* Formatting HP Service Partition.
* Enabling swap areas.
* Backing up LVM configuration for "vg00".
* Processing the archive source (Recovery Archive).
* Wed Mar 03 02:43:31 EST 2010: Starting archive load of the source (Recovery Archive).
* Processed 10% of archive
* Processed 20% of archive
* Processed 30% of archive

```

12. 恢复完成后系统将自动重启。

附录 1 不同网段的远程启动

如果 Client 和 Ignite-UX 服务器不在同一网段，可以使用 EFI 的 dbprofile 命令定义网关等信息，定义完后使用 lanboot 命令来完成 Client 的网络启动。如果 EFI 未提供 dbprofile 命令，请检查 EFI 版本，更新到最新的版本；也可以参考系统的硬件文档来确定是否支持 dbprofile。

1. 启动 Client 到 EFL Shell 状态，执行 dbprofile 命令创建 testprofile:

```
Shell> dbprofile -dn testprofile -sip 16.157.8.71 -cip 16.157.8.75 -gip 16.157.8.1 -m 255.255.248.0 -b "/opt/ignite/boot/nbp.efi"
Updating profile testprofile
```

```
Shell> dbprofile
Profile List
```

```
Profile Name: testprofile
  Network Type: IPv4
  Client IP address: 16.157.8.75
  Gateway IP address: 16.157.8.1
  Subnet Mask: 255.255.248.0
  Server IP address: 16.157.8.71
  Boot File: /opt/ignite/boot/nbp.efi
  Optional Data:
```

-sip:Ignite-UX 服务器的 IP 地址;

-cip:Ignite 客户端的 IP 地址;

-gip:网关 IP 地址;

-m:网络掩码;

-b:引导文件名。

2. 使用 lanboot 命令启动，系统会提示选择启动网卡:

```
Shell> lanboot select -dn testprofile
  01 Acpi(PNP0A03,0)/Pci(1|0)/Mac(66E7EBD5D15A)
Select Desired LAN: 01
```

使用 dbprofile 方式不需要添加 Client 信息到 Ignite-UX 服务器的 /etc/bootptab 文件

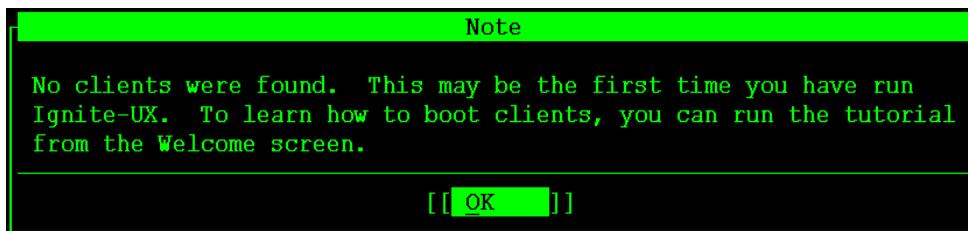
附录 2 通过菜单方式配置

初次使用者可以通过 Wizard 方式配置 Ignite-UX 和拷贝操作系统软件包。

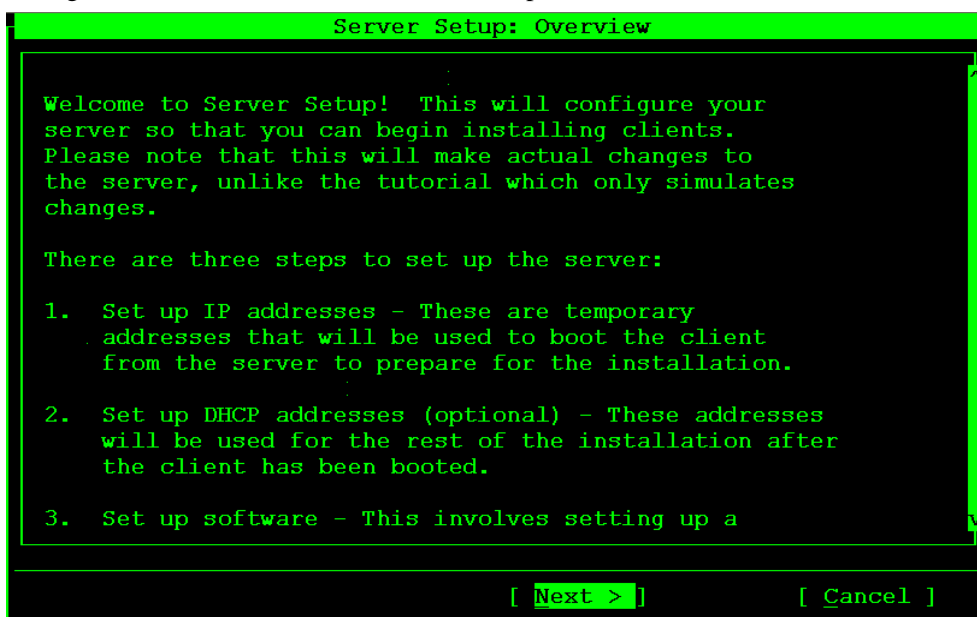
首先以 root 的身份，输入以下命令来启动 Ignite-UX:

```
#/opt/ignite/bin/ignite
```

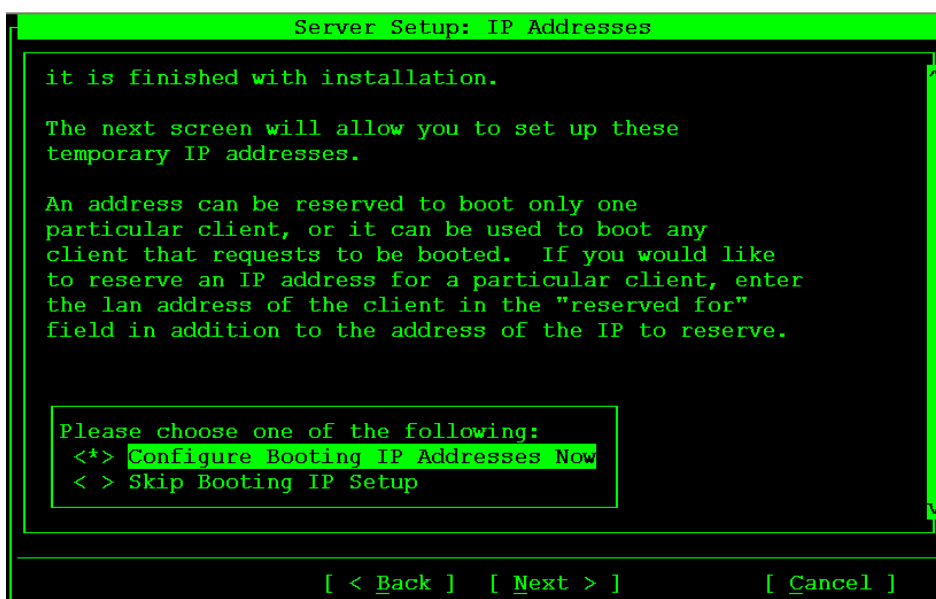
第一次启动 Ignite-UX，没有任何客户端，出现如图所示的说明。



开始配置 Ignite-UX 服务器，请单击 Server Setup... 启动服务器设置向导

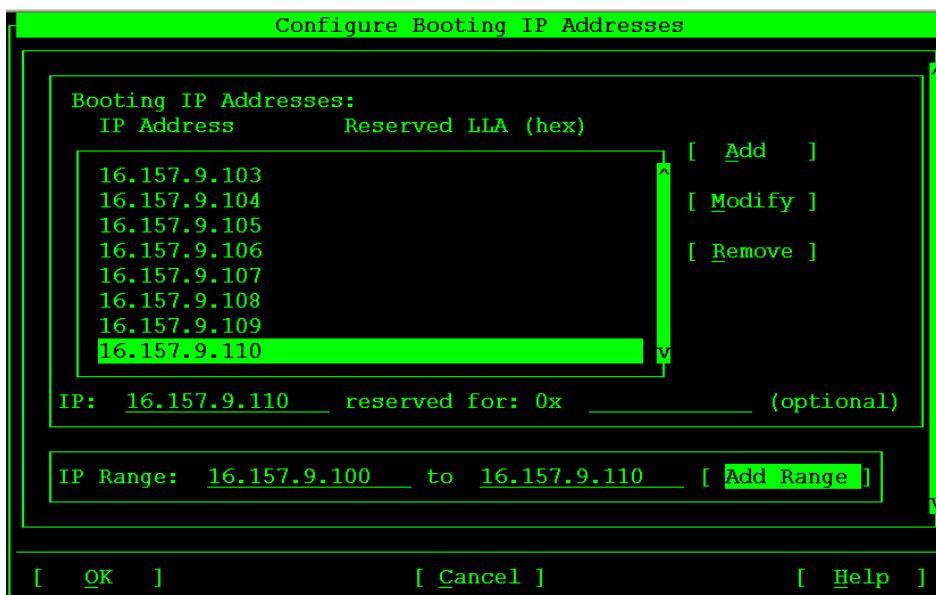


为 PA-RISC 客户端设置 Ignite-UX 服务器，请完成第 1 步（设置 IP 地址），

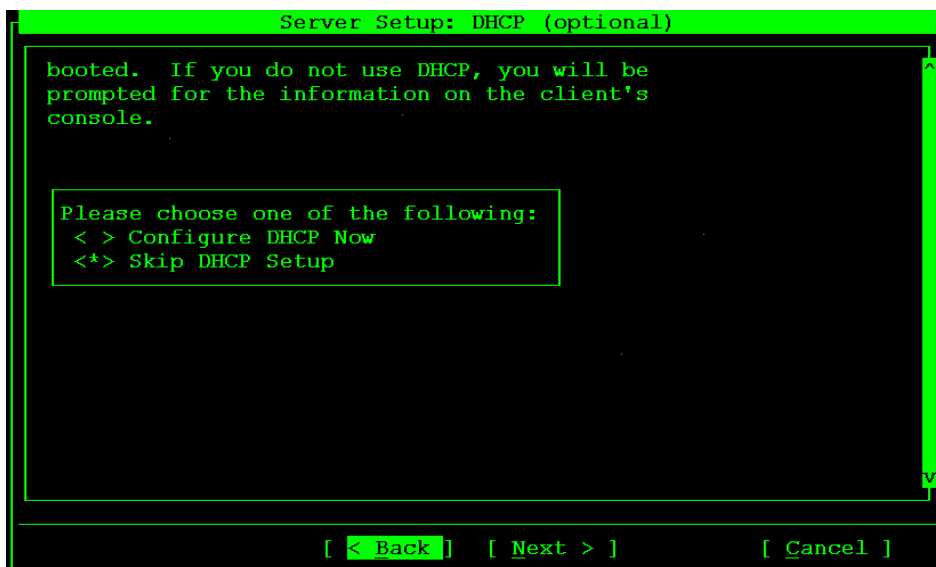


输入一个有效 IP 地址或有效 IP 地址范围。不要在 reserved for:0x 框中输入 MAC 地址，请将其保留为空。除非你需要将某个 IP 地址与相应的 MAC 地址绑定。

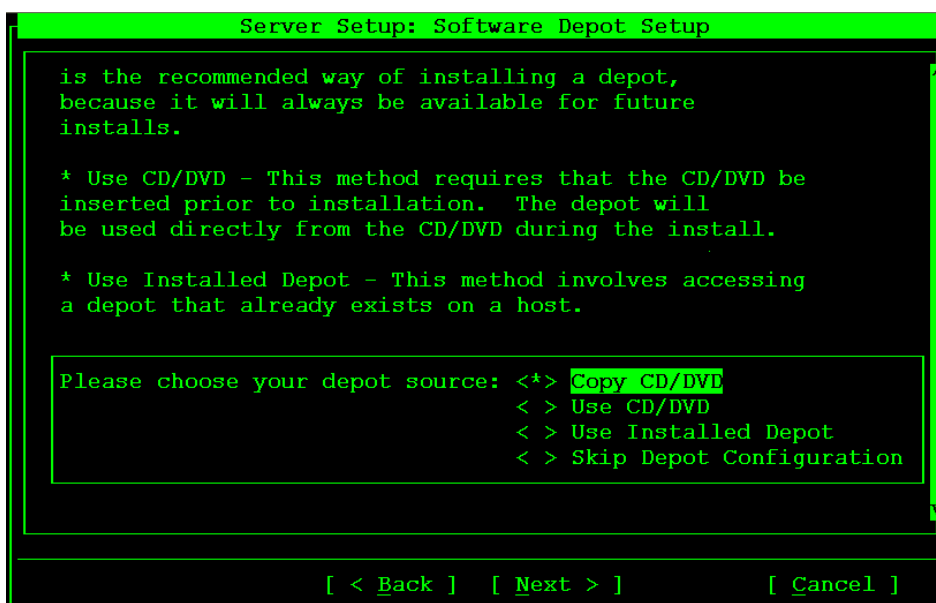
注意:这里的 IP 地址配置仅针对 PA-RISC 客户端,如果是 Itanium 客户端,可以选择“skip booting IP setup”。



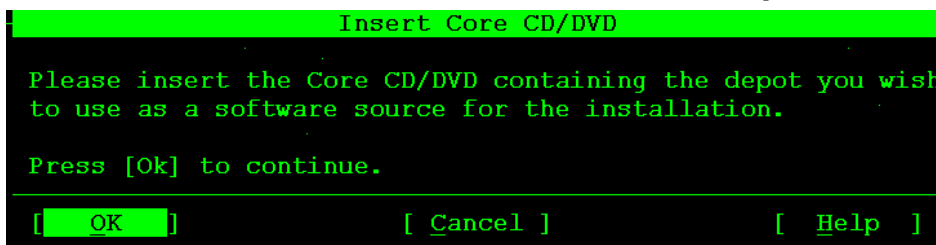
退出 Configure Booting IP Addresses 对话框之后,将显示 Server Setup:DHCP (optional)对话框。选择 Skip DHCP Setup, 再单击 Next。



此时将显示一个对话框，告知您以后如何对 DHCP 服务进行配置。单击 OK。现在将显示 Server Setup:Software Depot Setup 对话框



系统将提示插入需要拷贝的 OS 光盘，单击 OK 开始拷贝 OS depot。



随后系统将要求您确认所做的选择。然后显示 Server Setup Logfile 对话框，从而可以监视软件 depot 安装过程。该过程比较长，可能会花近两小时的时间。在此期间，此对话框将保持活动状态，并在新信息写入日志文件时进行更新。

上述安装完成之后，单击 OK 重复此过程来继续安装其他软件 depot，或单击 Finish 完成服务器安装和配置。

附录 3. PA-RISC 客户端操作系统的安装

1. 启动 PA-RISC 客户端进入 BCH 状态；
2. 在 BCH 下，使用 `search lan install` 命令查找可以实现网络启动的网卡和 ignite-UX 服务器。
3. 在 BCH 下，使用 `boot lan.XX.XX.XX.XX install` 命令进行网络安装。其中 XX.XX.XX.XX 是 Ignite-UX 服务器的 IP 地址，PA-RISC 客户端的地址在 Ignite-UX 服务器的文件 `/etc/opt/ignite/instl_boottab` 内设置，由 Ignite-UX 服务器自动提供给 PA-RISC 客户端。PA-RISC 客户端的 IP 地址与 Ignite-UX 服务器的 IP 地址应该在同一网段内。
4. 网络启动后根据提示实施安装。