Ignite-UX USB Memory Stick Boot

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About This Document

This white paper illustrates how to configure your Integrity system and a USB flash drive in order to boot HP-UX directly from a memory stick device. Once the system is booted to the HP-UX Ignite-UX install environment, you can perform a variety of install or recovery actions. This document details how you can recover from tape using Ignite-UX.

Intended Audience

This procedure is for the customer that needs an extremely portable boot device. It is useful for customers with no direct tape boot capability.

Requirements

You must have a USB memory stick with enough memory to hold the Ignite boot content – a 2GB or larger memory stick is required.

To function technically, the device needs to at least conform to Mass Storage Class (0x8), Sub-Class Reduced Block Command (0x01), or SCSI transparent command set (0x06); and interface protocol BulkOnly (0x50). Modern USB sticks from major manufactures should support these requirements.

The system used to create the USB memory stick content must support USB and have the USB driver installed.

The USB memory stick must be configured with the Ignite boot content as detailed here.

Configuring the USB Device with Ignite Boot Content

In order to configure the memory stick with the boot content, a number of commands are required. Appendix A: An Example Script to Configure the USB Device with Ignite Boot Content contains an example script that takes the USB device file name and the HP-UX version as arguments. You must run this script from a system with Ignite-UX installed.

An example script might be included in a future Ignite-UX product release. If so, the Ignite-UX product release notes will provide appropriate information.

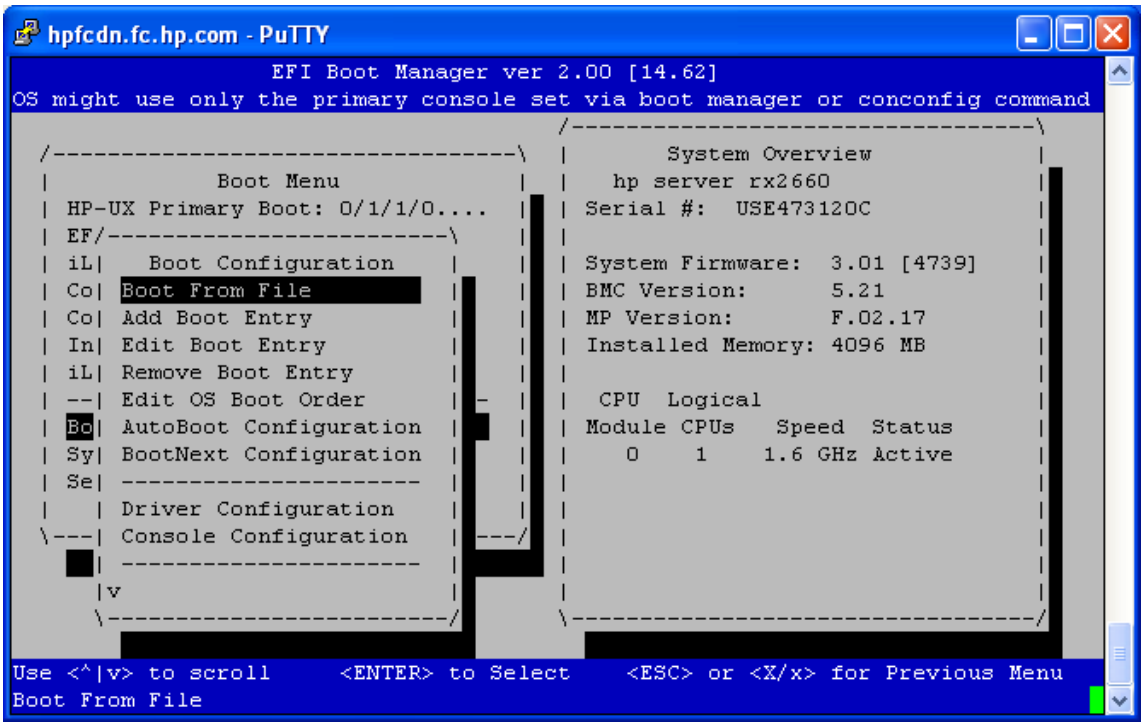
The Ignite-UX install environment that will be copied onto the memory stick will be the same Ignite-UX version installed on the system that runs the script. Ensure the version of Ignite-UX on the memory stick matches the version that was used to create the recovery image to be restored (the version used to create the recovery tape or that is installed on the Ignite-UX server).

At this time Ignite-UX does not support memory stick as a source type for install or recovery. Thus, you cannot create a memory stick image that supports install or recovery by itself.

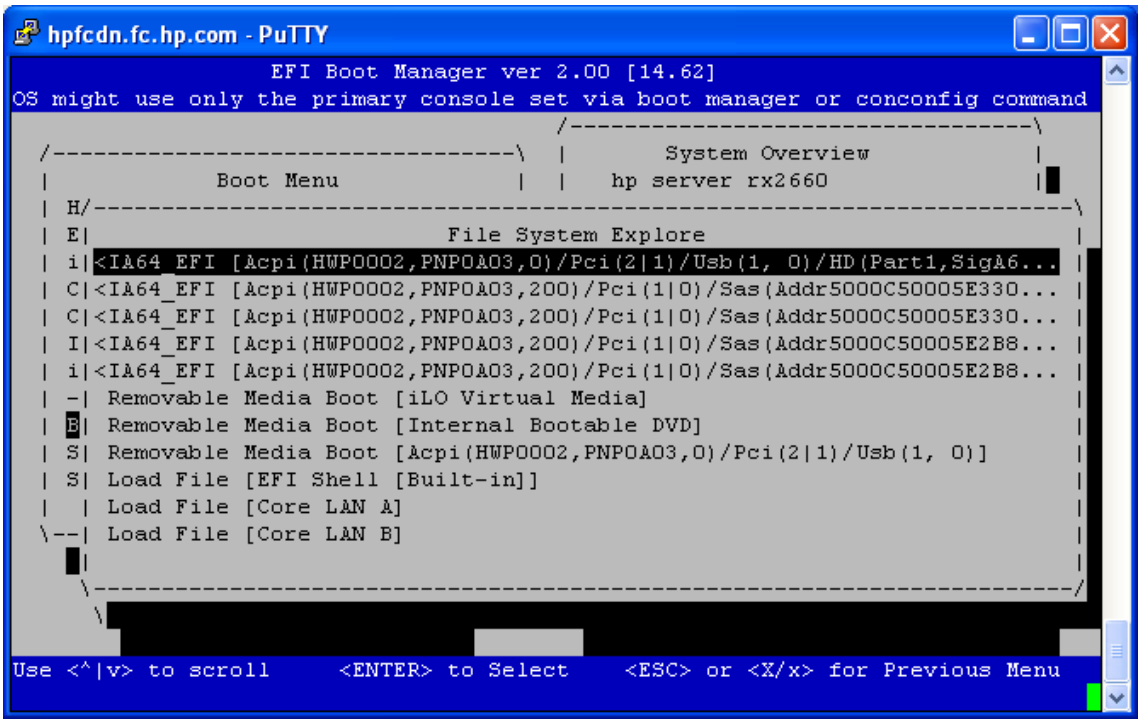
The Boot Procedure for a USB Memory Stick

Once you have created your boot memory stick, you can boot from it using the `Boot From File` option on the EFI Boot Manager menu. The procedure is outlined below:

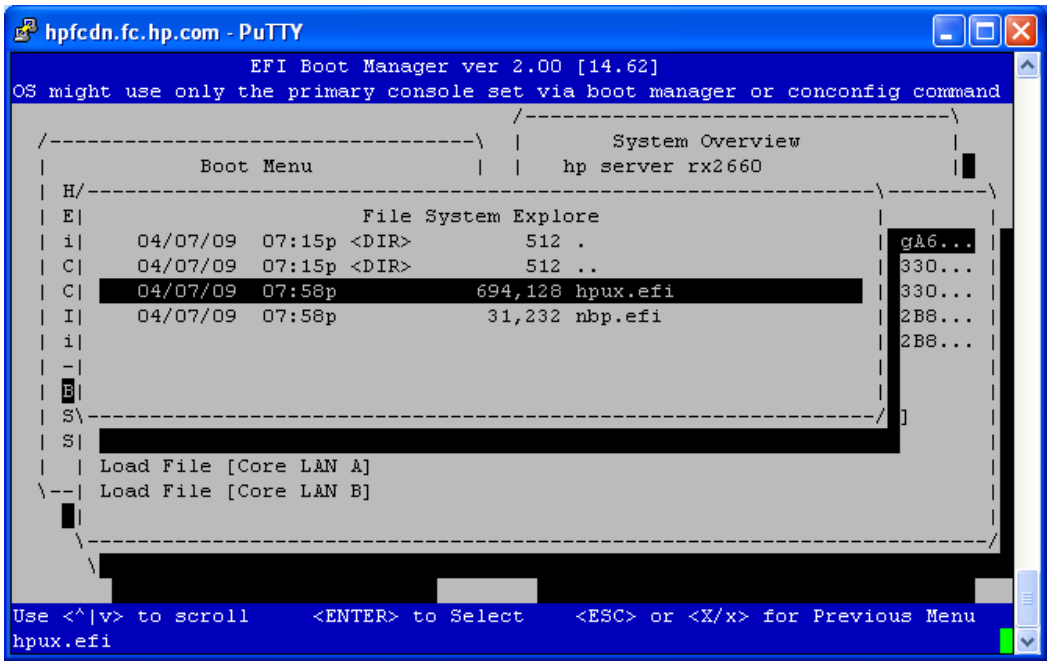
1. Select **`Boot Configuration`** from the EFI Boot Menu:
2. Select **`Boot From File`** in the EFI Boot Configuration menu:



3. Select the USB memory stick partition to be booted. This partition will be an EFI system partition on a USB device.



4. Explore down through the file system to the `hpux.efi` boot content file and select it for boot. You will need to navigate to the EFI and then the HPUX directories to locate the `hpux.efi` boot loader program.



The system then boots the HP-UX Ignite-UX install environment from the memory stick and starts the Ignite-UX user interface

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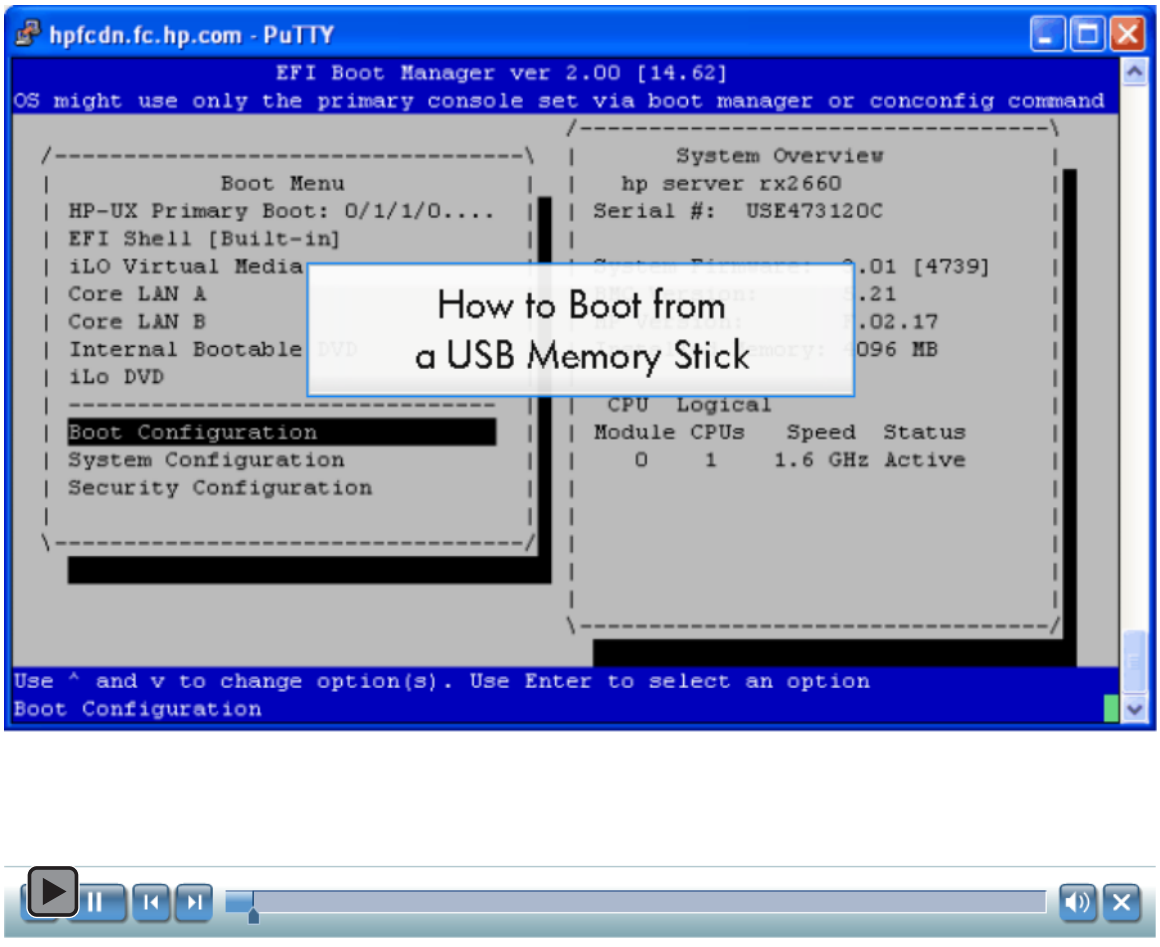
Note:

It is technically possible to create a boot menu entry for a USB memory stick that supports HP-UX boot. However, the details are complex and far beyond the scope of this document. Such a menu entry would be correct only for that particular memory stick and that particular boot image build. As a result, we do not recommend creating a boot menu entry and instead recommend using the boot-from-file approach detailed here.

Show Me! The USB Boot Procedure

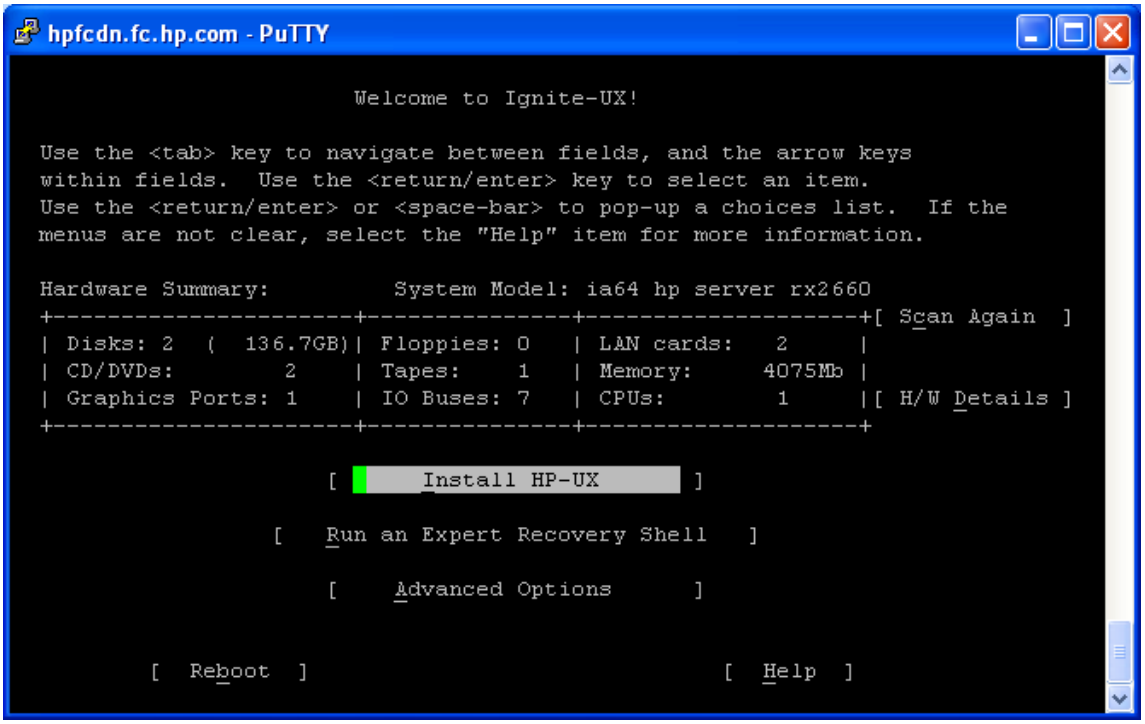
Below is an animated demonstration – clicking anywhere within the demo image will start the animation. Use the player bar at the bottom to control the playback. You will need Adobe Reader 9 to view the demo; download it from this URL: www.adobe.com.



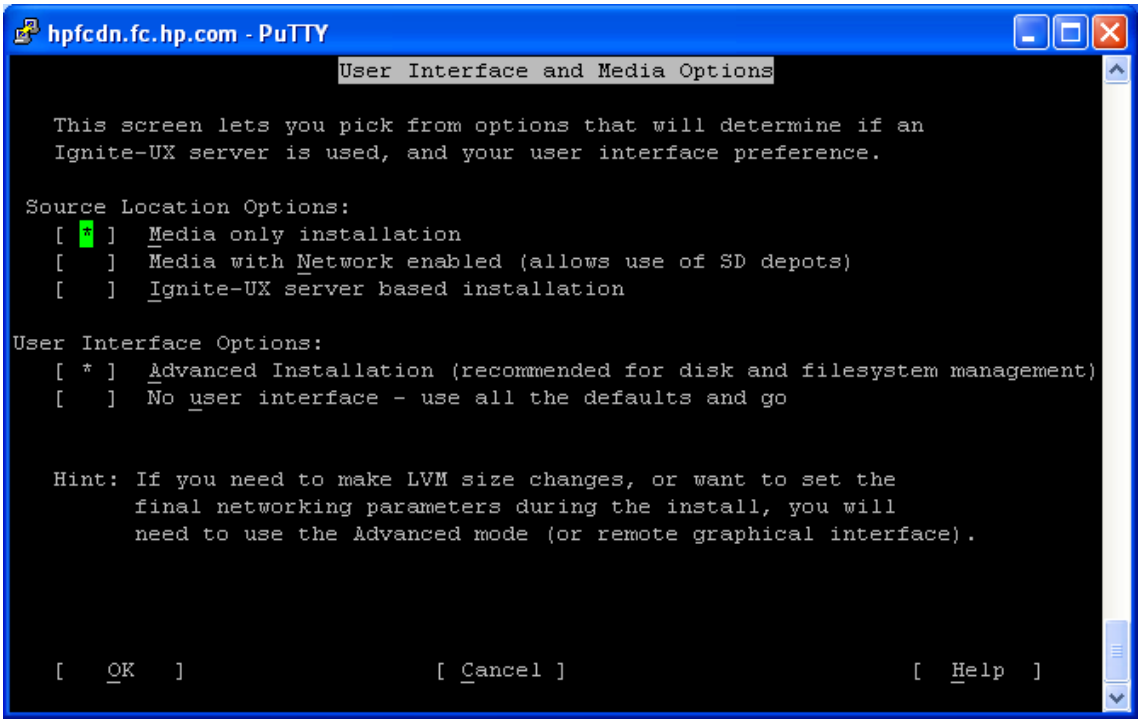
Recovering from Tape after Memory Stick Boot

Once you have booted, Ignite is launched. Navigate as shown below to recover from tape.

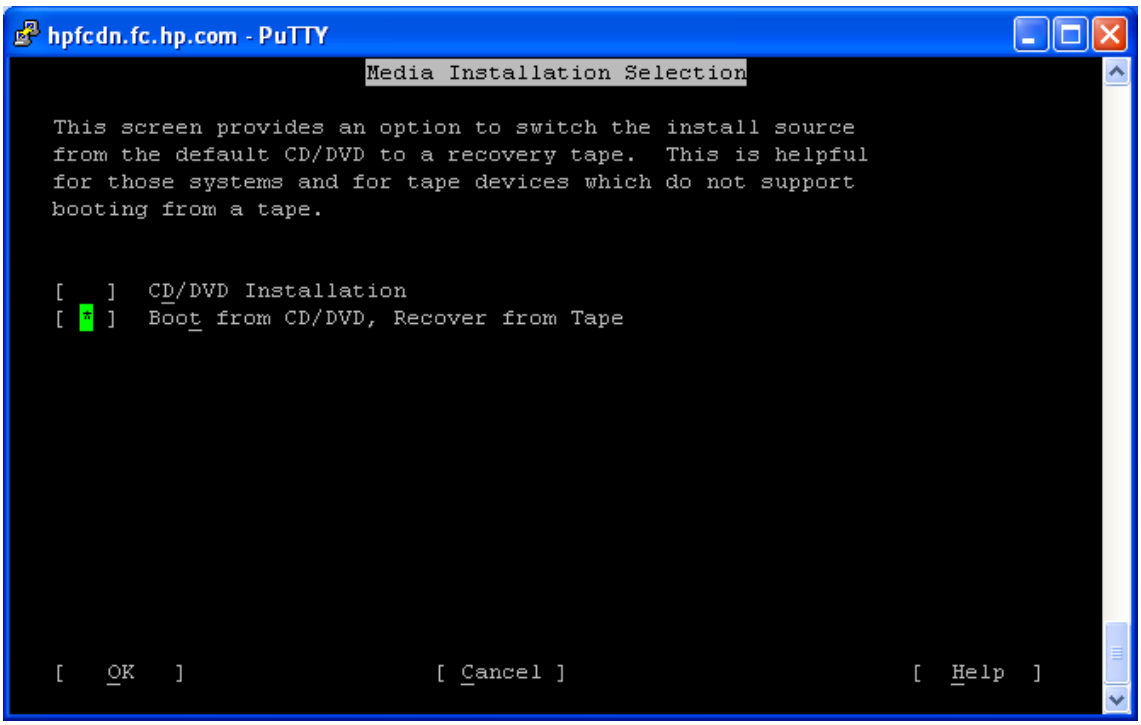
Select Install **HP-UX**:



Select a **`Media only installation`**:



Select **`Boot from CD/DVD, Recover from Tape`**:

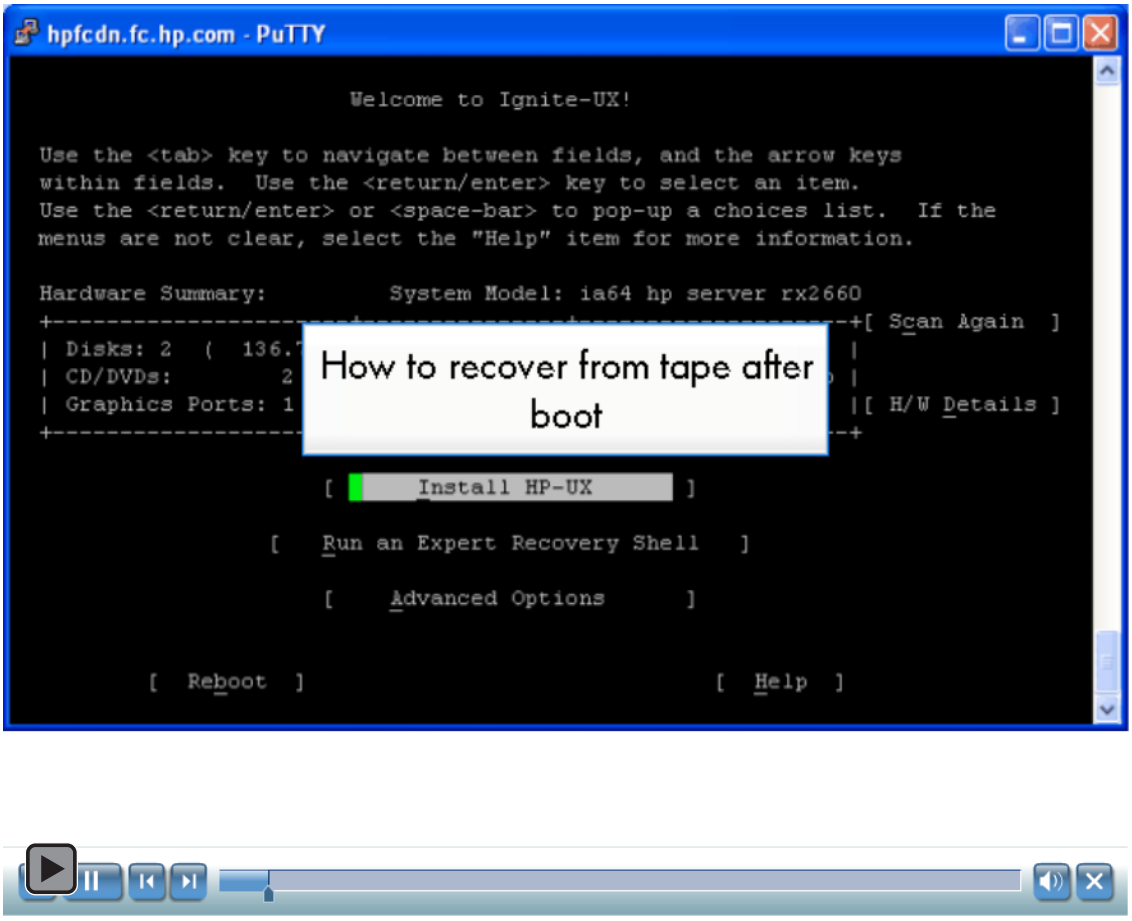


Select the tape drive you will use with the recovery tape.

Select the recovery archive and install the system.

Show Me! Recovering From Tape after USB Boot

Below is an animated demonstration – clicking anywhere within the demo image will start the animation. Use the player bar at the bottom to control the playback. You will need Adobe Reader 9 to view the demo; download it from this URL: www.adobe.com.



Appendix A: An Example Script to Configure the USB Device with Ignite Boot Content

```
#!/bin/sh -x
# First command line argument is USB stick device file basename (e.g.
c3t1d0)
# Second command line argument is the HP-UX release (e.g. 11.31)
disk=$1
rel=$2
cat <<@EOF > /tmp/idisk.txt
2
EFI 300MB
HPUX 1000MB
@EOF
idisk -w -q -f /tmp/idisk.txt /dev/rdsk/${disk}
rm /tmp/idisk.txt
ioscan  > /dev/null
insf -e -C disk > /dev/null
newfs -F hfs -R 50 /dev/rdsk/${disk}s2
mkdir /tmp/mnt
mount /dev/dsk/${disk}s2 /tmp/mnt
cp /opt/ignite/boot/Rel_B.${rel}/IINSTALL /tmp/mnt
cp /opt/ignite/boot/Rel_B.${rel}/IINSTALLFS /tmp/mnt
cat <<@EOF > /tmp/IFS.cfg
# Ignite-UX media boot helper
@EOF
/opt/ignite/bin/instl_adm -f /tmp/IFS.cfg -F /tmp/mnt/IINSTALLFS
rm /tmp/IFS.cfg
umount /tmp/mnt

mkboot -v /dev/rdsk/${disk} > /dev/null
cat <<@EOF > /tmp/AUTO.txt
boot /IINSTALL
@EOF
efi_cp -d /dev/rdsk/${disk}s1 /tmp/AUTO.txt EFI/HPUX/AUTO
rm /tmp/AUTO.txt
```

Getting the USB memory stick device name

Use the `ioscan` command to get the USB stick device name:

```
# ioscan –C disk | grep 255/
255/1/0.0.0              disk            TEAC    DV-28E-N
255/1/0.1.0              disk            HP USBKey4GB

# ioscan -nfH 255/1/0.1.0
Class     I  H/W Path     Driver S/W State   H/W Type     Description
===================================================================
disk      5  255/1/0.1.0  sdisk   CLAIMED     DEVICE       HP USBKey4GB
                         /dev/dsk/c2t1d0     /dev/rdsk/c2t1d0
                         /dev/dsk/c2t1d0s1   /dev/rdsk/c2t1d0s1
                         /dev/dsk/c2t1d0s2   /dev/rdsk/c2t1d0s2
```

Use the whole disk device special file name with the script, in this case, `c2t1d0`. If you are rebuilding the USB boot content, you might see section (partition) device files (`c2t1d0s1` and `c2t1d0s2`) – they should not be used.

If your USB configure script is called `make_usb_boot` and you are using HP-UX `11i` v3, you would run the script with the following command:

```
# ./make_usb_boot c2t1d0 11.31
```

The example script includes `sh –x`, which will show the commands being used to create the boot content.

Note:

USB flash devices are considerably slower than normal disk devices. Commands that require I/O might take a minute or so. The HP-UX file system driver caches I/O, so the `umount /tmp/mnt` command might take a couple of minutes.

For More Information

The following relevant documents are available online at http://www.hp.com/go/ignite-ux-docs and http://www.hp.com/go/hpux-core-docs.

Ignite-UX Administration Guide

HP-UX 11i v[1|2|3] Installation and Update Guide

HP-UX 11i v[1|2|3] Release Notes

HP-UX System Administrator's Guide

Managing Systems and Workgroups: A Guide for HP-UX System Administrator

Some or all of these documents are available on the Instant Information media and in printed form.

Product information regarding Ignite-UX is available at:

http://www.hp.com/go/ignite-ux

Subscribe to http://twitter.com/HP_UX_Docs to learn of updates to this document and other Ignite-UX documentation.

MPN 5900-0576, March 2010