Re: quickly partition disk, copy an image, install grub

Source: http://linux.derkeiler.com/Mailing−Lists/Debian/2005−09/2583.html

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From: Gregory Seidman (*gsslist+debian_at_anthropohedron.net*)
Date: 09/20/05

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Date: Tue, 20 Sep 2005 11:49:25 −0400
To: debian−user@lists.debian.org
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On Tue, Sep 20, 2005 at 09:20:33AM −0400, Matt Price wrote:
} Hi,
}
} I have to install ubuntu or something similar on about 20 aging
} workstations without cd drives. THese are donated boxes with small hard
} drives (as small as 2.1 gig, but not all identical) all wiped clean.
}
} my thought is: do a workstation install of ubuntu on one drive and get
} it all cleaned up the way I want it; shrink the partition down to a
} minimum size to avoid copying lots of empty sectors; make a disk image
} with dd; shutdown, install a second drive;and then:
}
} fdisk /dev/hdb, and set up / and swap partitions
} mkswap /dev/hdb5 # do I need to do this?
} # Do I need to create an e2fs fs on /dev/hdb1?
} dd if=/path/to/image of=/dev/hdb1 # will this work if the partitions
} # are not of exactly equal size?
} dd if=/dev/hda of=/dev/hdb bs=448 count=1 # does this install GRUB?
}
} so, my question is: is this the right way to go about this? am I
} missing any steps? is there a better way to do it?

First off, if you're asking on a Debian list you should be talking about Debian rather than Ubuntu. Based on the following assumptions:

1) You can find the smallest disk you will have to install on.

2) You will have some partition (/home? something else?) that should grow to fill the remaining disk space on larger disks.

3) You will be using a filesystem that supports growing, such as ext3.

4) You can put all of these machines on a network together.

5) You have a spare machine to use as "machine B" below.

6) The various machines' disks are /dev/hda and they can all boot from CD.

...here's what I'd do:

1) Do a full install and configuration on the machine (A) with the smallest disk. Configure everything, including partitions and swap, the way you want it. Make sure the partition that will be grown to fill the larger disks is the last partition.

2) On each filesystem (not swap) dd if=/dev/zero of=zeroes until it runs out of room, then remove the file of zeroes. This is important for compression, which comes later.

3) Set up a machine (B) with a network connection to your newly installed box so that it is listening on some TCP port, say 2000, for a network connection and will take any data from a connection and put it in a file. It should also be listening on another TCP port, say 3000, to which it will respond with the contents of the same file. I recommend using socket or netcat (nc) for this. I prefer socket, so my examples use socket:

   socket −r −q −p 'dd of=/tmp/diskimg.gz' −s 2000 &
   socket −w −q −p 'dd if=/tmp/diskimg.gz' −s −l 3000 &

4) Reboot machine A with Knoppix or your favorite LiveCD. Tell it not to find any swap partitions.

5) dd if=/dev/hda | gzip −c | socket −w −q MachineB 2000

6) Boot each of the other machines, in turn, with a LiveCD.

7) socket −r −q MachineB 3000 | gzip −d | dd of=/dev/hda

8) use parted to grow the last partition (or fdisk to delete it and create it again to fill the disk), then use resize2fs (or the command appropriate to your chosen growable filesystem) to fill the now larger partition

Note that the gzip in step 5 compresses all those nice zeroes you put on the disk in step 2 so that the data that goes over the network is minimized. This won't be incredibly speedy, but you should be able to perform step 7 on all of your machines in parallel. You may also want to set the bs parameter on the various dd commands.

} thanks much,
} matt
−−Greg