Fully Automated Installation of Ubuntu Server 16.04 with preseed

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Agenda

1) Introduction to automated installation mechanisms
2) How to customize a parmfile for Ubuntu 16.04
3) How to customize a preseed file for Ubuntu 16.04
4) Live demo of fully automated installation under z/VM
5) Live demo of fully automated installation under IBM KVM
6) Resource page
7) Questions
1) Introduction to automated installation mechanisms

- Red Hat Enterprise Linux: kickstart
- SUSE Linux Enterprise: autoyast
- Ubuntu: preseed
- What is required for automated installation?
  a) kernel
  b) initrd
  c) parmfile with some basic configuration statements and a URL pointing to a config file used by the automated installer
  d) config file that contains the data for the automated installer
  e) access to the installation repository
  f) access to a server (http or ftp) that holds the config file
2) How to customize a parmfile for Ubuntu 16.04

Sample parmfile (also on Ubuntu Wiki):

```plaintext
ro locale=en_US auto=true priority=critical cio_ignore=100-5ff

s390-netdevice/choose_networktype=qeth
s390-netdevice/qeth/layer2=true s390-netdevice/qeth/port=0
s390-netdevice/qeth/choose=0.0.f5f0-0.0.f5f1-0.0.f5f2

netcfg/use_autoconfig=false netcfg/disable_dhcp=true
netcfg/get_ipaddress=9.152.162.153 netcfg/get_netmask=255.255.252.0
netcfg/get_gateway=9.152.160.1 netcfg/get_nameservers=9.152.120.241
netcfg/get_hostname=s8330003 netcfg/get_domain=boeblingen.de.ibm.com

network-console/password=xxxxx network-console/password-again=xxxxx
network-console/start=true

preseed/url=http://bistro/ubuntu/tdiehl/demo.dasd.preseed.conf
```
Sample preseed file (also a similar one on Ubuntu Wiki):

# General configuration
d-i auto-install/enable boolean true
d-i debconf/priority string critical
d-i pkgsel/update-policy select none

# Localization
d-i debian-installer/language string en
d-i debian-installer/country string US
d-i debian-installer/locale string en_US.UTF-8
d-i localechooser/supported-locales multiselect en_US.UTF-8
3) How to customize a preseed file for Ubuntu 16.04

```plaintext
# HW clock
d-i clock-setup/utc boolean true

# time zone
d-i time/zone string Europe/Berlin

# Mirror preseed file for the Debian Installer
d-i mirror/country string manual
d-i mirror/protocol string http
d-i mirror/http/hostname string ports.ubuntu.com
d-i mirror/http/directory string /

# Use a http proxy
#d-i mirror/http/proxy string http://myproxy.example.com:3128
# alternatively: use no proxy
d-i mirror/http/proxy string

# The Debian release to install
d-i mirror/suite string xenial
```
3) How to customize a preseed file for Ubuntu 16.04

```
# user setup
d-i passwd/user-fullname string Ubuntu 16.04 test user
d-i passwd/username string ubuntu
d-i passwd/user-password password ubuntu
d-i passwd/user-password-again password ubuntu
d-i user-setup/allow-password-weak boolean true
d-i user-setup/encrypt-home boolean false

# Enable login as root
d-i passwd/root-login boolean true

# Root password
d-i passwd/root-password-crypted password $6$aidziCIp$DoPat8RfhBbDyprjZHQYjpFyCG7LR/i6u0JJ5AnC4k/4NFu4w2UmQ.5iIZzt1kEGT3uUxKKIi9yYqlT7eC9jP/

# enable shadow passwords
d-i passwd/shadow boolean true

# do not enable live installer, use normal instead
d-i live-installer/enable boolean false
```
3) How to customize a preseed file for Ubuntu 16.04  (DASD, zfcp)

   # DASD configuration
   d-i s390-dasd/dasd string 0.0.8747,0.0.87d8,0.0.87d9,0.0.87da,0.0.87db
   d-i s390-dasd/auto-format boolean true
   d-i s390-dasd/force-format boolean false

   # configuration of two multipathed zfcp LUNs
   ##d-i s390-zfcp/zfcp string \n   ##0.0.3c44:0x500507630443c3e8:0x4033400c00000000,\n   ##0.0.3c84:0x500507630448c3e8:0x4033400c00000000,\n   ##0.0.3c44:0x500507630443c3e8:0x4033400d00000000,\n   ##0.0.3c84:0x500507630448c3e8:0x4033400d00000000

   # optional lines to overwrite old RAIDs and LVMs ....
   d-i partman-md/device_remove_md boolean true
   d-i partman-lvm/device_remove_lvm boolean true
   d-i partman-lvm/device_remove_lvm_span boolean true
   d-i partman-lvm/confirm boolean true
   d-i partman-lvm/confirm_nooverwrite boolean true
3) How to customize a preseed file for Ubuntu 16.04 (DASD recipe)

# partitioning of a single DASD or zfcp LUN with three partitions
d-i partman-auto/method string regular

d-i partman-auto/expert_recipe string
  1-dasd-demo ::

  2048 6144 100000   ext4
    method{ format } format{ }              \
    use_filesystem{ } filesystem{ ext4 }    \
    mountpoint{ / }                         \

  512 1024 2048     linux-swap
    method{ swap } format{ }                \

  2048 16384 100000   xfs
    method{ format } format{ }              \
    use_filesystem{ } filesystem{ xfs }     \
    mountpoint{ /home }                     \

3) How to customize a preseed file for Ubuntu 16.04 (2 DASDs LVM)

```plaintext
# partitioning of 2 DASDs with LVM and 3 logical volumes
d-i partman-auto/method string lvm
d-i partman-auto/disk string /dev/dasda /dev/dasdb
d-i partman-auto/expert_recipe string
   2-DASDs-LVM-demo ::
      256 256 512 ext3
         $primary{ } $bootable{ } \
      method{ format } format{ } \
      device{ /dev/dasda } \
      use_filesystem{ } filesystem{ ext3 } \
      mountpoint{ /boot } \
      . \\
      1000 10000000 ext3
         $lvmignore{ } \
         $primary{ } \
         method{ lvm } \
         device{ /dev/dasda } \
         vg_name{ vg00 } \
      .
```
3) How to customize a preseed file for Ubuntu 16.04 (2 DASDs LVM)

```
1000 10000000 ext3
   $lvmignore{ }
   $primary{ }
   method{ lvm }
   device{ /dev/dasdb }
   vg_name{ vg00 }

2048 5120 10240 ext4
   $defaultignore{ }
   $lvmok{ }
   in_vg{ vg00 }
   lv_name{ lv-root }
   method{ format } format{ }
   use_filesystem{ } filesystem{ ext4 }
   mountpoint{ / }
```
3) How to customize a preseed file for Ubuntu 16.04  (2 DASDs LVM)

```
512  1024  2048  linux-swap
   $defaultignore{ }  \
   $lvmok{ }  \
   in_vg{ vg00 }  \
   lv_name{ lv-swap }  \
   method{ swap } format{ }  \

2048 10240 20480  xfs
   $defaultignore{ }  \
   $lvmok{ }  \
   in_vg{ vg00 }  \
   lv_name{ lv-home }  \
   method{ format } format{ }  \
   use_filesystem{ } filesystem{ xfs }  \
   mountpoint{ /home }  \
```

3) How to customize a preseed file for Ubuntu 16.04 (2 LUNs LVM)

```sh
# partitioning of 2 multipathed SCSI LUNs with LVM and 3 logical volumes

d-i partman-auto/method string lvm

d-i partman-auto/disk string /dev/mapper/mpatha /dev/mapper/mpathb

d-i partman-auto/expert_recipe string
  2-zfcp-LUNs-LVM-demo ::
    256 256 512 ext3
      $primary{ } $bootable{ }
    method{ format } format{ }
    device{ /dev/mapper/mpatha }
    use_filesystem{ } filesystem{ ext3 }
    mountpoint{ /boot }

1000 10000000 ext3
      $lvmignore{ }
      $primary{ }
    method{ lvm } 
    device{ /dev/mapper/mpatha }
    vg_name{ vg00 }
```

3) How to customize a preseed file for Ubuntu 16.04 (2 LUNs LVM)
3) How to customize a preseed file for Ubuntu 16.04 (2 LUNs LVM)

1000 10000000 ext3
    $lvmignore{ }
    $primary{ }
method{ lvm }
device{ /dev/mapper/mpathb }
vg_name{ vg00 }

2048 5120 10240 ext4
    $defaultignore{ }
    $lvmok{ }
in_vg{ vg00 }
lv_name{ lv-root }
method{ format } format{ }
use_filesystem{ } filesystem{ ext4 }
mountpoint{ / }
3) How to customize a preseed file for Ubuntu 16.04  (2 LUNs LVM)

512 1024 2048  linux-swap \
   $defaultignore{ } \
   $lvmok{ } \
   in_vg{ vg00 } \
   lv_name{ lv-swap } \
   method{ swap } format{ } 

2048 10240 20480  xfs \
   $defaultignore{ } \
   $lvmok{ } \
   in_vg{ vg00 } \
   lv_name{ lv-home } \
   method{ format } format{ } \
   use_filesystem{ } filesystem{ xfs } \
   mountpoint{ /home } 

Remark: The full recipe format is documented in the file partman-auto-recipe.txt included in the 'debian-installer' package or available from D-I source repository. This also documents how to specify settings such as file system labels, volume group names and which physical devices to include in a volume group.
3) How to customize a preseed file for Ubuntu 16.04 (partman, apt)

# remaining global partman configuration options
d-i partman-partitioning/confirm_write_new_label boolean true
d-i partman/choose_partition select finish
d-i partman/confirm boolean true
d-i partman/confirm_nooverwrite boolean true

#d-i partman/mount_style select uuid

# Choose the repositories to add
apt-mirror-setup apt-setup/restricted boolean true
apt-mirror-setup apt-setup/universe boolean true
apt-mirror-setup apt-setup/multiverse boolean true
apt-mirror-setup apt-setup/backports boolean true
apt-mirror-setup apt-setup/partner boolean false

# Enable source repositories in APT?
apt-setup-udeb apt-setup/enable-source-repositories boolean true
3) How to customize a preseed file for Ubuntu 16.04 (late command)

# Software selection
d-i tasksel/first multiselect standard system utilities, OpenSSH server, Basic Ubuntu server

# Should kexec-tools handle reboots?
kexec-tools    kexec-tools/load_kexec    boolean false

# Should kdump-tools be enabled by default?
kdump-tools    kdump-tools/use_kdump    boolean true

# after installation, install some packages - use only one line!!
d-i preseed/late_command string in-target sed -i s/prohibit-password/yes/g /etc/ssh/sshd_config; apt-install screen vim build-essential multipath-tools lsscsi lvm2 scsitools kdump-tools

# Perform the automatic action after installation
d-i finish-install/reboot_in_progress note

# Uncomment for KVM only: Perform a poweroff instead of a reboot
#d-i debian-installer/exit/poweroff boolean true
4) Live demo of fully automated installation under z/VM
5) Live demo of fully automated installation under IBM KVM
6) Resource Page


Example parmfile “PARMFILE UBUAUTO”:

Example preseed file “preseed.cfg”:


Additional information regarding preseed: https://help.ubuntu.com/16.04/installation-guide/s390x/apbs02.html

Presenter's preseed files are available together with the presentation!
Questions?

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Thank you!