



Fully Automated Installation of Ubuntu Server 16.04 with preseed

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Agenda

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- 4) Live demo of fully automated installation under z/VM
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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):

```
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=xxxx network-console/password-again=xxxx
network-console/start=true

preseed/url=http://bistro/ubuntu/tdiehl/demo.dasd.preseed.conf
```



3) How to customize a preseed file for Ubuntu 16.04 (general)

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 (time, mirror)

```
# 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, passwd)

```
# 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$DoPat8RfhBbDyprjZ
HQYjpfyCG7LR/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, zfcf)

```
# 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 zfcf LUNs
##d-i s390-zfcf/zfcf string \
##0.0.3c44:0x500507630443c3e8:0x4033400c00000000,\
##0.0.3c84:0x500507630448c3e8:0x4033400c00000000,\
##0.0.3c44:0x500507630443c3e8:0x4033400d00000000,\
##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 zfcpl 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)

```
# 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)

```
# 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)

```
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

Overview “Installing Ubuntu 16.04”: <https://help.ubuntu.com/lts/installation-guide/index.html>

Ubuntu 16.04 Installation Guide for s390x: <https://help.ubuntu.com/lts/installation-guide/s390x/index.html>

Ubuntu Automated Installs with preseed (s390x): <https://wiki.ubuntu.com/S390X/InstallationGuide/AutomatedInstallsWithPreseed>

Ubuntu 16.04.1 CDs: <http://cdimage.ubuntu.com/releases/16.04.1/release/>

Ubuntu 16.04.1 installer files for s390x: <http://ports.ubuntu.com/dists/xenial-updates/main/installer-s390x/current/images/>

Example parmfile “PARMFILE UBUAUTO”:

<https://wiki.ubuntu.com/S390X/InstallationGuide/AutomatedInstallsWithPreseed?action=AttachFile&do=get&target=parmfile.ubuauto>

Example preseed file “preseed.cfg”:

<https://wiki.ubuntu.com/S390X/InstallationGuide/AutomatedInstallsWithPreseed?action=AttachFile&do=view&target=preseed.cfg>

Partman recipe documentation “partman-auto-recipe.txt”: <http://ftp.dc.volia.com/pub/debian/preseed/partman-auto-recipe.txt>

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!

