

Debian-Installer preseeding for non-interactive installs

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UKUUG Linux 2005

Swansea, 7 August 2005

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 - Debian Installer, pros & cons
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- 3 Hands-off auto-install system
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 - bootstrapwrap.udeb
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example
`μdebs`

`dashslashedash.udeb`
`bootstrapwrap.udeb`

preseeding
internals

- rsync/server based
 - Scales badly
 - Encourages timidity about upgrades
- mondo-rescue
 - Similar to the rsync approach
 - No live images – need rescue to format upgrades

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internals

- rsync/server based
 - Scales badly
 - Encourages timidity about upgrades
- mondo-rescue
 - Single disk recovery
 - No live image - no rescue for remote upgrades

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- rsync/server based
 - Scales badly
 - Encourages timidity about upgrades
- mondo-rescue

• similar faults to rsync

• no way to make a rescue image that can be used to install

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- rsync/server based
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 - similar faults to rsync
 - rather fragile – sensitive to kernel upgrades

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internals

- Kickstart

- not very granular

- not native to Debian GNU/Linux

- FAI – best of the lot, but

- needs a separate network, which is not the goal of a fully
planned fail to provide
network to maintain across many machines

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internals

- Kickstart

not very granular

not native to Debian GNU/Linux

- FAI – best of the lot, but

very complex, requires a lot of knowledge to set up
and maintain
not native to Debian GNU/Linux
not very granular

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internals

- Kickstart
 - not very granular
 - not native to Debian GNU/Linux
- FAI – best of the lot, but
 - needs a sane network, which some people (i.e. my clients) fail to provide
 - difficult to maintain across many sites

- Kickstart
 - not very granular
 - not native to Debian GNU/Linux
- FAI – best of the lot, but
 - needs a sane network, which some people (i.e. my clients) fail to provide
 - difficult to maintain across multiple sites

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internals

- The standard method for Debian installs
- likely to be relatively stable, and well supported
- relatively boot medium agnostic

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preseeding
internals

- Fairly restrictive environment
- Painful to debug
- Confusing until one is familiar with what works and what doesn't

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internals

- the minimum system to get the job done
- partially installed μ debs awaiting postinst
- menu-item-nos (FIXME) & dependencies

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- early/late commands
- preseed/file & preseed/url
- initrd_preseed
- *dashslashdash.udeb*

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- language prompts
- host/domain prompts
- partitioning (no LVM/RAID – without kludging)
- debconf-set of non-existent variables
- late reboots

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internals

- **DEBIAN_DEBUG** (doesn't work ;-)
- `/var/log` \rightarrow `/var/log/debian-installer`
- `sleep 10000 ; true`

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internals

- **Boot medium agnostic**
- modular (class based)
- mirrorable (no intelligence required in the server)
- not require constant rebuilding of boot media
(preferably capable of sitting quietly on official media)
- allow complete or partial auto-installs
(i.e. prompt for host name only)
- allow exclusion of base packages (i.e. exim4)

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- language/country prompts

→ tweak the standard initrd

- network/host/domain prompts

→ network boot, or use the network to fetch the installer

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- language/country prompts
 - tweak the standard initrd
- network/host/domain prompts
 - rely on DHCP for IP address at least

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/lib/debian-installer-startup.d/S35dashslashdash

```
#!/bin/sh
set -e

. /usr/share/debconf/confmodule
. /lib/preseed/preseed.sh

# Used by preseed functions.
preseed_fetch () {
    ln -s "$1" $2
}
preseed_relative () {
    if [ -z "${1##/*}" ]; then
        return 1
    else
        return 0
    fi
}

if [ -e /dashslashdash.cfg -a \
    \( -n "$(debconf-get -/-)" -o "$(debconf-get -/url)" \) ]; then

    preseed_location /dashslashdash.cfg

    # let's move the menus around so we can preseed the keyboard
    # over the network ;->
    sed -ie 's/installer-menu-item: 1[012]/installer-menu-item: 22/' \
        /var/lib/dpkg/status
fi
```

/dashslashdash.cfg

```
# initrd preseed from http://hands.com/d-i/dashslashdash.cfg
# [ look there for an annotated version of this file ]
#
# Copyright (c) 2005 Hands.com Ltd

d-i      debconf/priority      string critical
d-i      netcfg/choose_interface select auto
d-i      netcfg/get_hostname   string unassigned-hostname
d-i      netcfg/get_domain     string unassigned-domain
d-i      netcfg/wireless_wep    string
local    local/classes        string
local    local/di-url         string
d-i      preseed/include_command string (
    set -x;
    url="$(debconf-get -/url)";
    [ -z "$url" ] && url="http://hands.com/d-i";
    if [ -n "$(debconf-get preseed/url)" ];
    then echo dsd.cfg;
    else
        echo "x preseed/url x $url/dsd.cfg" > /tmp/preseed-url.set;
        debconf-set-selections /tmp/preseed-url.set;
    fi ) 2> /var/log/preseed-1_include_command.debug
```

the above `preseed/include_command` has been reformatted
for readability — in the actual file it is all on one line

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- Adds ability to include or exclude packages into the list of packages installed by base-installer.
- Is able to be downloaded in the `preseed/early_command` so doesn't need patching of the `initrd.gz`

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bootstrapwrap.postinst

```
#!/bin/sh
set -e

mv /usr/sbin/run-debootstrap /usr/sbin/run-debootstrap.real
ln -s /usr/sbin/bootstrapwraper /usr/sbin/run-debootstrap
exit 0
```

/usr/bin/bootstrapwrap

```
#!/bin/sh

log() {
    logger -t bootstrapwrap "$@"
}

# check that --in/exclude is not already set
for arg in "$@" ; do
    if expr "$arg" : "--[ie][nx]clude" > /dev/null ; then
        log "error: existing base in/ex-clude option set before bootstrapwrapper ($arg)"
        exit 1
    fi
done

if [ -s /base_include ]; then
    INCLUDES="--include=$(grep -v '^#' /base_include | tr '\n' , | sed 's/,,$//') "
fi

if [ -s /base_exclude ]; then
    EXCLUDES="--exclude=$(grep -v '^#' /base_exclude | tr '\n' , | sed 's/,,$//') "
fi

/usr/sbin/run-debootstrap.real ${INCLUDES} ${EXCLUDES} "$@"
```

/lib/preseed/preseed.sh

```
...
# Note: Needs a preseed_fetch function or command not provided by this
# file, as well as preseed_relative
preseed_location () {
    ...
    if ! preseed_fetch $location $tmp; then
        error retrieve_error "$location"
    fi

    db_set preseed/include ""
    db_set preseed/include_command ""
    if ! debconf-set-selections $tmp; then
        error load_error "$location"
    fi
    ...
    db_get preseed/include
    local include="$RET"
    db_get preseed/include_command
    [ -n "$RET" ] && include="$include $(eval $RET)" || true

    for location in $include; do
        # Support relative paths, just use path of last file.
        if preseed_relative "$location"; then
            # This works for urls too.
            location="$(dirname $last_location)/$location"
        fi
        if [ -n "$location" ]; then
            preseed_location "$location"
        fi
    done
}
```

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This talk can be found at

<http://hands.com/~phil/talks/>

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