Automatic Linux installation

Installation of Linux system is time consuming operation and administrator do same work on many systems. There are methods for making it easier.

Virtual packages

For installing same set of packages to more computers is very useful to make a virtual package. Virtual package is package without software, but with dependencies and pre/post install scripts. We can make package mydepartment-desktop and set dependency to openoffice and gimp and in post install script change a welcome message and change desktop image to company logo.

Disc cloning

If we need to install huge number of same computers (same hardware, same software configuration), the easiest way is to install one computer and then clone it. There are systems like SystemImager (distribution independent) which works as a network boot servers. SystemImager can clone disk image to a client booted over network and make individual post-install settings.

Configuration script for install program

This method use standard installation program of selected distribution, but installation settings are predefined by script and not interactive. The configuration file can by located on installation media or loaded from network.

Kickstart

Kickstart is a name for automatic installation script. This script is used mostly by anaconda installer (RedHat Enterprise Linux, CentOS, Fedora). It is very simple text file, focused on easy using.

- Format: plain text file
- Parts for configuration: partitioning, authentization, bootloader, additional drivers, firewall, language settings, network, raid, lvm, repository, selinux, services, xconfig, package selection
- Supports including files with part of configuration
- Possibility to use pre-install and post-install script
- Interactive mode - only prefilled from kickstart file
- Inst source: cdrom, harddrive, nfs, http, ftp, iscsi support
- Logging (local, remote)
- VNC connection to installation gui
- GUI configurator (system-config-kickstart)
- Automatic generated kickstart file after each install: /root/anaconda-ks.cfg
- Kernel parameter for start automatic installation: ks=http://path.to.file/ks.cfg

Autoyast

Autoyast is method for automatic configuration of Novell SuSE Linux installer (SuSE Linux Enterprise, OpenSuSE). It is a complex XML file and the method is focused on combining configuration files by classes and their priority and rules depending on detected hardware or mac address.

- Format: XML file
- Parts for configuration: software (add-on packages, registration, online update, package selection), hardware (keyboard layout, partitioning (evms,lvm,classic), printer), system:

(boot loader, power management, logging, services, country settings, service settings /etc/sysconfig), network settings, network services, security (firewall, selinux)
- Pre-install, post-install scripts
- GUI configurator (yast autoyast)
- Automatic generated autoyast file after each install: /root/autoinst.xml
- Kernel parameter for start automatic installation: autoyast=http://path.to.file/profile.xml

Debian preseeding

Debian installer (Debian 4 etch based distributions) accept text file with predefined parameters. It is possible to configure everything what is in interactive installation. If installator find it in configuration file, it stop detecting or asking for answer and use predefined values. It is also possible to preseed hardware configuration and stop detecting it and configure packages.

- Format: text file

- Parts for configuration: localization, network configuration, mirror settings, partitioning, account settings, package selections, boot loader, x configuration, specific package configuration

- Pre-install and post-install scripts

- There is now automatic generated preseed file after installation. We can generate it: debconf-get-selections   installer > preseed.file ; debconf-get-selections >> preseed.file

- Kernel parameter for start automatic installation: auto url=http://path.to.file/preseed.file