

Features

- Class concept for configuration and installation
 - easy to handle and expand
 - a class specifies which template and configuration script is used
 - the configuration for a host is built by adding classes
 - classes can be generated dynamically during the installation process
- **Scalable method for installing hundreds of install clients**
- The installation kernel can be version 2.4 and 2.6
- Remote access via ssh during installation process
- *Shell, perl, expect* and *cfengine* script support for configuration
- FAI is also a rescue and disaster recovery system
- FAI runs on i386, AMD64, PowerPC, Alpha, SPARC and IA64 architecture
- Add your own functions easily or change the default behaviour via hooks
- Central configuration repository for all install clients
- Special FAI daemon for network wide monitoring of the installation
- FAI-CD performs the installation without an install server
- Update the running system without new installation (softupdate)
- **Brand New: GUI for FAI using GOsa**
 - GOsa provides a graphical interface for FAI
 - GOsa is a PHP based administration tool for managing systems in LDAP
 - FAI config space is completely put into LDAP
 - Config space can be managed using GOsa

Availability

- FAI homepage:
<http://www.informatik.uni-koeln.de/fai>
- Open source under GPL license
- CVS tree at <http://cvs.debian.org/fai>
- Active mailing list: linux-fai@uni-koeln.de
- Get the Debian package from the FAI homepage or from <http://sf.net/projects/fai/>
- Commercial support available

Some FAI users

- Lycos Europe, 850 hosts
- Host Europe, 250 hosts
- Deutsches Elektronen-Synchrotron, 60+ hosts
- MIT Computer science research lab, 200 hosts
- France Telecom, TRANSPAC, France, 300 hosts
- Electricit de France (EDF), France, 200 hosts
- Danmarks Meteorologiske Institut, 85+ hosts
- IFW-Dresden, Germany, 100+ hosts
- Physics department, FU Berlin, 139+ hosts
- The Welcome Trust Sanger Institute, 540+
- Brown University, Computer Science, USA, 300+
- fms-computer.com, Germany, 200-300 hosts
- Linux Information Systems AG, 100 hosts
- Albert Einstein Institute, Germany, 200+ hosts
- High Performance Computing Center North, HPC2N, two clusters with a total of 310+ hosts
- Max Planck Institute for Meteorology, 60+ hosts
- Computer-aided chemistry, ETH Zurich, 60 hosts
- and many more

FAI

Fully Automatic Installation



debian

Plan your installation,
and FAI installs your plan.

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What is FAI?

- FAI is an automated system to install Linux
- FAI does everything a system administrator has to do, before a user can log in to a brand new computer
- A set of scripts and config files for a fully automated installation
- It can install and configure the whole OS and all software packages

Why FAI?

- Manual installation takes a long time
- Repeating work is boring and leads to errors
- Configure FAI once & use it forever
- One command – hundreds of installations
- Quick Linux deployment in only a few minutes
- Easy to handle installation for Beowulf clusters
- Quick and easy deployment of Xen domains
- **Easy to perform a large Linux rollout**

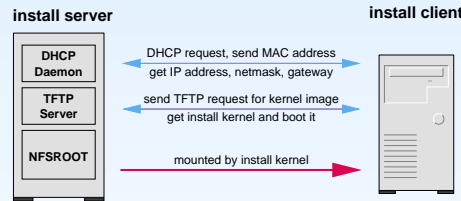
Installation times

CPU	MHz	RAM	software	time
Pentium 4	2800	1024MB	948 MB	5 min
Athlon XP	1433	896MB	1 GB	6 min
AMD-K7	500	320MB	780 MB	12 min
Pentium III	850	256MB	820 MB	10 min
Pentium III	850	256MB	180 MB	3 min
PentiumPro	200	128MB	800 MB	28 min

The three steps of FAI

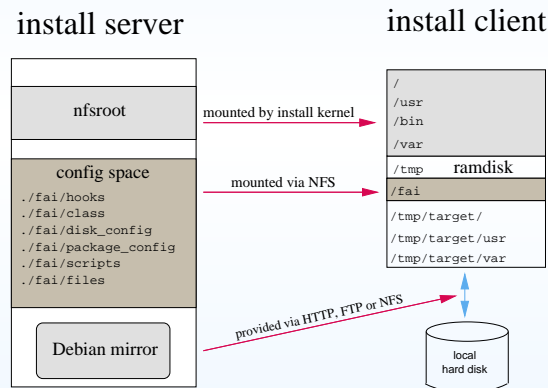
1 - Boot host

Boot via network card, CD-ROM or floppy



Now a complete Linux OS is running without using local hard disks

2 - Get configuration data



By default, the config space is mounted via NFS. But it can also be obtained via CVS or HTTP.

3 - Run installation

- partition local hard disks and create filesystems
- install software using apt-get command
- configure installed OS and additional software
- save log files to install server
- reboot new system

Requirements

A computer called install client:

- with network interface card
- with local hard disk
- No floppy disk, CD-ROM, keyboard or graphic card is needed

DHCP server: Install client receives boot and configuration data from this server.

TFTP server: Used for transferring the kernel to the clients when booting from network card with a boot PROM.

Client nfsroot: A directory which contains the whole file system for an install client during installation. All clients share the same nfsroot. This consumes only constant disk space.

Debian mirror: Access to a mirror is needed. NFS, FTP and HTTP access is supported. A local partial mirror needs about 10 GBytes disk space.

Install kernel: A kernel image that supports the network card and mounts its root filesystem via NFS is provided by the package fai-kernels.

Configuration space: A directory which contains the configuration data.

These services may be distributed across several computers.