

Fully Automatic Installation



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What is FAI ?

- System for unattended Linux installation
- Installs and configures the whole OS and all additional software
- Centralized configuration management and administration
- Scalable and flexible rollout method for Linux migration
- **Linux deployment in only a few minutes**

Why use FAI ?

- Manual installation takes hours, FAI just minutes
- Recurring tasks are boring and lead to errors
- You need an infrastructure management
- You want to save time

Features

- Installs Debian GNU/Linux, Ubuntu, CentOS, SuSe, Scientific Linux,
- Useful for KVM, XEN and Vserver host installations
- **Class concept** supports heterogeneous configuration and hardware
- Update running system without installation (e.g. daily maintenance)
- **Central configuration repository** for all install clients
- Advanced disaster recovery system
- Reproducible installation
- **Automatic documentation** in central repository
- Automated hardware inventory
- Hooks can extend or customize the normal behavior
- **Full remote control** via ssh during installation process
- FAI runs on i386, AMD64, PowerPC, SPARC and IBM z10 mainframe
- Fast automatic installation for Beowulf clusters
- **Several GUI for FAI** using GOsa, openQRM, DC²

Availability

- Homepage: <http://fai-project.org>
- Open source under GPL license
- Detailed documentation, mailing lists, IRC channel
- Official Debian packages, ISO images of demo CD
- Commercial support available

FAI at work



The FAI monitor daemon

FAI

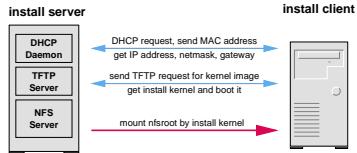
Plan your installation,
and FAI installs your plan.



The three steps of FAI

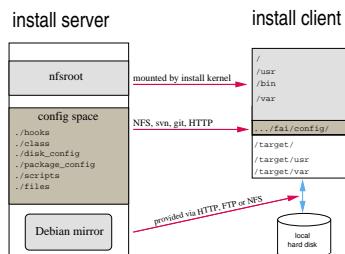
1 - Boot host

- Boot via network card (PXE), CD-ROM or floppy



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

2 - Get configuration data



3 - Run installation

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

Examples of installation times

CPU + RAM	software	time
Core i7, 3.2 GHz, 6GB	4.3 GB	7 min
Core i7, 3.2 GHz, 6GB	471 MB	77 s
Core2duo, 2 GHz, 2GB	4.3 GB	17 min
Core2duo, 2 GHz, 2GB	471 MB	165 s
Pentium 4, 3 GHz, 1GB	2200 MB	10 min
Pentium 4, 3 GHz, 1GB	1100 MB	6 min
Pentium 4, 3 GHz, 1GB	300 MB	105 s
Athlon 800 MHz, 512MB	2200 MB	32 min
Athlon 800 MHz, 512MB	300 MB	4 min

FAI users

- Anonymous, financial industry, 32.000 hosts
- LVM insurance, 10.000 hosts
- City of Munich, 14.800+
- StayFriends, 700+ hosts
- Albert Einstein Institute, 1725 hosts
- Zivit, 260 hosts on two IBM z10 EC mainframes
- Archive.org, 200+ hosts
- XING AG, 300-400 hosts
- Opera Software, ~300 hosts
- Stanford University, 450 hosts
- MIT Computer science research lab, 200 hosts
- The Wellcome Trust Sanger Institute, 540 hosts
- Mobile.de, ~600 hosts
- Thomas Krenn AG, 500 per month
- Electricité de France (EDF), 1500 hosts
- ETH Zurich, systems group, ~300 hosts
- Trinity Centre for High Performance Computing, 356 opterons, 80 xeons
- For more see <http://fai-project.org/reports/>



The Centibots Project
100 autonomous robots
funded by the DARPA
SRI International Artificial Intelligence Center, USA



The MERLIN cluster
180 Dual AMD MP2200
1 GB RAM per node
Albert Einstein Institute, Golm, Germany



IITAC cluster, top500.org
356 opterons, 80 xeons
Trinity Centre for High Performance Computing, University of Dublin, Ireland



Computer Science lab
308 workstations, 127 servers
University of West Bohemia
Czech Republic