Features

- Installs Debian GNU/Linux, Ubuntu, CentOS, SuSe, Scientific Linux Cern, ....
- **Class concept** supports heterogeneous configuration and hardware
- Fast creation of disk images for VM and the cloud
- FAI-CD performs the installation without an install server
- Autodiscover of the install server
- Reproducible installation
- **Automatic documentation** in central repository
- Advanced **disaster recovery** system
- Automated hardware inventory
- **Full remote control** via ssh during installation process
- Shell, perl, expect and cfengine script support for customization
- The FAI monitor shows an overview of the installation progress

Availability

- Homepage: [http://fai-project.org](http://fai-project.org)
- Open source under GPL-2+ license
- Detailed documentation, mailing lists, IRC channel
- Official Debian packages, ISO images of FAI CD
- Commercial support available

Some FAI users

- Anonymous, financial industry, 32,000 hosts
- LVM insurance, 10,000 hosts
- StayFriends, 700+ hosts
- City of Munich, 16,000 hosts
- XING AG, 300-400 hosts
- Albert Einstein Institute, 1,725 hosts
- Zivit, 260 hosts on two IBM z10 EC mainframes
- Archive.org, 1,200 hosts + 800 KVM hosts
- Opera Software, ~300 hosts
- Stanford University, 450 hosts
- MIT Computer science research lab, 200 hosts
- The Welcome Trust Sanger Institute, 540 hosts
- Deutsches Elektronen-Synchrotron, 273 hosts
- Mobile.de, ~600 hosts
- Electricité de France (EDF), 1,500 hosts
- Linux Information Systems AG, 1,000+ hosts
- ETH Zurich, systems group, ~300 hosts
- Umeå university, 70 hosts
- Trinity Centre for High Performance Computing, 356 opterons, 80 xeon
- High Performance Computing Center North, HPC2N, two clusters with a total of 310 hosts
- For more see [http://fai-project.org/reports/](http://fai-project.org/reports/)

GUI using GOsa

- GOsa provides a web interface for FAI’s config space in LDAP
- The city of Munich is using the combination

**openQRM** has a FAI plugin for cloud deployments

**Qluster** is a HPC Linux OS, using FAI as installer

FAI

Fully Automatic Installation

- **debian**
- **ubuntu**
- **CentOS**
- **Scientific Linux**

Plan your installation, and FAI installs your plan.

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**What is FAI?**
- System for unattended Linux installation
- Installs and configures the whole OS and all additional software
- Useful for XEN, KVM and Vserver host installations
- 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

**Installation times**

<table>
<thead>
<tr>
<th>CPU + RAM</th>
<th>software</th>
<th>time</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5-2690v2, 3.0 GHz, SSD</td>
<td>5.4 GB</td>
<td>7 min</td>
</tr>
<tr>
<td>i7-3770T, 2.50 GHz, SSD</td>
<td>6.0 GB</td>
<td>8.5 min</td>
</tr>
<tr>
<td>Core i7, 3.2 GHz, 6GB</td>
<td>4.3 GB</td>
<td>7 min</td>
</tr>
<tr>
<td>Core i7, 3.2 GHz, 6GB</td>
<td>471 MB</td>
<td>77 sec</td>
</tr>
<tr>
<td>Core2duo, 2 GHz, 2GB</td>
<td>4.3 GB</td>
<td>17 min</td>
</tr>
<tr>
<td>Core2duo, 2 GHz, 2GB</td>
<td>471 MB</td>
<td>165 sec</td>
</tr>
<tr>
<td>Pentium 4, 3 GHz, 1GB</td>
<td>2200 MB</td>
<td>10 min</td>
</tr>
<tr>
<td>Pentium 4, 3 GHz, 1GB</td>
<td>1100 MB</td>
<td>6 min</td>
</tr>
<tr>
<td>Pentium 4, 3 GHz, 1GB</td>
<td>300 MB</td>
<td>105 sec</td>
</tr>
<tr>
<td>Disk Image, Xfce desktop</td>
<td>1.1 GB</td>
<td>95 sec</td>
</tr>
<tr>
<td>Disk Image, Ubuntu 16.04</td>
<td>3.3 GB</td>
<td>5 min</td>
</tr>
<tr>
<td>Disk Image</td>
<td>630 MB</td>
<td>42 sec</td>
</tr>
</tbody>
</table>

**The three steps of FAI**

1. **Boot host**
   - Boot via network card (PXE), CD-ROM or USB stick
   - DHCP request, send MAC address
   - get IP address, netmask, gateway
   - send TFTP request for kernel image
   - send TFTP request for initrd and boot it
   - DHCP server
   - TFTP
   - mount nfsroot by install kernel

2. **Get configuration data**
   - Install server
   - Config space
   - /hooks
   - /target
   - Debian mirror
   - nfsroot
   - mounted by kernel

3. **Run installation**
   - partition local hard disks and create filesystems
   - install software using package manager (apt, yum, yast and more)
   - configure installed OS and additional software
   - save log files to install server
   - reboot new system

**Requirements**
- DHCP, TFTP, NFS server: Install client receives network and configuration data from this servers.
- **Client nfsroot**: A directory which contains the whole file system for an install client during installation. All clients share the same nfsroot.
- **Configuration space**: A directory tree which contains the configuration data. These are just small text files in a certain directory structure.
- **Debian mirror**: Access to a package repository via HTTP, FTP and NFS is supported as well as a proxy. These services may be spread across several computers.

**Screenshots**
- Autodiscover the FAI server
- Selecting a FAI profile from the menu