

System Management with FAI and GOsa²

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Michael Banck

mbanck@debian.org

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Outline

1 FAI



FAI

- Fully Automatic Installation
- One of Debian's Success Stories (eats Kickstarts for lunch)
- Sysadmin-centric, perl, shell, cfengine
- Plan your installation, and FAI installs your plan
- Implemented in Perl
- Rock solid



FAI (in detail)

- Client-specific PXE-config determines action (reinstall/localboot)
- Clients boot installation kernel/initramfs via PXEboot
- Root file system booted via NFS
- Applicable classes determined
- Configuration space determined
- Installation gets executed
- Client-specific PXE-config set to localboot
- Post-install management via softupdate mechanism



FAI classes

- Define the specific way a client gets installed
- Hardware-specific, feature-specific, client-purpose specific
- I386, AMD64, GRUB, GRUB-PC, GNOME, ...
- List of classes determined by evaluation of scripts
- Base classes:

```
#!/bin/bash
uname -s | tr '[:lower:]' '[:upper:]'
[ -x "`which dpkg`" ] && dpkg --print-architecture | tr a-z A-Z
[ -f /etc/RUNNING_FROM_FAICD ] && echo "FAICD"
```

- Host classes:

```
#!/bin/bash
case $HOSTNAME in
    demohost)
        echo "FAIBASE DHCPC DEMO" ;;
    *)
        echo "FAIBASE DHCPC" ;;
esac
(ifclass I386 || ifclass AMD64) && echo GRUB
```



FAI configuration space

- `class/$CLASS.var`
 - ▶ To be used by scripts, hooks, etc. below
- `disk_config/$CLASS`
 - ▶ Mount points, file system types, file system size ranges, options
 - ▶ Optionally preserve existing partitions
- `debconf/$CLASS`
 - ▶ Preseeding of variables, `debconf-set-selections` format
- `package_config/$CLASS`
 - ▶ Packages to install or (optionally) remove
 - ▶ Optionally other-classes
- `files/some/dir/file/$CLASS`
 - ▶ Copied into installed system via `fcopy` by scripts below
 - ▶ Optional pre/postinst scripts run before/afterwards
- `scripts/$CLASS/nn-$script`
 - ▶ Configuring/customizing the installation
 - ▶ Using the above defined variables and installed files
- `hooks/$hook.$CLASS`
 - ▶ Run at specific points during the installation
 - ▶ `instsoft`, `softupdate`, `savelog`, ...



GOsa²

- Configuration/Management System
 - ▶ Backend: LDAP
 - ▶ Frontend: Web
- User/Groups/Departments, Services
- Terminal Server/Desktop integration
- Plugin Infrastructure

addressbook connectivity dhcp dns fai gofax gofon
goto kolab ldapmanager log mail mit-krb5 nagios
netatalk opengroupware openexchange opsi phpgw
phpscheduleit pptp pureftpd rolemanagement rsyslog
samba scalix squid ssh sudo systems uw-imap webdav

- Can be used for system management
- Implemented in PHP
- Sometimes flakey



GOsa²-FAI

- Edit classes in LDAP (only)
- Assign repository/FAI profile to client
- Set action (wakeup, reinstall, softupdate) for clients
- Monitor installation progress
- Mass install a list of clients (via MAC-address import or through system list)
- View FAI installation logs



GOsa²-FAI (in detail)

- TFTP service supervised by `fts`
 - ▶ Queries LDAP for client `FAIstate`
 - ▶ Dynamically writes out PXE-config via FUSE file system
- Client-specific PXE-config determines action (reinstall/localboot)
- Clients boot installation kernel/initramfs via PXEboot
- Root file system booted via NFS
- Configuration source (`FAI_CONFIG_SRC`) is `gosa`
 - ▶ `/usr/lib/fai/get-config-dir-gosa` script
 - ▶ Starts `gosa-si-client`
 - ▶ Runs `ldap2fai`
- Configuration space determined by `ldap2fai`
 - ▶ Queries LDAP for client classes/configuration space
 - ▶ Default GOsa/FAI hooks override some parts of FAI
- Installation gets executed
 - ▶ `goto-fai-progress` sends progress to server via `gosa-si`
- FAIstate set to localboot



Setup of GOsa²-FAI

```
apt-get install gosa-plugin-fai
```



Setup of GOsa²-FAI

```
apt-get install gosa-plugin-fai
```

- Not so much



Setup of GOsa²-FAI

```
apt-get install gosa-plugin-fai
```

- Not so much
- Mark Pavlichuk has been creating install scripts

```
https://oss.gonicus.de/repositories/gosa-contrib/  
squeeze-install-scripts/trunk/
```

- Modify PHP config, `slapd.conf`, others
- Compile unavailable modules/packages from subversion



TODO

- Desktop Integration
- opsi
- Finish porting FAI's `simple` example
- `fai2ldap?`
- Get gosa-si into squeeze
- Get the rest into squeeze
- Integrate/file bugs, patches

