

# LiMux



Landeshauptstadt  
München

## ■ LiMux – Debian desktops conquer the city of Munich

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# DebConf 2007



**LiMux**  
Die IT-Evolution

# Agenda

## How LiMux got started

- Municipal IT in Munich
- The LiMux clients components and its infrastructure
- Office, municipal applications and training
- Current status and upcoming milestones

## The install demo

## The login demo

## **Project approval in 2003, real lift-off in 2005**

**(1) Free software (Open Source) for the desktop operating system and office software**

**(2) New applications should be developed OS independent, e.g. web interfaces, Java, ...**

# Munichs' IT administration – max'd heterogeneity

## Technical

- ~ 14,000 PCs, 16,000 users
- MS Windows NT 4 and Office 97/2000, some Win2k + Office 2k
- ~ 170 special municipal applications
- ~ 300 „common“ software products
- Various file services (SMB, NCP) and vendors (PC Netlink, ASU, Samba, Novell)
- Various products for system and config management and software distribution
- Various MS Office based solutions for template and boilerplate management

## Organizational

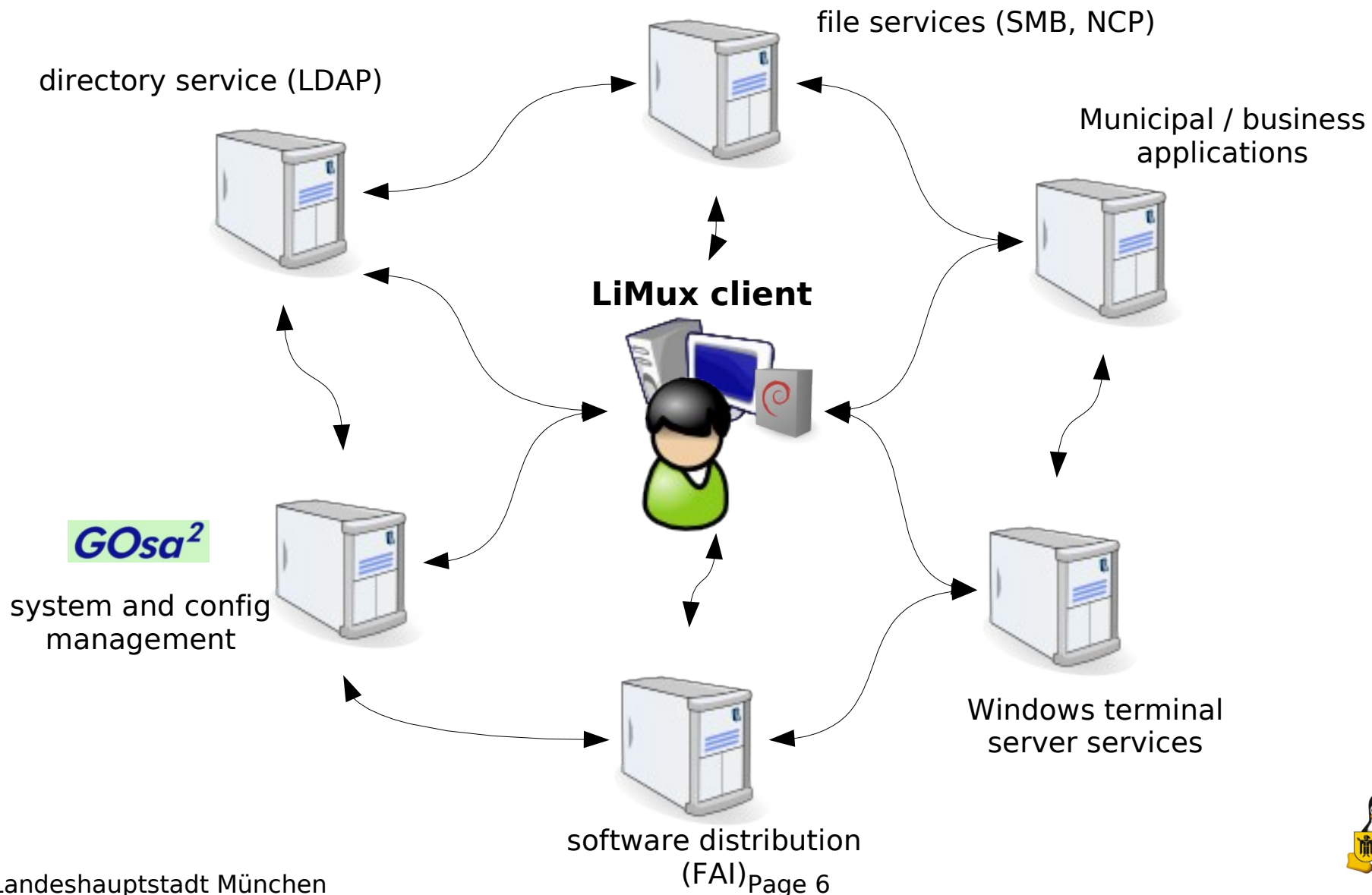
- 12 departments with different infrastructure
- 17 orga. units running their own IT
- 350 overall IT staff
- 120 LiMux project members, most part-time for coordination and information management
- Centralized IT strategy management (recommendations) and hardware procurement
- Decentralized independent IT operation using their own support concepts

## LiMux 1.x main components (cur. 1.1.1)

- Debian GNU/Linux sarge
- K Desktop Environment (KDE 3.5)
- X.org X-Server (6.9 – for better i810 support)
- OpenOffice 2.x (packaged with additional patches, e.g. no registration dialog)
- Thunderbird 1.5.x
- Firefox 1.5.x
- udev + Kernel 2.6.17 + various patches (Debian SVN, network drivers from vendors) - same kernel for FAI, clients and servers + NFSv4 nfsroot
- FAI 2.10.x + Gosa<sup>2</sup> 2.5.x

## LiMux 2.x based on Etch – ETA: end of 2007

# Infrastructure used by the clients



# Office, application migration and user training

## Office

- About 13,000 templates, macros and forms in use – do cleanup and migration
- ▶ **Wollmux – Java-based document creation system using OOo-UNO**, includes: validating form editor, text module system, LDAP connectivity (mainly to pre-fill letter heads), special municipal note system with advanced printing support, assistance for paper based workflows, very flexible configuration, ... „eierlegende Wollmilchsau“ (all purpose program)

## Municipal application migration

- Using WINE, vmware-images and terminal servers

## Training

- Many LiMux courses + extensive web-based e-learning portal

# Migration status

## Organisation

- Voluntary people using LiMux in three departments
- Two ways of migration:
  - Soft: OpenOffice.org, Firefox and Thunderbird on Win2k
  - Direct: LiMux clients
- Uncritical users first
- Release „Basisclient 1.0“ was completed in September 2006
- E-learning platform is online since December 2006

## Up to date (March 2007)

- 330 workstation computer are converted to Linux
- 200 additional test workstations are installed and administrated
- 1300 employees trained in open source software
- 1000 workstations with open source software under Windows
- 80 administrators trained for LiMux
- Client usability certified by TÜViT
- European e-learning award (eureleA 2007)

**In 2007: migrate 2000 workstations to Linux**

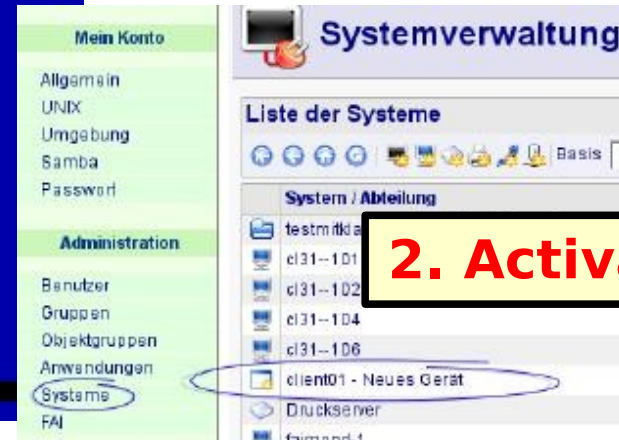




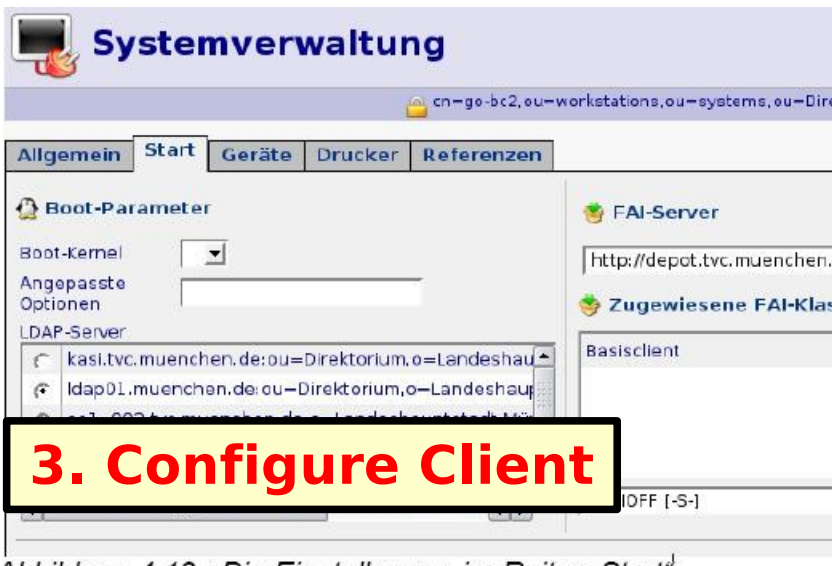
# Install Demo

## 1. Detected new Client

Information  
Warte auf Aktivierung durch den Systemadministrator.



## 2. Activate new Client

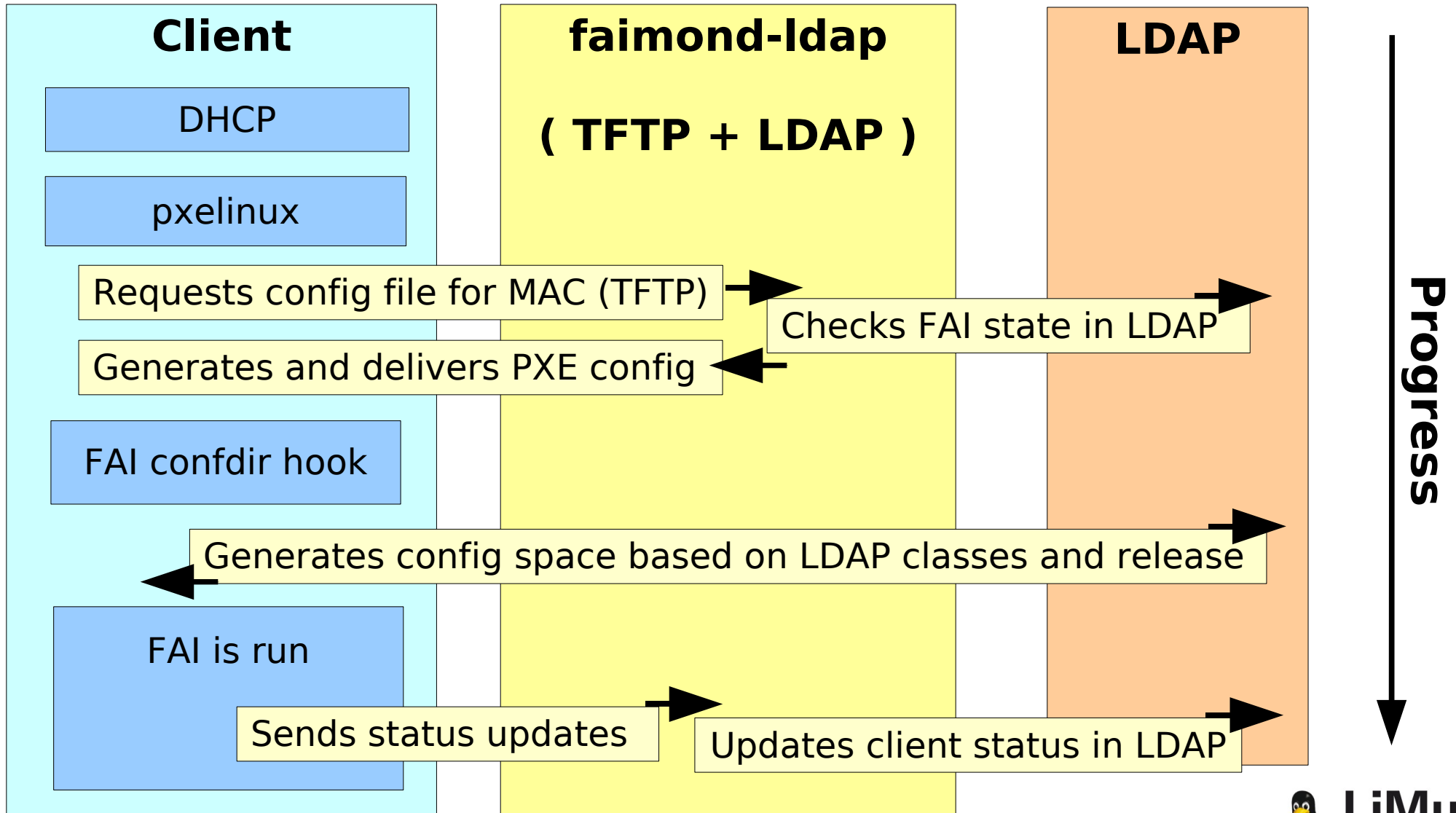


## 3. Configure Client



## 4. Install progress

## LiMux install process (pre FAI)



## Main changes for install

- MAC based FAI logging
- Initramfs-support for FAI NFS root + fai-chboot
- NFSv4 support for initramfs-tools
- LDAP FAI monitoring daemon including TFTP
  - Dynamically creates PXElinux config files from LDAP config
- Dump LDAP objects to create a FAI config space (ldap2fai)
- FAI progress bar

## Main use-cases (by FAI classes)

### ■ Basisclient

(Main distributed client – contains all common software)

### ■ AdminPC

(= Basisclient + various additional Admin-Tools)

### ■ Offline-LDAP

(local cached LDAP via running a local OpenLDAP – caches all required objects from the last users login)

### ■ Telecommuter

(= Basisclient + Offline-LDAP + DSL config)

### ■ Depotserver

(= LiMux install server, automatically replicating the required SW repositories)

# GOsa<sup>2</sup> – system and config management

- „Just“ an open-source PHP-based LDAP-Management-Tool
  
- Users (Posix, KDE-Profiles, roaming profiles, scripts, ...)
- Groups (see Users + KDE Menus, Application pre-config)
- Applications (icon placement, config scripts, application options)
- Systems (Terminals, Printers, ...)
  - Workstations (HW, SW)
  - Servers (SW-Repo, LDAP, File-Services, ...)
- FAI (Profiles, Templates, Scripts, Hooks, Partitioning)
- Object groups (system group management)
  
- Much more plugins available but not used by us (<http://www.gosa-project.org/>)
  - Asterisk (VoIP), PureFTP, Postfix, IMAP (sieve), Fax, ...

# LiMux Client Login (Demo)



# LiMux client startup (goto-agents)

## ■ Boot-process (per system)

- Generate LDAP base configuration
- X configuration
- APT configuration (sources.list)
- syslog, timeserver

## ■ After user login (per user)

- Create LDAP cache (e.g. for laptops – no net or tele-cummuter)
- Configure printers (CUPS)
- Generate UDEV rules for allowed USB storage devices
- Mount SMB / NCP / CIFS shares
- Install KDE kiosk profile
- Sync roaming profile
- Run assigned user login scripts
- Configure applications, KDE menu, desktop and panel

## **Further information...**

**Web:        [www.muenchen.de/limux](http://www.muenchen.de/limux)**

**E-Mail:    [limux@muenchen.de](mailto:limux@muenchen.de)**

**Devblog: [planetlimux.org](http://planetlimux.org)**

**Any questions?**