

Centralized Desktop Deployment and Management

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■ Presentation overview

- Introduction of university IT environment
- Services and technologies with Demos
- Tour around computer studyroom
- Discussion



■ **System Administration Dpt.**

- **Primary focus on MS Windows technologies**
- **182 MS Windows servers, 2228 desktops**
- **Centralized desktop management**
- **MS 0365 – university workgroup solution**
- **Support services**



■ Central Management Service

- **More than 40 000 active students, 5000 employees**
- **Dozens of localities such as faculties, institutes, departments, offices etc.**
- **Goals:**
 - transparent and straightforward working environment for all students and employees
 - unify the IT environment
 - allow access to the centralized IT resources
 - define administration rights and rules
 - provide all practices and technologies to the interested localities

■ **Services provided**

- **management of authentication via UCO and secondary password**
- **management, monitoring and backup of servers**
- **management of workstations' unattended installations**
- **management of the basic set of software**
- **local distribution of hotfixes and updates for Microsoft products**
- **local distribution of updates for Eset anti-virus products**

■ **Services provided**

- **availability of printers**
- **management of student profiles**
- **management of guest profiles**
- **troubleshooting – solution of serious and critical software problems on workstations**
- **general consultations concerning the area of IT**

■ Terms of Service

- the local administration departments are responsible for:
 - management of the extended set of software, which is not distributed
 - centrally reaction to the UCN administrators' requests
 - reporting of occurring problems to the UCN administrators
 - management of the network infrastructure of local workstations and servers
 - complaints related to the locality's hardware

■ So what you really get...

- Unattended installation of workstations (including drivers, no OS images)
- Regular update of centrally provided OS
- Regular update of centrally provided software (around 25 standard + 100 specialized)
- Monitoring
- Connection to the centralized printing systems = uniform payment using an ISIC card (via SUPO account) and standardized printing environment
- Special modes for exams
- And more... later in technical solutions

■ Main benefits

- Higher security and uniformity of provided services
- Constantly up-to-date environment without the need for any user interaction
- Unified environment of the MS Windows OS
- Standardized set of installed software
- Centralized printing
- Unified logon



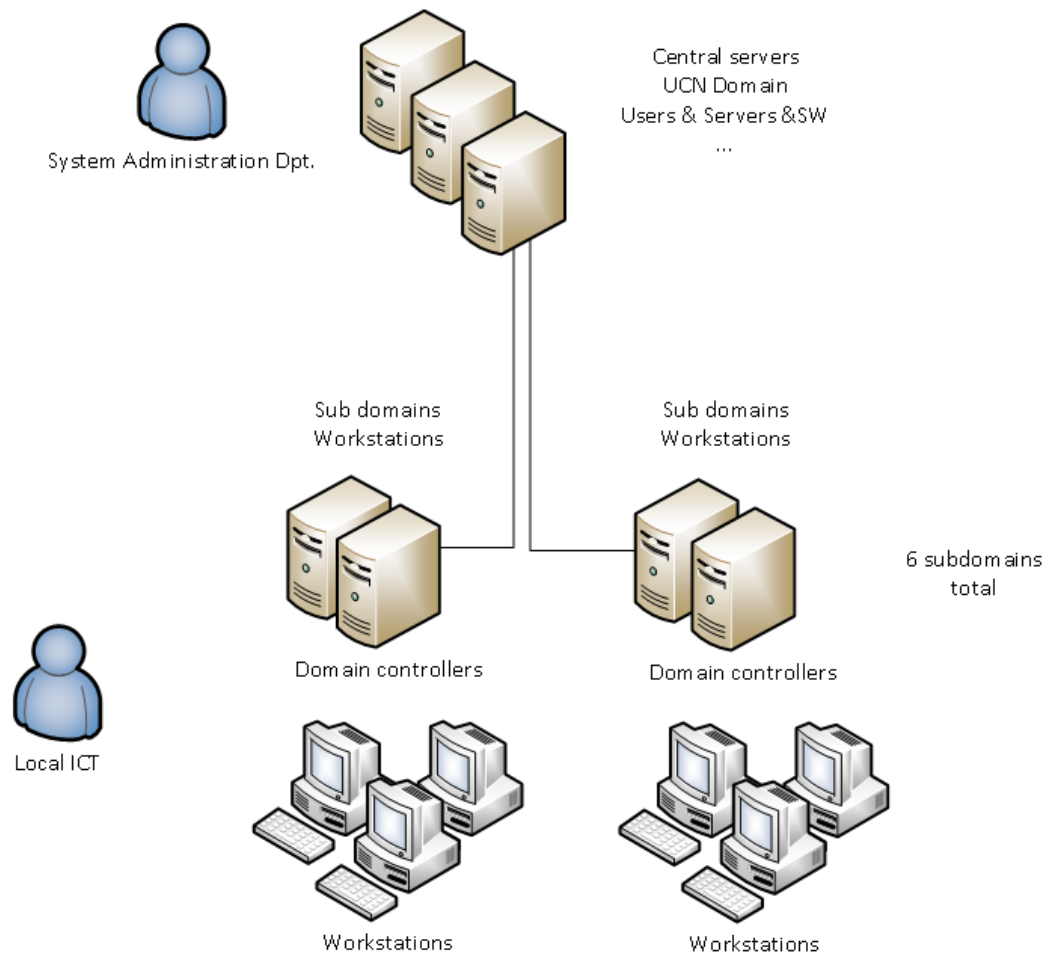
■ Localities

- **Currently deployed over a half of the organization units of MU**
 - **The rector's office**
 - **Institute of Computer Science**
 - **Faculty of Science**
 - **Faculty of Law**
 - **Faculty of Arts**
 - **Faculty of Education**
 - **Faculty of Social Studies**
 - **Technology Transfer Office**
 - **University Campus Bohunice**
 - **Faculty of Medicine localities**
 - **University Computer Centre**
 - **University Centre Telč**
 - **Accommodation and Catering Services of MU**

■ Division of localities

- **Study Rooms, Classrooms**
 - **roaming profiles, access to shared storages and printing devices, basic set of software and selected software related to their subject of study**
- **Employees' workstations**
 - **access to the SW associated with their work requirements (economic software, asset management, etc.).**
 - **local storagespace, access to central storages, printing devices, remote desktops, network backup storage, local profiles**

■ University central network

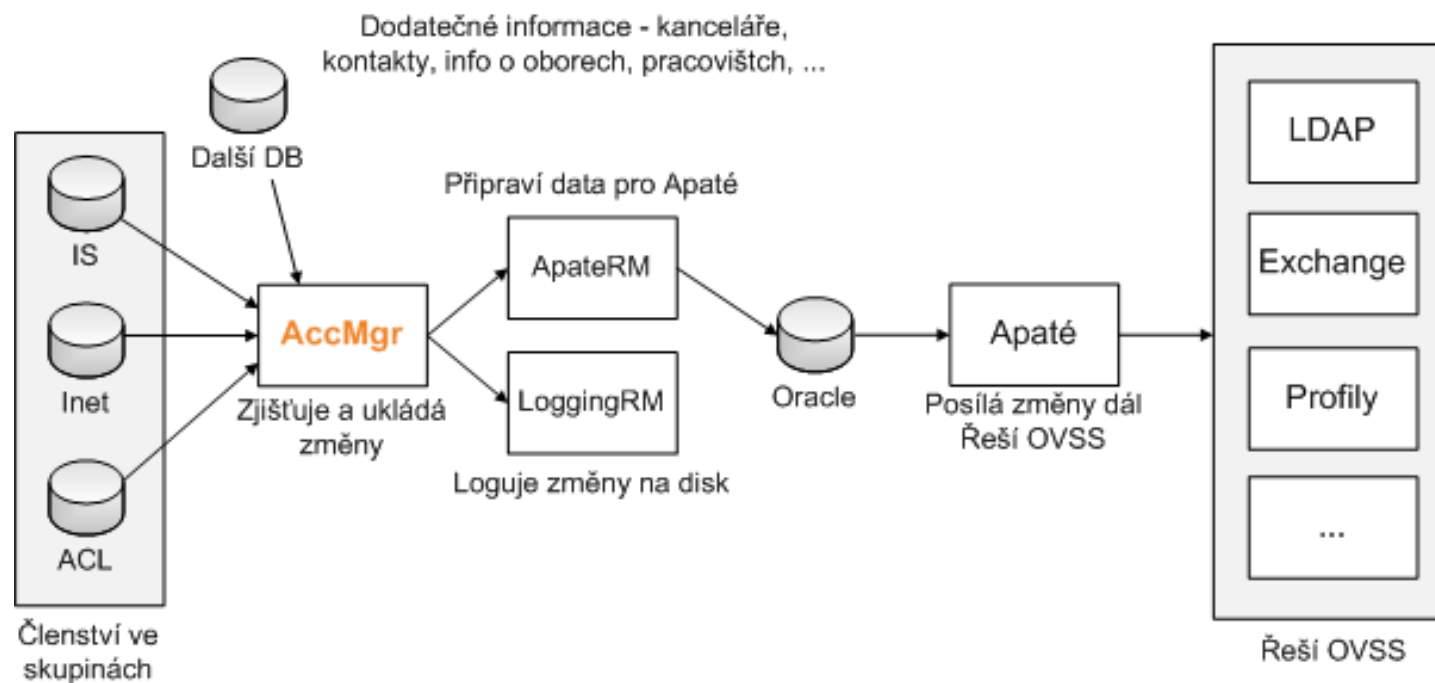




■ University central network

- **Windows forest with central domain ucn.muni.com**
 - **All user accounts (students, employees, guest, other)**
 - **Provides authentication to multiple systems:
Workstations, terminal servers, network data storages ,VPN, web applications via shibboleth**
 - **Servers**
 - **Standard SW GPOs**
- **Multiple subdomains**
 - **Workstations**
 - **Printservers**

Identity Management



■ Technical solutions

- Unattended Installation of operating systems
- Software Distribution
- User Profile Administration
- Remote Wake-up and Shutdown
- Examination Modes
- Monitoring of Localities
- Server backup

■ Unattended OS Installation

- opsi (open pc server integration)
- Windows 7 support (W10 in plan)
- Drivers included in installation
- Up to date images
- Computer deploy 15min -1hour
- Permission management

■ Unattended OS Installation

- Automatic connection to domain
- Out of domain installations
- 1 a 2 disk part installations
- Memtest, diskcleanup
- Simple solution for nontrivial bugs/infections
- Demo

■ Software Distribution

- Standardized set of software
- Extended set SW
- Software deployed through Group Policies
- Software is installed after PC restart
- Regular updates twice a month

■ User Profiles

- **Roaming profiles for students**
 - 1GB of storage per profile
 - Clustered storage
 - 1GB not enough? -> cloud services (o365/google)
- **Local profiles for employees**
 - Automatically connected network storage
 - Local profiles stored on secondary partition

Remote Wake-up and Shutdown

- Centrally controlled
- Scheduled
- Computers are waked and updated at night
- No waiting for updates
- Remote reinstallation of study rooms

■ Examination Modes

- Mainly used in study rooms
- Two modes:
 - Questionnaire
 - Examination
- Windows app
- Demo

■ Server Backup

- **Actual state**
 - **Backup system based on Powershell scripts and WB admin**
 - **Simple setup, basic scheduling**
 - **Regular over night backups**
 - **Nagios probe checking**
 - **Simple webpage check**

■ Server Backup

- **Planned state**
 - **Shrodingers backup**
 - **Dual backup of VM machines (Vmware + WBadmin)**
 - **Demo**

■ Monitoring of localities

- Application Frank
- Monitoring for information and security purposes
- Computer state
- Information about logged users
- Information presented in real-time
- History is logged
- Demo

■ Remote connection

Strong tools for troubleshooting

Windows remote desktop

Team Viewer

- **App distributed through ICS web – remote connection to user session**
- **TeamViewer installed as a service – remote connection resistant to user logoff**

■ Active Directory DEMO





University Computer Study Rooms

- Allows students access to university resources
- Workstations, connection for laptops, WiFi
- CPS open 24/7
- Print services
- Often used for presentations, workshops and exams

- Tour

Thank you for your attention.

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