

Centralized Desktop Deployment and Management

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■ Outline

- **System Administration Dpt.**
- **Central Management Service**
 - **Description**
 - **Identity Management**
 - **Technical solutions**
 - **Terms of services**
- **Visit to Central Computer Study**
- **DEMO**



■ **System Administration Dpt.**

- **Primary focus on MS Windows technologies**
- **188 MS Windows servers, 2228 desktops, 61 Linux servers**
- **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
 - Unified IT environment
 - Access to the centralized IT resources
 - Definition of administration rights and rules
 - Central point to provide all practices and technologies to the interested localities



■ **Central Management Service**

- **Based on the experience with technologies used in the University Computer Centre**
- **University Computer Network (UCN)**
 - **Enabling effective administration**
 - **Unified working environment for students and employees across the university**
 - **Three different purposes: university computer study rooms, classrooms and employees' workstations**

■ Main benefits

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

■ 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)
- Granting access to troubleshooting tools
- Remote access to the workstations
- 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



■ 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**

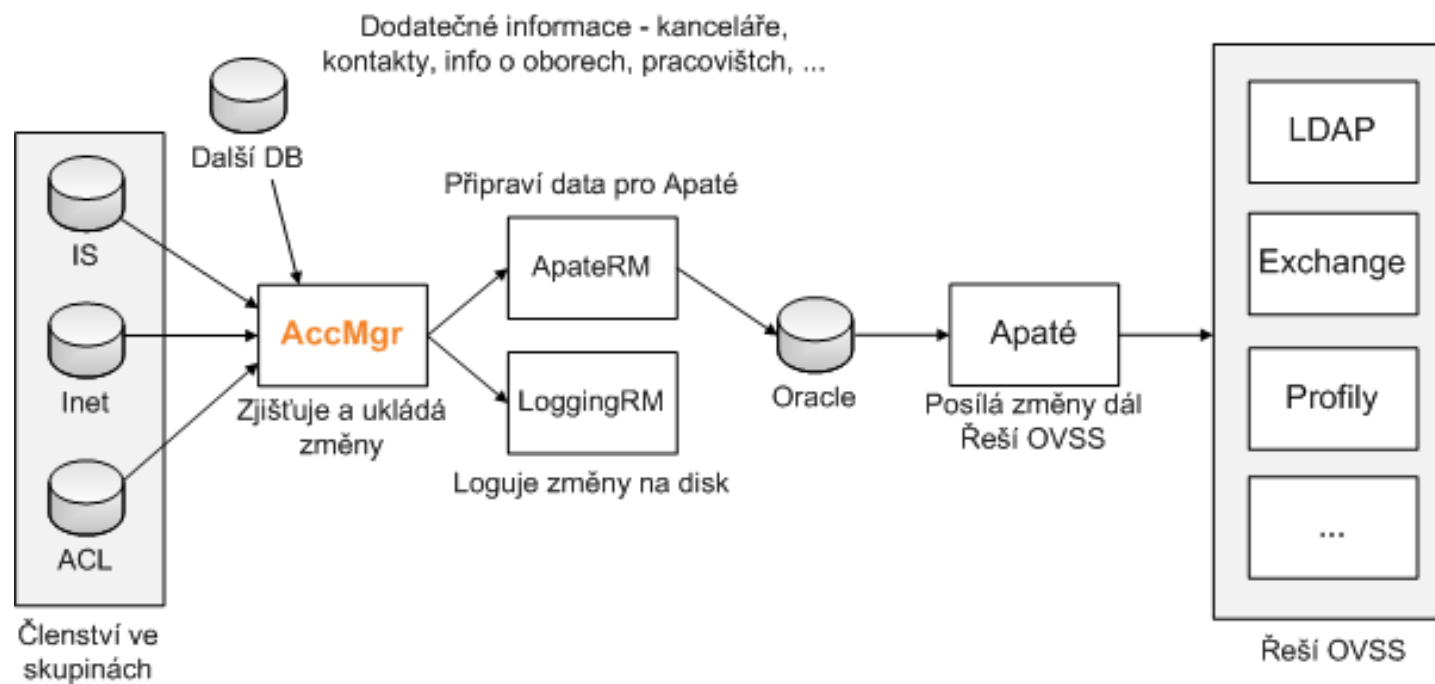
■ Division of localities

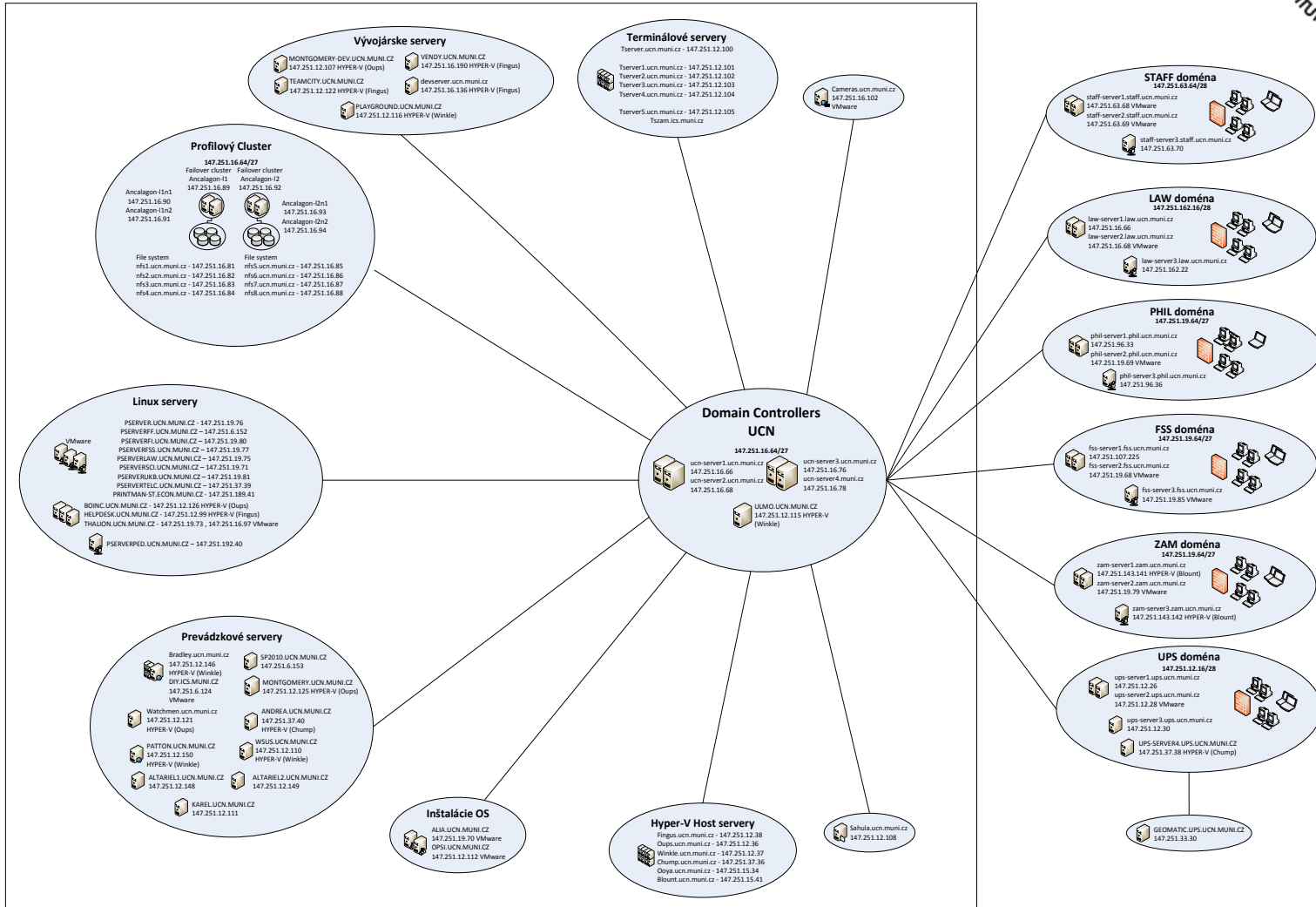
- **Study Rooms, Classrooms**
 - **roaming profiles, access to shared storages and printing devices, basic set of software and selected software related to their subject of study**
- **Employees' workstations**
 - **access to the SW associated with their work requirements (economic software, asset management,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

■ Design

- 4 main parts:
 - Identity management
 - OPSI – unattended OS installation
 - Active directory
 - Specialized technical solutions

Identity Management





■ Technical solutions

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



Unattended Installation of operating systems

- Automated tool OPSI based on the boot of operating system via network
- <https://alia.ucn.muni.cz>
- Support for Windows 8.1, 7 a XP (all updates included) and full driver installation, disk operations
- Preinstall steps – BIOS and network configuration (DHCP)
- Post install scripts – join to domain, security settings (filesystem, ...), cleaning after installation, etc.
- Domain settings - workstation's security settings, SW installation, grants access to printing solutions and user profiles, etc.
- DEMO

■ **Software Distribution**

- **Basic set– identical for all localities, contains all commonly used software, centrally updated**
- **Extended set– typically SW equipment requested by specific localities for lecturing purposes, updated according to an agreement between UCN domain administrators and local administrators**
- **Implementation via GPO (.msi, scripts)**
- **Installation after restart**



■ User Profile Administration

- Homogeneity of the user's working environment independent of the classroom and workstation
- Local profiles vs. roaming profiles
- Clustered storages:
 - NFS1-8 – 2TB each, 1GB per user



■ **Central Datastores**

- **Accessible via network repositories shared from server**
- **TEMP directory - fully accessible to all users**
- **Applications directory- read-only, includes applications that do not require installation on the client side**
- **User Profile that contains all user settings**
- **University SAMBA server – 20GB per employee**
- **Support for scientists – big data, grids**

Remote Wake-up and Shutdown

- **Centrally controlled wake-up, turn-on and shutdown of workstations according to a pre-arranged schedule**
- **Wake on LAN option**
- **Service windows during night**

■ Examination Modes

- **“Questionnaire” mode**
 - **Workstation logs in with a special account and launches an answer sheet from IS MU, students have no access to the internet, their own data or the installed applications**
- **“Exam” mode**
 - **Workstations are disconnected from the network, students do not have access to their own data, but all installed software is fully available**

■ Monitoring of Localities

- Gathering information about users and workstations, entries of students into the study rooms, bans, etc.
- Real time solution
- Frank v2.0

■ Remote access

- Need for remote user support and remote user access
- Windows remote desktop
 - User access
- Team Viewer
 - Admin access
 - help.ics.muni.cz
 - Manually or installed as service



■ Terms of Service

- **System Administration Department of the Institute of Computer Science) provides the following activities:**
 - **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**
 - **Availability of printing devices using the Active Directory**
 - **Management of student profiles**
 - **Management of host profiles in order to grant access of the**
 - **UCN and ICS services (Eduroam, VPN, ...) to MU visitors**
 - **Provision of information concerning the security state of the**
 - **IT infrastructure – security audit**
 - **Troubleshooting – solution of serious and critical software problems on workstations**
 - **General consultations concerning the area of IT**



■ **Terms of Service**

- **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**

Visit to Central University Study Room



■ DEMO

- Active directory
- SW management via GPOs
- OPSI

Thank you for your attention.

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