



Third ISC Workshop on HPC Applications in Precision Medicine

Lightning talk: ETH Zurich's Leonhard Med Cluster

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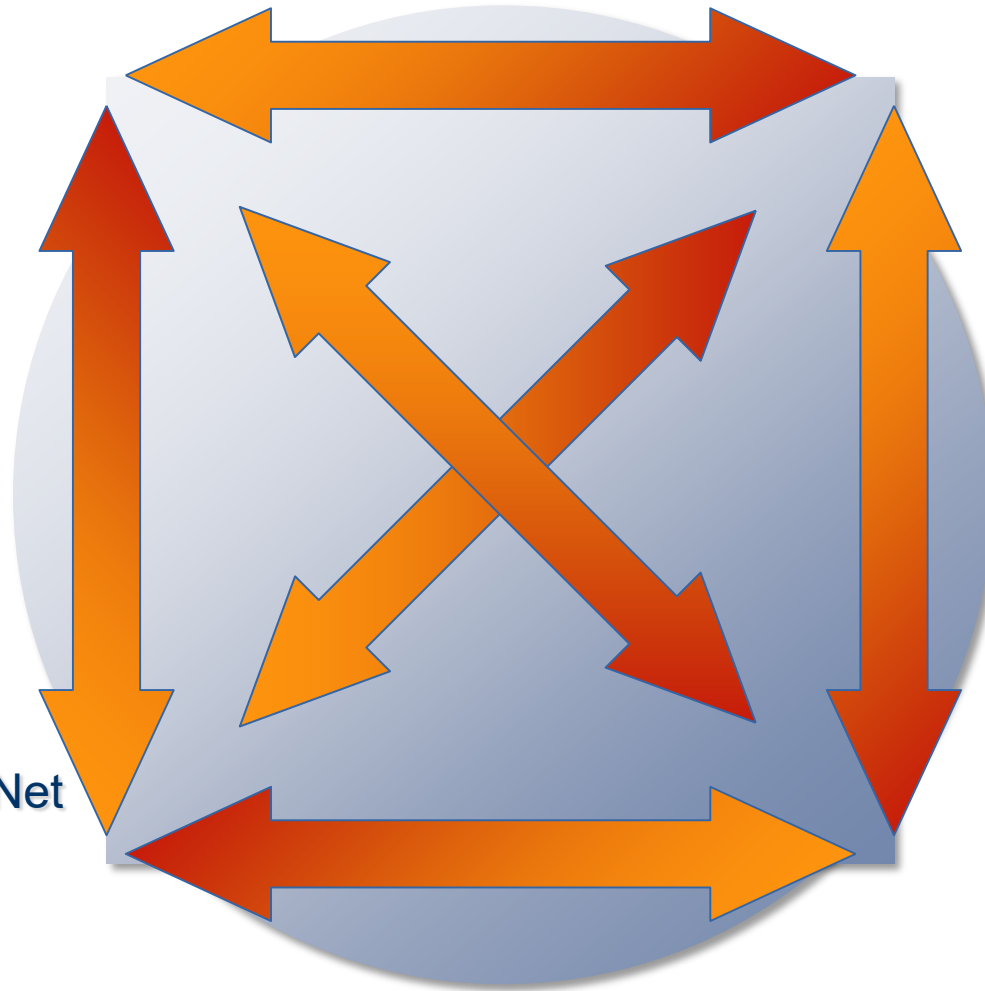
LeonhardMed – Mission

Regulations

- Legal
- Ethical
- Best Practices
- CH, USA, EU

Easy to use

- As on the notebook
- No security hassles
- Free access to the Net
- Interactive



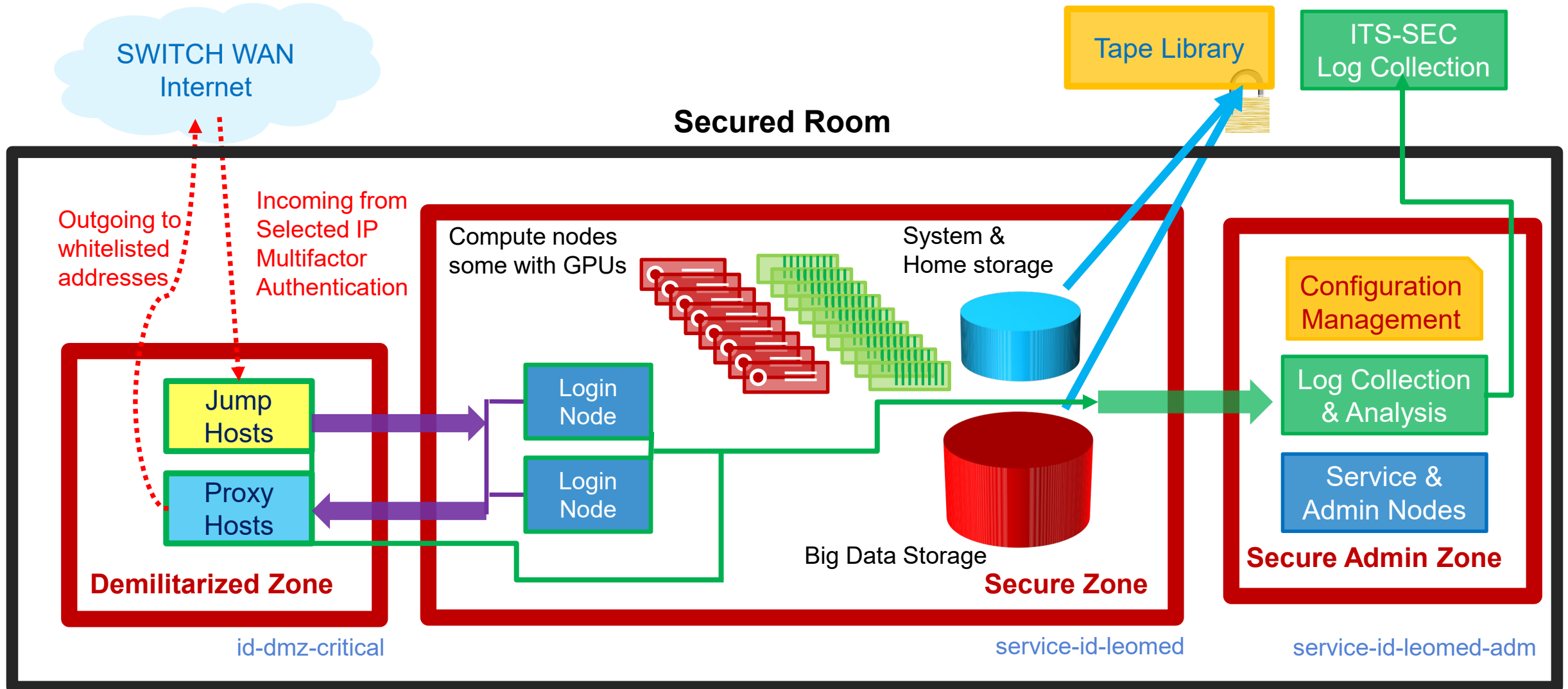
High Performance

- Fast Network
- GPUs
- Parallel Filesystems

Flexible

- Fast changes
- Cutting edge software
- State full nodes
- DB servers

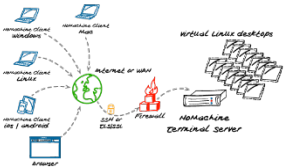
Leonhard Med – Security Architecture Overview



Leonhard Med – Challenges



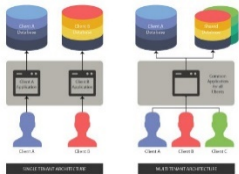
Monitoring Logging Alerting



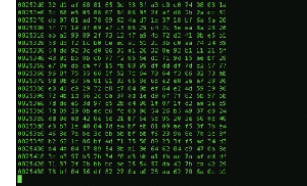
Terminal Servers



Web Access to Services



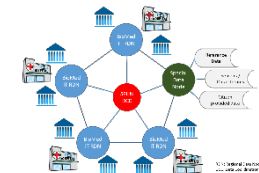
Multi Tenancy



User Level Encryption

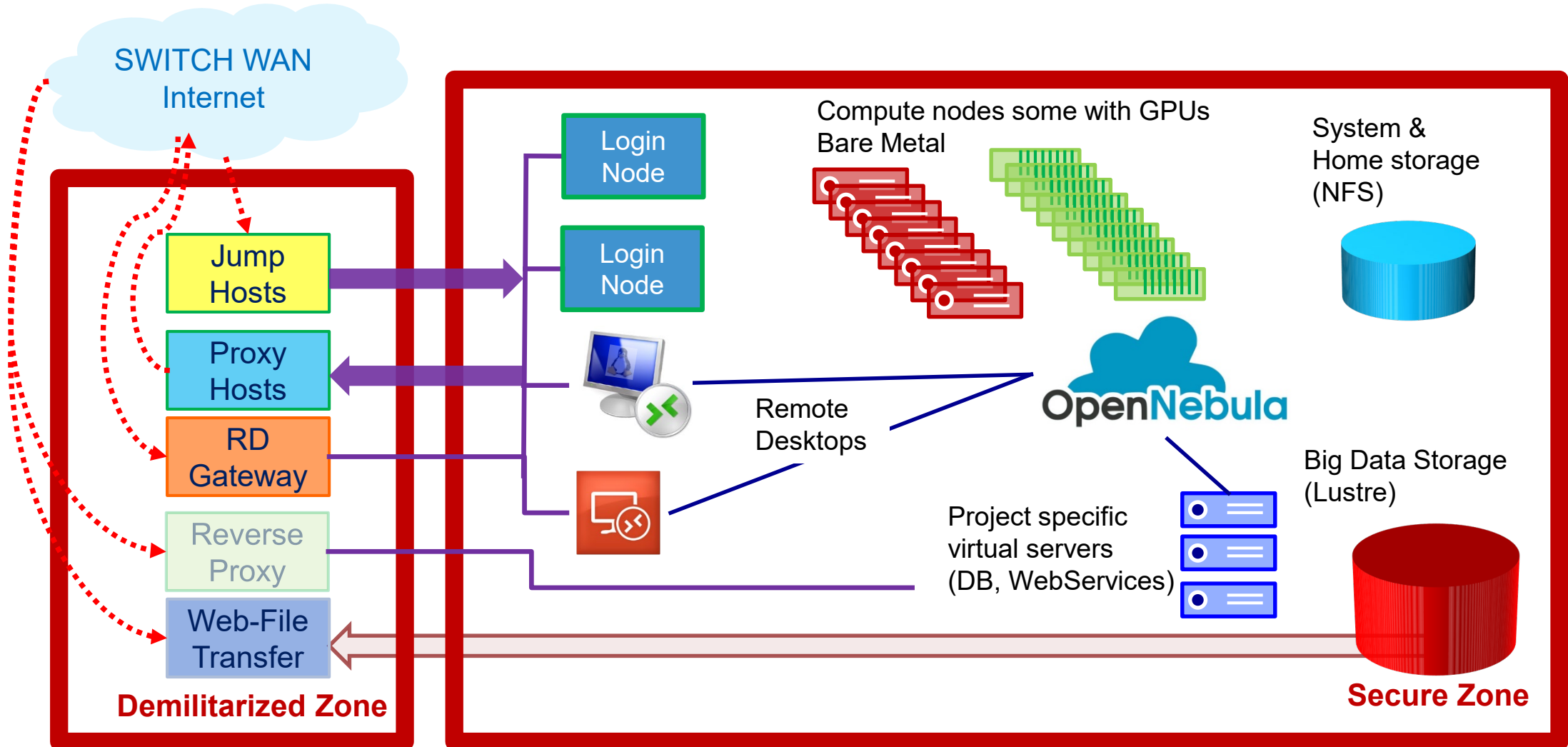


Physical Security & Surveillance

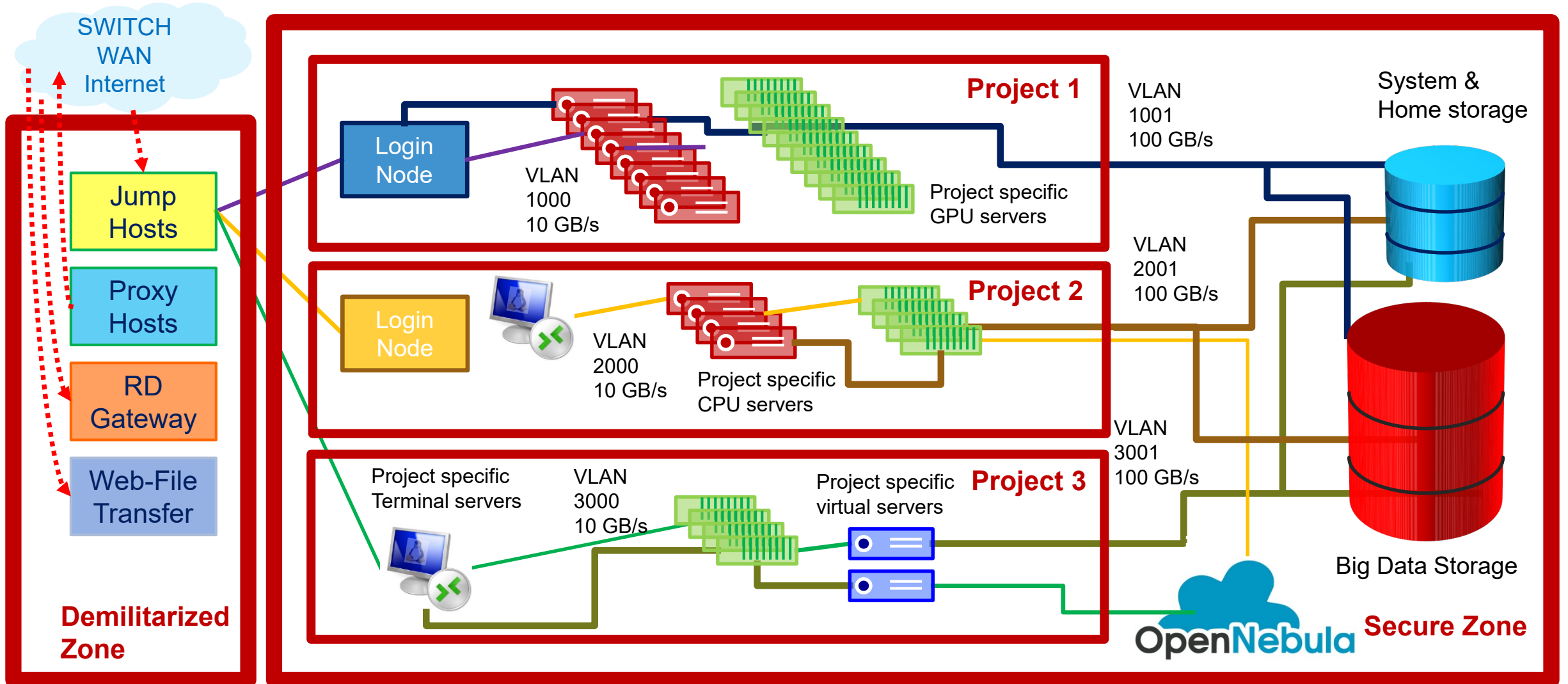


Bio Med IT users

Enhanced concept with terminal servers and cloud elements



Multi tenancy



LeonhardMed use cases

- Pattern recognition in medical data (e.g. on ICU metrics)
- Analysis of genomic patient data (e.g. BRCA II)
- Image analysis (e.g. X-ray or MRI)
- Tumorprofiler (including data access for tumor boards)
- Clinical trials
 - GCP compliance required
 - Movement sensor project as pilot (sensor data from private devices uploaded to LeonhardMed)