Cloud Strategy Perspectives
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(disclaimer: personal view)

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Building an academic private Cloud

Drivers

IT convergence benefits
- cost / resource optimization
- scale
- improved availability

Cloud / Virtualization benefits
- new services e.g., IaaS
- support of education
  - e.g., VMs for labs, virtual desktops
- support of research
  - e.g., VMs for big data / HPC, large scale system experimentss

Figure source: Eurich - Business Models for Academic Compute Infrastructures 2013-04-29
Building an academic private Cloud

**Constraints** (Unicamp-specific?)

- **Budget**
  (current absolute + future allocation models)

- **Long procurement times**
  (org bureaucracies + regulation)

- **IT skills**
  (slow / small margin for hiring)

- **Central & Distributed IT**
  (faculty autonomy)

- **HW Heterogeneity**
  (current + future)
Challenges: Private cloud strategy alternatives

**Build your own Cloud**
1. Buy HW (hyper-convergence)
2. Install open source Cloud stack
3. Customized SW development
4. Integration, integration, integration
5. Training (Buy + in-house)

**One-stop shop**
1. Buy (HW & SW) solution
2. Buy services / consultant hrs
3. Buy Training

- **Evaluation criteria:** BUDGET, in-house HR skills, available (in-market) skills, modularity, regional ecosystem considerations (e.g., federation of academic clouds), ...
- **Unknowns:** Long-term OPEX? (>>> initial CAPEX), Suitainability? (In-house SW development / engineering hours often forgotten)
Challenges: Break “server under the desk” mentality

Natural humans barriers
• Job security
• Loss of power / influence
• Fear to change

How? (update human firmware)
• right incentives?
• training?
• re-organizational actions?

Image source: https://www.flickr.com/photos/kingzog/103061262
(well?)- defined/understood interfaces
- Human-to-human
- Human-to-system
- Human-to-organization
- APIs

Current mode of operation
Newly defined interfaces?
- Human-to-human?
- Human-to-system?
- Human-to-organization?
- APIs?

Requires "Updates to human brain firmware"

Future mode of operation w/ cloud & virtualization

- Security concerns
- Data privacy?
  Governance?
  Policies?
- Etc.

+ Integration w/ Public Cloud
+ Federation w/ Academic Clouds in Brazil
I'm not thinking anything. That's my private cloud.