

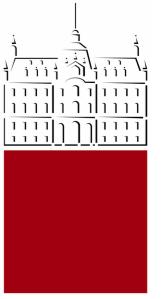


# Computer Mediated Communication (CE6014)

## Virtualization

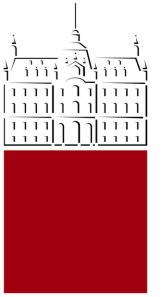
November 2011

Matevž Dolenc  
University of Ljubljana



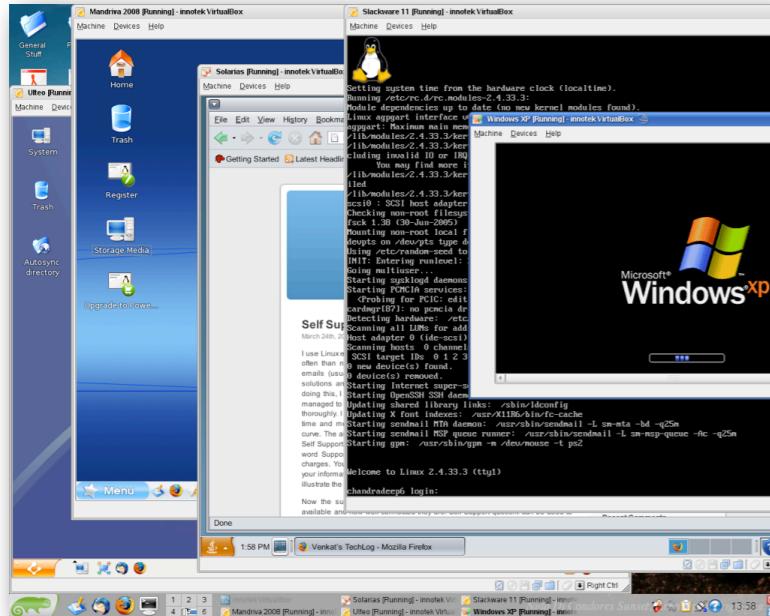
# Benefits

- ▶ Consolidate servers
- ▶ Conserve energy
- ▶ Improve ease of management
- ▶ Reduce backup and recovery time
- ▶ Test software configurations
- ▶ Maintain legacy applications
- ▶ Support a cross-platform office

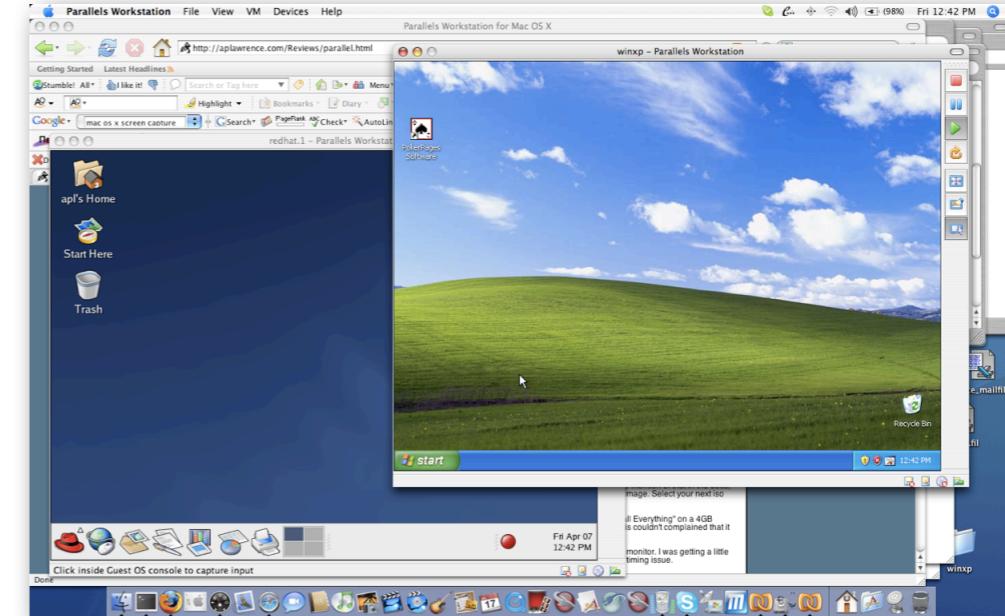


# Virtualization software options (desktop)

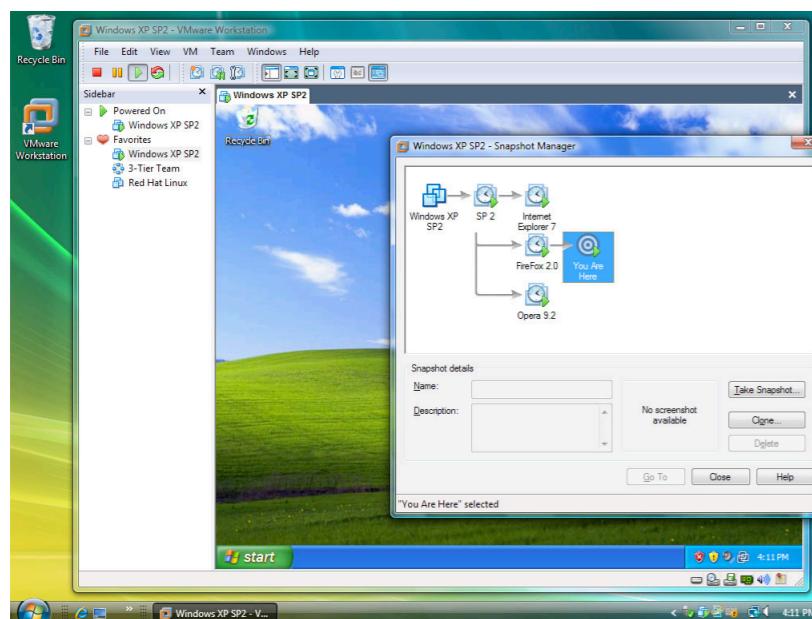
**VirtualBox,**  
<https://www.virtualbox.org/>



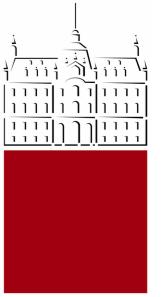
**Parallels,**  
<http://www.parallels.com/>



**VMWare,**  
<http://www.vmware.com/>



*Comparison of platform virtual machines,*  
[http://en.wikipedia.org/wiki/Comparison\\_of\\_platform\\_virtual\\_machines](http://en.wikipedia.org/wiki/Comparison_of_platform_virtual_machines)



# Virtualization software options (server)

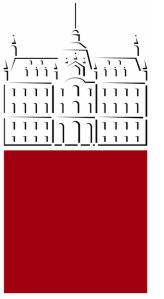
**VMWare,**  
<http://www.vmware.com/>

The screenshot shows the VMware Management Interface in Mozilla Firefox. The main window displays the 'Status Monitor' tab with a 'System Summary' section showing processor and memory usage. Below it is a 'Virtual Machines (4)' section listing four virtual machines: Linux Application Server, Windows Build Machine, Windows Application Server, and Linux Communication Server. Each entry includes a thumbnail, display name, power status, PID, and resource usage.

**Citrix,**  
<http://www.citri.com/>

The screenshot shows the Citrix XenCenter interface. The left sidebar has a 'Resources Pane' with a red box around it. The main area features a 'Citrix XenServer' banner with the text 'Enterprise-class. Cloud-proven. Free.' Below it are four buttons: 'LEARN about using XenCenter', 'ADD a server' (which has a red box around it), 'UPGRADE XenServer', and 'TRY Desktop Virtualization'. At the bottom, there's a 'Community Support Partners' section with a globe icon and a list of links.

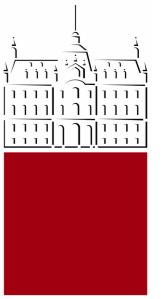
*Comparison of platform virtual machines,*  
[http://en.wikipedia.org/wiki/Comparison\\_of\\_platform\\_virtual\\_machines](http://en.wikipedia.org/wiki/Comparison_of_platform_virtual_machines)



# Cloud virtualization options

- ▶ Hardware virtualisation
  - Amazon/EC2 (<http://aws.amazon.com/>)
- ▶ Software virtualisation
  - Citrix XenApp (<http://www.citrix.com>)

# AWS examples

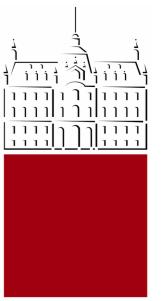


## ► Zynga.com

- Creators of the most popular Facebook games: Farmville, Mafia Wars, Treasure Isle, etc.
- More than 12,000 servers on AWS
- More than 230 million monthly users
- 100% on AWS



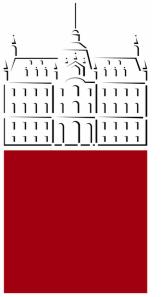
# AWS examples



## ▶ Netflix.com

- More than 9 Billion USD market cap
- Migrating 100% on Amazon Web Services
- So far: movie lists, website search, transcoding, recommendations, etc.
- 10 M subscribers, 100k DVD titles

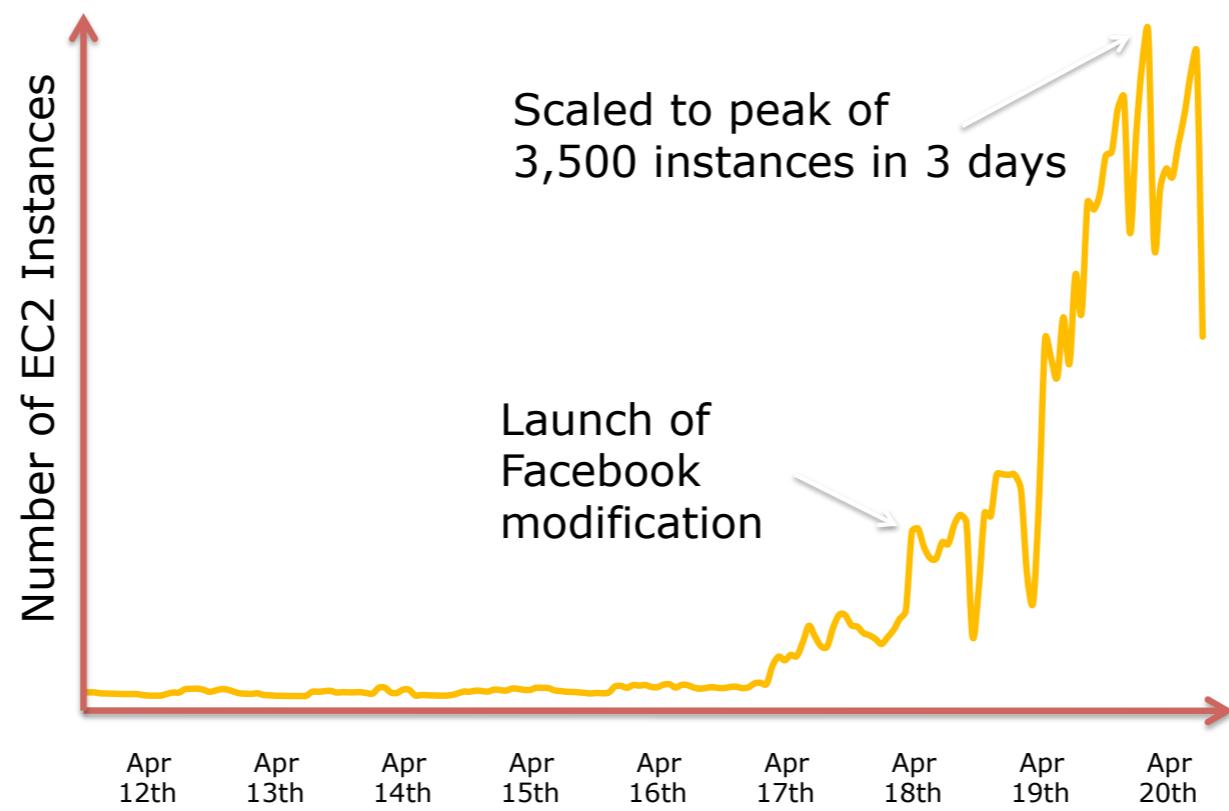


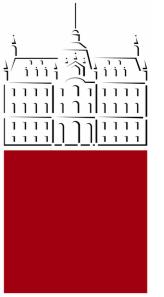


# AWS examples

## ► Animoto.com

- Simple application:
  - (1) Upload pictures, (2) upload / choose from existing music, (3) a nice video is automatically created
- It runs 100% on AWS
- Scaled from 80 to 3,500 servers (EC2 instances) in 3 days



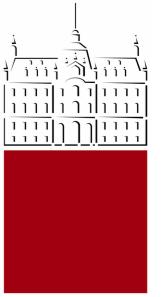


# AWS examples

## ► Autodesk Seek ([seek.autodesk.com](http://seek.autodesk.com))

- Autodesk Seek is the online source for architects and building engineers to search and download manufacturer design information (i.e., reusable CAD models that can be dropped directly into design projects).

The screenshot shows the Autodesk Seek homepage. At the top, there's a search bar with "All File Types" set to "tables" and a "Search" button. To the right of the search bar is a blue banner for "Revit Architecture Market" with the text "Sell your Revit content and win prizes!". On the left, there's a "Filter" sidebar with sections for "Product Attributes" (listing "All Configuration Values", "All Frame Material Values", "All Material Values", and "All Seat Material Values"), "Manufacturer" (listing "Generic (63)", "Generic (49)", "Draper Inc (39)", and "More"), "File Type" (listing "PDF (198)", "DWG (175)", "RTF (149)", and "More"), "External Catalogs" (listing "McGraw-Hill Construction Sweets Net...", "BIMWorld (58)", "Reed Construction Data (49)", and "More"), and "Product Libraries". The main area displays a grid of search results for tables, with 1-20 of 626 entries shown. Each result includes a thumbnail image, the name of the table (e.g., "End Table", "Poolside End Table", "Glass Coffee Table, Modern", "Modern Coffee Table", "Walnut Coffee Table"), its type ("Generic"), the source ("Reed Construction Data"), and download links for "1 RFA", "1 DWF", and "1 ZIP". There are also "Details" links for each item.



# Cloud BIM virtualization

- ▶ Different providers
  - CaddForce  
([www.caddforce.com](http://www.caddforce.com))
  - BIM Cloud Solutions  
([www.bimcloudsolutions.com](http://www.bimcloudsolutions.com))
  - etc.
- ▶ Different Graphisoft approatcch
  - BIM server
  - [www.graphisoft.com/products/archicad/teamwork.html](http://www.graphisoft.com/products/archicad/teamwork.html)

The screenshot shows the CaddForce website. At the top right is a red button with a white sphere icon labeled "Cloud 3.0 has arrived! find out more!". Below the header are navigation links: Home, Products, Services, About Us, and Contact Us. A social media link "Connect with us" with icons for Facebook, LinkedIn, and Twitter follows. The main content area features two images: one of a Dell Precision R5400 workstation and another of a server unit. Text below the workstation reads "Dell Precision R5400 with high end 3D graphics capability, virtualized in the cloud". To the right is a box with the text "Fast performance for your AutoCAD Revit & 3D CAD architecture needs." and the "Cloud 1.0" logo.

The screenshot shows the ArchiCAD 15 website. At the top is a navigation bar with links: Overview, DESIGN, Renovation, OPEN, Productivity, Teamwork (which is highlighted in blue), Press, and FAQ. Below the navigation is a large image of a modern building at night with the text "GRAPHISOFT ARCHICAD 15". A caption below the image reads "SHELL, ARTTechnic architects, [www.arttechnic.jp](http://www.arttechnic.jp). Photography: © Nacasa & Partners Inc.". A section titled "ArchiCAD Revolutionizes BIM Collaboration" contains text about the challenges of BIM implementation and how ArchiCAD's BIM Server technology addresses them. It also mentions "Industry-first Delta Server™ technology".