

COMP7370 Advanced Computer and Network Security

CloudAV: N-Version Antivirus in the Network Cloud (1)

Topics:

1. Research Tip: How to choose a research topic?
2. Security of cloud computing

Announcement: Homework 1 is due by tonight at 11:55pm.

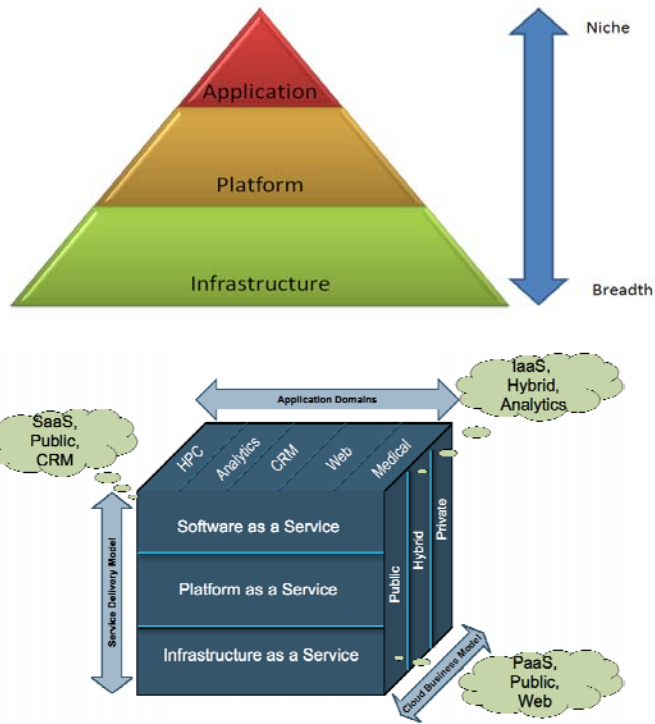
Topic 1: Research Tip: How to choose a research topic

- Why this tip?
 - Good example: Dr. Jahanian's research group at Umich
 - Fault tolerance, real-time systems, networking (before 2004) -> Security (After 2004)
 - My research background:
 - Scheduling (1995-2000) -> I/O-Aware Load Balancing (2001-2004) -> Energy-Efficient Storage Systems (2004-2011) -> Multicore-based Active Storage/Hadoop (2009 - 2015)
- Why you have to choose a research topic?
 - Topics assigned by your advisor are very broad
 - Changes in your research interests
 - One research topic in your entire CAREER?
 - Graduate Students vs. Researchers
 - Changes in application demands
 - e.g., cluster computing; optical network; security; cloud
 - you must be innovative (like Apple)
- How to choose?
 - Interests
 - Advisor's requirements
 - Your research background (e.g., security-aware scheduling)
 - Related work (google scholar, IEEE/ACM DL, top conferences)
 - Narrow down: e.g., clusters -> cluster storage sys. -> I/O load balancing for cluster storage sys.
 - Need time: e.g, my dissertation topic (3 months)
 - **3-minute Exercise:** write your interests -> advisor's topic -> your background -> your research topic

Topic 2: Security of cloud computing

- Motivation
 - See slide 3 in AreCloudsSecure.ppt
 - **Discussions:** What are implications?
 - Vendors
 - Customers
- Cloud Types: (virtulization; outsource)
 - Internet-based services (e.g., google base, loosely coupled)

- Infrastructure as a service (e.g., IMB blue cloud, HP flexible computing)
- Platform as a service (configurators/APIs, e.g., google App engine)
- Software as a service (e.g., oracle SaaS platform)



Next time: Security Management – Customer Responsibilities