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## **Internet Weather Report:**

### **– Increasing Cloudiness, Chance of Storms**

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# Everyone to The Cloud! Now! Hurry!



# To the cloud! Wait, the what?



COURTESY: MICROSOFT

# Cloud Computing is:

*Working from home on a rainy day?*

*Accessing your email in-flight?*

*A meaningless marketing buzzword?*

*The rediscovery of distributed computing?*

“**Cloud computing** is a [business AND technical] model for enabling convenient, **on-demand network access** [from ANY device...PC, Laptop/Pad, SmartPhone] to a **shared pool of configurable computing resources** (e.g., networks, servers, storage, applications, and services) that can be **rapidly provisioned and released** with minimal management effort or service provider interaction.” -- **NIST**

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# NIST Cloud Definition & Characteristics

<http://csrc.nist.gov/groups/SNS/cloud-computing/index.html>

**On-Demand Self-Service**

**Broad Network Access**

**Resource Pooling**

**Rapid Elasticity**

**Measured Service**

**Delivered as:**

**SaaS (Software as a Service)**

**PaaS (Platform as a Service)**

**IaaS (Infrastructure as a Service)**

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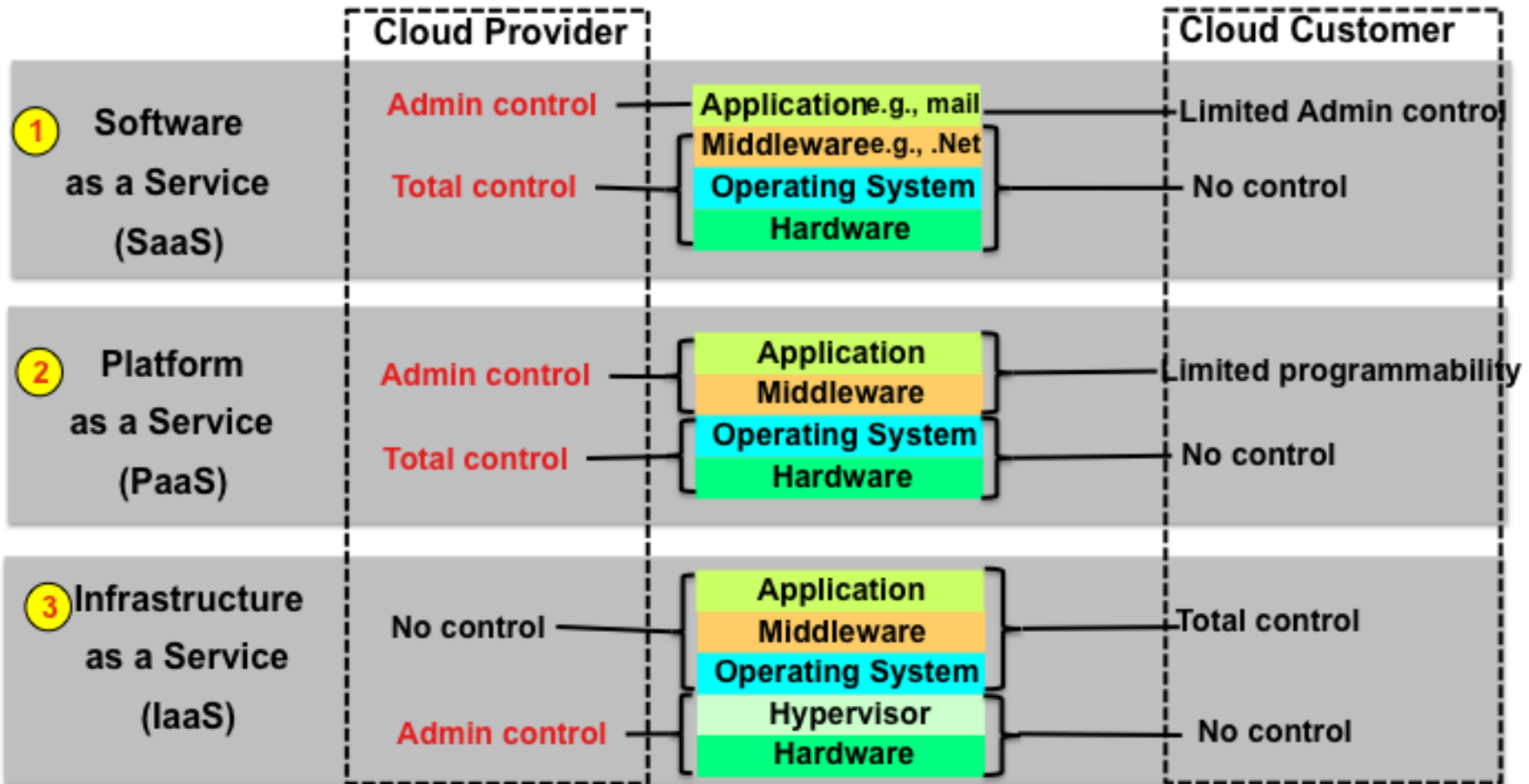
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# Who has Control & Who can See What



# “Cloud will solve ALL your IT problems!”

- ✓ **Centralized management**
- ✓ **Enhanced & standardized security**
- ✓ **Reduced costs:**
  - ✓ **Energy**
  - ✓ **No more over-provisioning**
  - ✓ **Pay-by-the-drink**
- ✓ **Scalability when you need it**

# However...

(...yes, there's always a 'however', someone's always raining on your parade)

- ✓ **Business model change**

- ✓ own-to-rent, loss of territory

- ✓ **Bigger target for bad guys**

- ✓ still in early stages of understanding risks

- ✓ **Bigger failure modes**

- ✓ Remember Amazon?

- ✓ **Harder to do troubleshooting & forensics**

- ✓ **Legal issues**

- ✓ who owns & has jurisdiction over your actions and your data?
- ✓ **LOCATION is relevant!**

# Nevertheless...

- ✓ **Cloud Computing is NOT going away**
  - ✓ in fact, US Gov't is **REQUIRING** “cloud first” solutions
- ✓ **Big IT vendors are targeting cloud solutions**
  - ✓ significant industry consolidation underway
- ✓ **Cloud services are becoming consumerized**
  - ✓ data services & apps (MS, Google, Apple, ...)
  - ✓ digital cameras with 3G/WiFi & auto-save-to-cloud
  - ✓ Google ChromeBook (ALL cloud, NO local apps)
- ✓ **Cloud will drive development of faster Internet**
  - ✓ demand for faster CPUs, I/O, networks
  - ✓ need better understanding of caching and parallelism
  - ✓ increasing Web consumer expectations for speed and responsiveness (was “8 sec rule” ...now 3 sec)

# Your homework:

(...sorry...I AM also a professor)

✓ Learn the *new language* of cloud computing

✓ Some neologisms:

- ✓ cloudology
- ✓ encloud/discloud
- ✓ cloudification
- ✓ cloudwashing
- ✓ cloudonomics
- ✓ cloudsourcing
- ✓ cloudage, cloudful
- ✓ cloudlet, cloudling
- ✓ and...

# ...Cloudward!





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**THANK YOU!**

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