A Bing-Inspired View of Cloud Management

Dave Maltz
Bing Autopilot Network Team
Trends in Cloud

• More, More, More
  – Faced with increasing scale, automation is the only path to survival
  – “Human-touch” creeps into processes – constant vigilance required to stamp it out

• Network time is significant and increasing(?) component of total Page Load Time
  – Lots of causes, lots of solutions – all important

• More powerful servers need a more powerful network
  – Server costs dominate, so network spend that unlocks server capacity pays back quickly
How to Get Started

• Talk to your own enterprises
  – Your campus IT folks
  – Companies nearby

• Talk to anyone that runs applications or networks
  – NANOG, LISA

• Get your hands dirty
  – Build a cloud app
  – Set up a cloud – emulab? your own scripts? Try provisioning 10 servers, or 1 server 10 times
How to Do Good Work

• **Experiment!**
  – Do microbenchmarks
  – Get time on cloud services (Azure, AWS, ...) there are programs to help pay for it
  – Simulations alone don’t cut it

• **Make friends with HCI/Sociologist colleagues**
  – Management processes have a human element
  – Do a real study of them
  – There are fields that know how to do this