



# Seattle: The Internet as a Testbed

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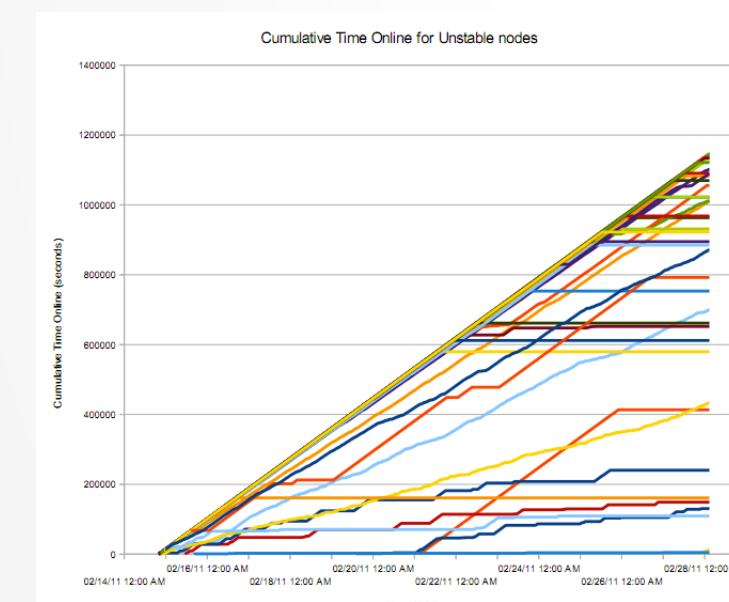


## What is Seattle?

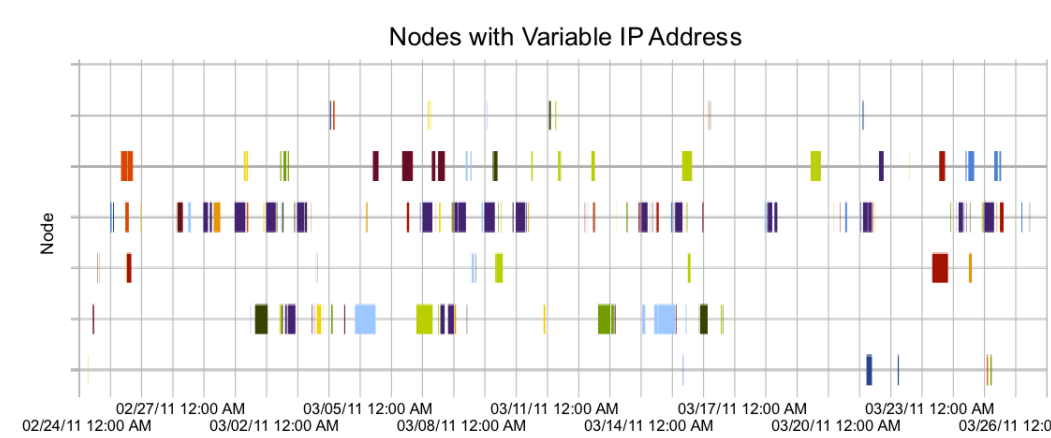
- Peer-to-peer PlanetLab
- Real end user nodes
- Realistic testing environments
- Available for use now!



Seattle nodes around the world

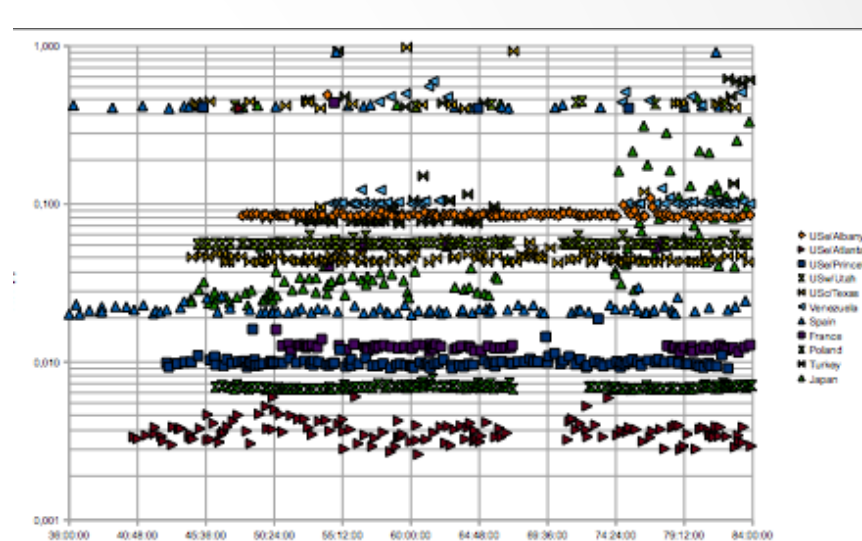


Diurnal and mobility patterns

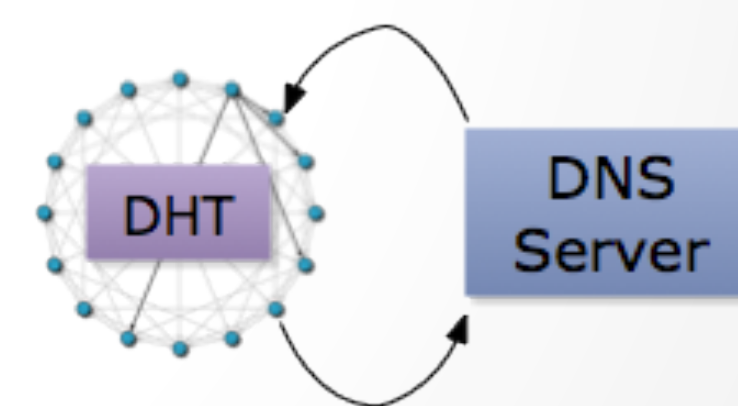


## Research Uses and Applications

- YouTube CDN mapping
- Tracking mobility & diurnal patterns
- Lightweight cloud containers
- Peer-to-peer encrypted file storage
- Web based code execution
- Peer-to-peer webserver



YouTube CDN mapping data



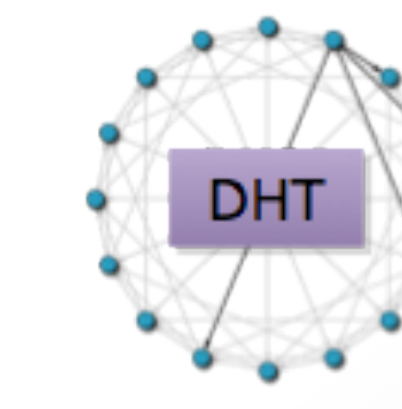
Zenodotus

## PlanetLab vs Seattle

OS VMs (Linux)	Programming language VMs (Python)
Connectivity via GERN/Internet2	Home users and testbeds
ICMP, TCP, UDP and safe raw sockets	TCP and UDP
Storage via HDD, memory & network	Storage via HDD, memory & network
Highly available dedicated machines	Real end user availability (diurnal patterns)
Fixed locations	Some mobile users
Outside of firewalls / NATs	Some nodes behind firewalls / NATs
Running on dedicated servers	Running on servers, mobile phones, laptops, etc.
Donate dedicated PCs outside firewall -> proportional share of PlanetLab	Donate resources of N machines -> access to 10*N machines on Seattle

## Educational Uses

- **16** classes around the world
- 2 year deployment
- Numerous tutorials and libraries available
- Assignments based on Seattle:
  - Non-transitive connectivity, stop-and-wait, sliding window, link state routing, webserver, DHT based on Chord, etc.



Special thanks to:



TransCloud

