

# Apache Traffic Server Internals

Phil Sorber - Comcast

# How I learned to stop worrying and love ATS

# About Me

(Why you should listen to me)

- Principal Engineer @ Comcast on IpCDN team
- Committer to ATS
- Generally cool guy [\[citation needed\]](#)



# About This Talk

(Why you shouldn't leave just yet)

- CPU
- Memory
- Storage
- Network
- Abstractions



# A brief History

- Inktomi (1996)
- Yahoo! (2002)
- Apache Incubator (2009)
- Apache TLP (2010)

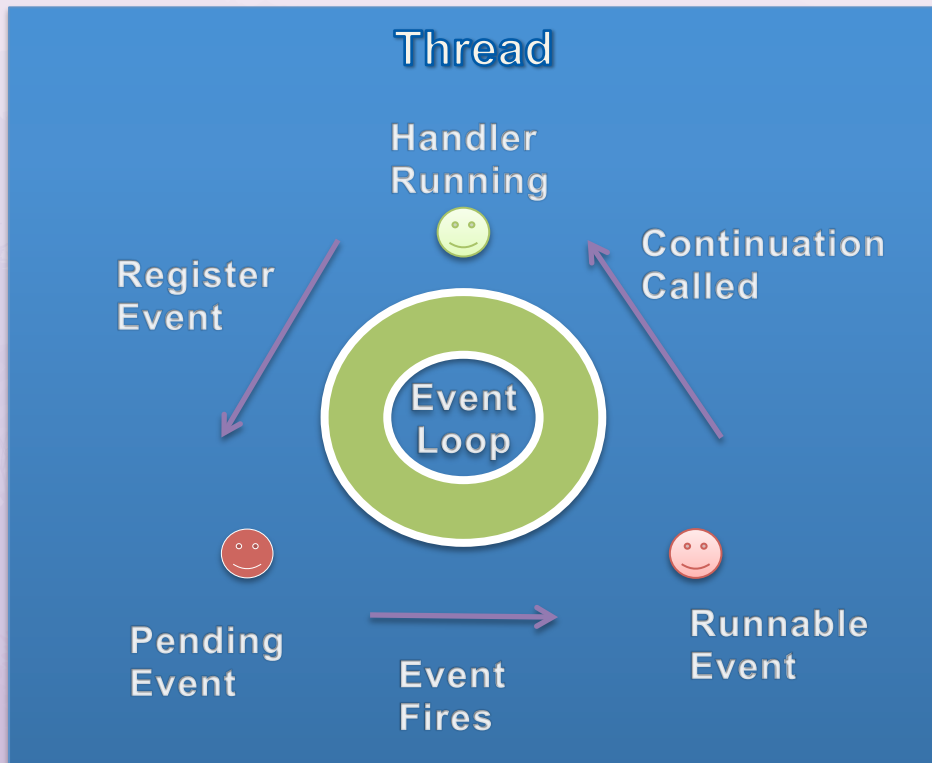


# CPU

- Multi-Threaded
- Asynchronous
- Event Driven
- Continuations
- CPU Affinity (NUMA)

# CPU

(continued)



# CPU

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- Thread Types
  - Net
  - AIO
  - Task
  - Accept
  - SSL
  - DNS
  - Remap
  - Plugins can also do thread things

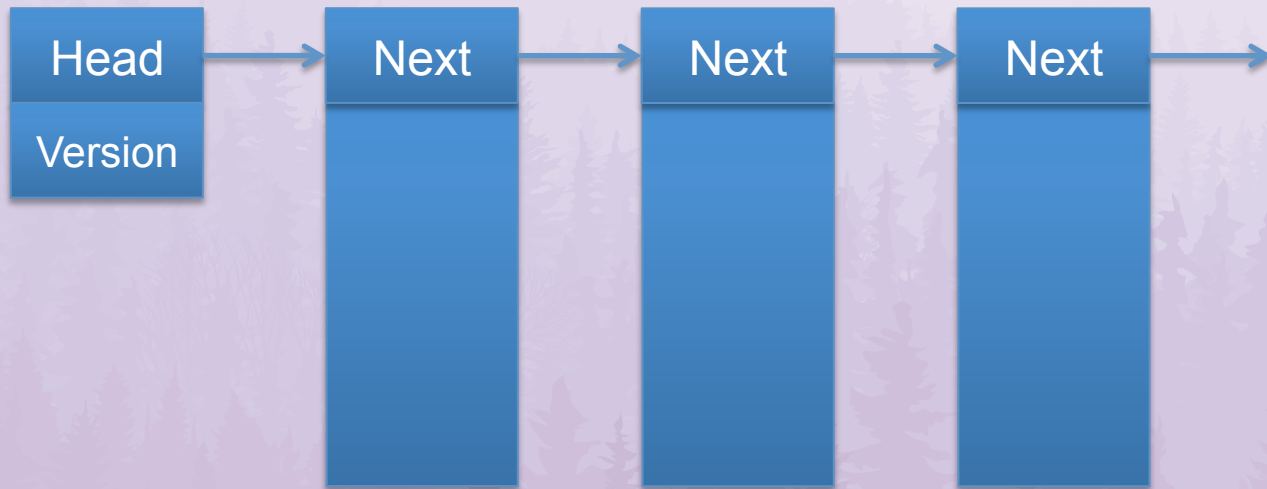
# Memory



- RAM Cache (not RAM disks)
- NUMA! NUMA!
- Freelists
  - Allocators
  - ClassAllocators (Global with atomics)
  - ProxyAllocators (Thread)
  - Arenas
- Huge Pages?

# Memory

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# Memory

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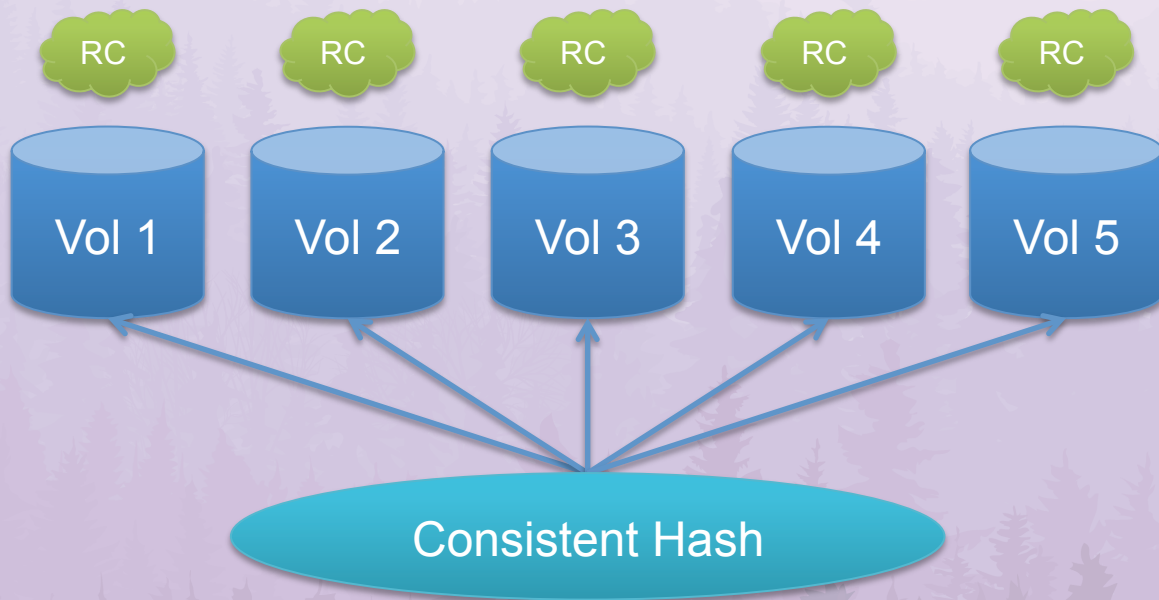
# Storage

- Raw Devices
- Unique Caches
- Distinct RAM Caches
- Consistent Hashing
- Circular Cache



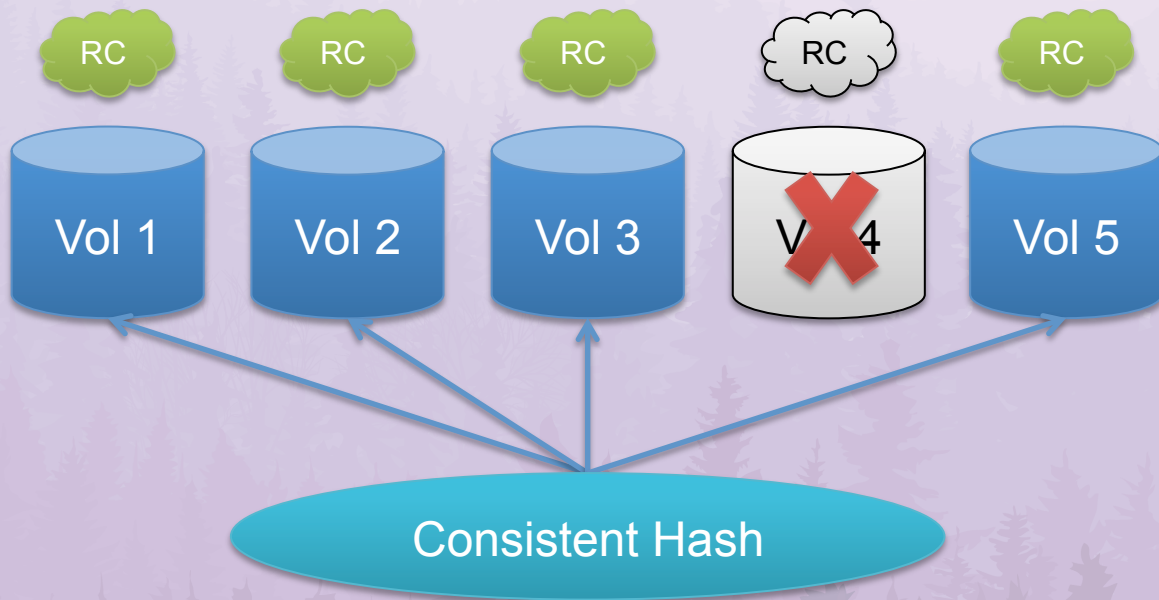
# Storage

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# Storage

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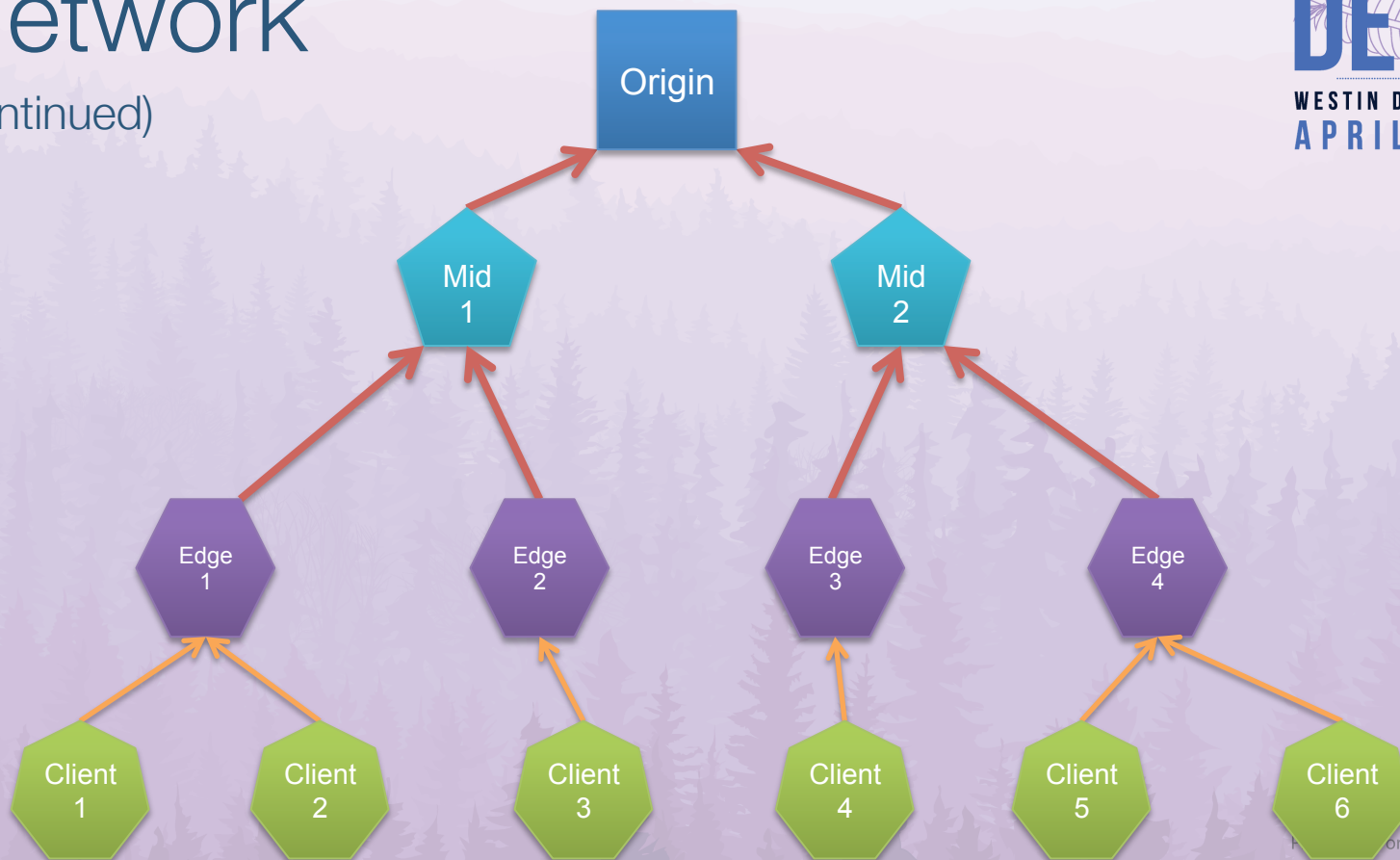
# Network

- Connection Pools
- Tiered Caches
- Parent Selection



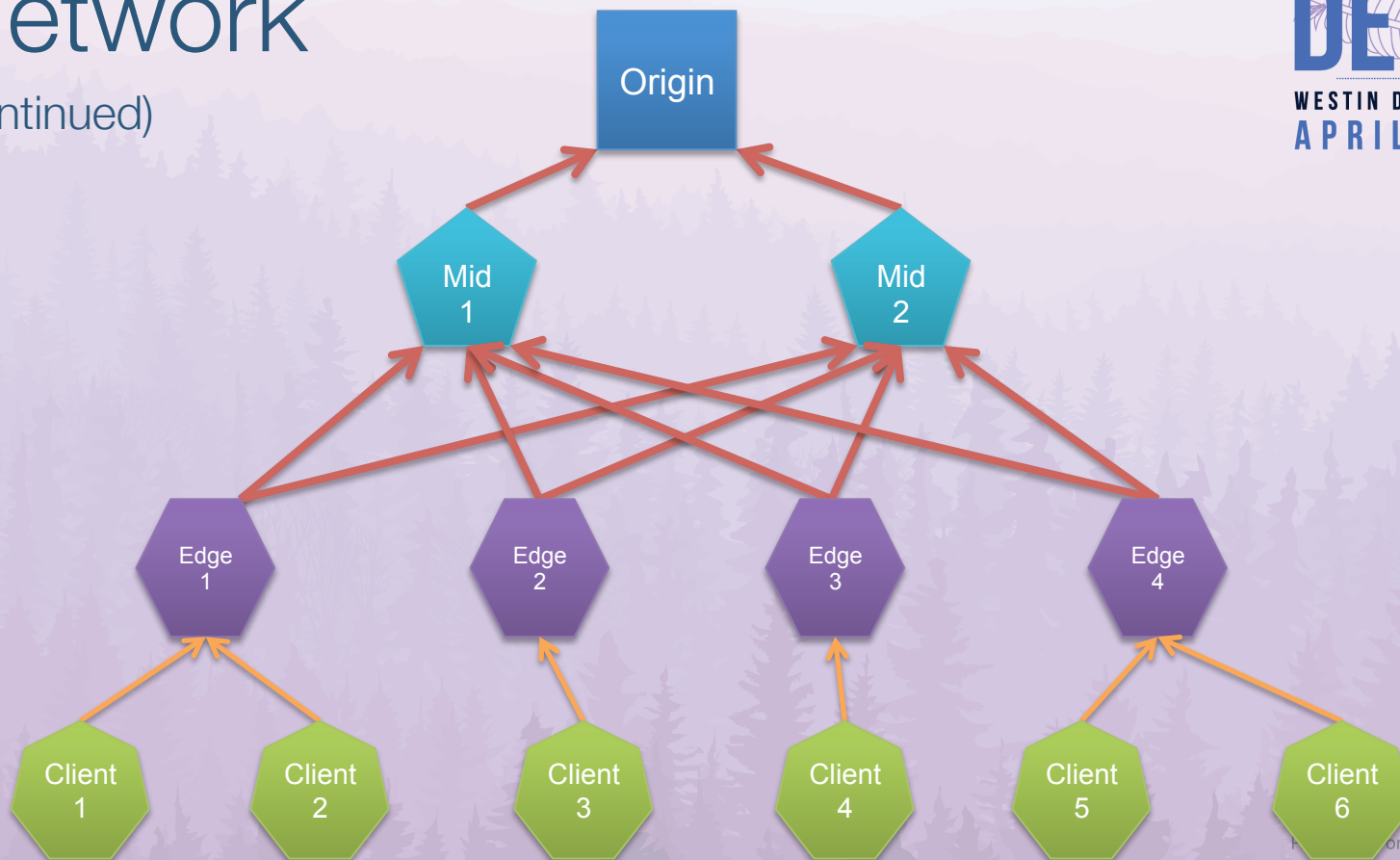
# Network

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# Network

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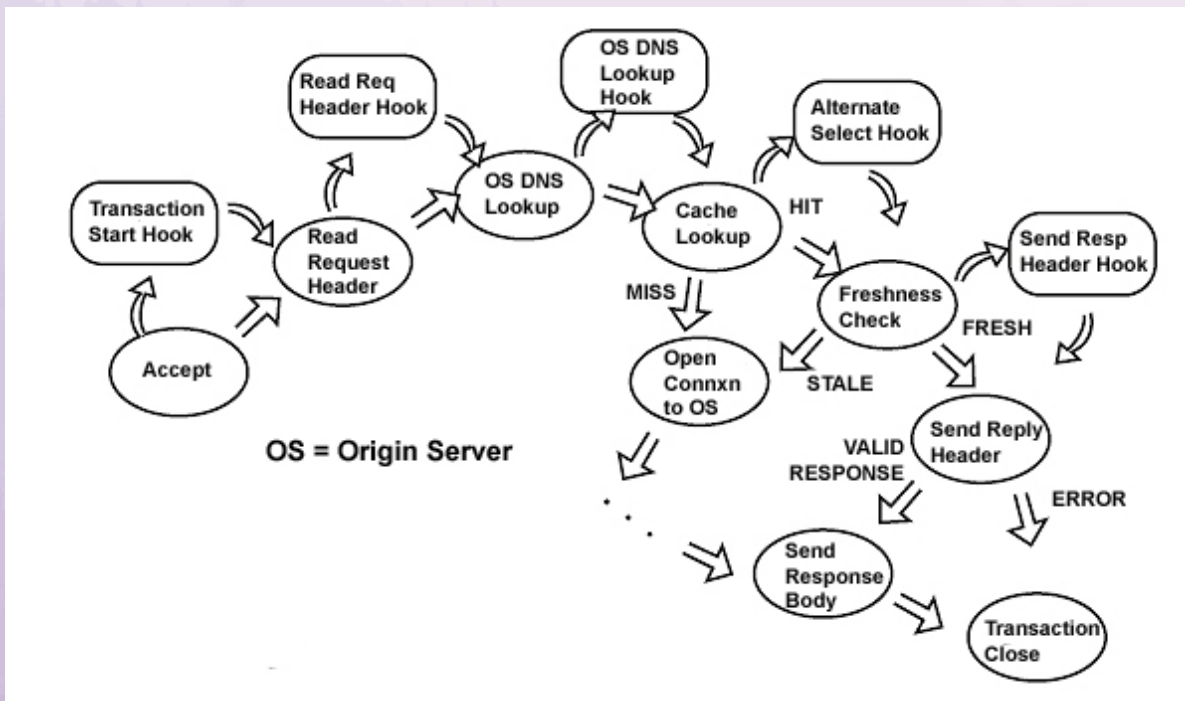
# Abstractions



- Processors
  - HostDB
  - DNS
  - Net
  - SSL
  - Cache
  - Remap
- State Machines
- Clustering

# Abstractions

(continued)



# Questions?

Seriously, ask some.

- Phil Sorber
- [sorber@apache.org](mailto:sorber@apache.org)
- @PhilSorber
- <http://trafficserver.apache.org>
- #traffic-server on freenode (PSUdaemon)

