**EdgeXL: Edge Acceleration for Slow Networks**

**EdgeXL Overview**
- Developed in the Princeton Computer Science Department
- Caches network content to disk, reducing network demand when multiple users view similar content
- Combines memory-efficient local cache with bandwidth-reducing WAN accelerator
- Multiplying effective bandwidth needed by schools, enterprises, ISPs, rural areas, developing regions
- Deployable individually or pairs
- Storage details: 1 Terabyte disk
  - Cost: $100
  - Capacity: 3 months
- Scalable, Memory-efficient
- Larger cache → more savings
- One EdgeXL: Whole objects only, Web text, graphics, video
  - 30-50% savings
- Two EdgeXLs: Partial & whole Network packets
  - 80-95% savings
- ISP-level performance: 10x less RAM needed
- School-level performance: 50x less RAM needed
- Test deployments in Ghana & Nigeria

**Typical EdgeXL Deployment and Usage**

**Deployment Experiences**
- Current deployments in Ghana & Nigeria
  - Machine is shared server & user system
    - Replaces Squid proxy
    - Shares disk with regular filesystem
    - HashCache footprint prevents thrashing
  - Installed, administered remotely
    - Local users provide machine
    - Local administrator installs Linux
    - Non-root account + ssh for remote login
- Working toward providing nodes on PlanetLab
  - Web proxy would cache static content
  - Dynamic content fetched from PlanetLab
  - Compressed via WAN accelerator
  - Bandwidth shifting can reduce local cost
  - When local cost >> remote datacenter, bandwidth shifting reduces total cost

**Benefits**
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