IPOP/Lake expedition Updates – PRAGMA-30

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U. Florida, U. Wisconsin, Virginia Tech, NAIST/ UCSD

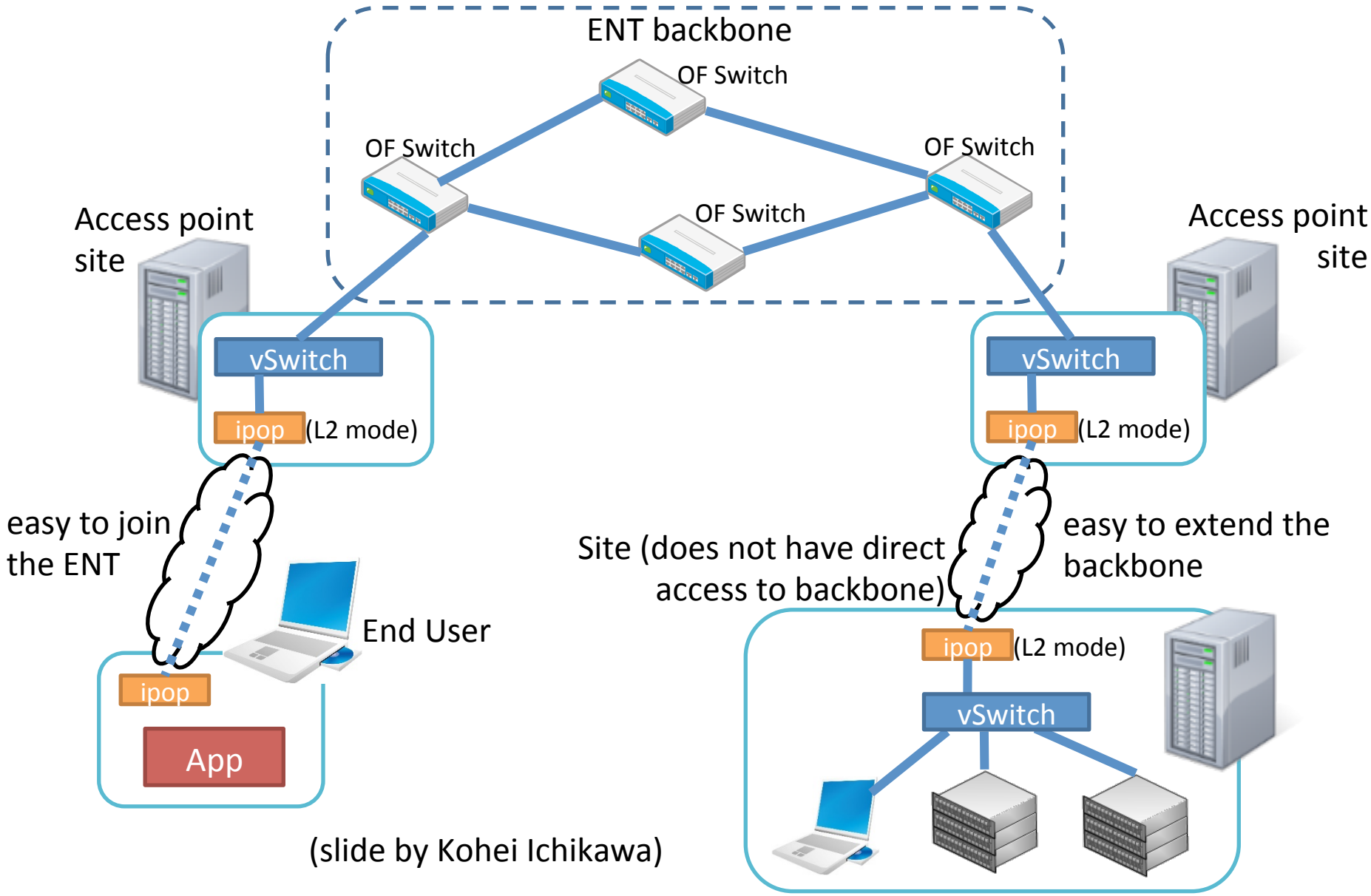
Technology development

- IPOP Switch mode
  - Handle L2 broadcasts, ARP
  - SDN-based overlay bypass for fast communication within network
- Revamped IPOP controller framework
  - Structured P2P GroupVPN
    - Chord-based P2P self-organizing topology and routing
    - On-demand IPOP links based on traffic inspection
    - Bootstrap nodes from XMPP

PRAGMA deployments/demos

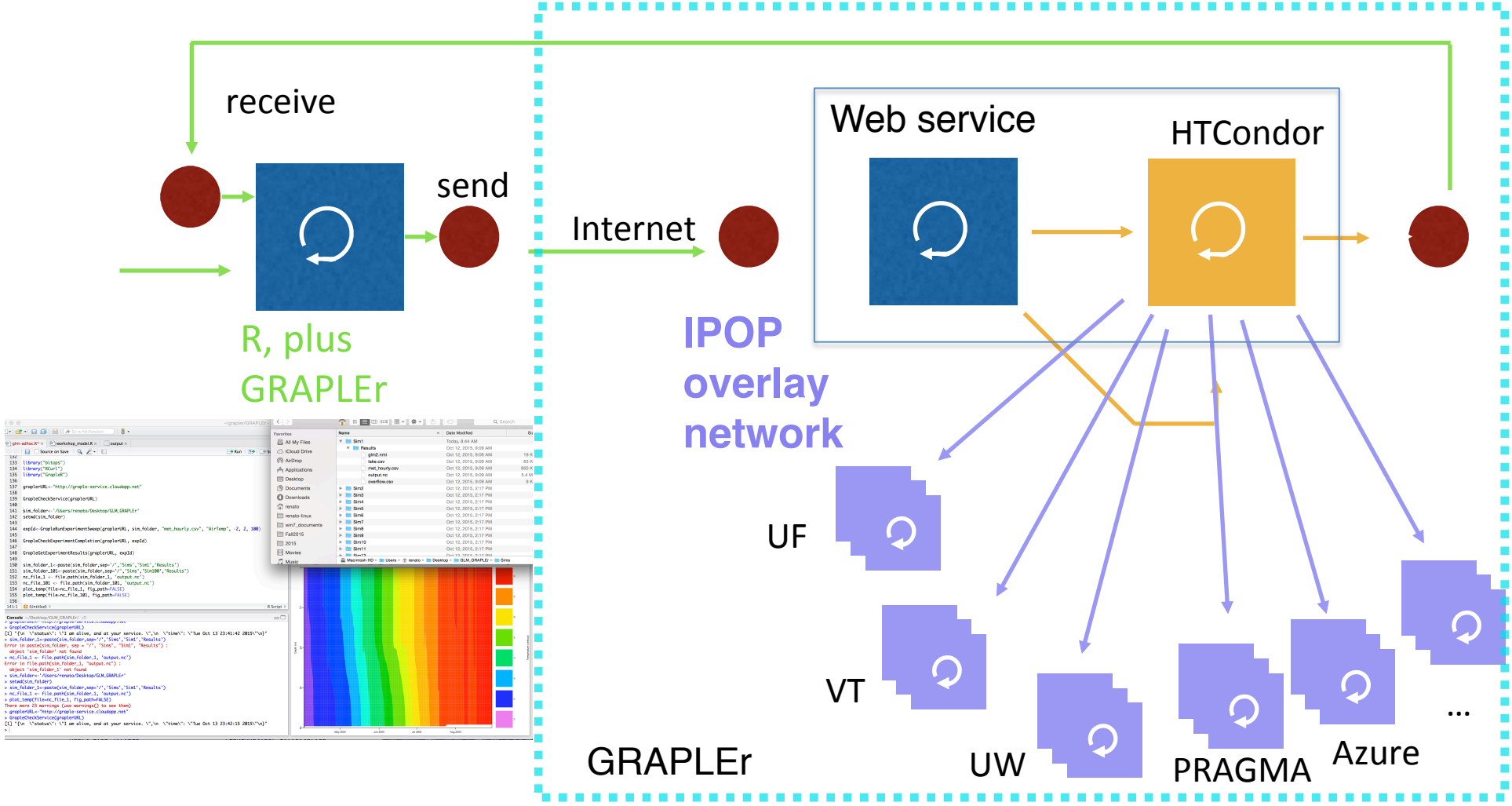
- More details: demo/presentations, Friday
- Extending ENT with IPOP
  - Collaboration with NAIST/UCSD (Ichikawa)
  - Provide access to testbed through IPOP L2 mode
- GRAPLEr
  - Collaboration with UWisc (Hanson), VT (Carey)
  - Web service + IPOP + HTCondor pool for lake modeling (GLM)
    - Development and use of R interface and Web service

Extending ENT backbone through IPOP



(slide by Kohei Ichikawa)

GLM through GRAPLEr



Expanding resources

- Lake expedition
  - Currently
    - UF, Azure; CloudLab
  - Additional resources
    - Comet/SDSC virtual cluster
      - Evaluate dynamic provisioning of back-end HTCondor nodes to GRAPLEr
      - USGS collaborators interested in dynamically-provisioned cloud resources, virtual cluster for R? object storage for driver data?
    - PRAGMA-booted virtual cluster nodes?
- IPOP + ENT
  - Virtual networks for ENT sites: UF, UCSD, NAIST; others?