

# Ohio Supercomputer Center

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## Open OnDemand: Open Source General Purpose HPC Portal

Basil Mohamed Gohar  
Web and Interface Applications Manager

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# Open OnDemand App Features

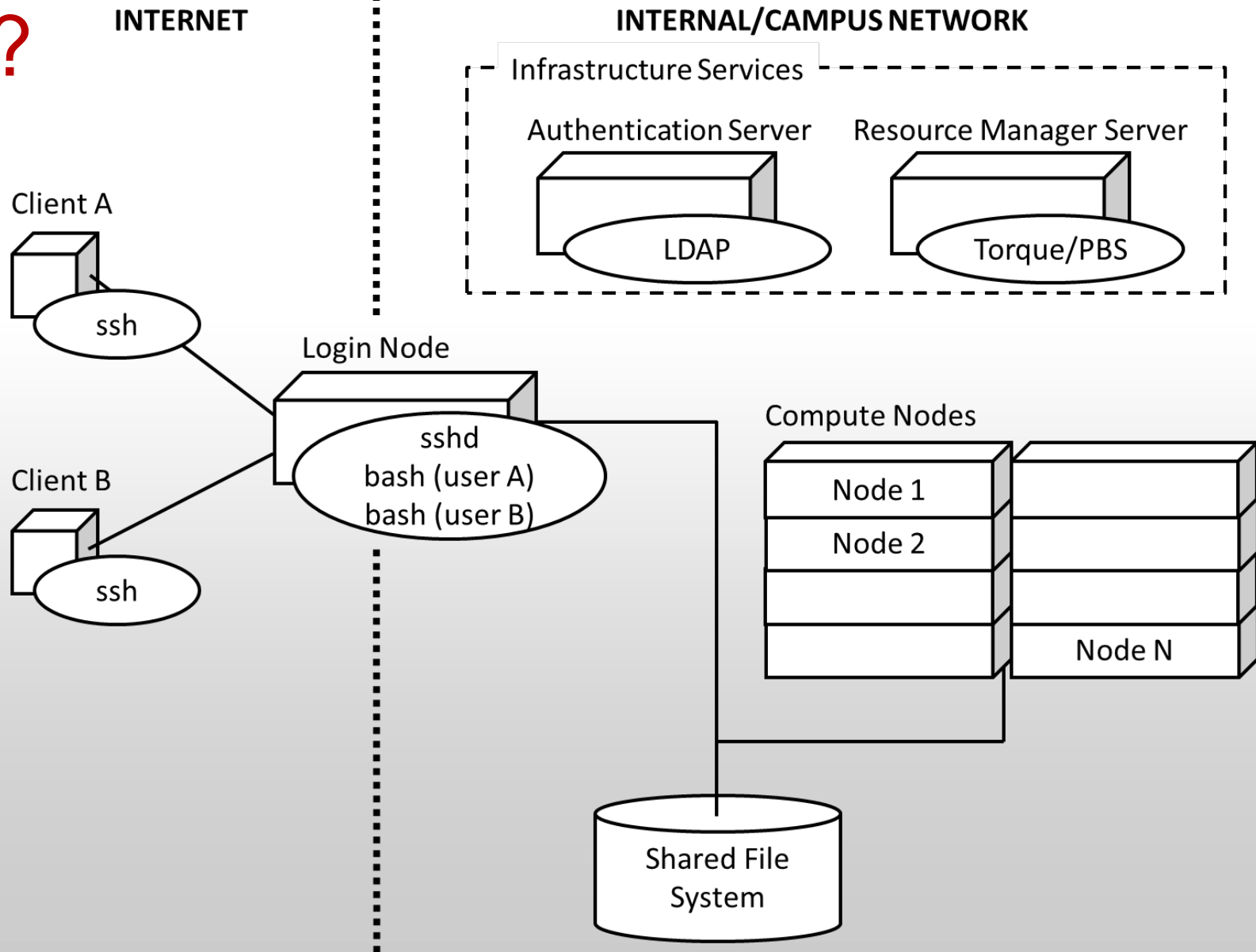
App	Features
Dashboard	Browse and Launch Apps.
File Browser	Browse directories. Upload/Download. Move and Rename.
File Editor	Multiple themes. Key bindings. Syntax highlighting.
Terminal	SSH session to login node.
My Jobs	Create and submit jobs to cluster.
Active Jobs	Display job queue.



# How does it work?

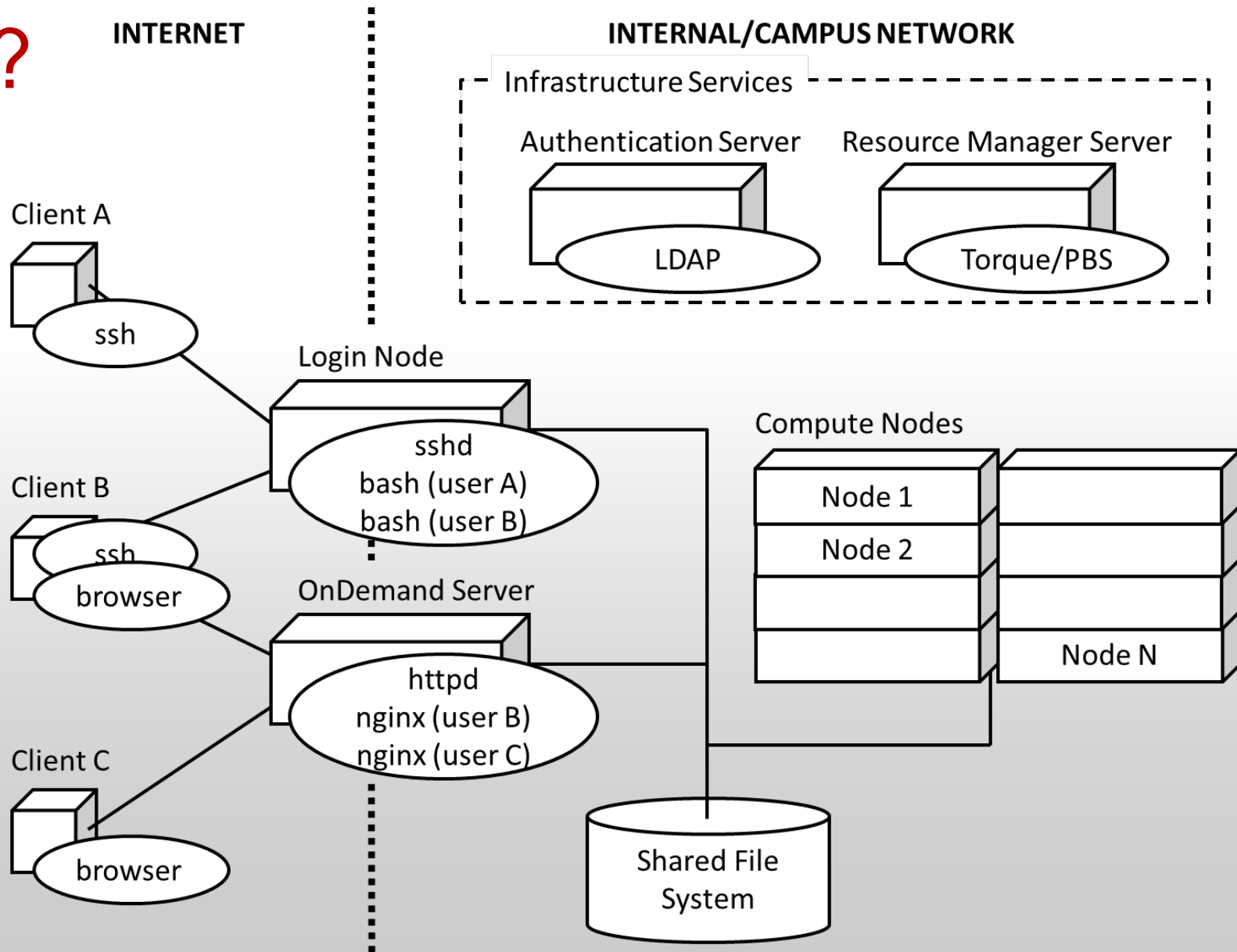
## Our View of the World

- Clients connect to login node through SSH
- Interact with batch system and shared file system through the “bash” user process



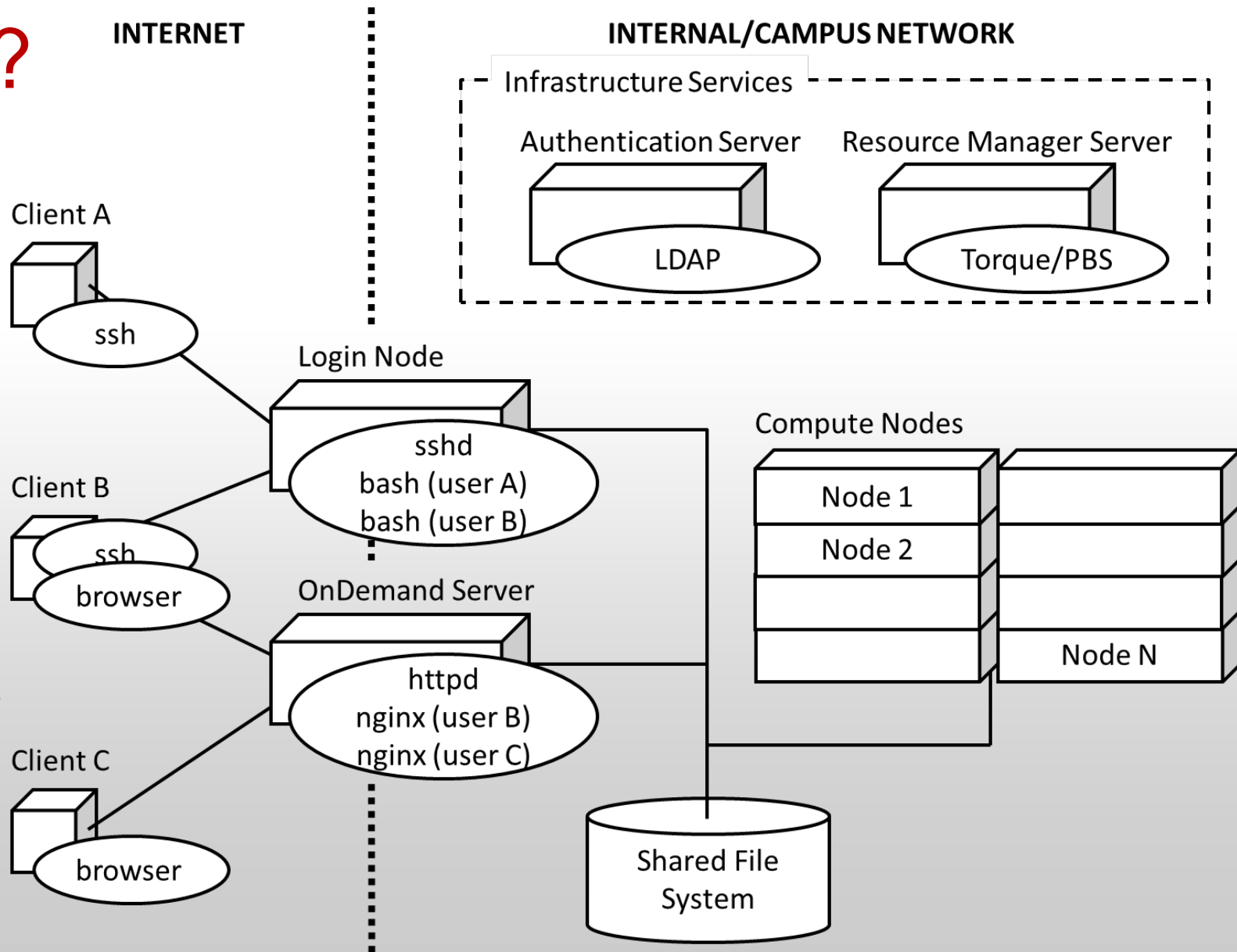
# How does it work?

- We introduced an “OnDemand” server
  - Similar to a traditional login node
  - Same authentication
  - Talks to the same resource manager
  - Mounts the same shared file system



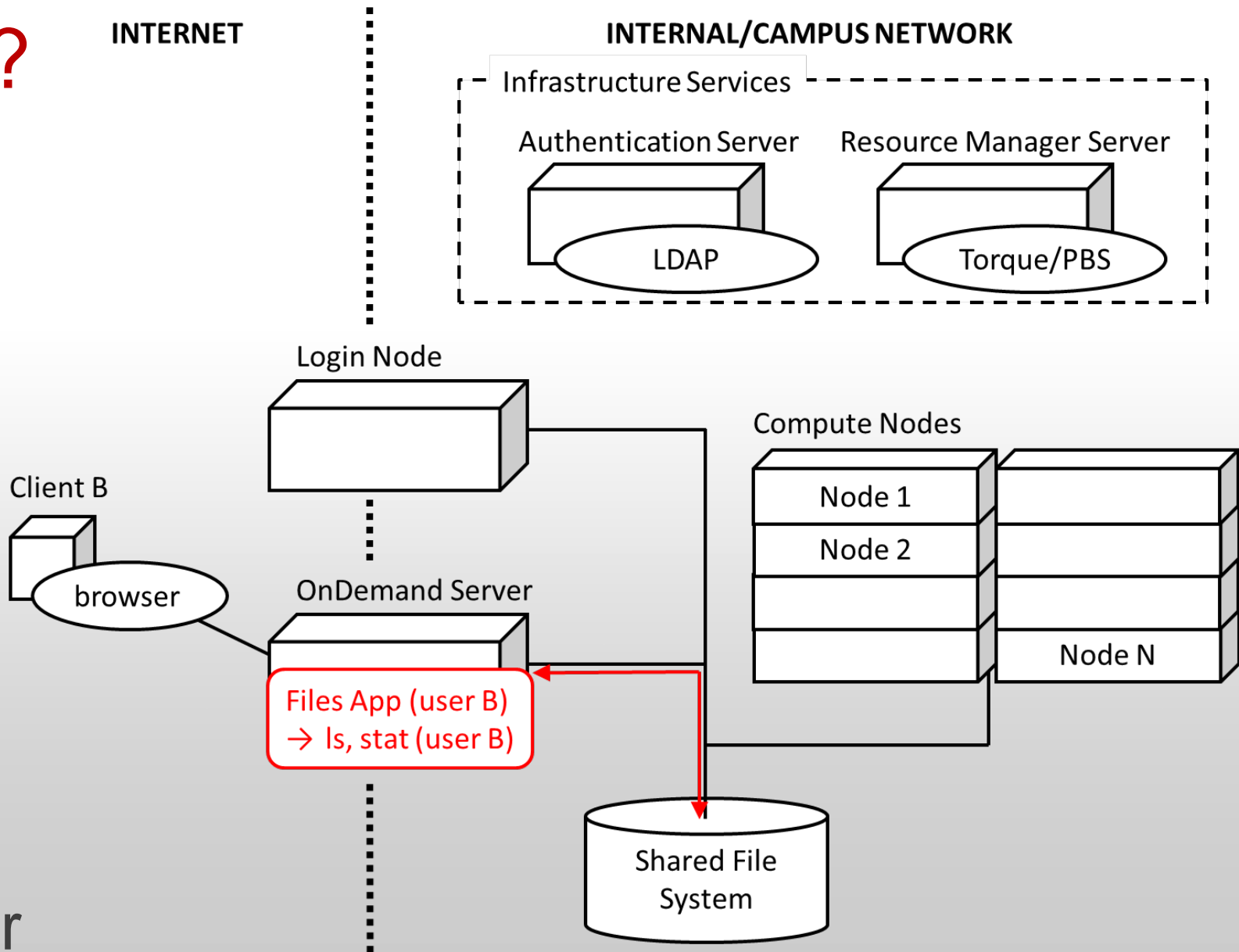
# How does it work?

- Now clients may also connect to OnDemand server through browser
- The “httpd” proxy starts up a per-user nginx (PUN) process for each user
- The PUN launches apps as children processes



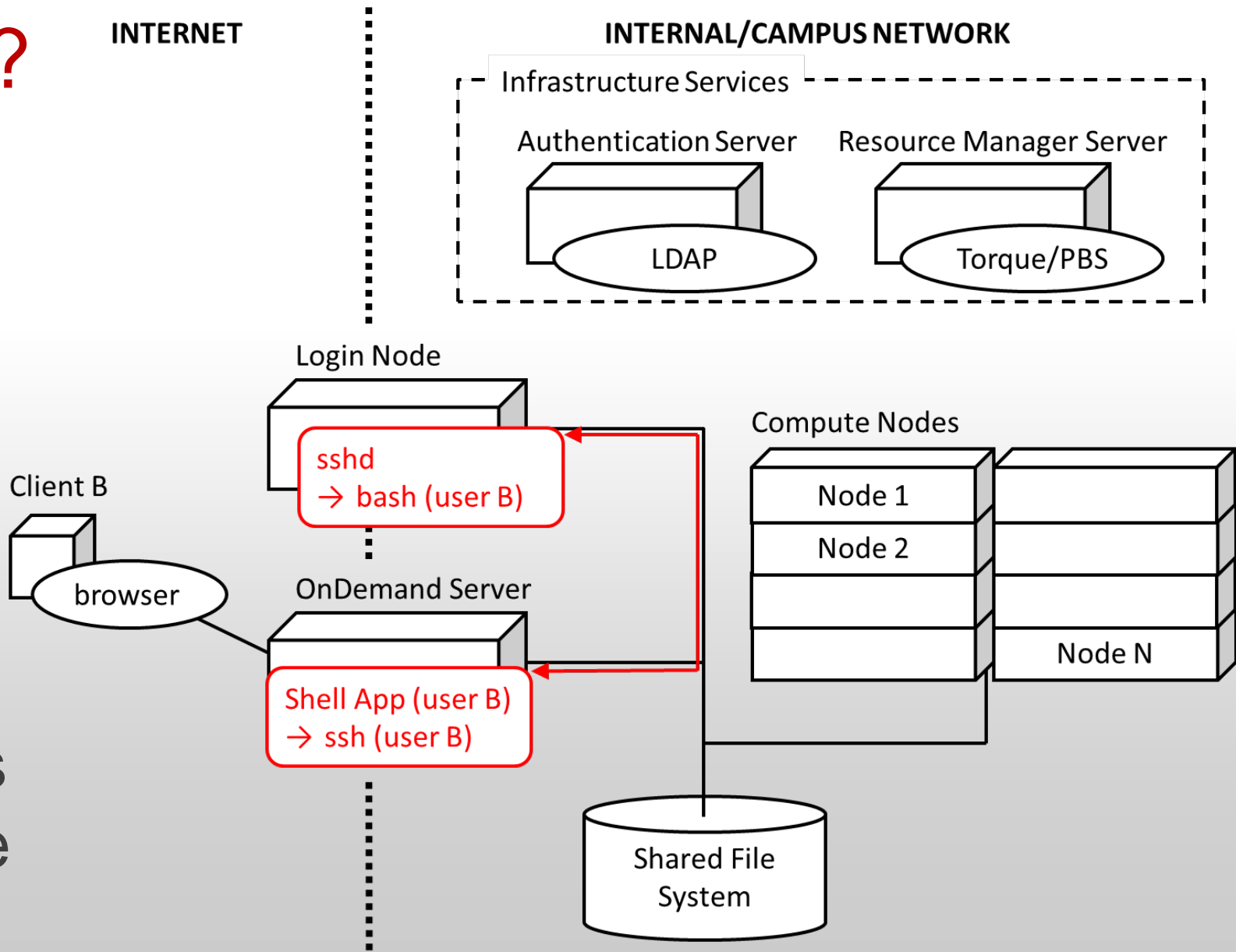
# How does it work?

- The “Files App” launches as the user under the PUN
- Interacts with the shared file system through the Node.js “fs” core library
- File permissions are maintained as all processes run as user



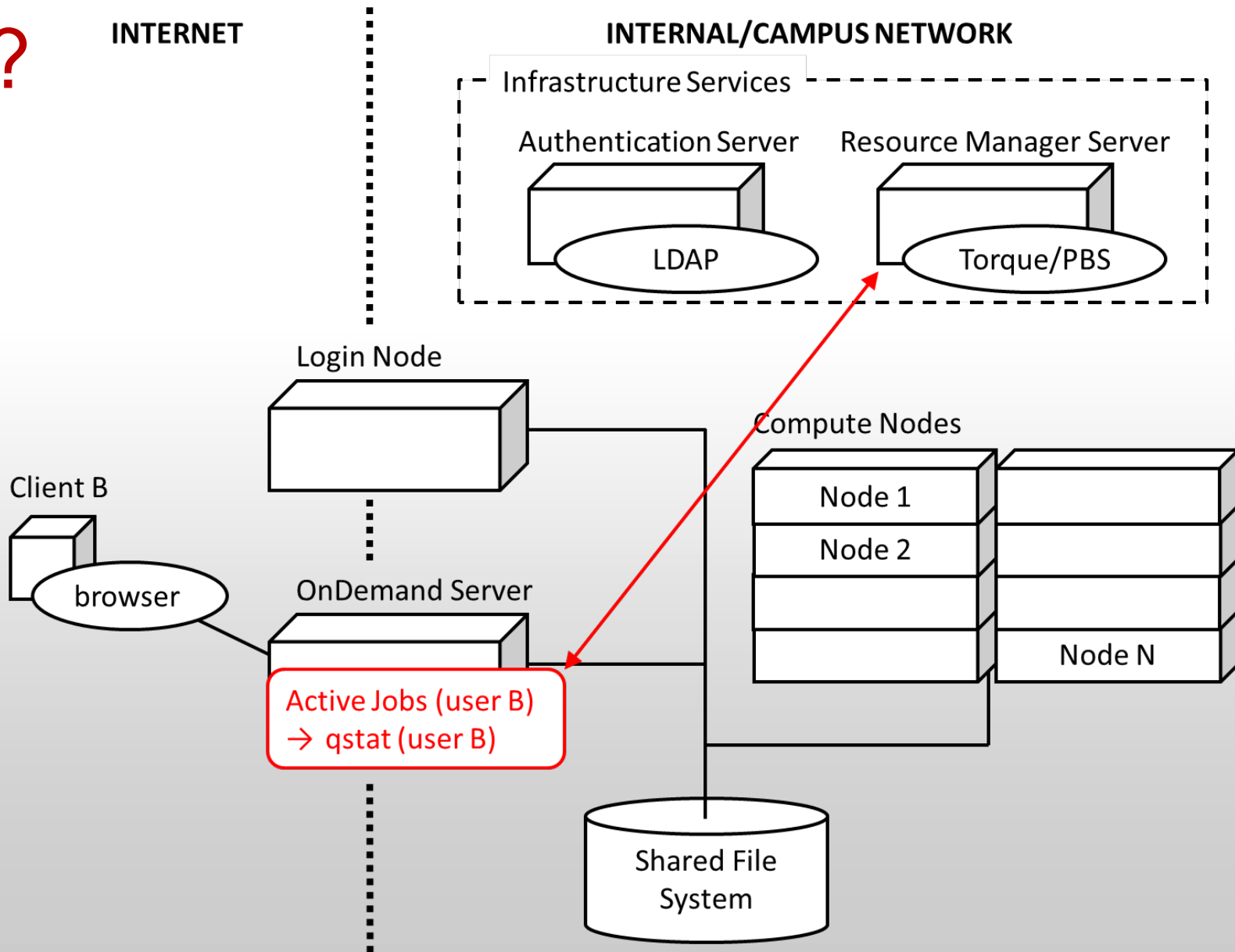
# How does it work?

- The “Shell App” launches as the user under the PUN
- Within the shell app an “ssh” process is started connecting to the login node
- The browser behaves as the terminal for the “ssh” process



# How does it work?

- The “Active Jobs App” launches as the user under the PUN
- Interacts with a Torque batch server
- Equivalent to a “qstat” command called by the user





# How does it work?

- The “My Jobs App” launches as the user under the PUN
- Submits jobs to Torque batch server
- Writes input files and reads output files generated by batch jobs through shared file system

