Virtualization

CERN openlab II quarterly review

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Håvard Bjerke

- Visit to USENIX, Argonne National Labs
- Testing Xen paravirtualization and VT extensions new machines
  - Montecito / VT-i
  - Dempsey / VT-x
- Openlab as a virtualization hub (forum-xen@cern.ch)
- SA3 (SmartFrog, Xavier)
- Maintaining Howto as reference for LCG deployment and deployment of virtualized Scientific Linux CERN nodes in the community

- **Tracking SLC issues**
- **Investigating networking under resource limitations (logical or policy)**
  - Static IP addresses
  - IP masquerading
    - Does not work for all applications
    - Problem with hostname mapping
  - Port forwarding
    - Need to keep track of ports
    - Some applications (LCG) have static port numbers
  - Ipv6? Tunneling? Virtual networking?

Virtualization in batch subsystems

- Multiple heterogeneous virtual nodes on a single machine

- Dynamic instantiation of virtual nodes

- PBS: Efficient utilization of CPU resources using different distributions (SLC3, SLC4) on a single SMP system.

- LSF, currently testing
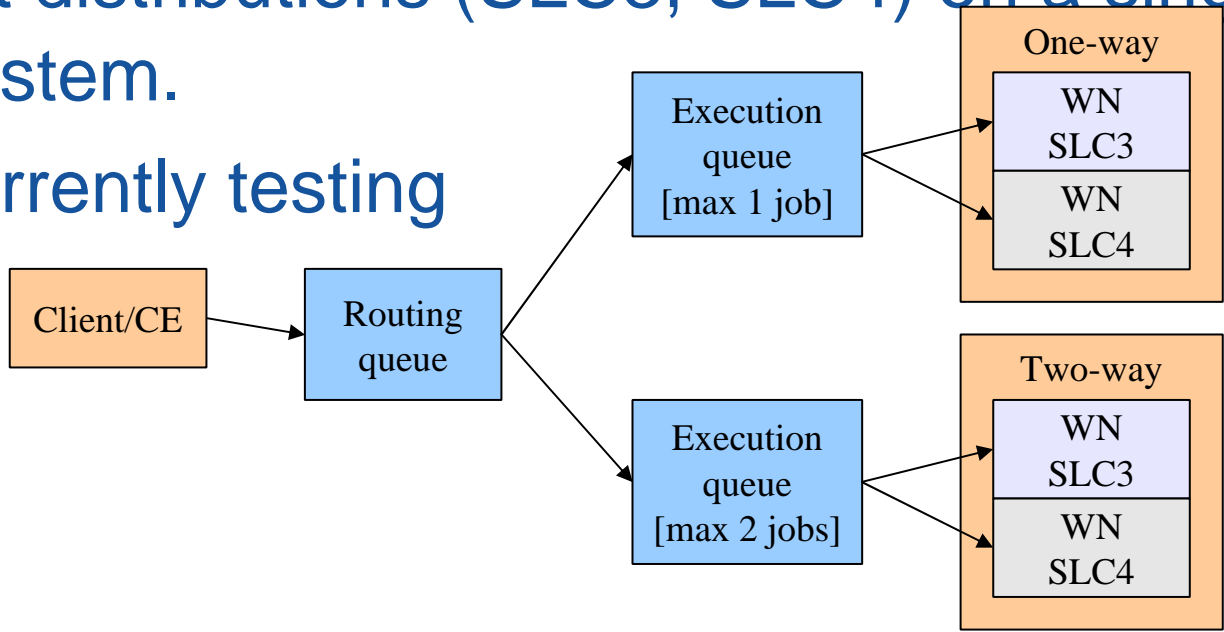
- Cooperation with Argonne National Labs
- Potential candidate for managing a cluster of Virtual Machines
- Strengths
  - Webservices API for interoperability
  - Provides services for both deployment and control
- Weaknesses
  - Globus Toolkit, which Virtual Workspaces depends on, is heavy
  - Early development
  - Does not provide VM image management

- Virtualization in LSF batch subsystem

- Management tools needed
  - Webservices for interoperability
  - VM Technology agnosticity
  - Proof-of-concept desired, similar to Microsoft Virtualization Server

- Testing of Intel Grid Programming Environment