

Xen and IB

Moiz Kohari
SUSE Labs
Linux Solutions Group

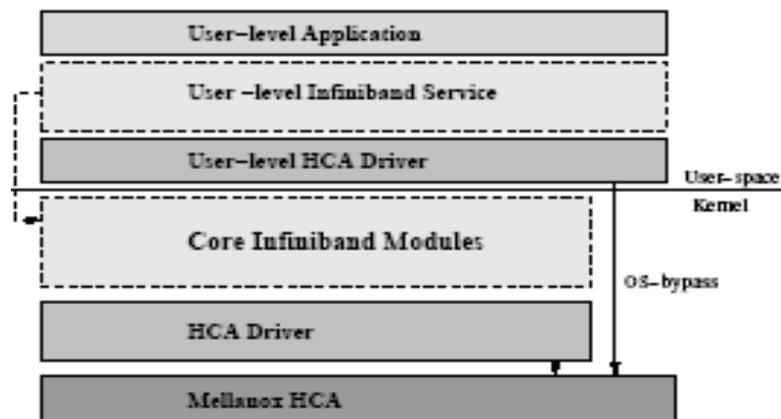
June 23, 2006



Novell®

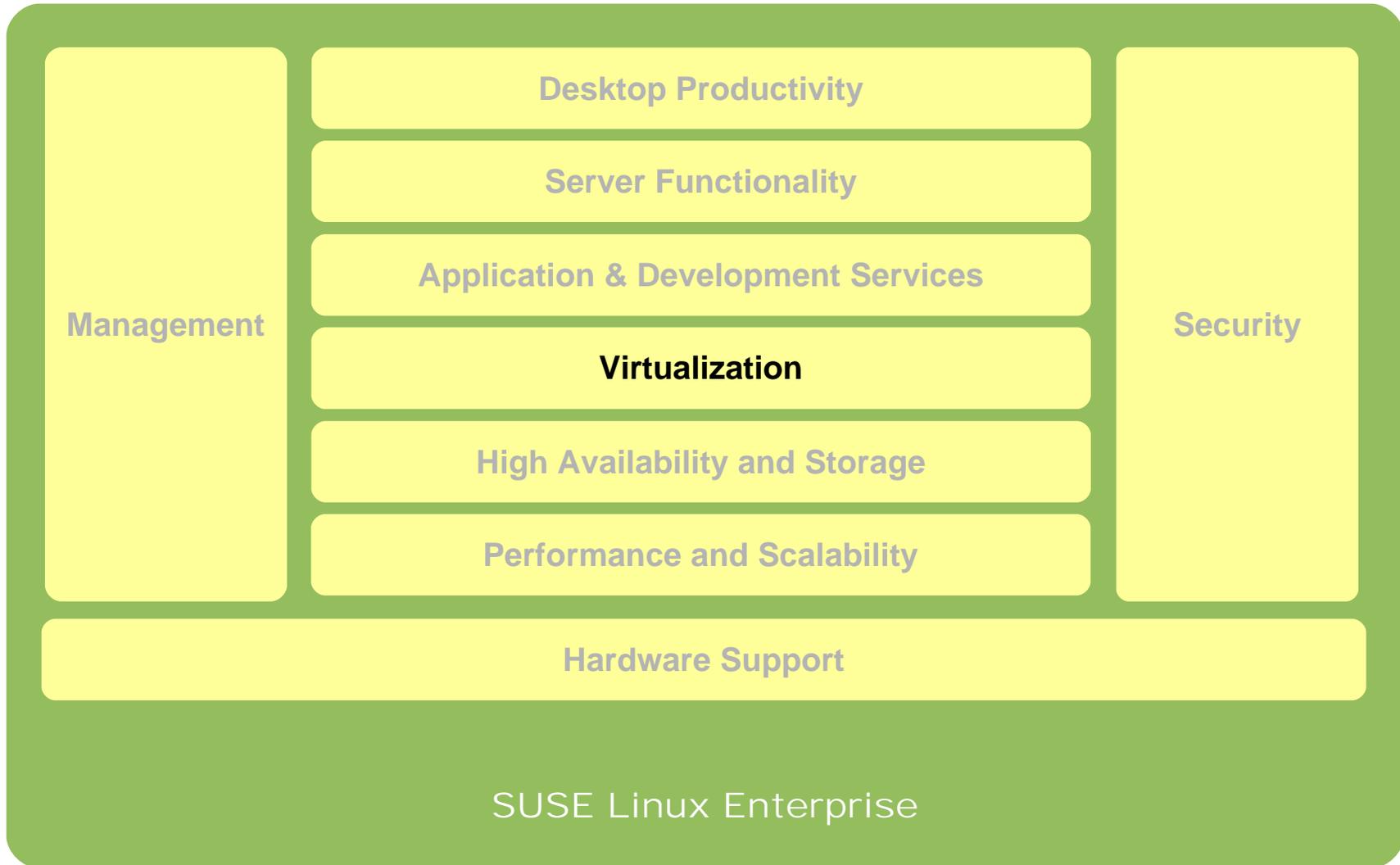
Xen and IB

- Virtual Machine Technologies Allow Multiple OS Instances To Run On a Single Physical Machine
- IB provides High Performance Interconnect
- Challenge – Current Device Models Require Hypervisor Involvement
- By Pass Device Domain For Critical Operations And Directly Communicate with IB Adapters

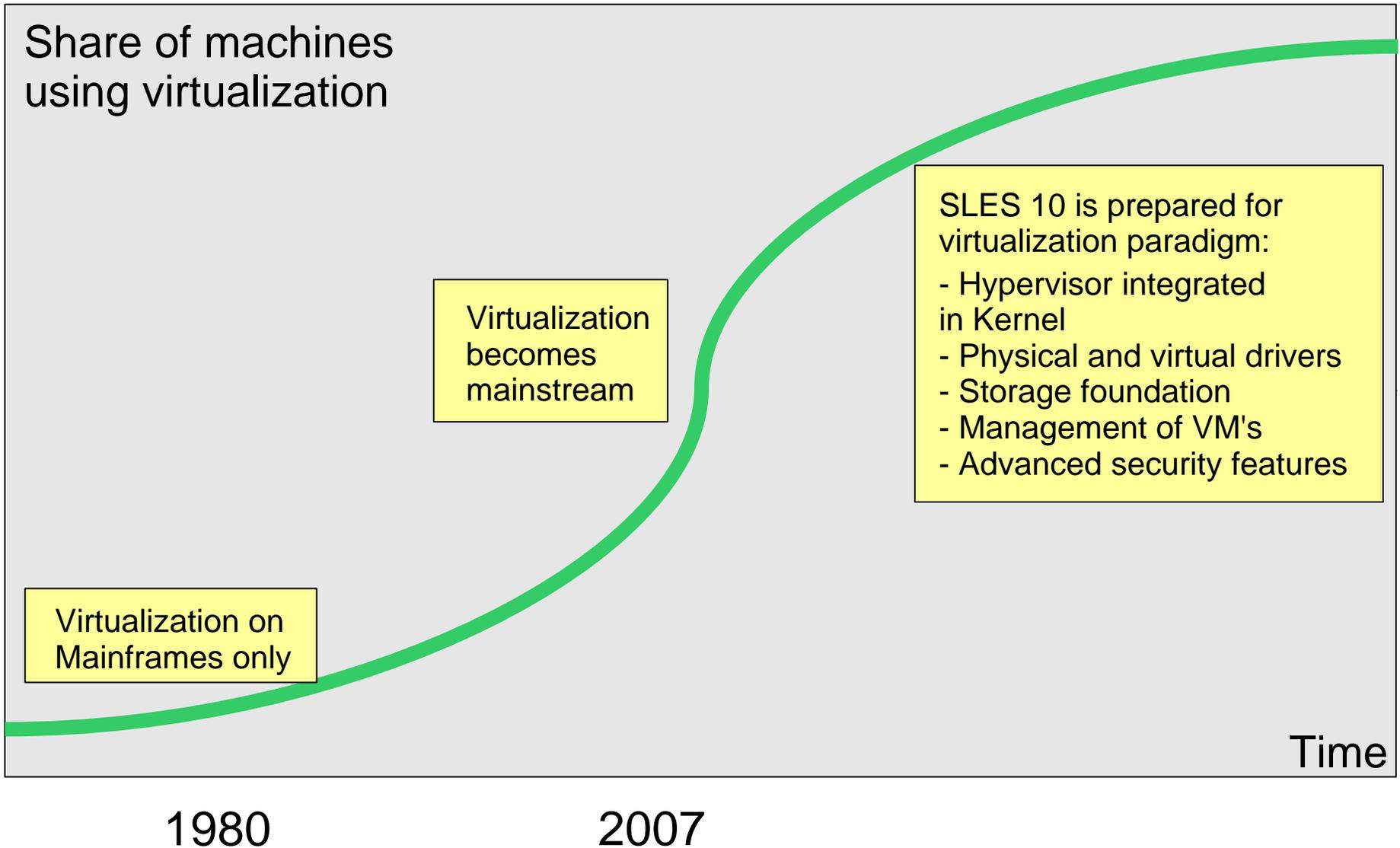


SUSE Linux Enterprise 10

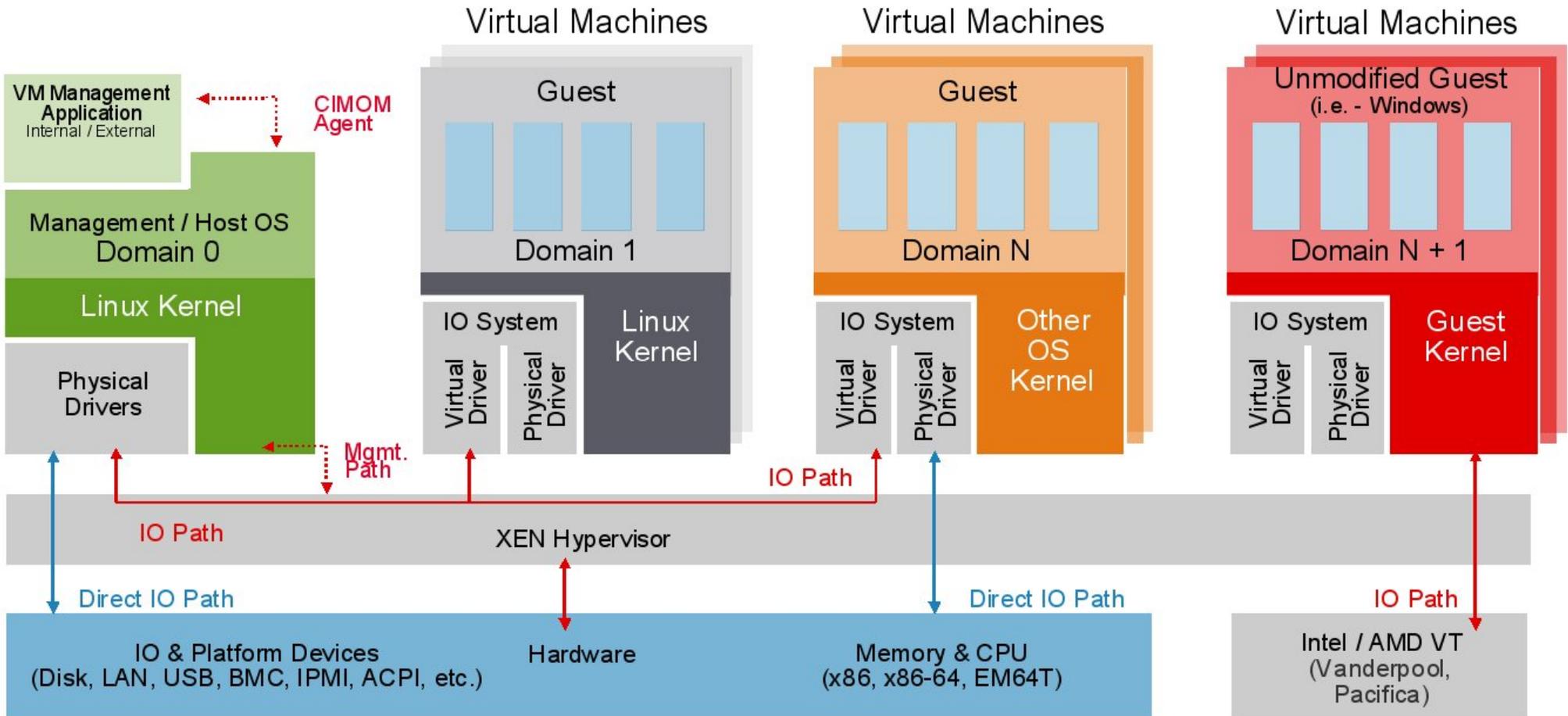
The Platform for the Open Enterprise



Technology trend: Virtualization



Novell Virtual Machine Architecture



Virtualization

Use cases

- Server consolidation
- Workload isolation (e.g. dedicated VMs, QoS policies)
- Scheduled HW Maintenance w/o SW downtime
- Compatibility environments
- SLES9/Windows/Solaris solution stack in VM running on SLES10

Virtualization

Xen 3.0 in SLES 10

- Hypervisor fully integrated & supported
- Support for SMP, PAE and 64-bit CPUs
- SLES 10 acting as a host to SLES 10 guest virtual servers
- Software control over guest I/O
- Dynamic management of memory resources among guests
- Ability to ensure service levels by guaranteeing guests certain fractions of physical CPUs
- Migrate live workloads from one physical server to another
- Paravirtualization & Hardware Virtualization
 - (Intel VT and AMD V)
- Command line XM tools (eg Xm create etc)
- Configure OCFS 2 & heartbeat - Xen sessions can failover between virtual machines

Xen Management

Per Server with SLES 10

- Based on CIM standard, CIM providers for VM management
- Server level: YaST modules for easy management - create & manage VM's
- NFS Cluster level: prototype web interface (due in SP1)

Enterprise XEN / VM Management

- Novell to deliver policy-driven VM management tools on top of Zenworks – Q4
- Partner products
 - Virtual Iron - manage virtual machines running on multiple computers
 - Cassatt - manages “virtual machine sprawl” using a vendor-neutral architecture to automate control across virtual servers from multiple sources, including VMware, Xen, and Microsoft.

RT- Virtualiation Support

- Real-Time Xen Virtualization
 - Domain0 Control Interface must be RT Enabled
 - Support containers with real-time characteristics
- Coherent Distributed Shared Memory (DSM)
 - Shielded CPUs and InfiniBand Optimized Virtual Lanes
- Deterministic Distributed Lock Management (DLM) Services (>1000 nodes)
- Real-Time Enabled Cluster File Systems