OpenPOWER™

System Management Tool for OpenPOWER

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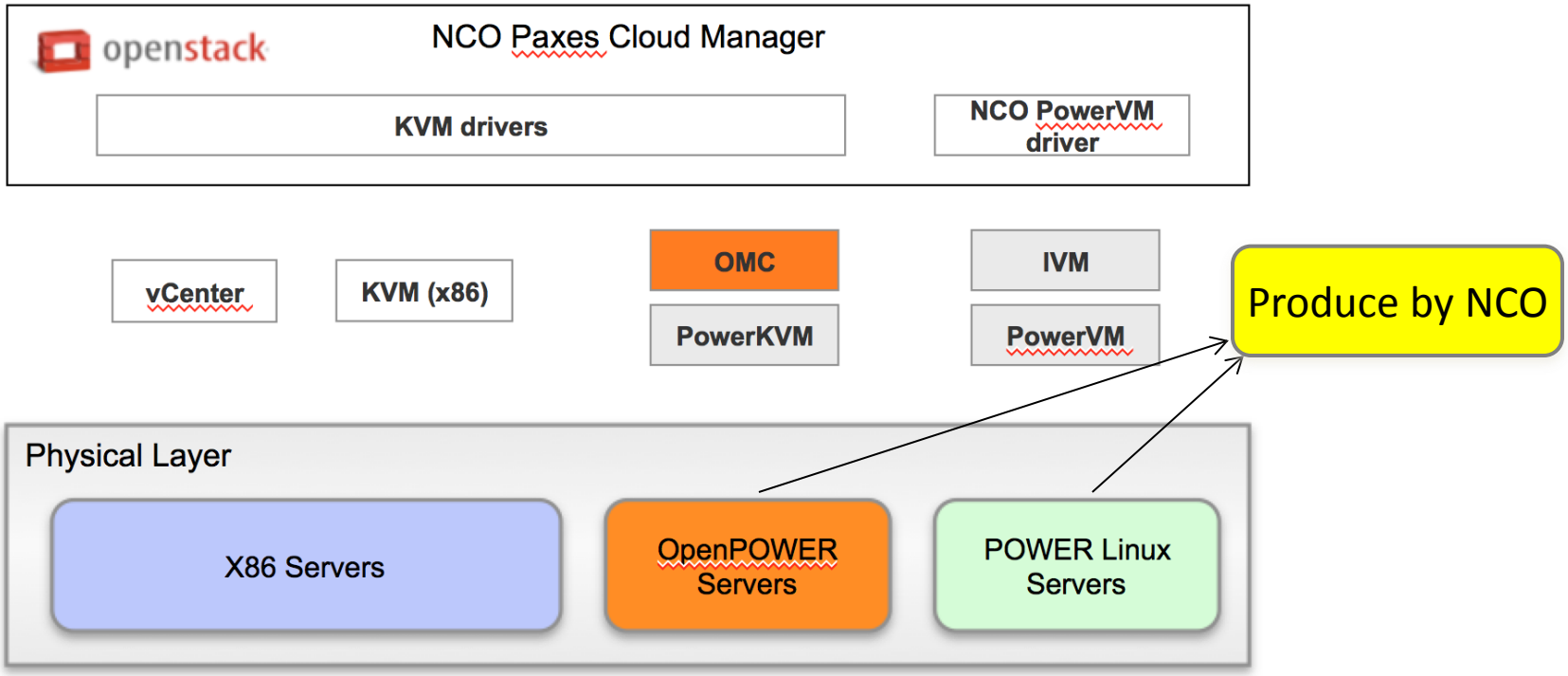
Neu Cloud Oriental System Technology Co., Ltd

- Leading High Performance Server Manufacturer in China, Invested By IBM
- Teamsun's Holdings Subsidiary

Neu Cloud is committed to the events focusing on the IBM POWER servers manufacturing, the localization, the well matched platform and ecological system. Owing to establish a comprehensive ecological system and manufacturing chain, Neu Cloud infuses substantial R&D into the domains of server, database, middleware, virtualization, cloud computing and big data. What's more, joint great efforts with leading enterprises by reaching agreements to chart a promising future.

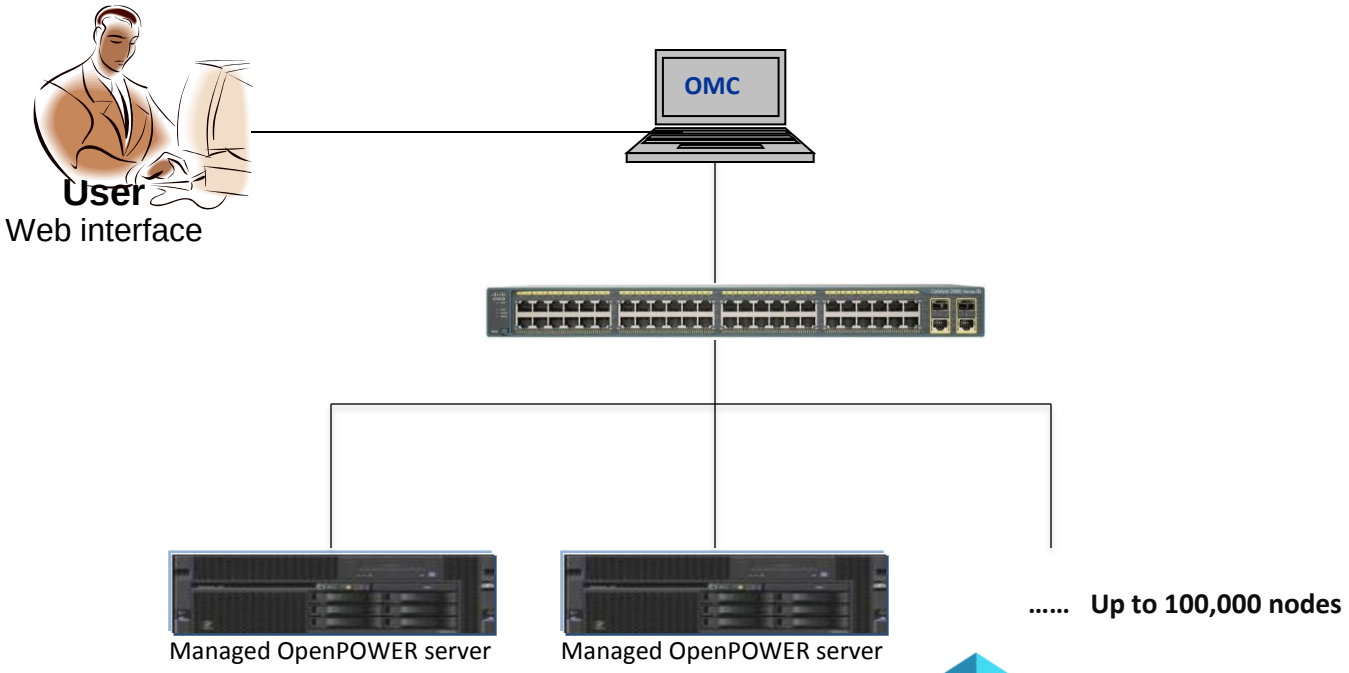
OpenPOWER in NCO Cloud Solution

- NCO IAAS cloud manager: Paxes, base on OpenStack development
- Paxes has been released
- NCO OpenPOWER server is on the way



OMC OverView

- Market demand
- IBM&NCO joint development
- Product name: OpenPOWER Management Console(OMC)
- Manage hardware and virtualization



Why?

I have OpenStack	I have Kimchi	I have x86 system management tool	I have HMC for PowerVM servers

• Cloud only
• Limited hardware management capabilities
	• KVM management only
	  • No hardware management capabilities
	  • No OS and applications management capabilities
		• Different system management characteristics:
		  • BMC
		  • PowerKVM
		  • Bootloader
		  • FRUs, sensors, event logs and alerts
			• HMC manages PowerVM through FSP, but FSP is not an option for OpenPOWER servers

OpenPOWER System Management Characteristics

Service processor	• Different BMC vendors, even build from the ground up • Significantly affect the hardware management capabilities
RAID	• Different HW raid vendors • Automatic RAID configuration • Software RAID requirement
Intelligent frame	• Share the power, Ethernet • IBM Power 795 like frame?
Energy management	• On-chip Power Management Micro-controller • Integrated Per-core VRM • Critical Path Monitors
Integrated PCIe Gen 3 & CAPI	• Native PCIe Gen 3 Support • Transport Layer for CAPI Protocol • Coherently Attach Devices connect to processor via PCIe
Virtualization vs Baremetal	• PowerKVM and PowerNV • Petiboot • Ubuntu, RHEL, SLES, CentOS
GPU	• GPU enablement & management • NVlink

Known OpenPOWER System Management Products

xCAT(Extreme Cloud/Cluster Administration Toolkit)

- Open source on SourceForge http://xcat.sf.net
- X86 and OpenPOWER
- CLI & RestAPI only
- No monitoring
- Announced at http://openpowerfoundation.org/technical/technical-resources/software/

PCM(IBM Platform Cluster Manager)

- IBM licensed
- Using xCAT as backend
- X86, IBM Power and OpenPOWER
- GUI & CLI & RestAPI

OpenPOWER Management Console

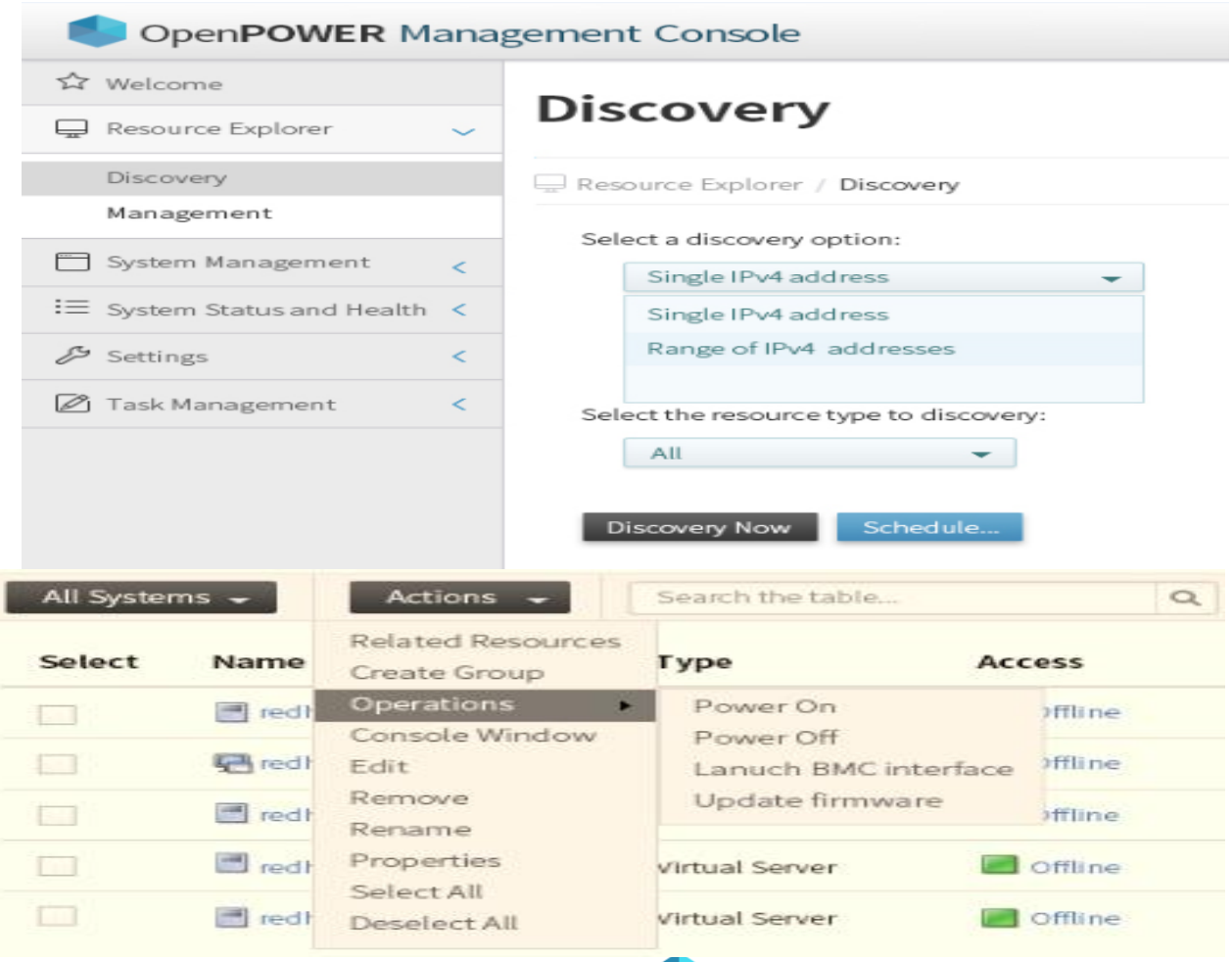
OpenPOWER Management Console

- IBM & Teamsun joint-development
- Using xCAT as backend
- Complete features set
- Hardware appliance
- OpenStack plugin

System Management Features (1/7)

Hardware management

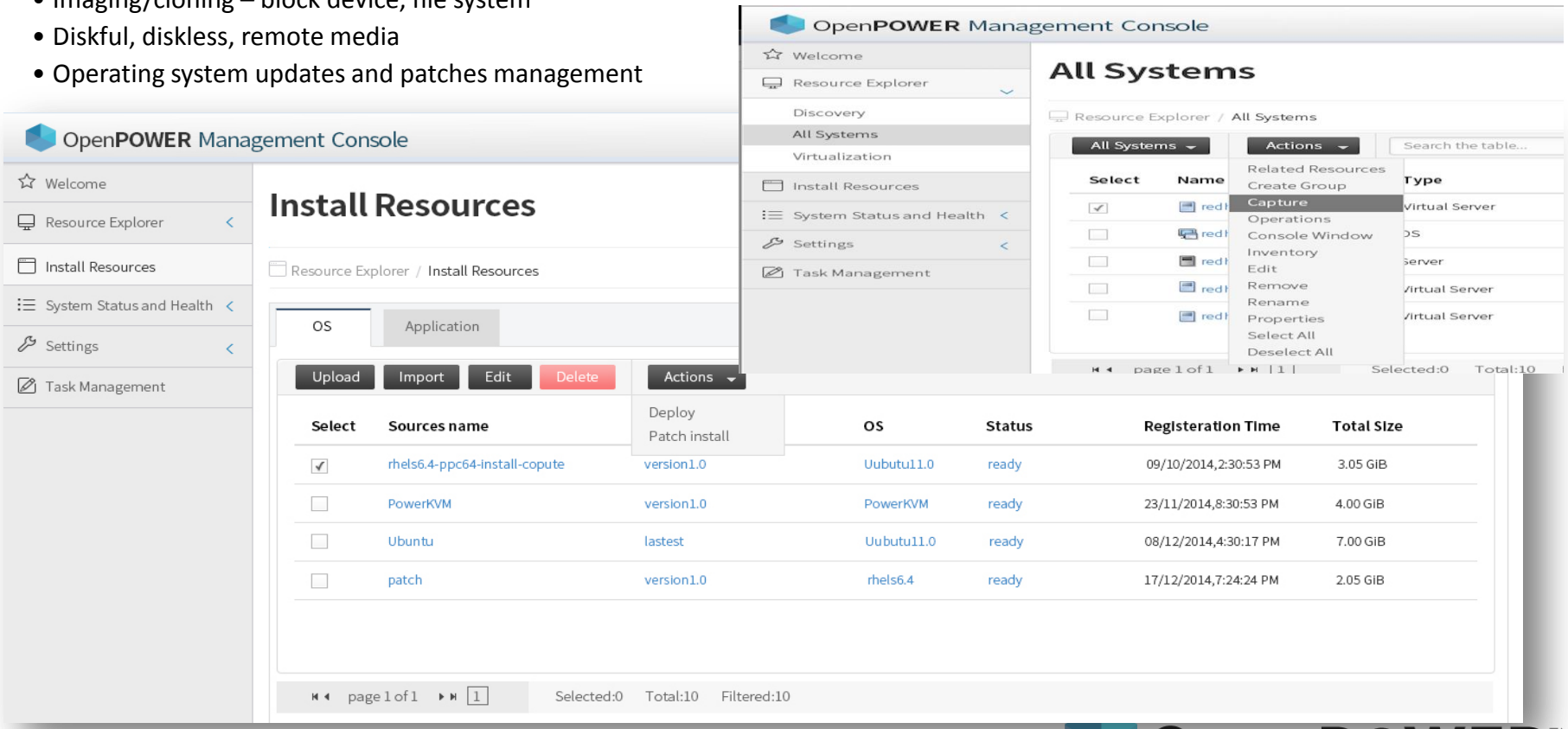
- Hardware discovery
- Hardware initialization
- Remote power, remote console
- Hardware inventory
- Hardware vitals
- Energy management
- Remote destiny control
- SNMP alters processing
- Firmware update
- Service processor configuration



System Management Features (2/7)

Unattended operating system provisioning

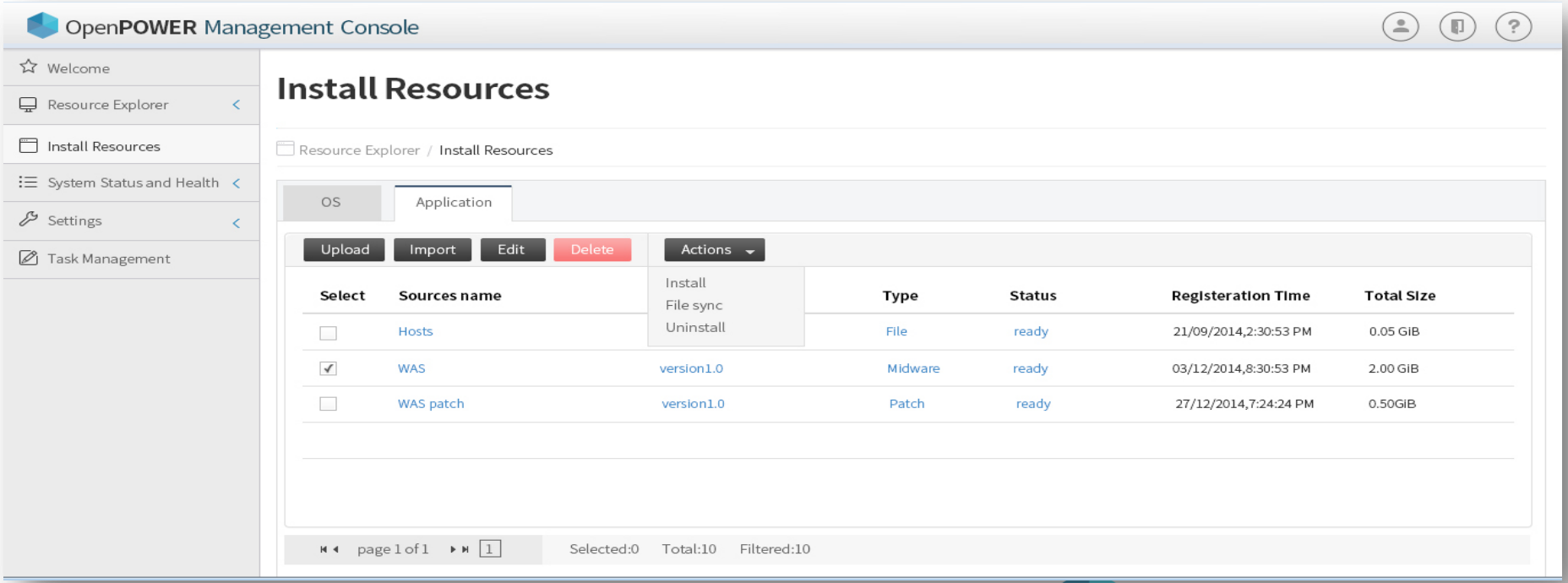
- Os native automatic installers: RedHat kickstart, SuSE autoyast, Ubuntu preseeding, AIX NIM and Windows WinPE
- Imaging/cloning – block device, file system
- Diskful, diskless, remote media
- Operating system updates and patches management



System Management Features (3/7)

Configuration management

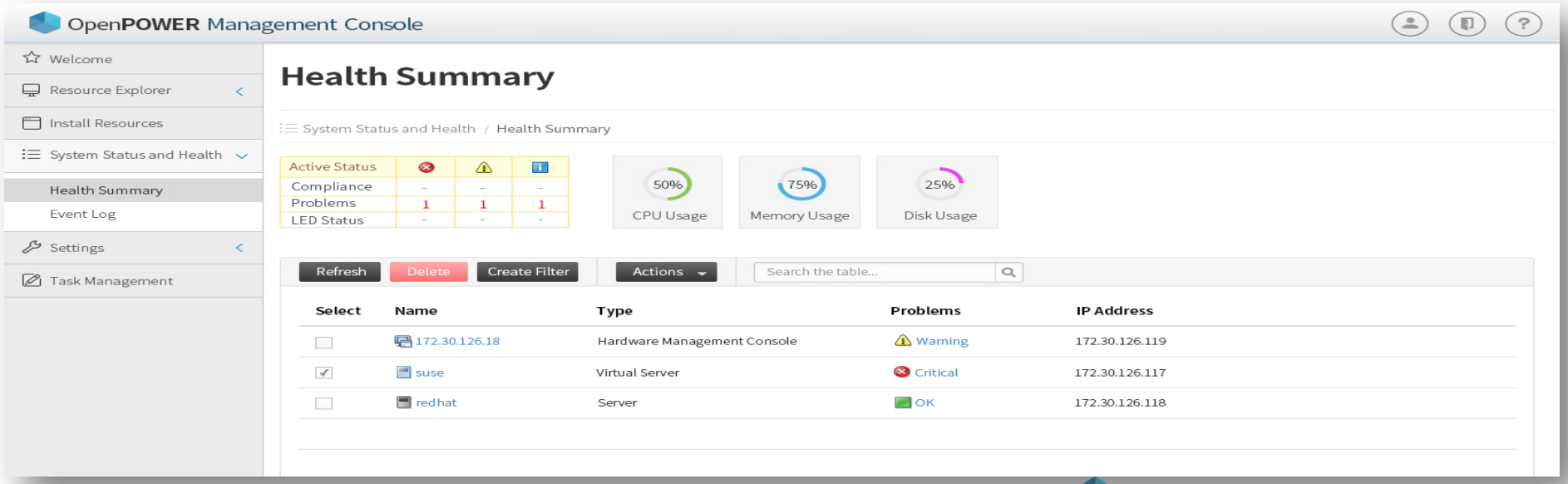
- Applications enablement: installation, configuration, patches and updates
- File sync
- Distributed shell



System Management Features (4/7)

Monitoring

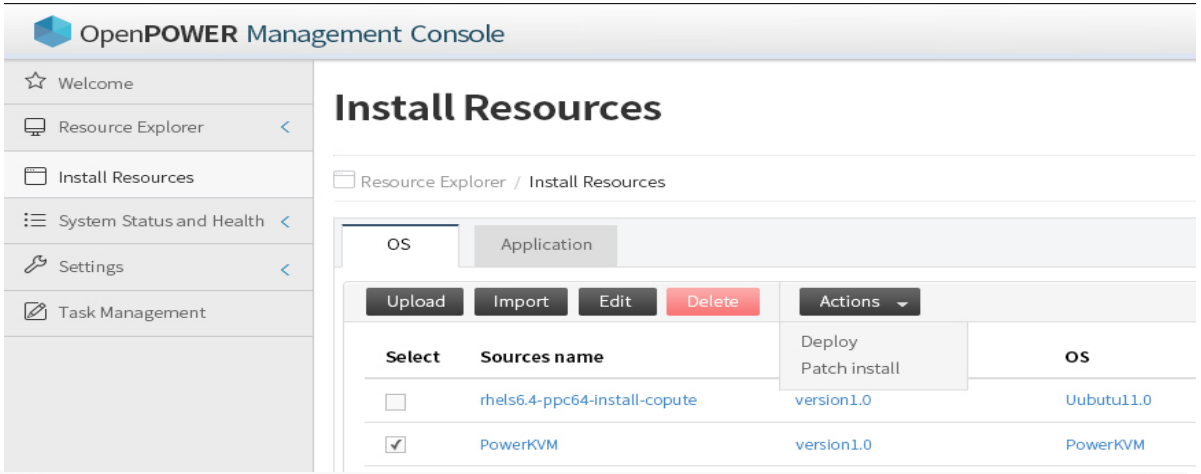
- Hardware monitoring: power status, vitals, eventlogs, SNMP alters, LEDs, service events
- Operating systems monitoring: performance, events
- Applications monitoring
- Push vs pull

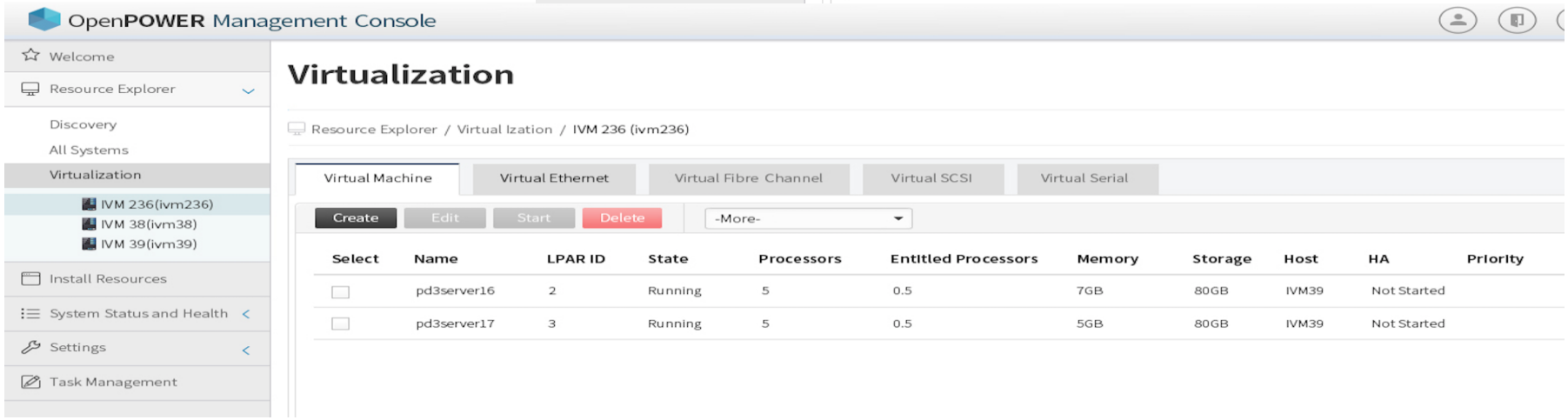


System Management Features (5/7)

Virtualization management

- Hypervisor provisioning and configuration
- VM lifecycle management
- Storage/network management

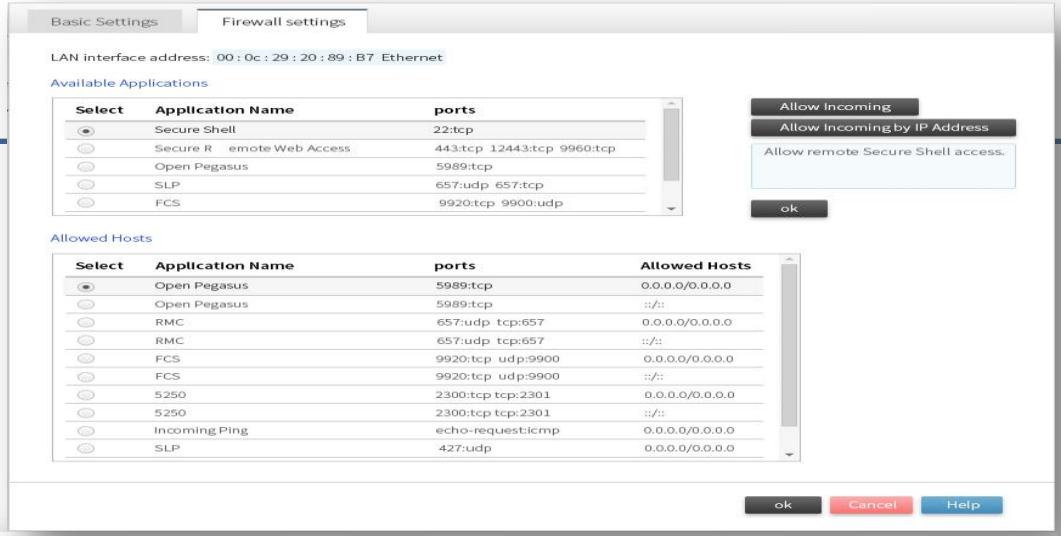


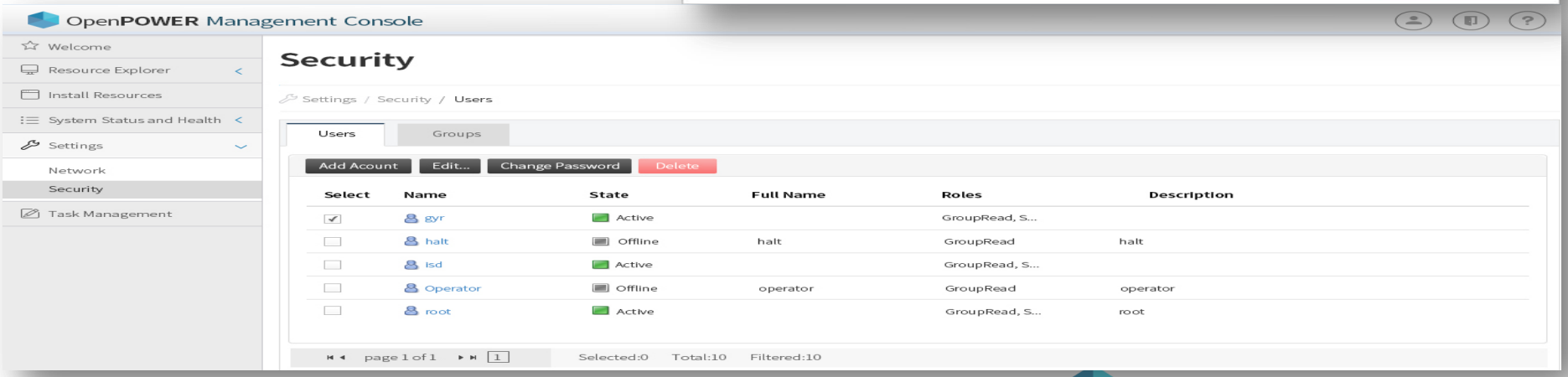


System Management Features (6/7)

Security & HA

- Users management
- TCP/UDP ports
- Encrypted communication
- High available management node





System Management Features (7/7)

Scalability

- How many servers could it manage
- Load balance, Hierarchy

UI

- CLI, GUI, REST API

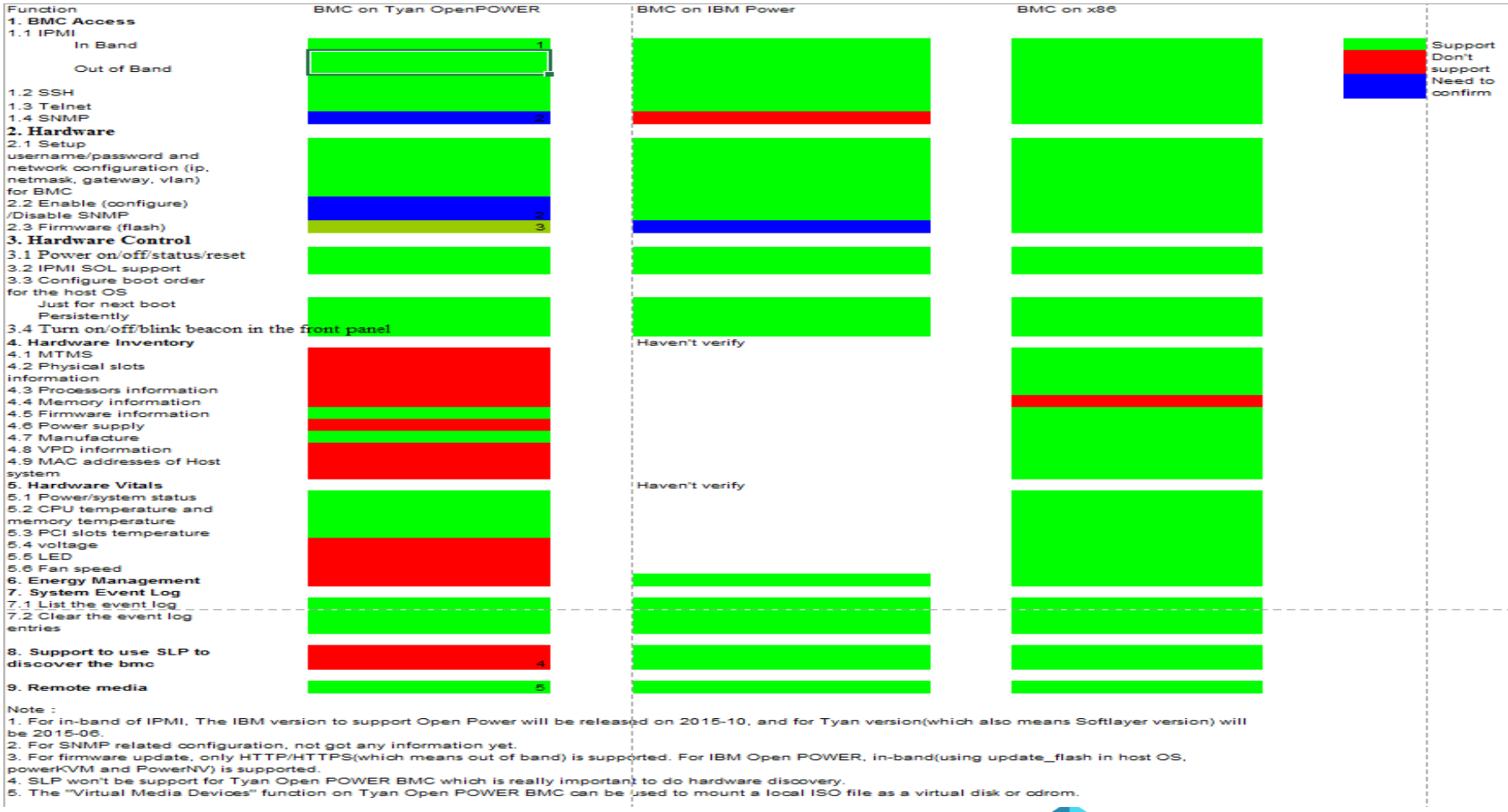
Delivery

- Standalone
- Virtual appliance: vm image, docker image, etc.
- Hardware appliance


Thank You !

Backup

BMC features comparison



Note :
1. For in-band of IPMI, The IBM version to support Open Power will be released on 2015-10, and for Tyan version(which also means Softlayer version) will be 2015-06.
2. For SNMP related configuration, not got any information yet.
3. For firmware update, only HTTP/HTTPS(which means out of band) is supported. For IBM Open POWER, in-band(using update_flash in host OS, powerKVM and PowerNV) is supported.
4. SLP won't be support for Tyan Open POWER BMC which is really important to do hardware discovery.
5. The "Virtual Media Devices" function on Tyan Open POWER BMC can be used to mount a local ISO file as a virtual disk or odrom.