RouterOS in Virtual Environment

RouterOS di lingkungan Virtualisasi

presented by
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Experience :

- Mikrotik user since 2008
- Listed in Indonesian MikroTik Consultants
- Co-founder of ASTA Informatics, PT.

Certification :

- MTC[NA, TCE, RE]
- VCA-Cloud, 2Xpert

ASTA Informatics, PT.

- We are System Integrator (most our of our clients are Small-medium Businees & Small-medium Enterprise)
- Provide Consulting, Installation & Services
- Already experienced with networking in wide variety of business (health, real estate, food & beverages, financial institution, manufacturing, hospitality, mining)
- More info at : www.astainformatics.com

routing the world with

Forum MikroTik Indonesia

- Founded by Akbar Azwir
- Largest Indonesian MikroTik user forum
- User are exchange their experience solve other users problem
- 49,552 members and growing (as per Nov 2013)

Common RouterOS deployment in real world network

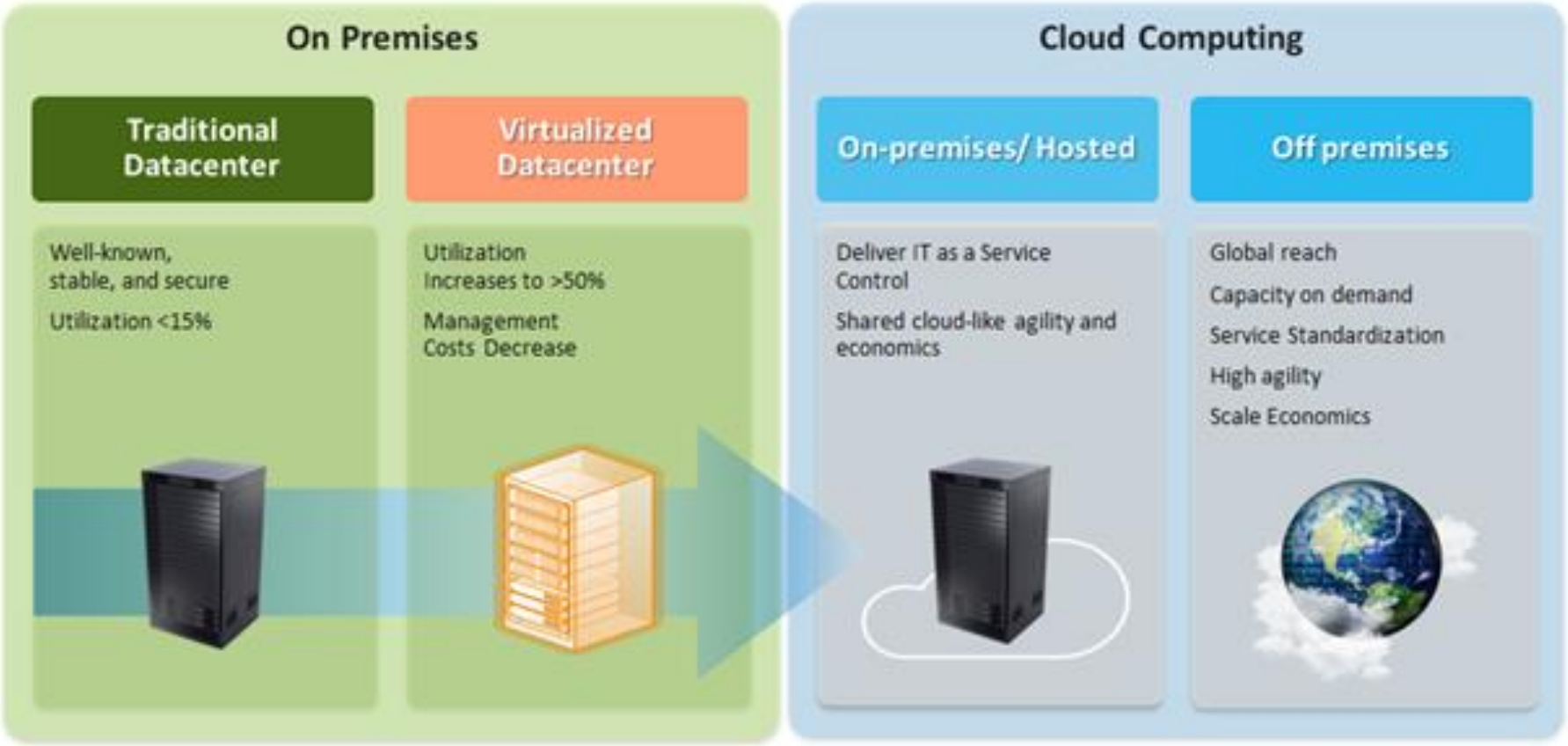
- RouterBOARD [mipsbe, misple, ppc, tile]

- RouterOS in x86 architecture

Welcome to the Cloud Era!

Workloads are virtualized in the x86 Architecture

Datacenter Evolution

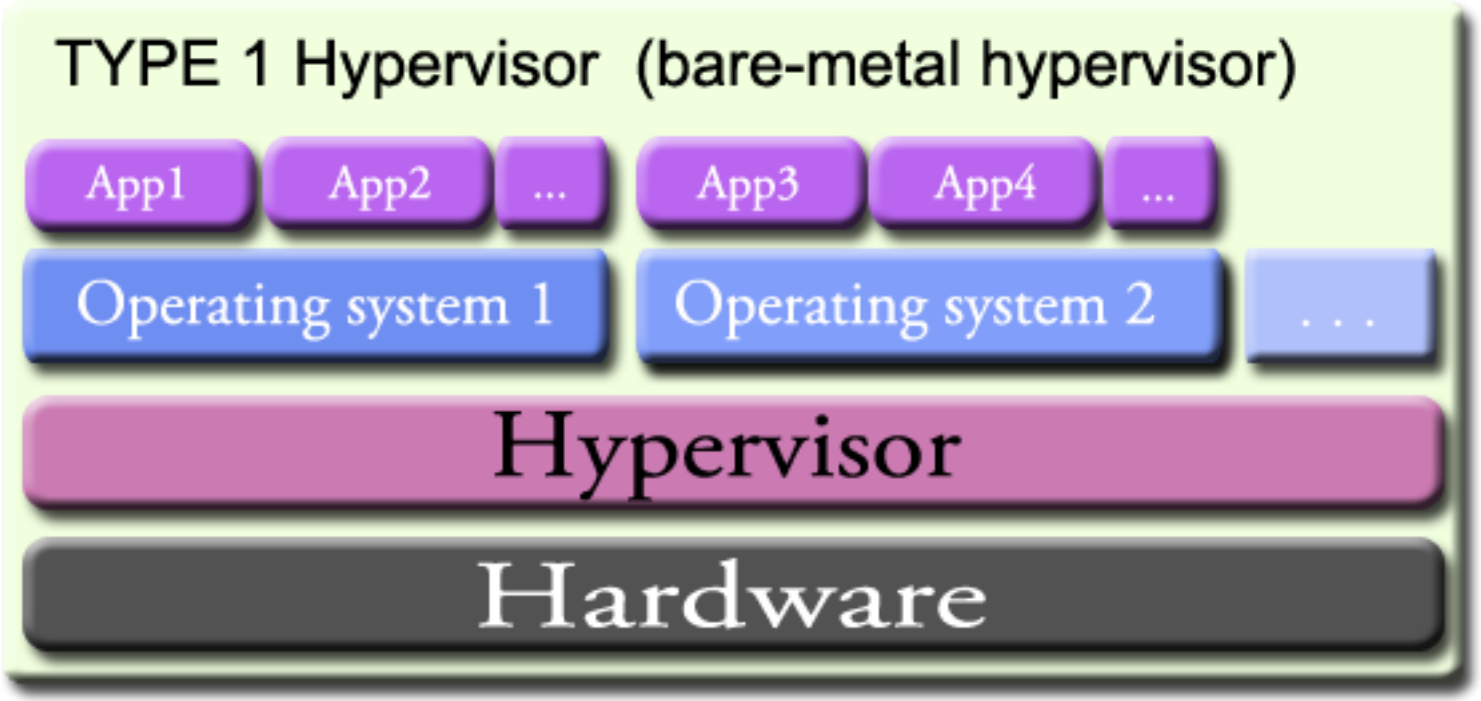


Why Virtualized?

- Faster Deployment
- Elasticity (VM can be clone, move, snapshot etc.)
- Maximum resource utilization, Save Energy.
- High Availability & Faster disaster recovery

More readings:
http://software.intel.com/en-us/articles/the-advantages-of-using-virtualization-technology-in-the-enterprise

Hypervisor



A hypervisor is a hardware virtualization technique that allows multiple guest operating systems (OS) to run on a single host

Running RouterOS as a VM

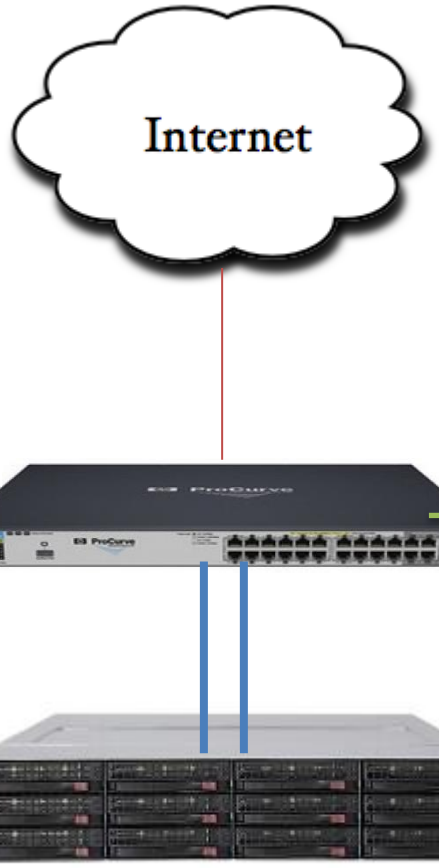
- Since MikroTik are available in x86, it can be virtualized
- Deployment & Performance Result are different for each hypervisor
- Support most of the common hypervisor available on the market today

RouterOS runs in different hypervisor

Hypervisor	Supported
ESXi (vSphere)	Yes
Hyper-V	Yes, (but Ethernet not detected)
XenServer	Yes, (but many user report problem)
KVM	**Best Performance, using VirtIO**

Case Study

Physical Look



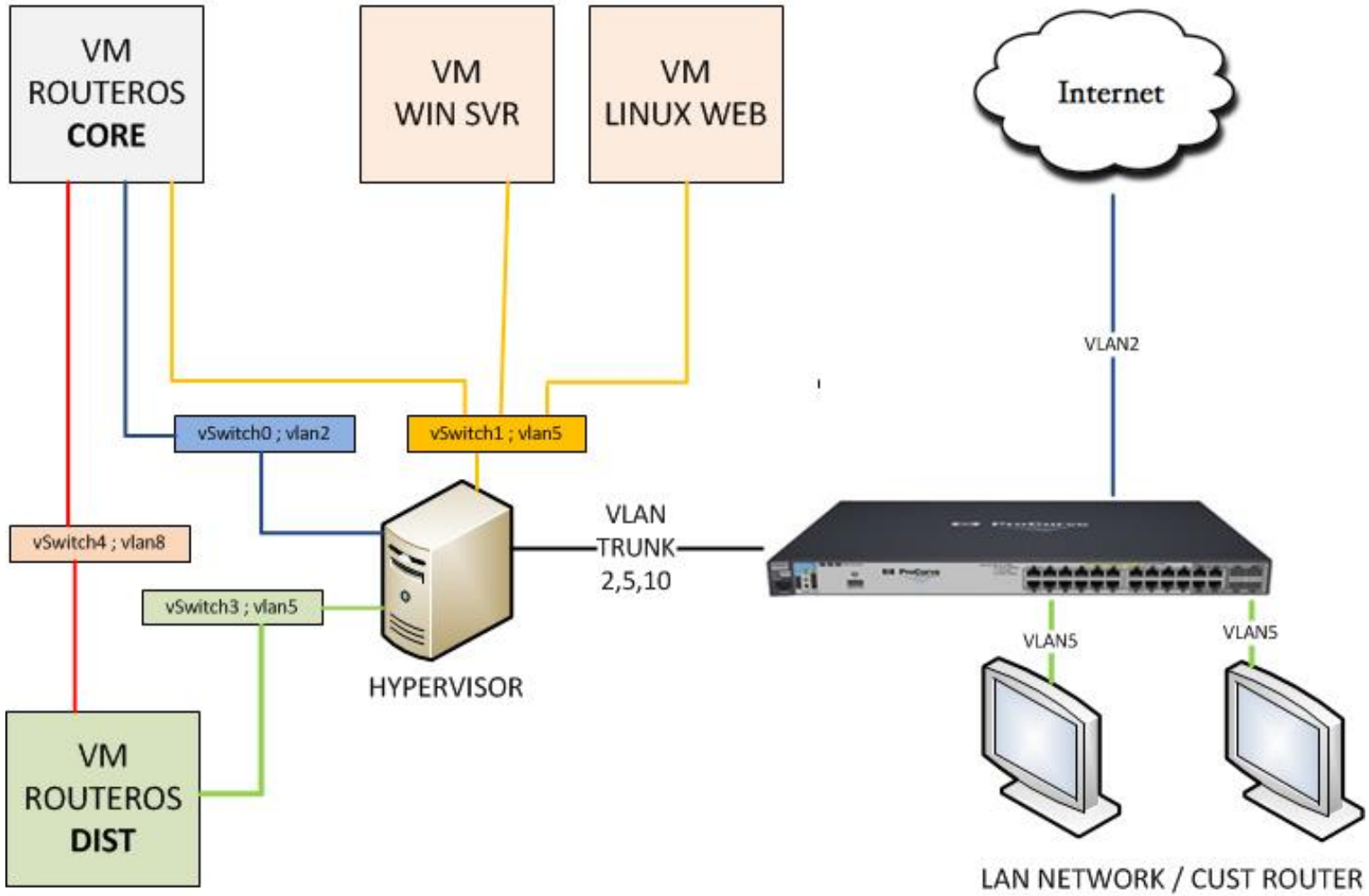
Managed Switch

to LAN/Customer

Server/PC Based Server

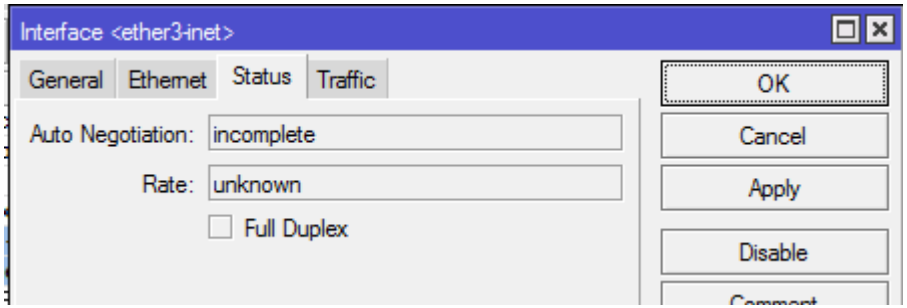
My Server Configuration :
2x 6core, 12 threads
32GB ECC RAM
2x 300 SAS
2x 1TB SATA NL

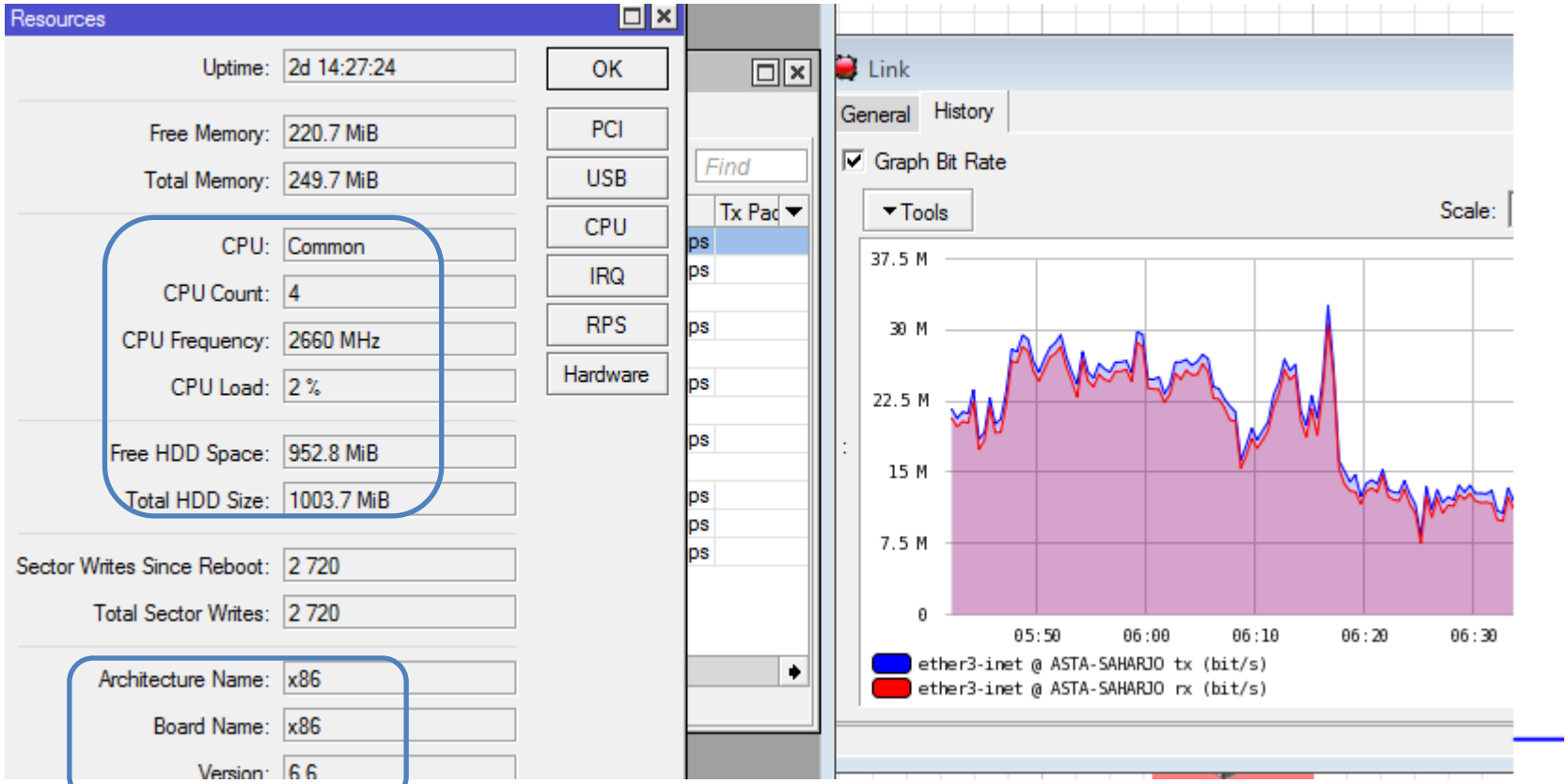
Logical Topology



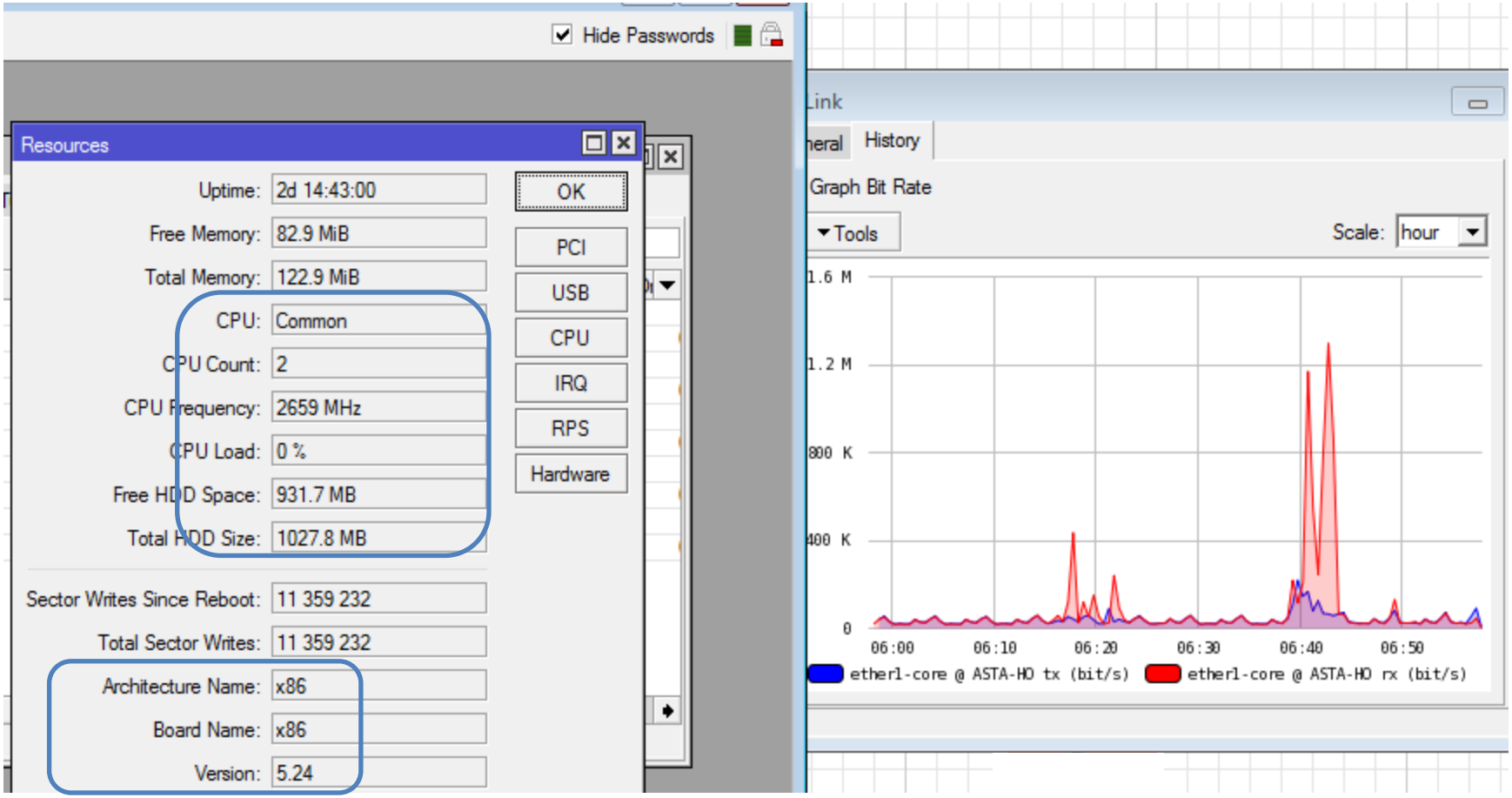
Showcase : VM CORE

VirtIO Interface Status

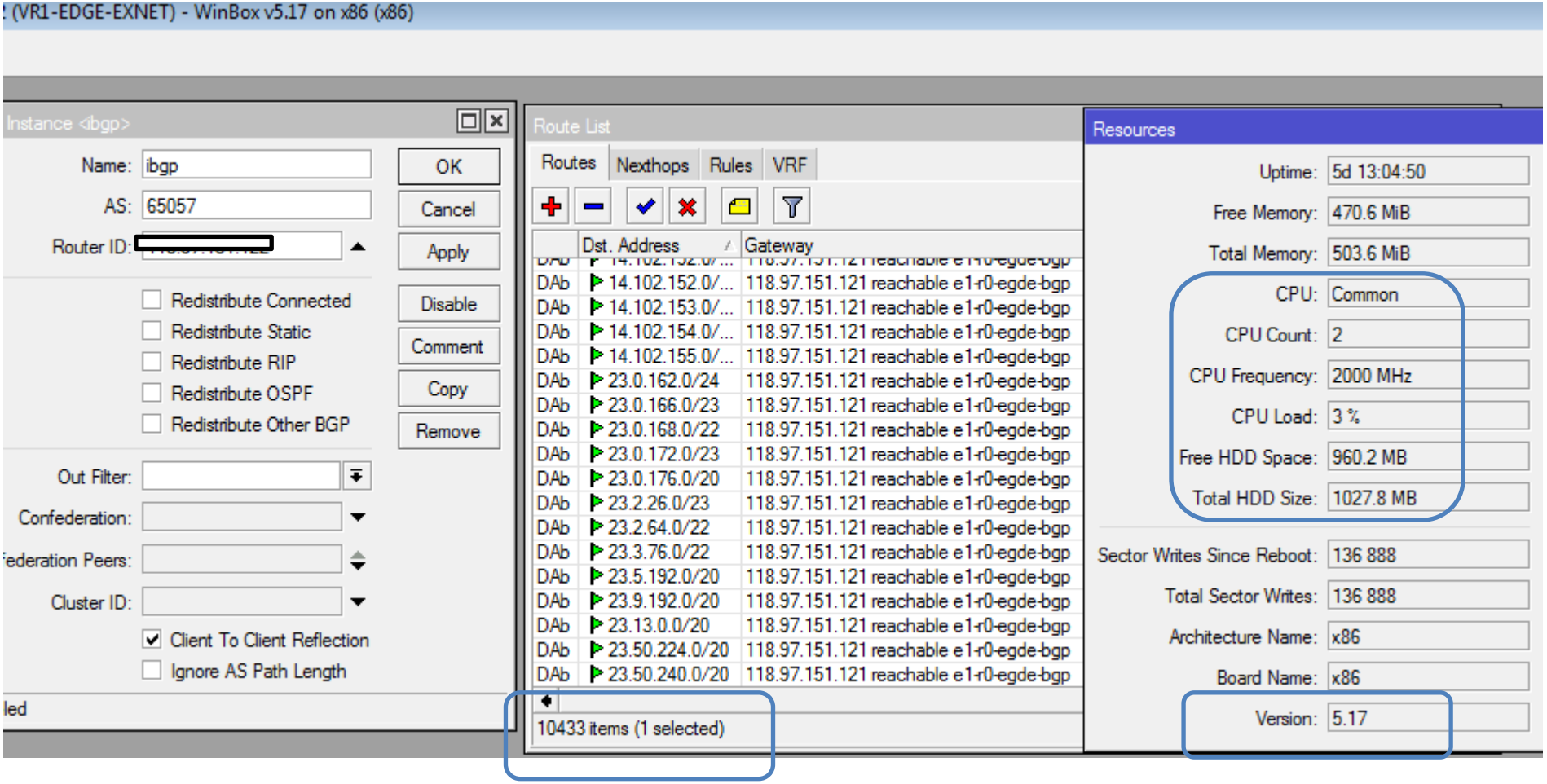




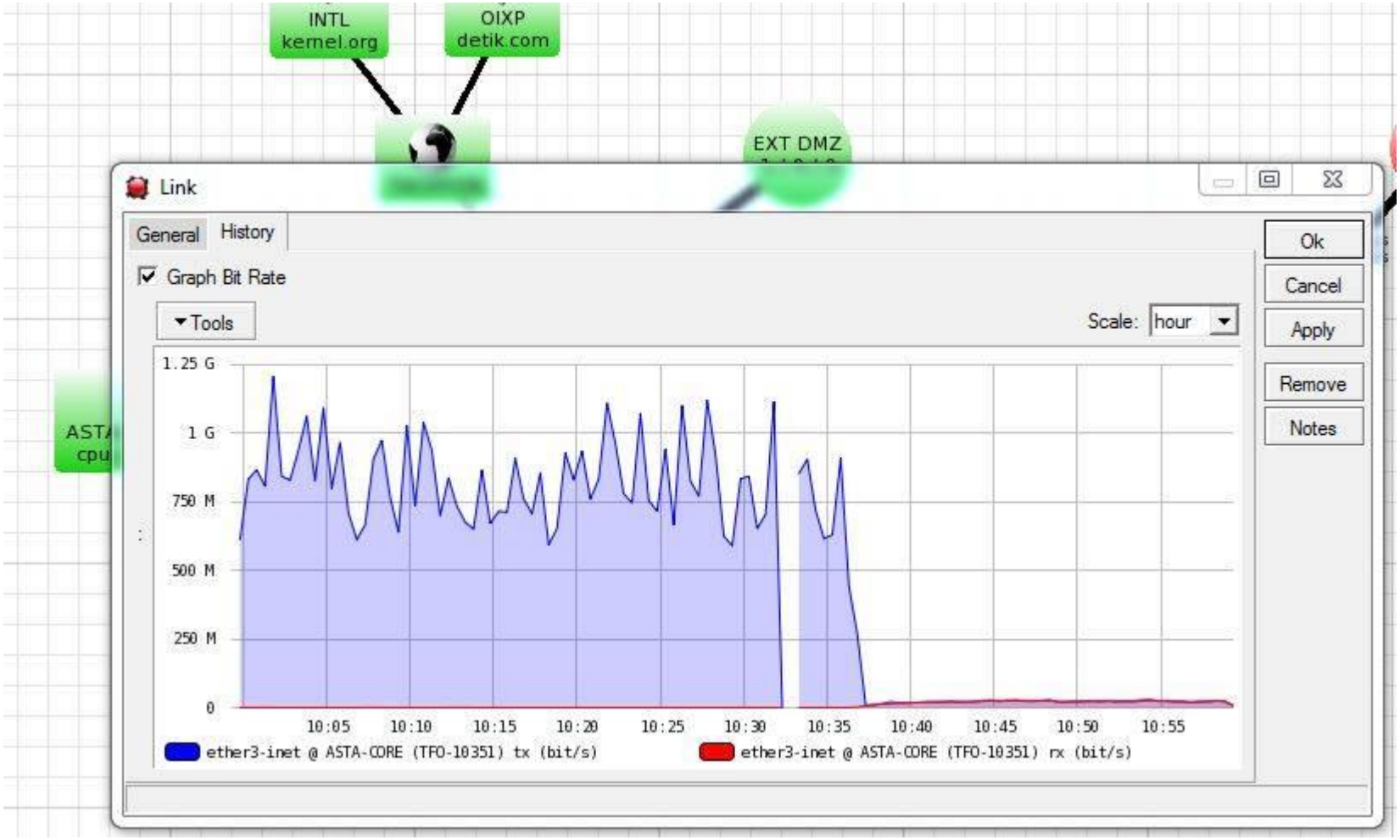
Showcase : VM DIST



Showcase [Another router]
used for BGP Peering, Runing Well



Showcase [Under Heavy Attack, UDP DDOS]
- VirtIO can deliver full interface traffic ~ 1Gbps
- Virtual Router still up



Conclusion

- RouterOS can run in virtual environment as production router
- Since Interface is all virtual, your network should be well documented for troubleshooting & maintenance purpose
- Linux KVM is Recommended for virtualized RouterOS workload
- VirtIO cannot display correct status but can forward at native interface speed

Any Question?

Please feel free to contact me at anytime

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