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 of our clients are Small-medium Business & 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
• 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
Why Virtualized?

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

More readings:
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

<table>
<thead>
<tr>
<th>Hypervisor</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESXi (vSphere)</td>
<td>Yes</td>
</tr>
<tr>
<td>Hyper-V</td>
<td>Yes, (but Ethernet not detected)</td>
</tr>
<tr>
<td>XenServer</td>
<td>Yes, (but many user report problem)</td>
</tr>
<tr>
<td>KVM</td>
<td><strong>Best Performance, using VirtIO</strong></td>
</tr>
</tbody>
</table>
Case Study

Physical Look

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, Running 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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