TUT1064

SUSE® Manager in the Clouds

Manage all your Linux instances in EC2, Azure, and GCP, and inside your own data center.

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Why SUSE Manager in the Cloud?

- More workloads are moving to the cloud
- Need to schedule updates and security patches, just like on prem
- Security exposure *can* be even higher in the cloud, depending on how you set things up
- SUSE Manager can run in the cloud and manage cloud workloads – in fact it can cross between on prem and different cloud providers
  - *Data transit charges may apply*
- More than just SLES – RHEL, CentOS, and Ubuntu too!
What can we deliver?

- All the great things about SUSE Manager
- Shown today on Amazon AWS, Azure, and Google Cloud Platform
- System management across clouds
- Visibility and flexibility in content delivery to your managed instances
What’s Common Across Cloud Providers

• Web UI, command line, and REST APIs
• Marketplace images – necessarily preconfigured
• Cloning templates
• Additional storage volume needs to be added
• Differences between BYOS and on-demand - for both SUSE Manager server and managed instances
• Need to set a static hostname and machine ID
• /usr/bin/suma-storage script (optional)
• SUSE Manager setup scripting
• We treat all managed systems as equal, for good or bad
Default organization defined on image

<table>
<thead>
<tr>
<th>Organization</th>
<th>Systems</th>
<th>Users</th>
<th>Trusts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization *</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*Tip: This organization is your SUSE Manager's default organization.
What’s Different: Amazon EC2

- Availability zones and visibility
- Network setup separated from instance setup
- Storage options
- Sizing without visible pricing
- Native management tools
Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace, or you can select one of your own AMIs.

Community AMIs

- Operating system:
  - Amazon Linux
  - CentOS
  - Debian
  - Fedora
  - Gentoo
  - OpenSUSE
  - Other Linux
  - Red Hat
  - SUSE Linux
  - Ubuntu
  - Windows

- Architecture:
  - 32-bit
  - 64-bit

- Root device type:
  - ebs
  - Virtualization type: hvm

Available AMIs:

- suse-manager-3-1-proxy-byos-v20170627-hvm-ssd-x86_64 - ami-6ff1c079
  - SUSE Manager 3.1 Proxy based on SLES 12 SP2
  - Root device type: ebs
  - Virtualization type: hvm

- suse-manager-3-1-server-byos-v20170627-hvm-ssd-x86_64 - ami-edf1c0fb
  - SUSE Manager 3.1 Server based on SLES 12 SP2
  - Root device type: ebs
  - Virtualization type: hvm

Select AMI
Demo: Amazon EC2
What’s Different: Microsoft Azure

• Sizing – Many choices, but pricing listed
• Networking setup
• Storage options – SSD and HDD in combination
• Hyper-V
• Native management tools
Azure – Selecting image
Azure - Networking setup
Azure - Adding storage

Azure now supports additional premium disk sizes: 32 GB (P4), 64 GB (P6), 2048 GB (P40), and 4096 GB (P60). Disks created before June 15, 2017 retain their existing performance and billing rates.

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Storage Account Type</th>
<th>Encryption</th>
<th>Host Caching</th>
</tr>
</thead>
<tbody>
<tr>
<td>suma31-suseon2017_Osdisk_1_70b8100a964d14566a9a185669e0731a</td>
<td>30 GB</td>
<td>Premium LRS</td>
<td>Not enabled</td>
<td>Read/Write</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LUN</th>
<th>Name</th>
<th>Size</th>
<th>Storage Account Type</th>
<th>Encryption</th>
<th>Host Caching</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>varspacewalk</td>
<td></td>
<td>Standard LRS</td>
<td>Not enabled</td>
<td>None</td>
</tr>
</tbody>
</table>

+ Add data disk
Demo: Microsoft Azure
What’s Different: Google Cloud Platform

• SUSE Manager image is available but hard to find!
• Just for fun we’ll use the command line
• Native management tools
Google – Selecting image?

**Boot disk**

Select an image or snapshot to create a boot disk, or attach an existing disk.

<table>
<thead>
<tr>
<th>OS images</th>
<th>Application images</th>
<th>Custom images</th>
<th>Snapshots</th>
<th>Existing disks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux for SAP with High Availability and Update Services 7.6 x86_64 built on 20190320</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Hat Enterprise Linux for SAP Applications 7 x86_64 built on 20181210</td>
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<td></td>
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</tr>
<tr>
<td>Red Hat Enterprise Linux for SAP HANA 7 x86_64 built on 20181210</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 12 SP4 x86_64 built on 20190221</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 15 x86_64 built on 20190221</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 12 SP3 For SAP x86_64 built on 20190221</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 12 SP2 For SAP x86_64 built on 20190221</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 12 SP3 For SAP x86_64 built on 20190221</td>
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<tr>
<td>SUSE Linux Enterprise Server 12 SP4 For SAP x86_64 built on 20190221</td>
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<td></td>
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</tr>
<tr>
<td>SUSE Linux Enterprise Server 15 For SAP x86_64 built on 20190221</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server version 1709 Datacenter Core for Containers Server Core, x64 built on 20160312</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server version 1709 Datacenter Core Server Core, x64 built on 20160312</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server version 1803 Datacenter Core for Containers Server Core, x64 built on 20180312</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server version 1803 Datacenter Core</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Can’t find what you’re looking for? Explore hundreds of VM solutions in Marketplace.

**Boot disk type**

<table>
<thead>
<tr>
<th>Standard persistent disk</th>
<th>Size (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
Google – Use the command line!

```
nbornstein@dewlap:~$ gcloud compute instances create sumaserver --image-project=suse-byos-cloud --image=suse-manager-3-2-server-byos-v20181217 --zone=us-east1-b --machine-type=n1-standard-4 --boot-disk-size=25GB --boot-disk-type=pd-ssd --network=my-network --subnet=my-subnet
WARNING: Some requests generated warnings:
- Disk size: '25 GB' is larger than image size: '10 GB'. You might need to resize the root partition manually if the operating system does not support automatic resizing. See https://cloud.google.com/compute/docs/disks/persistent-disks#repartitionrootpd for details.
- The resource 'projects/suse-byos-cloud/global/images/suse-manager-3-2-server-byos-v20181217' is deprecated. A suggested replacement is 'projects/suse-byos-cloud/global/images/suse-manager-3-2-server-byos-v20190221'.

<table>
<thead>
<tr>
<th>NAME</th>
<th>ZONE</th>
<th>MACHINE_TYPE</th>
<th>PREEMPTIBLE</th>
<th>INTERNAL_IP</th>
<th>EXTERNAL_IP</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>sumaserver</td>
<td>us-east1-b</td>
<td>n1-standard-4</td>
<td></td>
<td>10.0.0.2</td>
<td>35.243.241.165</td>
<td>RUNNING</td>
</tr>
</tbody>
</table>
nbornstein@dewlap:~$  
```
Google- Adding storage
Demo: Google Cloud Platform
Crossing the Clouds with Proxies

- Network traversal to/from cloud providers is expensive
  - This can apply to populating channels in SUSE Manager as well as updating your systems from SUSE Manager

- Network traversal across cloud regions can also be expensive
  - For example, you may have systems in multiple regions but only one SUSE Manager server
SUSE Manager communication
Demo: Proxies
SUSE Manager in the Cloud: Things to watch out for

- Hostname/DNS – make sure it persists
- Sizing
- Adding the storage for postgresql – may need a reinstall
- Swapfile (vs partition) on cached disk
- SUSEConnect and product registration – BYOS
- SSH connection for proxy configuration script
- Setting webUI password – satwho, satpasswd
- Managing on-demand instances with lifecycle management – don't pay twice!
- No unlimited virtualization subscriptions in the cloud
What do you want next?

• Topology awareness (CPI)
• "Bare metal" provisioning
Questions?
Resources

• SUSE Manager Documentation
• Blog – David Rocha
• Cloud setup for SUSE Manager
• SUSE Manager public wiki
  https://wiki.microfocus.com/index.php/SUSE_Manager
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