

Penguins on Azure

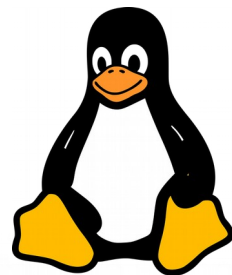
Stefan Johner

Cloud Engineer @ **dieMobiliar**

Microsoft Azure MVP

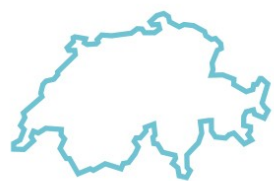
<https://blog.jhnr.ch>

@StefanJohner



The most personal insurer in Switzerland at a glance

la Mobilière



Nr. 1 in Switzerland for household contents, business and pure risk life insurance.

Founded in 1826

5334

employees



342

of which are trainees



160 locations

79 general agencies and their roughly 80 agency offices ensure that we are close to customers throughout the country.



Nine out of ten claims

are settled locally and directly by our general agencies.

CHF 160 m



This is the amount we voluntarily remit to customers from our surplus fund.



24/7

Swiss Mobiliar's 24 h Assistance service is available for customers around the clock, 365 days a year.



CHF 3.8 bn

We managed to raise the premium volume by 3.2% in the year under review

CHF 440.5 m

Swiss Mobiliar once again posts an outstanding annual profit.

2 m

Private individuals and corporate customers place their trust in us.



Agenda

- Introduction / Microsoft & Open Source
- Linux VMs on Azure
- Azure Active Directory Integration
- Deploy Linux on Azure
- Monitoring Linux Virtual Machines
- Business Continuity for Linux VMs
- Q&A

40% Azure VMs running Linux



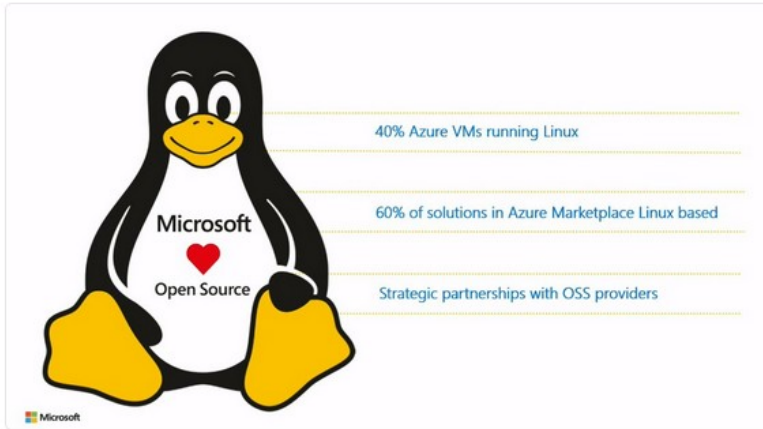
Microsoft Developer

@msdevUK

Follow



Did you know that 40% of #VirtualMachines in #Azure are running #Linux?
#FutureDecoded #Dev



3:09 PM - 31 Oct 2017

60% of solutions in Azure Marketplace Linux based

Strategic partnerships with OSS providers

<https://twitter.com/msdevUK/status/925364206500765696>

Microsoft and Linux



brendandburns
@brendandburns

Big changes for me! Tomorrow

Continuing to work on Kubernetes
Resource Manager and

2:15 AM - Jul 11, 2016

320 176 people are



#MSI
(ACS)
more.

4:53 AM - 29 Apr 2018

history of security



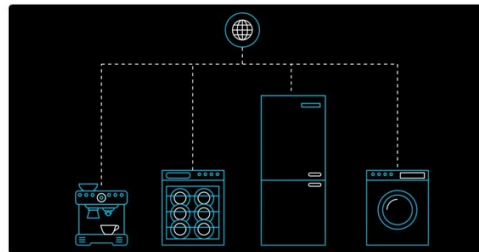
7:00 PM - 28 Sep 2015



The Linux Foundation
@linuxfoundation

Follow

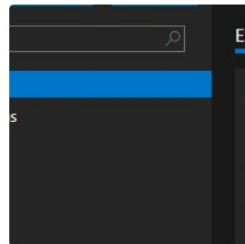
Linux-based Azure Sphere OS features a Microsoft Pluton Security Subsystem that works closely with the hardware: bit.ly/2EYP1Q3



writeameer
@writeameer

Follow

Got the now open source @servicefabric running on @googlecloud GCP on Linux and deployed my first container. The new Microsoft truly rocks.



1:03 PM - 11 Sep 2018

Use to nginx!

...the nginx web server is successfully in configuration is required.

...entation and support please refer to [nginx](https://nginx.com) port is available at nginx.com.

ng nginx.

...as Microsoft joins the Linux
...ly/2gnd11h



Red Hat, Inc.
@RedHat

Follow

We are proud to build on our 2015 partnership w/ @Microsoft to offer @OpenShift on @Azure. Read more in @ComputerWeekly: bit.ly/217IQeS #RHSummit



Red Hat teams up with Microsoft in hybrid cloud, container push
Building on a strategic alliance first announced in 2015, the two software companies are working together on Red Hat OpenShift on Azure to reduce the complexity of ...
computerweekly.com

1:50 PM - 11 May 2018



Linux Foundation: Microsoft's GitHub buy is a win for open source | ZDNet
...mes have changed, we've all grown up, says the Linux Foundation.
t.net

Azure Linux Support Team

Support for Linux on Azure

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/var/empty/sshd must be owned by root and not group or world-writable

★★★★★

January 30, 2018 by [Vittorio Franco Libertucci](#) // [0 Comments](#)

Problem Statement: You are attempting to ssh into a Linux VM and are unsuccessful. We have seen customers modify key sshd configuration files and upon restarting sshd or rebooting the VM connectivity is lost. symptoms/errors experienced The serial or console log may exhibit errors such as this: SuSE /var/empty must be owned by root and... [Read more](#)

Categories: [Linux](#)



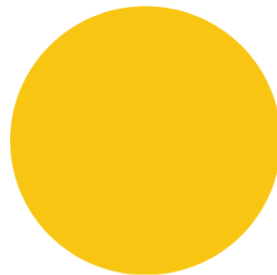
Microsoft ❤️ OpenSource

> ORGANIZATIONS COMMITTING TO OPEN SOURCE

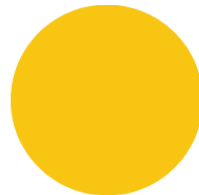
Open source
contributions made
by employees of
different
organizations

Open source development is driven by millions of paid and volunteer developers—and many of the organizations that employ them. Microsoft, Google, Red Hat, Intel, and a number of universities top the list of organizations whose employees contribute most to open source. ✳

Microsoft — 7700



Google — 5500



Red Hat — 3300



UC Berkeley — 2700





Microsoft ❤️ OpenSource

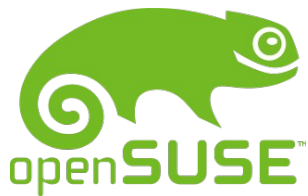
Top open source projects

VS Code, React, and Tensorflow once again top our list of open source projects by contributor count. New to the list are projects that manage containerized applications, share Azure documentation, and consolidate TypeScript type definitions: Kubernetes, Azure Docs, and DefinitelyTyped. *

		Contributors
1	<u>Microsoft/vscode</u>	19k
2	<u>facebook/react-native</u>	10k
3	<u>tensorflow/tensorflow</u>	9.3k
4	<u>angular/angular-cli</u>	8.8k
5	<u>MicrosoftDocs/azure-docs</u>	7.8k
6	<u>angular/angular</u>	7.6k
7	<u>ansible/ansible</u>	7.5k
8	<u>kubernetes/kubernetes</u>	6.5k
9	<u>npm/npm</u>	6.1k
10	<u>DefinitelyTyped/DefinitelyTyped</u>	6.0k



Endorsed Distributions



ubuntu[®]

ORACLE[®]



CentOS

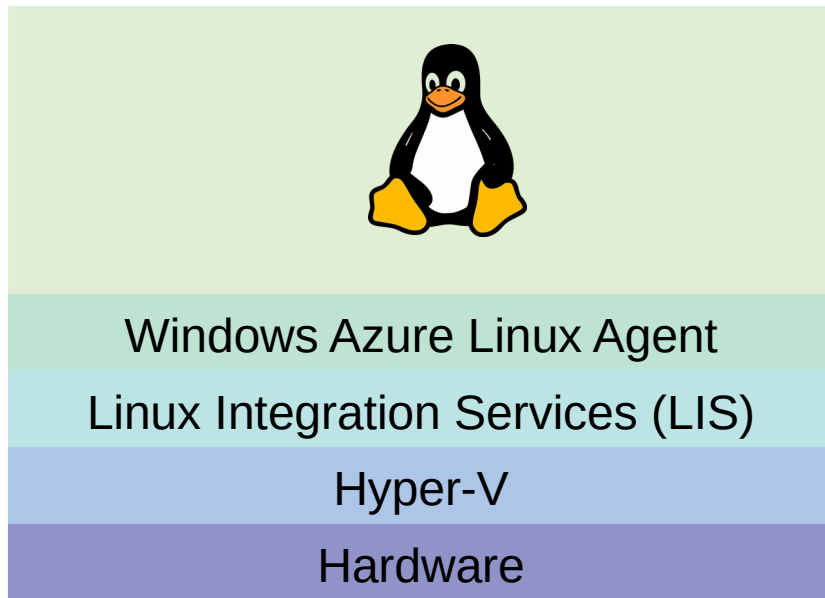
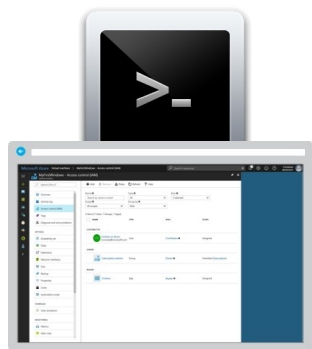


debian



redhat[®]

Linux Provisioning



VM Extensions



Linux Integration Services (LIS)

- Drivers to integrate with Hyper-V and Azure
- Present in kernel of endorsed distributions
 - May need to be installed on generic and/or to get the latest update
 - Latest download: LIS 4.2 (August 2018)
 - Source at <https://github.com/LIS/>



Linux VM Agent

What it will do

- Provision/manages VM – Required for every Linux VM on Azure
- interaction with the Azure Fabric Controller
- Managing VM Extension

How to get it

- If you create a VM from gallery, it is already included/configured by the distro vendor
- RPM and Deb packages available from some distributions
- If you create your own custom image, install it via GitHub and manually configure it



VM Extensions

- Enable main VM functionalities after provisioning
 - Offered by trusted 3rd parties or Microsoft
- Supports both Windows & Linux
- Access through multiple Interfaces
 - Management portal
 - Azure PowerShell cmdlets
 - Azure CLI
- Deployed by Azure Linux Agent



Azure AD Integration (Preview)

- Currently available for CentOS, Debian, RHEL and Ubuntu
- Use Azure AD authentication for Linux VMs, you centrally control and enforce policies that allow or deny access to the VMs.

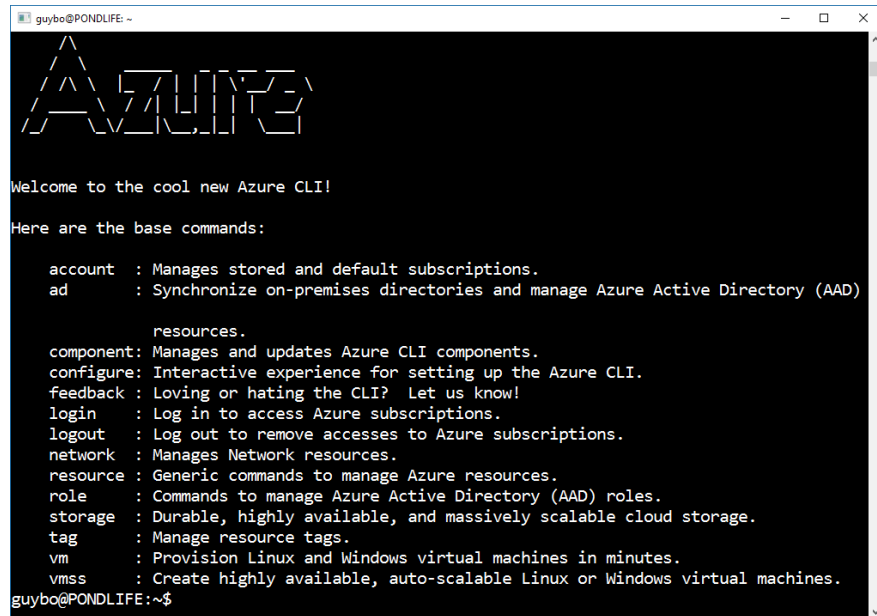


Deploying Linux VMs

- Azure Portal
- Azure Resource Manager
- Azure CLI
- Azure PowerShell
- Terraform
- Chef, Puppet & Ansible

Azure CLI

- Multi-platform command line experience for Azure
- Best used for building automation scripts that work against ARM
- <https://github.com/Azure/azure-cli>



```
guybo@POND LIFE ~  
AZURE  
Welcome to the cool new Azure CLI!  
Here are the base commands:  
  
account : Manages stored and default subscriptions.  
ad       : Synchronize on-premises directories and manage Azure Active Directory (AAD)  
           resources.  
component: Manages and updates Azure CLI components.  
configure: Interactive experience for setting up the Azure CLI.  
feedback  : Loving or hating the CLI? Let us know!  
login     : Log in to access Azure subscriptions.  
logout    : Log out to remove accesses to Azure subscriptions.  
network   : Manages Network resources.  
resource  : Generic commands to manage Azure resources.  
role      : Commands to manage Azure Active Directory (AAD) roles.  
storage   : Durable, highly available, and massively scalable cloud storage.  
tag       : Manage resource tags.  
vm        : Provision Linux and Windows virtual machines in minutes.  
vmss      : Create highly available, auto-scalable Linux or Windows virtual machines.  
guybo@POND LIFE:~$
```




Terraform

- Tool for building, changing, and versioning infrastructure safely and efficiently.
- Supports 70+ providers (e.g. AWS, Azure, VMware vSphere, Kubernetes, PostgreSQL, MySQL, etc.)
- Terraform separates the planning phase from the execution phase



HashiCorp

Terraform



Chef, Puppet & Ansible

- Provides seamless integration with Azure
- Automate the entire lifecycle of your Azure infrastructure, from initial provisioning through application deployment.
- Chef Client and Puppet Agent both available as Azure VM extensions
- Chef and Ansible are pre-installed in Azure Cloud Shell

```
knife azure server create --azure-dns-name 'test01' --azure-vm-name 'testserver01' --azure-vm-size 'Small' --azure-storage-account 'portalvhdsxxxx' --bootstrap-protocol 'cloud-api' --azure-source-image 'a699494373c04fc0bc8f2bb1389d6106__Windows-Server-2012-Datacenter-201411.01-en.us-127GB.vhd' --azure-service-location 'West Europe' --winrm-user azureuser --winrm-password 'myPassword123' --tcp-endpoints 80,3389 --r 'recipe[webserver]'
```



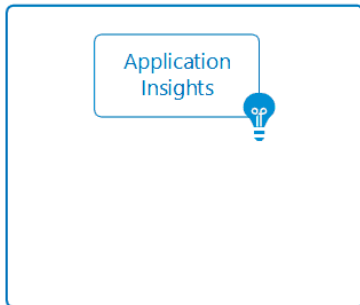
Demo

Linux VM Deployment

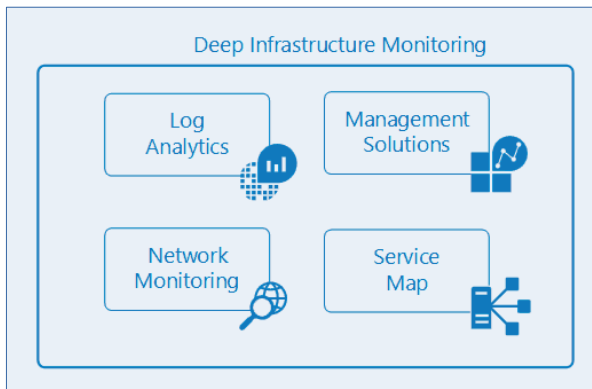


Monitoring

Deep Application Monitoring



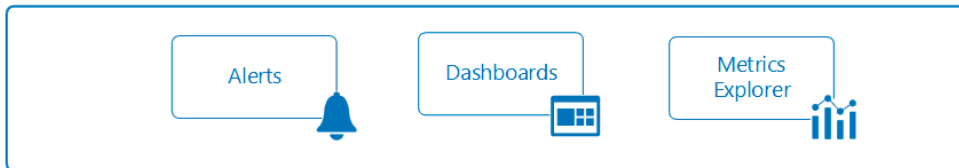
Deep Infrastructure Monitoring



Core Monitoring

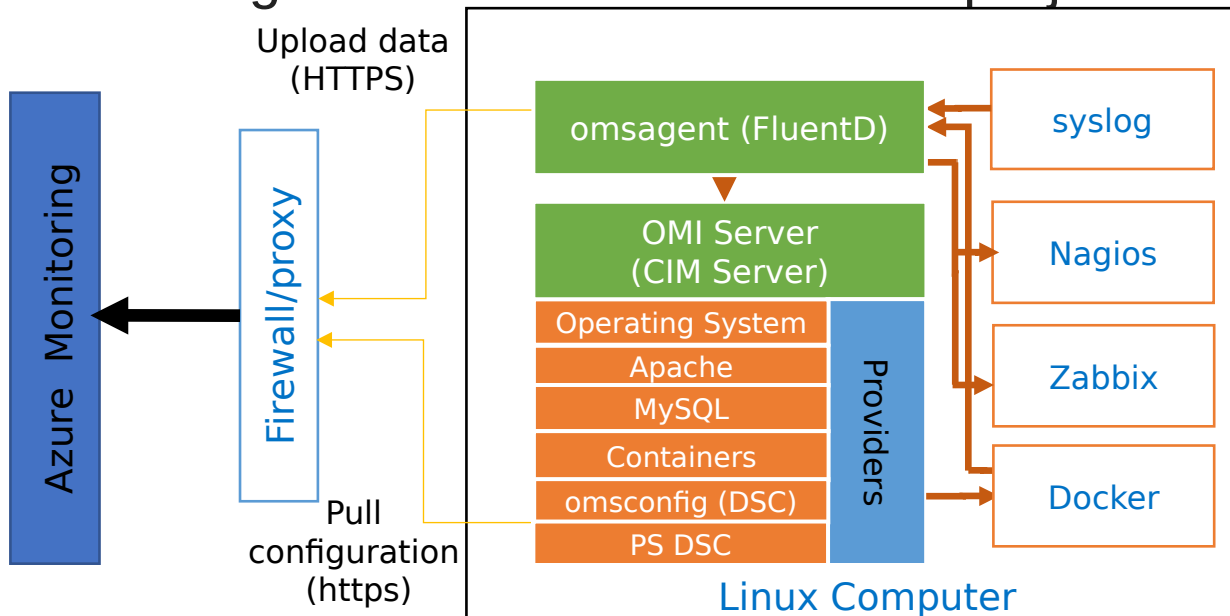


Shared Capabilities



Monitoring Linux Agent + FluentD

- FluentD is an open source data collector for unified logging layer.
- OMS Linux Agent is built on the FluentD project.





Business Continuity with Linux

- Azure Backup
 - Use Azure Backup to protect and restore data at a more granular level.
- Azure Site Recovery
 - Replicate the configuration and data on a VM across another datacenter



Azure IaaS VM Backup

- Backup VMs once-a-day
- No agent installation needed
- Application-consistent backup using pre-script and post-script framework
- Granular file recovery
- Restore all VM disks
- VM restore



Demo

Monitoring & Business Continuity



Resources

- [Create free Azure account today](#)
- [Azure CLI](#)
- [Terraform on Azure](#)
- [Cloud-init support for VMs in Azure](#)
- [Monitor Azure Services in Grafana](#)
- [OMS Agent for Linux](#)



Ein Danke an unsere Sponsoren!



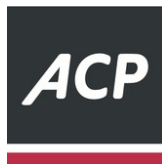
Hewlett Packard
Enterprise

SecureGUARD

e-shelter



INCRAM MICRO



iQSol
Security made in Austria.

TIMEWARP
INFORMATION TECHNOLOGIES



Penguins on Azure

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Microsoft Azure MVP

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