Microsoft Azure and Open

Source

2017 edition

Tomislav Tipurić Partner Technology Strategist Microsoft Adriatics









Microsoft—yes, Microsoft—joins the Linux Foundation

Google joins the .NET Foundation; the first preview of SQL Server for Linux is out. PETER BRIGHT - 11/16/2016, 7:30 AM





NEW YORK—At its first Connect event in 2013, Microsoft released Visual Studio 2013. In 2014, it announced the open sourcing of .NET and in 2015, the open sourcing of the Visual Studio Code editor. The big news this year? Microsoft, the company that has built an empire on proprietary, closed-source software, has joined the Linux Foundation as a platinum member.

Microsoft is bringing the Bash shell to Windows 10

Posted Mar 30, 2016 by Frederic Lardinois (@fredericl)





Here is an announcement from Microsoft Build you probably didn't see coming: Microsoft today announced that it is bringing the GNU project's Bash shell to Windows. Bash (Bourne Again SHell) has long been a standard on OS X and many Linux distribution systems, while the default terminal for developers on Windows is Microsoft's own PowerShell.

ADVERTISEMENT SAMSUNG Galaxy S8 Buy the Galaxy S8 and get the new Gear 360 for \$49.* Limited time offer, while supplies last. Terms apply AdChoices D **Crunchbase Microsoft** FOUNDED 1974 **OVERVIEW** Microsoft is an American multinational corporation that develops, manufactures, licenses, supports, and sells a range of software products and services. Microsoft's devices and consumer (D&C) licensing

segment licenses Windows operating system and related software; Microsoft Office for consumers; and

Microsoft joins the open source Cloud Foundry Foundation

Posted 8 hours ago by Frederic Lardinois (@fredericI)





ADVERTISEMENT







intri

Microsoft today announced that it is joining the Cloud Foundry Foundation, the non-profit behind the open source Cloud Foundry platform-as-a-service project that's currently in use by about half of the Fortune 500 companies. 'A decade ago no one could have seen this coming. But that was yesterday. Today, Microsoft is working hand-in-glove with other companies and opensource software.' –

Yes, Microsoft. Yes, Java. Oh, and yes, open source.



By Steven J. Vaughan-Nichols | June 14, 2017 -- 16:31 GMT (09:31 PDT) | Topic: Cloud



Our approach to open source in the cloud



Open Source Investments are Fueling the Momentum

Our Products		Our Offerings		s 1
SQL Server 🧡 Linux		Azure Marketplac	Organizations with the most op contributors	oen source
SQL Server on Linux	Acquisition	21 Mark Mark Mark Mark Mark Contact Image: Amage Image: Amage Image Image Image Image: Amage Image Image Image Image Image Image Image: Amage Image Image Image Image Image Image Image Image Image Image Image Image Image </td <td>Microsoft</td> <td>16,419</td>	Microsoft	16,419
HDInsight Microsoft	Windows Subsystem for Linux C:\Users\cahin> bash root@localhost: #	I out of 3	facebook	15,682 14,059
HD Insight managed service on Linux	Run Linux on Windows natively		🛕 angular	12,841
Our Partnerships		Our Employee	G google	12,140
Se redhat. Microsoft Partnership		8 Ross Gardle President A	FortAwesome	9,698
Microsoft joins	Certification earned	SW Foundat	<pre>elastic Apache </pre>	7,220 6,999
	Microsoft Solutions Associate Linux® on Azure for Linux on Azure certification	700 Milli Microsoft Open So	The state in the end of 2016	6,815



50% of .NET commits are external

2 of top 4 contributors are external

Mac support mostly contributed by externals

ARM support contributed mostly by Samsung

Open Source at enterprise scale

7,057 Open Source components integrated

9,599

Employees working on Open Source **3,800** Open Source projects released

Guiding principles

Microsoft Open Source Explore open.microsoft.com

Microsoft Open Source Code of Conduct FAQ

Contents

- Why have a Code of Conduct?
- Why this Code of Conduct?
 Why do this across all repos?
- Why do this across an reposit
 How does a project adopt the code and process?
- What if my Microsoft project already has a Code of Conduct?
- How do I raise a concern?
- What is the process for addressing issues that arise?
- How does the resolution team work?

Why have a Code of Conduct?

People and communities are the foundation of open source. Communities thrive through diversity of thought and the safety of its members. Microsoft has a deep-seated commitment to diversity and inclusion. All Microsoft employees enjoy a safe work environment and a culture of mutual respect and responsibility. Our team members and open source partners should enjoy the same environment when collaborating on open source projects.

While conduct issues seldom arise, when they do, they are often very public and very passionate. It is best for the community to be prepared with:

A clear and accessible Code of Conduct stating the norms under which projects operate

0 C 😂 🧮 🛈

An Issue Resolution Process for addressing cases where these norms are not being maintained

Why this Code of Conduct?

The Microsoft Open Source Code of Conduct is an instantiation of the TODO Group Code of Conduct template, that captures the Microsoft culture of equality, respect and inclusion. This same template is used by industry colleagues such as Facebook. Writter, GitHuby Nahoo and others in their open source projects.

acer

Responsible Actions

Transparency

Innovation

Respect

A = 4 48

Communication

Internal wikis seeded with open source FAQ content, for long-term discoverability/retention

Open Source Night – monthly FTE event, growing attendance and participation

Internal email DLs for us-to-them, peer-to-peer, support questions, policy questions

Public communication coming soon at https://opensource.microsoft.com/



Open Source Newsletter

OSPO

OCTOBER 2016

Velcome to the monthly newsletter of the Open Source Programs Office (OSPO)! You can learn more about OSPO's mission and our approach in this overview document. To subscribe to this newsletter, dick here to join the osblast DL.

Did You Know ... that GitHub 2FA is now required?

Over the past several weeks, the Open Source Programs Office has been working on rollout of required two-factor authentication (2FA) for all Thanks to the help of Microsoft's employees and outside contributors, 724 people have enabled 2FA on their GitHub accounts, allowing us to be in full 25

This represents huge progress! Moving forward, we need to continue to work to enable 2FA on all GitHub accounts that are members or collabo organizations. If you haven't already done so, please enable 2FA for your GitHub account, If you don't know how to do this, see the GitHub help page o contact ospocor

This week, we enabled a Security As component, you can view the results of any security assessments that are available for the component, or you can request a security assess

Here's an example of what this extension looks like in the Component Governance interfac

Open Source Tooling Update

We've been rolling out a variety of engancements to our open source registration and review tools. The following are some key changes deployed this month

What's New7 Notifications

Significantly improved reliability

- Notifications now sent for registrations that did not require review Notifications now sent when a review is re-assigned
- License discoven
- Previously completed reviews now considered as a source of license information Automatic detection for Microsoft EULA licensed components Improved license detection for Maven components
- Coming Sool

Ability to change the license or usage type for an in-progress revier

Public API for submitting regist We have also begun planning and design for registering (ontributions and for getting approval to release open source softwa

Open Source Activity - Registrations

The following charts show an overview of open source component registration activity as of 10/17/201



ficrosoft engineers have registered a total of 10,287 usages of open source components, and only 902 of those (~9%) have required manual review. Our goal s to continue driving the number of manual reviews down, to maximize scalability of the registration process and agility of engineering team

Ok... but why now? Why didn't you do it before?

Making Money from Software Licensing



Making Money from Software Cloud services



Azure regions

42

More than any other cloud provider

RECENTLY LAUNCHED:

US Gov: US Gov Texas and US Gov Arizona

NEWLY ANNOUNCED:

France: France Central and France South Africa: South Africa North and South Africa West



Microsoft Azure Technologies Compute



User-Supplied

Infrastructure-as-a-Service

Bitnami Application Stacks in the Azure Marketplace



ACS: The best place to run your containers

Standard tooling and API support

Streamlined provisioning of DC/OS Docker Swarm and Kubernetes



ACS-Engine – open sourced on Git Hub

☆ □ ○ ○

	This repository Search Pull requests Issues Gist	≰ +- ,⊠-			
	Azure / acs-engine O Unwatch → 78 Ode ① Issues 83 ① Pull requests 18 □ Projects 0 □ Wiki ≁ Pulse □ Graph	s ☆ Settings			
	Filters - Q is:pr is:open Labels Milestones	New pull request			
	□ ① 18 Open ✓ 299 Closed Author ▼ Labels ▼ Projects ▼ Milestones ▼ I □ ① Fix issue with Swarm Mode configuration × cla-not-required #525 opened a day ago by benformosa • Review required	Reviews - Assignee - Sort -			
	Fix an issue caused by WinNAT cla-not-required #520 opened 3 days ago by JiangtianLi • Approved	Ç 3			
	How to integrate a new cluster in an existing VNET cla-not-required kind/documentation orchestrator/k8s priority/P1 #506 opened 5 days ago by jcorioland • Review required				
	Sovereign cloud support for AzureGermanCloud and AzureUSGovCloud. cla-not-required #499 opened 9 days ago by wangtt03 • Review required	⊊ 28			
	Add nodeCidrMask parameter to allow running in a smaller IP vnet. cla-already-signed #495 opened 11 days ago by ashb • Review required	□ 3			
	Image:	5			
	k8s: managed service identity < cla-not-required #479 opened 15 days ago by colemickens • Review required	□ 17			
	□ îî K8: 1.5.3 -> 1.6.2 ✓ cla-already-signed kind/feature orchestrator/k8s #470 opened 20 days ago by ritazh • Changes requested ↓ 12 of 13	⊊ 66			

The cloud is where open enterprise innovation happens

In a cloud world, where organizations are looking at open source to drive agility and deliver apps more quickly, security and management remain top of mind

Through this partnership, Microsoft adds value to your Red Hat investments in Azure, wherever you are in your cloud journey



Integrated support

In-portal customer experience for PAYG deployments

Co-located support with Red Hat on-site team

ISO 27001 compliant B2B communication channel

Integrated support is available 24x7 for Cloud Access (BYOS) as well as On-Demand (PAYG) deployments



Platform-as-a-Service

Azure App Service







Web apps that scale with your business



Mobile apps

Mobile apps and back-ends for any device



Functions

A serverless event based experience to accelerate your development.



API apps

Easily build and consume APIs in the cloud

Industry-leading Application PaaS Platform

SOLUTIONS



Web Apps on Linux







Azure Container Technologies

Infrastructure



Orchestrator Microservices



PaaS



Infrastructure Control

Developer productivity



High productivity development



with ease

Testing in

production

Deployment

CI/CD build and deploy

Staged deployment

with slots







Built-in auto scale and load balancing



High availability with auto-patching



Global data center footprint



Private registry support



5

AAD integrated

Secure + compliant



Monitoring and diagnosis

Backup and recovery





Enterprise-grade apps

Database-as-a-Service



MySQL in-app

Managed through phpmyadmin or Kudu

Support PHP, MySQL apps like WordPress, Joomla, Drupal... MySQL server running on the same instance

You can turn on slow query and general logging Can impact performance

Storage is shared between both MySQL and your web app files



Azure Database for MySQL & Azure Database for PostgresSQL



Azure relational database platform

Power BI, App Services, Data Factory, Analytics, ML,

SQL Data Warehouse	SQL Database	MySQL PREVIEW	PostgreSQL PREVIEW		
	Intelligent: Advisors, Tuning, Monitoring				
Azure Database Services Platform	Flexible: On-demand scaling, Resource governance				
	Trusted: HA/DR, Backup/Restore, Security, Audit, Isolation				
Azure Compute					
Azure Storage					

Global Azure with 38 Regions

Demo

Let's see Azure in action...

The Relational Data Model A quick summary







Technology Basics Sharding

Atomic transactions typically span only a single shard

Microsoft Azure

Document Databases Example: MongoDB



Microsoft Azure



Globally Distributed

• (
	8	
a de la companya de l		
	••	
••		•

Multi-model + Multi-API



Guaranteed Millisecond Latency

SLA

99.99%





Elastic Scaleout

Comprehensive SLA



Well-defined Consistency



Why Use NoSQL on Azure?

To scale for lots of users and lots of data

Pros: NoSQL technologies can offer more scalability than relational databases

Cons: Often lose some benefits of relational databases, e.g., database-wide transactions To work better with different data formats, e.g., JSON

Pros: Avoiding object/relational mapping makes code easier to write

Cons: Limited BI tools; persistent data designed for a single application is harder to share To work with data in a more flexible way

Pros: NoSQL technologies don't have fixed schemas

Cons: Fixed schemas help prevent errors

Developers vs. DBAs?

Azure momentum, Compliance and Security



>90%

of Fortune 500 use Microsoft Cloud

Rest assured with layered datacenter security



Comply with industry and regional requirements



O demou...

Ruby on Rails pokrenut putem docker containera na App Servisu s Linuxom u pozadini (PaaS) koji podatke dovlači iz MySql baze nativno pokrenute u sklopu Azure DBaaS usluge (Azure Database).

Sve skupa napisao **Microsoftovac** bez ikakvog Ruby iskustva do jučer, na **Mac računalu** koristeći **besplatni** Visual Studio Code i hrpu pripadnih **open-source** alata



totipu@microsoft.com http://tipuric.com/ @totipu