



AWS USER GROUP SLOVAKIA

re:Invent re:Cap / demos

13 / 01 / 21

ohpen.com



MEDIÁLNY PARTNER

robíme it



Prague AWS User Group Meetup

<https://awsug.cz>

AWS User Group Meetup



Web pages: awsug.cz, start.awsug.cz



Presentations: <https://github.com/awsugcz/awsug.cz/tree/master/static/presentations/>



Youtube: <https://www.youtube.com/playlist?list=PL0Qk7ytdTD262PgKQ1GgFHX2ldYzhWM1E>



Meetup page: <https://www.meetup.com/Prague-AWS-Meetup/>



Photos: <https://photos.app.goo.gl/sE5kAt95ipmJ3ypPA>



We want you to speak! <https://goo.gl/forms/mFYRDTEL41DCewKP2>



1. VIRTUÁLNY AWS CZSK MEETUP

AWS re:Invent 2020 re:Cap

Vladimír Šimek
Sr. Solutions Architect, AWS

Zdeněk Bulan
Solutions Architect, AWS

WED 13. 01. 2021

Program

- To najzaujímavejšie z re:Inventu 2020 (Compute, Containers, Storage, Databases, Dev Tools)
- Demo ukážky
- Q & A - Otázky a odpovede

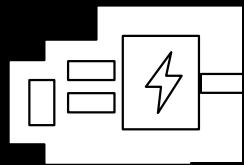
re:Invent 2020 statistics

- 9th re:Invent conference
- Online / Virtual
- 3 weeks - 30/11/2020 – 18/12/2020
- bonus content 12/01/2021 – 14/01/2021
- 5 keynotes – Andy Jassy (CEO), Werner Vogels (CTO), Partner Keynote, Infrastructure Keynote, Machine Learning Keynote
- 18 leadership sessions
- Sessions in 50 tracks (BI, Compute, Storage, Robotics, Retail, Automotive, AI/ML, IoT, ...) – 100s of hours
- Cheat sheet – 43 pages

Compute

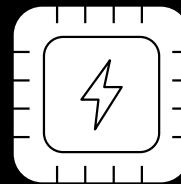
AWS Nitro System

Nitro Card



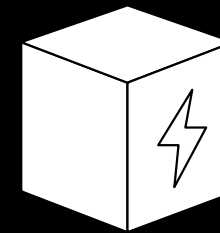
Local NVMe storage
Elastic Block Storage
Networking, monitoring, and security

Nitro Security Chip



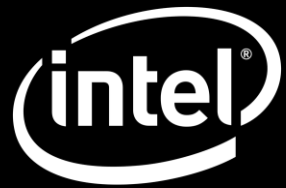
Integrated into motherboard
Protects hardware resources

Nitro Hypervisor



Lightweight hypervisor
Memory and CPU allocation
Bare metal-like performance

Choose your processor and architecture



Intel® Xeon® Scalable
(Skylake) processor



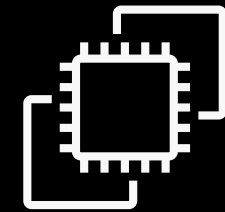
NVIDIA V100
Tensor Core GPUs



AMD EPYC processor



AWS Graviton
Processor (arm)



FPGAs for custom
hardware acceleration

Right compute for the right application and workload



AVAILABLE NOW!

Amazon EC2 Mac

RUN YOUR MAC WORKLOADS ON AMAZON EC2

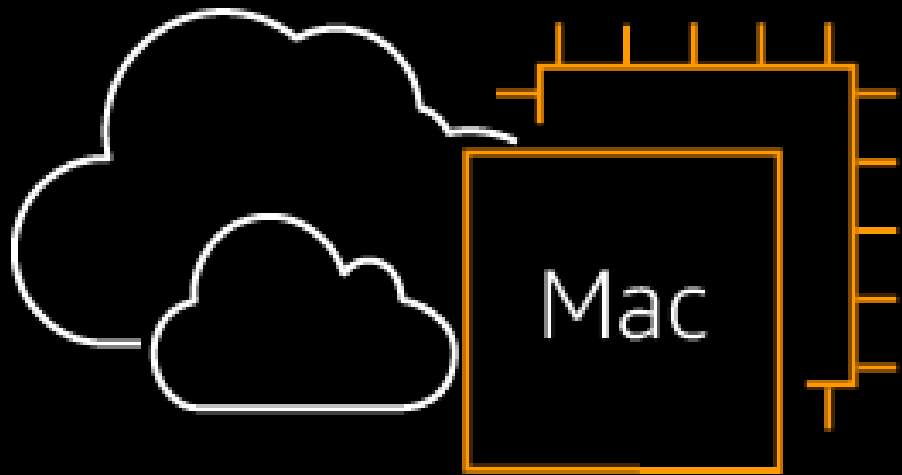
Run macOS in the
cloud for the first
time

Speed up dev lifecycle
for iOS, macOS, tvOS,
watchOS, iPadOS, and
Safari apps

Scale on-demand, pay-as-
you go, & benefit from
access to over 175
AWS services

SUPPORT FOR APPLE M1 CHIP COMING IN 2021

Amazon EC2 Mac Instances: hardware



Apple Mac mini hardware

Intel Core i7
3.2 GHz (4.6 GHz turbo)

Built with AWS Nitro

6

physical
cores

12

logical
cores

32 GB

memory

10 Gbps

network throughput

8 Gbps

Amazon EBS
bandwidth

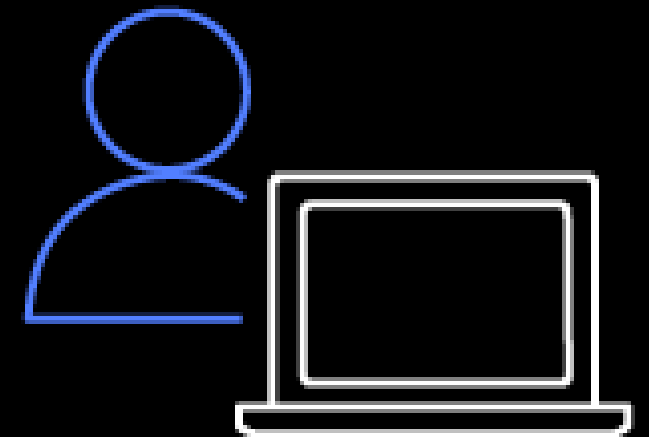
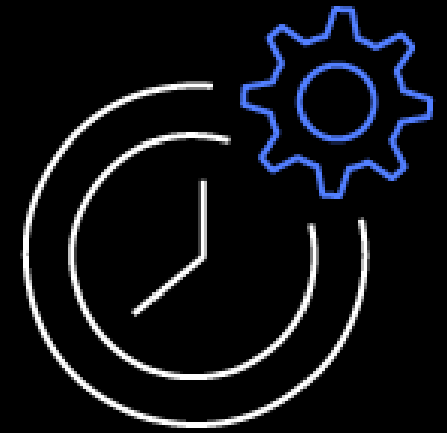
Amazon EC2 Mac Instances: details

- New **bare metal** instance type (*mac1.metal*)
- Designed for **Apple application development** workloads
 - Native support for macOS and Xcode
- Catalina (10.15.7) or Mojave (10.14.6) **AMIs**
 - Big Sur in roadmap for H1 2021
 - Easily switch on same host
- Integrated with **IAM, VPC, EBS, SSM, and CloudWatch**



Amazon EC2 Mac Instances: details

- Available as **single-tenant dedicated host**
- Allocate **On-Demand** for minimum of 24 hours
 - Compute and Instance Savings Plans available
- SSH and VNC (over SSH tunnel) access
 - Developer use cases – build/test/sign/publish
- Available **now** in 5 regions
 - US East (N. Virginia and Ohio), US West (Oregon), EU (Ireland), Asia-Pacific (Singapore)



Demo – EC2 Mac



Cloud continuum

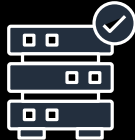
AWS—delivering cloud where customers need it

AWS REGIONS



For most use cases

On-premises



AWS Outposts



Metro centers

AWS Local Zones



5G networks

AWS Wavelength



AWS IoT Greengrass and FreeRTOS



AWS Snow Family

For low-latency, local data processing, data residency

Cloud continuum



AWS Outposts rack

Industry standard **42U rack**

Fully assembled, ready to be rolled into final position

Installed by AWS, simply plugged into power and network

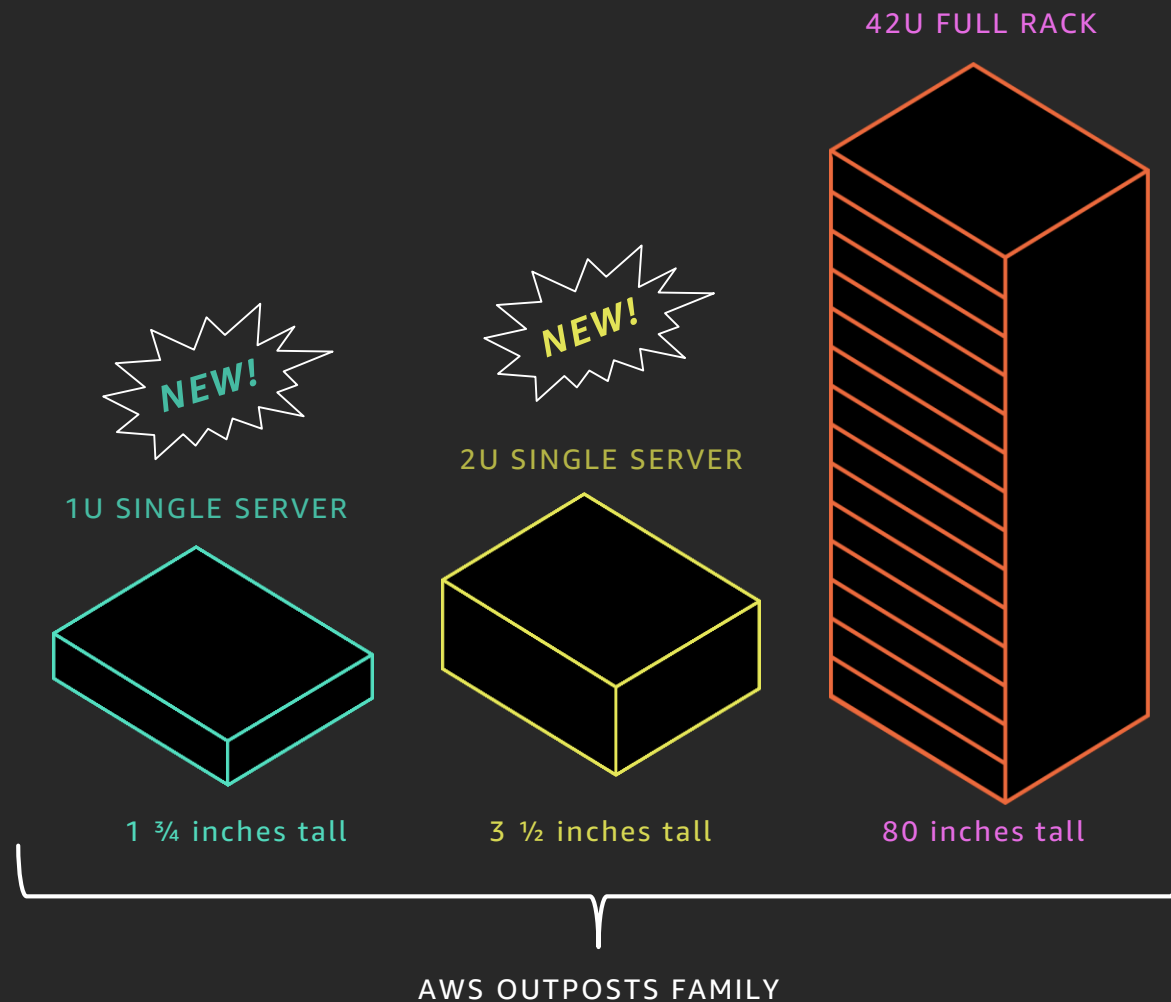
Centralized redundant power conversion unit and DC distribution system for higher reliability, energy efficiency, easier serviceability

Redundant active components including top of rack switches



Coming in 2021: AWS Outposts 1U and 2U

Run AWS Outposts in locations with limited space or capacity requirements



Offers the same AWS infrastructure, services, APIs, and tools on-premises, now with a smaller form factor

Choose between a 1U form factor with an AWS Graviton2 processor or a 2U form factor with an Intel processor

Run AWS services locally, including EC2, ECS, and EKS and edge services like AWS IoT Greengrass

Ideal for workloads that require low-latency and local processing needs

Simple device installation by either your own on-premises personnel or an AWS preferred third-party vendor

Containers & Serverless



Containers on AWS (ECS/EKS/Fargate)

On-premises

Cloud

Amazon EKS
+ AWS Outposts

Amazon EKS/ECS
+ Amazon EC2

Amazon EKS
+ AWS Fargate



Control Plane



Compute



Data Plane

Customer

Customer



Support



Fully Managed

COMING IN 2021

Amazon ECS Anywhere

RUN ECS IN YOUR OWN DATA CENTER

Same AWS-style ECS APIs,
cluster management, workload
scheduling, and monitoring



Works on
any infrastructure

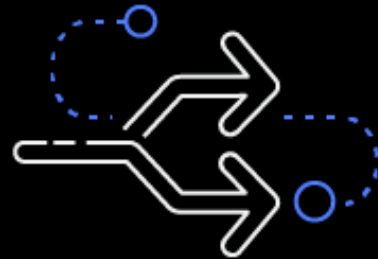
Seamless ECS experience
across AWS and your
on-premises infrastructure

Announcing EKS Anywhere

Create and operate Kubernetes in your data center and on your existing hardware using the same consistent EKS experience



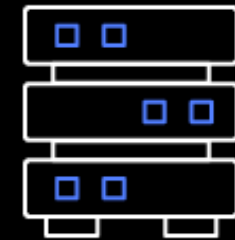
Helps customers run with secure, stable, and tested components used to run Amazon EKS



Built on open source standards cluster lifecycle management tooling



Bundled with components to accelerate readiness of production clusters



Bring your existing bare metal/self managed compute

Deploy and manage the lifecycle of EKS Distro clusters on-premises

A new public container registry from AWS

MEETING CUSTOMER NEED, LEVERAGING OUR EXPERIENCE OPERATING AMAZON ECR AT SCALE

Amazon ECR Public

Geo-replicated image storage

Amazon CloudFront cache

Single, global URL

Essentially free to use

No AWS account needed to pull



Amazon ECR Public Gallery

Search for public container artifacts

Image detail pages

Custom aliases

Verified accounts

Free for anyone to browse

```
docker pull public.ecr.aws/ecs/amazon-ecs-agent
```

<https://gallery.ecr.aws>

Amazon ECR Public Pricing

<https://aws.amazon.com/ecr/pricing>

FRICTIONLESS GETTING STARTED, ESSENTIALLY FREE, OPTIMIZED FOR OUR CUSTOMERS

Public image storage

Image owner

Use your AWS account to share images

50 GB each month always free

\$0.10 per GB-month after

Not billed for geo-replicated images

Not billed when anyone pulls

Data transferred on pulls

Image requester

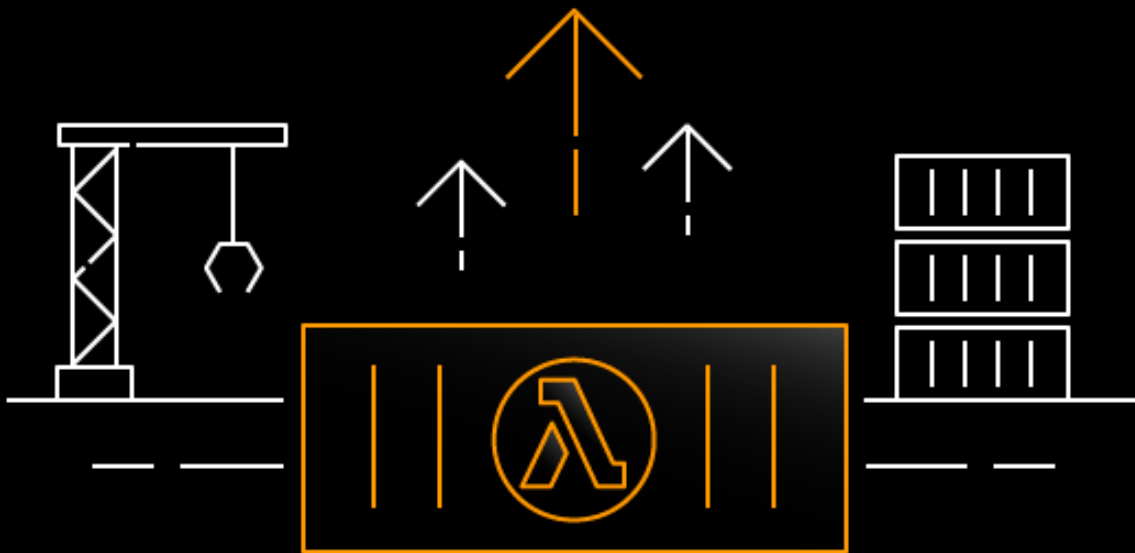
Pulls without AWS authentication (anonymous) limited to **500 GB each month** per source IP

Pulls with AWS authentication get **5 TB free data transfer each month** per AWS account

Pulls **from AWS compute** with AWS authentication get **unlimited free data transfer, regardless of region**

Container Image Support for AWS Lambda

PACKAGE AND DEPLOY FUNCTIONS AS CONTAINER IMAGES



Use a consistent set of tools for containers and Lambda-based applications

Deploy large applications with AWS provided or third party images of up to 10GB (ML, data analytics, large dependencies)

Benefit from sub-second autoscaling, high availability, 140 native service integrations, pay for use

Demo – AWS Lambda

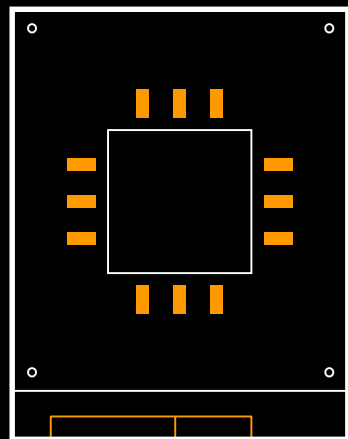
Storage



gp3: New General Purpose SSD volume

INDEPENDENTLY PROVISION IOPS AND THROUGHPUT AT UP TO 20% LOWER PRICE PER GB

NEW
AT RE:INVENT



General Purpose SSD

gp2

Up to 250 MB/s
Throughput

3,000 IOPS (burst)
Baseline Performance

3 IOPS / GB
Scaled Performance

gp3

20%
lower cost
per GB

Up to 1,000 MB/s
Throughput

3,000 IOPS (baseline)
Baseline Performance

Independently Scale
IOPS and Throughput

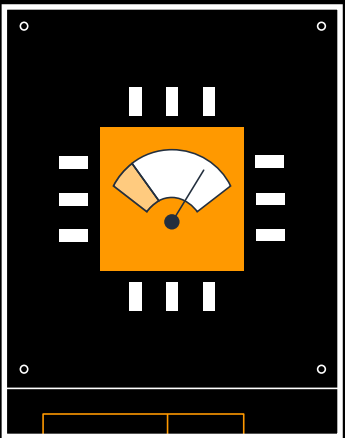
4X

Introducing io2 Block Express

THE FIRST SAN BUILT FOR THE CLOUD. AVAILABLE IN PREVIEW

NEW
AT RE:INVENT

io2



Provisioned IOPS SSD

Up to 64,000 IOPs
IOPS

Up to 1,000 MB/s
Throughput

Up to 16 TB
Capacity

Single Digit Millisecond
Latency

99.999%
Durability

io2 Block Express

Up to 256,000 IOPs
IOPS **4X**

Up to 4,000 MB/s
Throughput **4X**

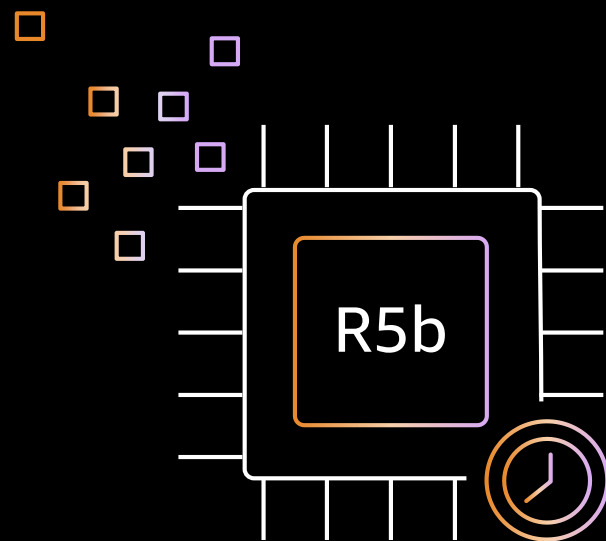
Up to 64 TB
Capacity **4X**

Sub-Millisecond
Latency

99.999%
Durability

Introducing Amazon EC2 R5b instances

NEW
AT RE:INVENT



Memory-optimized
instances delivering 3x
faster block storage
performance in cloud

Up to **3X** better EBS performance over EC2
R5 instances

Deliver up to **7,500** MB/second bandwidth
and **260k IOPS** of EBS performance

Designed for large database and data
analytics workloads

Consolidate workloads sensitive to storage
performance by migrating from R5 to R5b

Demo – GP3 Storage

Databases



Amazon Aurora

MySQL and PostgreSQL compatible relational database built for the cloud

Performance and availability of commercial-grade databases at 1/10th the cost

Performance and scalability



5x throughput of MySQL

3x throughput of PostgreSQL

15 read replicas

Scale out reads and writes across multiple data centers

Availability and durability



Fault-tolerant self-healing storage

Six copies of data across three AZs

Continuous backup to S3

Single Global database with cross-region replication

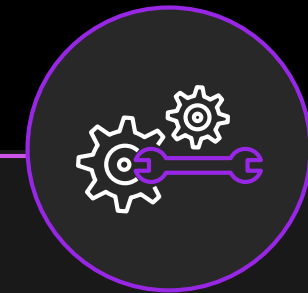
Highly secure



Network isolation

Encryption at rest/transit

Fully managed



Managed by RDS:

no hardware provisioning,
software patching, setup,
configuration, or backups

Introducing Amazon Aurora Serverless v2

NEW

PREVIEW

Support the most demanding applications without managing database capacity.

Highly Scalable



Scale instantly, from hundreds to hundreds-of-thousands of transactions, in a fraction of a second.

Save up to 90%



Scale capacity in fine-grained increments and save up to 90% of costs vs provisioning capacity for peak load.

Highly available



Power your business critical workloads with the full breadth of Aurora features, including Multi-AZ, read replicas, and Global Database.

Aurora MySQL – Preview today, Aurora PostgreSQL – Preview early 2021

Introducing Babelfish for Aurora PostgreSQL

NEW

PREVIEW

Run SQL Server applications on PostgreSQL with little to no code changes

Keep Existing Queries



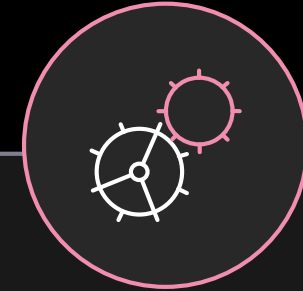
Translation layer enables Aurora PostgreSQL to understand Microsoft SQL Server's proprietary T-SQL

Accelerate Migrations



Lower risk and complete migrations faster, saving you months to years of work

Freedom to innovate



Run T-SQL code side-by-side with new open source functionality and continue developing with familiar tools

Developer Tools



AWS Customers love the AWS CLI

```
$ aws s3 ls
```

We also hear

“I can’t install software locally!”

“I just want to run a quick script!”

“How do I get started with the AWS CLI?”

“How can I easily switch accounts and regions for the AWS CLI?”

“How do I make changes to 83 S3 buckets quickly?”

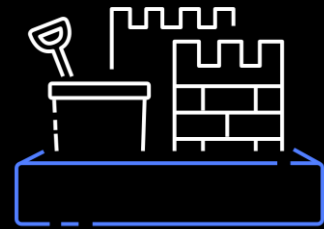
“How do I experiment on the latest AWS CLI?”

Introducing AWS CloudShell



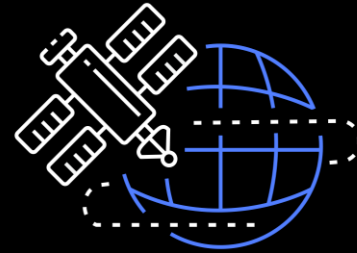
CLI

Interact with
your AWS
Resources
through the
AWS CLI



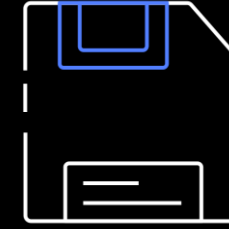
Try out

Quickly try out
documentation
examples



Explore

Explore new
AWS services
easily



Persist

Save up to 1GB
of data in your
home folder



1 Click

One click to
open a
command line

What's in the box?

Everything installed on Amazon Linux 2 and ...

CLIs	Tools/Utilities/Shells	Runtimes
AWS CLI (v2)	Git	Node
AWS SAM CLI	Vim, Nano	Python
AWS Elastic Beanstalk CLI	PowerShell	
AWS ECS CLI	bash, zsh	

Demo – CloudShell



What We Skipped?

- Analytics
- Machine Learning
- IoT
- Management & Governance
- Partners Announcements

re:Invent Bonus Content

Join us this week, Jan. 12 – 14, for re:Invent bonus content!

We've just added 200+ new streaming sessions across tracks like Storage, Databases, Analytics, and more.

Keynotes, leadership sessions, and breakout sessions from December are also available to watch on-demand.

<https://virtual.awsevents.com/>

AWS CZSK Webinar

28/01/2021 13:00-15:00 CET

Viac obsahu, viac demo ukážok.

<https://pages.awscloud.com/EMEA-field-OE-EEMRecaps-2021-reg-event.html>

Questions & Answers



Thank you...



<https://ef.awsug.cz>