DevOps

Linux/GIT/Jenkins

AWS EC2 And Cloud Watch

Presentation By: Madhusudhan

Content

- Linux
- GIT
- Jenkins
- AWS & Cloud Watch

Linux (CentOS)

-Booting Process

-Partitioning disk management

-Linux file systems

-Kernel

-User Management

-Network Services – DNS , DHCP, SSH, FTP

-Storage Services

-NFS /iscsi/scsi/lvm

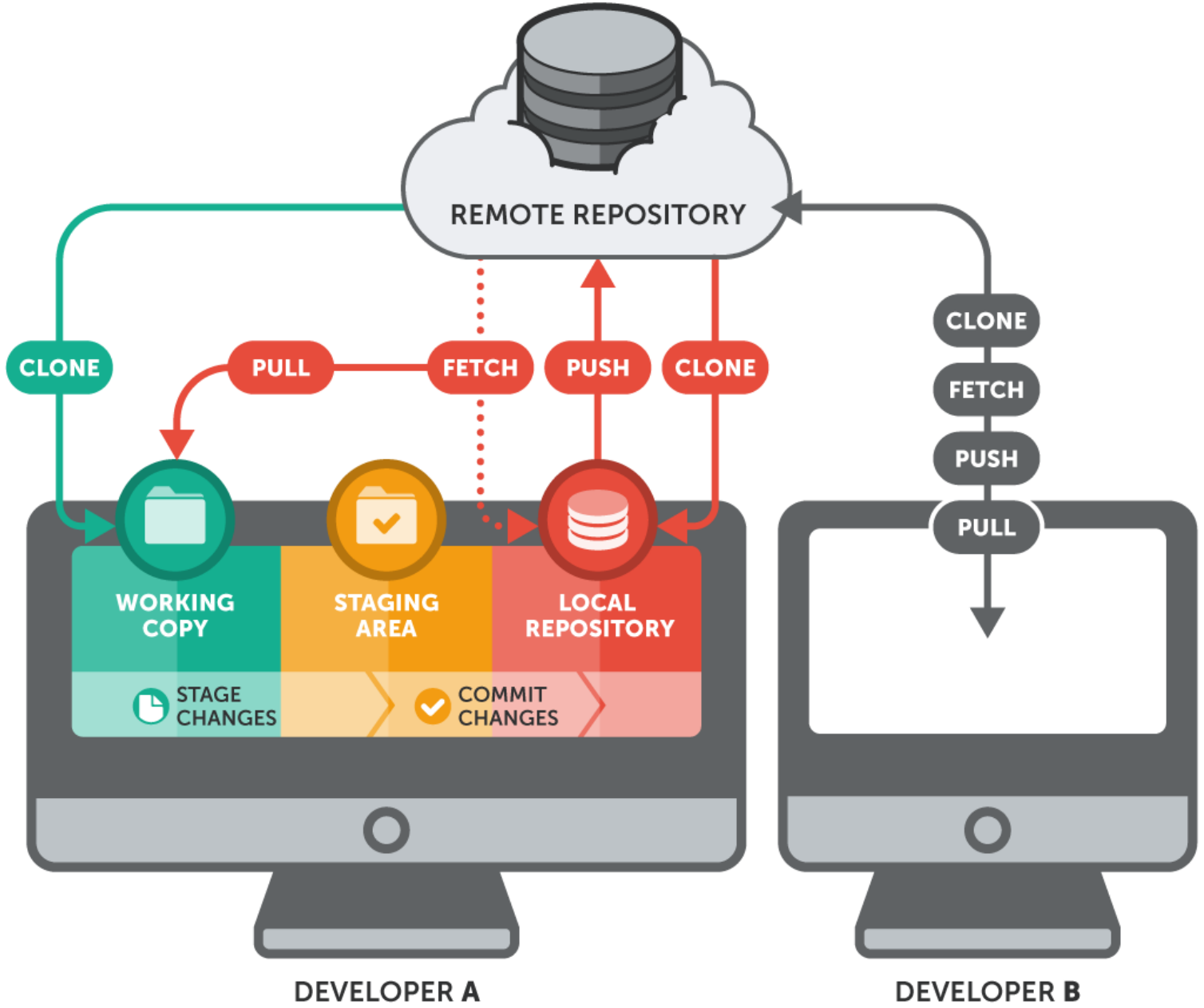
-Troubleshooting
    -Storage
    -Network
    -Computer Related / Performance

GIT - Software Configuration Management / Source Code Management

-Setup and config

-Git tracking

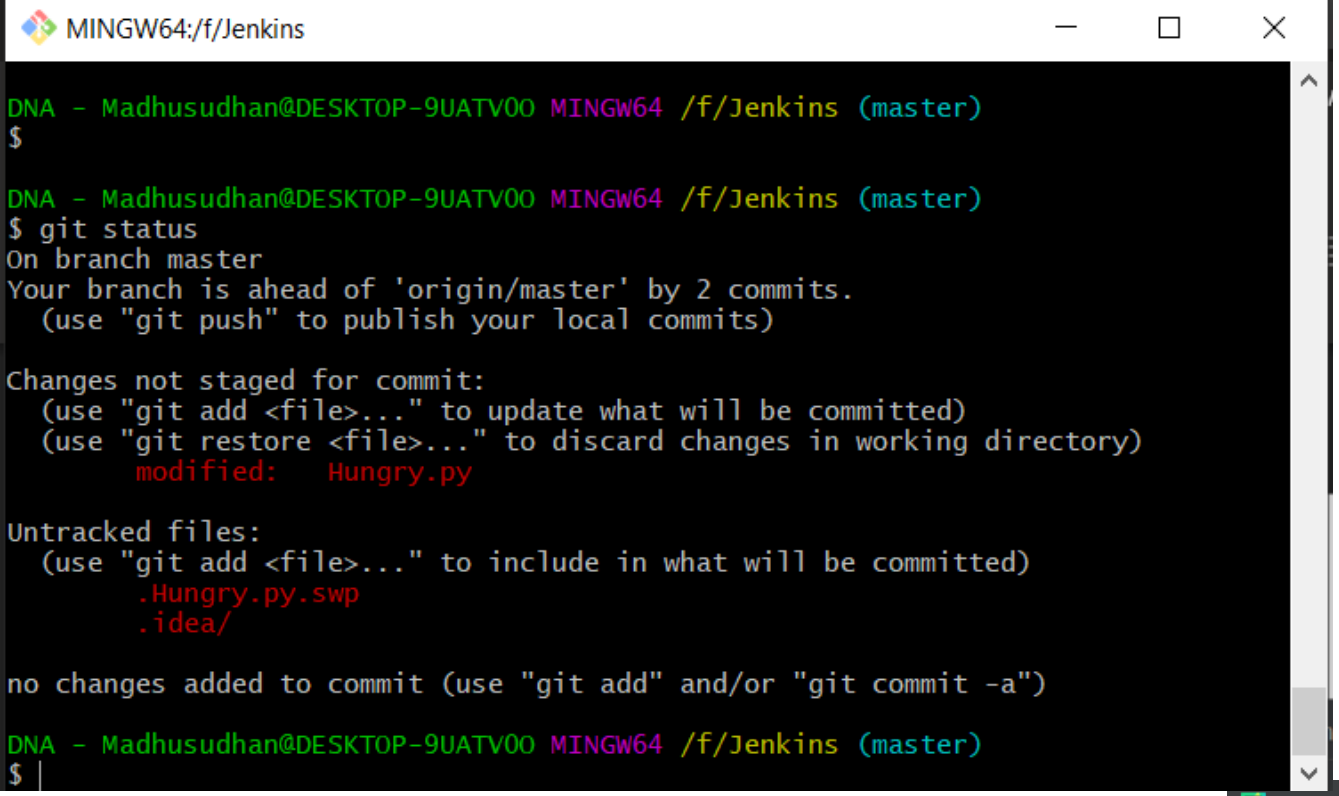
-SCM control

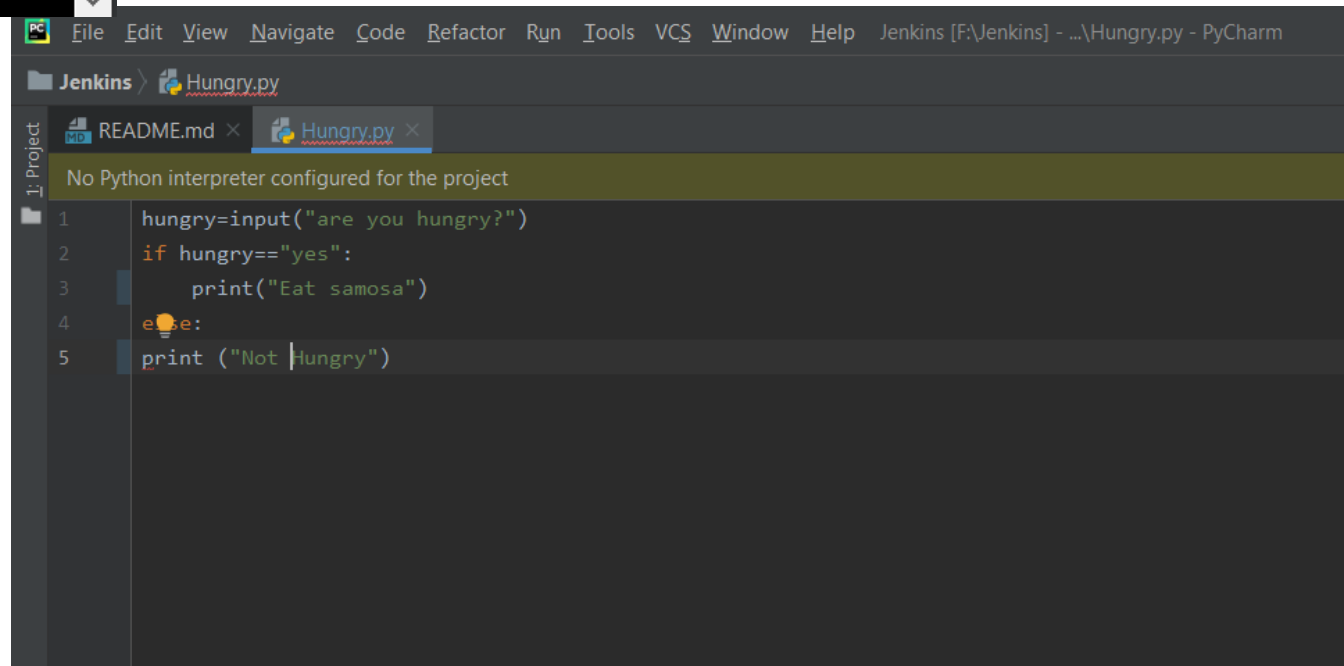


GIT Commands

- git config
- git init
- git clone
- git add
- git commit
- git diff
- git reset
- git status
- git rm
- git log
- git show
- git tag
- git branch
- git checkout
- git merge
- git remote
- git push
- git pull
- git stash

Initialise/Add/Staging/Pushing through GIT





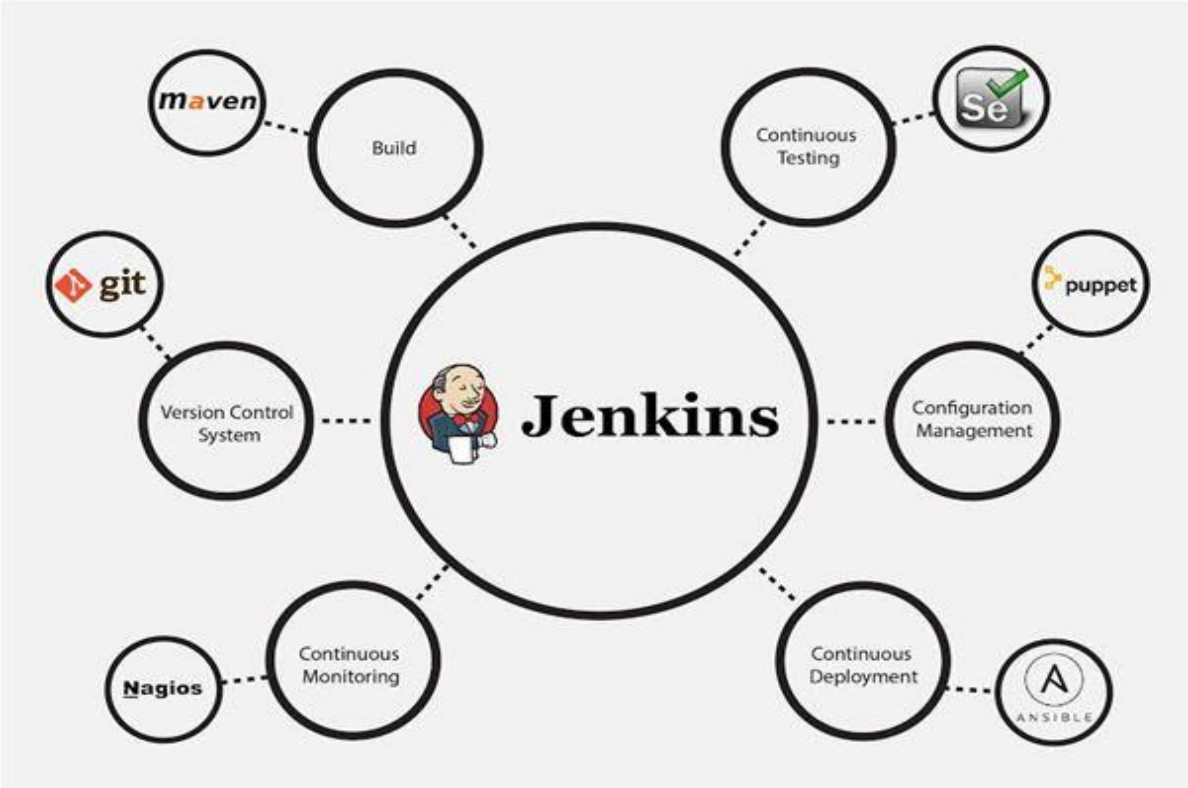
Jenkins

-Developer time is concentrated on work that matters: Most of the work like integration and testing is managed by automated build and testing systems. So the developer's time is saved without wasting on large-scale error-ridden integrations.

-Software quality is made better: Issues are detected and resolved almost right away which keeps the software in a state where it can be released at any time safely.

-Makes development faster: Most of the integration work is automated. Hence integration issues are less. This saves both time and money over the lifespan of a project.

Jenkins Features



Status of the build	Description
	Failed
	Unstable
	Success
	Pending
	Disabled
	Aborted

Figure a: Build status

Job health	Description
	No recent builds failed
	20-40% of recent builds failed
	40-60% of recent builds failed
	60-80% of recent builds failed
	All recent builds failed
	Unknown status

Figure b: Weather reports

New Item

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Lockable Resources

Credentials

New View

add description

All +

S	W	Name ↓	Last Success	Last Failure	Last Duration
		2020 Build	N/A	N/A	N/A
		Test	6 mo 14 days - #1	N/A	5.6 sec
		Test Jenkins	6 mo 14 days - #3	6 mo 13 days - #6	1 min 33 sec

Icon: S M L

Legend Atom feed for all Atom feed for failures Atom feed for just latest builds

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

AWS EC2 And Cloud Watch

Demonstration By: Madhusudhan Sridhar

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Add Tags | 6. Configure Security Group | 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

Amazon RDS

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy **Amazon Aurora, MariaDB, MySQL, Oracle, PostgreSQL, and SQL Server** databases on AWS. Aurora is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. Learn more about RDS

Launch a database using RDS

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-08bc77a2c7eb2b1da (64-bit x86) / ami-0c37ee902a7924ed2 (64-bit Arm)

Free tier eligible

Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)
64-bit (Arm)

Microsoft Windows Server 2019 Base - ami-0c278895328cddfdd

Windows
Free tier eligible

Microsoft Windows 2019 Datacenter edition. [English]

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)

Deep Learning AMI (Ubuntu 18.04) Version 27.0 - ami-0dbb717f493016a1a

MXNet-1.6.0, Tensorflow-2.1.0 & 1.15.2, PyTorch-1.4.0, Keras-2.2, & other frameworks, configured with Neuron, NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker & NVIDIA-Docker. For fully managed experience, check: https://aws.amazon.com/sagemaker

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)

Deep Learning AMI (Ubuntu 16.04) Version 27.0 - ami-0a79b70001264b442

MXNet-1.6.0, Tensorflow-2.1.0 & 1.15.2, PyTorch-1.4.0, Keras-2.2, & other frameworks, configured with Neuron, NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker & NVIDIA-Docker. For fully managed experience, check: https://aws.amazon.com/sagemaker

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)

1. Choose AMI | **2. Choose Instance Type** | 3. Configure Instance | 4. Add Storage | 5. Add Tags | 6. Configure Security Group | 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance types | Current generation | Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
☐	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
☑	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
☐	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
☐	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
☐	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
☐	General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel | Previous | Review and Launch | Next: Configure Instance Details

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Add Tags | 6. Configure Security Group | **7. Review**

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Edit AMI

Microsoft Windows Server 2019 Base - ami-0c278895328cddfdd

Free tier eligible

Microsoft Windows 2019 Datacenter edition. [English]

Root Device Type: ebs Virtualization type: hvm

Instance Type

Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups

Edit security groups

Security group name launch-wizard-1

Description launch-wizard-1 created 2020-04-22T13:13:50.672+05:30

Type	Protocol	Port Range	Source	Description

This security group has no rules

Instance Details

Edit instance details

Number of instances 1

Purchasing option On demand

Cancel | Previous | Launch

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Add Tags | 6. Configure Security Group | **7. Review**

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Edit AMI

Microsoft Windows Server 2019 Base

Free tier eligible

Microsoft Windows 2019 Datacenter edition. [E

Root Device Type: ebs Virtualization type: hvm

Instance Type

Edit instance type

Instance Type	ECUs	vCPUs	Network Performance
t2.micro	Variable	1	Low to Moderate

Security Groups

Edit security groups

Security group name launch-wizard-1

Description launch-wizard-1 create

Type	Protocol	Description

Cancel | Previous | Launch

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Create a new key pair

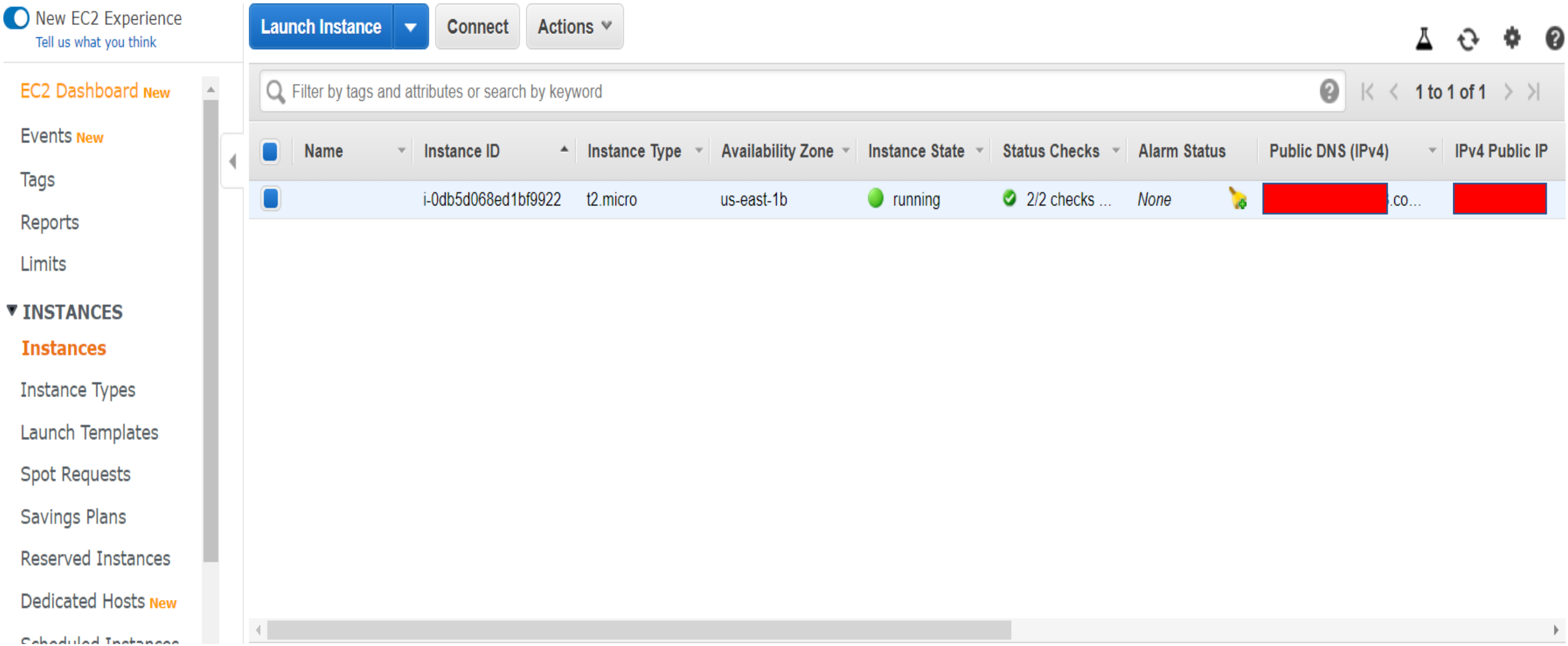
Key pair name

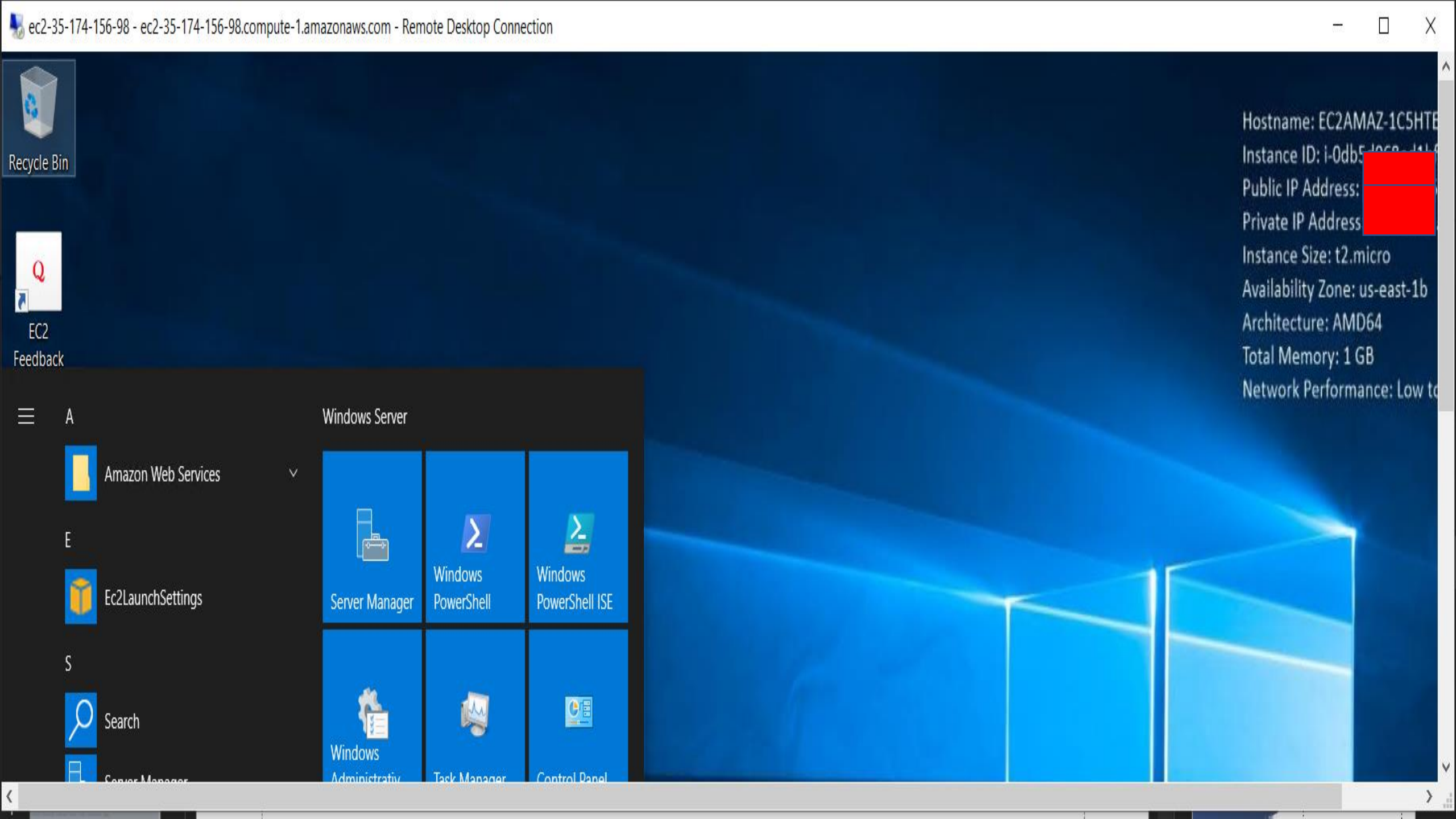
Devops

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel | Launch Instances


New EC2 Experience
Tell us what you think
Launch Instance
Connect
Actions
EC2 Dashboard New
Events New
Tags
Reports
Limits
INSTANCES
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts New
Filter by tags and attributes or search by keyword
1 to 1 of 1
Name
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm Status
Public DNS (IPv4)
IPv4 Public IP
i-0db5d068ed1bf9922
t2.micro
us-east-1b
running
2/2 checks ...
None

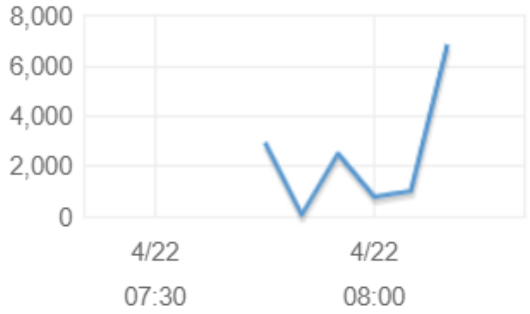

ec2-35-174-156-98 - ec2-35-174-156-98.compute-1.amazonaws.com - Remote Desktop Connection
Recycle Bin
EC2 Feedback
Hostname: EC2AMAZ-1C5HTE
Instance ID: i-0db5
Public IP Address:
Private IP Address
Instance Size: t2.micro
Availability Zone: us-east-1b
Architecture: AMD64
Total Memory: 1 GB
Network Performance: Low t
A
Amazon Web Services
E
Ec2LaunchSettings
S
Search
Windows Server
Server Manager
Windows PowerShell
Windows PowerShell ISE
Windows Administrativ
Task Manager
Control Panel

CLOUD WATCH

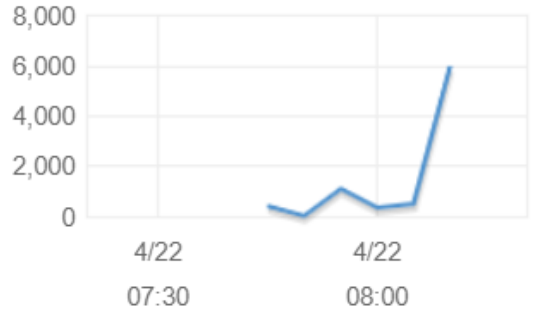
CloudWatch metrics: **Showing data for:** Last Hour

Below are your CloudWatch metrics for the selected resources (a maximum of 10). Click on a graph to see an expanded view. All times shown are in UTC. › View all CloudWatch metrics

Read Bandwidth (KiB/s)

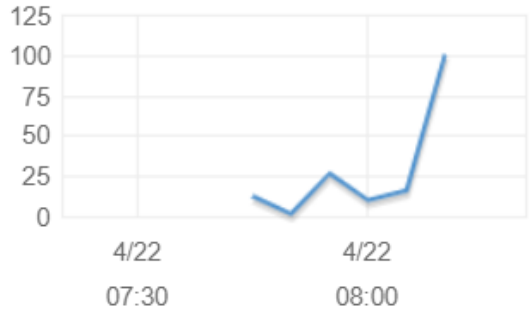


Write Bandwidth (KiB/s)



Read Throughput (Ops/s)

Write Throughput (Ops/s)



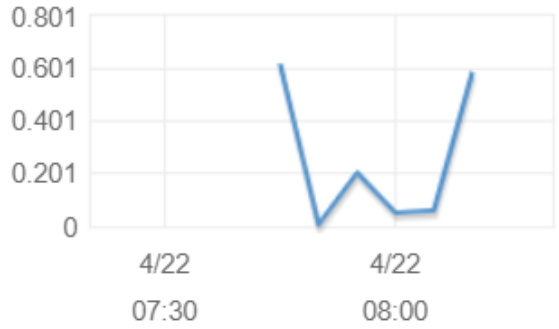
Average Queue Length (Operations)

Time Spent Idle (Percent)

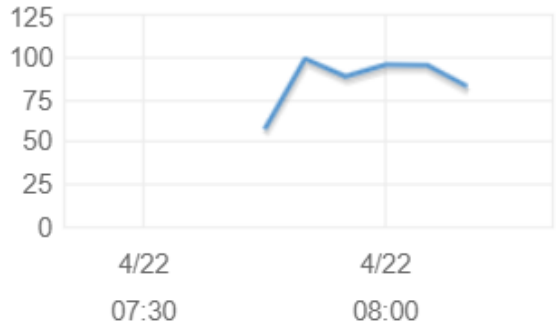
Average Read Size (KiB/op)

Average Write Size (KiB/op)

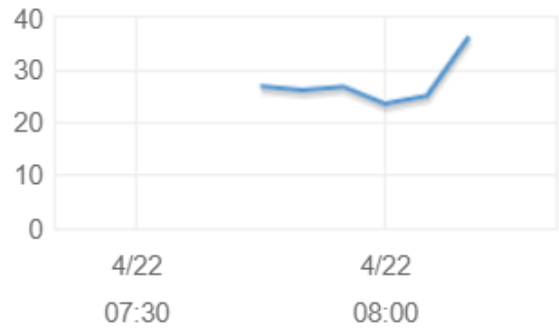
Average Queue Length (Operations)



Time Spent Idle (Percent)

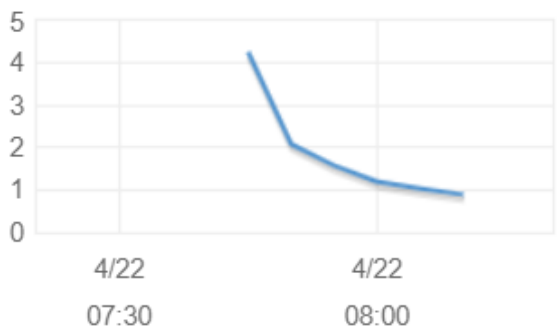


Average Read Size (KiB/op)

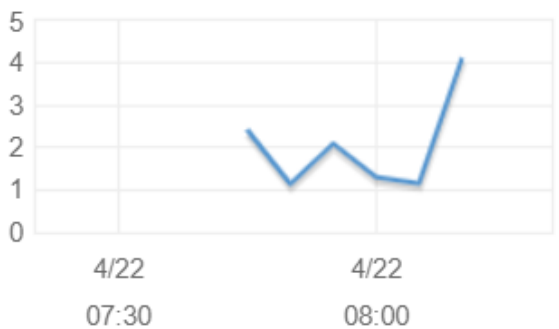


Average Write Size (KiB/op)

Average Read Latency (ms/op)



Average Write Latency (ms/op)



Burst Balance (Percent)