

CentOS Stream 8 – MERN Stack

Version:	1.0.0
Created by:	cloudimg

Table of Contents

1.) Overview.....	1
2.) Access & Security.....	2
3.) System Requirements.....	2
4.) Connecting to the Instance.....	2
5.) On Startup.....	2
6.) Filesystem Configuration.....	3
7.) Server Components.....	3
8.) Scripts and Log Files.....	4
9.) Using System Components.....	4

1.) Overview

This document is provided as a user guide for the CentOS Stream 8 – MERN Stack product offering on the Azure Marketplace. Please reach out to support@cloudimg.co.uk if any issues are encountered following this user guide for the chosen product offering.



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

2.) Access & Security

Please update the security group of the target instance to allow the below ports and protocols for access and connectivity.

Protocol	Type	Port	Description
SSH	TCP	22	SSH connectivity
Custom TCP	TCP	27017	Default MongoDB database port for remote connectivity
Custom TCP	TCP	3000	Express sample application front end
Custom TCP	TCP	8088	ReactJS sample application front end

3.) System Requirements

The minimum system requirements for the chosen product offering can be found below

Minimum CPU	Minimum RAM	Required Disk Space
1	1 GB	20 GB

4.) Connecting to the Instance

Once launched in the Azure Virtual Machines Service, please connect to the instance via an SSH client using the **azureuser** with the key pair associated at launch. Once connected as the **azureuser**, you will be able to **sudo** to the **root** user by issuing the below command

Switch to the root user

```
sudo su -
```

5.) On Startup

An OS package update script has been configured to run on boot to ensure the image is fully up to date at first use. You can disable this feature by removing the script from `/stage/scripts/` and deleting the entry in crontab for the root user.

Disable the OS update script from running on reboot

```
rm -f /stage/scripts/initial_boot_update.sh
```



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

```

crontab -e

#DELETE THE BELOW LINE. SAVE AND EXIT THE FILE.
@reboot /stage/scripts/initial_boot_update.sh

```

6.) Filesystem Configuration

Please see below for a screenshot of the server disk configuration and specific mount point mappings for software locations.

```

Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        971M   0  971M   0% /dev
tmpfs           981M   0  981M   0% /dev/shm
tmpfs           981M  8.5M  972M   1% /run
tmpfs           981M   0  981M   0% /sys/fs/cgroup
/dev/nvme0n1p2  38G   3.3G   33G  10% /
/dev/nvme1n1    9.8G  337M   8.9G   4% /var/lib/mongo
/dev/nvme0n1p1  2.0G   93M   1.8G   6% /boot
tmpfs           197M   0  197M   0% /run/user/1002
/dev/nvme2n1    9.8G  508M   8.8G   6% /apps

```

Mount Point	Description
/boot	Operating System Kernel files
/var/lib/mongo	MongoDB data directory
/apps	Installation directory for sample Express & ReactJS application

7.) Server Components

Please see below for a list of installed server components and their respective installation paths. The below versions are subject to change on initial boot based on the initial_boot_update.sh script finding new versions of the software in the systems package repositories.

Component	Version	Software Home
-----------	---------	---------------



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

Cloud-Init	22.1.1	/etc/cloud
Mongo DB 5 Community	5.0.9	/var/lib/mongo
Express	4.16.1	/apps/app
NodeJS	16.18.0	/bin/node
ReactJS	18.2.0	/apps/react-app
Azure CLI	2.53.1	/lib64/az

8.) Scripts and Log Files

The below table provides a breakdown of any scripts & log files created to enhance the useability of the chosen offering.

Script/Log	Path	Description
Initial_boot_update.sh	/stage/scripts	Update the Operating System with the latest updates available.
Initial_boot_update.log	/stage/scripts	Provides output for initial_boot_update.sh
mongo_db_admin_user_password.log	/stage/scripts	MongoDB admin database password file
start-react-app.sh	/stage/scripts	ReactJS sample application
start-express-app.sh	/stage/scripts	Express sample application
start-react-app.log	/stage/scripts	ReactJS sample application start log file
start-express-app.log	/stage/scripts	Express sample application start log file

9.) Using System Components

Instructions can be found below for using each component of the server build mentioned in section 7 of this user guide document.

Azure CLI

Using Azure CLI – as any OS user.

```
az
```

Cloud-Init



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

Edit the /etc/cloud/cloud.cfg file to reflect your desired configuration. A link to the cloud-init official documentation can be found below for referencing best practise for your use case.

<https://cloudinit.readthedocs.io/en/latest/>

```
vi /etc/cloud/cloud.cfg
```

MongoDB 5

The MongoDB Database service has been configured to start on boot, please use the below commands to start, stop and check the status of the service.

```
#Check the MongoDB service is running
service mongod status

#Stop the MongoDB service
service mongod stop

#Start the MongoDB service
service mongod start
```

You can access the mongodb database server as the root user by referring to the instructions in the /stage/scripts/mongo_db_admin_user_password.log file.

```
mongo -u mdbadmin -p

#Enter the randomly generated password found in the
/stage/scripts/mongo_db_admin_user_password.log file
```

Express

A sample Express application has been created in the below directory. A cronjob has also been created to start the application on boot. You can remove this functionality by deleting the crontab entry from the **root** user. Please also refer to the .log file shown below to view the startup of the application.

```
# Installation Directory
/apps/app
```



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

```
#Check Express version
express --version

#Check Crontab entry for the autonomous start of the application on boot.
crontab -e

#Remove the below line to stop the application starting on boot if required.
@reboot /stage/scripts/start-express-app.sh >> /stage/scripts/start-express-app.log
```

On instance boot, you will be able to access the sample Express Application front end by navigating to the below URL exchanging the values between <> with that of your own instance.

<PUBLIC/PRIVATEIP>:3000



Express

Welcome to Express

ReactJS

A sample ReactJS application has been created in the below directory. A cronjob has also been created to start the application on boot. You can remove this functionality by deleting the crontab entry from the **root** user. Please also refer to the .log file shown below to view the startup of the application.

```
# Installation Directory
/apps/react-app
```



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>

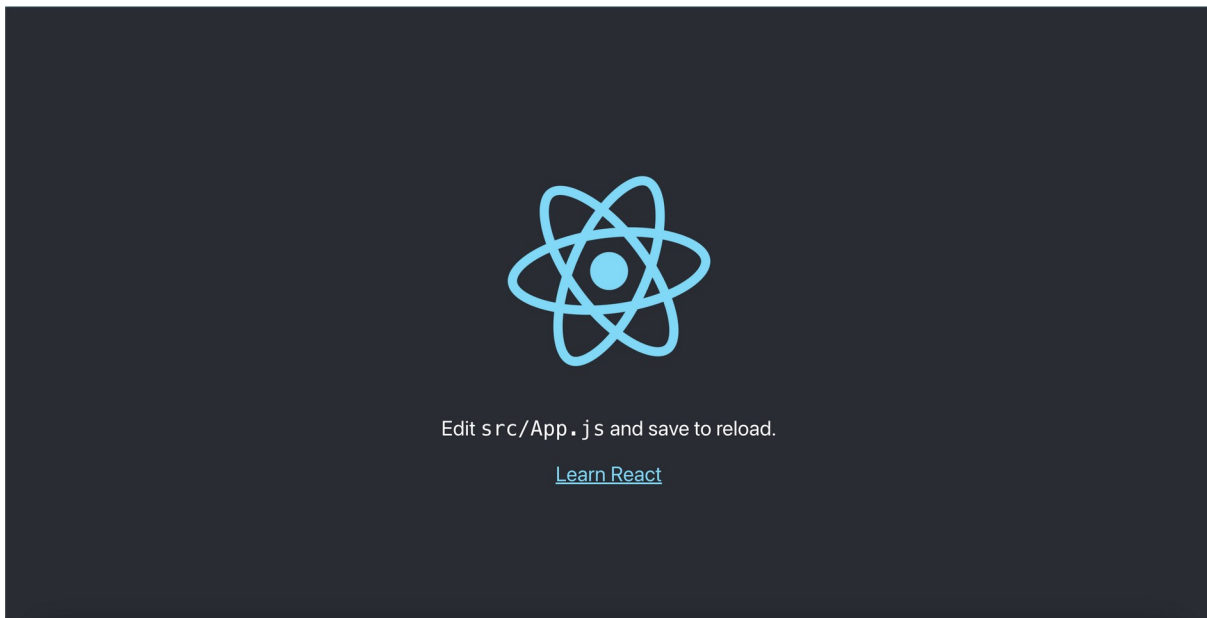
```
#Check ReactJS version
npm view react version

#Check Crontab entry for the autonomous start of the application on boot.
crontab -e

#Remove the below line to stop the application starting on boot if required.
@reboot /stage/scripts/start-react-app.sh >> /stage/scripts/start-react-app.log
```

On instance boot, you will be able to access the sample React Application front end by navigating to the below URL exchanging the values between <> with that of instance.

<PUBLIC/PRIVATEIP>:8088



NodeJS

You can check the NodeJS version installation on the system by issuing the below command.

```
node -v
```



Registered
Technology
Partner

cloudimg
(+44) 02045382725
3rd Floor 86-90 Paul Street London EC2A 4NE
support@cloudimg.co.uk
<https://cloudimg.co.uk>