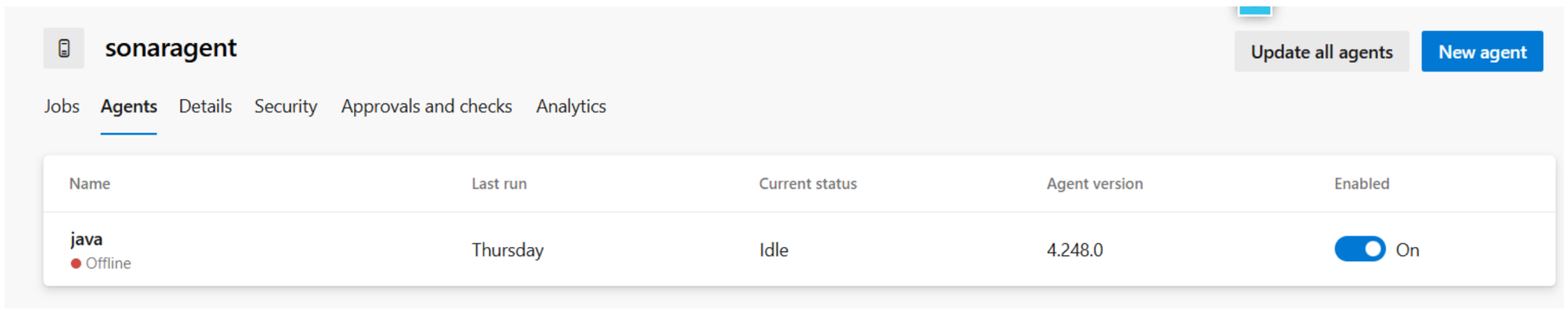
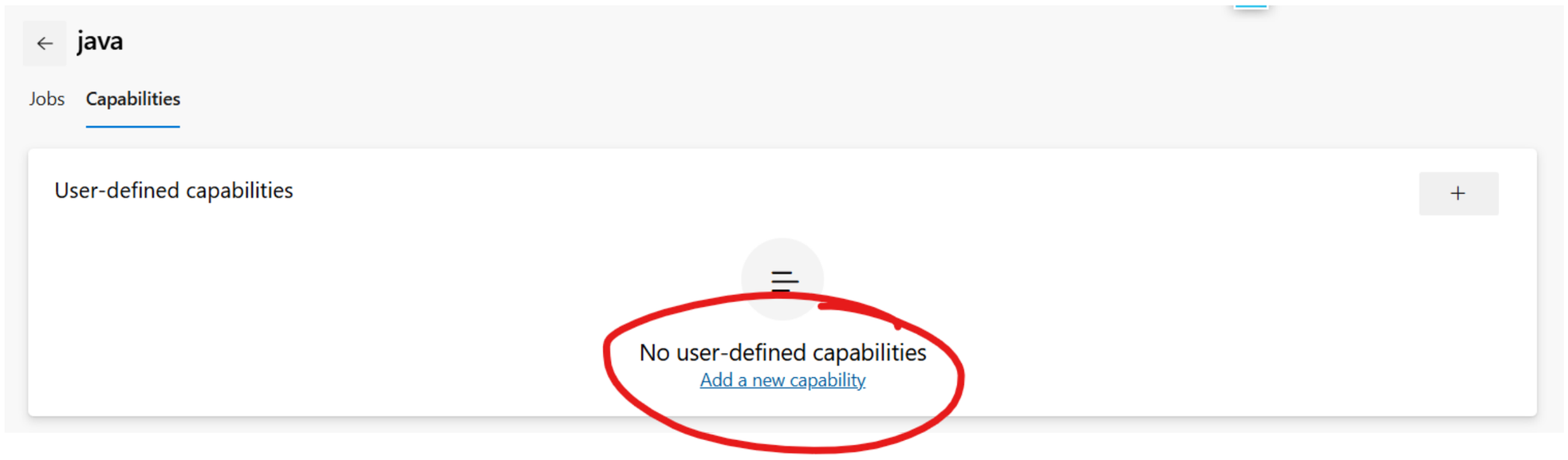
DEVSECOPS END-TO-END-PROJECT

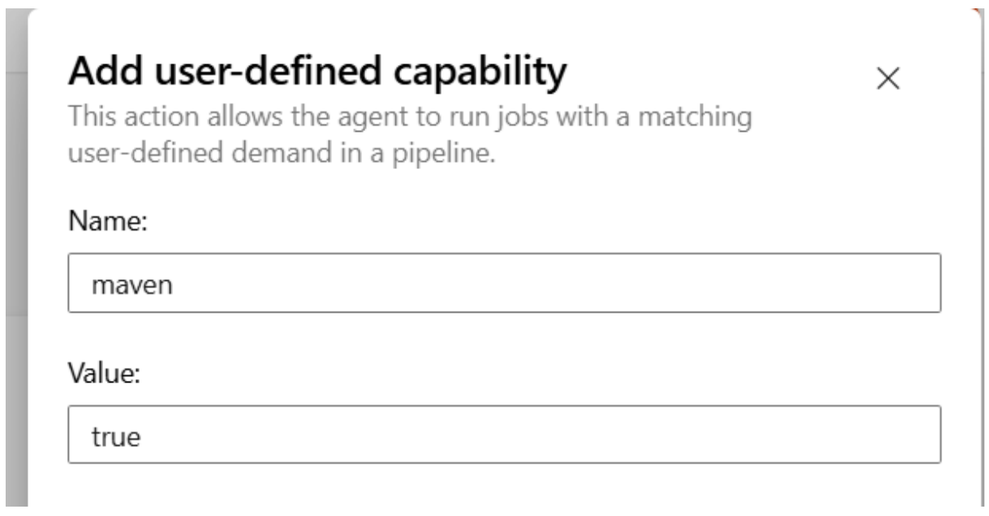
Prerequisite:

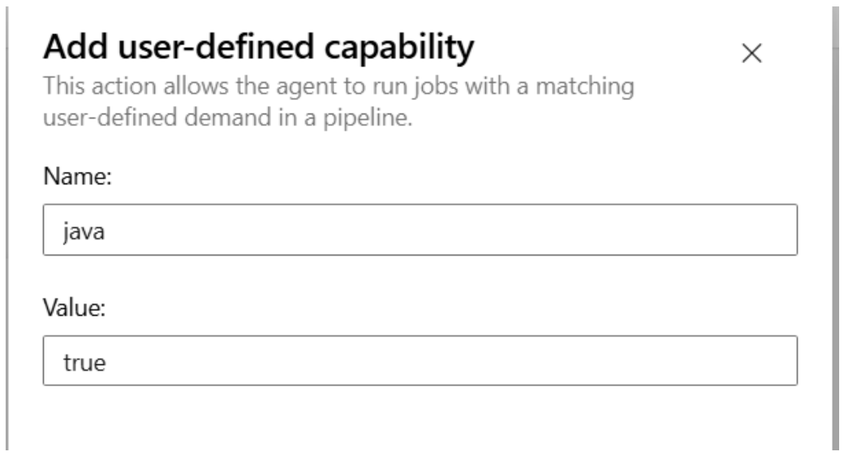
Install selfhosted Agent machine should be with the size 2 cpu and 8GB RAM



Add capabilities for this agent







Java 17 version

```
azadmin@java:~$ java --version
openjdk 17.0.13 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
azadmin@java:~$
```

Install maven

apt install maven

Install trivy

snap install trivy

```
azadmin@java:~$ trivy --version
Version: 0.52.2
```

Install docker and give permission to all users: by running below command

sudo apt install docker.io -y

sudo chmod 666 /var/run/docker.sock

Install sonarqube on docker container using image:

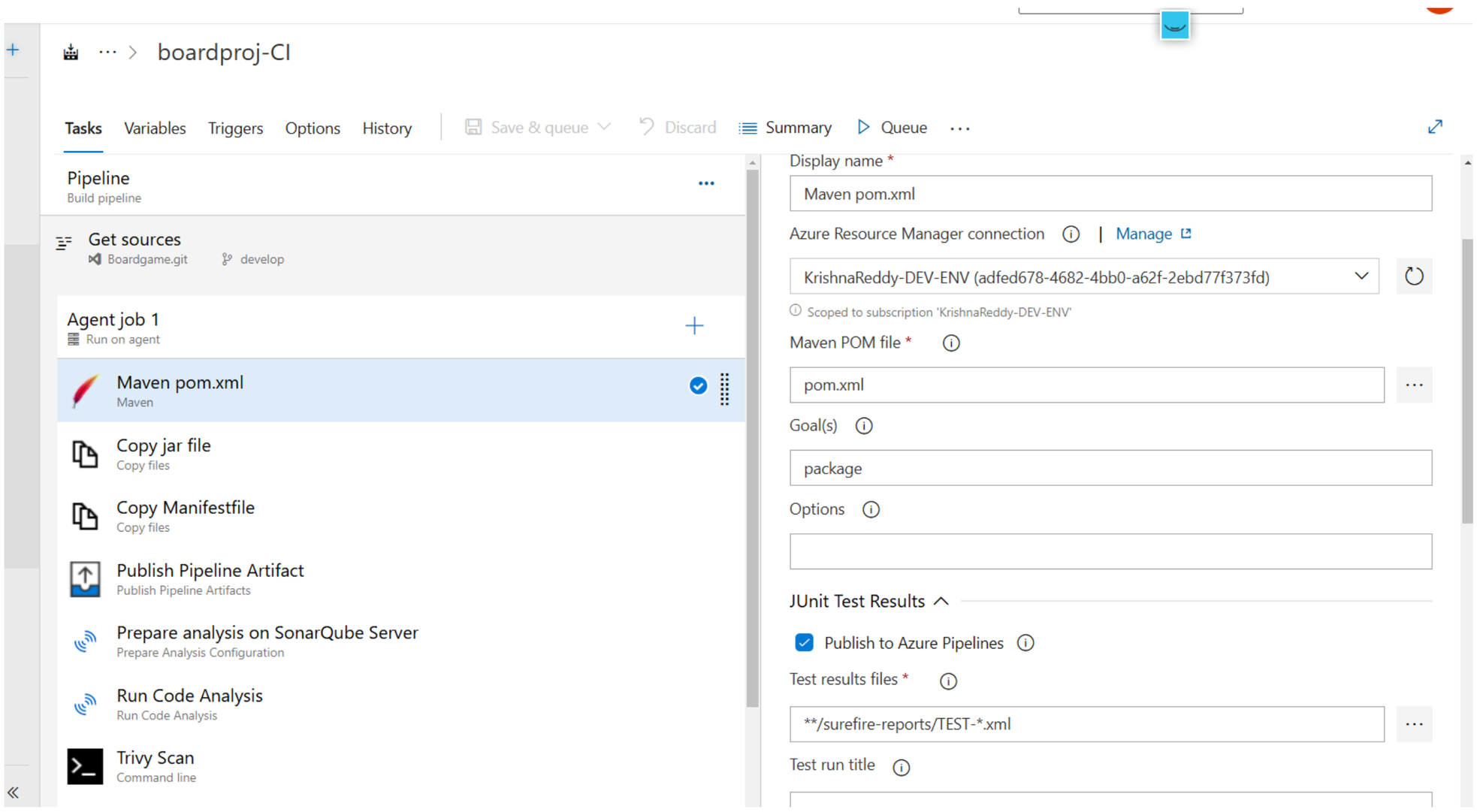
mc1arke/sonarqube-with-community-branch-plugin

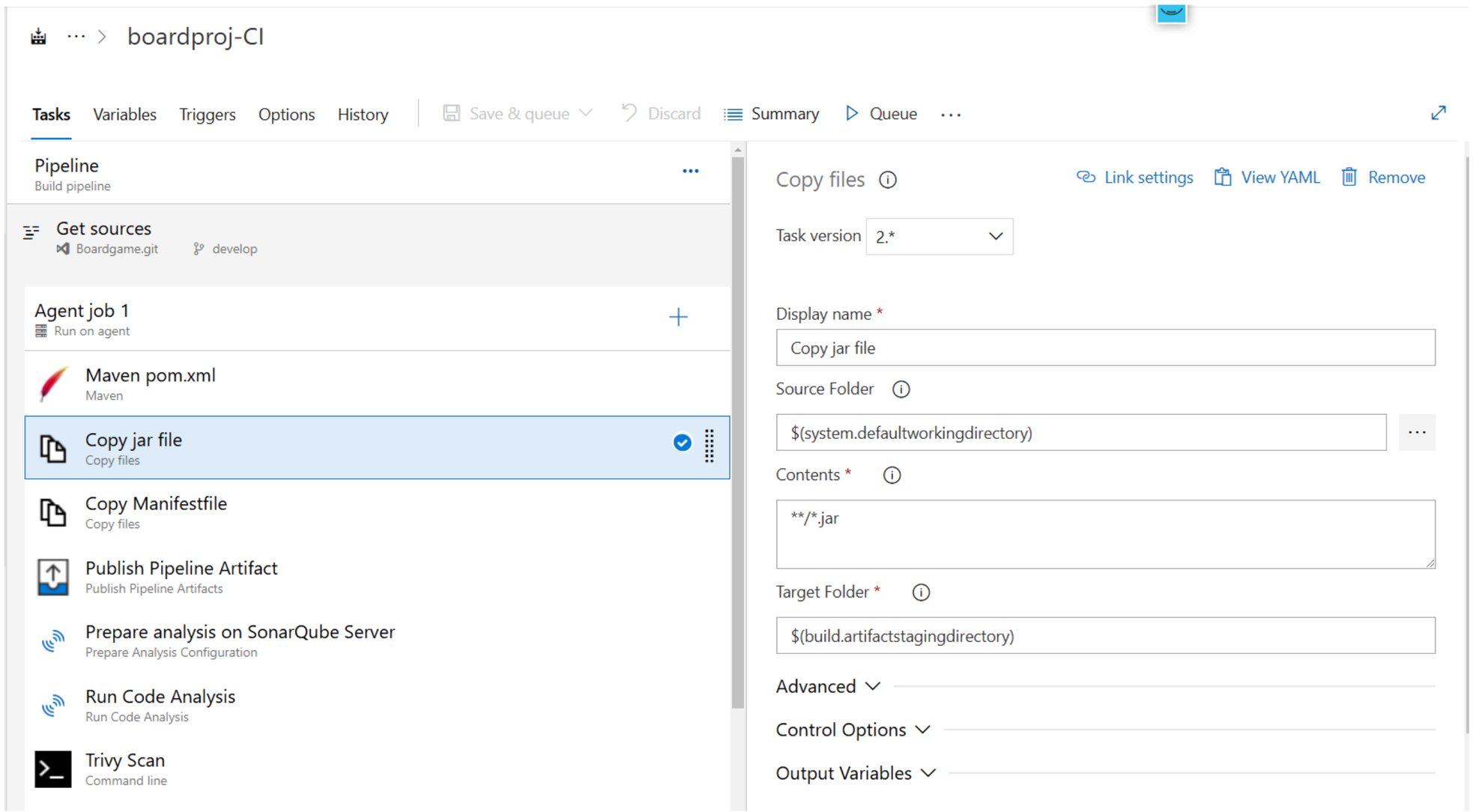
docker run -d –name sonar -p 9000:9000

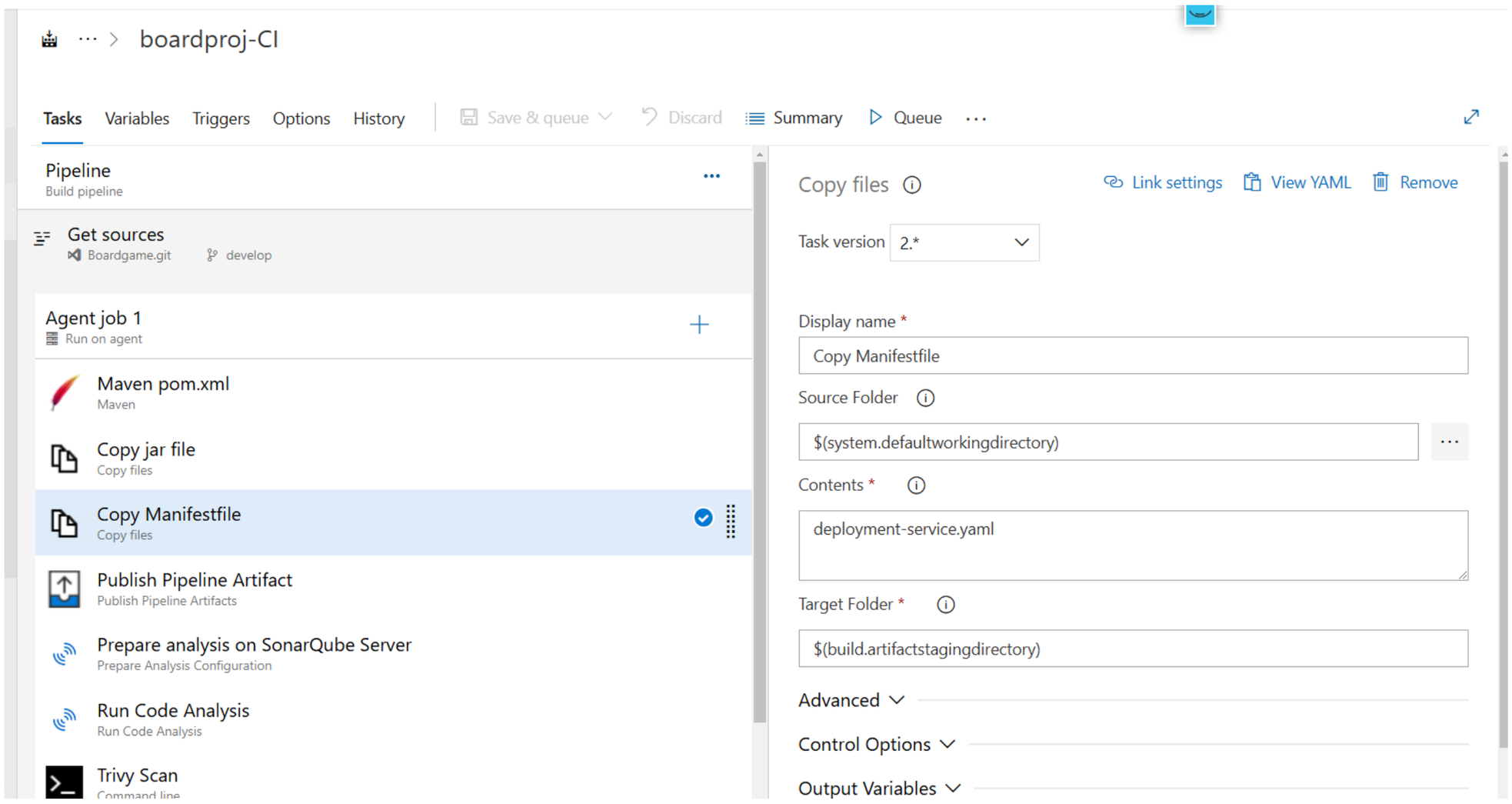
mc1arke/sonarqube-with-community-branch-plugin

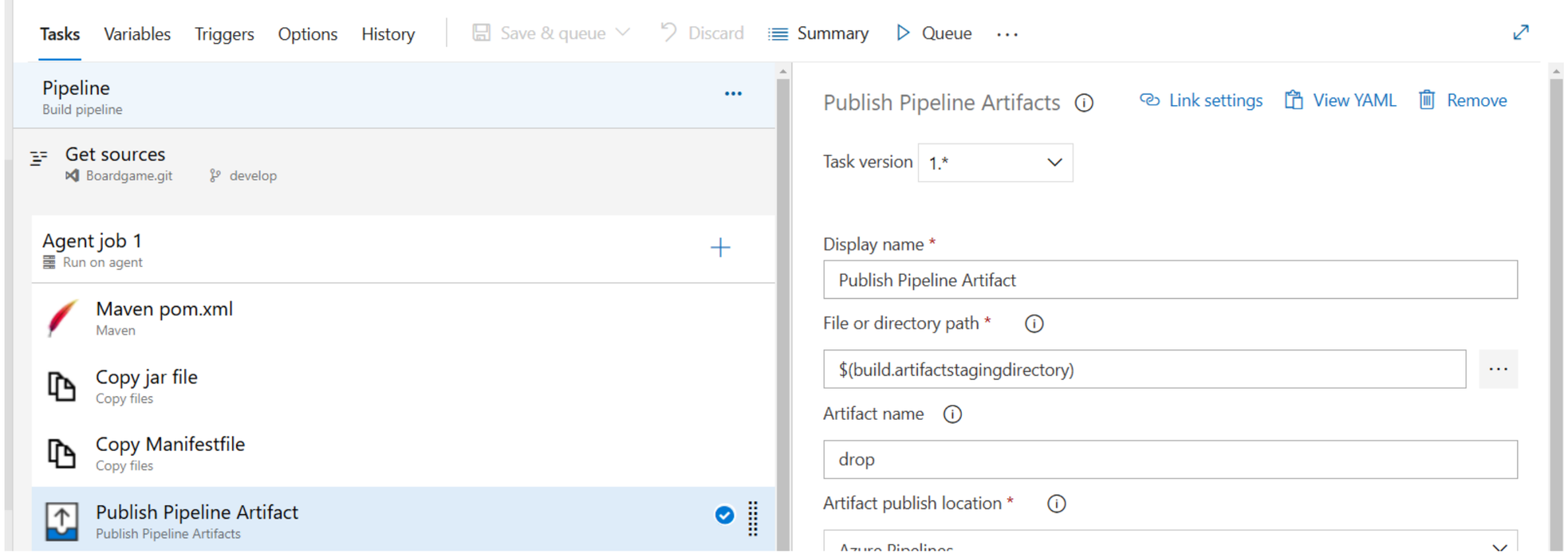
```
16  docker run -d --name sonar -p 9000:9000 mc1arke/sonarqube-with-community-branch-plugin
17  docker ps
```

Configure Azuredevops pipeline now

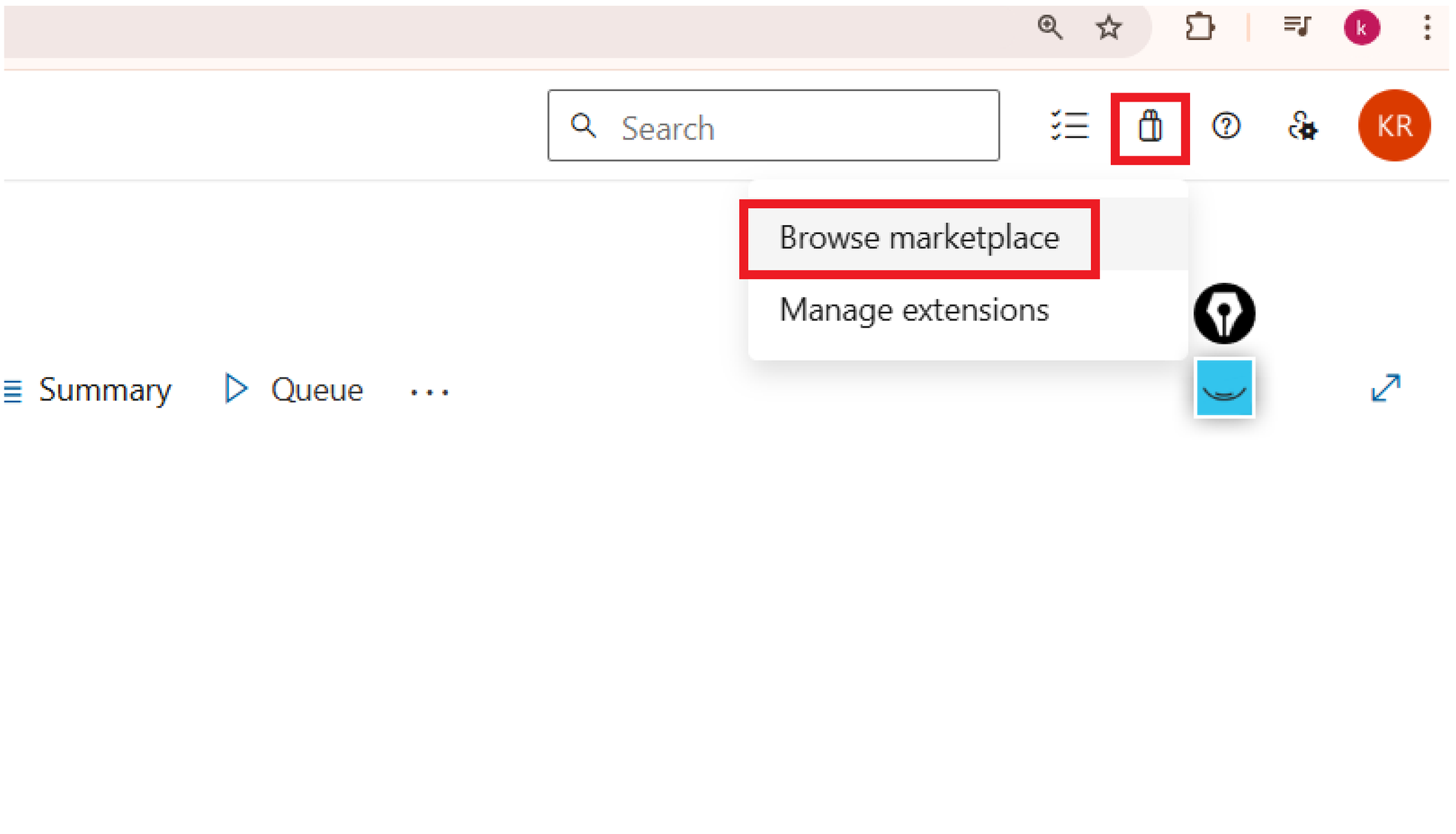


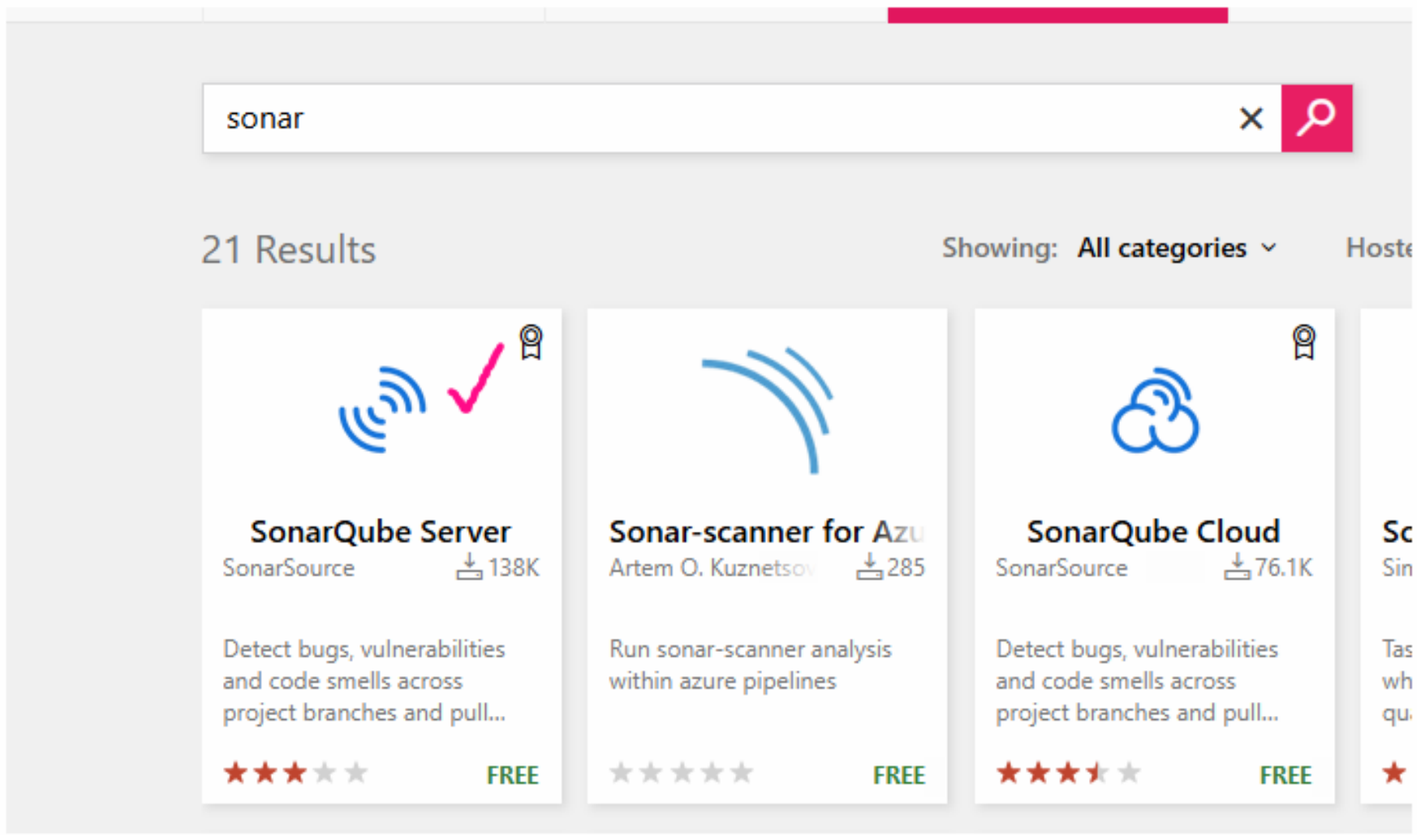


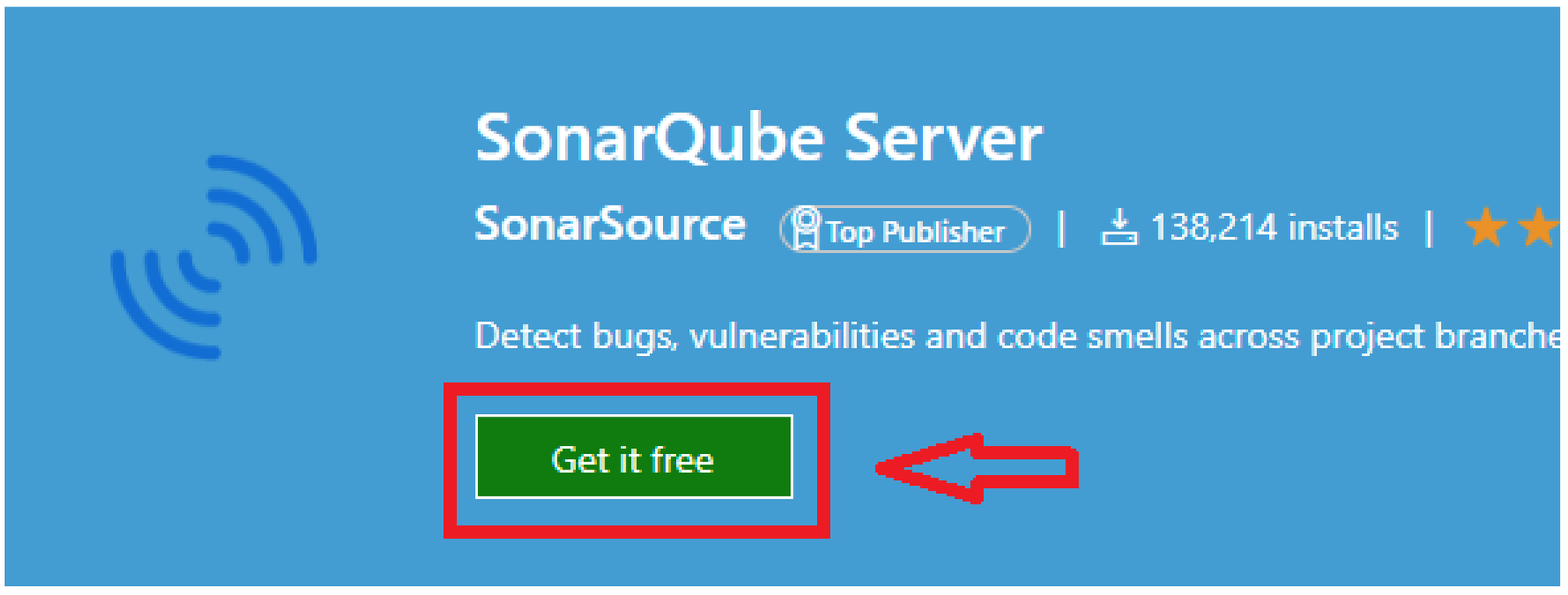




To integrate sonar qube in azure pipeline




sonar
21 Results
Showing: All categories
SonarQube Server
SonarSource
138K
Detect bugs, vulnerabilities and code smells across project branches and pull...
FREE
Sonar-scanner for Azu
Artem O. Kuznetsov
285
Run sonar-scanner analysis within azure pipelines
FREE
SonarQube Cloud
SonarSource
76.1K
Detect bugs, vulnerabilities and code smells across project branches and pull...
FREE


SonarQube Server
SonarSource
Top Publisher
138,214 installs
Detect bugs, vulnerabilities and code smells across project branche
Get it free

SonarQube Server

Organization — Done

Select an Azure DevOps organization

greatmindit1

This extension is already installed on this organization: greatmindit1.

For Azure DevOps Server

Download

Add tasks | Refresh

sonar

Run scanner and upload the results to the SonarQube Server.

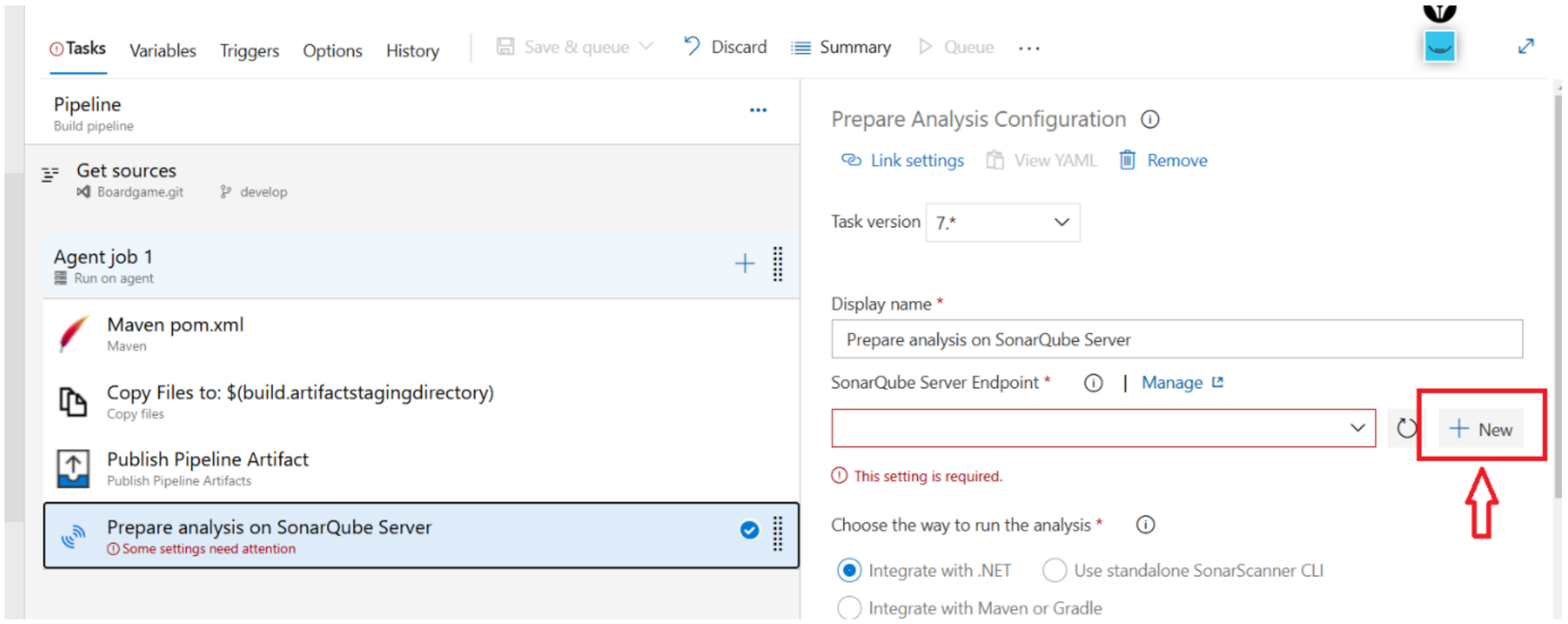
Prepare Analysis Configuration

Prepare SonarQube Server analysis configuration

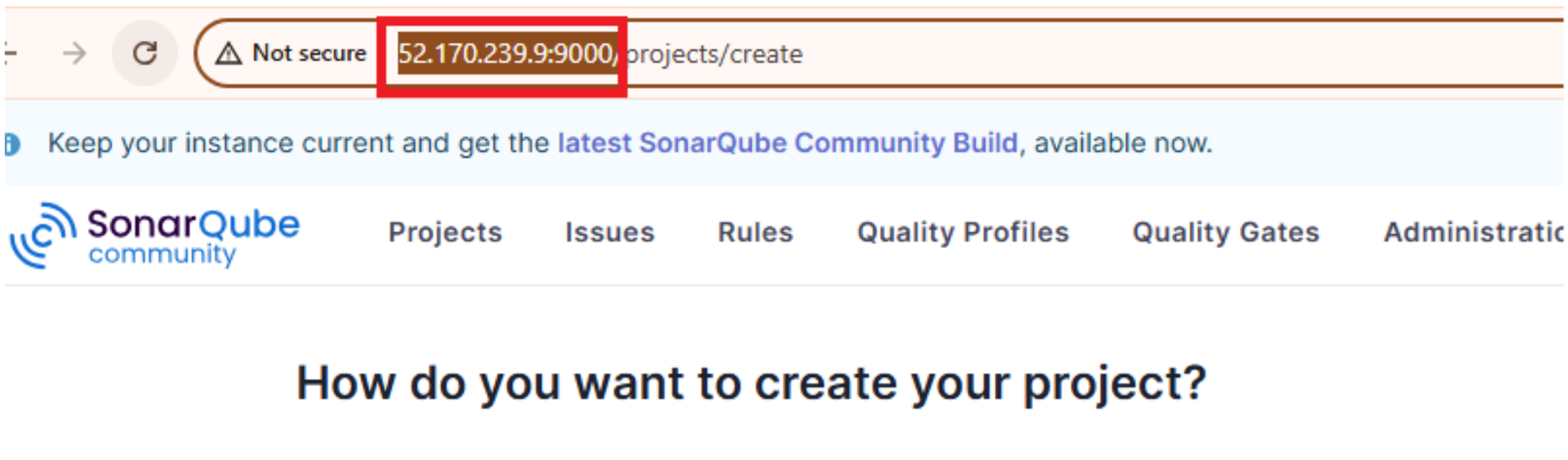
Add

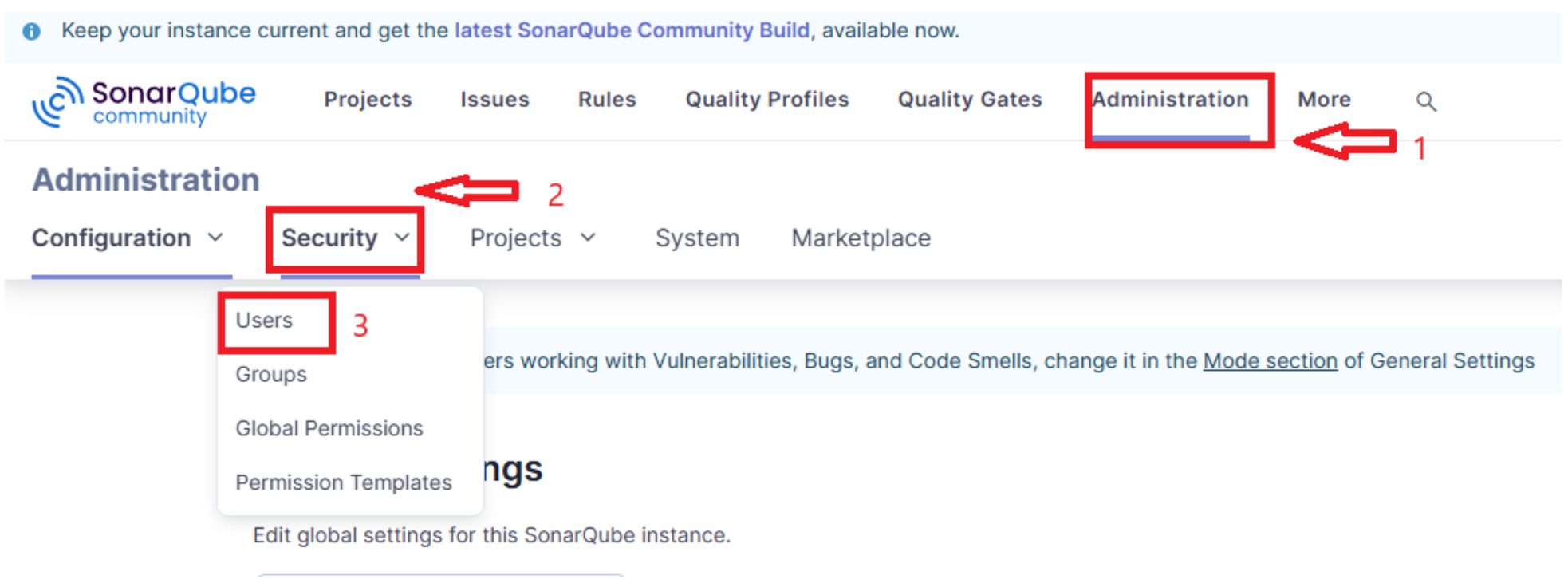
by sonarsource

Learn more



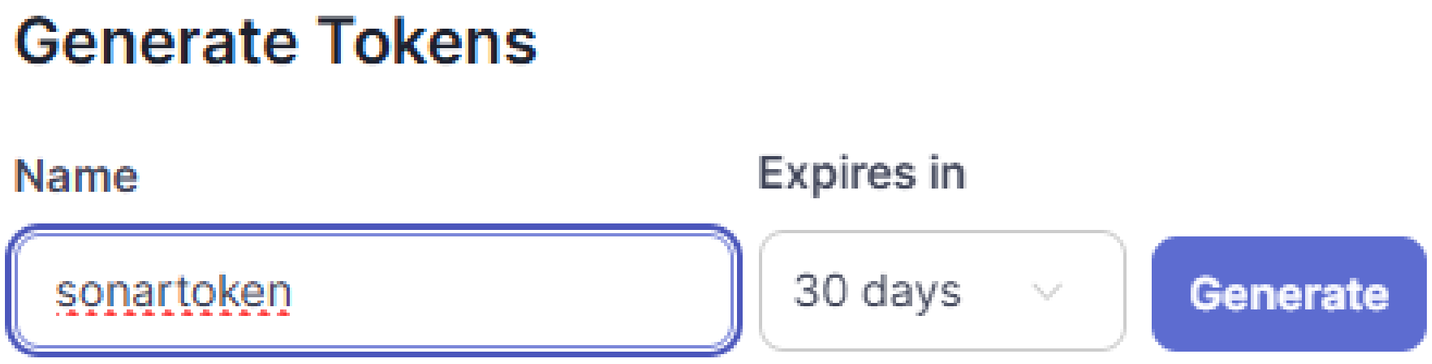
Copy the sonarqube server url

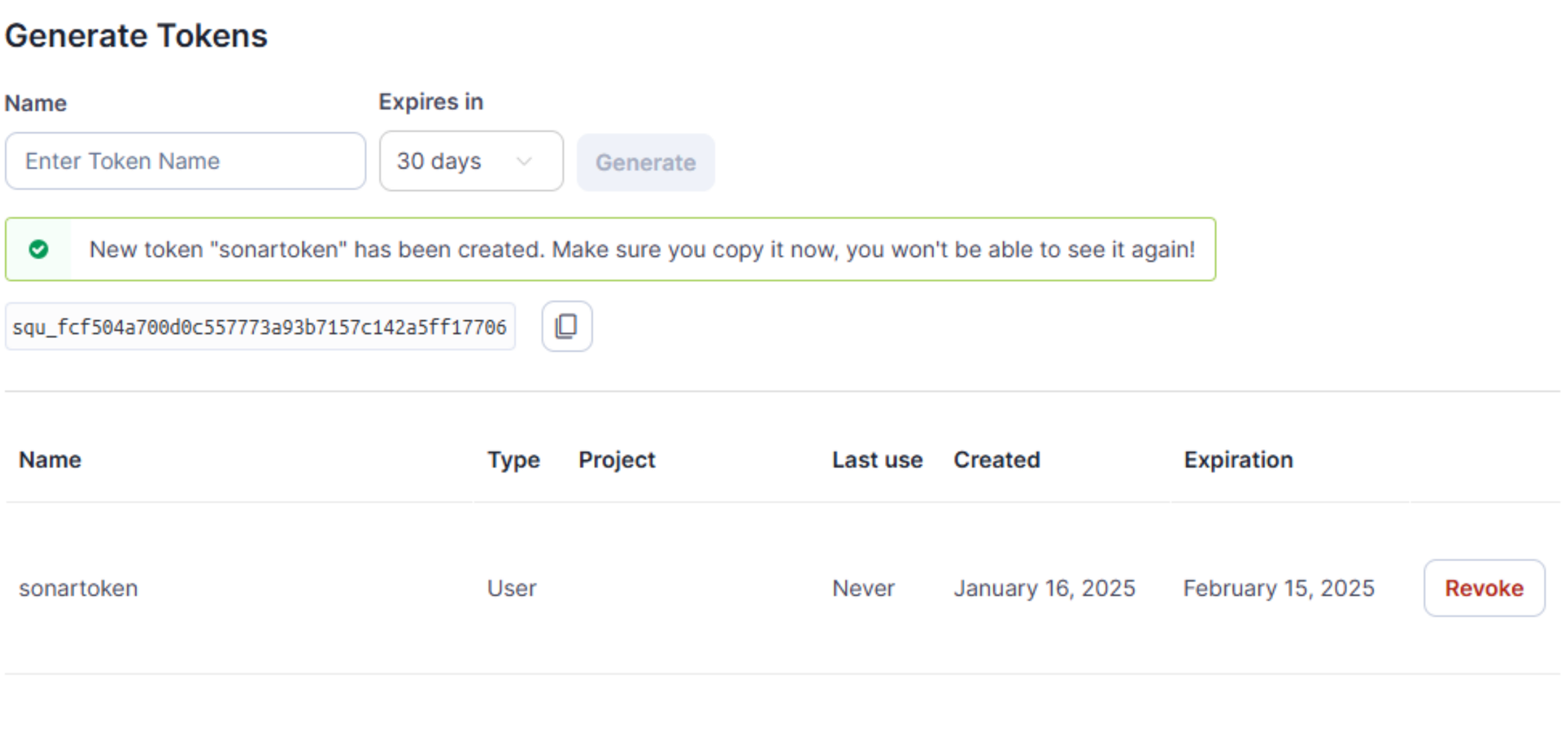




Click on token to create token for the same user

Provide token name





Server Url

http://52.170.239.9:9000

Url for the SonarQube Server to connect to.

Authentication

Token

••

Authentication Token generated through SonarQube Server (go to My Account > Security > Generate Tokens)

Details

Service connection name

sonar-connection

Description (optional)

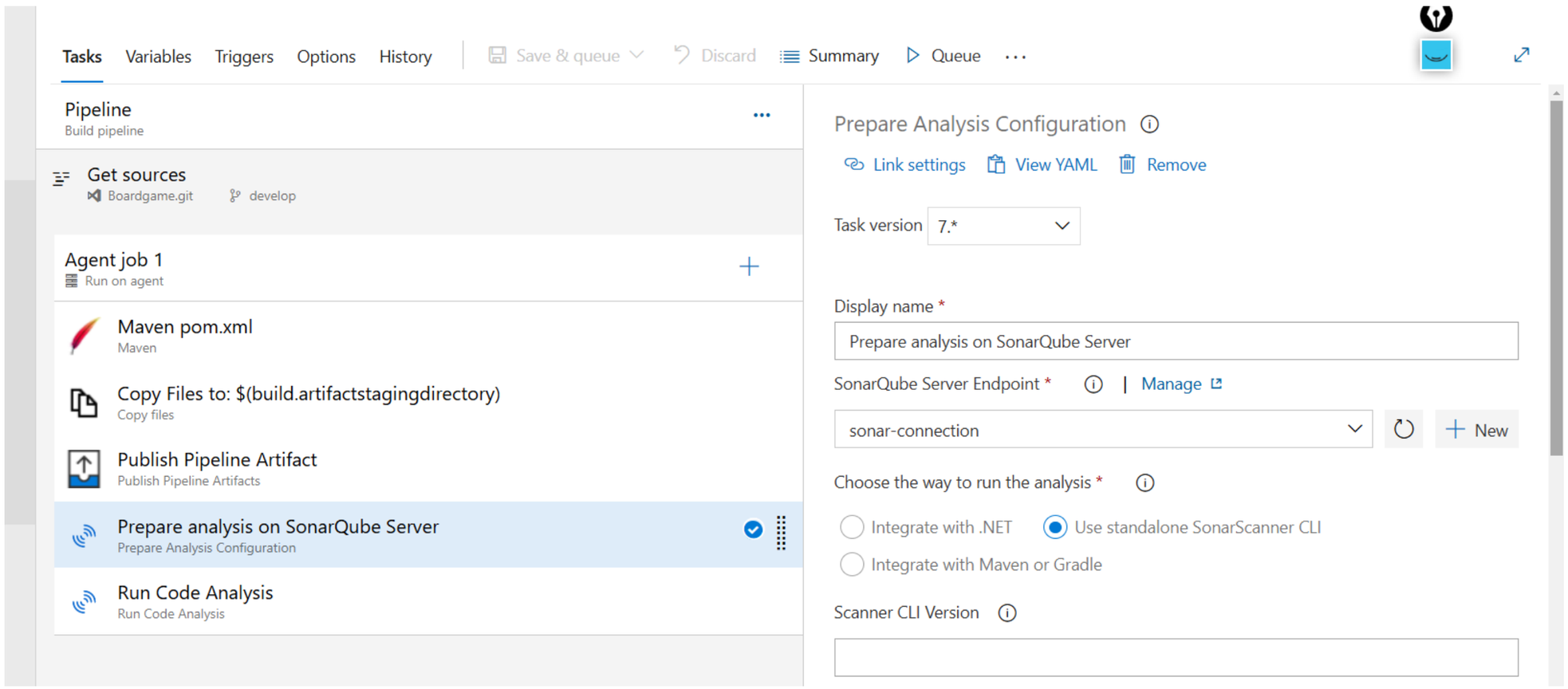
Security

Grant access permission to all pipelines

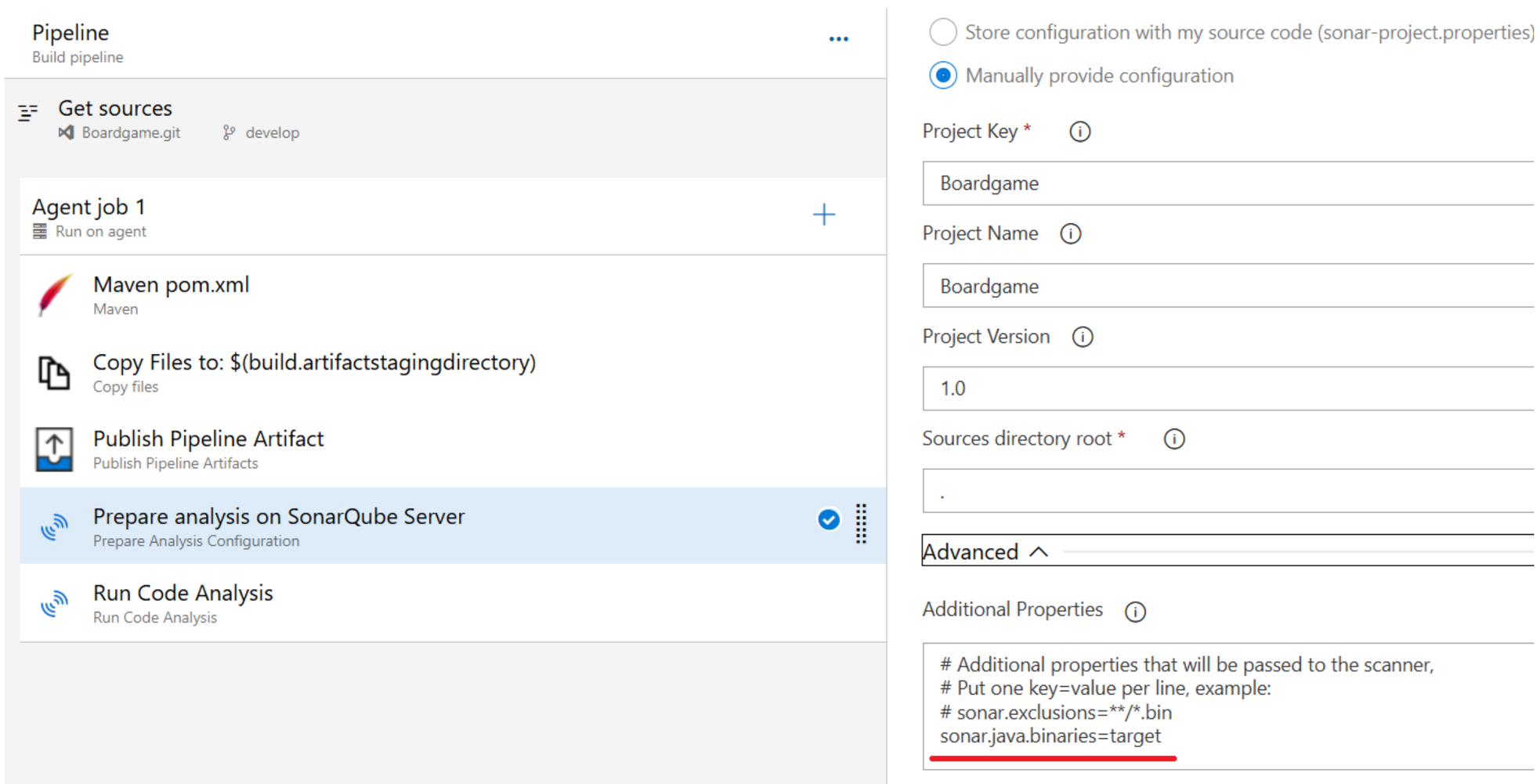
Learn more

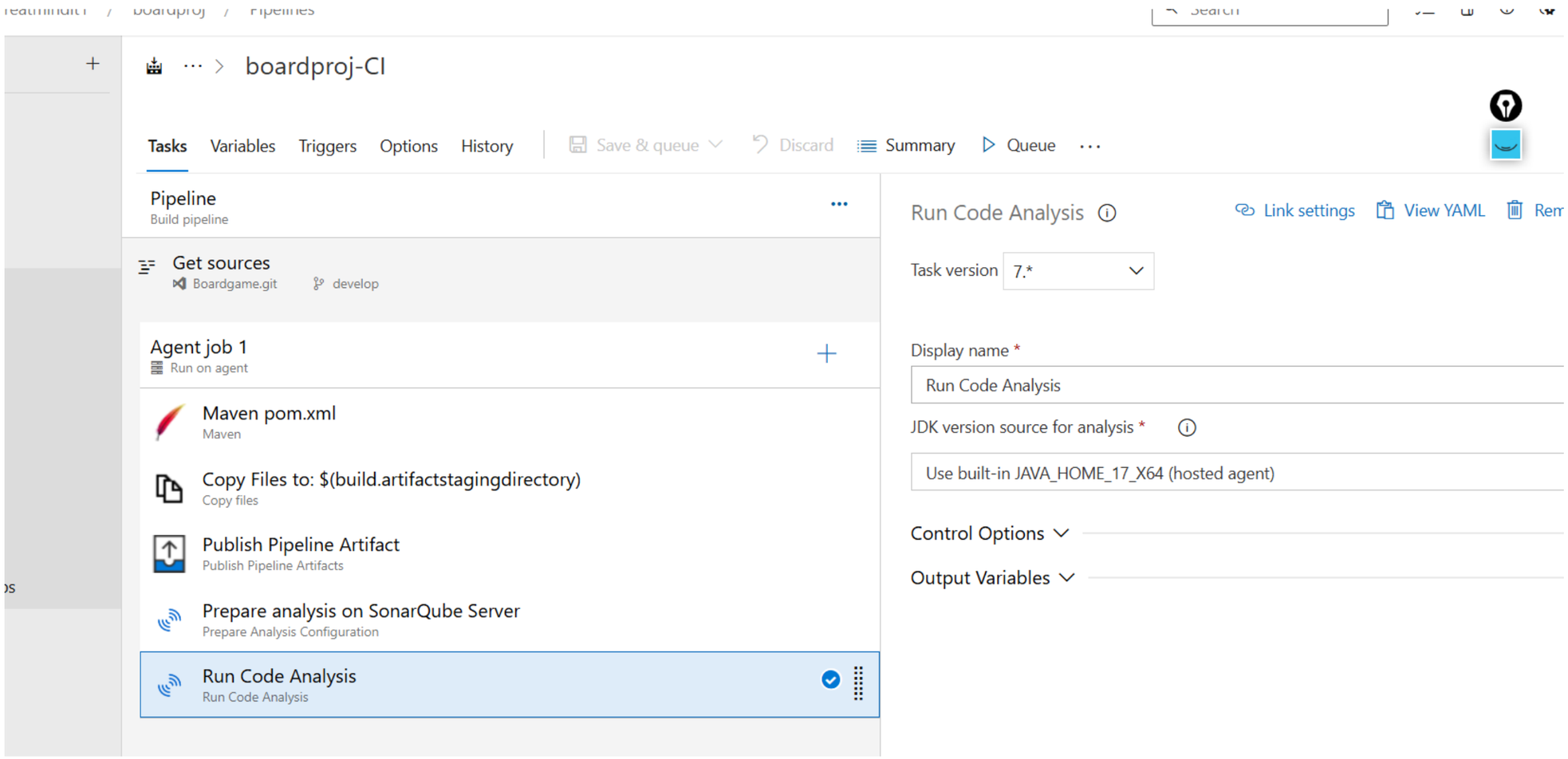
Troubleshoot

Save



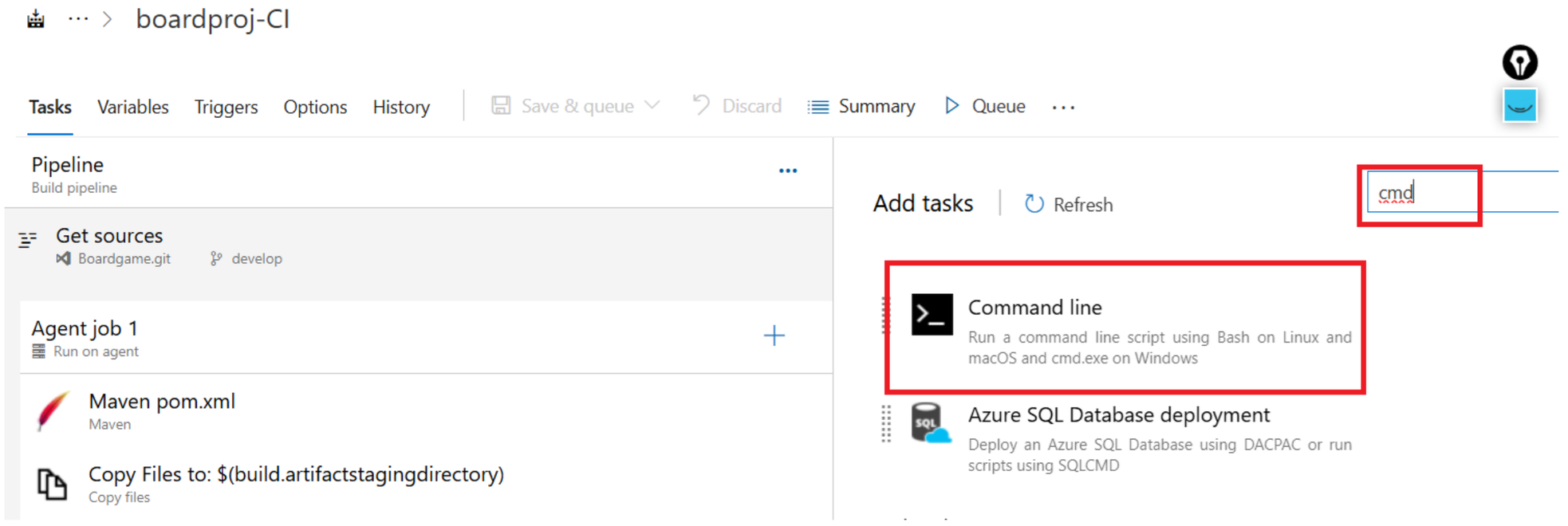
sonar.java.binaries=target



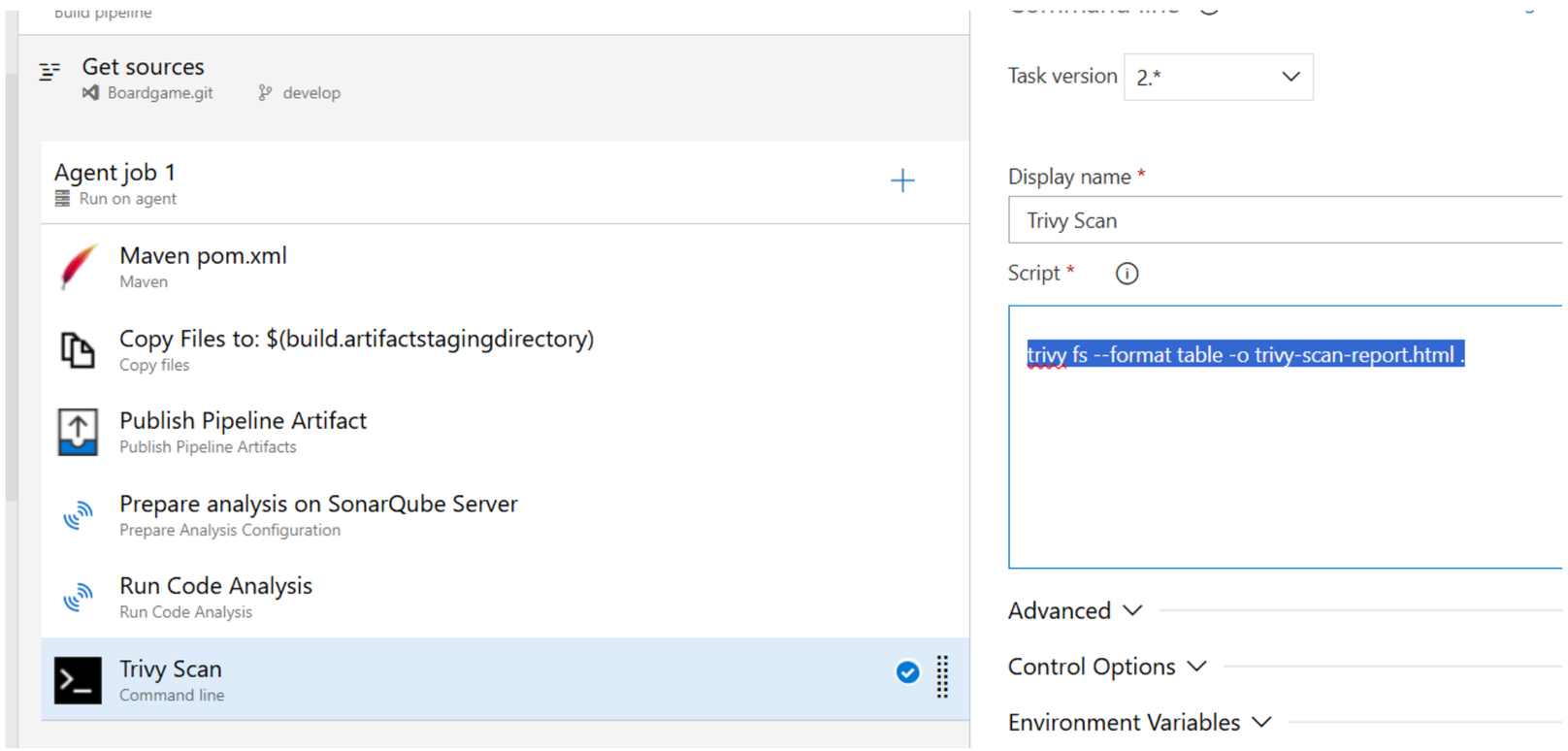


Now I need to run trviy..

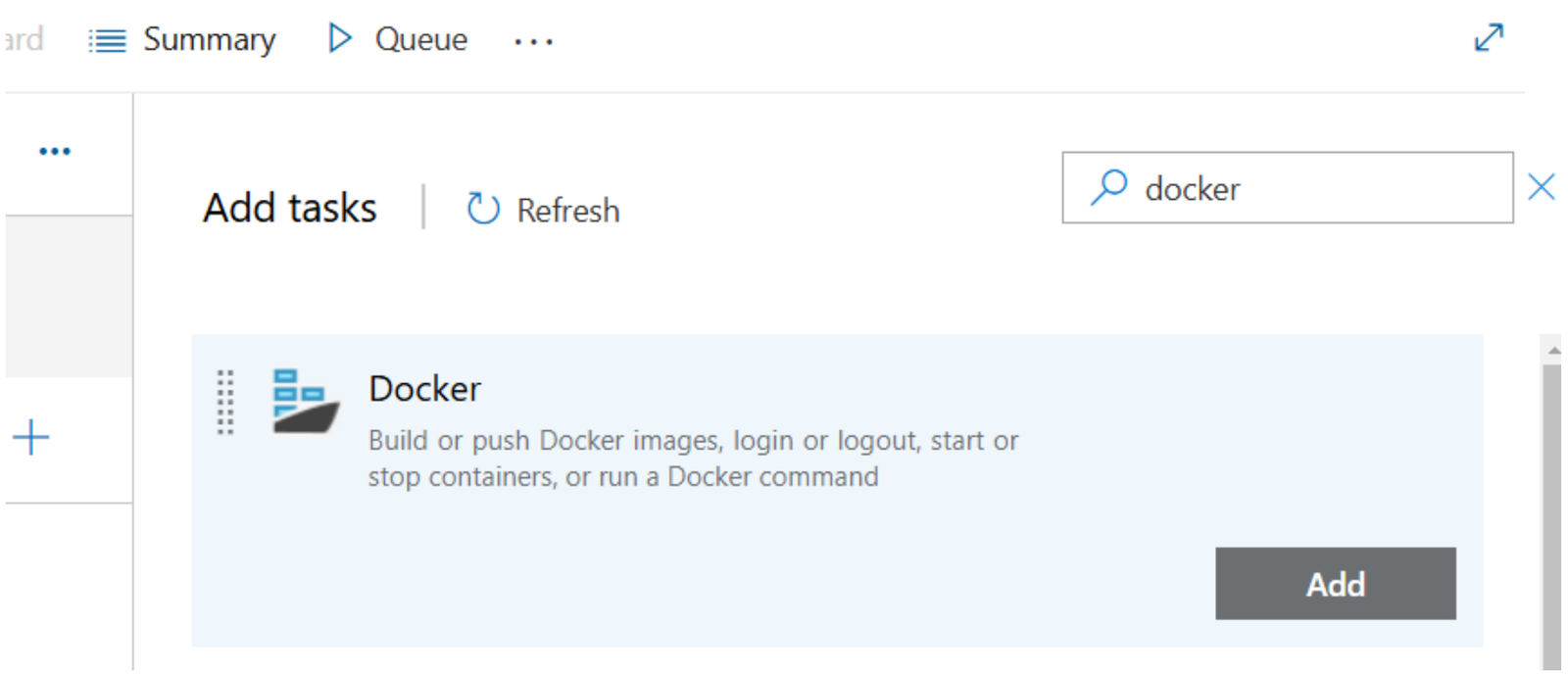
I will search for cmd and trivy is already installed on agent machine

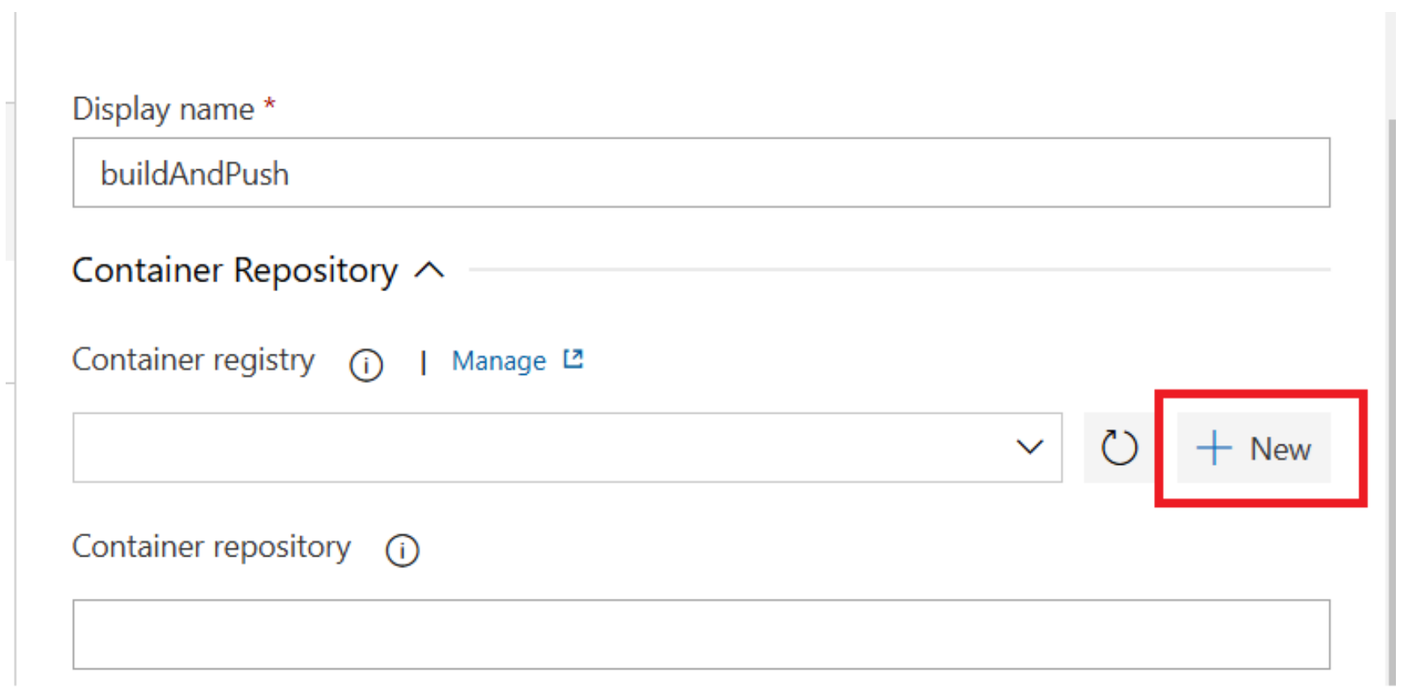


trivy fs --format table -o trivy-scan-report.html .



Now add Docker





New service connection

Registry type

Docker Hub | Others | Azure Container Registry

Docker Registry

https://index.docker.io/v1/

Docker ID

kuchalakantikris

Docker Password

••••••••••••

Email (optional)

Verify | Verification Succeeded

Details

Service connection name

dockeronn1

dockeronn1

Container repository

kuchalakantikris/boardsonar123

Commands

Command *

buildAndPush

Dockerfile *

**/Dockerfile

Build context

**

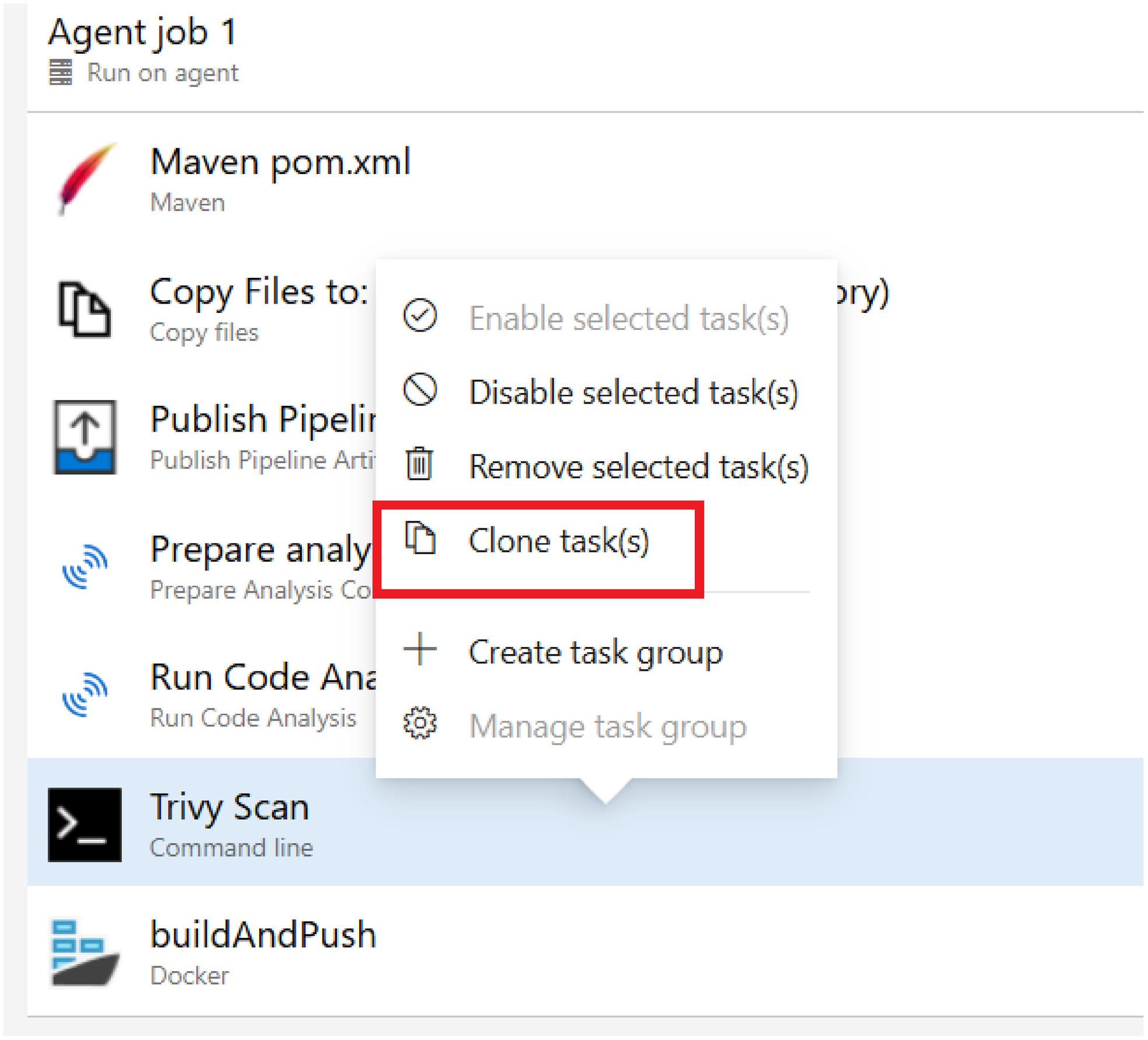
Tags

latest

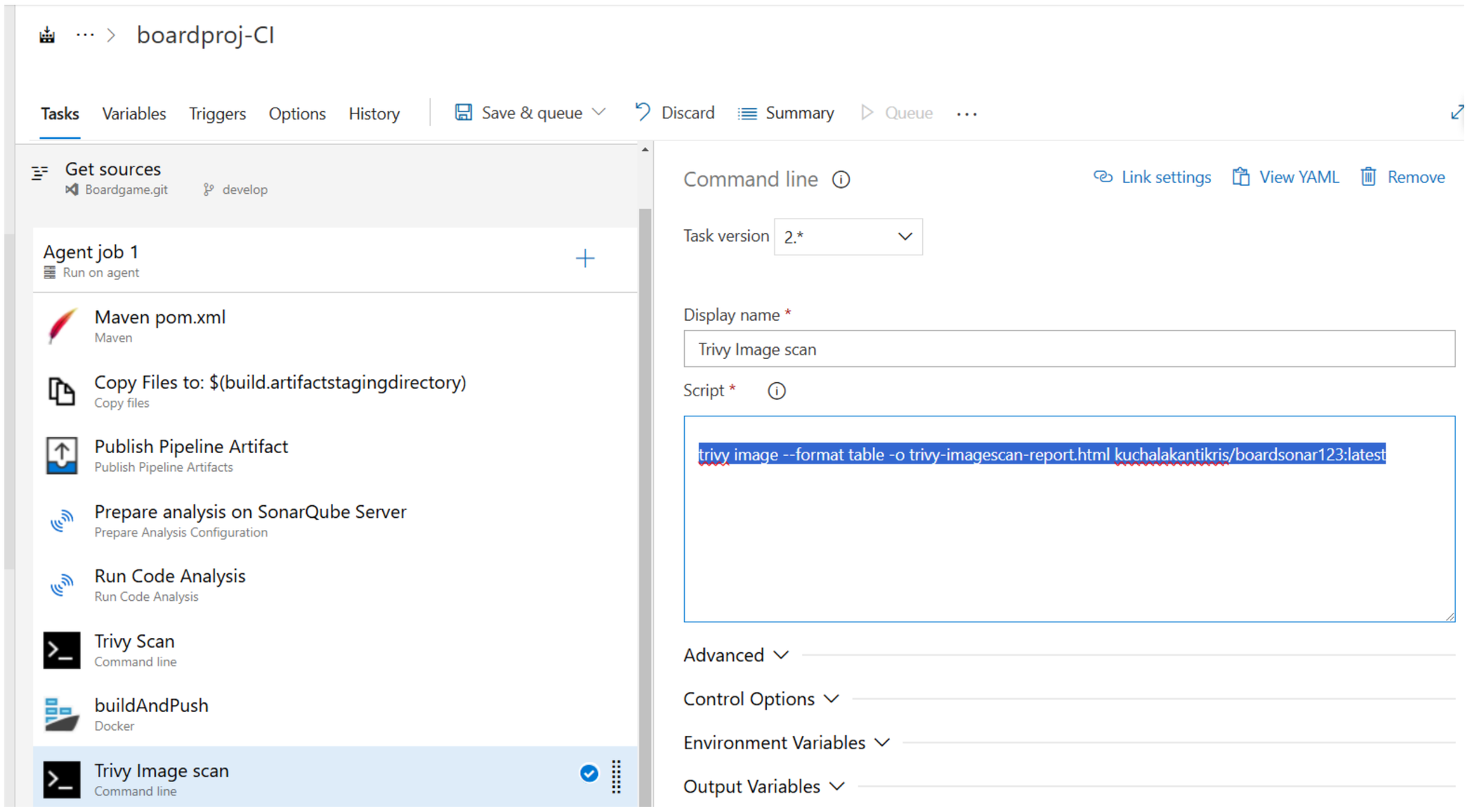
Add Pipeline metadata to image(s)

Add base image metadata to image(s)

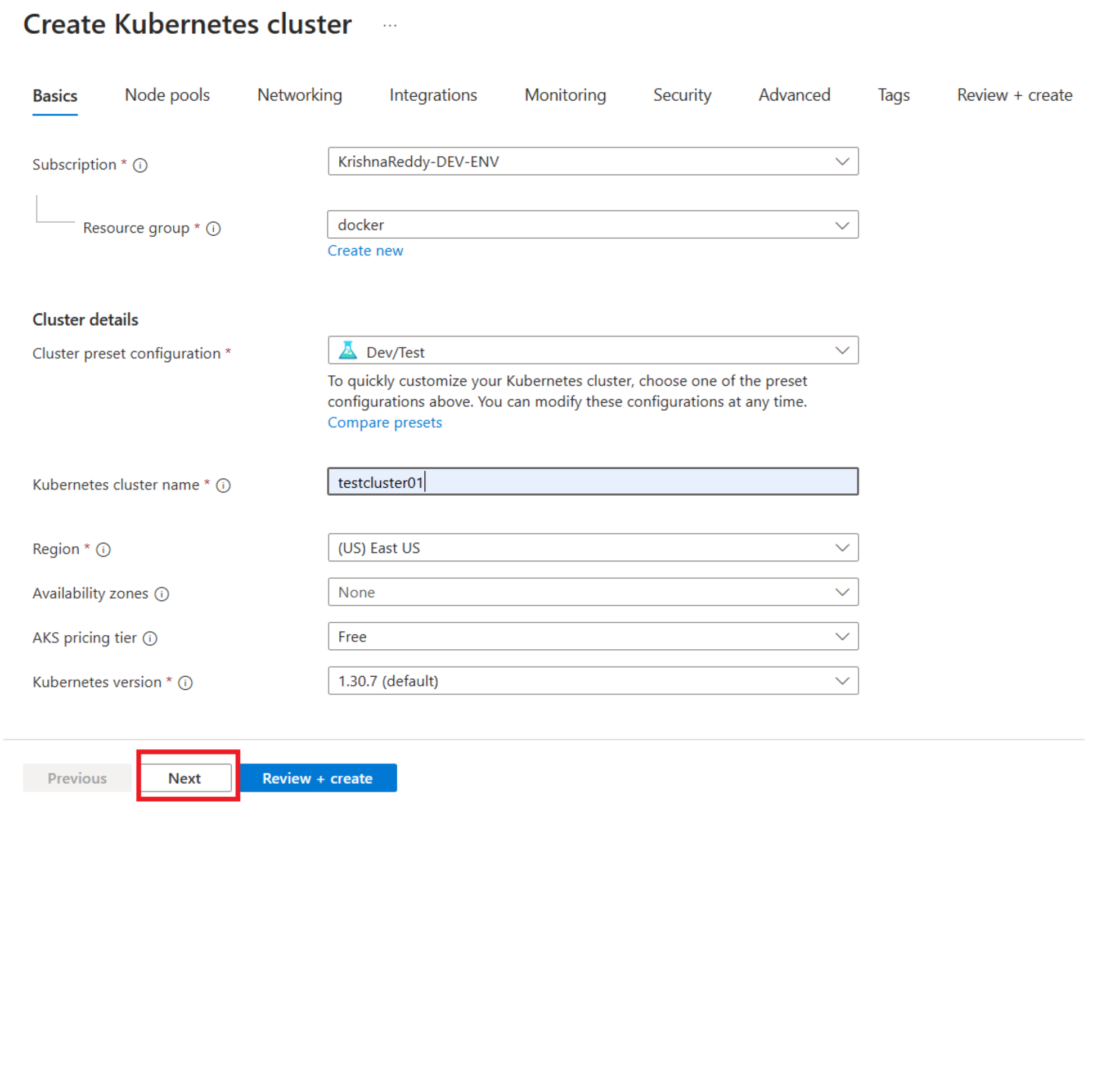
Create close of trivy to scan docker image



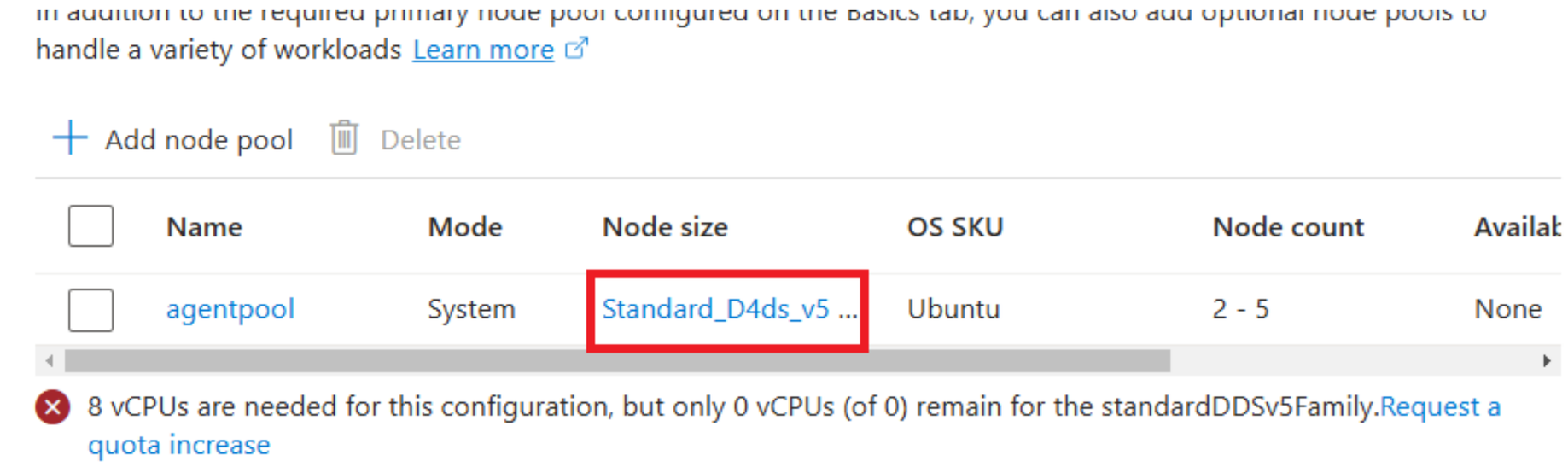
trivy image --format table -o trivy-imagescan-report.html kuchalakantikris/boardsonar123:latest

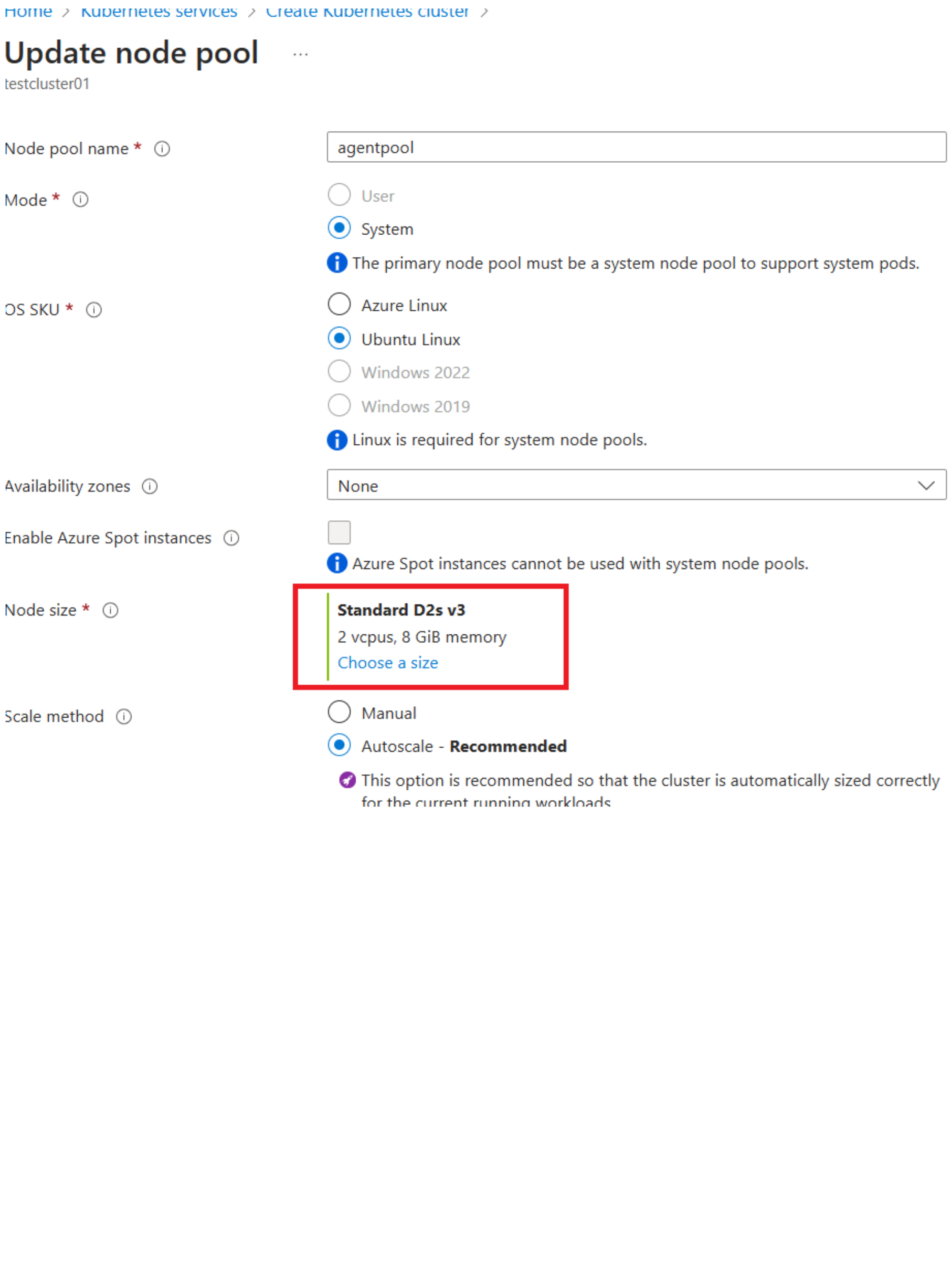


Now create kubernetes cluster



Change the node size , by clicking on this





Set authorized IP ranges ⓘ ☐

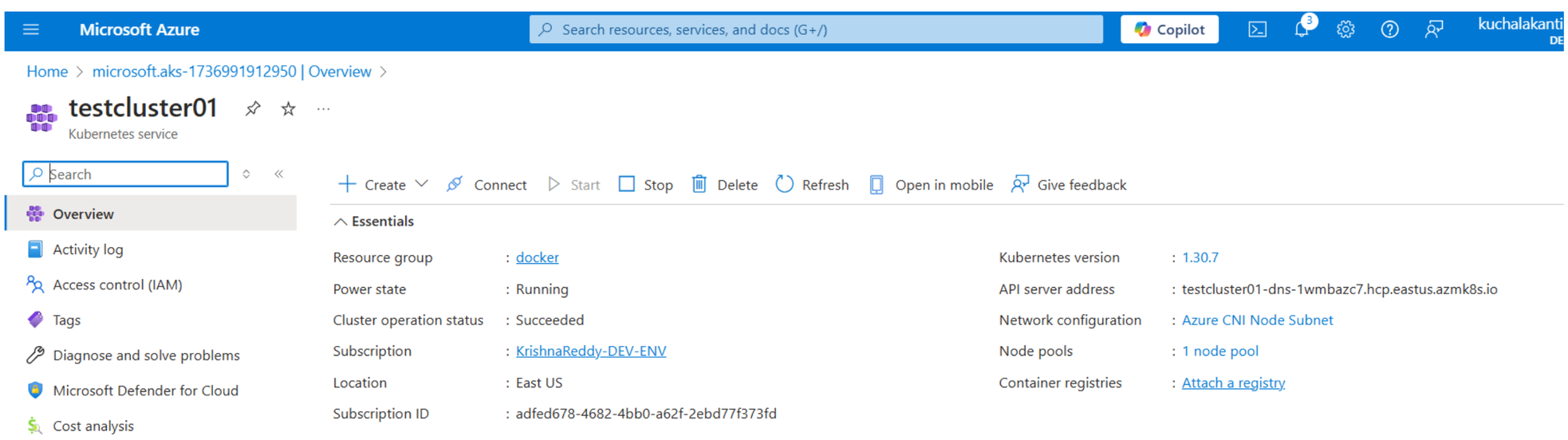
Container networking

Network configuration ⓘ

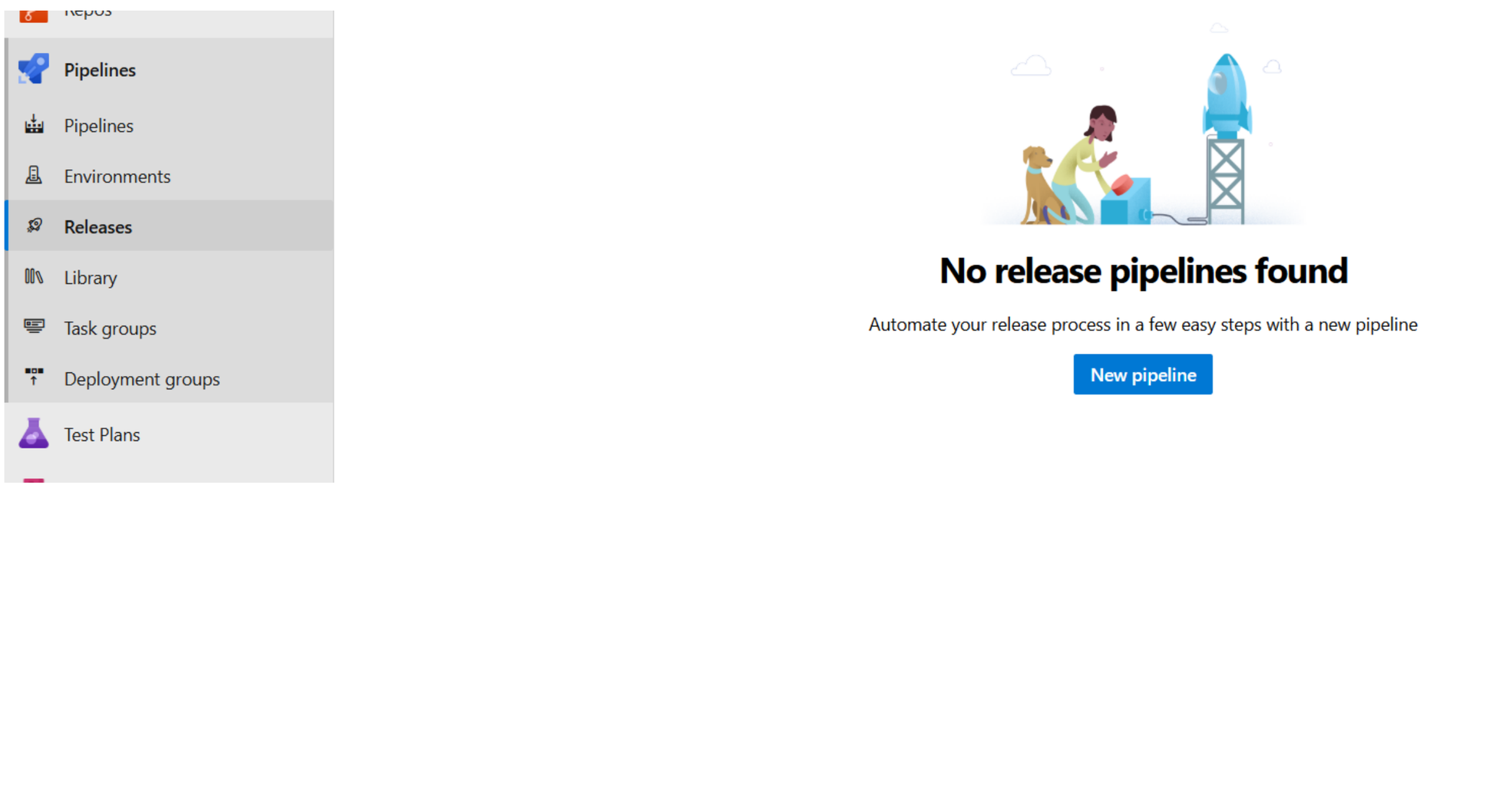
- ○ Azure CNI Overlay
  Assigns pod IP addresses from a private IP space. Best for scalability
- ◉ Azure CNI Node Subnet
  Previously named Azure CNI. Assigns pod IP addresses from your host VNet. Best for workloads where pods must be reachable by other VNet resources
- ○ kubenet
  Older, route table-based Overlay with limited scalability. Not recommended for most clusters

Previous | Next | **Review + create**

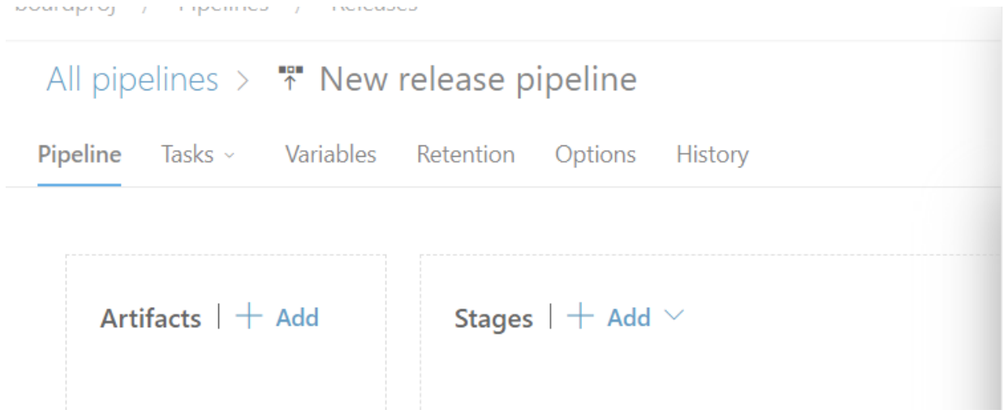
Use default values and click on Review and create

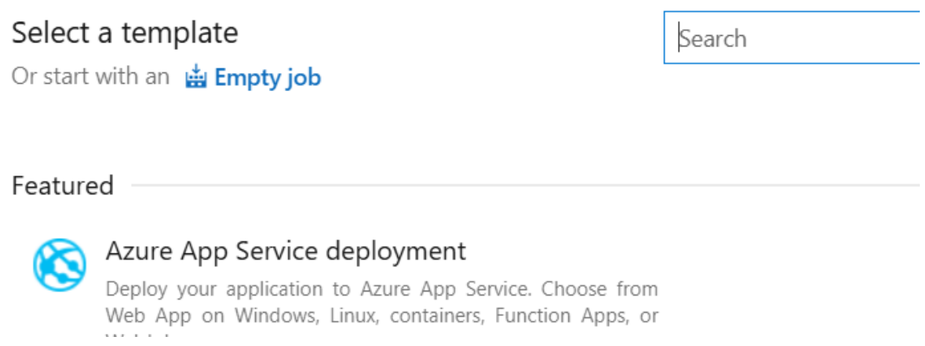


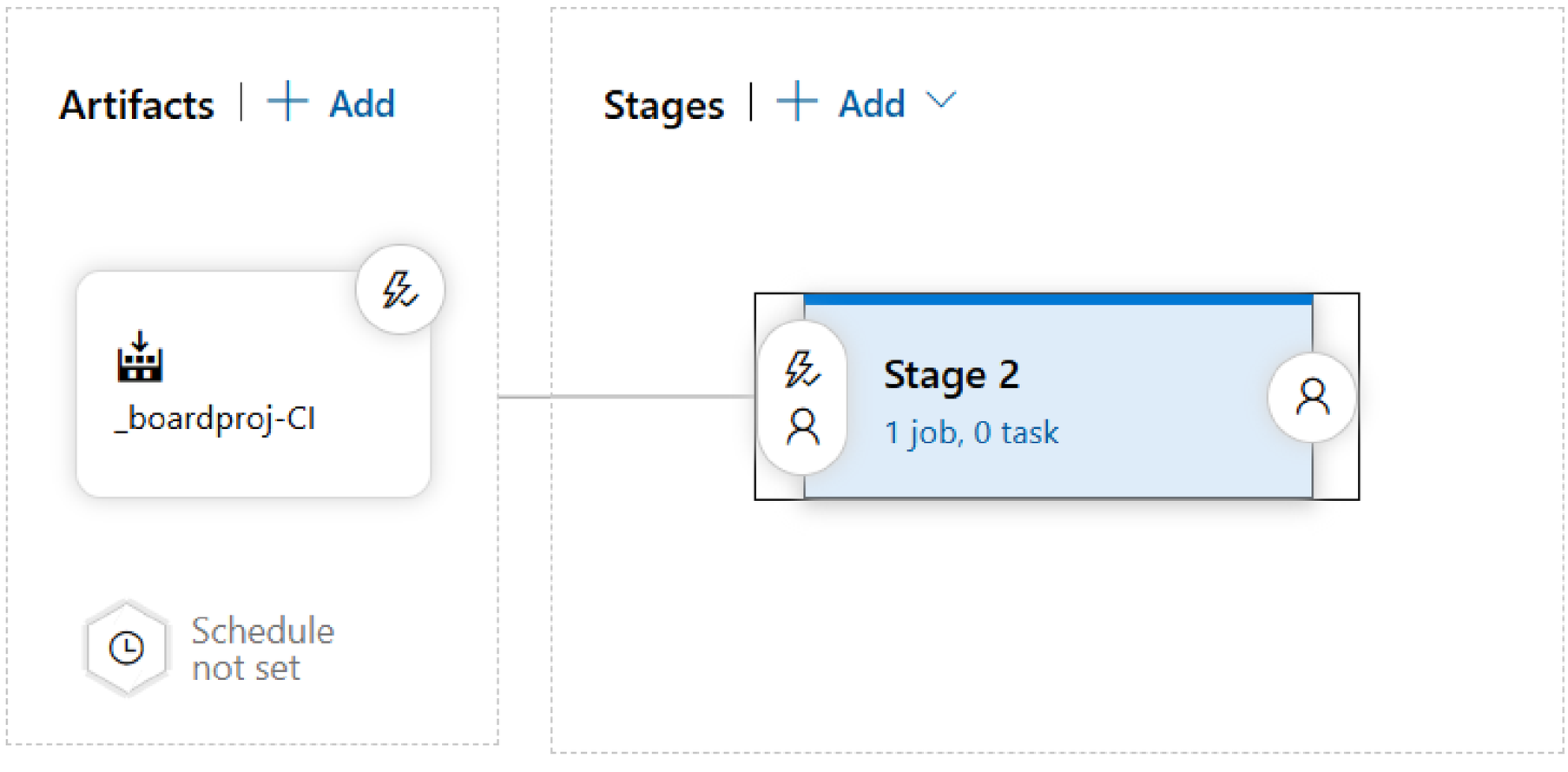
Now click on Release pipeline



Click on empty job







All pipelines > New release pipeline

Save | Create release | View releases | ...

Pipeline | Tasks | Variables | Retention | Options | History

Stage 2
Deployment process

Agent job
Run on agent

Add tasks | Refresh

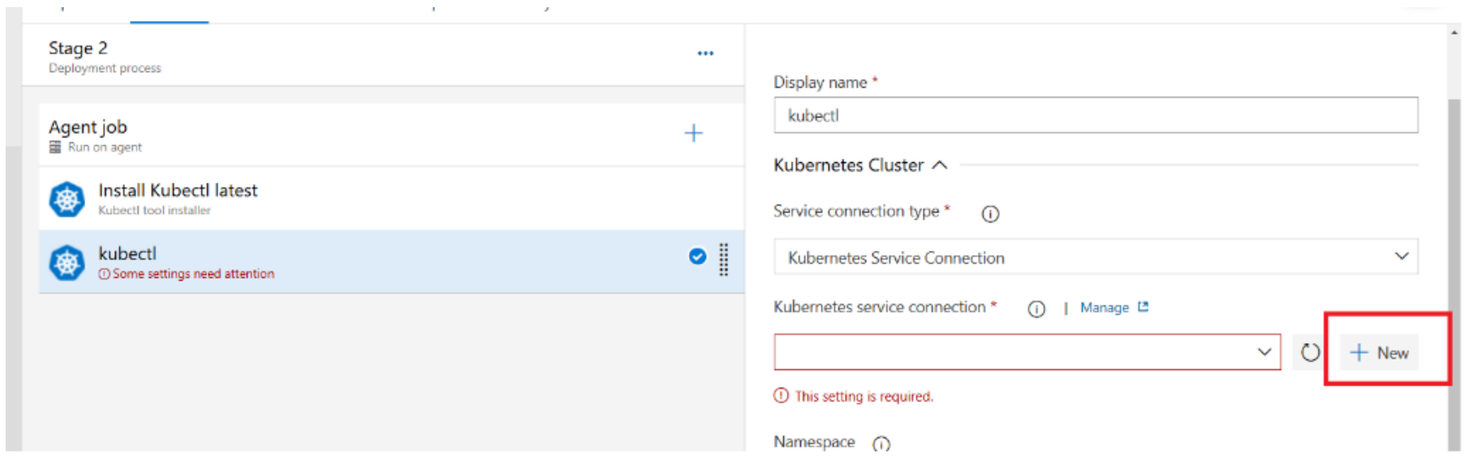
kubectl

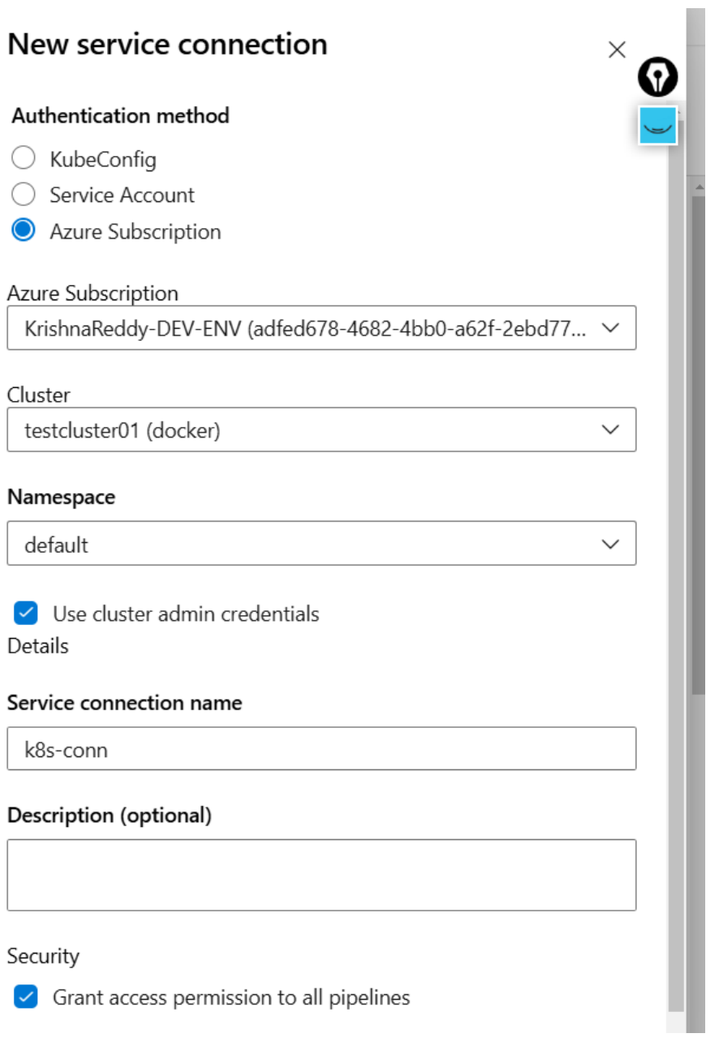
Kubectl
Deploy, configure, update a Kubernetes cluster in Azure Container Service by running kubectl commands

Kubectl tool installer
Install Kubectl on agent machine

Add

Marketplace





Kubernetes service connection * | Manage

k8s-conn1

New

Namespace

default

Commands

Command

apply

Use configuration

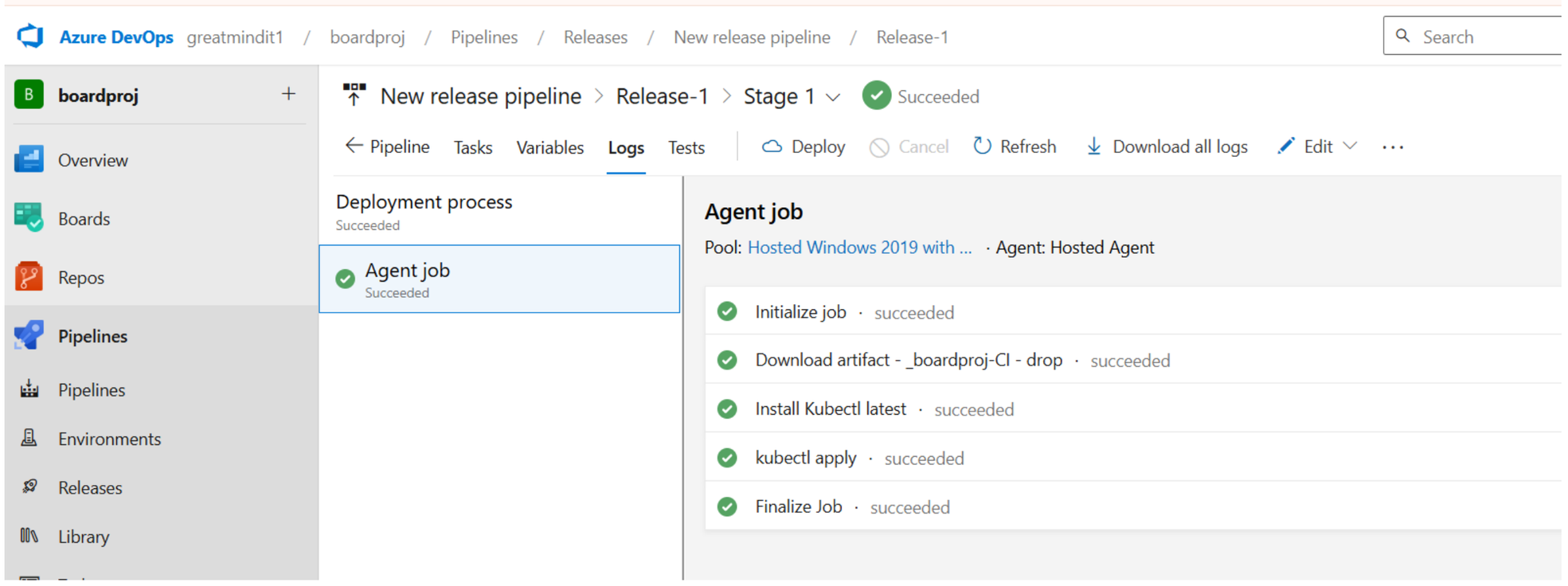
Configuration type

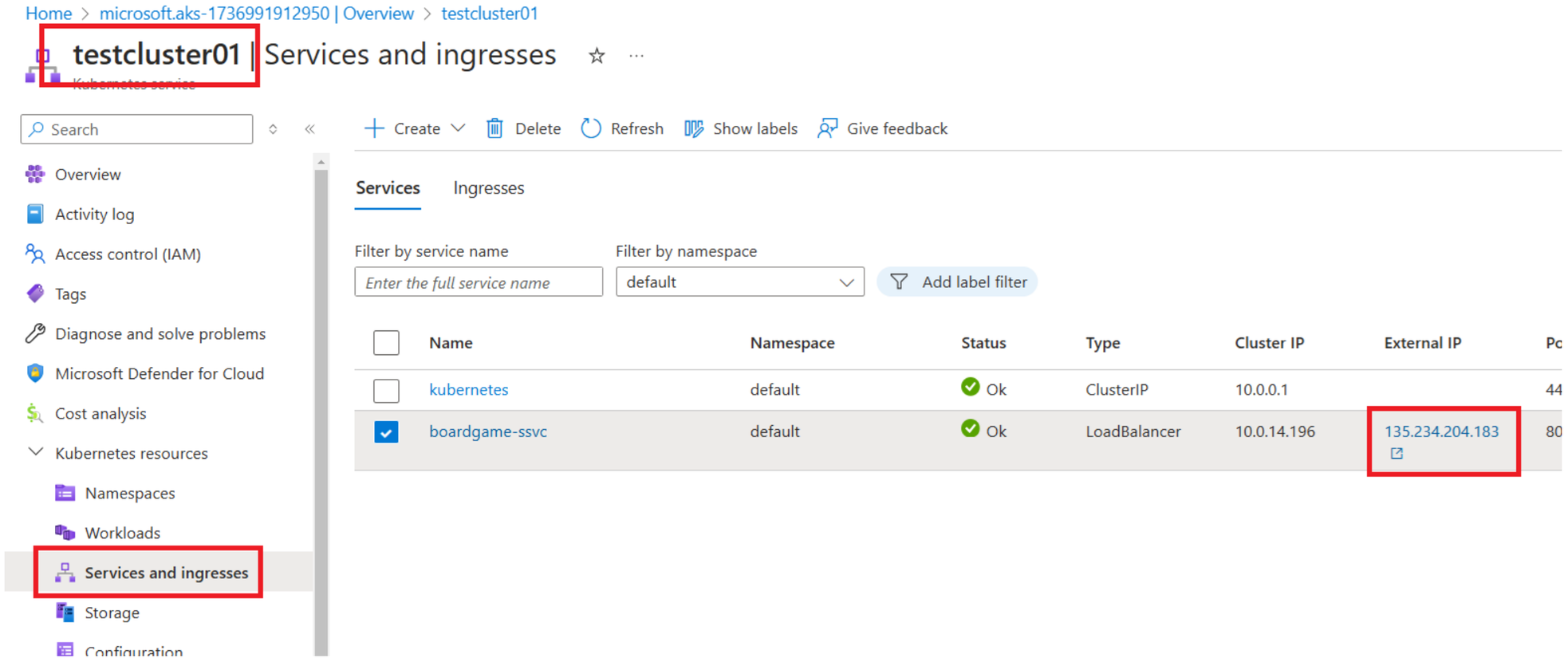
File path Inline configuration

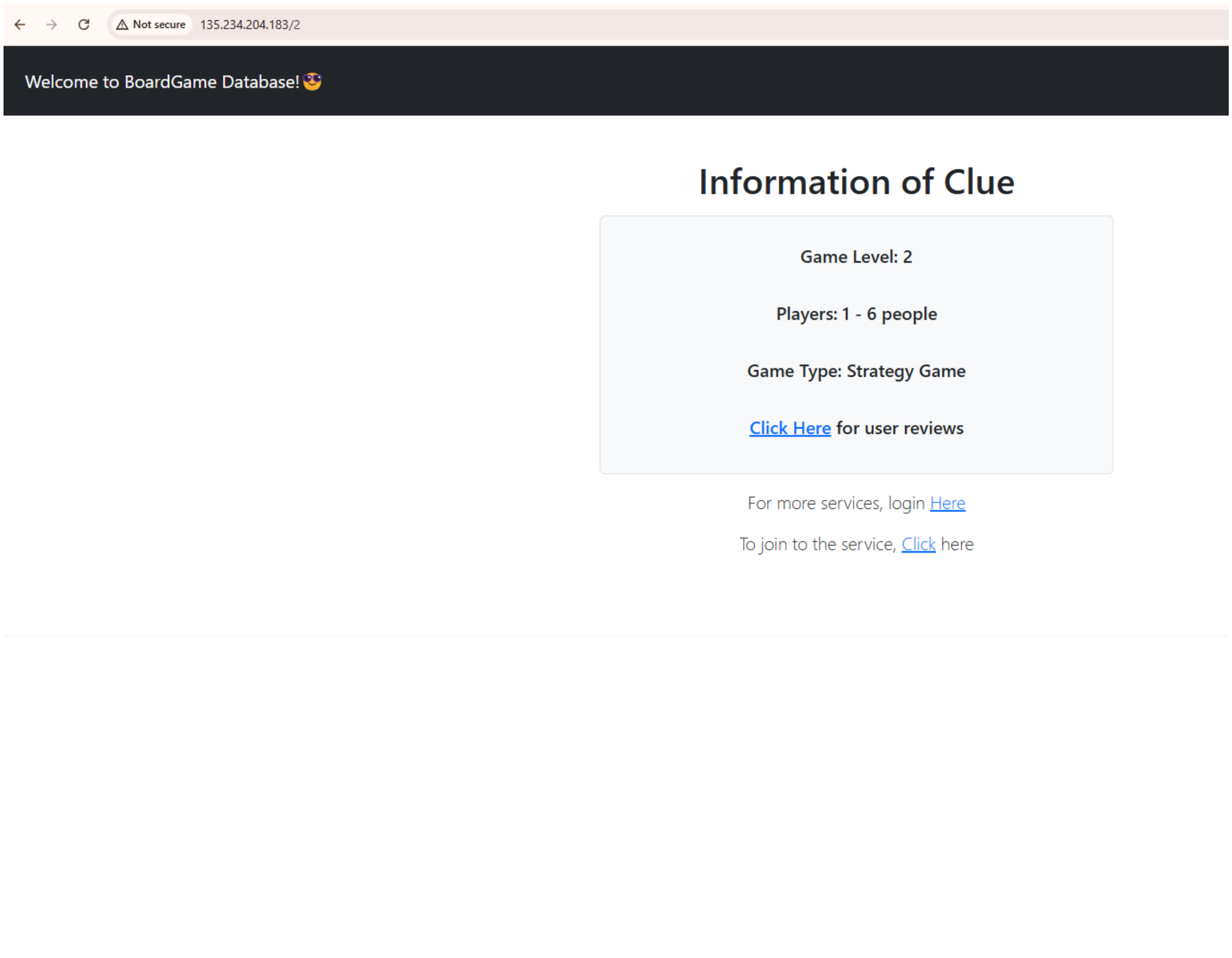
File path *

Browse File path

$(System.DefaultWorkingDirectory)/_boardproj-CI/drop/deployment-service.yaml




Home > microsoft.aks-1736991912950 | Overview > testcluster01
testcluster01 | Services and ingresses
Kubernetes service
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Microsoft Defender for Cloud
Cost analysis
Kubernetes resources
Namespaces
Workloads
Services and ingresses
Storage
Configuration
Create
Delete
Refresh
Show labels
Give feedback
Services
Ingresses
Filter by service name
Enter the full service name
Filter by namespace
default
Add label filter
Name
Namespace
Status
Type
Cluster IP
External IP
Pc
kubernetes
default
Ok
ClusterIP
10.0.0.1
44
boardgame-ssvc
default
Ok
LoadBalancer
10.0.14.196
135.234.204.183
80


Not secure
135.234.204.183/2
Welcome to BoardGame Database!
Information of Clue
Game Level: 2
Players: 1 - 6 people
Game Type: Strategy Game
Click Here for user reviews
For more services, login Here
To join to the service, Click here