

Magic Xpi 4.14 [LinuxVM-k8s] By : Sudeep Masare

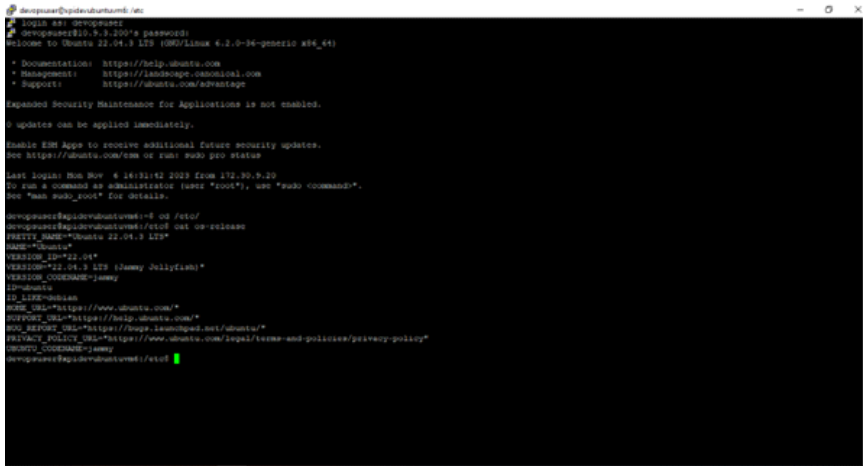
Thursday, November 2, 2023 4:34 PM

Hello Team,

Today we are going to setup Magic Xpi Build 100 Japanese on a Windows & we are going to host our microk8s cluster on Clean Linux System,

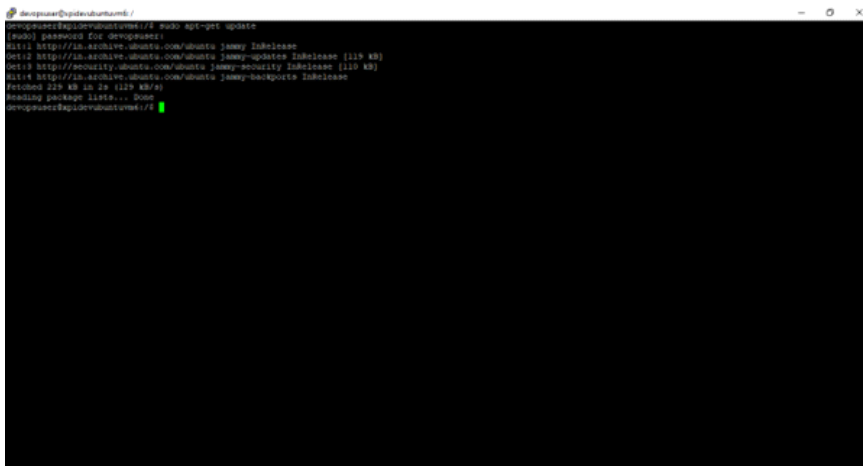
This hands on Lab assumes that you already have a Magic Xpi 4.14 Build 100 installed on your windows machine,

1. Let's have a clean **Ubuntu Linux 22.04 LTS** machine with following version,



```
devops@ipdevubuntu6:/~$  
LOGID 45: devops@ipdevops  
devops@ipdevops:~$ sudo apt-get update  
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 4.2.0-34-generic x86_64)  
 * Documentation:  https://help.ubuntu.com  
 * Help:          https://askubuntu.com  
 * Support:       https://ubuntu.com/support  
 * Ubuntu Key:   https://ubuntu.com/advantage  
Expanded Security Maintenance for Applications is not enabled.  
0 updates can be applied immediately.  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo apt-get install esm-apps  
Last login: Mon Nov  6 14:31:42 2023 from 172.30.9.20  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
devops@ipdevops:~$ sudo apt-get update  
devops@ipdevops:~$ cat /etc/os-release  
PRETTY_NAME="Ubuntu 22.04.3 LTS"  
NAME="Ubuntu"  
VERSION_ID="22.04"  
VERSION="22.04.3 LTS (Jammy Jellyfish)"  
VERSION_CODENAME=jammy  
ID=ubuntu  
ID_LIKE=debian  
HOME_URL="https://www.ubuntu.com/"  
SUPPORT_URL="https://help.ubuntu.com/"  
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"  
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-conditions/privacy-policy"  
DEBIAN_CODENAME=jammy  
devops@ipdevops:~$
```

2. Let's update the existing package manager,

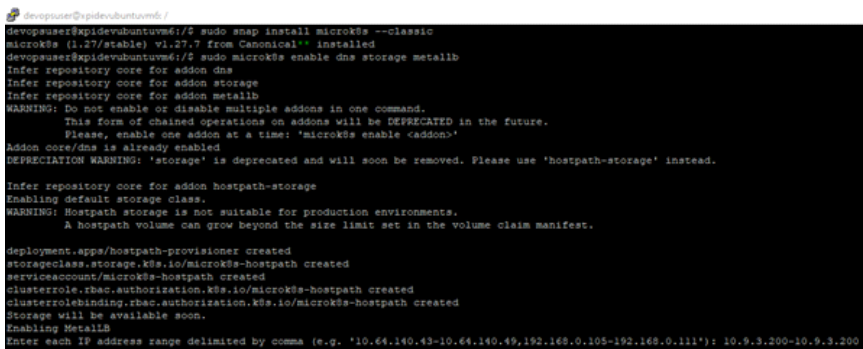


```
devops@ipdevops:~$ sudo apt-get update  
[sudo] password for devops:   
Hit1 http://us.archive.ubuntu.com/ubuntu jammy InRelease  
Get2 http://us.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]  
Get3 http://security.ubuntu.com/ubuntu jammy-security InRelease [119 kB]  
Hit4 http://us.archive.ubuntu.com/ubuntu jammy-backports InRelease  
Fetched 229 kB in 2s (119 kB/s)  
Reading package lists... Done  
devops@ipdevops:~$
```

3. Let's install the **microk8s** on this machine,

```
sudo snap install microk8s --classic  
sudo microk8s enable dns storage metallb
```

Once metallb prompts for IP range, provide <CURRENTMACHINEIP>-<CURRENTMACHINEIP>



```
devops@ipdevops:~$ sudo snap install microk8s --classic  
microk8s (1.27/stable) v1.27.7 from Canonical: installed  
devops@ipdevops:~$ sudo microk8s enable dns storage metallb  
Infer repository core for add-on dns  
Infer repository core for add-on storage  
Infer repository core for add-on metallb  
WARNING: Do not enable or disable multiple add-ons in one command.  
This form of chained operations on add-ons will be DEPRECATED in the future.  
Please, enable one add-on at a time: "microk8s enable <addon>"  
Add-on core/dns is already enabled.  
DEPRECATION WARNING: 'storage' is deprecated and will soon be removed. Please use 'hostpath-storage' instead.  
Infer repository core for add-on hostpath-storage  
Enabling default storage class.  
Enabling default storage class.  
WARNING: Hostpath storage is not suitable for production environments.  
A hostpath volume can grow beyond the size limit set in the volume claim manifest.  
deployment.apps/hostpath-provisioner created  
storageclass.storage.k8s.io/microk8s-hostpath created  
serviceaccount/microk8s-hostpath created  
clusterrole.rbac.authorization.k8s.io/microk8s-hostpath created  
clusterrolebinding.rbac.authorization.k8s.io/microk8s-hostpath created  
Storage will be available soon.  
Enabling Metallb  
Enter each IP address range delimited by comma (e.g. '10.64.140.43-10.64.140.49,192.168.0.105-192.168.0.111'): 10.9.3.200-10.9.3.200
```

```

Applying MetalLB Manifest
outboundresourcedefinition.apiserverextension.k8s.io/addresspools.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/cfipolicies.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/eggservices.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/speakers.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/communities.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/lpcaddresspools.metalb.io created
outboundresourcedefinition.apiserverextension.k8s.io/libvirtelements.metalb.io created
namespace/metalb-system created
service/metalb-controller created
serviceaccount/speakers created
clusterrole.rbac.authorization.k8s.io/metalb-system/controller created
clusterrole.rbac.authorization.k8s.io/metalb-system/speakers created
role.rbac.authorization.k8s.io/pod-lister created
clusterrolebinding.rbac.authorization.k8s.io/metalb-system/controller created
clusterrolebinding.rbac.authorization.k8s.io/metalb-system/speakers created
rolebinding.rbac.authorization.k8s.io/controller created
secret/webhook-service-cert created
service/webhook-service created
rolebinding.rbac.authorization.k8s.io/pod-lister created
daemonset.apps/speakers created
deployment.apps/controller created
validatingwebhookconfiguration.validationregistration.k8s.io/validating-webhook-configuration created
Waiting for MetalLB controller to be ready.
error: timed out waiting for the condition on deployments/controller
MetalLB controller is still not ready.
deployment.apps/controller condition met
addresspool.metalb.io/default-addresspool created
l2advertisement.metalb.io/default-advertise-all-pools created
MetalLB is enabled
devopsuser@xpidevubuntuv6:~$

```

Let's check the status of microk8s using, `sudo microk8s status`

```

devopsuser@xpidevubuntuv6:~$ sudo microk8s status
microk8s ready
high-availability: no
database master nodes: 127.0.0.1:113001
database standby nodes: none
addons:
enabled:
  dns # (source) CoreDNS
  ha-cluster # (source) Configure high availability on the outmost node
  helm # (source) Helm - the package manager for Kubernetes
  kubectl # (source) Helm 3 - the package manager for Kubernetes
  hostpath-storage # (source) Storage class: allocates storage from host directory
  metalb # (source) Configuration for your Kubernetes cluster
  storage # (source) Alias to hostpath-storage add-on, deprecated
disabled:
  cni-manager # (source) Cloud native certificate management
  community # (source) The community add-on repository
  dashboard # (source) The Kubernetes dashboard
  dns # (source) Automatic configuration of PodDNS
  host-access # (source) Allow Pod2Pod connecting to Host services smoothly
  ingress # (source) Ingress controller for external access
  kube-ovn # (source) An advanced network fabric for Kubernetes
  kubernetes # (source) OpenEBS Mayastor
  metrics-server # (source) Metrics Server for API access to service metrics
  storage # (source) MinIO object storage
  observability # (source) A lightweight observability stack for logs, traces and metrics
  prometheus # (source) Prometheus operator for monitoring and logging
  rbac # (source) Role-Based Access Control for authorization
  registry # (source) Private image registry exposed on localhost:32000
devopsuser@xpidevubuntuv6:~$

```

- It's not mandatory but let's have the setup of `kubectl` command line tool & `helm` 'Kubernetes Package Manager' on to this Cluster Enabled Machine,

Let's first get some of the basic utilities installed,

`sudo apt install curl`

```

devopsuser@xpidevubuntuv6:~$ sudo apt install curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 6 not upgraded.
Need to get 194 kB of archives.
After this operation, 454 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.14 [194 kB]
Fetched 194 kB in 2s (101 kB/s)
Selecting previously unselected package curl.
(Reading database ... 209150 files and directories currently installed.)
Preparing to unpack ../curl_7.81.0-1ubuntu1.14_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.14) ...
Setting up curl (7.81.0-1ubuntu1.14) ...
Processing triggers for man-db (2.10.2-1) ...
devopsuser@xpidevubuntuv6:~$

```

& then let's start installing `kubectl`

`sudo curl -LO https://storage.googleapis.com/kubernetes-release/release/$(curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt)/bin/linux/amd64/kubectl`

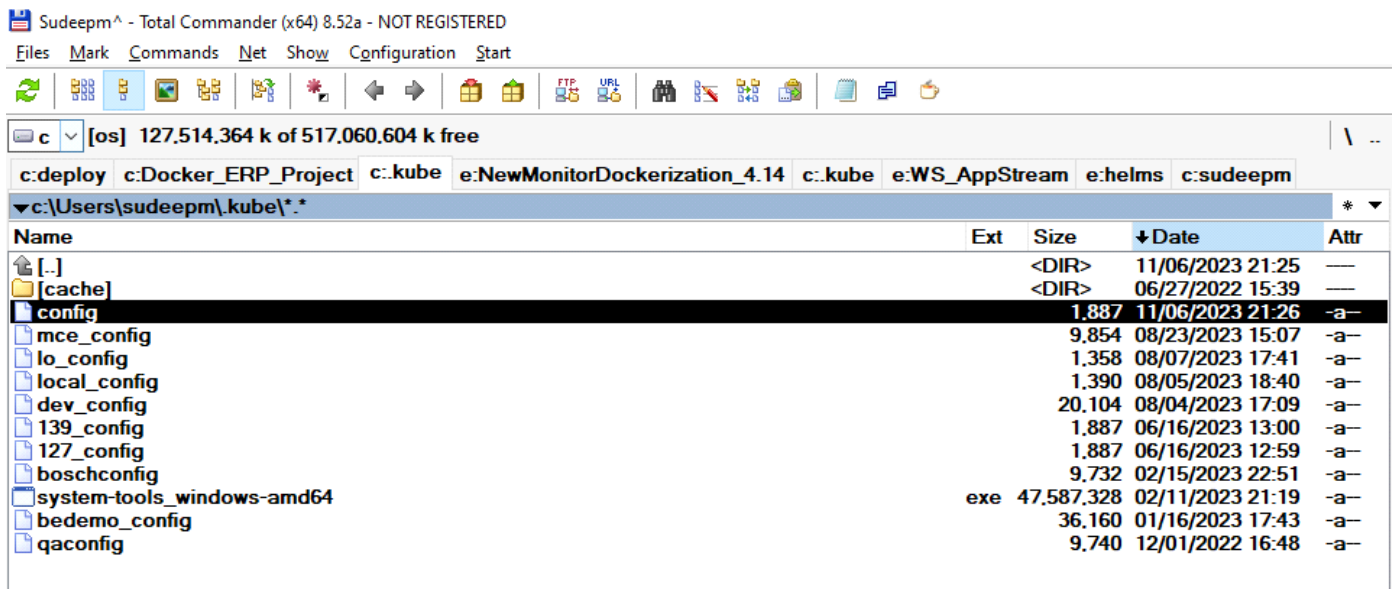
`sudo chmod +x ./kubectl`

`sudo mv ./kubectl /usr/local/bin/kubectl`

```

devopsuser@xpidevubuntuv6:~$ curl -LO https://storage.googleapis.com/kubernetes-release/release/$(curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt)/bin/linux/amd64/kubectl
% Total % Received % Xferd Average Speed Time Time Time Current
 0 0 0 0 0 0 0 0 0 0 0 0
100 47.5M 100 47.5M 0 0 4812K 0 0:00:01 0:00:01 0:00:00

```

You can even verify the output,

Cluster Machine Output

```

devopsuser@xpidevubuntuv6: ~
devopsuser@xpidevubuntuv6:~$ sudo microk8s kubectl get pods -A
NAMESPACE      NAME                                     READY   STATUS    RESTARTS   AGE
kube-system    calico-node-crd44                       1/1     Running  0           24m
kube-system    hostpath-provisioner-58694c9f4b-4krkm   1/1     Running  0           24m
kube-system    coredns-7745f9f87f-zrgc4               1/1     Running  0           24m
kube-system    calico-kube-controllers-6c99c8747f-618p2 1/1     Running  0           24m
metallb-system controller-8467d88d69-rkp6r               1/1     Running  0           23m
metallb-system speaker-p9xqm                       1/1     Running  0           23m
devopsuser@xpidevubuntuv6:~$ █

```

The same output from my local machine

```

ca: Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19042.1237]
(c) Microsoft Corporation. All rights reserved.

c:\Users\sudeepm\kube>kubectl get pods -A
NAMESPACE      NAME                                     READY   STATUS    RESTARTS   AGE
kube-system    calico-node-crd44                       1/1     Running  0           23m
kube-system    hostpath-provisioner-58694c9f4b-4krkm   1/1     Running  0           23m
kube-system    coredns-7745f9f87f-zrgc4               1/1     Running  0           23m
kube-system    calico-kube-controllers-6c99c8747f-618p2 1/1     Running  0           23m
metallb-system controller-8467d88d69-rkp6r               1/1     Running  0           23m
metallb-system speaker-p9xqm                       1/1     Running  0           23m

c:\Users\sudeepm\kube>

```

- Awesome, as now we are ready with our cluster, let's launch the deployment Of **Magic Xpi 4.14** from my windows machine towards this Cluster,

Just go to the machine on which you installed your Magic Xpi 4.14 i.e. go to the following path, **\Magic xpi 4.14\InMemoryMiddleware\deploy**

& run the **deploy-imm.bat** file.

This will automatically deploy the **Magic Xpi 4.14** on your destination cluster. Let's check the progress,

```

devopsuser@xpidevubuntuvm6: ~
devopsuser@xpidevubuntuvm6:~$
devopsuser@xpidevubuntuvm6:~$ sudo microk8s kubectl get ns
NAME                STATUS   AGE
kube-system         Active  33m
kube-public         Active  33m
kube-node-lease     Active  33m
default             Active  33m
metallb-system     Active  33m
magic-xpi-imm-ns    Active  2m15s
devopsuser@xpidevubuntuvm6:~$
devopsuser@xpidevubuntuvm6:~$ sudo microk8s kubectl get pods -n magic-xpi-imm-ns
NAME                READY   STATUS             RESTARTS   AGE
xpi-imm-server-deployment-95f5b66f9-p6tct  0/1     Init:0/1           0          2m10s
imm-controller-57969c7555-tqwwg           0/1     ContainerCreating  0          2m10s
logdb-5449c6769d-czjq8                    0/1     ContainerCreating  0          2m10s
imm-tunnel-deployment-6579d55db9-qr59x    1/1     Running            0          2m10s
imm-db-0                                    1/1     Running            0          2m10s
xpi-monitor-56dfd57466-j4r2r              0/1     PodInitializing   0          2m10s
devopsuser@xpidevubuntuvm6:~$

```

Excellent, you see containers are coming up :)

Once all pods come up in running state, let's try to access the monitor.

7. First of all, open the **Endpoints.txt** file created post deployment at location, **\Magic xpi 4.14\InMemoryMiddleware\deploy**

This file shows the action items to be taken before we can successfully access the monitor,

```

===== Please make note of the deployed Endpoints =====
IMM-DB at: xpidev.com:6379
LOG-DB at: xpidev.com:27017
IMM Controller URL: xpidev.com/controller
IMM-Tunnel URL: http://xpidev.com/imm-tunnel
Magic xpi monitor URL: http://xpidev.com/magic-monitor
=====Action needed =====
IMP Add the following to you System host file for name resolution.
for e.g. in windows "C:\WINDOWS\system32\drivers\etc\hosts"
-----
10.9.3.200 xpidev.com
-----

```

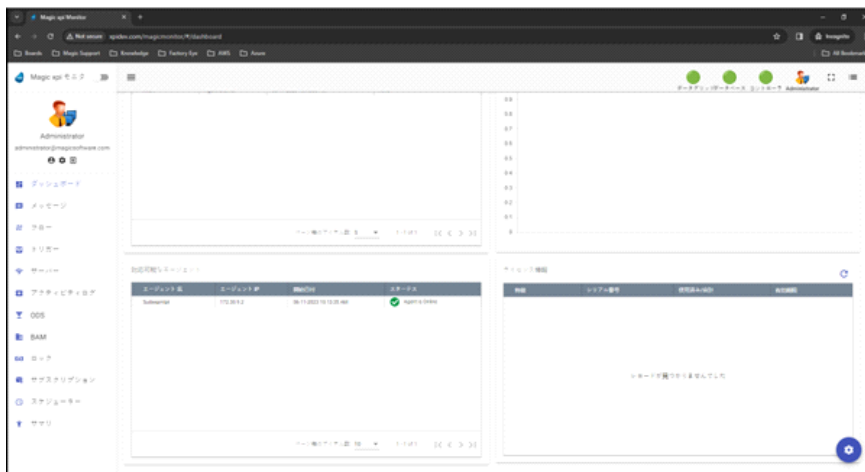
8. Let's now try to connect our agent to the **Controller** running on Cluster, so for that just make sure you have correct configuration in in your agents **.env** file & you are good to launch the agent, if the handshake is successful, you can see the agent connect in monitor,

```

Administrator: C:\Windows\System32\cmd.exe - imm-agent.exe
(c) Microsoft Corporation. All rights reserved.

C:\Magic_xpi 4.14\InMemoryMiddleware\agent>imm-agent.exe
21:43:13:4313 info The client successfully initiated the connection to: redis://@api.dev.com:6379
21:43:14:4314 info The client successfully initiated the connection to: redis://@api.dev.com:6379
21:43:14:4314 info LOG_DB connection established
21:43:14:4314 warn Creation of Host Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Host Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of SwapData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ContainerDetailsData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of worker data Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of project counter Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of PSSData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of triggerMeta data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of triggerMeta data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of scheduler data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of trigger data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Server Command Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Flow request Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of StepData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of FlowData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of HttpData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of StopSIDCommand data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ConversionData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ConversionData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of OdsDataCounter data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of StandaloneID data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of BpData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ConversionRepository data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ActivityMessageData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of EventData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of TcpData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of HI7Data data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Sape3Data data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ExecutionStatus data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of WebServiceData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of TimeoutKillLimitationCommand data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ProjectData data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Variable data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of LicenseFeature data Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of Controllist Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of RecoveryData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of AlertData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of FlowHistory Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of LicenseSummary Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of createSwapServerDataIndex Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of AgentData Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of createProjectloadDetailsIndex Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of ProjectsList Search Indices process has warning as: - Index already exists
21:43:14:4314 warn Creation of MqHttpRequest Search Indices process has warning as: - Index already exists
21:43:15:4315 info The Agent and controller Handshake Successful: OK
21:43:15:4315 info Handshake Success: OK

```



9. That's it now you can run the projects either from [Monitor](#) or from [start.Ink](#) in normal way.

Thank You!