

# Installer for IMM Deployment



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This document explains how you can use Magic's Installer when you want to deploy IMM in Single Node and Multi Node configurations. This Installer installs Microk8s and deploys IMM also without the need of Internet connectivity.



This document provides information for Ubuntu OS only.

## Prerequisites

Parameter	Remarks/Command to confirm
Ubuntu Linux Machine with the certified OS version 24.04 LTS	<code>lsb_release -a</code>
16GB RAM	<code>free -g</code>
30GB Free disk space	<code>df -h</code>
4-Core CPU	<code>lscpu</code>

## Keeping the TAR file Ready on Ubuntu Machine

1. Create a new folder inside home directory on Ubuntu machine, say, **Installation**.
2. Set necessary permissions to the folder to avoid any potential issues while copying the TAR file.

Use the following command: `chown -R <UserName>:<UserGroup> Installation`

For example, `chown -R xpiuser:xpigroup Installation`

3. Download the TAR file from the link provided by Magic Software Enterprises.
4. Copy the TAR file into the '**Installation**' folder.
5. Extract the TAR file using command:

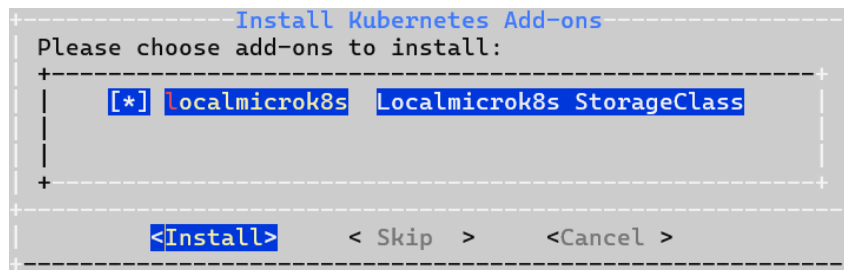
```
tar -xvf <tar_file_name>
```

On completion of the extraction, you will see a new folder **imm\_installer** as shown below:

Name	Size	Changed	Rights	Owner
cloud		11/8/2024 11:58:12 PM	rwxr-xr-x	inmis
config		11/8/2024 11:53:50 PM	rwxr-xr-x	inmis
files		11/8/2024 11:55:53 PM	rwxr-xr-x	inmis
helm		11/8/2024 11:58:12 PM	rwxr-xr-x	inmis
k8s		11/8/2024 11:53:50 PM	rwxr-xr-x	inmis
scripts		11/8/2024 11:53:50 PM	rwxr-xr-x	inmis
CHANGELOG	6 KB	11/8/2024 11:53:50 PM	rw-r--r--	inmis
installer.sh	8 KB	11/8/2024 11:53:50 PM	rwxr-xr-x	inmis
microk8s_sc_localmicrok8s.yaml	1 KB	11/8/2024 11:53:50 PM	rw-r--r--	inmis

## Microk8s Installation

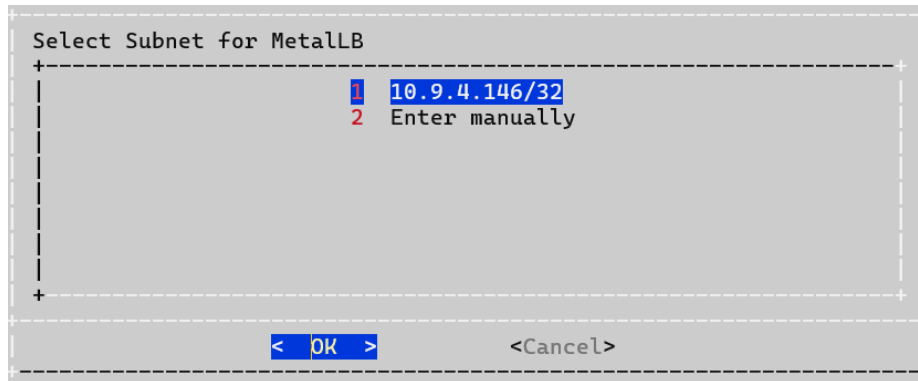
1. Execute `installer.sh` with sudo user from folder `home/xpiuser/installation/imm_installer`. This script installs Microk8s, and enables the add-ons, opens the required ports on firewall, and deploys IMM.
2. Select storage class Add-ons and press `< Install >`.



Currently the Installer supports only **Local microk8s storage**.

3. Now Installer prompts to **Select Subnet for MetalLB** with the following options as shown:





- **Automatically fetched IP of your Ubuntu machine (1.x.x.x)**
  - Select this option if you want to use IP of the Ubuntu server.
- **Enter manually**
  - Select this option for Multi Node deployment. If you are running in High Availability mode, then enter an additional available IP address different than the IP address of the three machines which will be part of the Multi Node cluster.  
For example, 10.9.11.11/32
  - For Single Node deployment also, you can select this option with the above IP address.
  - For Multi Instance deployment, you need to enter an IP range in CIDR format.  
For example, 10.9.11.0/28  
(This value allocates an IP between range 10.9.11.0 to 10.9.11.15.)



Consult your IT Department to confirm the correct IP addresses that are not in use.

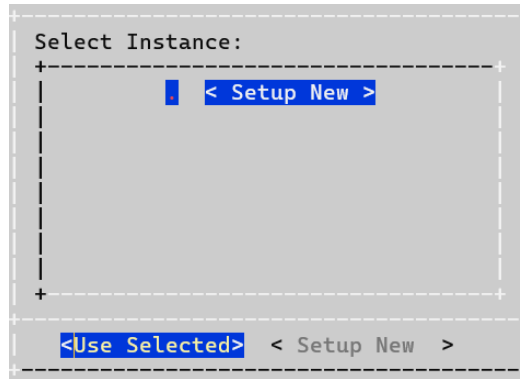
Here, Microk8s Installation is complete with required add-ons enabled.

The Installer now continues with IMM Deployment.

## IMM Deployment

1. The Installer prompts to **Select Instance**.



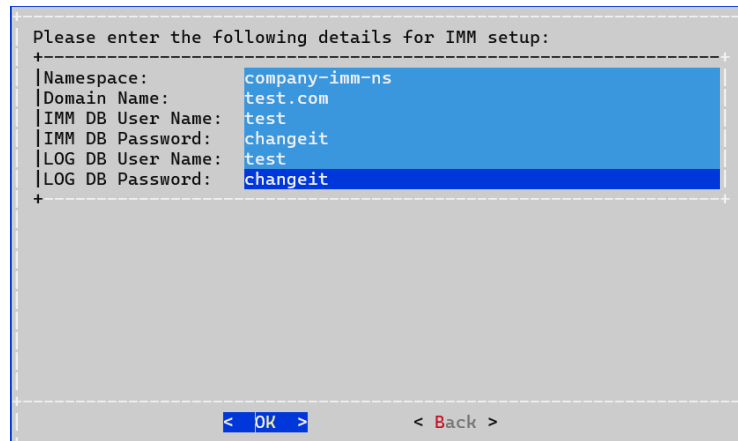


2. Select **Setup New**, since there is no previous instance of IMM deployed on your Ubuntu machine. In case of redeployment, Installer offers to choose an existing instance and provides a button **< Use Selected >**.



While upgrading IMM using Installer new version, if you select an already deployed IMM instance using **< Use Selected >** option, then the IMM is redeployed. However, if you select an already deployed IMM instance with the same version, it is not redeployed.

3. Enter your details for IMM setup as shown below.

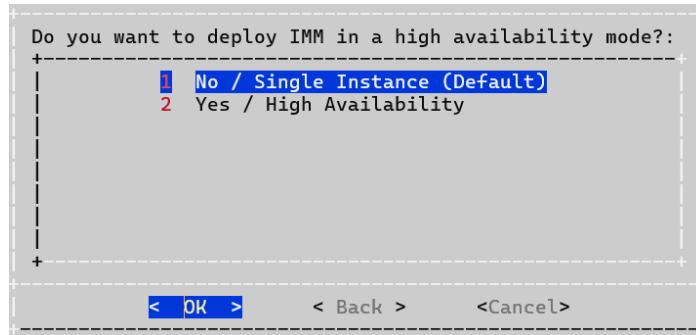


- You can change the values of all the above parameters.
- You can traverse the list of credentials using **Up** and **Down** arrow keys and use **Tab** key to select the buttons.

4. Select **<OK>**.



The Installer now prompts if you want Single Node deployment OR High Availability deployment:



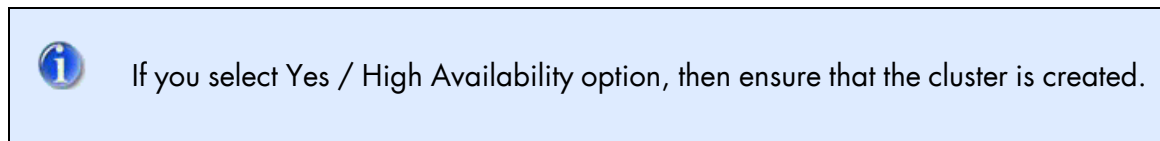
1. No / Single Instance (Default)

This option enables you to deploy IMM on Single Node.

2. Yes / High Availability

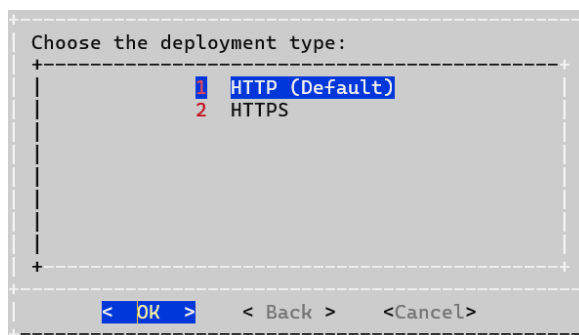
This option enables you to deploy IMM on Multi Node High Availability Cluster. For creating high availability Multi Node Cluster, please refer to the section [Setting-up a Multi Node Cluster](#).

5. Choose deployment according to your requirement.




6. The Installer takes your choice: 'Choose the deployment type:'

1. HTTP
2. HTTPS

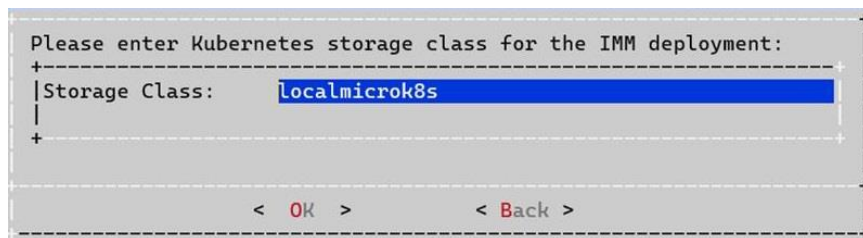



HTTPS provides secure connections in IMM. Please copy your key and certificate files in `imm_installer/config` folder before proceeding.

7. Select **HTTP** or **HTTPS** based on your requirement.

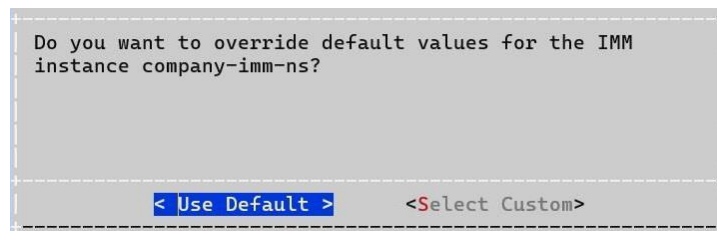
 If you select **HTTPS** option, then you need to select the key and certificate files on the next UI screens using Space Bar.

8. Enter Kubernetes storage class for IMM deployment.



 Currently the Installer supports only **Local microk8s** storage.

The Installer prompts if you want to use the default values for your deployment OR would you like to customize them.




9. Select **< Use Default >** OR **< Select Custom >** option based on your need.

If you want to customize deployment values then choose **< Select Custom >** option. The custom values can be given as shown below:

```

Enter Environment Variables
Please enter the values for the following environment variables:
+-----+
|REQ_HISTORY_THRESHOLD_IN_DAYS:      7
|REQ_BODY_MAX_SIZE_IN_BYTES:        100000000
|TIMEOUT:                             300000
|LOG_HISTORY_THRESHOLD_IN_DAYS:      7
|WIRE_TIGER_CACHE_GB:                1
|TIMEZONE                            US/Central
|LOG_LEVEL                            warn
+-----+
< Save >      < Back >      < Help >

```

 The unit for TIMEOUT is Milliseconds.

After deployment is complete, the Installer displays the list of deployed endpoints and actions to be taken.

```

Installation Complete
===== Please make note of the deployed Endpoints
=====
IMM Namespace: magic-xpi-imm-ns
Helm Chart Version: 4.14.1
IMM-DB at: test.com:6379
LOG-DB at: test.com:27017
IMM Controller URL: http://test.com/controller
IMM-Tunnel URL: http://test.com/immunnel
Magic xpi monitor URL: http://test.com/magicmonitor
HA Proxy Port: 8080
Sentinel Port: 26379
===== Action needed =====
IMP! : Please update your DNS Record with below provided IP and
Domain name.
-----
10.9.4.146 test.com
-----
< EXIT >

```

At this point, two files are created into `imm_installer` folder:

- **endpoints.txt** – This file provides information on URLs of Controller, Tunnel, and Monitor, Helm chart version and Namespace used while deploying the IMM.
- **Install<date\_time\_stamp>.log** – It logs any issues that you faced during deployment.

10. Check the pod status using the following command:

```
microk8s kubectl get pods -A
```

```
root@xpiqaubuntuv39:/home/xpiuser# microk8s kubectl get pods -A
NAMESPACE          NAME                                READY   STATUS    RESTARTS   AGE
container-registry registry-5776c58776-xl8q8           1/1     Running   0           7m46s
kube-system         calico-kube-controllers-796fb75cc-zn25p  1/1     Running   0           8m10s
kube-system         calico-node-fccxg                   1/1     Running   0           8m10s
kube-system         coredns-5986966c54-5gq8t           1/1     Running   0           5m32s
kube-system         coredns-5986966c54-7sj57           1/1     Running   0           8m10s
kube-system         coredns-5986966c54-wxxq7           1/1     Running   0           7m47s
kube-system         hostpath-provisioner-7c8bdf94b8-hzwr9  1/1     Running   0           69s
magic-xpi-imm-ns    imm-controller-8576bfcfd9-cpbjs      1/1     Running   0           68s
magic-xpi-imm-ns    imm-db-0                              1/1     Running   0           69s
magic-xpi-imm-ns    imm-si-66c8d5d79-65pgq              1/1     Running   0           69s
magic-xpi-imm-ns    imm-tunnel-5874fcd7c-rh6ds           1/1     Running   0           68s
magic-xpi-imm-ns    logdb-0                               1/1     Running   0           68s
magic-xpi-imm-ns    logdbcreatedb-ffs52                 1/1     Running   0           2m3s
magic-xpi-imm-ns    xpi-ingress-controller-magic-xpi-imm-ns-controller-67dfcbbws9wf  1/1     Running   0           69s
magic-xpi-imm-ns    xpi-monitor-59bc476bff-w6tmd        1/1     Running   0           6m42s
metallb-system     controller-5484c5f99f-n6dlj         1/1     Running   0           6m42s
metallb-system     speaker-dt9rg                        1/1     Running   0           6m42s
root@xpiqaubuntuv39:/home/xpiuser#
```

In case of Multi Node if any of the pods gets ImagePullBackOff error, then probably you missed executing the following command on each node of your cluster:



```
./installer.sh --upload-images
```

Confirm if all pods are running by using the command:

```
microk8s kubectl get pods -A
```

11. Please refer to **endpoints.txt** to follow the instructions for registering Domain Name and updating DNS Record.

- Location of file on Windows – C:\Windows\System32\drivers\etc\hosts

12. On updating the DNS Record, you can login to Magic xpi Monitor using the URL provided in **endpoints.txt**.

13. Now, to connect to your xpi server endpoint, you need to run the IMM agent from every Windows machine, where Magic xpi is installed. To do so:

- Open the folder **<Magic xpi Installation Folder>\InMemoryMiddleware\agent**.
- Execute command:

```
imm-agent.exe
```





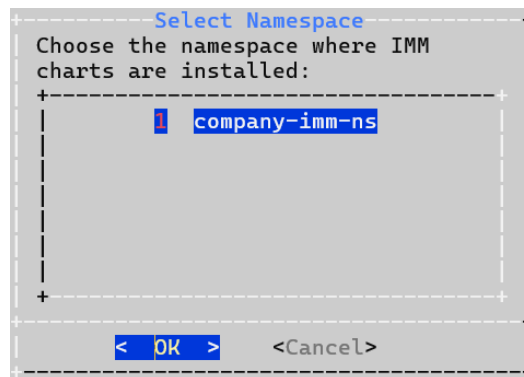
With SSL deployment, define CA certificates manually before continuing to use IMM agent. You need to assign the path of the certificate file to a flag named `TLS_CA_FILE_PATH` in the `.ENV` file located at `<Magic_xpi_installation_folder>\InMemoryMiddleware\agent`.

For example,

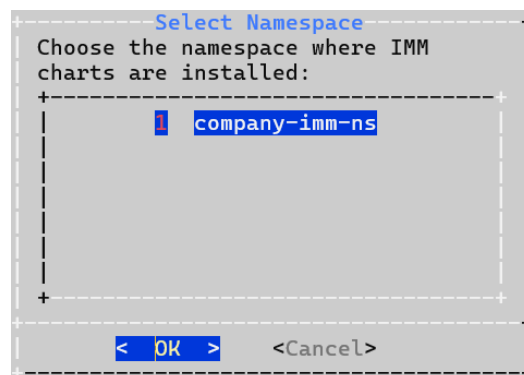
```
TLS_CA_FILE_PATH ="c:\temp\cacerts\gd_bundle-g2-g1.crt"
```

## IMM Undeployment

1. To uninstall the IMM deployment, execute command:  
`./installer.sh --uninstall`
2. The Installer prompts to choose the Namespace. If you have multiple Namespaces, **choose** the one that you want to undeploy.



The installer prompts to confirm undeployment.



3. Select `< OK >`.

The Installer prompts you to choose the namespace to be deleted.



```
The namespace 'company-imm-ns' is now empty. Do you want to delete it?

< Yes > < No >
```

4. Select **<Yes >**. The Installer informs that the Namespace was deleted.
5. Now if you check the pod status, execute command:

```
microk8s kubectl get pods -n <your_namespace>
```

This command shows no output on successful deletion of the Namespace.

## Microk8s and IMM Uninstallation

1. To uninstall Microk8s cluster and all IMM deployments in it, execute command:  
`./installer.sh --uninstall-system`
2. To continue removing microk8s, select Yes on both the following dialogs. Choosing No will cancel the removal process.

```
Are you sure you want to uninstall the MicroK8s cluster and all applications installed in it?

WARNING!!! This action cannot be reversed, and all applications data will be lost.

< Yes > < No >
```

```
Do you want to proceed with uninstalling following components?

* microk8s

Press 'Yes' to confirm or 'No' to exit.

< Yes > < No >
```

The Installer continues removal of microk8s and confirms it.

## Setting-up a Multi Node Cluster

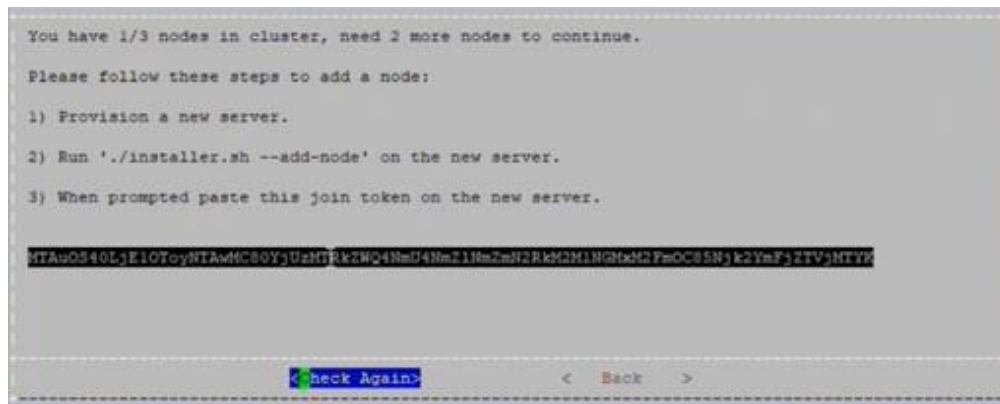
The Multi Node cluster requires minimum three Ubuntu machines (referred as M1, M2, and M3 hereafter).

1. Update the host file on each machine to have IP address and hostname mapping.

For example,

```
10.9.0.1    M1
10.9.0.2    M2
10.9.0.3    M3
```

2. Considering you selected the High Availability option in Installer, it prompts for joining another node into the cluster. Here, it will display **join token** which you need to copy and paste using instructions from the following three points.
3. Copy the token on Windows machine from Putty terminal.



```
You have 1/3 nodes in cluster, need 2 more nodes to continue.

Please follow these steps to add a node:

1) Provision a new server.
2) Run './installer.sh --add-node' on the new server.
3) When prompted paste this join token on the new server.

NTAu0S40LjE1OToyNTAwM0C80YjUzMTkzWQ4RmU4NmZlNmZmM2RkM2M1NGR0dGFmOC95Mjk2YmFjZTVjMTYy

Check Again < Back >
```

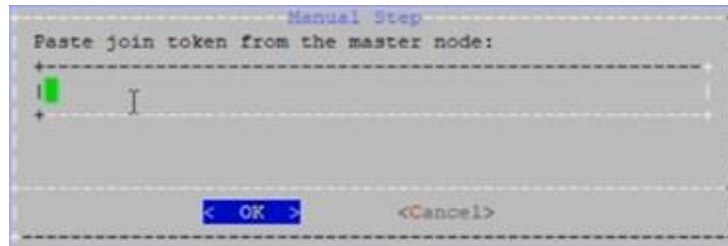


For example, on Windows machine on Putty terminal double-click to copy the token.

4. On other two machines (M2 and M3), execute the following command:

```
./installer.sh --add-node
```

On executing this command, the Installer prompts to enter the join token from Master Node as shown below:



5. Paste the join token copied from Master Node and continue the Installation process by pressing **< OK >**.
6. On Master Node, press **< Check Again >** to confirm that the Node is added into the Cluster. After the second Node (M2) is added into Cluster, a new join token is displayed on the same screen. On this screen, in the first line it displays the current number of Nodes inside the Cluster.
7. Copy the join token and follow the above four steps to add third Node (M3) in the Cluster.
8. On master node press **< Check Again >**. If the three nodes are in Cluster, the Installer continues to next screen where the IMM Deployment options are displayed.



The **AddNode** Installer option sometimes throws error in Console/Log due to microk8s getting timed-out while attempting to connect to Master Node. Microk8s then retries to connect and on successful connection, the Node is added to the Cluster. This error is not severe and is resolved on automatic retrial of connection.

9. Execute the following command on each Worker Node (M2 & M3):  

```
./installer.sh --upload-images
```

This command uploads IMM images to the local cache.
10. Now your system is ready for IMM deployment, you can continue with [IMM deployment](#).

## Troubleshooting

1. **Problem:** My project fails to start sometimes even after IMM Agent connecting with IMM Controller successfully.

**Solution:** Please check if your IMM Agent is running. If it is already running then restart the IMM Agent if this is the first time execution after installation.

2. **Problem:** Installer skips the installation of new Microk8s.

**Solution:** It may happen if your system has Microk8s installed already. To resolve the issue, uninstall Microk8s using command:

```
./installer.sh --uninstall-system
```

You can see the steps at [Uninstalling Microk8s](#).



# About Magic Software Enterprises

Magic Software Enterprises (NASDAQ: MGIC) empowers customers and partners around the globe with smarter technology that provides a multi-channel user experience of enterprise logic and data.

We draw on 30 years of experience, millions of installations worldwide, and strategic alliances with global IT leaders, including IBM, Microsoft, Oracle, Salesforce.com, and SAP, to enable our customers to seamlessly adopt new technologies and maximize business opportunities.

For more information, visit [www.magicsoftware.com](http://www.magicsoftware.com).



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