



Installing UFM Server Software

Table of contents

Prerequisites for UFM Server Software Installation

Additional Prerequisites for UFM High Availability Installation

The default UFM® installation directory is `/opt/ufm`.

For instructions on installing the UFM server software, please refer to following instructions per desired installation mode.

- [Installing UFM Server on Bare Metal Server](#)
 - [Installing UFM on Bare Metal Server- Standalone Mode](#)
 - [Installing UFM on Bare Metal Server - High Availability Mode](#)
- [Installing UFM Docker Container Mode](#)
 - [Installing UFM on Docker Container - Standalone Mode](#)
 - [Installing UFM on Docker Container - High Availability Mode](#)

The following processes might be interrupted during the installation process:

- httpd (Apache2 in Ubuntu)
- dhcpd

i Note

To install UFM over static IPv4 configuration (instead of DHCP) please refer to [Configuring UFM Over Static IPv4 Address](#) before installation.

After installation:

1. Activate the software license
2. [Perform initial configuration](#)

i Note

Before you run UFM, ensure that all ports used by the UFM server for internal and external communication are open and available. For the list of ports, see [Appendix – Used Ports](#).

Prerequisites for UFM Server Software Installation

Verify that a supported version of Linux is installed on your machine. For details, see UFM System Requirements.

The following table lists the packages that must be installed on your machine (according to the system OS) before you install the UFM server software.

RedHat 7	RedHat 8	RedHat 9	Ubuntu 18.04	Ubuntu 20.04	Ubuntu 22.04
acl	acl	acl	acl	acl	acl
apr-util-openssl	apr-util-openssl	apr-util-openssl	apache2	apache2	apache2
bc	bc	bc	bc	bc	bc
cairo	gnutls	gnutls	chrpath	chrpath	chrpath
gnutls	httpd	httpd	cron	cron	cron
httpd	iptables	iptables-nft	gawk	gawk	gawk
iptables	jansson	jansson	lftp	lftp	lftp
lftp	lftp	lftp	libcurl4	libcurl4	libcurl4
libxml2	libnsl	libnsl	logrotate	logrotate	logrotate
libxslt	libxml2	libxml2	python3	python3	python3
mod_session	libxslt	libxslt	qperf	qperf	qperf
mod_ssl	mod_session	mod_session	rsync	rsync	rsync
net-snmp	mod_ssl	mod_ssl	snmpd	snmpd	snmpd
net-snmp-libs	net-snmp	net-snmp	sqlite3	sqlite3	sqlite3

RedHat 7	RedHat 8	RedHat 9	Ubuntu 18.04	Ubuntu 20.04	Ubuntu 22.04
net-snmp-utils	net-snmp-libs	net-snmp-libs	sshpas	sshpas	sshpas
net-tools	net-snmp-utils	net-snmp-utils	ssl-cert	ssl-cert	ssl-cert
php	net-tools	net-tools	sudo	sudo	sudo
psmisc	php	php	telnet	telnet	telnet
python3	psmisc	psmisc	zip	zip	zip
python3-libs	python36	python3			
qperf	qperf	qperf			
rsync	rsync	rsync			
sqlite	sqlite	sqlite			
sshpas	sshpas	sshpas			
sudo	sudo	sudo			
telnet	telnet	telnet			
zip	zip	zip			

In addition, ensure the following before you begin installation:

- The computer hostname is not defined as 127.0.0.1 and localhost is defined as 127.0.0.1.
- The hostname must NOT appear on the loopback address line. An example of the loopback address is: 127.0.0.1 localhost.localdomain localhost.
- Disable the firewall service (/etc/init.d/iptables stop), or ensure that the required ports are open (see the prerequisite script, refer to [Used Ports](#)).
- SELinux is disabled.
- If more than one fabric is managed by different UFM instances, set up different management network spaces for each fabric (not the same LAN).

- Uninstall any previously installed Subnet Manager from the UFM server machine.
- MLNX_OFED 5.x version is installed prior to installing UFM.
- As of UFM v.6.12.0, it is **NOT mandatory** to configure the IPoIB fabric interface with an IP address.

In cases where the IP is configured, it is **mandatory** that the IP is permanently configured and that it starts automatically upon server reboot (the IPoIB fabric interface should be active even if the network is down).

i Note

The user can set a persistent IP address using Netplan (mainly for Ubuntu systems) or modifying the interface network script (RedHat systems).

- The default MLNX_OFED installation includes opensm. Remove the MLNX_OFED opensm before UFM installation like the following examples:

RedHat:

```
rpm -e opensm-3.3.9.MLNX_20111006_e52d5fc-0.1
```

Ubuntu:

```
apt purge opensm
```

By default, ib0 and eth0 are configured as primary access points for the UFM management. If different management and/or InfiniBand interfaces (including bond interfaces) are used as the primary access points, you should modify the configuration file by running the script `/opt/ufm/scripts/change_fabric_config.sh` as described in the section Configuring General Settings in `gv.cfg`.

Change the UFM Agent interface to the Ethernet and/or IPoIB interfaces used for communication with UFM Agent:

```
ufma_interfaces = ib0,eth0
```

Additional Prerequisites for UFM High Availability Installation

- Reliable and high-capacity out-of-band IP connectivity between the UFM Primary and Secondary servers (1 Gb Ethernet is recommended). This connectivity is used for DRBD synchronization.
- Format two identical servers with dedicated disk partitions for UFM replication. Since the UFM configuration file is replicated to the standby server, both master and standby servers must have the same interfaces.
- Allocate exactly the same size partition on both servers (master and slave) for the replicated data. See UFM Server Requirements for the recommended partition size. Partitions should not be mounted and must be zeroed (the file system should not be installed on the partitions). For disk partitioning, see the Linux user manual (man fdisk).
- We recommend establishing a passwordless SSH (via /root/.ssh/authorized_keys file) between the two servers before the installation.
- In fabrics consisting of multiple tiers of switches, it is recommended that the management ports (ib0) of the primary and secondary UFM server be connected to different fabric switches on the same tier (the outermost edge in CLOS 5 designs).

This is because by default, UFM manages the IB fabric via ib0, port 1 of the HCA. Failure or disconnect of ib0, the IB management port, causes a failure condition in UFM resulting in HA failover.

When the management ports (ib0) of the primary and secondary UFM server are connected to the same switch, a failure of this switch will result in a disconnect of both UFM from the fabric, and therefore UFM will not be able to manage the fabric.

Note

Subnet Manager is running over the native InfiniBand layer, therefore bonding the IpoIB interfaces will not provide high availability. For additional information, please refer to section UFM Failover to Another Port.

The UFM installation includes the InfiniBand Performance Management module (IBPM). This module is responsible for reporting performance information back to UFM and upper layer applications. When available, this process is offloaded to the non-management port (default ib1) of the UFM server. Failure or disconnect of the non-management port (ib1) on the primary UFM server will not cause UFM to failover. By default, the UFM Health Monitoring process is configured to try to restart the IBPM. For more information, see UFM Health Configuration in the UFM User Manual.

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