

# **UNIFY** Open Scape Fault Management

Installation and configuration

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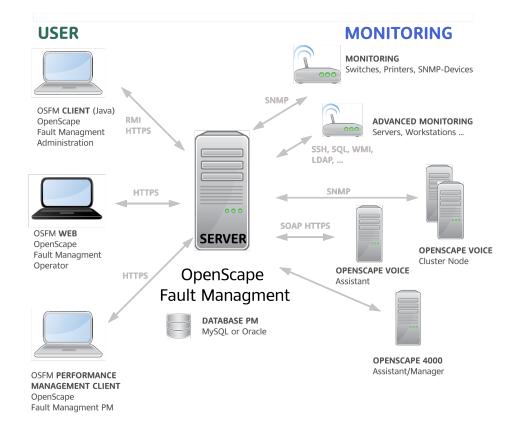


# **Product description**

OpenScape Fault Management (OSFM) is a network management tool that performs two tasks (bold print) according to FCAPS, an ISO model for network management:

- Fault Management
- Configuration Management
- Accounting Management
- Performance Management
- Security Management

OSFM monitors all or individual networks and their members and start actions if these devices report errors or alarms. Additionally monitoring all SNMP-enabled devices and any technology with the advanced Monitoring is possible. As the only network monitoring/management product, OSFM has special support for UNIFY OpenScape technologies. This makes out-of-the-box monitoring possible for OpenScape 4000, Voice and Business.



# **OSFM structure and communication**



# **Installation OSFM Server**

#### **Requirements Hardware**

- Server Testlab "minimum"
  - Bare Metal oder virtual (VMWare ESX, HyperV)
  - > 4 GB RAM
  - ► 50 GB HDD
  - ▶ 2x CPU Core
- Server production use "minimum"
  - **Bare Metal or virtual (VMWare ESX, HyperV)**
  - > 8 GB RAM
  - 600 GB HDD
  - ▶ 4x CPU Core
- Server production use "big"
  - Bare Metal oder virtual (VMWare ESX, HyperV)
  - 16 GB RAM
  - ▶ 600 GB HDD
  - > 8x CPU Core

Flash/SSD storage should be used for optimal performance.

#### **Requirements operating system**

Starting OSFM version 10, only 64-bit operating systems are supported:

- Windows 7 SP1 64 Bit
- Windows 8.1 64 Bit
- Windows 10 64 Bit
- Windows Server 2012R2 64 Bit
- Windows Server 2016 64 Bit
- **SuSE Linux Enterprise 11 64 Bit**
- SuSE Linux Enterprise 12 64 Bit

#### **Requirements Java**

A Java Runtime is required for the installation and operation of OSFM Server. The current version of the following versions can always be used:

- Oracle Java Runtime 8 64 Bit Windows
- Oracle Java Runtime 8 64 Bit Linux
- Oracle Java Runtime 11 64 Bit Windows
- Oracle Java Runtime 11 64 Bit Linux



#### **IBM Java Runtime 8 64 Bit Linux**

### **Requirements UNIFY Customer License Agent**

For the licensing of OSFM Server a UNIFY Customer License Agent CLA must be available, which provides a suitable license for the OSFM Server. Before installing OSFM V10 a compatible version of the CLA should always be available.

## **Database Server Requirements for Monitoring or Performance Management**

For storing the monitoring data, a copy in a MySQL database server can optionally be set. If the OSFM "Performance Management" feature is used, the installation of a MySQL or Oracle database server is required and mandatory.

#### TASK 1 > Installing the UNFIY Customer License Agent (CLA)

- → Download Installer of UNIFY Custer License Agent CLA from UNIFY SWS-Server
- → Installing CLA using the setup program: Installation with default values of the installer

#### TASK 2 > Windows platform: Install OSFM Server

→ Download Installer of Oracle Java 1.8 64-Bit:

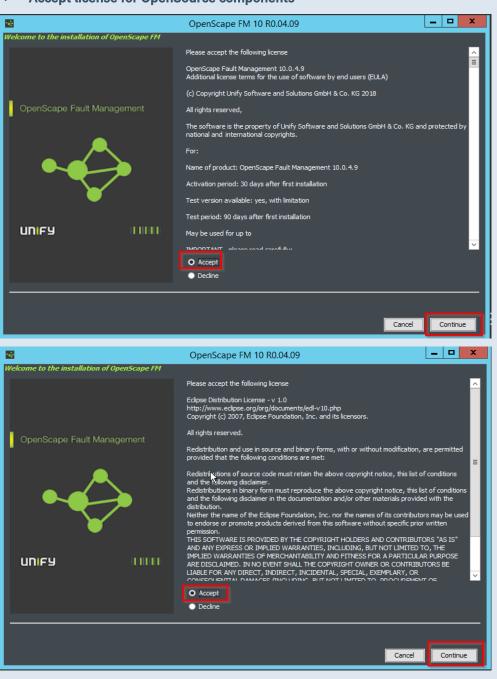
http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html

- → Installing Java using the setup program
- → Download Installer of UNIFY OpenScape Fault Management from UNIFY SWS Server
- → Use "setup\_osfm.exe" and start it with administrator authorization

18 C	OpenScape FM 10 R0.04.09	_ □	x
Welcome to the installation of OpenScape FM			
	This installer will guide you through the installation process of OpenScape FM For an update installation, please install into the same folder where the current version is installed.		
OpenScape Fault Management			
•			
UNIFY IIIIII			
			_
	Cancel	Continue	:

→ Accept license for OSFM





#### → Accept license for OpenSource components

→ Select "Full Installation" Installation



1941 - Contra Co	OpenScape FM 10 R0.04.09	_ □	x
Welcome to the installation of OpenScape FM	Please select the options to install		
	OpenScape FM full installation		
	OpenScape FM for OpenScape Business only		
OpenScape Fault Management			
UNIFY IIIIII			
			-
	Cancel	Continue	2

# → Adopt or adapt installation folder

1988 - Contra Co	OpenScape FM 10 R0.04.09	-		x
Welcome to the installation of OpenScape FM				
	Installation directory			
	C:\Program Files\OpenScapeFM			
	Choose			
OpenScape Fault Management				
¥				
UNIFY IIIIII				
	Cancel	Ľ	Continu	

→ Hostname "localhost" and port for the CLA (if it runs on the same machine)



22	OpenScape FM 10	R0.04.09	_ 0 X
Welcome to the installation of OpenScape FM			
OpenScape Fault Management	Please enter CLA connection CLA IP address/hostname : localhost CLA port : 61740	CLEAR FOR 7-DAY-D	EMO LICENCE
•			
UNIFY I IIIIII			
			Cancel

#### → Start installation

Welcome to the installation of OpenScape FM Start installation into this directory? C:\Program Files\OpenScapeFM OpenScape Fault Management UNIFY UNIFY UNIFY O Accept D Dedine		OpenScape FM 10 R0.04.09	-		x
C:\Program Files\OpenScapeFM OpenScape Fault Management UDIFY UIIII C Accept	Welcome to the installation of OpenScape FM				
OpenScape Fault Management     Implue     Implue     Implue     Implue     Implue     Implue		Start installation into this directory?			
		C:\Program Files\OpenScapeFM			
	OpenSeepe Fault Management				
O Accept	OpenScape Fault Management				
O Accept					
O Accept					
O Accept					
O Accept					
O Accept	Ŭ				
O Accept					
O Accept	UNIFY IIIIII				
		O Accept			
Cancel		Cancel		Continu	e



	OpenScape FM 10 R0.04.09	_ <b>_</b> ×
elcome to the installation of OpenScape FM		
	Checking Java version 1.8 64 Bit	8
	Stopping FM services Create Backup	© ©
	Creating target folder	<b>e</b>
OpenScape Fault Management	Extracting File:	0
	Registering FM services	Ø
	Creating start menu entries	<u> </u>
	Registering software Starting FM services	<ul> <li></li> <li><!--</td--></li></ul>
		Finished

After finishing the OSFM Server installation the installer starts the OSFM service which creates a new internal object database. This process briefly generates a high system load, which is normal again after completion.

# **Debugging the OSFM Server Installation**

Every installation or update process of OSFM is logged in log files. In the event of an error, these can be analyzed (with a text editor) or made available to support.

- ...\OpenScape FM\install\_\*\*DATE\*\*.log -> Installation Log
- ...\OpenScape FM\patch\_\*\*VERSION\*\*.log -> Patch Log

Log files are also written at the start of the OSFM system service and at runtime:

- ...\OpenScape FM\startup\log\startupservice.log -> Service Startup
- ...\OpenScape FM\startup\log\OpenScapeFM.log -> Service Startup
- ...\OpenScape FM\server\log\server.log -> Runtime Log (eg: License Error)

# **Options after completion of the installation**

After completion of a new installation, some settings can be adapted to the customer's environment:

Change user ID of OSFM Windows system service

If the "Advanced Monitoring" feature monitoring perform remote WMI monitoring, the user ID of "Local System Account" must be to a user with permission to connect to the network. Configuration in Windows Service Manager:



OpenScape Startup	Service Properties (Local (	Computer) ×
General Log On Rec	overy Dependencies	
Log on as:		
O Local System accou		
Allow service to	interact with desktop	
This account:	.\Administrator	Browse
Password:	•••••	`
Confirm passwork		
Switch to Acc	ount with Netwok con	nectivity
	OK Cancel	Apply

#### Change used JAVA Runtime

The OSFM installer saves the JAVA runtime version used during the installation and uses it to start the system service. In case of a JAVA update the information of the JAVA Runtime to be used must be adapted in the following file:

#### ..\OpenScapeFM\java.properties

and adjust an entry similar to this one:

```
java_home=C:\Java\jre1.8.0_92
```

#### > JAVA Runtime VM Memory-Option: Adjust RAM usage

The memory used by the JAVA Runtime Virtual Machine is set to 2 GByte with the installation. In the case of many monitored hosts, this value must be adjusted, e.g. to half of the total available RAM. Example:

#### ..\OpenScapeFM\startup\conf\OpenScapeFM.properties

Insert this entry for the use of 4 GByte RAM:

jvmarg-Xmx4096m

Configure Firewall

If the Windows firewall is used, ports must be opened for the operation of OSFM. The latest UNIFY Security Checklist should be used as information source.

# **Using the OSFM Client for Administration**

After successful installation of OSFM Server, the login to the user interface CLIENT for administration

can take place. A Java Runtime must be available to start the CLIENT.

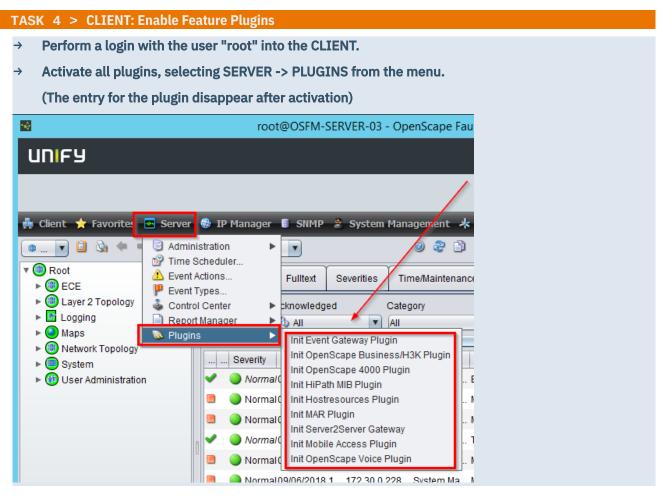


TASK 3 > Start CLIENT user interf	ace for administration	
→ Start the Firefox Internet brow	ser and navigate to the landing pa	age of your OSFM server:
https://localhost:3043		
https://*yourservername*:304	2	
	5	
→ Selection of "Client		
😻 🔞 OpenScape Fault Manag 🗙 🕂	OpenScape Fault Management - Mozilla Firefox	_ = ×
← ① ▲ https://localhost:3043/start.html?language=en	C Such	nen ☆ 🖻 🖡 🎓 💟 🚍
UNIFY OpenScape Fa	ault Management	Language: English 🔻 <u>Online Help</u>
	Client	
	Web	
	Performance Management	
Version 9 R1.10.07 © Unify Software and Solutions GmbH & Co. KG (20	[7]	

- → Open the file offered for download with JAVA Webstart
- → Login mask: Check the entry for Server and log in with the user "root" without any password
- → Set the password of the user "root" and use min. 8 characters with numbers/special characters

Client	Server	OpenScape Fault Management
Öffnen von index.jnlp	localhost	Change Password
Sie möchten folgende Datei öffnen: index.jnlp	Port 3042	Please enter a password.
Vom Typ: JNLP File (4,1 KB) Von: https://localhost:3043	Login	Set Password:
Wie soll Firefox mit dieser Datei verfahren?	root	*****
Offnen mit     Java(TM) Web Start Launcher (Standard)     Dater speichern	Password	Confirm:
Eür Dateien dieses Typs immer diese Aktion ausführen		UNIFY
OK	Login	





Plugins in OSFM Server provide additional features or support for a specific technology. A valid license is required to use some plugins.

#### ▶ Event Gateway Plugin

Feature Plugin. Can forward events as a freely definable SNMP trap. License included in Base.

#### > OpenScape Business/H3K Plugin

Technologie Plugin. Automatic discovery of OS Business and Hipath 3000 systems. License required.

#### OpenScape 4000 Plugin

Technologie Plugin. Automatic discovery of OS 4000 and Hipath 4000 systems. License required.

#### HiPath MIB Plugin

Technologie Plugin. Used by other plugins. No extra license required.

#### Hostresources Plugin

Feature Plugin. Easy use of certain SNMP MIB-II information. No extra license required.

#### MAR Plugin

Feature Plugin. Send email/SMS/App response to events. License included in Base.



#### Server2Server Gateway

Feature Plugin. Connect multiple OSFM servers, e.g. for central administration. License required.

Mobile Access Plugin

Feature Plugin. Using the iOS/Android App over the Internet. License included in Base.

OpenScape Voice Plugin

Technologie Plugin. Automatic discovery of OS Voice systems. License required.

# **Use of external databases**

OSFM Server can be connected to external databases. Two features use storage in external databases:

#### > (Advanced) Monitoring: Export of monitoring data to MySQL Server

- > Usage OPTIONAL, data is also stored in internal JAVA SQL database
- > Data can be stored over a longer period of time
- useful for many monitored hosts
- > Performance Management: Store VoIP QoS data in MySQL or Oracle SQL Server
  - > Usage REQUIRED, data will only be stored externally
  - > PM and Advanced Monitoring can share MySQL

#### TASK 5 > Windows platform: Install MySQL Server

→ Download the latest version of MySQL Server 5.7:

https://dev.mysql.com/downloads/mysql/

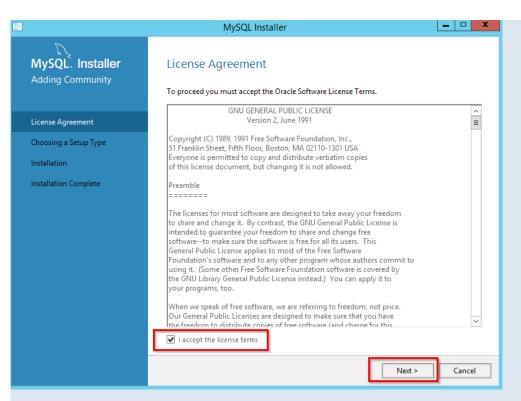
→ If you are not connected to the Internet, please install the following before

Microsoft VisualC++ Runtime 2015 und 2013

- → Run the MySQL Server 5.7 setup:
- → Accept License Agreement

Installer 🕨 MySQL Server	v Ċ "MyS	QL Server" durc 🔎
Name	Änderungsdatum	Тур
🔂 mysql-installer-community-5.7.23.0.msi	27.08.2018 14:03	Windows Installer.
vcredist2010_x64.exe	25.10.2016 21:37	Anwendung
vcredist2010_x86.exe	25.10.2016 21:55	Anwendung
🕼 vcredist2012_x64.exe	30.10.2013 13:15	Anwendung
🕼 vcredist2012_x86.exe	30.10.2013 13:15	Anwendung
🕼 vcredist2013_x64.exe	07.07.2016 17:23	Anwendung
/ wcredist2013_x86.exe	07.07.2016 17:23	Anwendung
/ woredist2017_x64.exe	10.04.2018 06:49	Anwendung
🙀 vcredist2017_x86.exe	10.04.2018 09:35	Anwendung



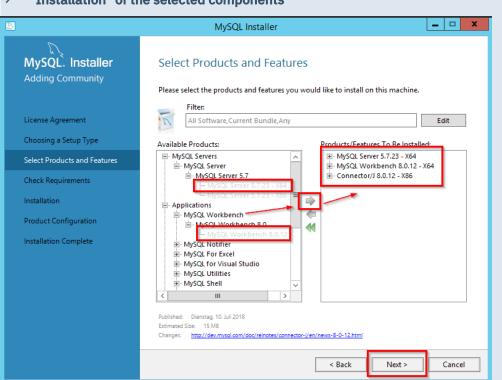


#### → Select Setup Type "Custom"

2	MySQL Installer	_ 🗆 X
MySQL. Installer Adding Community	Choosing a Setup Type Please select the Setup Type that suits you	ır use case.
License Agreement	O Developer Default	Setup Type Description
Choosing a Setup Type	Installs all products needed for MySQL development purposes.	Allows you to select exactly which products you would like to install. This also allows to pick other server versions and architectures (depending on
Select Products and Features	O Server only	your OS).
Installation	Installs only the MySQL Server product.	
Installation Complete	<ul> <li>Client only Installs only the MySQL Client products, without a server.</li> <li>Full Installs all included MySQL products and features.</li> <li>Custom Manually select the products that should be installed on the system.</li> </ul>	
		< Back Next > Cancel
Select following "	Products and Features"	

MySQL Server -> MySQL Server 5.7 -> MySQL Server 5.7.x.x - X64 Applications -> MySQL Workbench -> MySQL Workbench 8.0 -> MySQL Workbench 8.x.x - X64 MySQL Connectors -> Connector/J 8.0 -> Connector/J 8.x.x - X86





#### → "Installation" of the selected components

#### → Microsoft Visual C++ Runtime installation if necessary (Execute)

2		MySQL Installer
	MySQL. Installer Adding Community	Check Requirements The following products have failing requirements. MySQL Installer will attempt to resolve some of this automatically. Requirements marked as manual cannot be resolved automatically. Click on those items to try and resolve them manually.
	License Agreement	
	Choosing a Setup Type	For Product         Requirement         Status           O MySQL Server 5.7.23         Microsoft Visual C++ 2013 Redistrib         Status
	Select Products and Features	
	Check Requirements	N N
	Installation	
	Product Configuration	
	Installation Complete	Requirement Details MySQL Installer is trying to automatically resolve this requirement. There is nothing you need to do. Requirement: Microsoft Visual C++ 2013 Reditributable Package (x64) is not installed Status:
		Sack Execute Next > Cancel



<u>N</u>	MySQL Installer
MySQL. Installer Adding Community	Check Requirements The following products have failing requirements. MySQL Installer will attempt to resolve some of this automatically. Requirements marked as manual cannot be resolved automatically. Click on those items to try and resolve them manually.
Choosing a Setup Type Select Products and Features	For Product Requirement Status MySQL Server 5.7.23 Microsoft Visual C++ 2013 Redistrib INSTL DONE
Check Requirements	
Product Configuration Installation Complete	Requirement Details MySQL Installer is trying to automatically resolve this requirement. There is nothing you
	need to do. Requirement: Microsoft Visual C++ 2013 Redistributable Package (x64) is not installed Status:
	< Back Next > Cancel

# → Start "Product Installation" (Execute)

	MySQL Installer	
MySQL. Installer Adding Community	Installation Press Execute to upgrade the following p	roducts.
License Agreement Choosing a Setup Type Select Products and Features Check Requirements Installation Product Configuration Installation Complete	Product       MySQL Server 5.7.23       MySQL Workbench 8.0.12       Connector/J 8.0.12	Status     Progress     Notes       Ready to Install     Ready to Install     Notes



2	MySQL Installe	r .	_ 🗆 🗙
MySQL. Installer Adding Community	Product Configuration We'll now walk through a configura	tion wizard for each of the following pr	oducts.
License Agreement	You can cancel at any point if you w products.	rish to leave this wizard without configu	uring all the
Choosing a Setup Type	Product MySQL Server 5.7.23	Status Ready to Configure	2
Select Products and Features			
Check Requirements			
Installation			
Product Configuration			
Installation Complete			
	<	III	>
		Next	t> Cancel

# → "Group Replication" : Standalone MySQL Server ...

	MySQL Installer
MySQL. Installer	Group Replication
MySQL Server 5.7.23	Standalone MySQL Server / Classic MySQL Replication     Choose this option if you want to run the MySQL Server either standalone with the opportunity     to later configure classic MySQL Replication.
Group Replication	Using this option you can manually configure your replication setup and provide your own high
Type and Networking	availability solution if required.
Accounts and Roles	<ul> <li>Sandbox InnoDB Cluster Setup (for testing only)</li> <li>The <u>InnoDB cluster</u> technology provides an out-of-the-box HA (high availability)</li> </ul>
Windows Service	solution for MySQL using Group Replication technology.
Plugins and Extensions	This option allows you to test an InnoDB cluster setup on your local computer using several MySQL Server sandbox instances. Read more about this <u>here</u> .
Logging Options Advanced Options	To setup a real-world production InnoDB cluster please choose the standard MySQL Server configuration instead on all desired hosts and use the MySQL Shell
Apply Configuration	afterwards to create or expand the InnoDB cluster setup. MySQL Shell Client App $\leftrightarrow$ MySQL Router InnoDB Cluster
	Next > Cancel

→ "Type and Networking": Config Type "Server Machine"



<u>N</u>	MySQL Installer
MySQL. Installer MySQL Server 5.7.23	Type and Networking Server Configuration Type Choose the correct server configuration type for this MySQL Server installation. This setting will define how much cyclem recources are assigned to the MySQL Server installation. This setting will config Type: Server Computer
Type and Networking	Connectivity
Accounts and Roles Windows Service Plugins and Extensions Apply Configuration	Use the following controls to select how you would like to connect to this server.  TCP/IP Port: 3306  Open Windows Firewall port for network access Named Pipe Pipe Name: MYSQL Shared Memory Memory Name: MYSQL  Advanced Configuration Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.  Show Advanced and Logging Options
	< Back Next > Cancel
→ "Accounts and Rol	es": configure MySQL Password
	MySQL Installer
MySQL. Installer MySQL Server 5.7.23 Group Replication Type and Networking Accounts and Roles Windows Service	Accounts and Roles Root Account Password Enter the password for the root account. Please remember to store this password in a secure place. MySQL Root Password Repeat Password: Password strength: Weak
Plugins and Extensions Apply Configuration	MySQL User Accounts         Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.         MySQL Username       Host         User Role       Add User         Edit User

Delete

Cancel

< Back

Next >

→

"Windows Service": go with default (Next)



MySQL. Installer	
MySQL Server 5.7.23	Windows Service ✓ Configure MySQL Server as a Windows Service
Group Replication Type and Networking	Windows Service Details           Please specify a Windows Service name to be used for this MySQL Server instance. A unique name is required for each instance.           Windows Service Name:         MySQL57
Accounts and Roles	✓ Start the MySQL Server at System Startup
Windows Service	
Plugins and Extensions Apply Configuration	<ul> <li>Run Windows Service as</li> <li>The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.</li> <li>Standard System Account Recommended for most scenarios.</li> <li>Custom User An existing user account can be selected for advanced scenarios.</li> </ul>
	< Back Next > Cancel

	MySQL Installer
MySQL. Installer MySQL Server 5.7.23	Plugins and Extensions MySQL as a Document Store Use the following controls to select how you would like to connect to this server.
Group Replication Type and Networking	Enable X Protocol / MySQL as a Document Store     Port Number: 33060     Open Windows Firewall port for network access
Accounts and Roles Windows Service	Starting with MySQL Server 5.7, MySQL supports document store development. In order to provide a complete document store/NoSQL experience there is a new communications protocol called the X Protocol. The expanded capabilities of the X Protocol enable us to provide modern developer APIs with features such as
Plugins and Extensions Apply Configuration	asynchronous calls, pipelining, and more. In addition to implementing document collections, the new X DevAPI also supports relational and combined document store/relational capabilities. Now developers, designers and DBAs can deploy MySQL databases that implement document store, relational, or hybrid document/relation models.
	Click here to view MySQL as a Document Store online documentation           < Back         Next >         Cancel

→ "Apply Server Configuration": Execute + Next



	MySQL Installer
MySQL. Installer MySQL Server 5.7.23 Group Replication Type and Networking Accounts and Roles Windows Service Plugins and Extensions Apply Configuration	Apply Configuration         Press [Execute] to apply the changes         Configuration Steps       Log         Writing configuration file       Updating Windows Firewall rules         Adjusting Windows service       Initializing Database         Starting Server       Applying security settings         Creating user accounts       Updating Start Menu Link
MySQL. Installer Adding Community	A Back Execute Cancel       MySQL Installer       Product Configuration       We'll now walk through a configuration wizard for each of the following products.
License Agreement Choosing a Setup Type Select Products and Features Check Requirements Installation Product Configuration Installation Complete	You can cancel at any point if you wish to leave this wizard without configuring all the products.           Product         Status           MySQL Server 5.7.23         Configuration Complete.
"Installation Com-	Next > Cancel       Dete" : go with defaults (Finish)

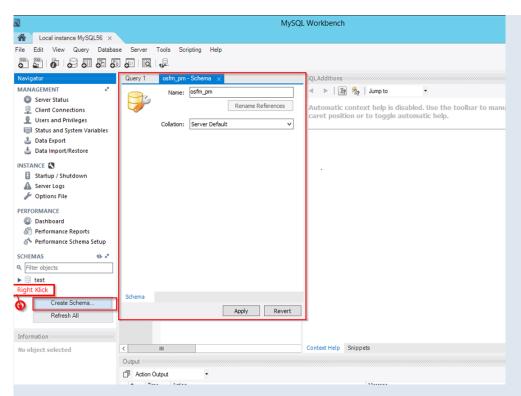


2	MySQL Installer	_ <b>_</b> X
MySQL. Installer Adding Community	Installation Complete The installation procedure has been completed.	
License Agreement Choosing a Setup Type Select Products and Features Check Requirements Installation Product Configuration Installation Complete	Copy Log to Clipboard Start MySQL Workbench after Setup	
		Finish

TASK 6 > MySQL server: Create database for OSFM

- Starting MySQL Server Workbench for Administration ÷ login with "root"  $\rightarrow$ File Edit View Database Tools Scripting Help MySQL Connections  $\oplus$   $\circledast$ Local instance MySQL56 x Ð Connect to MySQL Server Please enter password for the following service: Service: Mysql@localhost:3306 User: root Password: \*\*\*\*\*\*\*\* Save password in vault Select "Create Schema" →
- → configure name for Schema e.g. "osfm"
- → create with APPLY





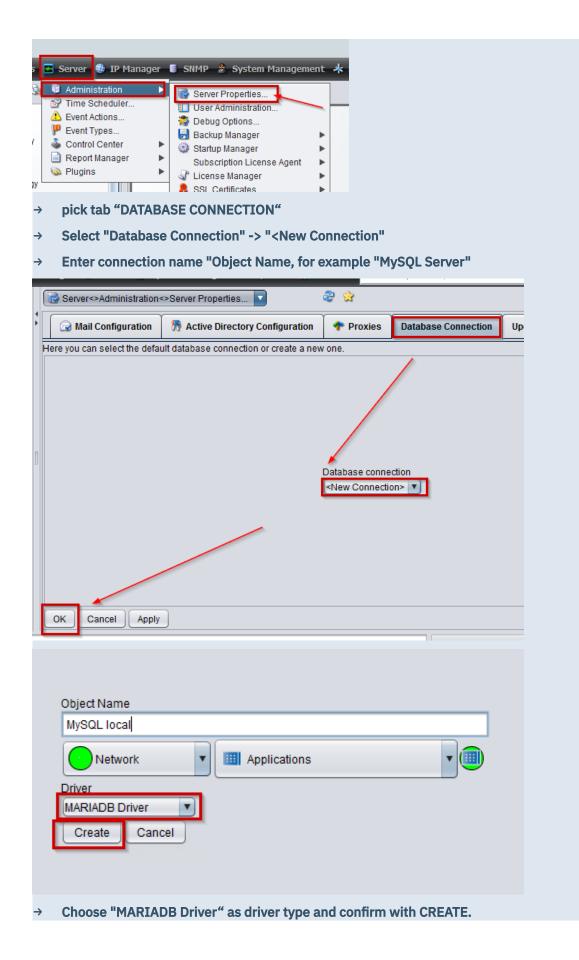
→ configure the user "root in "Limit to Hosts Matching" with "%" to allow access from all hosts on the network

Navigator MANAGEMENT <sup>247</sup> Server Status	Query 1 new_schema - Schema Local instance MySQL57 Users and Privilege	Administration - Users and Privil ×
Client Connections Users and Privileges Status and System Variables Data Export Data Import/Restore INSTANCE Startup / Shutdown	User Accounts User From Host mysql.session localhost root localhost	Details for account root@localhost         Login       Account Limits       Administrative Roles       Schema Privileges         Login Name:       root       You may create multiple accounts wit to connect from different hosts.         Authentication Type:       Standard       For the standard password and/or here to select 'Standard'.
Server Logs Poptions File PERFORMANCE Dashboard		Limit to Hosts Matching: % % and _ wildcards may be used Password: ************************************
Information		Confirm Password: Enter password again to confirm. Expire Password
Object Info Session	Add Account Delete Ret	iresh Revert Apply

TASK 7 > Connecting OSFM Server to MySQL Server

- → Start the Administration CLIENT of OSFM Server
- → In the main menu select SERVER -> ADMINISTRATION -> SERVER PROPERTIES ...







 $\rightarrow$  Enter the connection data for the (currently installed) database.

Server = localhost Port = 3306 Database = osfm User = root

Password = \*\*\*\*\*\*

- → Testing connection data with APPLY
- $\rightarrow$  If the connection was successful, save the connection data with OK.
- → Find new object in object tree

TASK 8 > SUSE Enterprise Linux Platform: meet requirements

→ Download Installer Oracle Java 1.8 64-Bit RPM:

http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html

→ ONLY FOR <u>SUSE LINUX ENTERPISE 11</u>: update "alternatives" for JAVA-Installer

	Terminal	
File Edit ∨iew Terminal I	Help	
osfm <mark>-linu</mark> x:~ # ca	it /etc/issue	
Welcome to SUSE L	inux Enterprise Server 11 SP3 (x86_64).	
osfm-linux:~ #		
P	unify-linux-02.one.materna.com - PuTTY	- 🗆 🗙
	t/osfm-installer <mark># ln -s</mark> /usr/sbin/update-alte t/osfm-installer # rpm -i jre-8u121-linux-x64.n	
→ Install Java us	ing RPM on the command line:	
· Install Java US	ing it is on the command the.	
cd /opt/osfm-:	installer	

rpm -i jre-8u181-linux-x64.rpm



```
_ 🗆 🗙
₽
                                 unify-linux-02.one.materna.com - PuTTY
unify-linux-02:/opt/osfm-installer # ln -s /usr/sbin/update-alternatives /usr/sbin/alternatives
Unpacking JAR files...
       plugin.jar...
       javaws.jar...
       deploy.jar...
       rt.jar...
       jsse.jar...
       charsets.jar...
       localedata.jar...
update-alternatives: using /usr/java/jre1.8.0_121/bin/java to provide /usr/bin/java (java) in auto
 mode
unify-linux-02:/opt/osfm-installer #
```

- → Download Installer from UNIFY Custer License Agent CLA (UNIFY SWS-Server)
- → Install CLA using the setup program: Installation with default values of the installer

cd /opt/osfm-installer/cla

rpm -i cla-v1-r39.1.0.x86\_64.rpm

#### TASK 9 > SUSE Enterprise Linux Platform: Install OSFM Server

- → Download Installer from UNIFY OpenScape Fault Management (UNIFY SWS-Server)
- → Start "setup\_osfm.sh" with administrator authorization (root)
  - cd /opt/osfm-installer/OSFM-V10R0
  - sh ./setup\_osfm.sh
- → Accept license for OSFM
- → Accept license for OpenSource components

P	unify-linux-02.one.materna.com - PuTTY	-		×
w wi ons f Ap	These End User License Terms are governed by German substathout reference to its conflicts of laws provisions. The Uni Convention on Contracts for the International Sale of Goods ril 11, 1980, shall not apply. The place of jurisdiction sha , Germany.	ted (CIS	Nat GG)	i o
Use shal	If there are any discrepancies between this translation of r License Terms and the German original version, the German l apply. pt (y/n) [n]y			





→ Choose "OpenScape FM Full Installation" installation option

unify-linux-02.one.materna.com - PuTTY	- 🗆 🗙
Please select the options to install	^
<ol> <li>OpenScape FM full installation[X]</li> <li>OpenScape FM for OpenScape Business only[]</li> </ol>	
0) Continue	
Selection: 0	×

→ Adopt or adapt installation folder

B	unify-linux-02.one.materna.com - PuTTY	- 🗆 ×
R.		^
Selection: 0 Installation_directory [/opt/OpenScapeFM] :		
		~
→ Accept default "loc	alhost" and port "61740" for the CLA	

B	192.168.100.10 - PuTTY	-	×
Please enter CLA connection parameters			^
CLA IP address/hostname : [localhost] CLA port : [61740] Type <y> to continue, <c> to clear the</c></y>	input or <n> to reset to defaults: [y]</n>		v

→ Start installation

# **Options after completion of the installation**

After completion of a new installation, some settings can be adapted to the customer's environment:

Starting and stopping OSFM services

For the stop and the start of the OSFM Server services the installation under Linux offers two programs to call up:

/opt/OpenScapeFM/startStartupService

/opt/OpenScapeFM/stopStartupService

Change used JAVA Runtime



The OSFM installer saves the JAVA runtime version used during the installation and uses it to start the system service. In case of an JAVA update the information of the JAVA Runtime to be used must be adapted in the following file:

#### /opt/OpenScapeFM/java.properties

and adjust an entry similar to this one:

java\_home=/opt/java/jre1.8.0\_92

#### JAVA Runtime VM Memory-Option: Adjust RAM usage

The memory used by the JAVA Runtime Virtual Machine is set to 2 GByte with the installation. In the case of many monitored hosts, this value must be adjusted, e.g. to half of the total RAM available. Example:

#### vi /opt/OpenScapeFM/startup/conf/OpenScapeFM.properties

Insert this entry for the use of 4 GByte RAM:

jvmarg-Xmx4096m

#### Firewall konfigurieren

If the SUSE-Linux firewall is used, ports must be opened for the operation of OSFM. The latest UNIFY Security Checklist should be used as a source of information for this purpose.

# Patching and updating OSFM Server

#### Updates for Version 10

For OSFM version 10 only full installers are available for updates, which can be used for a new installation as well as an update installation. The update process corresponds to the new installation with additional questions about the update.

#### • Updates for Version 9 und older

For older versions, cumulative (much smaller) patches were provided in addition to a full installer for space reasons. It's necessary to install the release version and then install the latest patch. This is also necessary for an upgrade to a higher major version..

# License OSFM Server

#### Select and configure license package

The license for OSFM-Server consists of a basic package and in case of the "Full" license of a variable part. In this case, the licensing model of OSFM as a major determining factor depends on the number of Dynamic Port licenses available in the communication systems to be monitored. This has the advantage that even smaller communication systems can be operated relatively cheaply with a mature fault management system.

Choice between "Full" and "OpenScape Business" packages:



package name	Features included	Features variable• OpenScape/HiPath 4000 Ports• OpenScape Voice Ports• Performance Management VoIP• Openscape Business Systeme• Host• System Management Advanced Monitoring• FM2FM Gateway SERVER2SERVER• Service Workbench• Redundanz License		
Full Installation	<ul> <li>Base System for installation</li> <li>500x Hosts</li> <li>5x System Management Advanced Monitoring</li> <li>Service Workbench Base</li> <li>2x Service Workbench Ticket Agents</li> </ul>			
OpenScape Business	<ul> <li>Base System for installation</li> <li>1x OpenScape Business System</li> <li>1x Host</li> <li>1x System Management/ Advanced Monitoring</li> </ul>	Not possible!		
DEMO 7 days	<ul> <li>Base System for installation</li> <li>10000x Port for OS3K/4K/Voice</li> <li>100x OS Voice VoiP Endpoint</li> <li>5x OpenScape Business System</li> <li>5x Advanced Monitoring</li> <li>250 x Hosts</li> <li>2 xServiceDesk Agents</li> <li>1x SERVER2SERVER Master 2x Slave</li> </ul>	Not possible!		
DEMO 90 days	<ul> <li>Base System for installation</li> <li>10000x Port for OS3K/4K/Voice</li> <li>100x OS Voice VoiP Endpoint</li> <li>5x OpenScape Business System</li> <li>5x Advanced Monitoring</li> <li>250 x Hosts</li> <li>5 xServiceDesk Agents</li> <li>1x SERVER2SERVER Master 2x Slave</li> </ul>	Not possible!		

# Variable: FM Port license

Example for FM port licenses: A network of two OS 4k and one OSV shall be monitored.

- OS 4K 1 = 800 flex licenses
- OS 4k 2 = 1200 flex licenses
- OS Voice = 3000 dynamic + 500 mobile licenses

#### Sum = 5500 FM+Port Lizenzen in addition to the fixed "Full" license

With this licensing, all communication systems can be monitored (three of the five System Management licenses are assigned to the two OS4K and the OSV system,). In this case, two system management licenses are free for other servers. If, for example, a UC server, a management server, an Xpert server and a VMware monitoring system are used, 2 additional system management licenses must be ordered in this case.



# Variable: FM IP node for hosts

IP node licenses are required for each IP device to be monitored by OSFM. An IP node license allows you to monitor a network element based on ICMP ("ping") and the standard MIB2. This allows basic status information such as "on / off", or "reachable / not reachable" to be displayed. can be determined. Up to 500 IP nodes can be monitored via SNMP-MIB2 and ICMP with the basic license. If a complete SNMP management/monitoring based on any MIBs is desired, this requires the use of one FM system management license per system.

## Variable: FM System Management Licenses for Advanced Monitoring

An FM system management license is required for complete monitoring and management of IP devices. This allows you to monitor any type of server, including VMware. Monitoring includes CPU utilization related to each process, memory utilization, disk space, network traffic, etc. one. Hardware parameters such as temperature, etc. can also be set. can be monitored. The FM basic package already includes 5 system management licenses. A system management license covers the monitoring of an IP node via SNMP using any Enterprise MIBs or FM's own system management agent. It does not matter whether an IP node is monitored via SNMP, the FM system management agent or both simultaneously.

## Variable: FM2FM Gateway licenses for multiple centrally managed OSFM servers

An FM2FM license is required if FM is to be used distributed in different network locations and a hierarchical management is to be established. One or more FM slave systems are connected to one FM master system. Reasons for this can be scaling aspects as well as location-related rights assignments. The total number of FM port licenses does not need to be changed when using FM2FM licenses.

FOR EXAMPLE: you can manage a complete network of 10,000 ports with multiple FM slave systems to which the port licenses are distributed as needed. One license per FM slave is required. The FM master requires a Master Manager license.

Example: One customer has three locations with one OS4K each with 200 ports each. An FM slave is to be operated at two locations. An FM master is to be operated at the main site, to which the two slaves are connected. The following licenses are required:

- 600 port licenses these are distributed to the two slaves and the master, which simultaneously monitors the OS4K at the main site.
- 3x base-license (2 Slaves, 1 Master)
- > 1x Master Manager license (package contains 1x Slave license)
- 1x additional slave



OSFM – ESSENTIALS

# Variable: FM Workbench Ticket Agent licenses for ticket system (support and assets)

Two ticket agents (users) are included in the basic FM license. If more than two users are to have access in order to work with the ticket management of the Workbench, licenses must be used for these additional ticket agents.

## Variable: Performance Management licenses for VoIP Phones

Performance Management is an additional option for OSFM. Before Performance Management can be used, the FM system must be correctly licensed for error monitoring. The correct number of FM port licenses must be available.

For performance management, an additional basic license and performance management port licenses must be scheduled. A performance management port license is required for each IP device to be monitored for VoIP quality. It is not necessary to procure performance management port licenses for all IP endpoints. The number of performance management port licenses can also be smaller than the number of FM ports. As an example: Only 20% of all IP endpoints should be permanently monitored for VoIP quality. Configuration in FM and integration with DLS ensures that only 20% of IP endpoints deliver QoS data.

KEEP IN MIND: The number of PM licenses may not and cannot be LARGER than the number of FM ports.

## Variable: Redundancy Licenses

If it is necessary to run fault management in a hot standby mode on another server, ensure that this server has the correct number of redundancy licenses. Not every FM license is also available as a redundancy license. is required as a redundancy license.



## **License calculator**

Technology	To count		
OpenScape 3000	Ports		
OpenScape 4000	Ports		
OpenScape Voice	Ports		
OpenScape VoIP Phones for QoS	VoIP Endpoints		
OpenScape Business	OSB-Systems		
Hosts (added to OSFM)	Hosts (IP Nodes)		
Advanced Monitoring	Hosts (IP Nodes)		
FM2FM	Master und Slaves		
Service Workbench	Agents		



# A sample calculation:

The following technologies are to be monitored:

- > OpenScape 4000 = 1x Manager, 1x Cluster, 3000x Phone
- > OpenScape Voice = 1x Assistant, 1x OSV Cluster, 1500x VoIP Phone
- OpenScape Branch = 50x Branch
- OpenScape misc. = 1x Xpression Server, 1x Xpert Server
- > Network: 50x Switch, 13x Windows Server

Component	FM Base	FM Port	FM IP Node	A. Monitoring	PM Port
<b>OpenScape 4000</b> 1x Manager, 3xNode A+B+Q 1x PBX, 3x Frames, 3000 Telephones	1	3000	8		
<b>OpenScape Voice</b> Node A+B, Assistent UC, 1500 Telephones VoIP	1	1500	3	3	1500
50x OpenScape Branch SBC			50	50 (Channelmonit oring)	
50x Switches / Router			50		
15x Windows Server Xpression, XPert, etc.			15	15	
SUM	2	4500	126	68	1500
covered in Base license	1	0	500	5	0
to order	1	4500	0	63	1500

## **Request Unify licenses for the CLA**

In order to calculate the license for OSFM servers, the ordered OpenScape Fault Management license modules as well as the details of the ports, number of IP nodes and number of system management nodes together with the License Authorization Code (=LAC) are transferred to the license server CLS. After logging on to the license server, you can enter the LAC's and the locking ID (MAC address for native environment or Advanced Locking ID for virtual environment) to generate a license key for this installation.

The license key generated in the CLS license server is required for commissioning OpenScape Fault Management. This is imported into the Customer License Agent (CLA). OSFM Server connects to the CLA to retrieve the valid licenses from CLA.

The URL to the license server is:



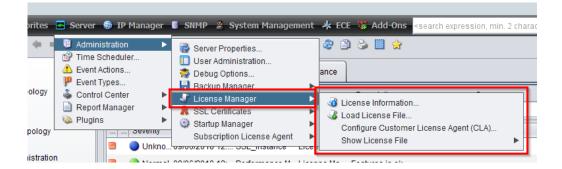
https://www.central-license-server.com/license-management/session/login.htm

## **Managing licenses with OSFM**

- OSFM asks CLA = valid license from UNIFY license server, the server starts
- > OSFM asks CLA = without valid license, it starts the 90-day demo version
- > OSFM asks CLA = no answer/valid (demo) license, OSFM Server does NOT start!
- > No specification of a CLA (configuration of the CLA remains empty), it starts the 7-day demo.
- > Developer license (user-defined) in the file "../server/conf/license.txt".

From the Administration CLIENT  $\rightarrow$  License Manager you can:

- inspect and check
- Ioad a file (developer license only!)
- specify a different CLA.



IMPORTANT: If the number of licenses is exceeded, the OSFM server generates warnings in the form of events. Upon expiry of a period of time features will be disabled.