# SES Server: Technical Reference Handbook

By The REUSE Company

Manage the SES ENGINEERING Studio Tool users, databases and Systems Engineering Suite high level configuration with the power and the simplicity of The REUSE Company Suite







# SES SERVER: TECHNICAL REFERENCE HANDBOOK

The REUSE Company

2025 Edition



# SES SERVER: TECHNICAL REFERENCE HANDBOOK

Version 2.5

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## **Changes History:**

Version	Date	Changes			
1.0	October 2019	Initial version			
1.1	November 2019	Added TRC DB Proxy option			
1.2	February 2020	Added TRC DB Proxy connector options.			
1.3	April 2021	New version for v18.5			
1.4	September 2021	New Flex version update			
2.0	January 2022	New version for v22			
2.1	March 2022	JDK version			
2.2	July 2022	New version 22.2.1 – FlexNet update			
2.3	August 2023	New version v23			
2.4	April 2024	New version v23.3			
2.5	December 2024	New version v23.4			

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# 1 Architecture & Deployment

This document applies to the 23.4.3 version of the product.

# 1.1 Applications Composing Systems Engineering Suite (SES)

The Systems Engineering Suite (SES) comprises these applications:

- SES Server: the tool for the administrative process of the suite. It includes:
  - Quality Database configuration
  - o SES Service
  - o RQA Batch: batch process for automatic assessment
- SES ENGINEERING Studio: This tool is designed to group all Engineering Suite capabilities using only one interface. It includes:
  - Quality Management Capability
  - V&V Management Capability
  - TRACEABILITY Studio Capability
- KM KNOWLEDGE Manager: the tool to manage the ontology.
- KM Online KNOWLEDGE Manager: the tool to manage the ontology online.
  - Needs the KM Online Backend component.
- RAT plugin for Google Chrome, Microsoft Edge, and Mozilla Firefox enables RAT on top of any web application that manages requirements.
  - Needs the RAT API Backend component.

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The different deployment components are described in detail below:

- **SES ENGINEERING Studio** works as a standard application. allows any systems engineer to manage different types of workproducts. From goals and high-level requirements to system or subsystem requirements, risks, verification actions
- **QUALITY Management Capability** is a feature inside SES ENGINEERING Studio. It connects to a SE workproduct through its SE Tool and configures the quality metrics and generates the quality assessment.
- V&V Management Capability is a feature inside SES ENGINEERING Studio. It
  has been designed to cover the verification and validation processes, allowing
  the users to design and develop their own verification and validation (V&V)
  actions, using different techniques and methods, including automatic rules that
  help the users in the V&V tasks.

- TRACEABILITY Management Capability is a feature inside SES ENGINEERING Studio. It connects many SE workproducts to different SE Tools and, discovers and manages the traceability links among them.
- **RAT plugin** is a plugin available in Chrome, Edge, and Firefox that enables to perform authoring in the same way performed inside ENGINEERING Studio, but on top of the web application of SE Tools.
- **RAT API Backend** is the server-side part of the RAT authoring capabilities enable for any web browser.
- **KM KNOWLEDGE Manager** works as a standard application. It connects and manages a relational database where the ontology information is available.
- **KM KNOWLEDGE Manager Online** is the web version of the KM Knowledge Manager. Manages a relational database where the ontology information is available.
- **KM KNOWLEDGE Manager Online Backend** is the backend version of the KM Knowledge Manager Online.
- **SES Server** is a tool and a service, whose role is to gather all settings needed to configure the SES ENGINEERING Studio and to avoid configuring them individually at each workstation installation.
- **RQA Batch** is a console application managed by the SES Server, responsible for launching the off-line quality assessment.
- The **Flex License Server** is necessary for the licensing system. The **TRC licensing daemon** must be added on top of it. They all must be installed on the same server.
- A Relational Database is necessary to manage all the information and data. The tool can work with MS Access, MS SQL Server, and MySQL.
- Finally, optionally, the **Ontology database proxy** can be included in the deployment architecture to act as intermediate between the ontology database and the client applications (SES ENGINEERING Studio and KNOWLEDDGE Manager) to match deployment restrictions that may enforce not to query directly from the client applications to the ontology database.

All of them must be installed on top of Windows OS, except for the Ontology Databases which can run in other OS, provided that they are compliant with the Database Management System compatibilities expressed in the description above.

## 1.2 Network Communications

The communication among the different tools can follow two different approaches in regards of the connectivity to the ontology database:

- 1. Client / Server traditional connections, the client tools (SES ENGINEERING Studio) connect directly to the ontology database.
- 2. The clients retrieve the information from the ontology database using a proxy.

In the following sections the network communications will be explained in detail for both models.

#### 1.2.1 Network Communications (Client/Server No Proxy)

The communication among the different tools and the RM Server (Requirement Management Server) follows the flow stated below:



FIGURE 2

Information being transferred in each communication.

All communications are done with a ciphered RSA encryption to share information in both directions. Once received, the information is decrypted, processed, encrypted, and sent back. All communications are secured using HTTPS protocol.

The information being transferred in every transaction described in Figure 2 is as follows:

ID	SESS-1	SESS-2	SESS-3
Туре	FlexLM Server	TRC Vendor Daemon	Ontology Database Access
Source	SES Server.exe	SES Server.exe	SES Server.exe
Target	Lmadmin Service	FLEXTRC.exe	Database Service
Ports	Range of 27000-27009	Auto Set	<b>SQL Server:</b> 1433 <b>MySQL:</b> 3306
Protocol	TCP/IP	TCP/IP	TCP/IP
Information provided	MAC address	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database.
Information received	License server reachable Y/N License available Y/N	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The database provides the content of the ontology to the client application

1.2.1.1 SES Server communication flows

#### 1.2.1.2 KNOWLEDGE Manager communication flows

Flow ID	ID KM-1 KM-2		KM-3				
Flow type	FlexLM Server	TRC Vendor Daemon	Ontology Database Access				
Source	KNOWLEDGE Manager.exe	KNOWI					
Target	Lmadmin Service	FLEXTRC.exe	Database Service				
Port(s)	Range of 27000- 27009	Auto Set	<b>SQL Server:</b> 1433 <b>MySQL:</b> 3306				
Protocol	TCP/IP	TCP/IP	TCP/IP				
Information provided	MAC address	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database.				
Information received	License server reachable Y/N License available Y/N	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The database provides the content of the ontology to the client application				

1.2.1.3 KNOWLEDGE N	Manager Online	communication flows
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1.2.1.3 KNOW	OWLEDGE Manager Online communication flows					
Flow ID	KMO-1	KMO-2	KMO-3	KMO-4		
Flow type	FlexLM Server	TRC Vendor Daemon	Ontology Database Access	Web Request		
Source	KM Online Backend	KM Online Backend	KM Online Backend	Internet Browser		
Target	Lmadmin Service	FLEXTRC.exe	Database Service	KMO Backend		
Port(s)	Range of 27000-27009	Auto Set	<b>SQL Server:</b> 1433 <b>MySQL:</b> 3306	80, 443		
Protocol	TCP/IP	TCP/IP	TCP/IP	HTTP, HTTPS		
Information provided	MAC address	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database.	The Source send a Web Request against the provided URL where the KMO Website is listening to		
Information received	License server reachable Y/N License available Y/N	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The database provides the content of the ontology to the client application	The Angular SPA content to be displayed in an Internet browser		

1.2.1.4 SES Engineering Studio communication flows

Flow ID	ENG-1	ENG-2	ENG-3	ENG-4	ENG-5
Flow type	FlexLM Server	TRC Vendor Daemon	License and Ontology configuration	Ontology Database Access	RM Server Access
Source	SES ENGINEERING Studio.exe	SES ENGINEERING Studio.exe	SES ENGINEERING Studio.exe	SES ENGINEERING Studio.exe	SES ENGINEERING Studio.exe
Target	Lmadmin Service	FLEXTRC.exe	SES Server.exe	Database Service	RM Server Service
Port(s)	Range of 27000-27009	Auto Set	16555	<b>SQL Server:</b> 1433 <b>MySQL:</b> 3306	*
Protocol	TCP/IP	TCP/IP	HTTP	TCP/IP	*
Information provided	MAC address	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The source requests the HOSTNAME and Port of communication for License Server and Ontology Database	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database	The Source sends User and Password (AD or RM Tool credentials) to connect to the server.
Information received	License server reachable Y/N License available Y/N	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The source sends the HOSTNAME and Port of communication for License Server and Ontology Database	The database provides the content of the ontology to the client application	The RM Server sends back the requirements contained in the requested requirements document.

\* Depends on RM service

1.2.1.5 RAT API Backend communication flows

Flow ID	PLAT 1 PLAT 2 PLAT 2 PLAT 2 PLAT 4				
Flow type	RAT-1 FlexLM Server	RAT-2 TRC Vendor Daemon	RAT-3 Ontology Database Access	RAT-4 Web Request Using the RAT Api plugin for Chrome, Firefox, or Edge	
Source	RAT API Backend	RAT API Backend	RAT API Backend	Internet Browser	
Target	Lmadmin Service	FLEXTRC.exe	Database Service	RAT API Backend	
Port(s)	Range of 27000-27009	Auto Set	<b>SQL Server:</b> 1433 <b>MySQL:</b> 3306	80, 443	
Protocol	TCP/IP	TCP/IP	TCP/IP	HTTP, HTTPS	
Information provided	MAC address	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database.	The Source send a Web Request against the provided URL where the KMO Website is listening to	
Information received	License server reachable Y/N License available Y/N	Same as FlexLM Server. Used as communication bridge between Flexera and SES applications	The database provides the content of the ontology to the client application	The Angular SPA content to be displayed in an Internet browser	

### 1.2.2 Network Communications (Using Ontology Database Proxy)

The communication among the different tools is exactly the same as in the previous scenario, the only difference is that instead of the Ontology Server there is the Proxy tool, and the Proxy is the only tool that communicates with the Ontology.



FIGURE 3

Flow ID	PXY-1	SESS-3	KM-3	KMO-3	ENG-4	RAT-3
Flow type	Ontology Database Access	Ontology Database Access	Ontology Database Access	Ontology Database Access	Ontology Database Access	Ontology Database Access
Source	Proxy	SES Server.exe	KNOWLEDGE Manager.exe	KM Online Backend	SES ENGINEERING Studio.exe	RAT API Backend
Target	Database Service		Proxy	Proxy	Proxy	Proxy
Port(s)	SQL Server: 1433 MySQL: 3306	Set in the proxy				
Protocol	TCP/IP	HTTP / HTTPS				
Information provided	1	The Source sends User and Password (AD or SQL credentials) to connect to the Ontology Database through the Proxy.				
Information received	2	The Proxy provides the content of the ontology to the client application.				

Proxy communication flows:

## 1.3 Deployment Scenarios

This architecture can be deployed in multiple ways depending on the installation goals, such as stand-alone installation, demonstrations, single user, proof of concept project, integration environment, production environment, etc., along with other policies such as the use of a database proxy.

The next epigraph will show the most typical deployment scenarios depending on those goals:

- Stand-alone installation / demo installation for laptops: it's recommended
- to install every piece of software of the suite on the laptop.

<sup>&</sup>lt;sup>1</sup> The Proxy sends User and Password (AD or SQL credentials) received in its requests to connect to the Ontology Database.

<sup>&</sup>lt;sup>2</sup> The database provides the content of the ontology to the proxy.





• **Stand-alone (Virtualized):** with the same approach as the stand-alone installation but having all the components in a virtualized environment or in an isolated server with Remote Desktop (RDP) Access only. This option would also be advised for non-Windows computers, as they can connect to a Virtualized Windows environment and use the tools.



FIGURE 5

 Production Deployment 1: The components are installed on different computers depending on their role: Clients, Server. For this type of configuration, it is required to have internet and ports communications enabled, as there is communication between several computers. Optionally, the client and/or server tools can also be segregated in different workstations.





 Production Deployment 2 (Virtualized): Similar to the previous configuration, all the components can be separated by role, but with the server components on a Virtual environment. Optionally, the Client side of the tools can be isolated on a different virtualized environment, as long as both virtualizations can interact with each other.



FIGURE 7

### 1.3.1 Considerations regarding KMO Backend installation with Active Directory

To enable Single Sign-On on KMO, the server where KMO backend is deployed on top of an Internet Information Server (IIS) must belong to the domain where the Single Sign-On users are.

The additional prerequisite is that the Active Directory (AD) controller of the domain must trust KMO backend server. To achieve this, the following set of ports and protocols must be opened in between them:

Protocol	Port(s)	AD and AD DS Usage	Type of traffic
ТСР	25	Replication	SMTP
TCP and UDP	42		WINS, Windows Naming Service
TCP and UDP	53	User and Computer Authentication, Name Resolution, Trusts	DNS
UDP	67 <sup>3</sup>	DHCP	DHCP, MADCAP
TCP and UDP	88	User and Computer Authentication, Forest Level Trusts	Kerberos
UDP	123	Windows Time, Trusts	Windows Time
ТСР	135	Replication	RPC, EPM
UDP	137	User and Computer Authentication	NetLogon, NetBIOS Name Resolution
UDP	138	DFS, Group Policy	DFSN, NetLogon, NetBIOS Datagram Service
ТСР	139	User and Computer Authentication, Replication	DFSN, NetBIOS Session Service, NetLogon
TCP and UDP	389	Directory, Replication, User and Computer Authentication, Group Policy, Trusts	LDAP
TCP and UDP	445	Replication, User and Computer Authentication, Group Policy, Trusts	SMB, CIFS, SMB2, DFSN, LSARPC, NbtSS, NetLogonR, SamR, SrvSvc

<sup>3</sup> DHCP is not a core AD DS service, but it is often present in many AD DS deployments.

TCP and UDP	464	Replication, User and Computer Authentication, Trusts	Kerberos change/set password	
ТСР	636	Directory, Replication, User and Computer Authentication, Group Policy, Trusts	LDAP SSL	
UDP	2535 <sup>4</sup>	DHCP	DHCP, MADCAP	
ТСР	3268	Directory, Replication, User and Computer Authentication, Group Policy, Trusts	LDAP GC	
ТСР	3269	Directory, Replication, User and Computer Authentication, Group Policy, Trusts	LDAP GC SSL	
ТСР	5722	File Replication	RPC, DFSR (SYSVOL)	
ТСР	9389	AD DS Web Services	SOAP	
UDP	Dynamic	Group Policy	DCOM, RPC, EPM	
ТСР	Dynamic	Replication, User and Computer Authentication, Group Policy, Trusts	RPC, DCOM, EPM, DRSUAPI, NetLogonR, SamR, FRS	
Source: Active Directory and Active Directory Domain Services Port Requirements				

Source: Active Directory and Active Directory Domain Services Port Requirements

<sup>&</sup>lt;sup>4</sup> DHCP is not a core AD DS service, but it is often present in many AD DS deployments.

# 2 Hardware & Software Requirements

## 2.1 Recommended Specifications

#### \* Version compatibility as of date: December 2024

#### 2.1.1 Stand-alone / Demo deployment

Operating System	Processor
Windows <sup>®</sup> 11 64-bit or later*	Num cores: 8
Windows 2019 / 2022 Server 64 bit or	
later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation
Internet	Resolution
Broadband internet connection	1920x1080 minimum display resolution
Components	Ontologies
.NET Framework 4.8	MS SQL Server 2019 or later*
FlexLM 11.19.4 (requires Java JDK 8 to 15)	MySQL 8.0 or later*
TRC Vendor Daemon	Microsoft Access 365
Microsoft C++ Runtime 2015-2022 Redist.	
Work product tools	Virtualization Environments
Microsoft Office 365	CITRIX version 7 or later*
IBM Rational DOORS 8.3 to 9.7	VMWare version 12 or later*
PTC Windchill 13	Microsoft Azure
CATIA Reqtify 14, 15 and 16	Amazon Web Services (AWS)
Visure Requirements 4.0 to 4.6	
IBM Jazz DOORS Next Generation 7.0.2	
IBM Rhapsody 9	

## 2.1.2 Production deployment

#### 2.1.2.1 SES Server

Operating System	Processor
Windows® 10 64-bit or later*	Num cores: 8
Windows 2019 / 2022 Server 64 bit or	
later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation (Recommended 512 GB
	hard disk drive in RAID)
Internet	
Broadband internet connection	
Components	Virtualization Environments
.NET Framework 4.8	CITRIX version 7 or later*
	VMWare version 12 or later*
	Microsoft Azure
	Amazon Web Services (AWS)

#### 2.1.2.2 Licensing server

Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 8
Windows 2019 / 2022 Server 64 bit or	
later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation (Recommended 512 GB
	hard disk drive in RAID)
Internet	
Broadband internet connection	
Components	
FlexLM 11.19.4 (requires Java JDK 8 to 15)	
TRC Vendor Daemon	
Microsoft C++ Runtime 2015-2022 Redist.	

2.1.2.3 Ontology	
Operating System	Processor
Windows® 10 64-bit or later*	Num cores: 8
Windows 2019 / 2022 Server 64 bit or	
later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation (Recommended 512 GB
	hard disk drive in RAID)
Internet	Ontologies
Broadband internet connection	MS SQL Server 2019 or later*
	MySQL 8.0 or later*
	Virtualization Environments
	CITRIX version 7 or later*
	VMWare version 12 or later*
	Microsoft Azure
	Amazon Web Services (AWS)

2.1.2.4 KMO Backend / RAT API Backend		
Processor		
Num cores: 8		
Storage		
50 GB hard disk drive empty space after		
the installation (Recommended 512 GB		
hard disk drive in RAID)		
Internet Information Services (IIS) 7.0 or later*		
Microsoft ASP.NET Core 7.0.20 Shared Framework		
Microsoft .NET 7.0.20 Windows Server Hosting		
20		

#### 2.1.2.5 SES ENGINEERING Studio / KNOWLEDGE Manager

2.1.2.5 SES EINGINEERING SLUGIO / KINOW	
Operating System	Processor
Windows® 10 64-bit or later*	Num cores: 8
Windows 2016 / 2019 Server 64 bit or	
later*	
Memory	Storage
32 GB RAM	20 GB hard disk drive empty space after the installation
Internet	Resolution
Broadband internet connection	1920x1080 minimum display resolution
Components	Work product tools
.NET Framework 4.8	Microsoft Office 365
Microsoft C++ Runtime 2015-2022 Redist.	IBM Rational DOORS 8.3 to 9.7
	PTC Windchill 13
	CATIA Reqtify 14, 15 and 16
	Visure Requirements 4.0 to 4.6
	IBM Jazz DOORS Next Generation 7.0.2
	IBM Rhapsody 9
Virtualization Environments	
CITRIX version 7	Amazon Web Services (AWS)
VMWare version 12	Microsoft Azure
2.1.2.6 KM Online / RAT Plugin for Chron	ne, Edge, or Firefox
Operating System	Processor
Windows® 10 64-bit or later*	Num cores: 8
Windows 2016 / 2019 Server 64 bit or	
later*	
Memory	
32 GB RAM	
	Resolution
	1920x1080 minimum display resolution
Components	
Microsoft Edge	
Google Chrome	
Mozilla Firefox	

## 2.2 Minimum Specifications

#### \* Version compatibility as of date: December 2024

## 2.2.1 Stand-alone / Demo deployment

Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 4
Windows 2016 / 2019 / 2022 Server 64 bit	
or later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation (Recommended 500 GB
	hard disk drive in RAID)
Internet	Resolution
Broadband internet connection	1920x1080 minimum display resolution
Components	Ontologies
.NET Framework 4.8	MS SQL Server 2019 or later*
FlexLM 11.19.4 (requires Java JDK 8 to 15)	MySQL 8.0 or later*
TRC Vendor Daemon	Microsoft Access 365
Microsoft C++ Runtime 2015-2022 Redist.	
Work product tools	Virtualization Environments
Microsoft Office 365	CITRIX version 7 or later*
IBM Rational DOORS 8.3 to 9.7	VMWare version 12 or later*
PTC Windchill 13	Microsoft Azure
CATIA Reqtify 14, 15 and 16	Amazon Web Services (AWS)
Visure Requirements 4.0 to 4.6	
IBM Jazz DOORS Next Generation 7.0.2	
IBM Rhapsody 9	

## 2.2.2 Production deployment

#### 2.2.2.1 SES server

Operating System	Processor
Windows® 10 64-bit or later* Windows 2016 / 2019 / 2022 Server 64 bit or later*	Num cores: 4
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after the installation (Recommended 512 GB hard disk drive in RAID)
Internet	
Broadband internet connection	
Components	Virtualization Environments
.NET Framework 4.8	CITRIX version 6.5
	VMWare version 5
	Microsoft Azure
	Amazon Web Services (AWS)

#### 2.2.2.2 Licensing server

Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 4
Windows 2016 / 2019 / 2022 Server 64 bit or later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after the installation (Recommended 512 GB hard disk drive in RAID)
Internet	
Broadband internet connection	
Components	
FlexLM 11.19.4 (requires Java JDK 8 to 15) TRC Vendor Daemon Microsoft C++ Runtime 2015-2022 Redist.	

2.2.2.3 Ontology	
Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 4
Windows 2016 / 2019 / 2022 Server 64	
bit or later*	
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after the installation (Recommended 512 GE hard disk drive in RAID)
Internet	Ontologies
Broadband internet connection	MS SQL Server 2014 to 2019 or later* MySQL 8.0 or later*
2.2.2.4 KMO Backend / RAT API Backen	d
Operating System	Processor
Windows® 10 64-bit or later* Windows 2019 / 2022 Server 64 bit or later*	Num cores: 8
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space afte the installation (Recommended 512 GB hard disk drive in RAID)
Internet	
Broadband internet connection	
Components	
.NET Framework 4.8	
Internet Information Services (IIS) 7.0 or la	ater*
Microsoft ASP.NET Core 7.0.20 Shared Fra	amework
Microsoft .NET 7.0.20 Windows Server Ho	sting

Microsoft Windows Desktop Runtime 7.0.20

#### 2.2.2.5 SES ENGINEERING Studio / KNOWLEDGE Manager

Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 4
Memory	Storage
16 GB RAM	20 GB hard disk drive empty space after
	the installation
Internet	Resolution
Broadband internet connection	1920x1080 minimum display resolution
Components	Work product tools
.NET Framework 4.8	Microsoft Office 365
Microsoft C++ Runtime 2015-2022 Redist.	IBM Rational DOORS 8.3 to 9.7
	PTC Windchill 13
	CATIA Reqtify 14, 15 and 16
	Visure Requirements 4.0 to 4.6
	IBM Jazz DOORS Next Generation 7.0.2
	IBM Rhapsody 9
Virtualization Environments	
CITRIX version 7 or later*	
VMWare version 12 or later*	
Amazon Web Services (AWS)	
Microsoft Azure	
2.2.2.6 KM Online / RAT Plugin for Chron	ne, Edge, or Firefox
Operating System	Processor
Windows <sup>®</sup> 10 64-bit or later*	Num cores: 4
Memory	
16 GB RAM	
Internet	Resolution
Broadband internet connection	1920x1080 minimum display resolution
Components	
Microsoft Edge	
Google Chrome	
Mozilla Firefox	

## 2.3 Compatible Database Management Systems

The Systems Engineering Suite (SES) relies on working with an Ontology Database, which can be held in different database management systems (DBMS) such as:





- MySQL: MySQL is a full-featured relational database management system (RDBMS) that competes with the likes of Oracle DB and Microsoft's SQL Server. MySQL is sponsored by the Swedish company MySQL AB, which is owned by Oracle Corp.
- Microsoft SQL Server: Microsoft SQL Server is a relational database management system developed by Microsoft.
- Microsoft Office ACCESS: Microsoft Access is a pseudo-relational database engine from Microsoft. It is part of the Microsoft Office suite of applications that also includes Word, Outlook, and Excel, among others.

## 2.4 Known Incompatibilities

We are aware of the following incompatibilities with other tools and formats:

• There is an incompatibility of our Software with .Net Monitoring tools such as Dynatrace, as these kind of applications blocks the execution of our software.

# 3 Licensing Guide

## 3.1 Introduction

This guide will assist you on how to download and install the FlexLM License Service needed for the Systems Engineering Suite licensing as well as some Troubleshooting steps to guide you on how to solve the issues you may have.

## 3.2 Licensing Applications

Systems Engineering Suite (SES) uses licenses based on the FlexLM licensing system for each of its products.

There are two different commercial models, depending on customer needs, for licensing the Suite:

- The first model is the **yearly subscription**, where the suite tools are licensed for a year. Updates can be downloaded while the subscription is active.
- The second model is **the perpetual model**. In it, the tools, once purchased, are licensed forever; together with a one-year Support & Maintenance (S&M) contract. While S&M active updates can be downloaded from TRC website, it is also possible to extend the S&M contract after the first one.

For both models, FlexLM allows you to have two different types of licenses:

- **Nodelocked**: The license can only be executed in a given machine as many times as needed.
- **Floating**: the license can be executed in some machines at the same time, provided that the number of concurrent instances of the application does not exceed the maximum number of available licenses for the application.

For more details about these models and the price list, please contact us at <u>sales@reusecompany.com</u>. This guide will explain to you how to install the three of them and to ask for a license key.

In any of these models, there are two pieces of the Systems Engineering Suite (FlexLM License Server and the TRC Vendor Daemon) that must be installed on the same server and should run a Windows Server operating system.

### 3.2.1 Installation

#### 3.2.1.1 Downloads

First, download the Flex License Server (tagged as FlexLM Server in the download page) and the TRC Vendor Daemon from the TRC website.

Use your browser to access <u>https://resources.reusecompany.com/downloads</u> and find there the version of the product licensed. Ask our support service if you need help to find it.

#### 3.2.1.2 Flex License Server

Once the Flex License Server has been downloaded, execute the Flex License Server installer (file name: Imadmin-x64) with administrator rights. This document will guide you through the different steps of the installation wizard.

LaunchAn	ywhere Error	×
8	Could not find a valid Java virtual machine to load. You may need to reinstall a supported Java virtual machine.	
	ОК	

FIGURE 9

If this error message appears while installing the Flex License Server tool, it indicates that no Java installation has been found in the system.

The Flex License Server documentation indicates that **Java Runtime Environment** (JRE) or **Java Development Kit (JDK)** from **version 11 to 23** is needed.

There are several options to fulfil this requisite:

- The official Oracle Java JRE and JDK
- <u>Amazon Corretto</u>: a no-cost, multiplatform, production-ready distribution of OpenJDK by Amazon.
- <u>Eclipse Temurin</u>, formerly known as AdoptOpenJDK: is the OpenJDK distribution by Adoptium Working Group.
- There can be or appear other OpenJDK distributions that might support this requisite.

The official Oracle Java JRE and JDK can be downloaded from the <u>Oracle website</u>. We recommend <u>JDK 11.0.13</u> and using the <u>Windows x64 download link</u>.
Any official Oracle JRE or JDK version download will require to create an account in the Oracle cloud, just follow the instructions provided in the Oracle web to do so, it's free and it only requires a valid email address.

If you don't want to register on the Oracle cloud, any other OpenJDK distribution compatible with Java version 11 to 23 can be useful. If after installing such version of the OpenJDK alternative distribution, the Flex License Server installer is launched and its installation wizard appears, it means that such version of the OpenJDK distribution installed is valid, if it does not appear, then you have to uninstall such version of OpenJDK of that distribution and look for another version that is compatible.

A table of compatibility as April 2024 of those mentioned alternative OpenJDK distribution is shown in the following sections.

If the error does not appear, means that you have a valid JRE or JDK, just skip the following section and go to the next section: 3.2.1.2.4.

3.2.1.2.1 INSTALLATION OF THE JDK 11.0.3 FROM ORACLE WEBSITE First of all, click on *the Create Account* button:



Then provide the information required with a valid email address and a suitable password matching the rules shown on the form. Finally, fill in any other information and click on the *Create Account* button.

C	reate Your Ora	cle Ac	count
	Already have an Oracle	Account? Sig	in In
Email Address*			Your email address is your username.
Password *			Passwords must have upper and lower case letters, at least 1 number and special character, not match or contain email, and be
Retype password *			at least 8 characters long.
Country *	Spain	~	
Name*	First or Given Name	Last N	lame
Job Title*			
Work Phone *			
Company Name*			
Address*			
City*			
ZIP/Postal Code*			
	Send me marketing communication of all marketing communications of all marketing communicating communicating communications of		
	By clicking on the "Create Account" use of Oracle's web site is subject to regarding Oracle's collection and up information about access, retention transfers and other topics, is availa Create Account	o the <u>Oracle.cor</u> se of your perso n, rectification,	n Terms of Use. Additional details mal information, including deletion, security, cross-border

FIGURE 11

An email will be sent to the address provided on the form and a confirmation page will be displayed.



FIGURE 12

Open your inbox and you will find it. Inside the text of the email there will be a button with the title *Verify your email address*. Click on it.



FIGURE 13

An Internet browser will be opened showing that the validation has been successfully performed. Just click on the *Continue* button.



FIGURE 14

Then, try the <u>Windows x64 download link</u> again, the login webpage will be prompted again in a new Internet browser explorer (or tab).

Just provide the username and password provided on the registration from and click on "Sign in". The download shall start immediately.



Then the binary file will be ready on your download folder, just execute it.

The following wizard will appear to gather all the necessary input parameters.

• Welcome window: just click on the *Next* button.





• Destination folder: if the default destination folder is not suitable, please select another one by clicking on the Change button, otherwise leave it as it is. Then, click on the *Next* button.

🛃 Java(TM) SE Development Kit 11.0.13 (64-bit) - Destination Folder	×
Java"	
Java(TM) SE Development Kit 11.0.13 (64-bit), including a private JRE and src.zip. This will require 420MB on your hard drive. Click the "Change" button to change the installation folder.	
Install Java(TM) SE Development Kit 11.0.13 (64-bit) to: C:\Program Files\Java\jdk-11.0.13\ Change	
Back Next Cancel	

FIGURE 17

• Progress window: this window will notify the progress of the installation; no action is required until it closes.

援 Java(TM)	SE Development Kit 11.0.13 (64-bit) - Progress —	$\times$
	NACIE .	
Status:	Extracting Installer	



• Complete window: this window will show the result of the installation process, hopefully it finishes successfully, then just click on the *Close* button.

🛃 Java(TM) SE Development Kit 11.0.13 (64-bit) - Complete	×
Java(TM) SE Development Kit 11.0.13 (64-bit) Successfully Installed	
Click Next Steps to access tutorials, API documentation, developer guides, release notes and more to help you get started with the JDK. Next Steps	
Close	

FIGURE 19

Finally, we are ready to run the Flex installation again once done.

3.2.1.2.2 INSTALLATION OF THE JDK FROM AMAZON CORRETTO (WINDOWS X64) Amazon Corretto – Table of compatibility as December 2024.

Version	Latest release	Compatibility	Previous releases compatibility
V22	22.0.0.36.2	Not compatible	Not compatible in any release
V21	21.0.2.13.1	Not compatible	Not compatible in any release
V17	17.0.10.7.1	Not compatible	Compatible until <u>17.0.7.7.1</u>
V11	11.0.22.7.1	Not compatible	Compatible until <u>11.0.19.7.1</u>
V8	8.402.08.1	Compatible	Download link

After download, the selected compatible version of Amazon Corretto, just install it by double clicking on the installation file package.

The following wizard will appear to gather all the necessary input parameters.

• Welcome window: just click on the *Next* button.



FIGURE 20

• Custom setup: if the default destination folder is not suitable, please select another one by clicking on the Change button, otherwise leave it as it is. Then, click on the *Next* button.

🔁 Amazon Corretto 8 (x64) Setup	- 🗆 X
Custom Setup Select the way you want features to be installed.	a
Click the icons in the tree below to change the way f	eatures will be installed.
Setup Environment	Amazon Corretto JDK 8 distribution
	This feature requires 321MB on your hard drive.
Location: C:\Program Files\Amazon Corret	browse
Reset Disk Usage	Back Next Cancel

FIGURE 21

• Ready to install window: this window is the last step before installation, just click on the *Install* button.

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FIGURE 22

• Progress window: this window will notify the progress of the installation; no action is required until it closes.

9	Amazon Corretto 8 (x64) Setup			-		×
	Installing Amazon Corretto 8 (x64)				a	
	Please wait while the Setup Wizard installs Amazon (	Corretto 8 (	x64).			
	Status: Updating component registration					
		Back	Next		Cano	el



• Complete window: this window will show the result of the installation process, hopefully it finishes successfully, then just click on the *Finish* button.



FIGURE 24

Finally, we are ready to run the Flex installation again once done.

Eclipse Temurin – Table of compatibility as December 2024.					
Version	Latest release	Compatibility	Previous releases compatibility		
<u>V22</u>	22+36	Not compatible	Not compatible in any release		
<u>V21</u>	21.0.2+13	Not compatible	Not compatible in any release		
<u>V20</u>	20.0.2+9	Not compatible	Version 20 compatible from release 20+36 until 20.0.1+9		
<u>V19</u>	19.0.2+7	Compatible			
<u>V18</u>	18.0.2.1+1	Compatible			
<u>V17</u>	17.0.10+7	Not compatible	Version 17 compatible from release <u>17.0.1+12 until 17.0.7+7</u>		
<u>V16</u>	16.0.2+7	Compatible			
<u>V11</u>	11.0.22+7	Not compatible	<u>Version 11 compatible from release</u> <u>11.0.12+7 until 11.0.19+7.</u> <u>Later* release 11 than 11.0.20+8;</u> <u>11.0.21+9; 11.0.22+7 are not</u> <u>compatible</u>		
<u>V8</u>	8.0.402+6	Compatible			

3.2.1.2.3 INSTALLATION OF THE JDK FROM ECLIPSE TEMURIN (WINDOWS X64) Eclipse Temurin – Table of compatibility as December 2024.

After download, the selected compatible version of Eclipse Temurin, just install it by double clicking on the installation file package.

The following wizard will appear to gather all the necessary input parameters.

• Welcome window: just click on the *Next* button.



FIGURE 25

• Custom setup: if the default destination folder is not suitable, please select another one by clicking on the Change button, otherwise leave it as it is. Then, click on the *Next* button.





• Ready to install window: this window is the last step before installation, just click on the *Install* button.



FIGURE 27

 Progress window: this window will notify the progress of the installation; no action is required until it closes.

🔁 Eclipse Temurin JRE with Hotspot 8u402-b0	)6 (x64) Setup		-		×
Installing Eclipse Temurin JRE with H	lotspot 8u402	2-b06 (x	54)		
Please wait while the Setup Wizard installs Ecli	pse Temurin JRE	with Hots	oot 8u402	2-b06 (x64	ł).
Status: Copying new files File: [1], Dire	ectory: [9], Size	: [6]			
	Back	Next		Cano	el



• Complete window: this window will show the result of the installation process, hopefully it finishes successfully, then just click on the *Finish* button.



FIGURE 29

Finally, we are ready to run the Flex installation again once done.

3.2.1.2.4 INSTALLATION OF FLEX LICENSE SERVICE

Once we have the valid JDK we can proceed to execute the Flex License Server installer.

Once launched the following wizard will guide you through the installation process gathering all the parameters needed.

• *Introduction*: this window will introduce all the actions to be performed while installing the FlexLM License Server application, please read the instructions and click on the *Next* button.



FIGURE 30

 Choose Install folder: In this window, you can select the location where the application is going to be installed. By default, it will be suggested to install the application in your "Program files". The pre-set value is "C:\Program Files\FlexNet Publisher 64-bit License Server Manager",

FlexNet Publisher License Serve	r Installer —		$\times$
	Choose Inst	all Fol	der
Introduction     Choose Install Folder     Choose Data Folder     Import files from Previous     Pre-Installation Summary     Installing     Important Information     Launch Configuration     Service Configuration     Install Complete	Only ASCII Characters Are Allowed In Install Directory.           Where Would You Like to Install?           C:IProgram Files/FlexNet Publisher License Server Manager*.           Restore Default Folder	Choose	
InstallAnywhere Cancel Help	Previous	Next	

FIGURE 31

## **so, to match our configuration, it should be changed to** "C:\Program Files\FlexNet Publisher License Server Manager".

You can choose any other destination, either by typing it in the textbox or by clicking on the *Choose*... button at the bottom right-hand side of the location textbox and navigating through your computer storage system to find the suitable location for it. When the path is selected, just click on the *Next* button.

FlexNet Publisher License Serve	r Installer	-	□ ×
		Choose Da	ata Folder
Introduction     Choose Install Folder     Choose Data Folder     Import files from Previous I     Pre-installation Summary     Installing     Important Information     Launch Configuration	Please choose path for Data Folder(logs, cache, config and licenses) Note:Only ASCII Characters Are Allowed In Directory Path. Where Would You Like The Data Folder To Be Installed?		
Service Configuration	C:\ProgramData\FLEXIm\Imadmin		
		Restore Default Folder	Chgose
InstallAnywhere Cancel Help	and the second s	Previous	Next



 This version allows to change the location where the license data can be imported. By default, it contains the following path "C:\ProgramData\FLEXIm\Imadmin". You can choose any other destination, either by typing it in the textbox or by clicking on the *Choose*... button at the bottom right-hand side of the location textbox and navigating through your computer storage system to find the suitable location for it. When the path is selected, just click on the *Next* button.

🛎 FlexNet Publisher License Serve	r Installer	_	
		Choose Da	ata Folder
Introduction     Choose Install Folder     Choose Data Folder     Import files from Previous I     Pre-Installation Summary     Installing     Important Information     Lauch Configuration     Service Configuration	Please choose path for Data Folder(logs, cache, config and licenses) Note:Only ASCII Characters Are Allowed In Directory Path. Where Would You Like The Data Folder To Be Installed? C:/ProgramData/FLEXIm/Imadmin		
O Install Complete		Restore Default Folder	Ch <u>o</u> ose
InstallAnywhere Cancel Help		Previous	Next



• *Import files from previous installations*: in this window you can select to recover the information you may have from previous installations of the FlexLM server. If it is the first time you are installing this Server, please click on the *Next* button, as there is no previous information that corresponds to a reinstallation.

FlexNet Publisher License Servi	er Installer –	$\times$
	Import files from Previous Installa	tion
Introduction     Choose Install Folder     Choose Install Folder     Choose Data Folder     mort files from Previous I     Pre-installation Summary     Installing     Important Information     Launch Configuration     Service Configuration     Install Complete	If you want to import license files Jog files, server.xml (configuration data) and vendor daemons from previous version of FlexNet Publisher 64-bit License Server Manager then please provide the path of previous installat	ion.
InstaliAnywhere Cancel Help	Restore Default Choose Previous Ne	

FIGURE 34

• *Pre-Installation Summary*: This is the last step before installing the application in your system. It holds a description of the parameters compiled through this installation wizard. If one or more of the parameters is not right for your installation, please click on the *Previous* button repetitively until you reach the

step to reconfigure your selections. When all the parameters are correct, please click on the *Install* button.



FIGURE 35

• *Installing*: this window requires no user interaction, as it waits until the installation is complete. In case the installation must be halted, click on the *Cancel* button. Otherwise, please wait until the process is finished and the wizard will proceed automatically to the next step.





• Install Visual C++ 2015-2022 Redistributable Package: VERY IMPORTANT: check to install dependencies for Visual C++ 2015-2022 Redistributable Package. Then click on the Next button.



FIGURE 37

 Visual C++ Redistributable Package Setup: Another small wizard (as shown below) will appear if the package was not previously installed. If so, please walk through it until you reach the following "Setup Complete" Window. On either of the situations, click on the Close button at the bottom to finalize the process.



FIGURE 38



FIGURE 40

If you get the error below it means that another version of this product is already installed. The installation of this version cannot continue. To configure or remove the existing version of this products, use Add/Remove Programs on the Control Panel. or cancel this installation.

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- Launch configuration: this window allows configuring the administration web interface port (default port: 8090) and license server port (default port: 27000). Please take these parameters into account:
  - The HTTP Port Number will be essential to request a license from TRC. The license for the SES tools is generated using the machine's Host ID, which can be retrieved from http://localhost:8090. If you select another port, the URL for this application will change to the http://localhost:<HTTP port number> that you enter for the first field in this form.
  - The License Server Port Number: this is the port number you will have to use later\* to configure the SES licenses in the SES Server installation.

Both ports can be changed later\* via the administration application that will be available through the URL explained in the first point: http://localhost:<HTTP port number>



FIGURE 42

Then you can configure other timeout parameters of the service as shown in the next figure. Unless you have any special consideration about your network latency or other issue, it is not advisable to change any of these parameters. Click on the *Next* button to continue.

FlexNet Publisher License Serve	r Installer	-		×
	Launch	n Conf	igurati	on
Introduction     Choose Install Folder     Choose Install Folder     Choose Data Folder     Import files from Previous I     Pre-Installation Summary     Installing     Important Information	<ol> <li>Configure the cache timeout value for the updation of count of activated licenses to be did dashboard.</li> <li>Configure AlertTimeInterval value for updation of alerts on web Ul's dashboard.</li> <li>Configure the restart retry value for the maximum number of times vendor daemon is atter if it goes down.</li> </ol>			
Launch Configuration     Service Configuration     Install Complete	ervice Configuration (Enter within range 30-5400 (in seconds))			]
	Enter the number of vendor daemon restart retries: 10 (Enter within range 0-10)			ļ
InstallAnywhere Cancel Help	E Contraction of the second se	Previous	<u>N</u> ext	



• Service configuration: THIS STEP IS IMPORTANT, if it is not configured as explained here, the FlexLM will not work properly. So please read the next paragraphs carefully.

First, before anything else, **check the 'Run as service' option**.

Then, decide which is the name of the FlexLM service to be registered on your machine. If there is no other FlexLM service running on this machine, we recommend keeping the **Imadmin** name because you will find some troubleshooting information where this name must be located inside a list of

services. If you already have another FlexLM service running on this machine (for example, an older version of the FlexLM License Server) please type another name and remember it.

NOTE: As mentioned in the previous paragraph, you can install as many FlexLM License Servers as you wish in the same machine, the only thing to consider is that they shall be listening to different ports and have different service names.

We recommend keeping the 'Number of seconds to delay on system restart' parameter as it is by default: 0.

Then click on the *Next* button.

FlexNet Publisher License Serve	er Installer – 🗆	$\times$
	Service Configu	ration
Introduction     Choose Install Folder     Choose Data Folder     Import files from Previous I     Pre-installation Summary     Installing     Important Information     Launch Configuration     Service Configuration     Install Complete	Provide information about running the FlexNet License Server Manager as a service. You must have administrative privileges to configure the server to run as a service.	
InstallAnywhere Cancel Help	Previous	<u>N</u> ext

FIGURE 44

Start the service. If it does not start, go to PC services administration, and start it manually as shown in section 3.2.3.4.

- *Installing service and installing*: this window does not require user interaction, as it waits until the installation is completed.
- *Installation complete*: in this window the output of the service configuration process is shown, typically with success. In such case just click on the *Done* button.



FIGURE 45

### 3.2.1.3 TRC Vendor Daemon

First, download the TRC Vendor Daemon installer from TRC website. *Your choice must match with the one selected for the Flex License server*, otherwise it will not work.

There are two ways to install TRC Vendor Daemon:

- The most typical one is executing the installer with administration rights. The installation wizard will guide you to provide all the necessary parameters to perform the installation and at the end, the tool will be installed.
- There is another possibility; to install it from the command line where all the parameters are provided beforehand, and the installation will be done without any further user interaction.

3.2.1.3.1 TRC VENDOR DAEMON INSTALLATION WITH THE INSTALLATION WIZARD To start, execute the selected TRC Vendor Daemon installer on the same machine where the FlexLM License Server is installed.

• *Select Setup Language*: this first window allows selecting the language of the installation wizard. You can choose between English and Spanish.





 Welcome: this window will introduce all the actions to be performed while installing the TRC License Vendor Setup (also known as TRC Vendor daemon) application, please read the instructions and click on the Next > button.





• Select the Flex License Manager Folder: this window allows you to select the location where the application is going to be installed.

K Setup - The REUSE Company License Vendor (x64)	-		×
Select the Flex License Manager Folder Select the Flex License Manager Admin installation folder		Ę	
The REUSE Company License Vendor will be installed under the selected	folder.		
To continue, click Next. If you would like to select a different folder, clic	k Brow	se.	
C:\Program Files\FlexNet Publisher License Server Manager	Brov	vse	
< <u>B</u> ack <u>N</u> ext >		Can	cel

FIGURE 48

• Select Start Menu Folder: this window allows you to select the location where the start menu shortcuts to the application will be created. By default, the installer proposes to create them under the folder "The REUSE Company" and the subfolder with the name of the application. Click Next >.

K Setup - The REUSE Company License Vendor (x64)	_		×
Select Start Menu Folder Where should Setup place the program's shortcuts?			ĸ
Setup will create the program's shortcuts in the following Star	t Men	u folder	
To continue, click Next. If you would like to select a different folder, cli	ck Bro	owse.	
The REUSE Company License Vendor	Bŗ	owse	
< Back Next >	•	Ca	ancel

FIGURE 49

• *Ready to Install*: this is the last step before installing the application in your system. It holds a description of the parameters compiled through this installation wizard. If one or more of the parameters is not right for your installation, please click "< Back" until you reach the corresponding step to

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reconfigure your choices. When all the parameters are correct, please click on the *Next* > button.

K Setup - The REUSE Company License Vendor (x64) -	• ×
Ready to Install Setup is now ready to begin installing The REUSE Company License Vendor (x64 on your computer.	•
Click Install to continue with the installation, or click Back if you want to review or change any settings.	r
Start Menu folder: The REUSE Company\License Vendor	^
<	>
< <u>B</u> ack Install	Cancel

FIGURE 50

• Completing the TRC License Vendor Setup Wizard: this window notifies you when the installation has finished successfully. Please click on the *Finish* button and the installation process will be complete.



FIGURE 51

3.2.1.3.2 TRC VENDOR DAEMON INSTALLATION IN SILENT MODE

To install TRC Vendor Daemon in silent mode, the command line with parameters to install it is like this:

#### TheREUSECompanyLicenseVendorSetup64\_<version>.exe /verysilent

# *IMPORTANT NOTE: Remember to open the command line window with administration rights, before executing the previous command.*

The mandatory parameters are:

/verysilent: installation mode

### 3.2.2 License Setup

At this moment, the FlexLM License Server is ready to open and receive license files. For this purpose, open a web browser and go to http://<server>:8090 to open the management interface. Click on the *Administration* tab (up-right).





If the administration webpage does not appear, please go to the Troubleshooting section of this chapter and check the following topics:

- 1. "License Server is down or not responding" problem
- 2. Unable to start the FlexLM License Service

Once the service is running the administration website will be displayed.

The **default credentials** are the word 'admin' for User and Password (it will prompt changing the default login the first time). Copy and send the System Information to <u>*licensing@reusecompany.com*</u> to generate the license file.

NOTE: Please do not send screenshots because it will complicate generating the license, the information from your server must be introduced manually in our system and it is prone to provoke typing errors. Thus, please copy the plain text and send it to us to the mentioned above email address. Thank you for understanding and we can help you in a more efficient way.

reve	enera.   Flexi	NET PUBLISHER	User Name: admin 👔 🗴 Help Sign Out Dashboard Administration
System Information	System Information Release Version: License Server Manager Port in Use:		
Liser	Display: Host Name: Host Domain Name: IPv4 Address:	KCS-00028.kcs.local	
Configuration	Ethernet Address: Volume Serial Number:	1c1b0d3d6f22	
Alert Configuration	Local Stop Server Allowed: Remote Stop Server Allowed: License Reclaim Allowed:	No	



Before receiving a valid license, the <u>License Request document</u> is mandatory to be fulfilled and signed, then please email it to <u>licensing@reusecompany.com</u>.

NOTE: Even if the previous steps are fully done, The REUSE Company reserves the right to not provide the license file if they consider so.

The license file will be provided with the same email address. Save the license file on your PC and import it to the FlexLM License Server. Import the license file to the Vendor Daemon Configuration tab.



FIGURE 54

Click on *Browse*..., to look for the provided license location. Once located, click on *Import License* to load the file into the FlexLM system.



₩ FlexNet Publisher*		Help	Sign Out
Import License File       Sistem       Sistem       Sistem       Configuration       Sistem       Sistem       Configuration       Sistem       Configuration       Sistem       Configuration       Sistem       Configuration	Dashboard	Adm	inistration

FIGURE 56

NOTE: Please check the option Overwrite License File on License Server in case you had loaded previous TRC license files in the past.

Restart the Vendor Daemon.

### 3.2.3 Troubleshooting

3.2.3.1 What to do when forgetting FlexLM Administration credentials In case of forgetting the administration login credentials, it is necessary to reinstall the FlexLM. Thus, it is recommended to create more than one administrator user.

### 3.2.3.2 Which ports are used by FlexLM?

FlexLM License Server has its own port, defined in the installation wizard. The default server port is not only a port but a range between 27000 and 27009.

The Vendor Daemon has its own port as well. However, there is not a predefined default port, so it could change every time the Daemon restarts.

# Both ports (or ranges) need to be fully accessible from the rest of the tools installed in any domain PCs!

It is possible to manage those ports:

To manage the FlexLM License Server port, open a browser and insert the following: http://localhost:8090. Click on the *Administration* tab, provide your credentials and then go to the *Server Configuration* tab.

геле	Nera. FLEXNET PUBLISHER
System Information	Server Configuration
	Web Server Configuration
	Secure Web Server Configuration License Server Configuration
User Configuration Alert Configuration	License Server Manager Port: O Use Default Port (27000 - 27009) © Use this Port
	*Maximum Number of License Server Manager Processing Threads: 10
Server Configuration	*Maximum Number of License Server Manager Receive Threads: 5
	Logging
Vendor Daemon	User Interface
Configuration	Save Cancel

FIGURE 57

To manage the Vendor Daemon port: Within the *Administration* tab, go to Vendor Daemon Configuration. Open the Daemon of the port you want to manage.

		Vendor Daemon:FLEXTRC	
	System Information	Vendor Daemon Port in Use: 51117	
		Vendor Daemon Actions	
	<u>User</u> Configuration	Stop Reread License Files	
		Report Log Name: Rotate Report Logs	[
	Alert Configuration	General Configuration	
	-	* License File or Directory	
	Contract I	licenses\FLEXTRC\OKR015001_L10_150513-RQSx30.lic	
		licenses\FLEXTRC\OKR015001_L16_150730-RQSx30A.lic	
	Server	licenses\FLEXTRC\OKR015001_L20_150730-CAKEx30A.lic	
	Configuration	licenses\FLEXTRC\OKR015001_L8_150507-CAKEx30.lic	
(	10		
		Vendor Daemon Location:	
	Vendor Daemon	licenses\FLEXTRC\FLEXTRC.exe	
U	Configuration		
		* Vendor Daemon Port:	
		O Use default port	
		Use this port 0	

FIGURE 58

You can also inspect log files for each component.

Log file for the FlexLM License Server



FIGURE 59

## Log file for the Vendor Daemon

System	Vendor Daemon:FLEXTRC
Information	Vendor Daemon Port in Use: 51117 Vendor Daemon Actions Stop Reread License Files
Configuration	Report Log Name: Rotate Report Logs
Alert Configuration	General Configuration Vendor Daemon Log Overwrite Vendor Daemon Log
Server Configuration	Vendor Daemon Log Location: logs/FLEXTRC.log
Vendor Daemon Configuration	View file externally

FIGURE 60

The FlexLM License Service is fully installed and ready to use.

3.2.3.3 "License Server is down or not responding" problem

Sometimes you can find this problem, especially when deploying everything on the same computer: licensing and the SES tools and especially on laptops, as they can get suspended or hibernated when closing the lid.

🟟 Systems Engineering Suite Server					- 🗆	$\times$
Systems Engineering Suite Server by The REUSE Company					S	
Credentials for Systems Engineering Suite Serv Login: SESAdministrator Password:	er:	- Active connection detail Name: TraceabilityForTemperat Description:		On	tology v. 22.2	2 2 1
Available connections:         Act        Connection name         Image: Connection state       Image: Connection state         Image: Connection state       SES V22.2 - Temperature War         Image: Connection state       Image: Connection state         Image: Connection state	Туре	Server dev.kcs.local\SQ dev.kcs.local\SQ		Last usage d • 07/07/2022 10: 07/07/2022 09: 26/05/2022 11:		
Systems Engi	-		t responding	×		
		[	ОК			

FIGURE 62

If it is not working correctly, please check that the parameters (Server name and Port) are properly set by clicking on "Test connection with SES Server" button in the "Configure Server" option of RQA/RAT, or if you are not able to connect in the SES Server application, then please access the machine where the FlexLM service is installed and follow this checklist to find the problem:

 Check that the FlexLM Service is running: If you did not change the service name when installing the FlexLM there should be a service whose name is **Imadmin** or **Imadmin64** running on that machine, if you did, just look it up by the name you gave it when installing.

You can see it by opening the Windows Task Manager and navigating to the *Service* tab. Check that the FlexLM service is running. If not, then start.

If the service is not able to start, please check the next topic in the troubleshooting. Test if the problem has been solved by going back to the SES Server or the QUALITY Management capability and try to log in or connect respectively.

If it is not on the list, then please go to the top of this manual and install the FlexLM service on this machine.

Processes Performance App I	history	Start-up Users Details Services			
Name	PID	Description	Status	Group	 
🔆 LanmanServer	4140	Server	Running	netsvcs	
LanmanWorkstation	2976	Workstation	Running	NetworkService	
lfsvc	2820	Geolocation Service	Running	netsvcs	
🔆 LicenseManager	9596	Windows License Manager Service	Running	LocalService	
🔍 lltdsvc		Link-Layer Topology Discovery Mapper	Stopped	LocalService	
🖟 Imadmin	584	Imadmin	Running		
lmhosts .	17316	TCP/IP NetBIOS Helper	Running	LocalServiceN	
LSM	1080	Local Session Manager	Running	DcomLaunch	
🔍 MapsBroker		Downloaded Maps Manager	Stopped	NetworkService	
MessagingService		MessagingService	Stopped	UnistackSvcGr	
MessagingService_6bd7681		MessagingService_6bd7681	Stopped	UnistackSvcGr	
MozillaMaintenance		Mozilla Maintenance Service	Stopped		
MpsSvc	1844	Windows Defender Firewall	Running	LocalServiceN	
MSDTC	12804	Distributed Transaction Coordinator	Running		
MSISCSI		Microsoft iSCSI Initiator Service	Stopped	netsvcs	
🔍 msiserver		Windows Installer	Stopped		
NaturalAuthentication		Natural Authentication	Stopped	netsvcs	
🔍 NcaSvc		Network Connectivity Assistant	Stopped	NetSvcs	
NcbService	1444	Network Connection Broker	Running	LocalSystemN	
NcdAutoSetup		Network Connected Devices Auto-Setup	Stopped	LocalServiceN	
Netlogon	824	Netlogon	Running		
🕼 Netman	6608	Network Connections	Running	LocalSystemN	
anetprofm	2280	Network List Service	Running	LocalService	
NetSetupSvc		Network Setup Service	Stopped	netsvcs	
NetTcpPortSharing		Net.Tcp Port Sharing Service	Stopped		
🔍 NgcCtnrSvc		Microsoft Passport Container	Stopped	LocalServiceN	
A NgcSvc		Microsoft Passport	Stopped	LocalSystemN	
NIaSvc	2056	Network Location Awareness	Running	NetworkService	
🔍 nsi	1300	Network Store Interface Service	Running	LocalService	
🔅 NvContainerLocalSystem	3876	NVIDIA LocalSystem Container	Running		
NvContainerNetworkService		NVIDIA NetworkService Container	Stopped		
NVDisplay.ContainerLocalS	2124	NVIDIA Display Container LS	Running		
NvTelemetryContainer	4000	NVIDIA Telemetry Container	Running		

FIGURE 63

 Check that the license and the TRC Daemon are working properly; to do this, FlexLM License Server includes a web interface available at the URL: http://<Server>:<WebInterfacePort>

Typically, if you do not change any default parameter in the installation, this URL will look like this: http://localhost:8090.

a. Open a web browser with your suitable URL and go to the *Administration* tab (top-right corner)

revenera.			IFR		User Name: adr	nin <b>?</b> Help	<b>X</b> Sign Out
		I OBLIGI				hboard Adm	iinistration
Alerts	c	oncurrent License	s		FLEXTRC V Select		
	I 4	Feature	Version	In Use (Available)	Expiration		
0 Critical			18.1	1 (30)	31-JUL-2018	Hosts	^
	^	XQS SIMTN LO	18.1	0 (30)	31-JUL-2018		
		XQS SIMTN LO CENG	18.1	0 (30)	31-JUL-2018		
		XQS SIMTN LO PKG	18.1	0 (30)	31-JUL-2018		
		XQS SIMTR LO	18.1	0 (30)	31-JUL-2018		
		XQS SIMTR LO CENG	18.1	0 (30)	31-JUL-2018		
		XQS SIMTR LO PKG	18.1	0 (30)	31-JUL-2018		≡
	~	XQS SIM LO					~
	©20	14 Flexera Software LLC. A	II Rights Re	served.			

FIGURE 64

b. Use the login and password you set up when installing the license in that tab.

IMPORTANT: In case of forgetting the administration login credentials, it is necessary to reinstall the FlexLM. Thus, it is recommended to create more than one administrator user at installation time.

revenera.   FLEX	NET PUBLISHER	User Name: admin <b>? X</b> Help Sign Out Dashboard Administration
Vou must sign into the Administration	on area. Click <u>here</u> to go to the Sign In page.          Sign In         Urer Name:         Password:         Password:         Cancel	

FIGURE 65

c. You should be able to get it and see a screen like the following one:

reve	nera. Flexnet publisher
10m	System Information
Sand	Release Version: 11.18.3.0
System Information	License Server Manager Port in Use:
	Display:
	Host Name:
	Host Domain Name:
User Configuration	IPv4 Address:
Conliguration	Ethernet Address:
	Volume Serial Number:
	TPM Host Id:
Alert	Local Stop Server Allowed: Yes
Configuration	Remote Stop Server Allowed: No
-Øa	License Reclaim Allowed: No



d. Go to the *Vendor Daemon Configuration* tab on the bottom left corner of the webpage



FIGURE 67

70



e. Check that FLEXTRC daemon STATUS is UP. If it is DOWN, then click on the **Administer** link of the FLEXTRC daemon row. If the license does not appear, refer to section 3.2.2.



FIGURE 69

f. Click on the START button

rever	era.   Flexnet Publisher		? Help	X Sign Out	
-		Dashboard	i Adm	inistration	
System	Vendor Daemon:FLEXTRC				
Information	Vendor Daemon Actions				
	Start				
User Configuration	General Configuration			- 1	Ξ
Â	• License File or Directory				
Alert Configuration					
O.o.	<u>h.</u>				
the second	Vendor Daemon Location:				
Configuration	licenses/FLEXTRC./FLEXTRC.exe				
	Vendor Daemon Port:				
Vendor Daemon	Use default port				
Configuration	O Use this port 0				
	* Restart Retries:				
	Enable Date-based Versions				
	Vendor Daemon Log				
localbost-8090/users?v	endor=FLEXTRC&licenseTab=floating&selected=	Save	Cancel	- 1	
					Ŧ

FIGURE 70

g. It will return to the previous screen with the message shown in the top right screenshot.

If you refresh the page some moments later\*, it will show that FLEXTRC daemon is UP then we have succeeded in fixing things or if it's DOWN we have to continue investigating what is going on.



FIGURE 71

Import License					
Name 🔺	Status	FlexNet Publisher Version	Port		
geensoft	Down	0.0		Administer	Delete
		0.0		Administer	Delete
valiosys	Stopped	0.0			



h. If the FLEXTRC daemon returns to DOWN status, we have to check what is going on in the daemon log file you can find in the **Administer** link of the daemon row.

Go to the Vendor Daemon Log section of the page and click in the link "View file externally".

Then a Notepad will open, if you scroll to the bottom, you will identify the reason the daemon is not running.

The most typical thing is that the licenses have expired and there is nothing to listen to, so the daemon is stopped.

The solution for this problem is to ask for new licenses at <u>licensing@reusecompany.com</u>
reve	nera. Flexnet publisher		<b>?</b> Help rd <u>Admi</u>	Sign Out
System Information User Configuration Alert Configuration Server Configuration Weight Configuration	Vendor Daemon Actions Stat General Configuration Vendor Daemon Log Overwrite Vendor Daemon Log Vendor Daemon Log Vendor Daemon Log View file externally	Save	Car	ncel
	©2014 Flexera Software LLC. All Rights Reserved.	_		



- If you have still the problem after reviewing all these items, maybe there is a network configuration problem between the SES Server and the FlexLM server. It can be due to firewalls or any wrong port configuration. Revise the following tips:
  - i. FlexLM License Server has its own port, defined in the installation wizard
    - 1. Default server ports: 27000 27009
  - ii. The Vendor Daemon has its own port as well
    - 1. There is not a predefined default port, so it could change every time the Daemon restarts

# iii. Both ports (or port ranges) need to be fully accessible from the rest of the tools installed on any domain PCs!

#### 3.2.3.4 Unable to start the FlexLM License Service

This problem appears when the FlexLM does not have the suitable configuration to run, we have not found the reason why but sometimes after a fresh installation of the FlexLM License Server it's unable to start. Please check these steps to solve the issue:

1. Check that the FlexLM Service is running: If you did not change the service name when installing the FlexLM there should be a service whose name is **Imadmin** running on that machine, if you did, just look it up by the name you gave it when installing.

You can see it by opening the Windows Task Manager and navigating to the Service tab. Check that the FlexPLM service is running. If not, then start it.

2. The service will try to start, but it will not be able to...

Service Control	Х
Windows is attempting to start the following service on Local Computer	
Imadmin	
Close	

FIGURE 74

3. Check the Log On configuration in the Services Management Console, by going to the Start Menu and typing 'services. MSc' select the *Service* option we have as Best Match by clicking with the right button of the mouse and selecting *Run as Administrator*, provide your administration credentials and the management console will open:

🔍 Services				-	
File Action View Help					
⊨ ⇒   📰   📴 🍳 🕞   🛿 📰   🕨 🔳 🕕 🕨					
Name	Description	Status	Startup Type	Log On As	
lnteractive Services Detection	Enables use		Manual	Local Syste	
Internet Connection Sharing (ICS)	Provides ne		Manual (Trigger Start)	Local Syste	
IP Helper	Provides tu	Running	Automatic	Local Syste	
IP Translation Configuration Service	Configures		Manual (Trigger Start)	Local Syste	
IPsec Policy Agent	Internet Pro	Running	Manual (Trigger Start)	Network S	
KtmRm for Distributed Transaction Coordinator	Coordinates	-	Manual (Trigger Start)	Network S	
Link-Layer Topology Discovery Mapper	Creates a N		Manual	Local Service	
Imadmin	This service	Running	Automatic (Delayed Start)	Local Syste	
Local Profile Assistant Service	This service	-	Manual (Trigger Start)	Local Service	
Local Session Manager	Core Windo	Running	Automatic	Local Syste	
MessagingService_6bd7681	Service sup		Manual (Trigger Start)	Local Syste	
Microsoft (R) Diagnostics Hub Standard Collector Service	Diagnostics		Manual	Local Syste	
Microsoft Account Sign-in Assistant	Enables use		Manual (Trigger Start)	Local Syste	
Microsoft App-V Client	Manages A		Disabled	Local Syste	
Microsoft iSCSI Initiator Service	Manages In		Manual	Local Syste	
Microsoft Office Click-to-Run Service	Manages re	Running	Automatic	Local Syste	
Microsoft Passport	Provides pr		Manual (Trigger Start)	Local Syste	
Microsoft Passport Container	Manages Io		Manual (Trigger Start)	Local Service	
Microsoft Software Shadow Copy Provider	Manages so		Manual	Local Syste	
Microsoft Storage Spaces SMP	Host service		Manual	Network S	
Microsoft Windows SMS Router Service.	Routes mes		Manual (Trigger Start)	Local Syste	
Mozilla Maintenance Service	The Mozilla		Manual	Local Syste	
Natural Authentication	Signal aggr		Manual (Trigger Start)	Local Syste	
Net.Tcp Port Sharing Service	Provides abi		Disabled	Local Service	
Netlogon	Maintains a	Running	Automatic	Local Syste	
Network Connected Devices Auto-Setup	Network Co		Manual (Trigger Start)	Local Service	
Network Connection Broker	Brokers con	Running	Manual (Trigger Start)	Local Syste	
Network Connections	Manages o	Running	Manual	Local Syste	
Network Connectivity Assistant	Provides Dir		Manual (Trigger Start)	Local Syste	
Network List Service	Identifies th	Running	Manual	Local Service	
Extended \ Standard		<u> </u>	• · · · · ·		

FIGURE 75

#### 4. Right-click with the mouse on the service line and select *Properties*:

🤹 Services				_		×
File Action View Help						
⊨ → 📰 🖾 4 💀 🚺 👘 🕨 🗉 🕨						
Name ^	Description	Status	Startup Type	Log On As		
A Interactive Services Detection	Enables use		Manual	Local Syste		
Internet Connection Sharing (ICS)	Provides ne		Manual (Trigger Start)	Local Syste		
💁 IP Helper	Provides tu	Running	Automatic	Local Syste		
IP Translation Configuration Service	Configures	-	Manual (Trigger Start)	Local Syste		
IPsec Policy Agent	Internet Pro	Running	Manual (Trigger Start)	Network S		
KtmRm for Distributed Transaction Coordinator	Coordinates	-	Manual (Trigger Start)	Network S		
Link-Layer Topology Discovery Mapper	Creates a N		Manual	Local Service		
🔐 Imadmin	This service	Running	Automatic (Delayed Start)	1 10 1		
Local Profile Assistant Service	This service		Manual (Trigger Start)	Start		
💁 Local Session Manager	Core Windo	Running	Automatic	Stop		
MessagingService_6bd7681	Service sup		Manual (Trigger Start)	Pause		
Microsoft (R) Diagnostics Hub Standard Collector Service	Diagnostics		Manual	Resume		
Microsoft Account Sign-in Assistant	Enables use		Manual (Trigger Start)	Restart		
Microsoft App-V Client	Manages A		Disabled			
Microsoft iSCSI Initiator Service	Manages In		Manual	All Tasks	>	
Microsoft Office Click-to-Run Service	Manages re	Running	Automatic	Refresh		
Microsoft Passport	Provides pr	-	Manual (Trigger Start)	Refresh		
Microsoft Passport Container	Manages Io		Manual (Trigger Start)	Properties		
Microsoft Software Shadow Copy Provider	Manages so		Manual	Help		
Microsoft Storage Spaces SMP	Host service		Manual	Help		
Aicrosoft Windows SMS Router Service.	Routes mes		Manual (Trigger Start)	Local Syste		
Mozilla Maintenance Service	The Mozilla		Manual	Local Syste		
Natural Authentication	Signal aggr		Manual (Trigger Start)	Local Syste		
Net.Tcp Port Sharing Service	Provides abi		Disabled	Local Service		
Netlogon	Maintains a	Running	Automatic	Local Syste		
Network Connected Devices Auto-Setup	Network Co	-	Manual (Trigger Start)	Local Service		
Network Connection Broker	Brokers con	Running	Manual (Trigger Start)	Local Syste		
Network Connections	Manages o	Running	Manual	Local Syste		
Network Connectivity Assistant	Provides Dir		Manual (Trigger Start)	Local Syste		
Network List Service	Identifies th	Running	Manual	Local Service		
Extended \ Standard /			* · · · · ·			

FIGURE 76

5. Then in the *Properties* window go to the *Log On* tab Your configuration will look like this:

Imadmin Properties (Local Computer)							
General Log On Record	Very Dependencies	ervices (Local)					
Log on as:							
	teract with desktop						
This account:	Local Service	Browse					
Password:	•••••						
Confirm password:	•••••						
	OK Cance	el Apply					

FIGURE 77

6. Change the option and select 'Local System account' as shown in the next figure. Then click on the *OK* button.

Imadmin Properties (Loca	al Computer) X
General Log On Recov	rery Dependences
Log on as:	
<ul> <li>Local System account</li> <li>Allow service to int</li> </ul>	
O This account:	Browse
Password:	
Confirm password:	
	OK Cancel Apply

FIGURE 78

7. Task Manager highlighting the FlexLM (Imadmin) service properties - Log on tab (II)Then go back to the list and select the service again, click with the right button of the mouse and in the context menu click the *Start* option.

Services				-	
File Action View Help					
⊨ 🔶 📰 📴 🗟 😖 🛛 📷 🕨 🔲 II ID					
Name ^	Description	Status	Startup Type	Log On As	
A Interactive Services Detection	Enables use		Manual	Local Syste	
🕵 Internet Connection Sharing (ICS)	Provides ne		Manual (Trigger Start)	Local Syste	
🖳 IP Helper	Provides tu	Running	Automatic	Local Syste	
IP Translation Configuration Service	Configures		Manual (Trigger Start)	Local Syste	
🖳 IPsec Policy Agent	Internet Pro	Running	Manual (Trigger Start)	Network S	
KtmRm for Distributed Transaction Coordinator	Coordinates		Manual (Trigger Start)	Network S	
🏩 Link-Layer Topology Discovery Mapper	Creates a N		Manual	Local Service	
🔐 Imadmin	This service		Automatic (Delayed Start)		
Local Profile Assistant Service	This service		Manual (Trigger Start)	Start	
🗟 Local Session Manager	Core Windo	Running	Automatic	Stop	
MessagingService_6bd7681	Service sup		Manual (Trigger Start)	Pause	
🗟 Microsoft (R) Diagnostics Hub Standard Collector Service	Diagnostics		Manual	Resume	
🏩 Microsoft Account Sign-in Assistant	Enables use		Manual (Trigger Start)	Restart	
🗟 Microsoft App-V Client	Manages A		Disabled		
Microsoft iSCSI Initiator Service	Manages In		Manual	All Tasks >	
🎎 Microsoft Office Click-to-Run Service	Manages re	Running	Automatic	Refresh	
Alicrosoft Passport	Provides pr		Manual (Trigger Start)		
Microsoft Passport Container	Manages Io		Manual (Trigger Start)	Properties	
Microsoft Software Shadow Copy Provider	Manages so		Manual	Help	
Microsoft Storage Spaces SMP	Host service		Manual	rieip	

FIGURE 79

8. The service now will be started normally.

Service Control	×
Windows is attempting to start the following service on Local Comp Imadmin	uter
<u>C</u> lose	

FIGURE 80

9. Your FlexLM License Server is up and running so you can continue using the Systems Engineering Suite.

🧠 Services				-	$\times$
File Action View Help					
🗢 🔿   📰   🗟 🧟   🔽 📰   🕨 🔳 🕪					
Name	Description	Status	Startup Type	Log On As	^
Interactive Services Detection	Enables use		Manual	Local Syste	
🧠 Internet Connection Sharing (ICS)	Provides ne		Manual (Trigger Start)	Local Syste	
🤹 IP Helper	Provides tu	Running	Automatic	Local Syste	
🖏 IP Translation Configuration Service	Configures		Manual (Trigger Start)	Local Syste	
🆏 IPsec Policy Agent	Internet Pro	Running	Manual (Trigger Start)	Network S	
🍓 KtmRm for Distributed Transaction Coordinator	Coordinates		Manual (Trigger Start)	Network S	
🍓 Link-Layer Topology Discovery Mapper	Creates a N		Manual	Local Service	
🧟 Imadmin	This service	Running	Automatic (Delayed Start)	Local Syste	
🧠 Local Profile Assistant Service	This service		Manual (Trigger Start)	Local Service	
🏟 Local Session Manager	Core Windo	Running	Automatic	Local Syste	
MessagingService_6bd7681	Service sup		Manual (Trigger Start)	Local Syste	
Alicrosoft (R) Diagnostics Hub Standard Collector Service	Diagnostics		Manual	Local Syste	
War wa ter caraci	- 10		14 1/00 PC - PC - PC	1 16 1	

FIGURE 81

# 4 Ontology Database Restoration

# 4.1 Introduction

This chapter will instruct you on downloading and restoring the Systems Engineering Suite Ontology Database provided by The REUSE Company, for each language you want your work-products to be assessed.

Version 22 of the Systems Engineering Suite works with a database that is not provided with the installers. This database can be restored on several Database Management systems (DBMG):

- Access
- SQL Server
- MySQL

We suggest using a MS Access database for demos, because there will not be any need to install anything that's not provided with a Windows installation combined with an SQL Server or MySQL for more robust and important installations rather than a demo.

IMPORTANT NOTE: MS Access databases ARE NOT AN OPTION when the plugin needed for your Systems Engineering Tool, where RAT – AUTHORING Tool is going to be installed as a plugin, is installed in a 64-bits version. The reason behind this is that Windows does not provide connectivity in 64-bits to the MS Access database, but it does when the processes are running in 32-bits mode. For these cases you shall use any other option.

Before proceeding, you need to know at which of the two situations:

- 1. You are new to the SE Suite tools or want to discard a previously managed database for a new one.
- 2. Upgrade your existing database content and structure to the latest version.

For the first situation, you just need to select the type of DBMG Server that you want to use and navigate to 4.2 Create a New Database from a Backup or Dump – Database Restoration, to configure it.

Otherwise, if you are upgrading your current existing database, we provide a tool called TRC Migration Tools, which is available on TRC Website, that performs all the necessary changes to keep the structure and data up to date. (See Section 3.3 "Use of DB

Migration Tool" in the *KM* – *KNOWLEDGE Manager: Technical Reference Handbook*, for more information on the process).

# 4.2 Create a New Database from a Backup or Dump – Database Restoration

Depending on your needs, select a DBMG and then download a suitable version, backup or dump, of the database from our website.

#### <u>VERY IMPORTANT NOTE: it is not enough to go to the DMBG Server (e.g., SQL</u> <u>Server or MySQL server installation) and create an empty database or schema, it</u> <u>has to have the table, views, etc. In general, it must have the predefined structure</u> <u>and also the contents, an empty database with the suitable structure is not able</u> <u>to assess any work-product.</u>

Another important parameter to consider is the language to assess the work-products, not to be confused with the Graphical User Interface (GUI) language, that will be always in English.

The selection of the database to understand, for example French, will determine that even if the application GUI is in English, the assessment or your requirements will be done in French.

The list of available ontology languages is:

- English
- French
- Spanish
- German
- Swedish
- Italian
- Japanese (to be released)

Then, considering these parameters, we can move to the next section.

### 4.2.1 Download Suitable Version from TRC Website

As you may know at this point, the Suite is fully operative with different database management systems (DBMG) (MS ACCESS, SQL Server and MySQL) and it supports assessments in many different languages (see table below).

To have the latest version of the database structure and data, please download the suitable backup (dump) from the following table (it will redirect to the TRC website, public downloads area):

DBMS Language	English	French	Spanish	German	Swedish	Italian	Dutch	Japanese
<u>Access</u>	<u>x32</u> <u>x64</u>	<u>x32 x64</u>						
<u>SQL</u> <u>Server</u>	<u>Download</u>	<u>Download</u>						
<u>MySQL</u>	<u>Download</u>	<u>Download</u>						

All of them are downloadable under this section in our webpage.

Once the download is completed, we can proceed to its restoration in the suitable DBMG. See the next section.

#### 4.2.2 Database Restoration

Depending on the DBMG system selected you will have to perform different steps to restore the file, backup or dump and create the suitable Ontology database instance.

#### 4.2.2.1 Microsoft Access

MS Access is the easiest database management system to manage because it is just as simple as unzipping the file downloaded from our website and saving it in a suitable location in your computer or in the server.

The only things to consider are:

- For those deployments that will be done completely (all the SES applications) in a single computer, you can work at any location in your computer where the current user has **reading and writing rights**.
- For the rest of the deployments, where the pieces are working together through the network, the database shall be placed in a shared location in the network with reading and writing rights for all those users who are going to use the application. The typical thing is that the database is configured in SES Server using a Network URL.
  - E.g., \\myservername.mydomain\my shared resources for SES\SES database v22.1 (English).mdb

#### 4.2.2.2 Microsoft SQL Server

Microsoft SQL Server is a useful tool to manage the SES Ontology Database, on TRC website you can download the suitable backups to restore in a given MS SQL Server instance. Thus, it is necessary that you have previously an instance of SQL Server up and running, otherwise you must install it.

If you do not have SQL Server Management Studio installed with your SQL Server instance, we recommend installing it, all the steps needed to restore the database backup are going to be guided with the help of this application. Then, you have to copy the backup downloaded from the website to the machine where the SQL Server instance is running. Then start the SQL Server Management Studio and provide your credentials, they can be SQL Server Authentication or Windows authentication, depending on your SQL Server instance parameters:



FIGURE 82

#### 4.2.2.2.1 RESTORATION STEPS

Once you are logged in, move the mouse over the Database node in the Object Explorer, right-click it and select in the contextual menu the *Restore database...* option.



FIGURE 83

The following window will appear,

Restore Database -	– 🗆 X
🐼 No backupset selected to be restored	d.
Select a page	Script - 🚺 Help
General General Getions	Source
Connection Wew connection properties Progress Ready	Restore Name Component Type Server Database Position First LSN Last LSN Checkpoint LSN Full LS
C Heady	Verfy Backup Media
	OK Cancel Help

FIGURE 84

Select the "Device" option and then click on the "..." button at the end of the line. The following window will appear:

Select backup devices					×
Specify the backup media and its loca	ation for your restore operation.				
<u>B</u> ackup media type:	File	$\sim$			
Backup <u>m</u> edia:					
				<u>A</u> dd	
				<u>R</u> emove	
				Con <u>t</u> ents	
			_		_
	<u>O</u> K	Cance		Help	
					.:

FIGURE 85

Here, select *File* as it is set by default then click on the *Add* button. Another window will appear (this is the last one, no more pop-up windows):

🧻 Locate Backup File -			(
Backup File location: E:\		9	2
C:   SRECYCLE.BIN   Backups   Microsoft SQL Server   Sistemas   System Volume Information     20180517_ses_ortology_v			
File name: 20180517_ses_ontology_v18.1.3_(English).bak	Backup Files(*.bak;*.tm;*.log	j) ~	
	<u>0</u> K	<u>C</u> ancel	



Then, select the backup on the server file system, as shown in the previous figure and then click on the *OK* button. Then the previous pop-up window will show your backup selection. Then click on the *OK* button again.

Select backup devices				×
Specify the backup media and its loc	ation for your restore operation.			
<u>B</u> ackup media type:	File	$\sim$		
Backup <u>m</u> edia:				
E:\20180517_ses_ontology_v18.1.3	_(English).bak		<u>A</u> dd	
			<u>R</u> emove	
	<u>O</u> K	Cancel	Help	

FIGURE 87

Then we are back in the first window of the restoration wizard. Be sure that the *Restore* checkbox on the backups set to restore is checked. Then check that the *Database* drop down list below the *Device* option is filled up with the new database name, as shown in the next figure. In some older versions of SQL Server Management Studio, it is possible to change the name for the desired one, in order to avoid name collision with an already existing database. If no problem is found when clicking on the *OK* button you do not have to use the *File* or the *Options* tab on the left-hand side of the window. Then click on the *OK* button.

Restore Database - Rqa Quality A	Analyzer v17.1 (English)					- 0	×
🕕 Ready							
Select a page General Files Options	D <u>a</u> tabase: F Destination Data <u>b</u> ase: F		E:\20180517_ses_ortology_v18.1.3_(English)bak Rqs Quality Analyzer v17.1 (English) Rqs Quality Analyzer v17.1 (English) The last backup taken (17 May 2018 03.03.44)				
Connection Use connection properties Progress One Done		:: omponent )atabase	t Type Full	Server	Database Rga Qualty Analyzer v 17.1 (English	Position a) 1	1850 >
					OK Canc	el	Help

FIGURE 88

The restoration wizard starts to restore the database in the SQL Server instance. You do not need to do anything at this step, just wait for it to return a result of the process.

💺 Restore Database - Rqa Qualit	y Analyzer v17.1	(English)	)				-		×
Restoring: E:\20180517_ses_ontology	_v18.1.3_(English	n).bak							Stop
Select a page	Script -	🛛 📑 Hel	р						
्या General मिल प्रा Costons	Source - <u>D</u> a © Dg Destination Datab Bestor Restore p	tabase: vice: D <u>a</u> tabase on ase: e to: lan	:	Rqa Quality Rqa Quality	Analyzer v 17 Analyzer v 17			Imel	<ul> <li></li> <li></li> <li></li> <li></li> </ul>
Connection	Restore	sets to res			Server	Database		Position	First L
	Hestore	Name	Componer Database			Rqa Quality Analyzer v 17.1	(English)	1	Hirst L 1850
View connection properties Progress	٢						Verify		<b>&gt;</b> Media
						OK	Cancel	H	lelp .:

FIGURE 89

When the restoration wizard finishes, the output is displayed in a message box. If it has been successful, it prompts the following message. Click *OK*.

Microsoft SQL Server Management Studio	×
Database 'Rqa Quality Analyzer v17.1 (English)' restored successfully.	
ОК	

FIGURE 90

Otherwise, it will show us the error found. Read it carefully and change the necessary options in the previous step to solve them.

When the backup is restored successfully, there will be a new node, under the Database node, in the Object explorer. We are not finished yet with the restoration, now it is the time to deal with the credentials to log in into the database.



#### 4.2.2.2.2 USER MANAGEMENT IN SQL SERVER

Now you must perform a user configuration in two different steps:

- First you have to create a new login in the SQL Server instance, it can be based on Windows or in SQL Server Authentication system.
- Then, you link the login with a new user in the restored database.

To perform the login creation, collapse the "Database" node and expand the "Security" node, then select the "Logins" node under the "Security" node and right-click on it. A contextual menu will open with several options, select *New login*...

In the following window you will set up all the parameters for the new login. You have two options:

- Create the login using Windows Authentication. The login is linked with the item (group or user) selected from the Active Directory and given a name for the login (we recommend for this case using the format domain\name, later\* it will be easier to distinguish the type of user without opening its properties in the lists).
- Create a new SQL Server user not linked with anything else.



The discussion here is what is the best option. For demos and installations, where everything is in a local environment, it is a better solution to create only one SQL Server user and use these credentials.

For bigger installations, such as corporative deployments, the option of Windows Authentication in cooperation with Active Directory is also a good option. In this case we recommend not to create a user for each Windows User because it will be time consuming to manage this user list, instead, we recommend creating the login linked to an Active Directory group, and then, only by managing the Active Directory users belonging to that Active Directory group you are also managing the access to the SQL Server database. it is also possible to use a shared SQL Server user for all the configuration, it only depends on the connection architecture and the policies of each company.

🔒 Login - New				-		×
Select a page	🖾 Script 🔻 📭 Help					
Server Roles User Mapping Securables	Login <u>n</u> ame:	ses_user			S <u>e</u> arch	ı
Status	<ul> <li><u>W</u>indows authentication</li> <li>SQL Server authentication</li> </ul>					
	Password:					
	<u>C</u> onfirm password:					
	Specify old password					
	Old password:					
	Enforce password policy					
	Enforce password expira					
	User must change passv     Mapped to certificate	vord at next login				
Connection	Mapped to asymmetric key			~		
Server:	Mapped to Credential			~		
-	Mapped Credentials	Credential	Provider			
Connection:		Cicucita	Trovider			
View connection properties						
Progress						<u>v</u> e
Ready	Default <u>d</u> atabase:	master		~		
	Default language:	<default></default>		~		
				ОК	Cano	cel
					Can	

#### FIGURE 93

In the case of selecting Window Authentication, just click on the *Search*... button on the right and in the following window, select the type of object to find in the Active Directory to be linked with the new login by using the *Locations*... button. Then, enter the name or a part of the name of the object to be linked in the textbox at the bottom of the window. Then click on *Check Names* to confirm that the object is found in the Active Directory. If so, the name will be completed and underlined, otherwise an Active Directory browser will pop-up. In this case, look up the desired one and click on *OK*. In this window, also click on the *OK* button.

Select User, Service Account or Group	×
Select this object type:	
User or Built-in security principal	Object Types
From this location:	_
	Locations
Enter the object name to select ( <u>examples</u> ):	
	Check Names
Advanced OK	Cancel

FIGURE 94

If the SQL Server user option is selected, write a unique login name in the textbox on the top of the form and introduce a password in the two textboxes in the middle of the button.

In this case, we recommend unchecking the option "User must change password at next login" to avoid having to log in with the new user and to change the password again.

Then click on the OK button.

Login - New				_		×
Select a page	🔄 Script 🔻 🛐 Help					
General Server Roles Server Roles Securables Status	Login name: <u>Windows authentication</u> SQL Server authentication Password: <u>Confirm password</u> : <u>Specify old password</u> <u>Old password</u> : <u>Enforce password policy</u> <u>Enforce password expira</u> <u>User must change passw</u> <u>Mapped to cetificate</u>	tion			S <u>e</u> arch	1
Connection	O Mapped to asymmetric key			$\sim$		
Server:	Map to Credential	Credential	Provider	~	<u>A</u> dd	
View connection properties						
Progress					Remo	<u>v</u> e
Ready	Default <u>d</u> atabase:	master		~		
48p	Default language:	<default></default>		~		
				OK	Cano	cel

FIGURE 95

Now when the login has been created, the only thing left to do is to associate the login with a user in the just restored database. Collapse the "Security" node and expand the "Databases" node and then your restored database node. Once opened, look up for the "Security" node *inside your database node* and open it. Right-click on the *Users* node and select *New user...* on the contextual menu that will be opening.



FIGURE 96

In this new window you must select the type of user defined in the new login: Windows User or SQL Server user. Then type the new Username in the first textbox. We recommend using the same name as the login.

间 Database User - New		-		×
Select a page	🔄 Script 🔻 🛐 Help			
General Owned Schemas	Usertype:			
Membership Securables Extended Properties	Windows user			~
	User name:			
	ses_user			
	Login name:			
	ses_user			
	Default language:			
				$\sim$
	Default <u>s</u> chema:			
Connection				
Server:				
Connection:				
View connection properties				
Progress				
Ready				
		ОК	Ca	incel:

FIGURE 97

In the case of Windows User, use the "..." button besides the login name to look it up among all the Logins as explained in the creation of the new Login, in the SQL Server instance. Then click on the *OK* button.

Select User, Service Account or Group		×
Select this object type:		
User or Built-in security principal		Object Types
From this location:		
		Locations
Enter the object name to select ( <u>examples</u> ):		
		Check Names
Advanced	OK	Cancel

FIGURE 98

In the case of SQL Server user, use the same login name you have created as SQL Server login in the previous step. Then click on the *Membership* tab.

间 Database User - New	-	-	×
Select a page General Owned Schemas Membership Securables Extended Properties	Script		····
Connection			
Server: Connection:			

FIGURE 99

In the membership tab, you have to give rights to the user to be created, the required permissions to connect to the SES Ontology database are db\_datareader and db\_datawriter, thus we check those permissions for this user. Then we click on the *OK* button to confirm the creation of the user for the database instance.

间 Database User - New		-		Х
Select a page	Script - B Help			
General General Muned Schemas Munebership Securables Extended Properties	Script   Database role membership:  Role Members  db_backupoperator  db_backupoperator  db_datareader  db_daladmin  db_denydatareader  db_owner  db_securtyadmin			
Connection				
Server: Connection:				
Progress				
Ready a a b a c a c a c a c a c a c a c a c a				
	E	ОК	Can	cel

FIGURE 100

Back in the main window of SQL Server Management Studio, under the database instance, in the "Security" and "Users" node, the new user is shown.



FIGURE 101

Then we are done, now you can procced to install the next piece of Systems Engineering Suite (SES) in your deployment.

#### 4.2.2.3 MySQL

MySQL is a very good system to manage the SES Ontology Database. On TRC website you can download the suitable dump to restore in each MySQL server. Thus, it's necessary that you have previously an instance of MySQL server and it's up and running or, otherwise you must install it.

If you don't have MySQL Workbench installed with your MySQL Server instance, we recommend installing it. All the steps needed to restore the database backup are going to be guided with the help of this application.

Then you have to copy the dump downloaded from our website to the machine where the MySQL Server instance is running.

VERY IMPORTANT WARNING FOR MYSQL DEPLOYMENTS ON NON-WINDOWS OPERATING SYSTEMS: when using MySQL on top of a Linux distribution, there is a problem of case sensitivity, table names are checked by default to be in the same casing as in the queries and this will provoke a problem in the Suite. So please revise the installation in this case to behave as case insensitive.

It can be checked in the MySQL Workbench's MANAGEMENT tab, under Status and System variables. Inside it, look up for "lower\_case\_table\_name", then if the value is 1 it is fine, otherwise you have to change it. Unfortunately, it cannot be done inside MySQL Workbench, it has to be done in the MySQL server editing the configuration file. You will find an example of changing this configuration for a given Linux distribution <u>here</u>. For other distributions, please check it in the MySQL manual for that distribution.

Here is a snapshot of the MySQL Workbench showing the current status of the lower\_case\_table\_name variable with a compatible value (1) for the Systems Engineering Suite.



FIGURE 102

Then start the MySQL Workbench, and create a new connection to your MySQL server instance by clicking in the "+" button besides the title "MySQL Connections":



FIGURE 103

Then, the "Setup New Connection" window will appear. Here you will have to provide a name for the connection, then go to the "Parameters" tab, in the "hostname" field please fill it up with the server's name where you have installed MySQL server, if the workbench is installed in the same machine you can use "localhost" or the "127.0.0.1" as shown in the following figure. Then choose the port, the default one is the 3306 as shown in the following figure, but if in the installation of the server it was decided to change to another one then here you have to provide that other one. Finally, provide the credentials to be able to log in: first the username in the next field and then the password, you can decide to store it in the vault ... by clicking in the button with that name and entering it or just providing it when logging and not storing it. Now it is time to test the connection by clicking on the "Test connection button". If everything goes fine, you will receive a message stating that the connection is successful, and you can click on the *OK* button. Otherwise, correct the parameters to be able to log in, then test it and click again on the *OK* button.

Setup New Conn	ection	- 🗆 X
Connection Name: Connection Method:	Standard (TCP/IP)	Type a name for the connection
Parameters SSL	Advanced	
Hostname:	127.0.0.1 Port: 3306	Name or IP address of the server host - and TCP/IP port. Name of the user to connect with.
Password:	Store in Vault Clear	The user's password. Will be requested later if it's not set.
Default Schema:		The schema to use as default schema. Leave blank to select it later.
Configure Server	Management	Test Connection Cancel OK



Then, the new connection will appear in the main window. Just click on it and if necessary, provide the password.



FIGURE 105

Then a new tab will be opened allowing to restore the downloaded dump to a new schema in our server instance.

MySQL Workbench		- 🗆 ×
Localhost ×		
File Edit View Query Database Server Tools Scrip	ng Help	© <b></b>
Navigator	Query 1 ×	
MANAGEMENT  Server Status  Clinit Connections  Users and Privileges  Status and System Variables  Data Import/Restore  INSTANCE  INSTANCE  A Server Logs	* 🖬 🖬   🗲 🛣 🔕   😼   🕲 🥹 🗐   Limit to 1000 rows 🔹   🍫   🛫 Q, 🖺 😐	
Joptions File	Output	
PERFORMANCE	Action Output	
<ul> <li>② Dashboard</li> <li>③ Performance Reports</li> <li>④ Performance Schema Setup</li> </ul>	Time Action Message	Durstion / Fetch
Management Schemas		
Information output and output and		

FIGURE 106

Now you are ready to review all the necessary steps to restore the dump and configure the MySQL credentials to create the connection from the SES applications

#### 4.2.2.3.1 RESTORATION STEPS

To restore the MySQL dump you have downloaded from the TRC Website:

Go to the "Data import/Restore" option in Management options and click on it.





Then select the "Import from Self-Contained file" option to restore the database from the downloaded dump. Once the option is selected, click on the "..." button at the end of the line and browse for the dump in your file system.

Priala Marin Data Import
Data Import Import from Disk Import Progress

FIGURE 108

Once the dump file has been selected, select the name of the schema of the database where you want to restore it.

rver <u>T</u> ools <u>S</u> cripting <u>H</u> elp		Ø 🔲
Priala Marin     Data Import/Res     Priala Marin     Data Import  mport from Disk Import Progress Import Options		
Import Options     Import Options     Import from Dump Project Folder     Select the Dump Project Folder to import. You     Load Folder Contents	C:\Users Documents\dumps can do a selective restore.	
<ul> <li>Import from Self-Contained File</li> <li>Select the SQL/dump file to import. Please no</li> </ul>	Path of the databse to be restored	
Default Schema to be Imported To		
Default Target Schema:	restored New The default schema to import the our otherwise it is is only used if the dum otherwise it is ignored.	dump into. Ip file doesn't contain its schema,

FIGURE 109

As the note says, this parameter is ignored if the dump also contains the schema information to be restored into. For this later\* case, you can always edit your dump file with a text editor and change the schema to be used.

For example, in the following figure, the name of the database is "SES Ontology v18.1 (English)" if you want to change it just find all instances and replace them by the new name and save the changes before proceeding to restore it in the next step.

20180517_9	es_ontology_v18.1.3_(english).sql - Notepad++		×
File Edit Sea	rch View Encoding Language Settings Tools Macro Run Plugins Window ?		х
🕞 📄 🔛 🐚	B G 🕼 X 🐘 👔 🤿 C 📾 🦕 🔍 🔍 📴 🔜 1 🗷 🖉 📓 X 💷 👁 💌 🗉 🖢 📾		
20180517 eee	ontology, v18.1.3. (english) agl 🔀		
	MySOL dump 10.13 Distrib 5.7.9, for Win64 (x86 64)		-
2			
	Host: Database: SES Ontology v18.1 (english)		
4	51		
5	Server version 5.5.18		
6			
7 /*	!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;		
	!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;		
	<pre>!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;</pre>		
	!40101 SET NAMES utf8 */;		
	!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;		
	!40103 SET TIME_ZONE='+00:00' */;		
	!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;		
	140014 SET @OLD_FOREIGN_KEY_CHECKS=00FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;		
	:40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;		
	40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;		
17 18 🖂			
	Current Database: `SES Ontology v18.1 (english)`		
20			
20			
	EATE DATABASE /*!32312 IF NOT EXISTS*/ `SES Ontology v18.1 (english) ` /*!40100 DEFAULT		
	ARACTER SET latin */:		
23			
	E `SES Ontology v18.1 (english) `:		
25			~
And result - 4 hits			2
Search "S	25 Ontology v18.1 (english)" (4 hits in 1 file)		
	7_ses_ontology_v18.1.3_(english).sql (4 hits)		
	3: Host: Database: SES Ontology v18.1 (english) 19: Current Database: `SES Ontology v18.1 (english)`		
	2: CREATE DATABASE /*!32312 IF NOT EXISTS*/ 'SEE Ontology v18.1 (english)' /*!40100 DEFAULT CHARACTER SET latinl	*/:	
	24: USE 'SES Ontology v18.1 (english)';		
			10
tructured Query	Language file         length : 1,395,558         lines : 6,043         Ln : 24         Col : 34         Sel : 0   0         Windows (CR LF)         UTF-8		NS .

FIGURE 110

Then select the restoration you want to perform. You can choose between:

- Dump Structure and Data: This option will restore all the information in the database.
- Dump Data Only: This option would restore only the data if the schema selected in the previous step has the same schema.
- Dump Structure Only: This option will restore only the structure of the database and will remove all data of the Target Schema selected.

In this case, you must select the first option *Dump structure and Data*.

Finally, click on Start Import.



FIGURE 111

The restoration wizard starts to restore the schema in the MySQL server instance. You do not need to do anything at this step, just wait for it to return a result of the process.

MySQL Workbench -	[		×
A Priała Marin ×			
Eile Edit View Query Database Server Tools Scripting Help			
	۵		
Navigator			
MANAGEMENT " Server Status Scient Connections Users and Privileges Import from Disk. Import Progress			
Status and System Variables Import Completed			
Data Export     Data Import/Restore			
Status: INSTANCE I of Imported.			
Startup / Shutdown Log:			
Server Logs 16:40:19 Restoring C: Users Documents BackUp Database_ to_be_restored.sql		1	
Options File     Running: mysql.exe -defaults-file="citusers"   kppdata local[temp]tmpkrrg4y.cn" -protool=tphost=127.0.0.1 -user=mpria/a -port=300     dharacter-set-tod=-contents-actabase-databases_tob_pe_restored < Cit(Users)     (Vpcountent)(Back(dp)(Database, to_pe-restored < Cit(Users)     (Vpcountent)(Back(dp)(Database, to_pe-restored < Cit(Users)     (Vpcountent)(Back(dp)(Database, to_pe-restored < Cit(Users)     (Vpcountent)(Back(dp)(Database)     (Database)     (Data			
PERFORMANCE 16:40:22 Import of C:\Users \Quad Quad Quad Quad Quad Quad Quad Quad			
🚳 Dashboard			
🖗 Performance Reports			
N Performance Schema Setup			
SCHEMAS 🛛 🕸 📲			
Q, Filter objects			
database_to_be_restored			

FIGURE 112

Now, in the left-hand side of the Workbench in the SCHEMAS section at the bottom, if you click on the *Refresh* button (the one with two arrows pointing to each other

besides de label "SCHEMAS") you will be able to see that the new schema has been created and it's ready to be used.

#### 4.2.2.3.2 USER MANAGEMENT IN MYSQL

Now that we have restored the dump in a new MySQL schema, the only thing left to do, for the sake of security, is to create another MySQL user to allow the SES applications to access this schema, only with reading and writing rights. To do that, in the top left corner of the window, under the "MANAGEMENT" options, click on the "User and privileges" option.



Once selected, on the right-hand side the tab for "Users and Privileges" will be opened for the current MySQL server instance. Just click on the "Add account" button on the bottom left corner of this tab.

_						
MySQL Workbench					- 0	×
A Priala Marin ×						
<u>File Edit View Query Database Serve</u>	<u>T</u> ools <u>S</u> cripting <u>H</u> elp	3				
	ā 🐙				0	
Query 1 Administration - Users and Privil						
Priala Marin Users and Privileges User Accounts	Select an account to edi	t or click [Add Account] t	o create a new one			
User From Host		ministrative Roles Schema				
	Login Name:		You may create mu to connect from diff	tiple accounts with the same n erent hosts.	name	
	Authentication Type:	Standard	For the standard pa select 'Standard'.	issword and/or host based au	thentication,	
	Limit to Hosts Matching:		% and _ wildcards i	nay be used		
	Password:		Type a password to	reset it.		
		Consider using a password mixed case letters, number	with 8 or more characters with s and punctuation marks.			
	Confirm Password:		Enter password aga	in to confirm.		
Add Account Delete Refresh				Revert	Ap	ply

FIGURE 114

Then, in the list of users there will be a new one whose name is "newuser". You have to rename it with the desired name, then provide the list of hosts where the connection can be started or just simply type '%' as a wildcard meaning that the user can connect from any location (able to reach the server). Then type a valid password in the next textbox and confirm it in the following on. Before clicking on the *Apply* button on the bottom right corner of the tab, click on the *Schema Privileges* tab.

MySQL Workbench		– 🗆 X
🏠 Priala Marin 🛛		
Eile Edit View Query Database Server	Iools Scripting Help	Ø <b>D</b>
Query 1 Administration - Users and Privil >		
Priala Marin Users and Privileges		
User Accounts	Details for account newuser@%	
User From Host	Login Account Limits Administrative Roles Schema Privileges	
newuser %	Login Name: newuser You may cre to connect f	ate multiple accounts with the same name om different hosts.
	Authentication Type: Standard For the stan select 'Standard	dard password and/or host based authentication, ard'.
	Limit to Hosts Matching: % and _ wild	lcards may be used
	Password: Type a pass	word to reset it.
	Consider using a password with 8 or more character mixed case letters, numbers and punctuation marks	
	Confirm Password: Enter passw	ord again to confirm.
Add Account Delete Refresh		Revert Apply

FIGURE 115

In this tab you have to assign the permissions for this new user to the SES Ontology schema that you have just restored. To do that, click on the *Add Entry*... button on the right-hand side of the tab.

MySQL Workbench			- 🗆 X
🏠 Priala Marin 🛛			
Eile     Edit     View     Query     Database     Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server     Image: Server       Image: Server     Image: Server     Image: Server     Image: Server			© <b>—</b> —
Priala Marin Users and Privileges			
User Accounts User From Host	Details for account newuser@%	Schema Privileges	
newuser %	Login Account Limits Administrative Roles Schema Privileges	Schema Privileges	
	Schema and Host fields may use % and _will The server will match specific entries before Object Rights Schema Poparte Deter Deter Deter Schema And	doards. widdcarded ones. Revoke Al Privileges DOL Rights COEATE AITER REFERENCES PHOEN COEATE VIEW COEATE VIEW COEATE VIEW COEATE NOUTINE EVENT DROP TRIGGER	Delete Entry  Add Entry  Other Rights  CANNT OFTION  CRAINT TEMPORARY TABLES  LOCK TABLES
			Unselect All Select "ALL"
Add Account Delete Refresh	1		Revert Apply

FIGURE 116

A new pop-up window will open asking for the schema or schemas to give permissions to. You must select the last option, *Selected schema*, and then in the drop-down list besides this option choose the SES Ontology schema we have just restored.

🕅 New Schema Privilege Definit	ion		-		×
Select the Schema for which the use Schema	er 'newuser' will have the privileges you	want to define.			
All Schema (%)			This rule will apply to any schema name. This rule will apply to schemas that match the given name		
O Schemas matching pattern:			You may use _ and % as wildcards in a pattern. Escape these characters with \in case you want their lite	1.1	
O Selected schema:	database_to_be_restored	~	Select a specific schema name for the rule to apply to.		

FIGURE 117

Then, back in the "Users and Privileges" tab, the only thing left to do is assign the permissions for that user and that schema. Just select all the permissions shown in the next figure inside the red box.

- SELECT
- INSERT
- UPDATE
- DELETE
- EXECUTE
- SHOW VIEW

• LOCK TABLES

MySQL Workbench			– 🗆 X
A Local instance ×			
Eile Edit View Query Database S	arver ∐ools ≦cripting <u>H</u> elp		
	10		©
Query 1 Administration - Users and Privi	L ×		
Local Instance Users and Privileges	Details for account newuser@%		
User From Host	Login Account Limits Administrative Roles Scho	ema Drivilanan	
	Schema Privileges	, INSERT, LOCK TABLES, SELECT, SHOW VIEW, UPDATE	
	Scheme and Host Reids may use % and , wildcards The server will not apodic metrics before wildca The user 'newsate' di 'Ni will have the following aco Cityet Rights SERICT SERICT SERICT SERICT SERICT SERICT SERICT SERICT SERICT SHOW VIEW		Revole Al Privleges Delete Entry Add Entry Other Rights GRANT OPTION GRANT OPTION CRAFT TRAPCRARY TABLES LOCK TABLES
			Unselect All Select "ALL"
Add Account Delete Refresh			Revert Apply
Output			
Action Output •			
# Time Action		Message	Duration / Fetch



And that's it, no more permissions to be granted, just click on the *Apply* button and you have finished the restoration of the MySQL dump in your MySQL server instance.

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# 5 Installation Guide

# 5.1 Introduction

The Systems Engineering Suite (SES) Server is the tool designed to gather all the configuration parameters of the SES tools so, when installing them, they do not have to go through the same configuration process after installation. This tool must be installed just after installing the license parts: **FlexLM** and **TRC Vendor Daemon**.

This centralized configuration also allows to control the current status of all the parameters from all the installations at the same time.

The SES Server is composed of two different pieces of software:

- SES Server
- RQA Batch

They can be installed together or separately, to avoid competing for the CPU between SES Server and the RQA Batch when the latter is running all the assessment tasks. The installation steps for both options are the same, except that for the latter, you also must install the RQA – QUALITY Studio Batch, as described in the RQA Batch Installation and Setup Guide document, after installing the SES Server.

# 5.2 SES Server Installation

There are two ways to install SES Server:

- The most typical one is executing the installer with administration rights. The installation wizard will guide you to provide all the necessary parameters to perform the installation and at the end, the tool will be installed.
- There is another possibility; to install it from the command line where all the parameters are provided beforehand, and the installation will be done without any further user interaction.

### 5.2.1 Download

First, download the SES Server installer from TRC website. Use your browser to access <u>https://resources.reusecompany.com/downloads</u>. Ask our support service if you need help to find it.

### 5.2.2 SES Server Installation with the Installation Wizard

To start, execute the installer with administration rights. This document will guide your through the different steps of the installation wizard.

• *Select Setup Language*: in this first window you can select the language of the installation wizard. You can choose between English and Spanish.

Select Se	tup Language	×
5	Select the language to use during the installation:	
	English English Español	×



NOTE: This language selection is not the language that the SES Server user interface will have. The SES Server user interface language will rely on your Operating System language. You can always change it in the Options button of the login window or in the File menu of the SES Server main window.

• *Welcome*: this window will introduce all the actions to be performed while installing the SES Server application, you only have to read the instructions and click on the "Next >" button.
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FIGURE 120

 License Agreement: this window will show the license agreement you will need to accept if you want to use the application. Please read it carefully before accepting it, then select the first option below the text and then click on the "Next >" button. However, if you do not agree just click on the "Cancel" button, it will forcefully finish the installation wizard and it will not install the application.



FIGURE 121

- *License Server*: this window prompts for the licensing information needed to run the application. Consider the FlexLM installation and your deployment scenario to fill up this window.
  - In the *License Server* field enter the machine name or IP address where the FlexLM is installed.
  - In the *Port* field enter the PUBLIC port of the FlexLM service you have defined during the installation of FlexLM in Section 3.2.1.2 Flex License Server.

ŝ	tup - Systems Engineering Suite Server —	
i	cense Server	<
	Select a license server	Ē
	Please specify name or address of an existing license server, then click next. The options can be changed later from the application.	
	servername	٦
	Computer name or IP Address, i.e. servername or 192.168.0.10	
	Port	
	27000	
	Port number, i.e. 27000. Blank for default value	
	Optional: Additional Server in format port@servername and comma separated (,)	7
	Comma separated list, i.e: 27000@server2, 27000@server3	
	3-Server License Oluster	
	< Back Next > Can	icel



- *Optional*: This field can be used with two different purposes:
  - FlexLM High-availability: In installations that need to have high-availability, the FlexLM consists in a 3-Server License Cluster-installation (also known as a triad-installation): the FlexLM service is installed in three different servers, one of them is the master, and the rest are slaves but all of them are capable of grating licenses in any case: when all the three services are working properly or when one of the three is down. Keep in mind that all of them are holding the same license file.

The way to fill up this form, is to fill in the 'License Server' and 'Port' fields on the top of the window with the information from the Master FlexLM server and in this 'Optional: Additional Server' field you have to fill in with the same information, but this time related to all the slave FlexLM servers in the form of "port2@servername2, port3@servername3".

You must also check the "3-Server License Cluster" checkbox.

Setup - Systems Engineering Suite Server	_		×
License Server Select a license server			
Please specify name or address of an existing license server, then dic options can be changed later from the application. License Server	k next	. The	
servername Computer name or IP Address, i.e: servername or 192.168.0.10 Port			
27000 Port number, i.e. 27000. Blank for default value Optional: Additional Server in format port@servername and comma	separa	ited (,)	
27000@servername2, 27000@servername3 Comma separated list, i.e: 27000@server2, 27000@server3			
< <u>B</u> ack <u>N</u> ext	>	Car	ncel

FIGURE 123

 Several independent FlexLM services: In case of serving different licenses in different servers, you can select this option to set the list for additional FlexLM services so that when one of them is not available or does not have licenses to server for the application, it tries to request the license from the next one. To add additional FlexLM slave servers, just add the information for each one in this way ("port@servername") and join them by comma (,).

For this option DO NOT check the "3-Server License Cluster" checkbox.

Setup - Systems Engineering Suite Server		-		×
License Server Select a license server				١
Please specify name or address of an existing license s options can be changed later from the application. License Server	erver, the	n dick next.	The	
Servername Computer name or IP Address, i.e: servername or 192.168.0	.10			
Port				
27000				7
Port number, i.e. 27000. Blank for default value Optional: Additional Server in format port@serverna 27000@otherservername, 27000@anotherserverna Comma separated list, i.e: 27000@server2, 27000@server2 ] 3-Server License Cluster	me	nma separat	ted (,)	]
< <u>B</u> ac	k <u>N</u>	<u>l</u> ext >	Can	icel

FIGURE 124

• *Security permission:* This window allows you to define the permissions that the users working with SES ENGINEERING Studio.

If you select *Allow to execute functionality*, this means that every user will be allowed to perform every action possible in SES ENGINEERING Studio.

Otherwise, if you select *Do not allow to execute functionality*, the actions will be limited, and the administrator will have to define the users allowed to perform each action.

NOTE: This option can be configured later\* on, inside the SES Server application.

Setup - Systems Engineering Suite Server	—		×
Security permission Functionality execute permission by default		5	
Next, the default functionality execute permission must be set. Thi permission that users will have in case of not configuring a security		e	
Allow to execute functionality			
O Do not allow to execute functionality			
< <u>B</u> ack Ne	xt >	Can	cel

FIGURE 125

• *Service Port:* this window shows the port number "16555" by default. Don't change it. Just click "Next >" to advance.

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🟟 Setup - Systems Engineering Suite Server		_		X
Service Port SES service port			s	١
Specify the port for the SES service				
Port number				
16555				
	< <u>B</u> ack	<u>N</u> ext >	Cancel	



Select Destination Location: in this window you can select the location where
the application is going to be installed. By default, it will suggest installing the
application in your "Program files" folder under the folder "The REUSE
Company" and the subfolder with the name of the application. But you can
choose any other destination, either by typing it in the textbox or by clicking
on the "Browse" button on the right-hand side of the location textbox and
navigating through your computer storage system to find the suitable location
for it. When the path is selected, just click on the "Next >" button.



FIGURE 127

• Select Start Menu Folder: in this window you will be able to select where in your start menu the shortcuts to the application must be created. By default, the installer proposes to create them under the folder "The REUSE Company" and the subfolder with the name of the application:

S Setup - Systems Engineering Suite Server	_		×
Select Start Menu Folder Where should Setup place the program's shortcuts?		5	١
Setup will create the program's shortcuts in the following S	tart Mer	nu folder.	
To continue, click Next. If you would like to select a different folder	, click Bro	owse.	
The REUSE Company\Systems Engineering Suite Server	В	rowse	
< <u>B</u> ack <u>N</u> ex	d >	Can	cel

FIGURE 128

Ready to Install: this is the last step before installing the application in your system. It holds a description of the parameters compiled through this installation wizard. If one or more of the parameters is not right for your installation, just click on the "< Back" button repetitively until you reach the step to reconfigure your selections. When all the parameters are correct, just click on the "Next >" button.

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S Setup - Systems Engineering Suite Server -	×
Ready to Install Setup is now ready to begin installing Systems Engineering Suite Server on your computer.	s
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Program Files (x86)\The REUSE Company\Systems Engineering Suite Serv	ie 🔷
Start Menu folder: The REUSE Company\Systems Engineering Suite Server	
<	~
< Back Install	Cancel

FIGURE 129

• *Installing*: in this window you do not have to do anything but wait until the installation is complete. Just in case you must cancel the installation, click on the "Cancel" button. Otherwise wait until the process is finished and the wizard will move automatically to the next step.



FIGURE 130

• Completing the SES Server Setup Wizard: this window appears to notify you when the installation has finished successfully. Just click on the "Finish" button and you will have finished installing the application.



FIGURE 131

## 5.2.3 SES Server Installation in Silent Mode

Either for SES Server whether including RQA Batch or not, the command line with parameters to install it is:

```
SESServerSetup <version>.exe /verysilent /licenseServer
       <your.host.name> /licensePort <portNumber>
                [/additionalLicenseServers
<port@servername1>,<port@servername2>,... /licenseCluster
                          <0|1>1
```

#### IMPORTANT NOTE: Remember to open the command line window with administration rights, before executing the previous command.

The new mandatory parameters are:

/vervsilent: installation mode

/licenseServer: FlexLM License Server hostname

/licensePort: FlexLM License Server port

And the optional parameters for FlexLM high-availability mode are:

/additionalLicenseServers: additional FlexLM in servers

<port@servername> format and split by comma character (',')

/licenseCluster: indicates FlexLM architecture according to:

0: set of non-related FlexLM servers

1: high-availability and fault-tolerant FlexLM 3-server cluster (triad)

# 5.3 SES Setup in SES Server

Now, the best option is to go through the configuration of all the parameters of the Systems Engineering suite. To do that, open the just installed SES Server and the Login form will show up.

Here, we will find some steps to proceed before being able to log in. First you must connect to a SES Ontology database.

There is a list of available connections. Here, the connection can be managed and there can be as many connections as desired, but only one active at a time.

ogin	Ľ	Systems Engineering Suite Server. —		<ul> <li>Active connecti</li> <li>Name:</li> <li>AD6 Part.8</li> </ul>	on detail:		×	A
-	Administra vord:	itor		Description:		С	ntology v. 23.2	
	ble conne							
	Active 👻	Connection name	Serve	er	Database name	Last usage date 👻	Credentials	
	$\checkmark$	AD6 Part.8	dev\s	SQLEXPRESS20	[Demo-20230411]	24/04/2023 10:04:25		ľ
		[v22] MBSE Webinar 2022 04	dev.k	cs.local\sqlex	MBSE_Webinar_20	06/09/2022 10:10:46		
A		${\it Traceability} For {\it Temperature} Warrior$	dev.k	cs.local\SQLE	TraceabilityForTem	07/07/2022 10:14:58		
82		SES V22.2 - Temperature War - MB	dev.k	cs.local\SQLE	SES V18.5 - Temper	07/07/2022 09:42:24		
		[5.0] Temperature War Database (			D:\[Temperature W	26/05/2022 11:30:09		
*		SES v22 - Temperature war	KCS-	00028\SQLEXP	SES v18.5 - Temper	15/11/2021 20:02:33	$\checkmark$	
		[5.0] Temperature War Database			C:\Users\mbas\Do	15/11/2021 19:46:51		L
		SES v22 Temperature War - SQL	D:\Pr	ogram Files\Te	SES v20 - Temperat	15/11/2021 15:17:14		
		SES v22 - Temperature war (ENG)			D:\Program Files\T	15/11/2021 15:16:29		
		KM Hands-on			D:\Projects\Hands	09/02/2021 15:43:42	$\checkmark$	
		EIRENE			C:\Users\mbas\Do	09/02/2021 13:54:02		•
		connection			-	+ • 🖉 🗙 •	- G	<

FIGURE 132

When you open this list for the first time, it is going to be empty, thus, now it is the time to add the first connections. For this, you can either:

- 1. Right-Click on the blank space from the *Available connections*; a contextual menu will pop-up with several options to manage connections to the database
- 2. Click on the buttons at the bottom right corner of the connection list.

ogin	1			Name:			X	2
ES/	Administ	rator		AD6 Part.8			e	
assv	vord:			Description:		Or	ntology v. 23.2	~
aila	ble conn	ections:						
	Active 👻	Connection name	Serve	r	Database name	Last usage date 👻	Credentials	
2		SES v22 Temperature War - SQL	D:\Pr	ogram Files\Te	SES v20 - Temperat	15/11/2021 15:17:14		-
		SES v22 - Temperature war (ENG)			D:\Program Files\T	15/11/2021 15:16:29		
		KM Hands-on			D:\Projects\Hands	09/02/2021 15:43:42	$\checkmark$	
		EIRENE			C:\Users\mbas\Do	09/02/2021 13:54:02		
Þ		RQA Hands-on	dev.	cs.local\sqlex	RQA Hands-on	16/09/2020 10:48:36		
		RQA+RAT Hands-On Ontology			C:\Users\mbas\Doc	Access (*.mdb file	s)	
Þ		[DEV] RQA_TRACE	dev.	cs.local\SQLE	RQA_TRACE	Access 2007 (*.acc	cdb files)	
		Test	KCS-	00028@8085	KCS-00028	Microsoft SQL Ser	nuer (Native)	
		SE Suite v18.2 - English - SQL Server	dev.	cs.local\sqlex	Rga Quality Analyz.			
>		TRACEABILITY	dev.	cs.local\sqlex	Rqa Quality Analyz.	Microsoft SQL Ser	ver (OLEDB)	
		SES Suite v18 - English - Access			D:\Projects\Databa.	MySQL		
Nu	mber of	connections: 18			4	TRC DB Proxy		
	ata activ	e connection				+ • 2 × •		1

FIGURE 133

From the list, choose the suitable connection type to create it:

- MS Office Access
  - Access MBD file (compatible with 32 bits tools)
  - Access ACCDB file (compatible with 64 bits tools)
- Microsoft SQL Server:
  - Two different drivers
    - Native driver (support bulk inserts)
    - OleDb for SQL Server driver (does not support bulk insert)
  - When possible, it is better for performance to use the Native driver because it will be faster when assigning metrics to modules, updating baselines, assessing workproduct correctness, etc.
  - OleDb for SQL does not support Secure connection, so no Proxy connection can be set from it.
- MySQL
- TRC DB Proxy

In the following sections, we are going to describe how to set up a connection to an Ontology database depending on the type of database management system selected for your deployment:

#### 5.3.1 Connection to a Microsoft Access Database

Right-click on the list and the 'Add connection' option and choose Microsoft ACCESS.

A new window will pop-up. Select only the path where the database is stored. Important:

- For a single machine installation, local paths are valid.
- For multiple machine installation, network paths must be also provided.

OleDb for MS Access Connection Configurator		-		×
Connection information:				
Name:				_
Description:				
				•
OleDb for MS Access connection parameters:				
Database file:				
			ρ	×
Choose an authentication system:				
O Use Windows authentication				
Use Database authentication				
User:				
Password:				
Remember:				
Access password:				
Enter your password			0	
Indicate if this connection is the active one:				
Active				
Test Connection	(	ЭK	Can	cel

FIGURE 134

Type your Login and Password, if it is protected with any, and set the connection as "Active" to use this database in this moment.

NOTE: If the 'Remember' option is not checked, SES ENGINEERING Studio will ask for the database credentials on every connection attempt.

*Test Connection* before clicking on *Accept* to check that the connection can be properly done.



FIGURE 135

Finally click on 'Accept' and the connection will be created.

IMPORTANT: Microsoft does not provide Microsoft ACCESS drivers for tools in 64 bits version. In this term, RAT – AUTHORING Tool Plugin for IBM Rational DOORS will not be possible if the version installed is 64 bits. In this case, we recommend using a different database manager and connection, such as Microsoft SQL Server or MySQL.

Click on *Test Connection* before clicking on *OK* to check that the connection can be properly done.

#### 5.3.2 Connection to a Microsoft SQL Server Database

Right-click on the list and the 'Add connection' option and choose Microsoft SQL Server. A new window will pop-up.

Microsoft SQL Server (Native driver) Connection Configurator			
Connection information:			
Name:			
My Ontology Database			
Description:			
Comments		*	
Vicrosoft SQL Server connection parameters:			
Server:			ı İ
servername[\instance][:port]			1
Database name: database name			1
Choose an authentication system:     Use Windows authentication     Use Database authentication			
<ul> <li>Use Windows authentication</li> <li>Use Database authentication</li> <li>User:</li> </ul>			
Use Windows authentication Use Database authentication User: [sql_server_user			
<ul> <li>Use Windows authentication</li> <li>Use Database authentication</li> <li>User: sql_server_user</li> <li>Password:</li> </ul>			
Use Windows authentication Use Database authentication User: sql_server_user Password:			]
Use Windows authentication Use Database authentication User: sql_server_user Password: •••••••• Remember: ✓			
Use Windows authentication User: sql_server_user Password: Remember: ✓ Selected security mode:	on.		
<ul> <li>Use Windows authentication</li> <li>Use Database authentication</li> <li>User:         <ul> <li>sql_server_user</li> <li>Password:</li> <li>enember: ✓</li> </ul> </li> <li>Selected security mode:         <ul> <li>Normal connection.</li> </ul> </li> </ul>		e.	
<ul> <li>Use Windows authentication</li> <li>Use Database authentication</li> <li>User:         <ul> <li>sql_server_user</li> <li>Password:                 <ul></ul></li></ul></li></ul>		e.	
<ul> <li>Use Windows authentication</li> <li>Use Database authentication</li> <li>User:         <ul> <li>sql_server_user</li> <li>Password:</li> <li>e</li> <li>e</li> <li>Remember: ✓</li> </ul> </li> <li>Selected security mode:         <ul> <li>Normal connection.</li> <li>Force SSL/TLS secure connection, no server certificate verificate CA</li> </ul> </li> </ul>		e.	

FIGURE 136

Select the SQL Server hostname and the database name.

NOTE: To set a specific SQL Server instance, add a backslash character ('\') and the instance name followed by the hostname (e.g.: <hostname>\<instance>)

NOTE: SES Server automatically connects to the default SQL Server port. However, it is possible to set a custom port by adding a colon character (':') and the port number followed by the hostname (e.g.: <hostname>:<port> or <hostname>\<instance>:<port>)

Depending on the configuration set on how to log into SQL Server, type the SQL Server Login and Password or select Windows authentication: Finally, set the connection as "Active" to use this database in this moment.

NOTE: If the 'Remember' option is not checked, SES ENGINEERING Studio will ask for the database credentials on every connection attempt.

NOTE: Windows Authentication uses the NT AUTHORITY\SYSTEM user as bridge to communicate between our Proxy Manager Service and the SQL Server Database. Please make sure that this user has the required Read and Write permissions over the required databases.

Click on *Test Connection* before clicking on *OK* to check that the connection can be properly done.



FIGURE 137

Finally click on 'OK' and the connection will be created.

#### 5.3.3 Connection to a MySQL Schema

Right-click on the list and the 'Add connection' option and choose MySQL. A new window will pop-up.

Select the MySQL hostname and the Database schema.

NOTE: SES Server automatically connects to the default MySQL port. However, it is possible to set a custom port by adding a colon character (':') and the port number followed by the hostname (e.g.: <hostname>:<port>).

Ny MySQL Connection Configurator	-		×
Connection information:			
Name:			
My Ontology Database			
Description:			
Comments			•
			Ŧ
MySQL connection parameters:			
Server:			
servername			
Schema:			
schema_name			
User:			
mysql_user			
Password:			
•••••			
Remember: 🗸			
Selected security mode:			
Normal connection.			
Prefer SSL/TLS connection if available, no server certificate verific	cation.		
Force SSL/TLS secure connection, no server certificate verificatio			
Force SSL/TLS secure connection, verifiying server certificate CA.			
Force SSL/TLS secure connection, verifiying server certificate CA	and nam	e.	
Indicate if this connection is the active one:			
✓ Active			
Test Connection	Р ОК	G	ancel

FIGURE 138

Type the MySQL Login and Password and set the connection as "Active" to use this database in this moment.

NOTE: If the 'Remember' option is not checked, SES ENGINEERING Studio will ask for the database credentials on every connection attempt.

Click on *Test Connection* before clicking on *OK* in order to check that the connection can be properly done.





Finally click on *OK* and the connection will be created.

VERY IMPORTANT WARNING FOR MYSQL DEPLOYMENTS ON NON-WINDOWS OPERATING SYSTEMS: when using MySQL on top of a Linux distribution, there is a problem of case sentivity, tables names are checked by default to be in the same casing as in the queries and this will provoke a problem in the Suite. So please revise the installation in this case to behave as case insensive.

It can be checked in the MySQL Workbench in the MANAGEMENT tab, under Status and System variables, then in System Variables look up for "lower\_case\_table\_name", then if the value is 1 it's fine, otherwise you have to change it. Unfortunately it cannot be done inside MySQL Workbench, it has to be done in the MySQL server editing the configuration file. You will find an example of changing this configuration for a given Linux distribution here. For other distributions, please check it in the MySQL manual for that distribution.

Here is a snapshot of the MySQL Workbench showing the current status of the lower\_case\_table\_name variable with a compatible value (1) for the Systems Engineering Suite.

MySQL Workbench				- 🗆 X
<b>A</b>	×			
File Edit View Query Database Server Tools Scripting	Heb			
				Ø <b>   </b>
Neviator	Duary1 Administration - Status and Syst	v.		
MANAGEMENT	A			
Server Status	Server Variables			
Client Connections				
L Users and Printleges	Status Variables System Variables			
Status and System Variables  Data Export		ane	Value	Description
Data import/Restore	Category	iower_case_table_names	1	If set to 5, table names are stored in
INSTANCE 🕅	A			
Startup / Shutdown	Pitered Advanced/General			
Server Logs	Advanced/Insert delayed settings			
🖋 Options File	Advanced/Thread specific settings Advanced/Transactions			
PERFORMANCE	Advanced/Various			
Ø Dashboard	General/Backup General/Directories			
Performance Reports	General/Features			
♂▲ Performance Schema Setup	General/Frewal General/General			
	General/International			
	General/Memory usage General/SOL			
	General/System			
Management Schemes	General/Transactions InnoCORLIFEE pool			
	Inno08/Datafies			
Information	Inno08/Fullext search Inno08/General			
No object selected	Inno08)Logfiles			
	Inno06/Memory Inno06/Marious			
	Logging/Advanced log options v			
	< > <			>
	Copy Global Status and Variables to Clipboan	d Copy Selected to Clipboard		Refresh
Object Info Session				

FIGURE 140

# 5.4 Log In

Now SES Server is ready to be launched. Provide the SES Server user credentials:

- User: SESAdministrator
- Password: AdminAdmin

NOTE: these credentials can be changed inside SES Server after login.

edentia	als for	Systems Engineering Suite Server:		<ul> <li>Active connecti</li> </ul>	on detail:			_
ogin:				Name:			T	
SESAdm	ninistra	ator		AD6 Part.8			e de la companya de l	
assword	d٠			Description:		Or	ntology v. 23.2	~
								-
	•••							
ailable	conne	ections:						
Acti	ve 👻	Connection name	Serve	r	Database name	Last usage date 👻	Credentials	. [
> [		SES v22 Temperature War - SQL	D:\Pr	ogram Files\Te	SES v20 - Temperat	15/11/2021 15:17:14		[
		SES v22 - Temperature war (ENG)			D:\Program Files\T	15/11/2021 15:16:29		
		KM Hands-on			D:\Projects\Hands	09/02/2021 15:43:42	$\checkmark$	
		EIRENE			C:\Users\mbas\Do	09/02/2021 13:54:02		
		RQA Hands-on	dev.k	cs.local\sqlex	RQA Hands-on	16/09/2020 10:48:36		 [
		RQA+RAT Hands-On Ontology			C:\Users\mbas\Doc	25/05/2020 10:30:36		
		[DEV] RQA_TRACE	dev.k	cs.local\SQLE	RQA_TRACE	31/03/2020 17:35:50		
A [ A [ A [ A [		Test	KCS-0	00028@8085	KCS-00028	29/11/2019 10:24:08		
▶ [		SE Suite v18.2 - English - SQL Server	dev.k	cs.local\sqlex	Rqa Quality Analyz	15/11/2019 11:02:41		
▶ [		TRACEABILITY	dev.k	cs.local\sqlex	Rqa Quality Analyz	14/06/2019 12:28:58		
		SES Suite v18 - English - Access			D:\Projects\Databa	29/10/2018 10:52:26		ľ
Numb	er of o	connections: 18						
/ligrate	active	connection			-	F • 🖉 🗙 •	G. •	

FIGURE 141

If everything is fine the main SES Server window shall be prompted.

However, there can be many different types of errors, the most typical is that the "License server is down or not responding."



FIGURE 142

This can be caused by a wrong license server configuration in the installation steps. Imagine the case that instead of typing 'server12' you have typed 'server21' to this moment. You can check which is the current license server configuration by clicking on the *Configure Server* button at the bottom of the log in window:

Login:				Name:			*	Z		
SES	Administr	rator		AD6 Part.8						
ass	word:			Description:		0	ntology v. 23.2	~		
•••	•••••									
vail	able conn	ections:								
I	Active 👻	Connection name	Serve	r	Database name	Last usage date 👻	Credentials			
		SES v22 Temperature War - SQL	D:\Pr	ogram Files\Te	SES v20 - Temperat	15/11/2021 15:17:14		Ì		
		SES v22 - Temperature war (ENG)			D:\Program Files\T	15/11/2021 15:16:29				
		KM Hands-on			D:\Projects\Hands	09/02/2021 15:43:42	$\checkmark$			
		EIRENE			C:\Users\mbas\Do	09/02/2021 13:54:02				
		RQA Hands-on	dev.k	cs.local\sqlex	RQA Hands-on	16/09/2020 10:48:36				
		RQA+RAT Hands-On Ontology			C:\Users\mbas\Doc	25/05/2020 10:30:36				
		[DEV] RQA_TRACE	dev.k	cs.local\SQLE	RQA_TRACE	31/03/2020 17:35:50				
		Test	KCS-	00028@8085	KCS-00028	29/11/2019 10:24:08				
*		SE Suite v18.2 - English - SQL Server	dev.k	cs.local\sqlex	Rqa Quality Analyz	15/11/2019 11:02:41				
SA.		TRACEABILITY	dev.k	cs.local\sqlex	Rqa Quality Analyz	14/06/2019 12:28:58				
		SES Suite v18 - English - Access			D:\Projects\Databa	29/10/2018 10:52:26				
		connections: 18 e connection			-	F • 🖉 🗙 •		[;		

FIGURE 143

Click on the *Configure Server* button to change the current FlexLM License Server address and port and other options.

1. Check the Server Licensing option in any case and enter a valid FlexLM License Server address and port as shown in the following figure.

S Select License Source – $\Box$ ×
Select your license
Use License Server:
If your administrator has provided you with License Server information
Server More servers Options
Enter the primary server name and port in the fileds below. For additional servers use tab More Servers Server name:
servername
Port: 27/000
OK Cancel

FIGURE 144

 Depending on your FlexLM installation, you can check the 3-Server FlexLM License Cluster configuration or the Additional FlexLM Servers in the "More Servers" tab of the FlexLM configuration window. The behaviour is exactly the same as described in the installation procedure for SES server in the 'License Server' <u>step</u>.

S Select Lice	nse Source	-		×						
Select your license										
Use Lic	ense Server:									
lf your adm Server infor	inistrator has pro mation	vided you with	n License							
Server	More servers	Options								
more lice format p	Additional servers for high availability: Include more license servers in the search path using the format port@servername, one server per line 27000@servername2,27000@servername3									
✓ 3-set	✓ 3-server License Cluster									
	[	OK	Can	icel						

FIGURE 145

3. Finally, in case you are having network problems to reach the FlexLM server due to restricted connection availability or a high volume of requests to the FlexLM server, you can increase the timeout for the SES application license checking period. You can select a timeout between 200 ms and 3000 ms (3 seconds) maximum.



FIGURE 146

When the FlexLM configuration update is finished, just click on the *OK* button and then the following message will appear:





This means that, to ensure that the SES Server is updated you must restart the SES license service (installed along SES Server, in this very same machine; **NOT to be confused with the FLEXLM Service**). This can be done in two different ways:

 To do this, you have to go to the Windows Task Manager, then go to the 'Services' tab, then look up "QRLicenceService" under the Name column or "SE Suite Tools License Service" in the Description column, then click with the right button of the mouse on that line and select 'Restart'. The service will be stopped and restarted, and we can try to log in again.

File Options View				
Processes Performance App	p history	Start-up Users Details Services		
Name	PID	Description	Status	Group
QRLicenceService	3932	SE Suite Tools License Service	Running	
🔍 QSTokenManagerService	3876	SE Suite Tools Token Management	Runn Sta	rt
QWAVE		Quality Windows Audio Video Experience	Stopp Sto	p
🔆 RasAuto		Remote Access Auto Connection Manager	Stopp Res	tart
🔍 RasMan	4732	Remote Access Connection Manager	Runn	3
RemoteAccess		Routing and Remote Access	Stopp	en Services
RemoteRegistry		Remote Registry	Stopp Sea	rch online
🔍 RetailDemo		Retail Demo Service	Stopp Go	to details
🔍 RmSvc		Radio Management Service	Stopped	LocalServiceN
🗟 RpcEptMapper	840	RPC Endpoint Mapper	Running	RPCSS
端 RpcLocator		Remote Procedure Call (RPC) Locator	Stopped	
RpcSs	840	Remote Procedure Call (RPC)	Running	rpcss
🔍 SamSs	780	Security Accounts Manager	Running	
SCardSvr		Smart Card	Stopped	LocalServiceA
🔍 ScDeviceEnum		Smart Card Device Enumeration Service	Stopped	LocalSystemN
🖓 Schedule	2276	Task Scheduler	Running	netsvcs
SCPolicySvc		Smart Card Removal Policy	Stopped	netsvcs
SDRSVC		Windows Backup	Stopped	SDRSVC
🔍 seclogon		Secondary Log-on	Stopped	netsvcs
🔍 SecurityHealthService	1944	Windows Security Service	Running	
SEMgrSvc	10000	Payments and NFC/SE Manager	Running	LocalService
SENS	2104	System Event Notification Service	Running	netsvcs
🕞 Sense		Windows Defender Advanced Threat Protection Service	Stopped	
🔍 SensorDataService		Sensor Data Service	Stopped	
SensorService		Sensor Service	Stopped	LocalSystemN
SensrSvc		Sensor Monitoring Service	Stopped	LocalServiceA

 Another option for previous versions of Windows, when this tab is not included in the Task Manager, but you can find this list in the Service Manager window, to open it, press Windows + R and the command window will appear:

🖅 Run	×
	Type the name of a program, folder, document or Internet resource, and Windows will open it for you.
<u>O</u> pen:	services.msc v
	OK Cancel Browse

FIGURE 149

Type there 'services.msc' as shown in the previous figure.

Then, the Service Management Console will appear, look for the "SE Suite Tools License Service" service, select its line and right-click with the mouse. A contextual menu will appear, on it, select *Restart*. The service will be stopped and started and we can try to log in again.

Services						- 0	×
e Action View	/ Help Q 📦 🛛 📷 🕨 🗰 🔢 🕪						
Services (Local)			-				_
Services (Local)	Name	Description	Status	Startup Type		Log On As	
	Remote Desktop Services UserMode Port Redirector	Allows the r	Running	Manual		Local Syste	
	Remote Procedure Call (RPC)	The RPCSS	Running	Automatic		Network S	
	Remote Procedure Call (RPC) Locator	In Windows		Manual		Network S	
	🖏 Remote Registry	Enables rem		Disabled		Local Service	
	🖏 Retail Demo Service	The Retail D		Manual		Local Syste	
	Routing and Remote Access	Offers routi		Disabled		Local Syste	
	🖏 RPC Endpoint Mapper	Resolves RP	Running	Automatic		Network S	
	🙀 SE Suite Tools License Service	Requiremen	Rupping	Automatic		Local Syste	
	🖏 SE Suite Tools Token Management	SE Suite Too	Ri Si	tart		Local Syste	
	Secondary Log-on	Enables star	St	top		Local Syste	
	Secure Socket Tunneling Protocol Service	Provides su	Ri P.	ause		Local Service	
	Security Accounts Manager	The startup	RI R	esume		Local Syste	
	Security Center	The WSCSV	P.	estart	ed Start)	Local Service	
	🖏 Sensor Data Service	Delivers dat	1	2	tart)	Local Syste	
	Sensor Monitoring Service	Monitors va	A	ll Tasks >	tart)	Local Service	
	Sensor Service	A service fo		efresh	tart)	Local Syste	
	Server .	Supports fil	R	erresn	er Start)	Local Syste	
	Shared PC Account Manager	Manages pr	P	roperties		Local Syste	
	Shell Hardware Detection	Provides no	R			Local Syste	
	Smart Card	Manages ac	н	elp	tart)	Local Service	
	Smart Card Device Enumeration Service	Creates soft		Manual (Trigge	Start)	Local Syste	
	Smart Card Removal Policy	Allows the s		Manual	-	Local Syste	
	SNMP Trap	Receives tra		Manual		Local Service	
	Software Protection	Enables the		Automatic (Del	ayed Start,	Network S	
	Spatial Data Service	This service		Manual		Local Service	
	Spot Verifier	Verifies pote		Manual (Trigge	Start)	Local Syste	





• Another possibility when clicking on the OK button of the FlexLM configuration window, is that if our SES license service installed along SES Server is not

running for any given reason then the warning message that will appear will be the following:



FIGURE 151

This means you have to manually start the SES Service. You can do as described for the previous problem (either using the Task Manager or the Services Management Console) and then you have to open in SES Server the FlexLM configuration by clicking again on the *Configure Server* button. There, you can change your FlexLM configuration again, and when saving it, this time, the message to appear is the one warning to restart the SES Service to have all the SES applications updated with the changes. Then you can proceed to log in to the SES Server and go to the main window.

## 5.5 Main Window

### 5.5.1 Licensing

The first tab of the SES Server shows all license-related information: source, messages, expirations and total number of licenses by product. The license info is requested by the SES license service to the Flex License Server.

You can also stop and start the SES Licensing Service on the top-right corner (administration rights needed for this activity).

Ŧ		Systems I	Engineering Suite Server		_ 🗆 ×
File Systems Engineering Suite	e Server				۵ 🕜
License Roles & User Management Licensing	Scheduled Email notification Synchronization	SKB Assets SKB Assets	Repositories NLP Configurations Databases	SES Service	
License Info:					
License path: 29000@dev.kc	s.local				
Service status: Ok					
Expiration date: 12/31/2023					
SES License:					
Server License Expires on 12/31/2	023 12:00 AM				
SES Service Configuration:					
Computer name or net address:	KCS-00028				Port: 16555
Product Licenses:					
License				•	Total 🔺
Database Migration Tool					30 🔺
Decision Manager Studio					30
Engineering Studio					30
Engineering Studio Plugin Full	Edition				30
Engineering Studio Plugin Lite	Edition				30
KNOWLEDGE Manager Full Edi	ition				30
KNOWLEDGE Manager Lite Edi	ition				30 💌
C Refresh License Info		Com	ected as 'mbas' to '(Demo-2023)	1411] SES Ontology v23.1' from 'SQLServer	Jative' @ 'devISOI EXPRESS2008'
		Com	lected as mbas-to [Demo-20230	will set onlogy vzs. I nom setselven	aute @ detiodLEAFRESS2008

FIGURE 152

# The REUSE Company

The REUSE Company is an organization specialized in the application of Semantic Representation and Analysis Technologies to a wide range of industries (Aerospace, Defense, Automotive, Naval, Health, ...). Our customers are usually (but not limited to) safety-oriented organizations.

Our focus is on System/Software Reuse, Traceability and Quality applied to all types of work-products throughout the whole SE lifecycle (requirements, SysML Models, physical models, tests cases, data results, manuals, natural language descriptions, fault trees, etc.). The integration of tools and technology from The REUSE Company facilitates the representation, analysis and exploitation of knowledge allowing for a knowledge-centric system engineering approach.

Our mission is to promote system/software and knowledge reuse within any organization, by offering processes, methods, tools, and services that make it possible. We offer technology that is fully integrated within the organization's production chain.



