



## SAP NetWeaver '04 Installation Guide

# Search and Classification (TREX) 6.1

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SAP AG  
Neurottstraße 16  
69190 Walldorf  
Germany  
T +49/18 05/34 34 24  
F +49/18 05/34 34 20  
[www.sap.com](http://www.sap.com)

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## Icons in Body Text

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help* → *General Information Classes and Information Classes for Business Information Warehouse* on the first page of any version of *SAP Library*.

## Typographic Conventions

Type Style	Description
<i>Example text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.  Cross-references to other documentation.
<b>Example text</b>	Emphasized words or phrases in body text, graphic titles, and table titles.
EXAMPLE TEXT	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
Example text	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
<b>Example text</b>	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

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# Installing Search and Classification (TREX) 6.1

## Purpose

This guide describes the installation of *Search and Classification (TREX) 6.1 SR1* (support release). The target group of the guide consists of system administrators and consultants.

The guide is structured as follows:

- [Implementation Considerations \[Page 7\]](#) explains what you need to take into account before the installation.
- [Naming Conventions \[Page 10\]](#) contains information on special naming conventions for this guide.
- [Checklists for the Installation \[Page 11\]](#) contains a separate checklist for each installation variant, including an overview of the installation steps.
- [Server Side \[Page 17\]](#) describes how you plan, prepare, and carry out the installation of the server software. It also describes the configuration steps that you have to carry out immediately after the installation.
- [Client Side \[Page 55\]](#) describes how you carry out the installation of the client software, if this is necessary. It also describes the configuration steps that you have to carry out on the client side.
- [Installation Check \[Page 63\]](#) describes how to check whether the installation of the server software was successful.
- [Additional Information \[Page 65\]](#) contains information on troubleshooting problems that might occur during the installation and explains how to control the installation from another host. It also describes how to start, stop, and uninstall TREX.

## Constraints

### Additional Configuration Steps Depending on the Application

Additional configuration steps may be necessary depending on the application for which you are installing TREX. These additional steps are not described in this guide. You can find them in the documentation on the application in question.



## Implementation Considerations

Refer to the following information before starting the installation.

### Migration from TREX 6.0 to TREX 6.1

If you want to update a TREX system with version TREX 6.0 SP1 Patch 2 or higher to TREX 6.1, you have to migrate the configuration files and indexes of your TREX 6.0 version using scripts.



For detailed information on the migration from TREX 6.0 to TREX 6.1, see the guide *Migration from TREX 6.0 SP1 to TREX 6.1* in the *SAP Service Marketplace* at [service.sap.com/instguidesNW04](http://service.sap.com/instguidesNW04) → *Installation*.

### Master guide

If you are installing TREX in a mySAP Business Suite solution or in a business scenario, make yourself familiar with the relevant master guide before beginning the installation.

The master guide is the central document for implementing mySAP Business Suite solutions and business scenarios. It lists the components and third-party applications that are necessary for a mySAP Business Suite solution, and refers to any necessary installation and upgrade guides. It also defines the installation sequence of business scenarios belonging to the relevant mySAP Business Suite solution.

### Integration of Application and TREX

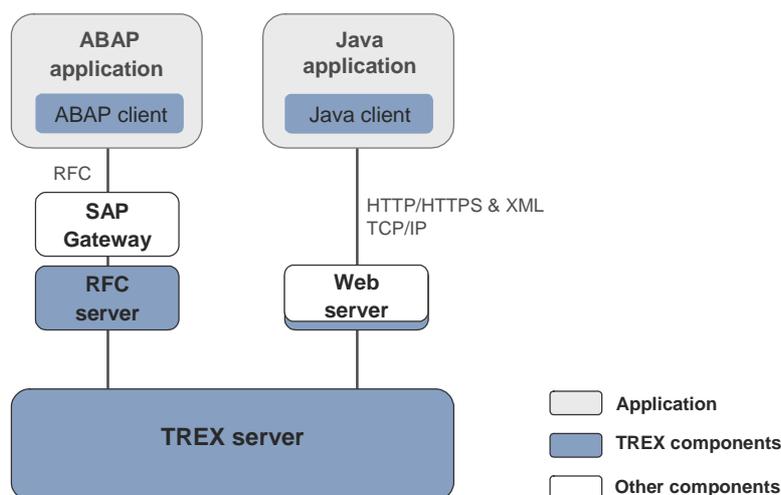
TREX is based on a client/server architecture. The client software is integrated into the application that uses the TREX functions, and allows communication with the TREX servers. The TREX servers execute the requests of the clients: They index and classify documents and respond to search queries.

TREX offers an ABAP and a Java client. This allows ABAP and Java applications to use TREX functions. ABAP and Java applications communicate with the TREX servers using different protocols and components.

- ABAP applications communicate with TREX servers using the RFC protocol. Communication takes place using an instance of the SAP Gateway and an RFC server.
- Java applications communicate with TREX using the HTTP or HTTPS protocol. This communication takes place using a Web server that is enhanced with TREX-specific functions.

RFC and Web servers have similar functions: They receive the requests of the application, convert them to a TREX-internal format, and send them on to the responsible TREX server.

The graphic below depicts the interaction between applications and TREX.



There is no dependency between TREX and the application using TREX with regard to the operating system used. You can install TREX on a different operating system to the application that accesses TREX.

### Connecting TREX to More Than One Application

In principle, you can connect one TREX system to more than one application.

Note the following:

- The TREX system must have appropriate dimensions so that it can process the load of all the applications.
- You must take organizational measures to ensure that the applications use separate index namespaces.

### Sizing

The required hardware for the server software depends on the following factors:

- How many documents of what type are to be indexed?
- What quantities of documents are to be indexed initially, and what quantities during routine operation?
- How many search queries are expected? How many parallel search queries are expected?

Plan the required number of hosts and the equipping thereof with your SAP hardware partner. Use the information in [Hardware and Software Requirements \[Page 17\]](#) as a basis for this.



For more information on sizing TREX, see the guide *Sizing Search and Classification TREX 6.1* at [service.sap.com/sizing](http://service.sap.com/sizing).

## Minimal TREX System

A minimal system consists of one TREX instance (**one** installation of the server software). You can use a minimal system as a demo, test, and production system.



For a production system, SAP recommends that you install the server software on a single host that is used exclusively for TREX.



If TREX is running on the same host as other components, you must make sure of the following:

- There is enough main memory for all components.
- TREX can use the required main memory space exclusively.

## Distributed TREX System

Search and Classification (TREX) consists of a client component and a server component. The server component is based on a flexible architecture that allows a distributed installation. You can use a distributed installation to achieve the following:

- Load balancing
- High availability

You can distribute the search and indexing load among several hosts.

You can make sure that both indexing and searching are highly available.



Your TREX system can quickly reach its performance limit if you install TREX on a single server in a productive scenario with large document sets and a large number of search queries. SAP therefore recommends that you calculate the expected load and availability requirements for your TREX system early on in the planning process and start with a distributed TREX installation immediately if that is what you require.



In a distributed scenario, the same TREX version and patch level must run on all TREX hosts. Mixed installations with different TREX versions are not supported.



For detailed information on the installation and configuration of a distributed TREX system, see the guide *Distributed Search and Classification (TREX) 6.1 Systems* in the *SAP Service Marketplace* at [service.sap.com/instguidesNW04](http://service.sap.com/instguidesNW04) → *Installation*.

## Installation of the Server Software

The TREX servers can be used by one or more applications. When you are installing TREX, you need to know the type of application and communication protocol. There are the following possibilities:

- The TREX servers are only used by Java applications.

Since Java applications communicate with the TREX servers using HTTP, you definitely need to carry out the installation steps that enable an HTTP connection.

- The TREX servers are only used by ABAP applications.

Since ABAP applications communicate with the TREX servers using RFC, you definitely need to carry out the installation steps that enable an RFC connection.

- The TREX servers are used by Java and ABAP applications.

In this case, execute the installation steps necessary for an HTTP and an RFC connection.



The documents to be indexed are sent by an ABAP application to TREX. The search takes place using a Web application (Java application).

This guide contains a checklist with an overview of necessary installation steps for each case.

## Installation of the Client Software

The ABAP client is part of the SAP R/3 system, and must not be installed separately. The required configuration in the SAP R/3 system is described in this guide.

You may need to install the Java client. The installation and configuration that follow are described in this guide.



## Naming Conventions

The following naming conventions are valid for this documentation:

### Terminology

Term	Meaning
TREX host	Host on which the TREX server software is installed.
TREX instance	One installation of the TREX server software.

### Variables

Variable	Meaning
<TREX_DIR>	Installation directory for TREX. The path to the directory is: <ul style="list-style-type: none"> <li>• On UNIX: /usr/sap/trex_&lt;instance_number&gt;</li> <li>• On Windows: &lt;disk_drive&gt;:\usr\sap\trex_&lt;instance_number&gt;</li> </ul>
<DVD_DIR>	Directory under which you mount the DVD.
<OS>	Name of the operating system in a path.
<HOME_TREXUSR>	Home directory of the user <trex_instance_number>.
User <trex_instance_number>	Operating system user that you created for a TREX instance.
User <gwsadm>	Operating system user on which the SAP Gateway is running.
User <j2eeadm>	Operating system user with which you log on to the host on which the J2EE Engine is running.

The following example shows how variables are used.



Go to the directory `<DVD_DIR>/UNIX/<OS>`.

If the DVD is mounted under `/sapdvd1` and you are using the operating system AIX, you have to go to the directory `/sapdvd1/UNIX/AIX_64`.

### Path Specifications

The forward slash (/) is usually used in path specifications such as `<Trex_DIR>/saprofile.ini`.

### Commands

Commands such as script calls are sometimes distributed over several lines in this documentation. When you execute the commands, enter them as one line.



## Checklists for the Installation

### Purpose

Use the tables below as checklists for the installation of the system. All necessary installation phases (planning, preparation, installation, and post-installation activities) are listed in these tables.

Use the links to the general descriptions of actions and to additional information that will help you when executing the actions. By doing this, you ensure that you do not overlook any important information.

### Process Flow

1. Print the relevant checklists:
  - [Installation with HTTP Connection \[Page 12\]](#)
  - [Installation with RFC Connection \[Page 13\]](#)
  - [Installation with HTTP and RFC Connections \[Page 15\]](#)
2. Carry out the installation steps in the order specified in the tables.
  - When carrying out an obligatory step during the installation, follow the link to the relevant section.
  - Then carry out the work steps described there.
  - When the installation step has been successfully completed, place a check (✓) next to the relevant entry in the table in order to record your progress.
  - Then continue with the next step listed in the table.



## Installation with HTTP Connection

### Server Side

#### Installation Planning

✓	Action
	Check the <a href="#">hardware and software requirements [Page 17]</a> .
	Check what <a href="#">documentation [Page 22]</a> you need for the installation.

#### Installation Preparation

✓	Action
	If you want to install multiple TREX instances, read the <a href="#">information [Page 23]</a> on this.
	<a href="#">Prepare the system for the SAPinst GUI [Page 24]</a> .
	<a href="#">Create a user for TREX [Page 25]</a> .
	Check whether there is sufficient <a href="#">disk space [Page 26]</a> for installing the TREX software.

#### Installation

✓	Action
	<a href="#">Install TREX with SAPinst [Page 28]</a> .

#### Post-Installation Activities

✓	Action
	<b>General UNIX Configuration</b>
	<a href="#">Configure TREX automatic start [Page 37]</a> .
	Set the required <a href="#">environment variables [Page 39]</a> .
	Check the <a href="#">UNIX kernel parameters [Page 40]</a> and change them if necessary.
	TREX starts automatically if you have restarted the host. If you have not restarted the host, start TREX manually. <ol style="list-style-type: none"> <li>Log on with the user &lt;trex_instance_number&gt;.</li> <li>Execute the following commands:               <pre>cd &lt;TREX_DIR&gt; TREX start</pre> </li> </ol>
	<b>General Windows Configuration</b>
	On Windows no actions are needed to start TREX. The TREX daemon starts automatically as a Windows service after the installation.
	Check the <a href="#">performance settings for the operating system [Page 43]</a> .
	<b>General TREX Configuration</b>
	Activate <a href="#">Python extensions [Page 44]</a> if necessary.

	Change the suggested <a href="#">index and queue directories [Page 46]</a> if necessary.
	<b>Configuration of the HTTP Connection</b>
	Change the <a href="#">Web server address [Page 47]</a> if necessary.
	Only Windows: Make sure that the Web server has started and that the <i>World Wide Web Publishing Service</i> is running.
	Windows Only: Configure the <a href="#">Web server [Page 47]</a> .
	Only Windows: <a href="#">Check permissions for the TREX directory [Page 49]</a> .

## Client Side

### Installation and Configuration

✓	Action
	Install the <a href="#">Java client for J2EE 6.40 [Page 55]</a> .
	Enter the <a href="#">address of the TREX name server [Page 55]</a> into the Java client configuration settings.
	Check the <a href="#">proxy settings [Page 56]</a> .



## Installation with RFC Connection

### Server Side

#### Installation Planning

✓	Action
	Check the <a href="#">hardware and software requirements [Page 17]</a> .
	Check what <a href="#">documentation [Page 22]</a> you need for the installation.

#### Installation Preparation

✓	Action
	If you want to install multiple TREX instances, read the <a href="#">information [Page 23]</a> on this.
	<a href="#">Prepare the system for the SAPinst interface [Page 24]</a> .
	Only Windows: After the gateway installation, restart the host and check that the process <code>gwrđ.exe</code> starts.
	<a href="#">Create a user for TREX [Page 25]</a> .
	Check whether there is sufficient <a href="#">disk space [Page 26]</a> for installing the TREX software.

**Installation**

✓	Action
	<a href="#">Install TREX with SAPinst [Page 28]</a> .

**Post-Installation Activities**

✓	Action
	<b>General UNIX Configuration</b>
	<a href="#">Configure TREX automatic start [Page 37]</a> .
	Set the required <a href="#">environment variables [Page 39]</a> .
	Check the <a href="#">UNIX kernel parameters [Page 40]</a> and change them if necessary.
	TREX starts automatically if you have restarted the host. If you have not restarted the host, you can start TREX manually as explained below. <ol style="list-style-type: none"> <li>1. Log on with the user &lt;trex_instance_number&gt;.</li> <li>2. Execute the following commands:               <pre>cd &lt;TREX_DIR&gt; TREX start</pre> </li> </ol>
	<b>General Windows Configuration</b>
	On Windows no actions are needed to start TREX. The TREX daemon starts automatically as a Windows service after the installation.
	Check the <a href="#">performance settings for the operating system [Page 43]</a> .
	<b>General TREX Configuration</b>
	Activate <a href="#">Python extensions [Page 44]</a> if necessary.
	Change the suggested <a href="#">index and queue directories [Page 46]</a> if necessary.
	<b>Configuration of the RFC Connection</b>
	Configure the <a href="#">number of registered RFC servers [Page 51]</a> .
	If necessary, activate <a href="#">queue server usage [Page 53]</a> .
	If the gateway is not installed on the TREX host, change the <a href="#">connection parameters of the RFC server [Page 54]</a> .

**Client Side****Configuration**

✓	Action
	Create the required <a href="#">RFC destinations [Page 57]</a> .
	Create a <a href="#">search server relation [Page 61]</a> if necessary.



## Installation with HTTP and RFC Connections

### Server Side

#### Installation Planning

✓	Action
	Check the <a href="#">hardware and software requirements [Page 17]</a> .
	Check what <a href="#">documentation [Page 22]</a> you need for the installation.

#### Installation Preparations

✓	Action
	If you want to install multiple TREX instances, read the <a href="#">information [Page 23]</a> on this.
	<a href="#">Prepare the system for the SAPinst interface [Page 24]</a> .
	Only Windows: After the gateway installation, restart the host and check that the process <code>gwrd.exe</code> starts.
	<a href="#">Create a user for TREX [Page 25]</a> .
	Check whether there is sufficient <a href="#">disk space [Page 26]</a> for installing the TREX software.

#### Installation

✓	Action
	<a href="#">Install TREX with SAPinst [Page 28]</a> .

#### Post-Installation Activities

✓	Action
	<b>General UNIX Configuration</b>
	<a href="#">Configure TREX automatic start [Page 37]</a> .
	Set the required <a href="#">environment variables [Page 39]</a> .
	Check the <a href="#">UNIX kernel parameters [Page 40]</a> and change them if necessary.
	TREX starts automatically if you have restarted the host. If you have not restarted the host, you can start TREX manually as explained below. <ol style="list-style-type: none"> <li>1. Log on with the user <code>&lt;trex_instance_number&gt;</code>.</li> <li>2. Execute the following commands:               <pre>cd &lt;TREX_DIR&gt; TREX start</pre> </li> </ol>
	<b>General Windows Configuration</b>
	On Windows no actions are needed to start TREX. The TREX daemon starts automatically as a Windows service after the installation.

	Check the <a href="#">performance settings for the operating system [Page 43]</a> .
	<b>General TREN Configuration</b>
	Activate <a href="#">Python extensions [Page 44]</a> if necessary.
	Change the suggested <a href="#">index and queue directories [Page 46]</a> if necessary.
	<b>Configuration of the HTTP Connection</b>
	Change the <a href="#">Web server address [Page 47]</a> if necessary.
	Only Windows: Make sure that the Web server has started and that the <i>World Wide Web Publishing Service</i> is running.
	Windows Only: Configure the <a href="#">Web server [Page 47]</a> .
	<b>Configuration of the RFC Connection</b>
	Configure the <a href="#">number of registered RFC servers [Page 51]</a> .
	If necessary, activate <a href="#">queue server usage [Page 53]</a> .
	If the gateway is not installed on the TREN host, change the <a href="#">connection parameters of the RFC server [Page 54]</a> .

## Client Side – Java Application

### Installation and Configuration

✓	Action
	Install the <a href="#">Java client for J2EE 6.40 [Page 55]</a> .
	Enter the <a href="#">address of the TREN name server [Page 55]</a> into the Java client configuration settings.
	Check the <a href="#">proxy settings [Page 56]</a> .

## Client Side – ABAP Application

### Configuration

✓	Action
	Create the required <a href="#">RFC destinations [Page 57]</a> .
	Create a <a href="#">search server relation [Page 61]</a> if necessary.



## Server Side

### Purpose

The sections below describe how to install the server software and tell you the configuration steps that are necessary on the server side.



## Installation Planning

### Purpose

The following sections contain information that is relevant for the installation planning.



## Hardware and Software Requirements

The tables below contain the hardware and software requirements for the TREX server software.



The requirements for hardware and software listed here are valid for a TREX installation on a single host (single server system). The requirements for a distributed system that supports load-balancing and high availability are listed in the guide for the installation and configuration of a distributed TREX system. This guide is called *Distributed Search and Classification (TREX) 6.1 Systems* and is located in the *SAP Service Marketplace* at [service.sap.com/instguidesNW04](http://service.sap.com/instguidesNW04) → Installation.



For more information about the requirements for using TREX, see the document *Requirements and Recommendations for Using TREX* on the SAP Service Marketplace [service.sap.com/nw-howtoguides](http://service.sap.com/nw-howtoguides) → *Portal, KM, and Collaboration* and as an attachment to *SAP Note 761489 TREX 6.1: Requirements and Recommendations*.

### Hardware Requirements

Requirement Type	Requirement
Hard disk capacity:	<ul style="list-style-type: none"> <li>• SAPinst work directory You require the following for the installation tool SAPinst:               <ul style="list-style-type: none"> <li>○ On UNIX, 140 MB in temporary directories or in a directory chosen by you.</li> <li>○ On Windows, 40 MB in the directory C:\Program Files.</li> </ul> </li> <li>• TREX Directory You need the following for the TREX software:               <ul style="list-style-type: none"> <li>○ On UNIX, at least 630 MB in the directory /usr/sap.</li> <li>○ On Windows, at least 450 MB in the directory &lt;disk_drive&gt;:\usr\sap.</li> </ul> </li> </ul>

Requirement Type	Requirement
	<p>You also need disk space in this directory for the trace files that TREX writes during routine operation</p> <ul style="list-style-type: none"> <li>Index Directory</li> </ul> <p>A minimum of 80 GB, depending on the number and type of documents to be indexed.</p> <p>If documents exist in different formats (Microsoft Word, PDF, and so on), the index needs approximately half as much disk space as the documents. For pure HTML documents, the index needs about twice as much disk space as the documents. In addition, the same amount of disk space as for the index is needed temporarily for the optimizing process.</p>  <p>A document set that consists only of HTML documents and has a total size of 10 GB generates an index size of 20 GB (2 x 10GB). An additional 20 GB disk space is needed temporarily for optimization. Therefore, you need 40 GB disk space altogether: 20 GB permanently and 20 GB temporarily.</p> <ul style="list-style-type: none"> <li>Queue Directory</li> </ul> <p>The queues require approximately three quarters of the disk space required by the indexes. The documents to be indexed are kept temporarily in the queue directory before being forwarded to actually be indexed.</p> <p>In the case of an installation with an RFC connection, you can use TREX with or without a queue server. If you are not using a queue server, the queue directory is not relevant. SAP Note 658052 contains information on which configuration is suitable for which application.</p> <p>The three directories can be located on different partitions. The index directory and queue directory can also be located on a file server. The TREX host must be able to access the file server as quickly as it can access the local hard drive.</p>
RAM	<ul style="list-style-type: none"> <li>Demo or test system: At least 1 GB.</li> <li>Productive system: 4 GB, at least 2 GB per CPU.</li> </ul> <p>With <b>two</b> index servers per TREX instance: At least 4 CPUs.</p>  <p>The amount of main memory that is actually used depends on several factors. For example, in the case of the index server influencing factors are index size, number of parallel search requests, and size of the number of hits.</p>

Requirement Type	Requirement
CPU	Demo or test system: <ul style="list-style-type: none"> <li>• AIX: At least two POWER3 processors of the most recent model</li> <li>• HP-UX: At least two PA-RISC processors of the most recent model</li> <li>• Linux: At least one Pentium III processor of the most recent model</li> <li>• Sun Solaris: At least two Ultra-SPARC II processors of the most recent model</li> <li>• Windows: At least one Pentium III processor of the most recent model</li> </ul>
	Productive system <ul style="list-style-type: none"> <li>• AIX: At least two POWER4 processors of the most recent model</li> <li>• HP-UX: Recommended: Two PA-RISC processors of the most recent model</li> <li>• Linux: Recommended four, at least two Intel Xeon processors (or equivalent) of the most recent model</li> <li>• Sun Solaris: Recommended: Two Ultra-SPARC III processors of the most recent model</li> <li>• On Windows: Recommended four, at least two Intel Xeon processors (or equivalent) of the most recent model</li> </ul>

### Windows: Software Requirements

Requirement Type	Requirement
Operating system	TREX (32 Bit binaries) supports the following Windows version: <ul style="list-style-type: none"> <li>• Microsoft Windows Server 2000/IA32 32 Bit               <ul style="list-style-type: none"> <li>○ At least Microsoft Windows 2000 Server (US English version) with service pack 3 or higher</li> <li>○ Recommended: Microsoft Windows 2000 Advanced Server (US English version) with service pack 3 or higher</li> </ul> </li> <li>• Windows Server 2003/IA32 32 bit (US English version; SP1 or higher)</li> </ul>

Requirement Type	Requirement
	 <p>For security reasons, the supported partition installed on Windows is NTFS (NT file system) not FAT32 (file allocation table).</p>  <p>For the most current information about platform and operating system availability of TREX check the Platform Availability Matrix (PAM) on <i>SAP Service Marketplace</i> <a href="http://service.sap.com/pam">service.sap.com/pam</a>.</p>
Python	Version 2.1.3. A Python version by ActiveState is part of the delivery. If Python has not been installed, it is installed by the TREX setup program in the directory <drive>:\usr\sap\Python.
Web server	Only relevant for an installation with an HTTP connection. Microsoft Internet Information Server (IIS) 5.0 or 6.0

### UNIX: Software Requirements

Requirement Type	Requirement
Operating system	<p>TREX (32 Bit binaries) supports one of the following UNIX versions:</p> <ul style="list-style-type: none"> <li>• AIX <ul style="list-style-type: none"> <li>○ AIX 5.2 64 Bit</li> <li>○ AIX 5.3 64 Bit</li> </ul> </li> <li>• HP-UX <ul style="list-style-type: none"> <li>○ HP-UX 11.0</li> <li>○ HP-UX 11i (11.11)/PA-RISC, with patches PHCO_27740, PHNE_28089, PHSS_26560, PHSS_26946</li> <li>○ HP-UX 11.23/PA-RISC</li> </ul> </li> <li>• LINUX REDHAT <ul style="list-style-type: none"> <li>○ LINUX REDHAT AS 2.1/IA32 32 Bit</li> <li>○ LINUX REDHAT EL 3/IA32 32 Bit</li> </ul>  <p>During installation of TREX on Red Hat Enterprise Linux EL 3, refer to SAP Note 722273 Red Hat Enterprise Linux 3: Installation and upgrade.</p> <ul style="list-style-type: none"> <li>○ LINUX REDHAT EL 4/IA32 32BIT</li> <li>○ LINUX REDHAT EL 4/X86_64 64BIT</li> </ul> </li> </ul>

Requirement Type	Requirement
	<p data-bbox="715 248 767 300"></p> <p data-bbox="715 315 1321 405">LINUX REDHAT EL 4/ X86_64 64BIT is supported with TREX 32 Bit binaries running in compatibility mode.</p> <ul data-bbox="592 427 1150 622" style="list-style-type: none"> <li data-bbox="592 427 794 456">• LINUX SUSE           <ul data-bbox="671 483 1150 622" style="list-style-type: none"> <li data-bbox="671 483 1110 512">○ LINUX SUSE SLES8/IA32 32BIT</li> <li data-bbox="671 539 1110 568">○ LINUX SUSE SLES9/IA32 32BIT</li> <li data-bbox="671 595 1150 622">○ LINUX SUSE SLES9/X86_64 64BIT</li> </ul> </li> </ul> <p data-bbox="715 640 767 692"></p> <p data-bbox="715 707 1321 797">LINUX SUSE SLES9/ X86_64 64BIT is supported with TREX 32 Bit binaries running in compatibility mode.</p> <p data-bbox="715 815 767 866"></p> <p data-bbox="715 882 1321 938">TREX only supports LINUX distributions that have been released by SAP.</p> <ul data-bbox="592 956 1038 1151" style="list-style-type: none"> <li data-bbox="592 956 815 985">• SUN SOLARIS           <ul data-bbox="671 1012 1038 1151" style="list-style-type: none"> <li data-bbox="671 1012 1023 1041">○ SUN SOLARIS/SPARC 8</li> <li data-bbox="671 1068 1023 1097">○ SUN SOLARIS/SPARC 9</li> <li data-bbox="671 1124 1038 1151">○ SUN SOLARIS/SPARC 10</li> </ul> </li> </ul> <p data-bbox="715 1169 767 1220"></p> <p data-bbox="715 1236 1337 1359">For the most current information about platform and operating system availability of TREX check the Platform Availability Matrix (PAM) on <i>SAP Service Marketplace</i> <a href="http://service.sap.com/pam">service.sap.com/pam</a>.</p>
Python	Python 2.1.3. A Python version from ActiveState is part of the delivery and is installed by the TREX setup program in the <TREX_DIR>/Python directory.
Web server	Only relevant for an installation with an HTTP connection. Apache Web Server 1.3.29: The Web server is part of the delivery, and is installed by the TREX setup program in the <TREX_DIR>/Apache directory.



## Required Documentation

You require this installation guide and the following additional documentation for the installation:

- SAP Notes on Installation
- The *SAPinst Troubleshooting* guide

### SAP Notes on Installation

You **must** read the SAP Notes on installation **before** you begin the installation. The SAP Notes contain current installation information and corrections to the installation documentation.

Make sure that you use the current version of the SAP Notes. SAP Notes can be found in the *SAP Service Marketplace* at [service.sap.com/notes](http://service.sap.com/notes).

#### Relevant SAP Notes

SAP Note Number	Title	Comment
802990	TREX 6.1 (HP-UX): Index larger than 2 GB	
777099	TREX 6.1 (Windows): Checking permissions for TREX directory	
722273	Red Hat Enterprise Linux 3: Installation and upgrade	
752950	TREX 6.1 on Windows Server 2003 with non administrator use	
798575	TREX 6.1 SP9/SR1 index creation failed on Windows	
792327	TREX 6.1 (Windows): delete TREX Website after uninstallation	Contains current information on the deinstallation of TREX 6.1.
658052	TREX 6.0/6.1: Additional Information About TREX ABAP Client	Relevant for an installation with an RFC connection:  Contains recommendations for using the queue server and information on which application uses which version of the ABAP client. This information is relevant for configuration steps after the TREX installation.

### SAPinst Troubleshooting Guide

The *SAPinst Troubleshooting* guide contains current information on how to avoid installation failure and how to proceed when an installation fails. For more information, see the documentation on the *SAP Service Marketplace* at [service.sap.com/sapinstfeedback](http://service.sap.com/sapinstfeedback).



SAP recommends reading this documentation before beginning the installation.



## Installation Preparations

### Purpose

The following sections describe the steps you carry out before the TREX installation.



### Information on Installing Multiple TREX Instances

You can install several independent TREX instances on the same host. This is useful for test purposes. Note the following:

#### Before the installation

The instances must run on different users in order to simplify the administration of multiple instances. You should therefore create a separate user for each instance, for example, `trex_<instance_number1>`, `trex_instance_number2` and so on.

#### During the setup

- Give each instance a different instance number.
- Each instance must be installed in its own directory. The TREX setup program ensures this by including the instance number in the directory name.
- Each instance must use a different port. The TREX setup program suggests suitable ports so that they don't clash with other TREX instances on the same host.

#### After the Installation (HTTP Connection)

If you are installing TREX on Windows, you must make sure that the Web pages of the individual instances run independently of one another. The following configuration is required for this:

- Microsoft IIS 5.x: For each Web site, the *Application Protection* must be set to *High (Isolated)* in the corresponding virtual directory.
- Microsoft IIS 6.0: There must be a separate Web service extension for each instance. Each TREX Web site must also use its own application pool.

The configuration steps are described in this guide.

#### After the Installation (RFC Connection)

You can create a separate RFC destination in the SAP R/3 system for every TREX instance. When creating an RFC connection with the activation type *Registration*, you have to specify the registration program of the relevant TREX instance. This name is entered in the configuration file `<TREX_DIR>/TREXRfcServer.ini`.

## Preparing the System for SAPinst GUI

### Use

The installation tool SAPinst uses the Java based graphical user interface SAPinst GUI. Preparing the system for SAPinst GUI consists of checking your Java Runtime Environment (JRE), because the JRE could not be integrated into the SAPinst GUI executable due to licensing issues.



You can run the SAPinst GUI on the installation host or, if required, you can control an installation using a standalone SAPinst GUI on a separate Windows or UNIX host.

This standalone SAPinst GUI enables you to perform the installation on a remote host while monitoring it with the SAPinst GUI from a local host. If you want to do that, see [Controlling a SAPinst Installation from a Remote Machine \[Page 71\]](#).

### Procedure

You have to check the existence of a released Java Runtime Environment (JRE) on the host where SAPinst GUI should run. JRE is not part of the SAP shipment. If necessary you need to download and install the required version.

Platform	Required JRE for the SAPinst GUI
All platforms	<p>The required JRE is 1.4.2 or higher.</p> <p></p> <p>To check the version of an already installed JRE, enter:  <code>java -version</code></p> <p>If the checked version does not match the required JRE you must set the environment variables <code>JAVA_HOME</code> and <code>SAPINST_JRE_HOME</code> to the path of the required JRE (<code>C:\jdk1.3.1</code> on Windows for example or <code>/usr/lib/java/j2sdk1.3.1</code> on UNIX for example).</p> <p>See your operating system documentation on how to set environment variables.</p>



## Creating a User

### Use

You need a separate UNIX or Windows user for every TREX instance that you install. You specify this user later on during the TREX setup. SAPinst makes sure that the user is owner of all files and directories that belong to the TREX instance.

Note the following information on user properties:

#### UNIX

Property	Information
User type	You can create a local user or a user that is managed using NIS (Network Information System, previously called Yellow Pages).
User name	<p>You can choose the user name freely.</p>  <p>SAP recommends that you use the user name <code>trex_&lt;instance_number&gt;</code> in order to simplify support for a TREX system. The specification <code>&lt;instance_number&gt;</code> must match with the instance number that you defined during the TREX setup.</p>
User ID	You can choose the user ID freely.
Group assignment and permissions	<ul style="list-style-type: none"> <li>The user is not allowed to have root permissions.</li> </ul>  <p>If the group <code>sapsys</code> is available, we recommend that you assign this group to the user.</p>
Home directory	<p>The home directory cannot be the same as the installation directory of a TREX instance (<code>/usr/sap/trex_&lt;instance_number&gt;</code>).</p> <p>This is because the corresponding installation directory is deleted when a TREX instance is uninstalled. If the installation directory is the same as the home directory of the user <code>&lt;trex_instance_number&gt;</code>, the home directory is deleted when the instance is uninstalled.</p>

#### Windows

Property	Information
User type	<p>You can create a local user or network user (domain user) here.</p>  <p>If you create a network use (domain user) here for the TREX user, you must also log on as a network user later on in order to start the TREX installation (see <a href="#">Installing with SAPinst [Page 28]</a>).</p>

User name	<p>You can choose the user name freely.</p>  <p>SAP recommends that you use the user name <code>trex_&lt;instance_number&gt;</code> in order to simplify support for a TREX system. The specification <code>&lt;instance_number&gt;</code> must match with the instance number that you defined during the TREX setup.</p>
Group assignment and permissions	<ul style="list-style-type: none"> <li>The user should not have any administrative permissions.</li> </ul>  <p>We recommend not giving the user administrative permissions for security reasons.</p>  <p>If the group <code>sapsys</code> is available, we recommend that you assign this group to the user.</p> <ul style="list-style-type: none"> <li>For an installation with an HTTP connection: If you are using Microsoft IIS 6.0, you have to assign the user to the group <code>IIS_WPG</code> (IIS Worker Process Group).</li> </ul>

## Procedure

When creating the user, proceed as described in the documentation for your operating system.



## Checking Disk Space

### Use

SAPinst creates the installation directory for the TREX software in the following directory:

- On Windows: `<disk_drive>:\usr\sap`
- On UNIX: `/usr/sap`

Before the installation starts, make sure that there is enough disk space in this directory for the TREX software. For information on the required disk space, see [Hardware and Software Requirements \[Page 17\]](#).



SAPinst creates an index directory and a queue directory in the installation directory. Large amounts of data are stored in these directories during routine operation. If there is not enough disk space in the installation directory, you can move these directories after the installation. For more information, see [Changing the Index and Queue Directory \[Page 46\]](#).

## Procedure on UNIX

Starting Point	Procedure
The directory <code>/usr</code> does not yet exist.	For the directory <code>/usr</code> , select a partition that has sufficient disk space for the TREX software and other SAP software if necessary.
The directory <code>/usr</code> exists, but the directory <code>/usr/sap</code> does not.	<p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>• Create a new partition with sufficient disk space for the directory <code>sap</code>. Insert the directory <code>sap</code> into the directory <code>/usr</code>.</li> <li>• Create the directory <code>sap</code> in a file system that has sufficient disk space. Generate a symbolic link to the directory <code>sap</code> in the directory <code>/usr</code>.</li> </ul>
The directory <code>/usr/sap</code> already exists.	<p>Go to the directory <code>/usr/sap</code> and check the amount of free disk space by executing the following command.</p> <pre>df -k .</pre> <p>If there is not enough disk space, proceed as follows:</p> <ol style="list-style-type: none"> <li>1. Create the installation directory in a file system that has sufficient disk space. The installation directory must have the name <code>trex_&lt;instance_number&gt;</code>. <code>&lt;instance_number&gt;</code> must match the instance number that you specified during the installation.</li> <li>2. Generate a symbolic link to the installation directory in the directory <code>/usr/sap</code>.</li> </ol> <p></p> <p>If you use the instance number 48 for your TREX installation, execute the following commands as root:</p> <pre>mkdir /mypath_with_enough_space/trex_48 ln -s /mypath_with_enough_space/trex_48 /usr/sap/trex_48</pre>

## Procedure on Windows

On Windows you can choose the target drive during the installation. Use the Windows Explorer to check whether there is sufficient disk space on the target drive.



## Installation

### Purpose

The sections that follow describe how to install TREX with SAPinst and tell you which entries are required during the setup.



## Installing with SAPinst

### Use

This procedure tells you how to run SAPinst to install TREX on the released platforms.

It describes an installation where SAPinst GUI and SAPinst server are running on the same host. If you want to perform a remote installation, that is, SAPinst GUI is running on another host, see [Controlling a SAPinst Installation from a Remote Machine \[Page 71\]](#).

### SAPinst GUI Handling

The following push buttons are available on the different SAPinst GUI dialogs (input screens, installation progress screen, message box):

Push Button	Meaning
<i>Back</i>	Displays the previous dialog for editing
<i>Next</i>	Displays the next dialog for editing
<i>Cancel</i>	<p>Cancels the installation with the following options:</p> <ul style="list-style-type: none"> <li>• <i>Stop</i> Stops the installation and leaves the installation files in the state in which they are at the current point in time. This means that you can continue the installation later from this point.</li> <li>• <i>Reset</i> Resets all installation input files. All files in the installation directory are removed from the system and no log files are saved. This means that you must start the installation from scratch again.</li> </ul>
<i>Logoff</i>	<p>Exits SAPinst GUI only. The SAPinst server keeps on running.</p>  <p>Typical use case:</p> <p>You need to logoff during the installation (for what reason ever) from the host where you control the installation with SAPinst GUI. Then you can connect from another host to the running installation. Be aware, that you need the TREX installation files for that.</p> <p>For more information on running SAPinst GUI standalone, see <a href="#">Starting SAPinst GUI Standalone [Page 72]</a></p>
<i>View Log</i>	Displays the content of the <code>sapinst.log</code> file during the installation.
<i>Retry</i>	Performs the installation step again (if an error has occurred).

<i>Stop</i>	Stops the installation and leaves the installation files in the state in which they are at the current point in time. This means that you can continue the installation later from this point.
<i>Reset</i>	Resets all installation input files. All files in the installation directory are removed from the system. No backup is available.  This means that you must start the installation from the beginning again.



Before you start the installation with the command `sapinst` make sure that all mount-points (UNIX) or network drives (Windows) are accessible. If this does not work you may have to temporarily unmount the unaccessible mount points or mapped network drives.

## Installing on UNIX

1. Log on to the installation host as **root**.
2. Mount the DVD with the installation files.



Mount the DVD locally. We do not recommend using Network File System (NFS).

3. Enter the following commands to run the command `sapinst` from the mounted DVD:

```
cd <DVD_DIR>/SAPINST/UNIX/<OS>/
chmod 777./sapinst
```

SAPinst creates the directory `sapinst_instdir` – which is the current working directory for your installation – and SAPinst GUI starts automatically by displaying the *Welcome* screen.



If SAPinst GUI does not start, your `DISPLAY` environment variable might not be set correctly. Make sure that `DISPLAY` is set to `<hostname>:0.0`, where `<hostname>` is the host on which SAPinst GUI is to be displayed. Typically, this is the hostname or IP address of your local host.

You need an X server to run SAPinst GUI. You cannot use a terminal program that supports text mode only, like telnet.



SAPinst normally creates the installation directory `sapinst_instdir` directly below the temporary directory (`$TEMP` or `$TMP` or `/tmp`). The location of the log files is `sapinst_instdir/NW04SR1/TREX/MAIN`.

Therefore make sure that your operating system is configured not to delete the temporary directory and its subdirectories when the system is rebooted.

You need at least 300 MB free space in your temporary directory for each installation service.

If SAPinst does not find any temporary directory, the installation terminates with the error FCO-00058.



If you want SAPinst to use any other installation directory than `sapinst_instdir` directly below the temporary directory, proceed as follows:

- Create an installation directory of your choice for SAPinst with sufficient free space (at least 300 MB) and permissions 777.
- Change to this installation directory.
- Enter the following command to run the command `sapinst`:

```
<DVD_DIR>/SAPINST/UNIX/<OS>/sapinst
```



SAPinst uses the port 21212 during the installation for communication with the SAPinst GUI. If this port is already used by another service you must start SAPinst as follows:

```
./sapinst SAPINST_DIALOG_PORT=<free_port_number>
```

4. In the *Welcome* screen, choose *Search and Classification (TRES)* → *TRES Instance Upgrade/Installation*. Choose *Next*.



SAPinst may create a subdirectory for the chosen installation service below the directory `sapinst_instdir`.

5. Follow the instructions on your screen. The necessary input parameters are listed in the section [Input for the Installation \[Page 31\]](#).

After you have maintained all input parameters, SAPinst starts the installation and displays installation progress during the processing phase. If the installation was successful, the screen *Finished installation* is displayed.

If errors occur during the installation, see [Troubleshooting \[Page 65\]](#).

## Installing on Windows

1. Log on to the installation host as a user with **administrator rights**.



If you created a domain user as TRES user (see [Creating a User \[Page 25\]](#)) you also have to log on to the TRES installation as a domain user.

2. Insert the DVD with the installation files in your DVD drive.
3. Double click `sapinst.exe` from `<DVD_DRIVE>:\SAPinst\NT\I386`.

SAPinst creates the directory `sapinst_instdir` – which is the current working directory for your installation – and SAPinst GUI starts automatically by displaying the *Welcome* screen.



Normally, SAPinst creates the working directory `sapinst_instdir` directly below path `<drive>:\Program Files\`. The location of the log files is `sapinst_instdir\NW04SR1\TRES\MAIN`.

Exception: If `<drive>:\Program Files\` is not accessible or write-protected, SAPinst tries to create the working directory directly below the temporary directory (`%TEMP%`). If SAPinst does not find the temporary directory, the installation terminates with the error FCO-00057.

4. In the *Welcome* screen, choose *Search and Classification (TRES)* → *TRES Instance Upgrade/Installation*. Choose *Next*.
5. Follow the instructions on your screen. The necessary input parameters are listed in the section [Input for the Installation \[Page 31\]](#).

After you have maintained all input parameters, SAPinst starts the installation and displays installation progress during the processing phase. If the installation was successful, the screen *Finished installation* is displayed.

If errors occur during the installation, see [Troubleshooting \[Page 65\]](#).

## Entries for the Installation

The table below shows the names of the windows that are displayed during the TREX installation process and the entries that you need to make.

Window	Entry
<i>Welcome to NetWeaver Installation</i>	In the folder hierarchy, choose <i>SAP Installation Master</i> → <i>Search and Classification (TREX)</i> → <i>SAP NetWeaver 04 Support Release 1</i> → <i>TREX instance Upgrade/Installation</i> to install TREX for the first time. Choose <i>Next</i> .
<i>SAPinst DVD / CD Browser &gt; Software Package Request</i>  <i>Enter the location of the required software packages</i>	Enter the main directory of the DVD containing the TREX installation files into the field <i>Package Location</i> of the Web browser.   SAPinst identifies the required software packages on the DVD/CD by checking the corresponding packages using the file LABEL.ASC. This file contains information on the software packages to be installed.   The file LABEL.ASC appears in several directories. Always enter the main directory of the DVD in the CD browser.  For more information on the CD browser, see <a href="#">Handling the CD Browser [Page 68]</a>
<i>SAPinst displays the chosen settings. To start the installation, choose Start.</i>	Choose <i>Next</i> .
<i>TREX &gt; Instance</i>  <i>Choose a new TREX instance to install or an existing TREX instance to upgrade</i>	<ol style="list-style-type: none"> <li>1. Make sure that <i>Install a new TREX instance</i> is checked.</li> <li>2. Enter an instance number for the TREX instance that you are installing. Note the following: <ul style="list-style-type: none"> <li>○ You can choose any number between 00 and 98.</li> <li>○ The instance number must be unique on the host. If several instances of a piece of SAP software are running on the same host (TREX instances or instances of other SAP systems) they must have different instance numbers.</li> </ul> </li> <li>3. <b>Only Windows:</b> Choose the drive on which the TREX software is to be installed.</li> </ol>

	<p>SAPinst checks whether the installation directory already exists. If not, it creates it. The directory is:</p> <ul style="list-style-type: none"> <li>• On UNIX: /usr/sap/trex_&lt;instance_number&gt;</li> <li>• On Windows              &lt;disk_drive&gt;:\usr\sap\trex_&lt;instance_number&gt;</li> </ul> <p>The path to the directory is fixed and cannot be changed (apart from the Windows disk drive).</p> <p style="text-align: center;"></p> <p>The directory should not be available before the installation unless you explicitly created it for space reasons previously (see <a href="#">Checking Disk Space [Page 26]</a>).</p> <p>This allows you to ensure that the directory does not contain any data that doesn't belong to TREX, which would then also be deleted if TREX were uninstalled.</p>
<p><i>TREX &gt; OS User Account</i></p> <p><i>Specify the user who will own the TREX directory and files</i></p>	<p>Specify the user and password that you created for TREX (see <a href="#">Creating a User [Page 25]</a>).</p>
<p><i>TREX &gt; Third-Party Software Requirement</i></p> <p><i>Confirm the requirement of third-party software for TREX</i></p>	<p>SAPinst tells you that Python is being installed.</p> <p>On Windows, SAPinst checks whether an applicable Python version has been installed. If no suitable Python version has been installed, Python is installed in the directory &lt;disk_drive&gt;:\usr\sap\Python</p> <p>On UNIX, Python is installed in the directory &lt;TREX_DIR&gt;/Python in all cases.</p>
<p><i>TREX &gt; Instance Installation Details</i></p> <p><i>Enter values to configure settings for the following TREX installation components</i></p>	<p>You can make the following settings for the TREX installation:</p> <ol style="list-style-type: none"> <li>1. <i>Number of Index Server Processes</i> <p>You can configure a second index server per TREX index. You do this in order to increase the performance of a single host system if the host has little load, and sufficient CPUs and main memory are available.</p> <p style="text-align: center;"></p> <p>The installation causes the number of index server instances to be raised to 2 on all operating system with main memory of more than 4 GB.</p> <p>SAP recommends that you leave the number of index server instances as the prescribed value.</p> </li> <li>2. <i>Snapshot location</i> <p>You can specify the directory for the index snapshots here. An index snapshot is a complete copy of an index that is needed for index replication. Index replication is an important procedure for managing and updating large indexes in a distributed TREX system.</p> <p>You specify this directory if you want to build a distributed TREX system.</p> </li> </ol>



For detailed information on index replication and the installation of a distributed TREX system, see the guide *Distributed Search and Classification (TREX) 6.1 systems* on the *SAP Service Marketplace* at [service.sap.com/instguidesNW04](http://service.sap.com/instguidesNW04) → *Installation*.

### 3. Number of Preprocessor Server Processes

You can configure multiple preprocessor instances per TREX instance. You do this in order to prioritize the processing of documents on a host with multiple CPUs.



If your host on *Red Hat Enterprise Linux AS 2.1* has more than one CPU, the number of preprocessor instances is automatically raised to the number of CPUs when the installation takes place.

SAP recommends that you do not change the default setting.

The TREX server ports are calculated and defined by SAPinst as follows according to the allocated number of index servers and preprocessor instances and the chosen TREX instance number. The basis of the port numbers is 30000 .

- Name server:  $30001 + 100 * \langle \text{trex\_instance\_number} \rangle$
- Preprocessor:  $30002 + 100 * \langle \text{trex\_instance\_number} \rangle + 10 * (\langle \text{preprocessor\_instance\_number} \rangle - 1)$
- Index server:  $30003 + 100 * \langle \text{trex\_instance\_number} \rangle + 10 * (\langle \text{index\_server\_instance\_number} \rangle - 1)$
- Queue server:  $30004 + 100 * \langle \text{trex\_instance\_number} \rangle$
- HTTP server:  $30005 + 100 * \langle \text{trex\_instance\_number} \rangle$

This method of calculation ensures that the ports do not clash with another TREX instance on the same host.

You cannot change the prescribed ports during the installation. However, the number of the TREX instance that you just chose in the *Select the TREX Instance* window determines the second and third places of the port numbers.



If you chose the instance number 48 and have specified two instances each for the index server and preprocessor, the ports are defined as follows:

Name server = 34801

Preprocessor 1 = 34802

Preprocessor 2 = 34812

Index server 1 = 34803

Index server 2 = 34813

Queue server = 34804

HTTP server = 34805

#### 4. *Install HTTP Server*

If the application communicates with TREX using an HTTP connection, check the field *Install HTTP Server*.

#### 5. *Install RFC Server (requires SAP Gateway on local network)*

If the application communicates with TREX using an RFC connection, check the field *Install RFC Server*.

#### 6. *Number of RFC Server Processes*

You can configure multiple RFC server instances per TREX instance. You should increase this parameter according to the number of concurrent RFC requests (see [Configuring the Number of Registered RFC Servers \[Page 51\]](#)).



For detailed information on the configuration of a distributed TREX system, see the guide *Distributed Search and Classification (TREX) 6.1 systems* in the *SAP Service Marketplace* at [service.sap.com/instguidesNW04](http://service.sap.com/instguidesNW04) → *Installation*.

#### 7. *Gateway Instance Number*

Here you enter the instance number of the SAP gateway that you select when creating the RFC destination (see [ABAP Application \(RFC Connection\) \[Page 57\]](#)). You can change the instance number of the SAP gateway later, when creating an RFC destination (see [Creating an RFC Destination \[Page 57\]](#)).

#### 8. *Gateway Host*

Enter the host name of the host on which the SAP gateway is installed.

<p><i>TREX &gt; Proxy Settings</i></p> <p><i>Enter the proxy configuration settings</i></p>	<p>If there is a proxy server between the TREX servers and the documents to be indexed, specify the proxy server and define exclusion rules if necessary.</p> <p></p> <p>You want to index the following:</p> <ul style="list-style-type: none"> <li>▪ Documents on internal servers that can be accessed without a proxy server.</li> <li>▪ Web pages on external servers that can only be accessed using a proxy server.</li> </ul> <p>In this case, specify the proxy server. Since the proxy server should not be used for internal addresses, define exclusion rules for internal addresses.</p> <ul style="list-style-type: none"> <li>• <i>Proxy Server Name</i> – host name and domain of the proxy server Example: <b>proxy.mylocation.mycompany.com</b></li> <li>• <i>Proxy Server Port</i> – proxy server port Example: <b>8080</b></li> <li>• <i>Proxy User Name</i> – user name needed to access the proxy server</li> <li>• <i>Proxy User Password</i> – password defined for the user</li> </ul> <p></p> <p>You can change the user and password for accessing the proxy server using a script later on. For more information, see <a href="http://help.sap.com/nw04">help.sap.com/nw04</a> → <i>SAP Library</i> → <i>Information Integration</i> → <i>Knowledge Management</i> → <i>Configuration of the TREX Security Settings</i> → <i>Specifying a Password for the Proxy Server</i>.</p> <ul style="list-style-type: none"> <li>• <i>Proxy Exclusions</i> – proxy exclusions. These rules define when the proxy server is <b>not</b> to be used. Separate multiple entries using a semicolon.</li> </ul> <p></p> <p>Examples of exclusion rules:</p> <ul style="list-style-type: none"> <li>▪ Do not use the proxy server to get URLs that end in <code>mycompany.com</code>: <b>mycompany.com</b></li> <li>▪ Do not use the proxy server to get IP addresses that start with <code>10</code>: <b>10.</b></li> </ul> <p></p> <p>Do not use asterisks as placeholders.</p>
---	---

<p><i>TREX &gt; Languages for Document Analysis</i></p> <p><i>Enter the document analysis languages</i></p>	<p>TREX supports the following languages for indexing and searching:</p> <ul style="list-style-type: none"> <li>• European languages – English, German, French, Spanish, Portuguese, Dutch, Swedish, Finnish, Danish, Bokmal and Nynorsk (the two Norwegian languages) and Italian.</li> <li>• Asian languages – Japanese, Korean, Simplified Chinese, and Traditional Chinese.</li> </ul> <p>If the application does not transmit the document language to TREX, TREX has to carry out a language recognition process before indexing. You can select the languages that you want TREX to recognize.</p> <p style="text-align: center;"></p> <p>Only select the languages that are relevant. This optimizes performance during the language recognition process, and therefore during the search and indexing process. The language recognition process gives better results if as few languages as possible are used.</p> <p style="text-align: center;"></p> <p>However, TREX can also index documents whose language is not specified here. TREX then inserts the documents in question into the index for the default language (normally English). For example, if you select English and German and a document in Spanish is then indexed, the document is inserted into the English index.</p> <p>This affects the documents in question in the following manner:</p> <ul style="list-style-type: none"> <li>▪ A linguistic search is not possible.</li> <li>▪ TREX may extract keywords (document features) that are not characteristic of the document.</li> </ul> <p>You can also change settings for the language recognition process after the installation. For more information, see the SAP Library at <a href="http://help.sap.com/nw04">help.sap.com/nw04</a> → <i>SAP NetWeaver</i> → <i>Information Integration</i> → <i>Knowledge Management</i> → <i>Administration Guide</i> → <i>Technical Operations in Detail</i> → <i>Configuration of Language Recognition and Proxy Servers</i>.</p>
<p><i>Start Installation</i></p> <p><i>The current product will be installed with the following parameters.</i></p>	<p>SAPinst displays the chosen settings. To start the installation, choose <i>Start</i>.</p>



## Post-Installation Activities

### Purpose

You carry out certain technical configuration steps after the installation. The sections below describe:

- General configuration steps that you carry out for your operating platform.
- TREX configuration steps that you carry out as required.
- Configuration steps that you only carry out if the application in question communicates with TREX using an HTTP connection.
- Configuration steps that you only carry out if the application in question communicates with TREX using an RFC connection.



## General UNIX Configuration

### Purpose

The following sections describe the steps that are necessary after an installation on UNIX.



## Configuring TREX Automatic Start

### Use

In the TREX directory, there is a script that stops and starts the TREX daemon. If you want the TREX daemon to start automatically when the host is started and stop automatically when the host is stopped, proceed as explained below.

### Procedure

#### AIX

1. Log on as root.
2. Add the following start instruction to the configuration file `/etc/inittab`.
 

```
trex:2:once:<TREX_DIR>/TREX start
```
3. Check whether the file `/etc/rc.shutdown` exists. If it does not exist, create it. Add the following stop instruction to the file:

```
<TREX_DIR>/TREX stop
```

#### HP-UX, Linux, and Sun Solaris

1. Log on as root.
2. Copy the TREX script to the directory `init.d`. We recommend that you include the number of the TREX instance in the script names in order to make administration easier.

```
HP-UX: cp <TREX_DIR>/TREX /sbin/init.d/TREX_<instance_number>
```

```
Linux, Sun Solaris: cp <TREX_DIR>/TREX  
/etc/init.d/TREX_<instance_number>
```

3. In the appropriate `rc<run-level>.d` directories, create two links to the TREX script:
- A link to start the TREX daemon
  - A link to stop the TREX daemon



Choose the `rc` directory that corresponds to the run level for normal multi-user operation for the start instruction. With Sun Solaris, Linux, and HP-UX, this is normally run level 3, corresponding to the directory `rc3.d`. If your installation varies from the standard installation, modify the appropriate `rc` directory.



The prefix in the script name determines the sequence in which the scripts are started or stopped when the run level is reached.

- For the start instruction, we recommend choosing the prefix `s90` for Sun Solaris and Linux and `s900` for HP-UX. The script name will therefore be `S90TREX_<instance_number>` (Linux, Sun Solaris) or `S900TREX_<instance_number>` (HP-UX). If you choose a different sequence, make sure that the network layer is started before the TREX script.
- For the stop instruction, we recommend choosing the prefix `k10` for Linux and Sun Solaris and `k100` for HP-UX. The script name will therefore be `K10TREX_<instance_number>` (Linux, Sun Solaris) or `K100TREX_<instance_number>` (HP-UX).

HP-UX:

```
ln -s /sbin/init.d/TREX_<instance_number>
    /sbin/rc3.d/S900TREX_<instance_number>
```

```
ln -s /sbin/init.d/TREX_<instance_number>
    /sbin/rc0.d/K100TREX_<instance_number>
```

Linux:

```
ln -s /etc/init.d/TREX_<instance_number>
    /etc/rc.d/rc3.d/S90TREX_<instance_number>
```

```
ln -s /etc/init.d/TREX_<instance_number>
    /etc/rc.d/rc0.d/K10TREX_<instance_number>
```

Sun Solaris:

```
ln -s /etc/init.d/TREX_<instance_number>
    /etc/rc3.d/S90TREX_<instance_number>
```

```
ln -s /etc/init.d/TREX_<instance_number>
    /etc/rc0.d/K10TREX_<instance_number>
```



## Setting Environment Variables

### Use

You have to set certain environment variables in order for TREX to run. If you start TREX using the `TREX` script, the environment variables are set automatically. You have to set the environment variables manually in the following cases:

- You are starting the TREX daemon in debug mode.
- You are starting individual TREX servers.
- You are executing the Python test script.

The TREX directory contains two Shell scripts that you can use to set the environment variables:

- `TREXSettings.sh` (Bourne shell `sh`, Bourne-again shell `bash`, Korn shell `ksh`)
- `TREXSettings.csh` (C-Shell `csh`)

We recommend that you enter the scripts into the login profile of the TREX user, so that the environment variables are set when the user logs on. If necessary, you can execute the scripts directly.

### Entering Scripts in the Login Profile

1. Log on with the TREX user.
2. Add the following call to the file `<HOME_TREXUSR>/.profile`:
 

```
. <TREX_DIR>/TREXSettings.sh
```
3. Add the following call to the file `<HOME_TREXUSR>/.login`:
 

```
source <TREX_DIR>/TREXSettings.csh
```

### Executing a Script

1. Log on with the TREX user.
2. Go to the TREX directory.
3. Execute the appropriate script.

Shell	Command
Bourne shell <code>sh</code> , Bourne-again shell <code>bash</code> , Korn shell <code>ksh</code>	<code>. TREXSettings.sh</code>
C shell <code>csh</code>	<code>source TREXSettings.csh</code>



## Checking and Changing UNIX Kernel Parameters

### Use

Check the following UNIX kernel parameters and modify them if necessary:

- Number of open files per process

On UNIX platforms, each process may only have a certain number of files open at once. If you create a large number of indexes and queues during routine operation, the TRES processes, in particular the queue server and index server, open a lot of files.

With many UNIX installations, the value for the maximum number of files that the processes are allowed to have open is too low. The parameter must have the following value:

Operating system	Value
AIX, HP-UX, Sun Solaris	At least 2048
Linux	At least 1024

- Only HP-UX – process size

The process size should be at least 2GB.



The process size is not limited for AIX and Sun Solaris.

The TRES directory contains a test program that you can use to check whether the kernel parameters are set at a suitable level. If this is not the case, you should change the kernel parameters.

### Checking Kernel Parameters

1. Log on with the TRES user `<trex_instance_number>`.
2. Go to the TRES directory.
3. Set the environment variables required by TRES:
  - Bourne shell `sh`, Bourne-again shell `bash`, Korn shell `ksh`:  
`. TRESsettings.sh`
  - C Shell `csh`:  
`source TRESsettings.csh`

4. Test the number of open files per process:

```
portlibtester.x -file
```

This command creates test files in the directory `/tmp/portlibtester`. The test must give a result of at least 1000 files (Linux) or 2000 files for other UNIX platforms. If it does not, you should change the kernel parameters.

5. Only HP-UX – test the possible process size:

```
portlibtester.x -mem
```

This command calls upon as much main memory as possible. The test must output the value 1900 MB at least. If it does not, you should change the kernel parameters.

## Changing Kernel Parameters

### AIX

1. Log on as root.
2. Carry out the following steps as appropriate, depending on whether you are working with or without a Network Information System (NIS).
  - (Without NIS) Execute the following command:  

```
chuser nofiles=2000 <trex_instance_number>
```
  - (With NIS) Add the following entry to the file `/etc/security/limits:`  

```
<trex_instance_number>:
    nofiles=2000
```



```
trex_instance_number:
    nofiles=2000
```
3. Restart the host using `reboot`.

### HP-UX

1. Log on as root.
2. Open the administration tool SAM (`usr/sbin/sam`).
3. Set at least the following values in the dialog box *kernel configuration/configurable*.

Kernel Parameter	Lowest Acceptable Value
<b>Process Size</b>	
<code>maxdsiz</code>	0X80000000 or 2147483648
<code>maxdsiz_64bit</code>	0X80000000 or 2147483648
<code>maxtsiz</code>	0X40000000 or 1073741824
<code>maxtsiz_64bit</code>	0X40000000 or 1073741824
<b>Number of Open Files</b>	
<code>maxfiles</code>	2048
<code>maxfiles_lim</code>	2048
<code>nfile</code>	20000

4. Restart the host using `reboot`.

### Linux

1. Add the following line to the end of the script `<TREX_DIR>/TREXSettings.sh`:  

```
ulimit -n 1024
```
2. Add the following line to the end of the script `<TREX_DIR>/TREXSettings.csh`:  

```
unlimit openfiles
```



`TREXSettings.csh` is not relevant for the TREX daemon. It is only relevant if you start the TREX servers manually or execute test scripts.

3. If the TREX daemon is running, stop it and then restart it.

## Sun Solaris

1. Log on as root.
2. Add the following lines to the configuration file `/etc/system`.  

```
set rlim_fd_max=2048
set rlim_fd_cur=2048
```
3. Restart the host using `reboot`.

## Result

After the change, execute `portlibtester.x -file` again. If the number of open files is still too low, the UNIX system administrator must have restricted this parameter in another way. Contact the UNIX system administrator to remove this restriction.



Note for Linux: If you receive error messages during indexing, the value 1024 for the number of open files may not be sufficient. If this is the case, run TREX on root (you can only raise the parameter value to 2048 on root). Proceed as follows:

- Make sure that the script `<TREX_DIR>/TREXSettings.sh` contains the following line at the end:  

```
ulimit -n 2048
```
- Make sure that the script `<TREX_DIR>/TREXSettings.csh` contains the following line at the end:  

```
unlimit openfiles
```

`TREXSettings.csh` is not relevant for the TREX daemon. It is only relevant if you start the TREX servers manually or execute test scripts.

- Add a comment sign to the configuration file `<TREX_DIR>/TREXDaemon.ini` before the following lines:  

```
#userid = <trex_instance_number>
#groupid = <group>
```

This change causes the TREX daemon to run on root next time it starts.



## General Windows Configuration

### Purpose

The following sections describe the steps that are necessary after an installation on Windows.



## Checking Performance Settings for the Operating System

### Use

To optimize the performance of TREX when using the released Windows platform, you need to check your Windows configuration and make changes if necessary.

### Optimizing Data Throughput For Network Applications

The Windows installation normally makes caching settings that are optimized for file servers. The operating system then reserves a large part of the main memory for the caching of files. Since this file-system cache impairs performance when indexing, you ought to change these settings.

1. Use the secondary mouse button to click on *My Network Places* on the Windows desktop, and choose *Properties*.
2. Use the secondary mouse button to click on the local network connection and choose *Properties*.
3. Select the entry *File and Printer Sharing for Microsoft Networks* and choose *Properties*.
4. Select *Maximize data throughput for network applications*.
5. Choose *OK* twice.

### Optimizing Performance for Background Processes



Programs such as Microsoft SQL Server and Microsoft Exchange make the setting described below automatically when they are installed. If you have installed one of these programs, you do not need to make any changes.

The setting is only relevant if TREX is running as a Windows service.

#### Windows 2000

1. Use the secondary mouse button to click on *My Computer* on the Windows desktop, and choose *Properties*.
2. Choose the *Advanced* tab, and then choose *Performance Options*.
3. Under *Application Response*, choose the *Background Services* field.
4. Choose *OK* twice.

### Windows Server 2003

1. Use the secondary mouse button to click on *My Computer* and choose *Properties*.
2. Choose the *Advanced* tab, and then choose *Settings* → *Advanced*.
3. Select *Background services* under *Adjust for best performance of*.
4. Choose *OK* twice.



## General TREX Configuration

### Purpose

The sections below describe configuration steps that you carry out as required.



## Activating Python Extensions

### Use

Some TREX functions are implemented as Python extensions. If the application used by TREX uses these functions, you have to activate the Python extensions. The installation documentation for the application in question contains information on whether you have to activate any Python extensions.

The following Python extensions are available:

Extension	Description
XML attribute extraction	Extracts the attributes to be indexed from XML files.  This extension is required if the texts to be indexed consist only of attributes and the attributes are transmitted to TREX as XML files.
Expansion of linguistic search queries	Enhances linguistic search queries so that TREX can carry out an exact search as well as a linguistic search.
Metadata extraction	Extracts metadata from HTML documents.
Topic maps	Uses topic maps to determine terms that have a semantic relationship to the search term.  The semantic relationships involved depend on the structure of the topic map. In most cases the topic map stores synonyms, hypernyms, and hyponyms (superordinate and subordinate terms).
Semantic search	Uses topic maps to enhance search queries with additional search terms.  This extension allows you to include lists of synonyms in the search, for example.

The following procedure explains how you activate the Python extensions globally for all indexes.



If you need to activate Python extensions locally for your application, the relevant information can be found in SAP Note 700771.

The global activation consists of the following two steps:

1. Activate the Python extension handler.
2. Registering the required Python extensions

## Activate the Python extension handler.

1. Edit the configuration file `<Trex_DIR>/TrexExtensions.ini`.
2. Check that the `[activate]` section has the structure below, and modify the section if necessary.

```
[activate]
imsapi=search, thesaurus, admin
preprocessor
```

3. In the `[extensionhandlers]` section, add the line `trexxpy` and/or remove the comment sign (`#`).

```
[extensionhandlers]
trexxpy
```

## Registering the Python extensions

The directory `<Trex_DIR>\extensions\example` contains the file `_extensions.py`. This serves as a template for the configuration file `extensions.py`.

1. Copy the file `_extensions.py` to the TREX installation directory `<Trex_DIR>` and rename it to `extensions.py`.
2. Edit the configuration file `extensions.py`.
3. In the relevant section, change the entry `if 0:` to `if 1:`. You identify the extensions by the class name.

Extension	Class
XML attribute extraction	XmlExtractor
Expansion of linguistic search queries	LinguistFix
Metadata extraction	AttributeExtractor
Topic maps	XtmExpander
Semantic search	SemanticSearch



Register XML attribute extraction:

```
# XML attribute extractor extension
# -----
if 1:
    sys.path.append(os.path.join(os.getenv('SAP_RETRIEVAL_PATH'),
                                'extensions', 'attribute-extractor'))
    from xmlextractor import XmlExtractor
    trexx.registerExtension(trexx.EXTCLASS_INDEXING,
                           XmlExtractor(debug=0, mimetypes=['text/xml']))
```

## Result

The changes take effect when you next start the TREX daemon.

If you want to use the semantic search or topic maps, you must carry out further configuration steps. If necessary, contact SAP Support.

If errors occur during routine operation and the required functions are not available, check the trace file (<TREX\_DIR>/trace/PythonExtension.log). This contains information on the incorrect entries in the TREX configuration files. If you cannot solve the problem, contact SAP support.



## Changing the Index and Queue Directory

### Use

SAPinst creates an index directory and a queue directory in the directory <TREX\_DIR>. You can change these directories if necessary (for example, if you want the directories to be located in a different partition).

### Procedure

1. Create the index directory or queue directory in the required partition.



We recommend that you use the directory names `index` or `queue`.

2. Make sure that the directory permissions match with those of the original directory (<TREX\_DIR>/index or <TREX\_DIR>/queue).
3. Stop TREX (see [UNIX: Stopping the TREX Daemon \[Page 74\]](#) or [Windows: Stopping the TREX Daemon \[Page 76\]](#)).
4. Edit the configuration file <TREX\_DIR>/sapprofile.ini. Change the parameter `TREX/IndexServer/basepath/index` or `TREX/IndexServer/basepath/queue` so that the relevant parameter now points to the new directory.

Only use forward slashes (/) in paths (even on Windows).



The standard configuration is:

```
TREX/IndexServer/basepath/index=%(SAP_RETRIEVAL_PATH)/index
TREX/QueueServer/basepath/queue=%(SAP_RETRIEVAL_PATH)/queue
```

If TREX is running on UNIX; enter the following:

```
TREX/IndexServer/basepath/index=/my_path/index
TREX/QueueServer/basepath/queue=/my_path/queue
```

If TREX is running on Windows and the directories are located on a local disk drive, enter the following:

```
TREX/IndexServer/basepath/index=D:/my_path/index
TREX/QueueServer/basepath/queue=D:/my_path/queue
```

If TREX is running on Windows and the directories are located on a file server, enter the following:

```
TREX/IndexServer/basepath/index=//my_server/my_path/index
TREX/QueueServer/basepath/queue=//my_server/my_path/queue
```



All remaining paths are only relevant for a distributed system.

5. Start TREX (see [UNIX: Starting the TREX Daemon \[Page 74\]](#) or [Windows: Starting the TREX Daemon \[Page 76\]](#)).



## Configuration of the HTTP Connection

### Purpose

The following sections describe the steps that you carry out if the application and TREX are communicating using an HTTP connection.



## Changing the Web Server Address

### Use

SAPinst enters the Web server address fully qualified with domain into the configuration file `<TREX_DIR>/topology.ini`. Your network configuration dictates whether you have to enter the Web server address with or without the domain. If you have to remove the domain from the address, proceed as follows:

### Procedure

1. Stop TREX (see [UNIX: Stopping the TREX Daemon \[Page 74\]](#) or [Windows: Stopping the TREX Daemon \[Page 76\]](#)).
2. Edit the configuration file `<TREX_DIR>/topology.ini`. Remove the domain from the Web server address:

```
<httpserver>
  <<port>>
    Before the change: url=http://mytrexhost.mydomain:<port>/ ...
    After the change: url=http://mytrexhost:<port>/ ...
  ...
</httpserver>
```

3. Start TREX (see [UNIX: Starting the TREX Daemon \[Page 74\]](#) or [Windows: Starting the TREX Daemon \[Page 76\]](#)).



## Only Windows: Configuring IIS

### Use

You have to configure Microsoft IIS as follows:

Version	Configuration
Microsoft IIS 5.x	Set <i>Application Protection</i> to <i>High</i>
Microsoft IIS 6.0	<ul style="list-style-type: none"> <li>• Create a Web service extension</li> <li>• Create an application pool</li> </ul>

## Procedure for Microsoft IIS 5.x

1. Choose:
  - Windows 2000: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services*
  - Windows Server 2003: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services (IIS) Manager*.
2. Navigate to the Web site `SAP_TREX_<instance_number>`.
3. Display the properties of the virtual directory `TREXHttpServer`. This virtual directory is located beneath the Web site. On the tab *Virtual Directory*, choose *High (Isolated)* in the field *Application Protection*.
4. Restart the Web server.

## Procedure for Microsoft IIS 6.0

Choose:

- Windows 2000: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services*
- Windows Server 2003: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services (IIS) Manager*.

### Create a Web service extension

1. Choose *Web Service Extensions*.
2. Create an extension with the following data:

Field	Entry
<i>Extension name</i>	<code>TREXHTTPServer_&lt;instance_number&gt;</code>
<i>Required files</i>	<code>&lt;disk_drive&gt;:\usr\sap\TREX_&lt;instance_number&gt;\TREXIsapiExt.dll</code>
<i>Set extension status to Allowed</i>	Select this field.

### Create an application pool

1. Choose *Application Pools*. Create an application pool with the following ID:  
`AppPool_TREX_<instance_number>`  
You do not need to change the other settings.
2. Display the properties of the application pool you just created and then choose *Identity*. Select *Configurable*. Enter the name of the user (`<trex_instance_number>`) and give the password twice.



The user `<trex_instance_number>` must belong to the group `IIS_WPG` (IIS Worker Process Group).

3. Display the properties of the Web site `SAP_TREX_<instance_number>`. Choose *Home Directory* and assign the Web site to the application pool that you just created.



## Only Windows: Checking Permissions for the TREX Directory

### Use

The TREX setup program creates the Web site `SAP_TREX_<instance_number>` on the Web server. This causes an anonymous user for access to the Web site to be defined. The anonymous user needs certain permissions for the TREX directory:

- IIS 5.X: *Full Control*
- IIS 6.X: *Read & Execute*

If an error occurs, find out the anonymous user and correct the settings.

Proceed as follows to do this:

- Determine the anonymous user entered in the Web site `SAP_TREX_<instance_number>`.
- Give this user *Full Control* access to the TREX directory and to all contained files and sub-directories.

### Determining the Anonymous User

#### Microsoft IIS 5.X

1. Choose:
  - Windows 2000: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services*
  - Windows Server 2003: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services (IIS) Manager*.
2. Use the secondary mouse button to click on the `SAP_TREX_<instance_number>` Web site. Choose *Properties* → *Directory Security*.
3. In the Anonymous access *and authentication control* area, choose *Edit*.
4. In the *Anonymous access* area, choose *Edit*.
5. Select the name that is entered in the Username field, and copy it using CTRL+C.
6. Close the Internet Services Manager.

Now give the determined user full access to the TREX directory on Microsoft IIS 5.X.

#### Microsoft IIS 6.X

1. Choose:
  - Windows 2000: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services*
  - Windows Server 2003: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services (IIS) Manager*.
2. Use the secondary mouse button to click on the `SAP_TREX_<instance_number>` Web site. Choose *Properties* → *Directory Security*.

3. In the Authentication and access control area, choose Edit.
4. Select the name that is entered in the *Username* field, and copy it using CTRL+C.
5. Close the Internet Information Services Manager.

Now give the determined user *Read & Execute* permission for the TREX directory on Microsoft IIS 6.X..

## Giving the Determined User Certain Permissions

### Windows 2000

1. Use the secondary mouse button to click on the TREX directory. Choose *Properties* → *Security*.
2. Choose *Add*.
3. Select your local host under *Look in*.
4. Add the copied user name using CTRL+V. Check the validity of the user name using *Check Names*.
5. Choose *OK*.
6. Select the user and grant the access permissions:
  - IIS 5.X: *Full Control*
  - IIS 6.X: *Read & Execute*
7. Choose *Advanced*.
8. Select the user again.
9. Select *Allow inheritable permissions from parent to propagate to this object and Reset permissions on all child objects and enable propagation of inheritable permissions*.
10. Choose *OK* twice.

### Windows Server 2003

1. Use the secondary mouse button to click on the TREX directory. Choose *Properties* → *Security*.
2. Choose *Add*.
3. Select your local host using *Locations*.
4. Add the copied user name using CTRL+V. Check the validity of the user name using *Check Names*.
5. Choose *OK*.
6. Select the user and grant the access permissions:
  - IIS 5.X: *Full Control*
  - IIS 6.X: *Read & Execute*
7. Choose *Advanced*.
8. Select the user again.
9. Select *Allow inheritable permissions from the parent to propagate to this object and Replace permission entries on all child objects*.
10. Choose *OK* twice.



## Configuration of the RFC Connection

### Purpose

The following sections describe the steps that you carry out if the application and TREX are communicating using an RFC connection.



## Configuring the Number of Registered RFC Servers

### Use

In the standard configuration, only one RFC server registers itself with the SAP Gateway. If parallel search requests are frequently sent to TREX, you should increase the number of registered RFC servers. The requests are then distributed among several RFC servers and can be processed more quickly.

Technical background information: The RFC server processes requests one after another. If it is currently processing a request and then receives further requests, it collects them in a queue. If the RFC server receives too many requests, the queue may become full. This means that no more requests will be accepted.



We recommend that you start twice as many RFC servers as the host has CPUs.

The possible number of RFC servers is not directly linked to the number of CPUs. However, if too many RFC servers are running, the CPU uses more time to swap between the processes than to process the requests.

The following procedure describes how you increase the number of registered RFC servers.

### Procedure

1. Edit the configuration file `<TREX_DIR>/TREXDaemon.ini`.
2. Change the parameter `instances` in the RFC server section:

```
[rfcserver]
Windows: executable=TREXRfcServer.exe
UNIX: executable= TREXRfcServer.x
arguments=-r
startdir=<TREX_DIR>
instances=<number_of_RFC_servers>
```



If your host has 4 CPUs, set the number of RFC servers to 8.

3. If you are using the SAP Gateway of the application server, an RFC server needs to be registered for every application server used. Because each application server has its own gateway, the configuration file must contain one RFC server section for each application server. Add RFC server selections as required:

```
[rfcserver<number>]
Windows: executable=TREXRfcServer.exe
UNIX: executable=TREXRfcServer.x
```

```
arguments=-r -host=<gateway_host> -instance=<gateway_instance>
-service=<registration_name>
```

```
startdir=<TREX_DIR>
```

```
instances=<number_of_RFC_servers>
```

The registration name should have the following structure:

```
TREXRfcServer_<instance_number>_<trexhost>
```

Enhance the section names in the parameter programs :

```
[daemon]
```

```
programs=queueserver,indexserver,preprocessor,nameserver,rfcserver,rfcs
erver<number>,rfcserver<number> ...
```



You want to register RFC servers for two application servers. To do so, change the configuration file as follows:

```
[rfcserver1]
```

```
Windows: executable=TREXRfcServer.exe
```

```
UNIX: executable=TREXRfcServer.x
```

```
arguments=-r -host=mygatewayhost1 -instance=sapgw47
-service=TREXRfcServer_48_mytrexhost
```

```
Windows: startdir=C:\usr\sap\trax_48
```

```
UNIX: startdir=/usr/sap/trax_48
```

```
instances=4
```

```
[rfcserver2]
```

```
Windows: executable=TREXRfcServer.exe
```

```
UNIX: executable=TREXRfcServer.x
```

```
arguments=-r -host=mygatewayhost2 -instance=sapgw29
-service=TREXRfcServer_48_mytrexhost
```

```
Windows: startdir=C:\usr\sap\trax_48
```

```
UNIX: startdir=/usr/sap/trax_48
```

```
instances=4
```

```
[daemon]
```

```
programs=queueserver,indexserver,preprocessor,nameserver,
rfcserver,rfcserver1,rfcserver2
```

## Result

Changes to the configuration file take effect when you next start the TREX daemon.



## Activating Queue Server Usage

### Use

There are two methods for indexing:

- With queue server

The RFC server sends the documents to be indexed to the queue server. The queue server collects the documents and transmits them to the index server according to the conditions defined in the queue parameters. The actual indexing takes place on the index server.

- Without queue server

The RFC server sends the documents to be indexed to the index server.

The most suitable configuration depends on the application. The version of the TREX ABAP client determines whether you can configure usage of the queue server in the file `TREXRfcServer.ini`. SAP Note 658052 contains information on which configuration is most suitable for each application and whether you have to activate the usage of the queue server in the file `TREXRfcServer.ini`.

### Procedure

1. If you have to activate the usage of the queue server, edit the configuration file `<TREX_DIR>/TREXRfcServer.ini`.
2. In the `[CONNECTION]` section, set the `USE_QUEUESERVER` parameter to `YES`.

```
[CONNECTION]
```

```
USE_QUEUESERVER=YES
```

```
...
```

### Result

The changes take effect when you next start the RFC server. The RFC server is automatically started by the TREX daemon and/or by SAP Gateway.

If you use the queue server, check the queue parameters regularly and set them according to your requirements. Make sure that you configure the intervals at which the queue server is to transmit documents to the index server. The settings that are suitable depend on how often documents are to be indexed, and how quickly you want them to be available for the search.

You can configure queue parameters using the Python version of the TREX administration tool, for example. For more information, see the SAP Library at [help.sap.com/nw04](http://help.sap.com/nw04) → *SAP NetWeaver* → *Information Integration* → *Knowledge Management* → *Administration Guide* → *Technical Operations in Detail* → *TREX Administration Tools* → *TREX Administration Tool (Python)*.



## Changing the Connection Parameters of the RFC Server

### Use

If the gateway is not installed on the TREX host, you have to change the name that the TREX RFC server uses to register with the gateway.

### Procedure

1. Edit the configuration file `<TREX_DIR>/TREXRfcServer.ini`.
2. Enhance the parameter `SERVICE` with the host name of the TREX host:

```
[CONNECTION]
HOST=<gatewayhost>
INSTANCE=sapgw<instance_number>
SERVICE=TREXRfcServer_<instance_number>_<trexhost>
```



```
[CONNECTION]
HOST=mygatewayhost
INSTANCE=sapgw47
SERVICE=TREXRfcServer_48_mytrexhost
```

3. Restart TREX.



## Client Side

### Purpose

The section below describes the installation of the client software, if such an installation proves to be necessary. It also describes the configuration steps that you have to carry out on the client side.



## Java Application (HTTP Connection)

You install and configure the TREX Java client if you want a Java application to be able to communicate with TREX. You also check the client-side proxy settings.



## Specifying the Address of the TREX Name Server

### Use

The TREX Java client needs to know the address of the TREX name server in order to communicate with the TREX servers. The following procedure describes how you determine the address and enter it into the configuration settings for the TREX Java client.



The TREX Java client communicates with the TREX server by HTTP and TCP/IP. Make sure that the TCP port that the name server uses is open.

### Procedure

1. On the TREX host, open the configuration file `<TREX_DIR>/sapprofile.ini`. Determine the name server port that is entered in the parameter `TREX/NameServer/Port`.
2. Use the user `<j2eeadm>` to log onto the host on which the J2EE Engine is running.
3. Start the *SAP J2EE Engine Visual Administrator Tool* and log on to the J2EE Engine.  
For information on using the tool, see the SAP Library at [help.sap.com/nw04](http://help.sap.com/nw04) → *SAP NetWeaver* → *Application Platform (SAP Web Application Server)* → *Java Technology in SAP Web Application Server* → *Administration Manual* → *Server Administration* → *SAP J2EE Engine Administration Tools* → *Visual Administrator*.
4. Click on *Cluster* and navigate to *Services* → *TREX Service*.
5. Enter the address of the TREX name server into the parameter `nameserver.address`.  
`tcpip://<host_name_of_trex_host>:<name_server_port>`

You enter only the host name or the host name and the domain depending on your network environment.



`tcpip://mytrexhost:34801` OR `tcpip://mytrexhost.mydomain:34801`



The address of the TREX name server must be configured for all server processes of the cluster. Otherwise the connection between the J2EE Engine and TREX cannot be established.

6. Save your changes and confirm the restart of the service.

## Checking Proxy Settings

### Use

If an application is unable to communicate with TREX, it may be due to the application trying to access TREX using a proxy server. If this is the case, you have to change the configuration so that access does not take place using the proxy server.

The procedure depends on the application concerned:

- SAP Enterprise Portal 6.0 with Content Management
- Other Java applications based on J2EE 6.40

### Procedure

#### SAP Enterprise Portal 6.0 with Content Management

Check the settings in the portal under *System Administration* → *System Configuration* → *Service Configuration* → *Applications (Content Catalog)* → *com.sap.portal.ivs.httpservice* → *Services* → *Proxy*.

If a proxy server is entered there, you have to enter the TREX host in the field *http – Bypass Proxy Servers*.

#### Other Java applications based on J2EE 6.40

For other Java applications, you have to check the configuration of the J2EE Engine. The proxy settings belong to the Java parameters. If a proxy server is configured in the Java parameters, enter the TREX host into the parameter `nonProxyHosts`. You can choose one of the following methods:

- Alternative 1: `D"http.nonProxyHosts=<hostname>.<mydomain>|localhost`  
For `<hostname>.<domain>`, enter the host name and domain (if necessary) of the TREX host.
- Alternative 2: `D"http.nonProxyHosts=*<mydomain>|localhost`

You can change Java parameters using the *SAP J2EE Engine GUI Config Tool*. For information on using the tool, see the SAP Library at [help.sap.com/nw04](http://help.sap.com/nw04) → *SAP Netweaver* → *Application Platform (SAP Web Application Server)* → *J2EE Technology in SAP Web Application Server* → *Administration Manual* → *Server Administration* → *SAP J2EE Engine Administration Tools* → *Config Tool* → *The GUI Config Tool*.



## ABAP Application (RFC Connection)

No client-side installation is required in order for an ABAP application to communicate with TREX. You merely have to configure the client side for communication with TREX.



## Creating an RFC Destination

### Purpose

You need one or more RFC destinations in the SAP R/3 system so that an application can communicate with TREX.

The application sends the indexing or search requests to the RFC server via an SAP Gateway. The RFC server receives the request, forwards it to the responsible server, and waits for a response. When the server reports that it has processed the request, the RFC server informs the application of this. The RFC server is then ready to process the next request.

An RFC server can only process incoming requests one at a time. If the application sends parallel requests (multiple indexing requests, multiple search requests, or both together), you should make sure that enough RFC servers are available to deal with them. This involves configuration both on application side and on TREX side.

### RFC destination with activation type Registration

The activation type of the RFC destination is important on application side. The activation type determines how the gateway communicates with the RFC servers. You configure the RFC destination with the activation type *Registration*.



The activation type *Start* for creating an RFC destination is no longer supported as of TREX 6.1 SP12.

With the activation type *Registration*, the gateway sends the request to a pool-registered (already started) RFC server. If an RFC server is free, it accepts the request and processes it. If no RFC server is free, one of the RFC servers places the request in an internal queue and processes it as soon as possible.

If none of the registered RFC servers can receive the request, the gateway attempts to send it again. After a number of failed attempts, the gateway returns an error to the application that sent the request.

The following section describes how you create the RFC destination. The section [Configuring the Number of RFC Servers \[Page 51\]](#) contains information on how to register multiple RFC servers.



## Creating an RFC Destination with Activation Type Registration

### Use

The following procedure describes how you create an RFC destination with the activation type *Registration* in an SAP system of Release 6.20 or higher.

### Procedure

1. Choose transaction *SM59* in the SAP system, and then choose *Create*.
2. Enter the following data:

Field	Entry
<i>RFC Destination</i>	Any. For example, <b>TREXDEFAULT_REG</b>
<i>Connection Type</i>	<b>T</b>
<i>Description</i>	Any. For example, <b>RFC Destination for TREX</b>

3. Save your entries.
4. Enter the following data on the tab page *Technical Settings*:

Field	Entry
<i>Activation Type</i>	<i>Registered server program</i>
<i>Program ID</i>	Name that the RFC server uses to register with the SAP Gateway: <registration_name>  Use the same lower/uppercase conventions as used in the TREX configuration file <TREX_DIR>/TREXRfcServer.ini or <TREX_DIR>/TREXDaemon.ini. If the lower/upper case is not the same, the connection test will not work.

5. If you are using the SAP Gateway of the application server, leave the fields *Gateway Host* and *Gateway Service* empty. Otherwise, enter the following data:

Field	Entry
<i>Gateway Host</i>	Host name (with domain name if necessary) or the IP address of the host on which the gateway is installed.
<i>Gateway Service</i>	Name of the gateway in the form <b>sapgw&lt;instance_number&gt;</b>



If you are using the SAP Gateway of the application server, an RFC server needs to be registered for every application server used. For an example of the required configuration on TREX side, see [Configuring the Number of Registered RFC Servers \[Page 51\]](#).

The SAP Gateway of the application server has the advantage that it processes the requests more quickly than other SAP Gateways. However, it does lead to greater administration requirements: When a new application server is implemented, you have to make sure that you register additional RFC servers.

6. Save your entries and choose *Test Connection*.

The RFC connection is established.



If you used the host name of the target host, and the connection test fails, enter the IP address for the host instead, and test the connection again. If the RFC connection still cannot be established, see [Checking an RFC Connection \[Page 70\]](#).

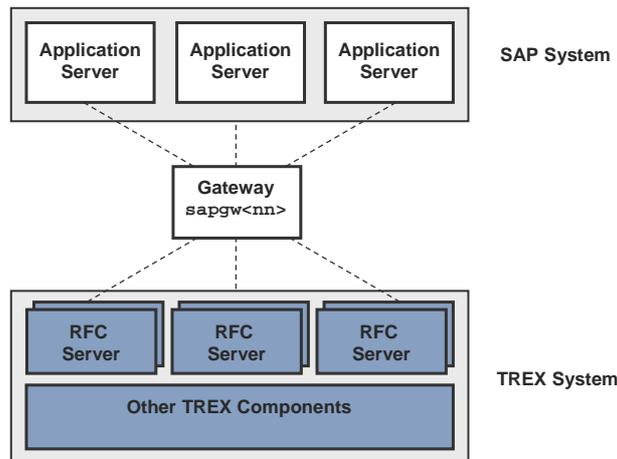
## Example Scenarios on Using the SAP Gateway

The entries in the fields *Program ID*, *Gateway Host*, and *Gateway Service* depend on the following:

- The SAP Gateway that you are using
- The location of the parameters `host`, `service`, and `instance`, which the RFC server uses when it starts (`TREXDaemon.ini` or `TREXRfcServer.ini`)

### Example 1: Using a Central SAP Gateway

In this scenario, you use a central SAP gateway, through which communication takes place. The gateway can run on any machine. The SAP system sends all requests to this gateway. On the TREX side, all RFC servers are registered with this gateway. The graphic below depicts this scenario:



The benefit of this scenario is that the configuration effort on the TREX side is lower. You only have to specify the connection information for one gateway in the TREX configuration.

The configuration file `TREXDaemon.ini` determines only that the RFC server is started in registered mode (parameter `-r`).

- Parameter `SERVICE`

The values that are entered in the `TREXRfcServer.ini` configuration file apply.

- Parameter `HOST`

Enter the name of the host machine on which the central gateway is running.

- Parameter `INSTANCE`

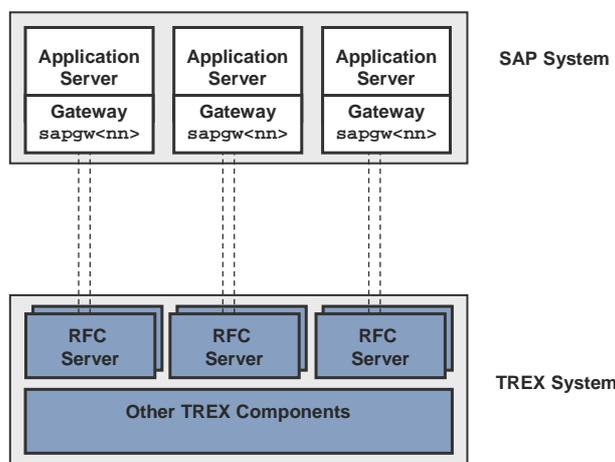
Enter the instance number of the central gateway.

You specify these values in the RFC destination.

Configuration Area	Parameter
TREXDaemon.ini	[rfcserver] Windows: executable=TREXRfcServer.exe UNIX: executable=TREXRfcServer.x arguments=-r startdir=<Trex_DIR> instances=<number_of_RFC_servers>
TREXRfcServer.ini	[CONNECTION] HOST=<gatewayhost> INSTANCE=sapgw<instance_number> SERVICE=TREXRfcServer_48
RFC Destination (SM59)	Program ID TREXRfcServer_48 Gateway Host <gatewayhost> Gateway Service sapgw<instance_number>

### Example 2: Using the SAP Gateways on the Application Servers

In this scenario, you use the local SAP gateways on one or more application servers. In this scenario, communication takes place over more than one gateway. Each application server in the SAP system sends its requests to its local gateway. On the T Rex side, RFC servers are registered with each local gateway. The graphic below depicts this scenario:



You have changed the configuration file `TREXDaemon.ini` so that RFC servers register for every application server. You have specified the parameters `host`, `service`, and `instance` in the RFC server selections. You specify the value of the parameter `service` in the RFC destination.

Configuration Area	Parameter
TREXDaemon.ini	<pre>[daemon]  programs=nameserver,preprocessor,indexserver,queueserver,rfcserver1,rfcserver2  [rfcserver1]  Windows: executable=TREXRfcServer.exe UNIX: executable=TREXRfcServer.x arguments=-r -host=mygatewayhost1 -instance=sapgw47 -service=<b>TREXRfcServer_48_mytrexhost</b> startdir=&lt;TREX_DIR&gt; instances=&lt;number_of_RFC_servers&gt;  [rfcserver2]  Windows: executable=TREXRfcServer.exe UNIX: executable=TREXRfcServer.x arguments=-r -host=mygatewayhost2 -instance=sapgw29 -service=<b>TREXRfcServer_48_mytrexhost</b> startdir=&lt;TREX_DIR&gt; instances=&lt;number_of_RFC_servers&gt;</pre>
RFC Destination (SM59)	<p><i>Program ID</i> <b>TREXRfcServer_48_mytrexhost</b></p> <p><i>Gateway Host</i> (this field remains empty)</p> <p><i>Gateway Service</i> (this field remains empty)</p>



## Creating a Search Server Relation

### Use

It might be necessary to create a search server relation for communication between an application and TREX. The installation documentation on the application in question will contain information on whether you need a search server relation.



Technical background: The need for a search server relation depends on the version of the TREX ABAP client that is used by the application in question. There are the following versions:

- The SRET package with the function modules SRET\*
- The STREX package with the function modules TREX\_\*

If the application in question uses the SRET package, you must create a search server relation. If the application uses the STREX package, this step is not required.

Creating a search server relation consists of the following:

1. Creating a search server relation.
2. Testing the search server relation.

## Creating a Search Server Relation

1. Choose transaction *SRMO* in the SAP R/3 system.
2. Choose *Create SSR*.
3. Enter a name for the search server relation in the field *Search Server Relation ID* (for example, *SSR\_TREX*).
4. Choose *Create SSR*.
5. Enter the following data:

Field	Entry
<i>Search engine</i>	<p><b>DRFUZZY</b></p> <p>This is the internal name of the TREX search engine.</p>  <p>Make sure that you enter <b>DRFUZZY</b> in uppercase and in the format specified.</p>
<i>RFC Destination (TCP/IP)</i>	<p>Name of the RFC destination that you created with the activation type <i>Registration</i>. This entry must match the name that you assigned when you created the RFC destination (see <a href="#">Creating an RFC Destination with Activation Type Registration [Page 58]</a>).</p>  <p><b>TREXDEFAULT_REG</b></p>
<i>Description</i>	<p>Description of the search server relation, for example, <b>Search Server Relation for Retrieval Service</b>.</p>

6. Save your entries.  
You return to the previous dialog box.
7. Select the newly created search server relation in the table.
8. Choose *Set SSR as Default*.
9. In the confirmation prompt that appears, choose *Yes*.  
The search server relation is then shown as default in the table.

## Testing a Search Server Relation

1. Choose the *RFC Destinations* tab.  
Two entries are listed for the search server relation you created: One for action I (indexing) and one for action S (searching).
2. Select the entry with action = S. Choose *Connection Test* under *Search Engine Settings*.  
The connection with the TREX RFC server and the TREX search engine is established. You can see this in the version information that is shown for the TREX components.
3. Select the entry with action = I. Choose *Connection Test* under *Search Engine Settings*.

The connection with the TREX RFC server and the TREX search engine is established. You can see this in the version information that is shown for the TREX components.



If the RFC connection still cannot be established, see [Checking an RFC Connection \[Page 70\]](#).

## Installation Check

### Purpose

If you have carried out all the steps described, TREX is ready for operation. You can carry out checks to ascertain whether the installation was successful.

## Checking Processes

### Use

You can check on operating systems whether the TREX daemon is running and whether the required process has started.

### Procedure

#### With UNIX

Log on with the user `<trex_instance_number>`. Use `ps -fu <trex_instance_number>`, to check whether the following processes are running:

Process	HTTP Connection	RFC Connection
httpd	✓	
TREXDaemon.x	✓	✓
TREXIndexServer.x	✓	✓
TREXNameServer.x	✓	✓
TREXPreprocessor.x	✓	✓
TREXQueueServer.x	✓	✓
TREXRfcServer.x		✓

#### With Windows

Open the Task Manager and check whether the following programs are running:

Process	HTTP Connection	RFC Connection
TREXDaemon.exe	✓	✓
TREXIndexServer.exe	✓	✓
TREXNameServer.exe	✓	✓
TREXPreprocessor.exe	✓	✓
TREXQueueServer.exe	✓	✓
TREXRfcServer.exe		✓



## Executing an Installation Test Script

### Use

TREX delivers a Python script that you can use to test the basic functions of TREX. If the Python script is executed successfully, you know that TREX has been installed properly, the configuration files contain the necessary entries, and the TREX servers are running.

### Procedure on UNIX

1. Log on with the user `<trex_instance_number>`.
2. Go to the TREX directory.  

```
cd /usr/sap/trex_<instance_number>
```
3. Set the environment variables required by TREX by executing one of the following scripts.
  - Bourne-Shell `sh`, Bourne-again-Shell `bash`, Korn-Shell `ksh`:  

```
. TREXSettings.sh
```
  - C Shell `csh`:  

```
source TREXSettings.csh
```
4. Go to the directory that contains the test script and execute it:  

```
cd python_support  
python runInstallationTest.py
```

### Procedure on Windows

1. Log on with the user `<trex_instance_number>`.
2. Open a test console by choosing *Start* → *Programs* or *All Programs* → *SAP TREX* → *Instance <instance\_number>* → *Tools* → *TREX\_<instance\_number> Console*



Always use a test console when executing Python test scripts. The correct environment variables are set in the test console.

You are in the directory

```
<disk_drive>:\usr\sap\trax_<instance_number>\python_support.
```

3. Execute the test script:

```
runInstallationTest.py
```

### Result

The script carries out the following tests:

- Deleting any test indexes that were generated for a previous script run
- Creating a test index
- Indexing documents
- Testing search functions
  - Exact, error-tolerant (fuzzy), and linguistic searches
  - Search using Boolean operators such as AND and OR

The results are displayed at the end of the script run. You see the tested calls and their statuses (OK or Failed).

When you run the script for the first time, the call 'Delete Index' has the status Failed. This is because there was no existing text index to be deleted. If this is the only cell with the status Failed, the test was successful.



## Additional Information

### Purpose

The sections below contain information on the following topics:

- Troubleshooting for the installation
- Control of the installation from a remote computer
- Starting and Stopping TREX
- Uninstalling TREX



## Troubleshooting

### Purpose

The following sections contain information on the following issues:

- How to deal with errors that occur during the SAPInst installation.
- How you create the TREX Web site manually (only relevant for an HTTP connection and only if TREX is installed on Windows).
- How you proceed if there are communication problems between an application and TREX when using an RFC connection.



## Information on SAPInst

### Purpose

The following sections contain information on solving errors that affect SAPInst.



## Troubleshooting during the installation

### Procedure

If an error occurs during the **dialog phase**, SAPInst:

- Stops the installation
- Displays a dialog box that informs you about the error

You can now directly view the log file by choosing *View Logs*. Finally, you must abort the installation with *Stop* or *Reset*, and try to solve the problem.

If an error occurs during the **processing phase**, SAPInst:

- Stops the installation
- Displays a dialog box that informs you about the error

You can now:

- Directly view the log file by choosing *View Logs*.
- Try to solve the problem

For more information, see the *SAPInst Troubleshooting Guide* in the *SAP Service Marketplace* at the Internet address

`service.sap.com/sapinstfeedback`

- Stop or reset the installation.

For more information, see [Continuing an Interrupted Installation with SAPInst \[Page 66\]](#).



## Continuing an Interrupted Installation

### Use

SAPInst does not abort the installation in error situations, you can continue an interrupted installation when you have:

- **Not** canceled the installation

That is, the error dialog box is still displayed and SAPInst is waiting for your input. Proceed as follows:

In the error dialog box, choose *Retry*.

SAPInst now retries the installation step.

- **Already** canceled the installation

That is, the installation was aborted. There are the following situations:

If you have canceled with...	Meaning
<i>Stop</i>	<p>Since SAPInst records the installation progress in the <code>keydb.xml</code> file, you can continue the installation from the failed step without repeating previous steps.</p> <p>During this procedure, you can reset the installation, too, if required.</p>
<i>Reset</i>	<p>You must restart from the beginning, that is, with the default <code>keydb.xml</code> file as delivered.</p> <p></p> <p>In some cases, you must uninstall already installed components, before repeating the installation from the beginning. For example, this applies to an SAP system installation. For more information, see the description on how to uninstall a component in the corresponding installation guide.</p>

### Prerequisites

You solved the problem that caused the error situation.

## Procedure on UNIX

1. Log on to the installation host as **root**.
2. Mount the DVD with the installation files.



Mount the DVD locally. We do **not** recommend using Network File System (NFS).

3. Enter the following commands to run the command `sapinst` from the mounted DVD.

```
cd <DVD_DIR>/SAPINST/UNIX/<OS>/
./sapinst
```

4. In the *What do you want to do?* screen, decide between the following alternatives and choose *OK*.

Alternative	Behavior
<i>Run a new Installation</i>	The installation will <b>not be continued</b> . Instead, SAPinst deletes the mentioned installation directory for the chosen installation service and starts the installation from the beginning.  The log files from the old installation are put into a backup directory with the following naming convention: <log_day_month_year_hours_minutes_seconds> (log_01_Oct_2003_13_47_56, for example).
<i>Continue old installation</i>	The installation of the mentioned installation service will be continued from the point of failure.

## Procedure on Windows

1. Log on to the installation host as a user with **administrator rights**.
2. Insert the DVD with the installation files in your DVD drive.
3. Enter the following commands to run the command `sapinst`:

```
cd <DVD_DRIVE>:\SAPinst\NT\I386
sapinst
```

4. In the *What do you want to do?* screen, decide between the following alternatives and choose *OK*.

Alternative	Behavior
<i>Run a new Installation</i>	The installation will <b>not be continued</b> . Instead, SAPinst deletes the mentioned installation directory for the chosen installation service and starts the installation from the beginning.  The log files from the old installation are put into a backup directory with the following naming convention: <log_day_month_year_hours_minutes_seconds> (log_01_Oct_2003_13_47_56, for example).
<i>Continue old installation</i>	The installation of the mentioned installation service will be continued from the point of failure.



## Handling the CD Browser

### Procedure

The following tells you how to handle the CD Browser window. SAPinst displays this window in following situations:

1. SAPinst wants to check the availability of the software package.

You can recognize this situation by the flag *Check Location* displayed on the *CD Browser Window*.

Choose one of the following actions:

Action	Result
You do not enter any package location and leave the flag <i>Check Location</i> deselected.	SAPinst skips the check and you can continue the installation procedure.  However, SAPinst asks later for the missing LABEL.ASC (see step 2 below).
You enter the path of the package location and leave the flag <i>Check Location</i> deselected.	SAPinst skips checking the label location, but your entered package locations are used later for the installation.  SAPinst only asks again for a missing LABEL.ASC if the package location is incorrect (see step 2 below).
You enter the path of the package location and select the flag <i>Check Package Location</i> .	SAPinst checks the label location and displays an error message if the location is incorrect.  If all locations are correct, SAPinst does not ask again for the LABEL.ASC files later.

2. SAPinst cannot find the correct LABEL.ASC but needs the location of the software to process the installation now.

You can recognize this situation by the missing flag *Check Location* on the *CD Browser* window. You now have to enter the path to the correct LABEL.ASC. Otherwise, the installation cannot continue.

Additionally, you can copy the installation package by entering a location in the column *Copy Package to*.



## Creating a Web Site Manually (Only Windows)

### Use

This section is only relevant if an application communicates with TREX using HTTP.

The TREX setup program normally creates the Web site `SAP_TREX_<instance_number>` on the Web server. If an error occurred during this process, you have to create the Web site manually.

### Procedure

1. Open the *Internet Information Services* (Microsoft IIS 5.0) or the *Internet Information Services (IIS) Manager* (Microsoft IIS 6.0).
  - Windows 2000: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services*
  - Windows Server 2003: Navigate to *Control Panel* → *Administrative Tools* → *Computer Management* → *Services and Application* → *Internet Information Services (IIS) Manager*.
2. Use the secondary mouse button to click on the TREX Web site (Windows 2003) or the computer icon (Windows 2000), and choose *New* → *Web Site*.
3. A wizard that helps you with the creation process is started. Enter the information from the table below, and adopt the default settings for all other fields.

Field	Input
<i>Description</i>	<code>SAP_TREX_&lt;instance_number&gt;</code> , for example <code>SAP_TREX_48</code>
<i>TCP Port</i>	<p><code>&lt;free_port&gt;</code></p> <p></p> <p>We recommend that you calculate the port as follows:</p> $30000 + 100 * \text{<instance\_number>} + 5$ <p>SAPinst calculates the ports of the TREX servers using this method. The method ensures that the ports do not clash with another TREX instance on the same host.</p> <p></p> <p>If the instance number is 48, the port is 34805.</p>
<i>Path</i>	<code>&lt;disk_drive&gt;:\usr\sap\trex_&lt;instance_number&gt;</code>
<i>Permissions (Read, Run scripts, and so on)</i>	None. Make sure that no field is checked.

4. When you have created the Web site, you have to create a virtual directory. Use the secondary mouse button to click on the Web site `SAP_TREX_<instance_number>`, and choose *New* → *Virtual Directory*.

5. A wizard that helps you with the creation process is started. Enter the following information:

Field	Input
Alias	TREXHTTPServer_<instance_number>
Path	<disk_drive>:\usr\sap\trex_<instance_number>
Permissions (Read, Run scripts, and so on)	Select <i>Execute (such as ISAPI applications or CGI)</i> . Remove the selection for the other permissions.

6. Display the properties of the virtual directory `TREXHTTPServer_<instance_number>`. Choose the *Virtual Directory* tab, and remove the selection for *Log visits* and *Index this resource*.
7. Display the properties of the Web site `SAP_TREX_<instance_number>`. Choose the *Web Site* tab, and remove the selection for the *Enable Logging* field.



## Checking an RFC Connection

### Use

If the connection test fails when you create an RFC destination or search server relation, check the following:

- SAP gateway
- RFC destination
- TREX configuration

## Checking the Gateway

### With UNIX

1. Check that the process `gwrld` is running:  
`ps -fu <gwsadm> | grep gwrld`
2. Check whether the group to which the user `<gwsadm>` belongs has the access permission `rxw` for the directory `/usr/sap/trex_<instance_number>`.

### With Windows

1. Use the Task Manager to check whether the process `gwrld.exe` is running.
2. Check the settings of the gateway service. To do this, choose the following paths:
  - Windows 2000: *Start* → *Settings* → *Control Panel* → *Administrative Tools* → *Services*.
  - Windows Server 2003: *Start* → *Administrative Tools* → *Services*.

Start the service `SAPGWS_<SAPSYSNR>` if it is not already running. If necessary, change the start type of the service so that it starts automatically.

3. Open the *SAP Management Console* by choosing *Start* → *Programs* or *All Programs* → *SAP System Management Console*. Check whether the gateway instance has started. If necessary, start the gateway instance using *Action* → *Start*.

## Checking an RFC destination:

Check the data that you entered when you created the RFC destination [Creating an RFC Destination \(Registration\) \[Page 58\]](#)). Pay attention to lowercase and uppercase letters in the input parameters.

## Checking the TREX Configuration

Check the gateway parameters in the file `<TREX_DIR>/TREXRfcServer.ini`:

- Is the host name of the host on which the gateway is installed correct?
- Does the instance number match the number you specified during the gateway installation?

```
[CONNECTION]
```

```
HOST=<local_host_or_host_name>
```

```
INSTANCE=sapgw<gw_instance_number>
```



The values for the parameters `HOST` and `INSTANCE` must be entered in lower case.



# Controlling a SAPinst Installation from a Remote Machine

## Purpose

You can run the SAPinst GUI in standalone mode to perform a remote installation.

This enables you to install an SAP system on another host (the remote host) while monitoring the installation with the SAPinst GUI on your local Windows or UNIX host (the local host).

## Prerequisites

Both hosts are on the LAN and can ping each other.

To test this:

- Log on to your remote host and enter the command `ping <local_host>`.
- Log on to the local host and enter the command `ping <remote_host>`.

## Process Flow

1. You start SAPinst on the remote host
2. You start SAPinst GUI standalone.

For details, see the following sections.



## Starting SAPinst GUI Standalone

### Use

You use this procedure when you want to run SAPinst GUI standalone on a host.



Typical examples for running or starting SAPinst GUI only are:

- Controlling a SAPinst installation from an other host
- Connecting a SAPinst GUI after choosing the push button *Logoff* during the installation.

### Procedure on UNIX

1. Log on to the installation host as **root**.
2. Mount the DVD with the installation files.



Mount the DVD locally. We do not recommend using Network File System (NFS).

3. Run the GUI from an existing directory by entering the following commands:

```
mkdir <SAPinstGUI_Dir>
chmod 777 <SAPinstGUI_Dir>
cd <SAPinstGUI_Dir>
<DVD_DIR>/SAPINST/UNIX/<OS>/startInstGui.sh
```

If a SAPinst server already runs on this host, the SAPinst GUI automatically connects to the server.

Otherwise, the *SAP Installation GUI Connection* window appears. In the latter case, enter the host name of the installation host and the same port as SAPinst uses on the remote host and choose *OK*. SAPinst GUI then connects to the SAPinst server.

### Procedure on Windows

1. Log on to the installation host as a user with **administrator rights**.
2. Insert the DVD with the installation files in your DVD drive.
3. Run the GUI from an existing directory by using this procedure (use a command prompt, do not double-click the file `startinstgui.bat`):

- a. Create an SAPinst GUI installation directory: `mkdir <SAPinstGUI_Dir>`
- b. Change to this directory: `cd <SAPinstGUI_Dir>`
- c. Start the SAPinst GUI from this directory by entering the following path:

```
<DVD_DRIVE>:\SAPinst\NT\I386\ startinstgui.bat
```

If a SAPinst server already runs on this host, the SAPinst GUI automatically connects to the server.

Otherwise, the *SAP Installation GUI Connection* window appears. In the latter case, enter the host name of the installation host and the same port as SAPinst uses on the remote host and choose *OK*. SAPinst GUI then connects to the SAPinst server.



## Starting SAPinst on the Remote Host

### Use

You use this procedure to set up your **remote** host where the SAPinst server should run only. The remote host is the host where you want to install TREX.

### Procedure on UNIX

1. Log on to the installation host as **root**.
2. Mount the DVD with the installation files.



Mount the DVD locally. We do not recommend using Network File System (NFS).

3. Enter the following commands:

```
cd <DVD_DIR>/SAPINST/UNIX/<OS>/  
./sapinst SAPINST_START_GUI=false
```

SAPinst now starts and waits for the connection to the SAPinst GUI.

You see the following at the command prompt:

```
guiengine: no GUI connected; waiting for a connection on host  
<host_name>, port <port_number> to continue with the installation
```

You can now start the SAPinst GUI on your local host, as described in [Starting SAPinst GUI Standalone \[Page 72\]](#).

### Procedure on Windows

1. Log on to the installation host as a user with **administrator rights**.
2. Insert the DVD with the installation files in your DVD drive.
3. Enter the following commands:

```
cd <DVD_DRIVE>:\SAPinst\NT\I386  
sapinst SAPINST_START_GUI=false
```

SAPinst now starts and waits for the connection to the SAPinst GUI. You see the following at the command prompt:

```
guiengine: no GUI connected; waiting for a connection on host  
<host_name>, port <port_number> to continue with the installation
```

You can now start the SAPinst GUI on your local host, as described in [Starting SAPinst GUI Standalone \[Page 72\]](#).



## Starting and Stopping TREX on UNIX

### Purpose

The following sections explain how to start and stop TREX on UNIX.

The `TREX` script that you use to start and stop the TREX daemon is located in the `TREX` directory. After the installation the script should be executed automatically when the host is started or stopped. You can also call up the script manually, for example, if you want to stop TREX temporarily and then restart it. You can also start the TREX servers individually for test purposes or troubleshooting.



### Starting the TREX Daemon

#### Procedure

1. Log on with the user `<trex_instance_number>`.
2. Go to the TREX directory, and call up the `TREX` script using the `start` option:

```
cd <TREX_DIR>
TREX start
```



### Stopping the TREX Daemon

#### Procedure

1. Log on with the user `<trex_instance_number>`.
2. Go to the TREX directory, and call up the `TREX` script using the `stop` option.

```
cd <TREX_DIR>
TREX stop
```



Do not stop the TREX daemon using `kill -9`, and do not stop the individual child processes that the daemon has started. Doing so can lead to the loss of data. Affected indexes can be irreparably damaged.

### Result

Certain processing steps, for example, writing an index, cannot be interrupted. Such steps are completed before TREX is stopped. This process can take a while to complete.

With large indexes, it can take up to a few hours to stop the TREX servers if lots of documents are currently being indexed.



## Starting and Stopping Individual TREX Servers

### Use

You can start individual TREX servers for test purposes and for troubleshooting. You can then track the program output on the screen.

### Starting the TREX Servers

1. Log on with the user `<trex_instance_number>`.
2. Stop the TREX daemon (see [Stopping the TREX Daemon \[Page 74\]](#)).
3. Go to the TREX directory.
4. Start each TREX server in a separate shell.

TREX Server	Command
Index server	<code>TREXIndexServer.x</code>
Name server	<code>TREXNameServer.x</code>
Preprocessor	<code>TREXPreprocessor.x</code>
Queue server	<code>TREXQueueServer.x</code>
Only relevant for an RFC connection: RFC server	<code>TREXRfcServer.x -r</code>

### Stopping the TREX Servers

1. Display the window in which you started the TREX server.
2. Use `CTRL+C` or close the window.

Certain processing steps, for example, writing an index, cannot be interrupted. Such steps are completed before the TREX servers are stopped. This process can take a while to complete.

With large indexes, it can take up to a few hours to stop the TREX servers if lots of documents are currently being indexed.



Do not stop the TREX servers using `kill -9`, as this can lead to data loss. Affected indexes can be irreparably damaged.



## Starting and Stopping TREX on Windows

### Purpose

The following sections explain how to start and stop TREX on Windows:

The TREX setup registered the TREX daemon as a Windows service. The service is configured so that it starts automatically when the host is started up, and stops automatically when the host is shut down. You can start and stop the service manually if necessary. You can also start the TREX servers individually for test purposes or troubleshooting.



### Starting the TREX Daemon

#### Procedure

1. Log on with the user *<trex\_instance\_number>*.
2. Choose *Start → Programs or All Programs → SAP TREX → Instance <instance\_number> → TREX Service → Start*.



### Stopping the TREX Daemon

#### Procedure

3. Log on with the user *<trex\_instance\_number>*.
4. Choose *Start → Programs or All Programs → SAP TREX → Instance <instance\_number> → TREX Service → Stop*.



Do not use the Task Manager to stop the TREX daemon or the individual TREX servers. Doing so can lead to the loss of data. Affected indexes can be irreparably damaged.

### Result

Certain processing steps, for example, writing an index, cannot be interrupted. Such steps are completed before TREX is stopped. This process can take a while to complete.

With large indexes, it can take up to a few hours to stop the TREX servers if lots of documents are currently being indexed.



## Starting and Stopping Individual TREX Servers

### Use

You can start individual TREX servers for test purposes and for troubleshooting. You can then track the program output on the screen.

### Starting the TREX Servers

1. Stop the TREX daemon (see [Stopping the TREX Daemon \[Page 76\]](#)).
2. Open a separate prompt for each TREX server.
3. Go to the TREX directory and start the TREX server.

TREX Server	Command
Index server	<code>TREXIndexServer.exe</code>
Name server	<code>TREXNameServer.exe</code>
Preprocessor	<code>TREXPreprocessor.exe</code>
Queue server	<code>TREXQueueServer.exe</code>
Only relevant for an RFC connection: RFC server	<code>TREXRfcServer.exe -r</code>



In the properties of the prompt, deactivate the *QuickEdit Mode* option.

Leave the prompt open. If you want, you can minimize the window so that it is shown as a pushbutton in the Windows task bar.

### Stopping the TREX Servers

1. Display the window in which you started the TREX server.
2. Use `CTRL+C` or close the window.

Certain processing steps, for example, writing an index, cannot be interrupted. Such steps are completed before the TREX servers are stopped. This process can take a while to complete.

With large indexes, it can take up to a few hours to stop the TREX service if lots of documents are currently being indexed.



Do not use the Task Manager to stop the TREX servers. Doing so can lead to the loss of data. Affected indexes can be irreparably damaged.



## Uninstalling TREX

### Use

You can uninstall the TREX server software using SAPinst.



When you uninstall TREX, the entire TREX directory is deleted, **including all configuration data**. If the index directory and queue directory are located in the TREX directory, **all indexes and queues are deleted**.

### Procedure on UNIX

1. Log on with the user `<trex_instance_number>`.
2. Stop TREX (see [Stopping the TREX Daemon \[Page 74\]](#)).  
It can take a while to stop the TREX processes. Make sure that all of the TREX processes have stopped before you start the uninstallation process.  
For an installation with an HTTP connection: Check that the Web server (HTTP daemon) has stopped. You can use the following command to do this:  

```
ps -fu <trex_instance_number> | grep httpd
```
3. Log on as root.
4. Make sure that the environment variable `DISPLAY` has been set for root on `<host_name>`. `<host_name>` is the host on which the SAPinst GUI is to be displayed.
5. Start SAPinst.
  - If you are installing from the DVD, mount the DVD containing the TREX installation files first.
  - If you are installing from the SAP Service Marketplace, navigate to the directory `<TREX_SP>`.

For a detailed description of these steps, see [Installing with SAPinst \[Page 28\]](#).
6. Choose the entry *Uninstall a TREX 6.1 Search and Classification Instance* from the Welcome window.
7. Confirm the uninstallation.
8. The CD browser may ask you for the path to the file `LABEL.ASC`. Enter the main directory of the DVD into the field *Package Location*.
9. Select the TREX instance that you want to uninstall.
10. Enter the user that you created for the TREX instance.
11. Confirm the uninstallation.
12. To start the uninstallation, choose *Start*. When the uninstallation has finished, choose *OK*.
13. Carry out the following steps:
  - AIX – remove the start and stop instructions for the TREX script from the files `/etc/inittab` and `/etc/rc.shutdown`.
  - HP UX, Linux, or Sun Solaris – Remove the links to the TREX script.

HP-UX:

```
rm /sbin/init.d/TREX_<instance_number>
rm /sbin/rc3.d/S900TREX_<instance_number>
rm /sbin/rc0.d/K100TREX_<instance_number>
```

Linux:

```
rm /etc/init.d/TREX_<instance_number>
rm /etc/rc.d/rc3.d/S90TREX_<instance_number>
rm /etc/rc.d/rc0.d/K10TREX_<instance_number>
```

Sun Solaris:

```
rm /etc/init.d/TREX_<instance_number>
rm /etc/rc3.d/S90TREX_<instance_number>
rm /etc/rc0.d/K10TREX_<instance_number>
```



If the TREX script is started or stopped in a different run level or sequence, you have to modify the `rm` command accordingly.

## Procedure on Windows

1. Log on as an administrator.
2. Start SAPinst.
  - If you are installing from the DVD, insert the DVD containing the TREX installation files first.
  - If you are installing from the SAP Service Marketplace, navigate to the directory <TREX\_SP>.
3. For a detailed description of these steps, see [Installing with SAPinst \[Page 28\]](#).
4. Choose the entry *Uninstall a TREX 6.1 Search and Classification Instance* from the Welcome window.
5. Confirm the uninstallation.
6. The CD browser may ask you for the path to the file LABEL.ASC. Enter the TREX subdirectory of the DVD into the field *Package Location*.
7. Select the TREX instance that you want to uninstall.
8. Enter the user that you created for this TREX instance.
9. Confirm the uninstallation.
10. To start the uninstallation, choose *Start*. When the uninstallation has finished, choose *OK*.