



ICW Professional Exchange Server 3.2

Installation Manual

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1 Introduction

This manual will help you to install and configure Professional Exchange Server.

1.1 Document Overview

This manual will help you to install and configure Professional Exchange Server.

Chapter 1 gives a short introduction to the installation program of Professional Exchange Server.

Chapter 2 details all prerequisites necessary for the installation of Professional Exchange Server.

Chapter 3 deals with the actual installation procedure, describing all steps to be completed.

Chapter 4 describes how to start and how to stop the application.

Chapter 5 gives information about some special issues like silent installation.

The Appendix (chapter 6) provides overviews of the most relevant aspects of the installation which can be used as reference.

1.2 The Installation Program

Professional Exchange Server comes with an install program which offers an interactive user interface for installation and configuration. Therefore, there is no need to edit any property files.

The install program includes not only Professional Exchange Server itself, but also the subsystems needed for operating the application.

During installation, the install program will ask you to specify values for individual properties. Some of these values affect the installation settings of Professional Exchange Server and its subsystems, and other settings are relevant for actual operation. Whenever applicable, the install program will offer default values to speed up the installation and configuration process. Your input will be validated by the install program to prevent non-working configuration settings.

To make the install process more comfortable you can specify the purpose of your installation. Professional Exchange Server offers preset installation settings for the most probable application scenarios. Applying one of these predefined settings, the install dialog will ask you only for those values that may differ from installation to installation within the same scenario. All values typical for the chosen scenario are set automatically. The installation purpose *custom* allows to set all configuration properties



(no automatic settings at all). This allows for configurations designed for very specific application scenarios.



2 Prerequisites

2.1 Required Prior Knowledge

To install the Professional Exchange Server application in a production environment, you need to be familiar with the administration of the following systems:

- Operating System (the OS the Professional Exchange Server application will run on)
- Network infrastructure (IP addresses, firewall rules, SSL certificates, ...)
- Oracle database (setting up an instance)
- Apache HTTPD Web server (with AJP connectivity)

2.2 Hardware and Software Requirements

The following components have to be installed and running on your system:

- Apache HTTPD Web server (with AJP connectivity)
- Certificates (client, server and CA keystore in Java Keystore format (with the file extension .jks))
- Java JDK 1.6 (please set JAVA_HOME environment variable to your Java installation directory)

A database server is required and must be accessible by your Professional Exchange Server installation:

- Oracle 10g (instance should be running with UTF-8 encoding)



NOTE

Further information on hardware and software requirements

For detailed information on hardware and software requirements, see the document *Hardware and Software Requirements* which is part of the documentation package.

2.3 Components Delivered with the Install Package

The following components come together with Professional Exchange Server.



- Apache Tomcat 6.0.29
- Ant 1.7.1 (with Ant-Contrib 1.0b3) necessary because the installation process for Professional Exchange Server is Ant-based
- Java Service Wrapper 3.3.9-st
- HSQLDB 1.8.0.10

These components are installed and configured together with Professional Exchange Server in the same installation process.

2.4 Preparing the Database

When installing Professional Exchange Server you need a database instance. You will find information on the creation of the database instance in the respective database documentation. If you use an Oracle Database you can use the Oracle DBCA tool.



3 Installation Procedure

3.1 Quick Summary

When installing Professional Exchange Server and its subsystems, you have to carry out the following main steps, which are described in detail in the following sections.

1. Verify all third-party software and services are installed and running.
2. Under Linux, create a dedicated user.
3. Extract the program files from Zip file that has been delivered.
4. Execute the installation.
5. Specify the installation purpose appropriate for your application scenario.
6. Answer the questions of the interactive installation program. (The program asks you to specify values for certain installation and configuration properties).
7. Check your settings and confirm. Now, the installation will be executed.
8. Install the autostart script.
9. Install and configure the Apache HTTPD Web server (with AJP connectivity).

You can start the application by proceeding as follows:

1. Make sure your database is online, accessible and started.
2. Start Apache Tomcat.
As soon as you start Tomcat, Professional Exchange Server will also be started.
3. Call up Professional Exchange Server in your Internet browser.
⇒ The Login page opens.

3.2 Starting the Installation Program

In order to start the PXS installation program, complete the following steps:

1. Verify that all third-party software and services are installed and running.
Check if:
 - your Oracle Database is accessible,
 - the JDK is installed,
 - JAVA_HOME is configured,
 - the necessary certificates are available (client, server and CA keystore in Java keystore format (file extension .jks)).



Before installing Professional Exchange Server, a dedicated user (unprivileged, non-root) must be created on your operating system. This ensures Professional Exchange Server itself has no root rights.

2. Open the shell and execute as a root user:

```
useradd -m <<username of your choice>>
```



NOTE

Usage of created user

The application runtime user will be the same user as the user who executes the installer. Ensure that the selected user has write privileges to the intended installation location.

3. Log on to your operating system as the unprivileged, dedicated PXS user you have just created.
4. Copy the delivered Zip file that contains the PXS install program to the target machine and extract the Zip file.
5. In the shell, change directory to the extracted zip file.
6. Execute the installation (as the unprivileged user you have created in step 2) by executing:

```
chmod +x start.sh
```

and then

```
./start.sh
```

⇒ An interactive dialog will open directly in the shell. This dialog will guide you through the whole installation process.
7. Follow the interactive dialog in the shell and answer all installation questions as described in the following sections.

3.3 Working with the Interactive Installation Dialog

Interactive installation dialog

After you start the installation ([see \[page 7\]](#)), an interactive installation dialog is offered directly in the shell to guide you through the installation. The dialog consists of several questions regarding the settings for Professional Exchange Server and its subsystems. Each question will ask you to enter a value for one individual property.

Default values

Whenever applicable, the install program will offer default values to speed up the installation and configuration process. The default values suggested are displayed in brackets directly behind the question. If you just press ENTER without giving any input

for a question, the default value will be used. If you ignore the default and enter your specific value instead, your input will be used for configuration.

Choice of values

Sometimes there are only some predefined values possible. The set of possible values is given in angle brackets. Choose the value that suits your purposes best. Make sure you use exactly the same spelling as given in the brackets.

Automatic validation

Each value you enter will be validated by the install program. If your input for a certain value is not accepted, you are asked to enter the value again. 10 attempts are possible. After these 10 attempts, the installation process terminates with failure.

Note that the installer will use your previous input as default when you are asked to enter an invalid value again. Please check your input and enter a new value.

Port numbers entered during installation are only checked against running network services. The administrator himself has to take care not to use the same port numbers for different services.



NOTE

Numbering of questions in the interactive installation dialog

The individual questions of the interactive installation dialog are numbered. Depending on the installation purpose you specify (see question A1 in the [following section \[page 9\]](#)), some questions are answered automatically by the application. Therefore, some questions may be left out in the dialog resulting in gaps between the numbers of the questions. In these cases, default values based on the installation profile you have chosen have been set.

3.4 The Questions of the Interactive Install Dialog

This section describes how to follow the installation dialog within the shell of your operating system.

1. Start the installation process as described in the section [Starting the Installation Program \[page 7\]](#).
 - ⇒ You will get a welcome prompt that informs you that the interactive install dialog will start right now. It also reminds you to have this installation manual ready in case you have any questions during the configuration.

**NOTE****Have the installation manual at hand**

Make sure this installation manual is available to you at all times during the installation process.

2. Confirm by pressing ENTER.
3. Answer the questions in the dialog as described here.

**NOTE****Questions marked by number**

The questions of the dialog are numbered. The following description of the individual questions and the results of your input refer to these numbers. Some questions might not appear in your dialog. You have only to answer those questions that appear in your dialog.

Question A1

Here you have to enter the purpose of your installation.

You can choose between five possible values (purposes):

- production
- custom
- sales
- tradeshow
- test

Each purpose describes one of the most probable application scenarios for Professional Exchange Server. When you choose a particular purpose, the install dialog will ask you only for those values that may differ from installation to installation in this scenario. All typical values for the chosen scenario are set automatically since the application holds a set of preconfigured properties for each installation purpose.

Therefore your choice determines:

- which questions you will be asked during the interactive dialog, that is, for which properties you can specify individual values,
- which properties default values are assumed.

**NOTE****Overview of all Properties**

You will find an overview of all configuration properties in the appendix. The overview also shows which values are preset with each individual installation purpose. Please refer to this overview as it might help you to make your initial choice.



Purpose Production: This will be the most common installation purpose. If you choose Production, you will have to specify all settings relevant for live operation. An Oracle 10g database instance (running with UTF-8 encoding) has to be available.

Purpose Sales: You choose this installation purpose if you want to demonstrate the advantages of Professional Exchange Server in a sales context. No Oracle database is necessary since the application will run in demo mode and only use the HSQL database which is part of the installation package of Professional Exchange Server. You only have to specify the target installation directory for your Professional Exchange Server instance.

Purpose Trade show: You choose this installation purpose if you want to demonstrate the advantages of Professional Exchange Server at a trade show. No Oracle database is necessary since the application will run in demo mode and only use the HSQL database which is part of the installation package of Professional Exchange Server. You only have to specify the target installation directory for your Professional Exchange Server instance and the web application name .

Purpose Custom: If you choose this installation purpose, you will be asked to set your custom value for **each** configuration property. No preset values will be used. This allows for configurations designed for very specific application scenarios.

Purpose Test: You choose this installation purpose if you want to run the application for tests. You will have to specify the target installation directory, the database you want to use for testing (Oracle or HSQL), the database connection settings if you are using Oracle, the web application name and the session timeout.

To specify the installation purpose that fits your installation scenario best, simply

- enter the installation purpose of your choice and confirm with ENTER.

Question A2

Here, you have to specify the location of the Professional Exchange Server installation directory. If you specify directories which do not exist, they will be created automatically.



NOTE

Path conventions

Do not use any whitespace in directory names or anywhere else in your path.

Make also sure you do not use any special characters or umlauts.

- Enter the absolute path and confirm with ENTER.

Question A3



Here you have to enter which database you are going to use. You can choose between three possible values:

- **HSQL**

The HSQL database is part of the Professional Exchange Server installation package and mainly intended for demonstration purposes (non-production systems). If you use HSQL, you do not have to specify any further database settings.

- **Oracle**

If you want to use Oracle, make sure an Oracle database server is accessible by your Professional Exchange Server installation.

- **Oracle Real Application Cluster (Oracle RAC)**

If you want to use an Oracle RAC, make sure an Oracle RAC database system is accessible by your Professional Exchange Server installation.

To specify the database you are going to use, simply

- enter the appropriate value as proposed in the installation dialog and confirm with ENTER.



NOTE**Exact spelling**

Make sure you use exactly the same spelling of the value as suggested in the installation dialog (**hsql**, **oracle**, or **oracle-rac**).

Question B1

Specify here if you want the interface for the document import (XDS) to be accessible with or without user authentication.

- Enter yes or no and confirm with ENTER.

Question B2

Specify here if you want the interface for patient data import (PIX feed) to be accessible with or without user authentication (see also questions E6 and E7).

- Enter yes or no and confirm with ENTER.

Question B3

Here, you have to enter the absolute path to the server keystore file. Make sure you use the Java keystore format (file extension .jks). The Java keystore format is required as mentioned in the installation prerequisites.

If you do not specify this path, the application will use a default keystore.

- Either
 - enter the path and confirm with ENTER, or
 - just press ENTER (to use the default keystore).



Question B4

- Enter the appropriate password.

Question B5

Here, you have to specify the absolute path to your truststore keystore file. Make sure you use the Java keystore format (file extension .jks). The Java keystore format is required as mentioned in the installation prerequisites above.

If you do not specify this path, the application will use a default keystore.

- Either
 - enter the path and confirm with ENTER, or
 - just press ENTER (to use the default keystore).

Question B6

- Enter the appropriate password.

Question B7

Here, you have to specify the absolute path to your client keystore file. Make sure you use the Java keystore format (file extension .jks). The Java keystore format is required as mentioned in the installation prerequisites above.

If you do not specify this path, the application will use a default keystore.

- Either
 - enter the path and confirm with ENTER, or
 - just press ENTER (to use the default keystore).

Question B8

- Enter the appropriate password.

Question C1

During installation, an initial user account with administrator rights is created. The username of this first user is *admin*. Here, you have to define the first password for this account.

- Enter a secure password (minimum 8 characters) for the default user account *admin*.

After installation, log in to the Professional Exchange Server with this account and open the user management interface to add more users to the application.

The default user *admin* possesses the combined access rights of the following roles:

- JMX Administrator,
- Organization Administrator,
- User Administrator, and
- Terminology Administrator.



For details regarding the different roles and their access rights, see the section "Assign Roles" in the *System Administration Manual*.

Question C2

Set the answer to "true", if GE Centricity DICOM WebViewer is integrated in the installation. Settings for connection parameters are described in the System Administration Manual.

Question D1

The HSQL database comes bundled with Professional Exchange Server and is intended for demonstrations. It will run as a service and listen on a default network port. You may change this port if it conflicts with another server application on your system.

Question D2

You have to provide the appropriate JDBC driver if you decided to use Oracle.

- Enter the full path here.

Question D3

- Enter here the URL that is to be used by the application to access the chosen Oracle server/system.

Question D4

- Enter here the username of the user account you have defined on your Oracle server for the production use of Professional Exchange Server.

Question D5

- Enter the password of the user account you have defined on your Oracle server for the production use of Professional Exchange Server.

Question D6

- Enter here the username of the user account you have defined on your Oracle server for administration of your Oracle database.



NOTE

Required user for internal purposes

This user account is required during the installation process to create new databases for internal purposes.

Question D7

- Enter the password of the user account you have defined on your Oracle server for administration of your Oracle database.



NOTE

Required user for internal purposes

This user account is required during the installation process to create new databases for internal purposes

**Question D8**

- Enter the name of the tablespace on the Oracle server that is to be used by Professional Exchange Server.

Question D9

- Enter a database schema prefix if you need to have more than one installation connect to the same database. Keep in mind the maximum length of the prefix is 6 characters.

If the database is used only by one installation, you can leave the database schema prefix empty.

Question D10

- Enter the Oracle ONS configuration string in accordance with your JDBC configuration.

Question D11

- Enter the absolute path to the Oracle ONS .jar for your database in accordance with your JDBC configuration.

Question D12

- The application can run with or without encryption. Only selected data is encrypted (document content and user passwords) when encryption is turned on. When data already exists subsequent changes to this setting are not possible.

Question E1

Enter here the network port number for https access to Tomcat. The installer will automatically pick an unused port as default. To disable enter -1.

Question E2

Enter here the network port number for https access to Tomcat. The installer will automatically pick an unused port as default. To disable enter -1.

Question E3

Enter here the network port number for AJP access to Tomcat. The installer will automatically pick an unused port as default. To disable enter -1.

Question E4

Enter here the network port number for JMX JNDI access. The installer will automatically pick an unused port as default. To disable enter -1.

Question E5

Enter here the network port number for JMX remote access. The installer will automatically pick an unused port as default. To disable enter -1.

Question E6



Enter here the network port number for unauthenticated MLLP access. The installer will automatically pick an unused port as default. To disable enter -1.

Question E7

Enter here the network port number for authenticated MLLP access. The installer will automatically pick an unused port as default. To disable enter -1.

Question E8

Enter here the port that should be used for authenticated MLLP access. For Imaging Order. To disable enter -1.

Question E9

Enter here the port that should be used for unauthenticated MLLP access. For Imaging Order. To disable enter -1.

Question F1

Here you have to specify if you need to install Tomcat or not.

- Enter yes or no and confirm with ENTER.

Question F2

You may enter a unique identifier (or accept the default) which will then be used as a suffix for the creation of start/stop scripts under `/etc/init.d`. This may be useful if you make multiple installations on the same host and need these scripts for each individual installation.

Question F3

Enter the maximum Java heap size (in MB) that Tomcat can use.

Question G1

You can either choose one of the proposed files or provide your own.

Question G2

- Enter the absolute path to store old log files for backup purposes (by default they are stored in the Tomcat's log directory).

Question G3

- Enter the application name you want to appear in the application's URL (for example., entering 'example-name' results in the URL 'www.somehost.com/example-name').

Question G4

- Specify here the time interval for session timeout.

Question G5

- Enter the absolute path to the directory where the application can store indexing data.



Question G6

- Enter the absolute path to the directory where the application can temporarily store outgoing document availability notifications.

Question G7

- Enter the application time zone using the format Area/Location, or set the local time zone by just pressing ENTER (the local time zone is offered as a default value).

You will find a list of all valid time zone names in the appendix of this document in the section [Time Zone Names \[page 31\]](#).

Question G8

- Enter here your own unique object identifier (OID) for the affinity domain (that is, the home community ID) or accept the default value.

Question G9

- Enter here your own unique object identifier (OID) for the document repository or accept the default value.

Question G10

This is the host name/IP address where ATNA logging messages will be sent to.

Question G11

The audit repository port is the network port that the host defined in question G10 listens to for messages.

Question G12

The 'audit source ID' is an ID that helps identify the messages that are sent to the host defined in question G10.

Question G13

The 'audit enterprise site ID' is also an ID that helps identify the messages that are sent to the host defined in question G10.

Question G14

Professional Exchange Server only displays document entries that a user is authorized to view. Professional Exchange Server determines which documents a user *is* authorized to view by considering the documents' confidentiality codes, the user's role, and the patient's explicit or implied consent to a privacy policy.



CAUTION

Default Privacy Policy

Choosing a permissive default privacy policy can provide extensive access to patient data. Please ensure that the policy you choose complies with your organization's privacy regulations.



This is done as follows:

- The application determines the patient's consent by querying the document registry for consent acknowledgment documents.
- The application assumes a configurable default privacy policy if no active consent acknowledgment document can be found for a patient.

The application accepts consent acknowledgment documents pointing to the OID of one of the following five privacy policies:

- **Policy 1:**
 - Short name: "No sharing"
 - sharing with users according to their authorization under normal circumstances is not allowed
 - sharing with all users in emergency situations is not allowed
 - publishing documents to the registry is allowed
- **Policy 2:**
 - Short name: "No publishing or sharing"
 - sharing with users according to their authorization under normal circumstances is not allowed
 - sharing with all users in emergency situations is not allowed
 - publishing documents to the registry is not allowed
- **Policy 3:**
 - Short name: "Emergency sharing only"
 - sharing with users according to their authorization under normal circumstances is not allowed
 - sharing with all users in emergency situations is allowed
 - publishing documents to the registry is allowed
- **Policy 4:**
 - Short name: "Normal sharing only"
 - sharing with users according to their authorization under normal circumstances is allowed
 - sharing with all users in emergency situations is not allowed
 - publishing documents to the registry is allowed
- **Policy 5:**
 - Short name: "Normal and emergency sharing"
 - sharing with users according to their authorization under normal circumstances is allowed



- sharing with all users in emergency situations is allowed
- publishing documents to the registry is allowed

To select one of the privacy policies as default policy:

- simply enter the appropriate number (1, 2, 3, 4, or 5) and press ENTER.

Question G15

Please enter the hostname or IP address of your MPI (required by Imaging Order)

Question G16

Please enter the port used by your MPI (required by Imaging Order)

Question H1

Do you want to enable LDAP based user management (further configuration steps are required)?

Question H2

The type of your LDAP server

Currently this can be either ADAM or ApacheDS. For example enter, ADAM.

Question H3

The fully-qualified URL of the LDAP server. For example enter, `ldaps://localhost:10389`

Question H4

The base naming context used. For example, `dc=bundestag,dc=de`

Question H5

The distinguished name of the technical user to establish the LDAP connection. For example, `jackerma@bundestag.de`

Question H6

The technical user's password.

Question H7

Add prefix to the userDN. For example, `uid =`.

Question H8

Add suffix to the userDN. For example: `,ou=personen,dc=icw,dc=com`.

Question H9

The base naming context for user-groups. For example, `ou=gruppen`.

Question H10

The user-group's object class. For example, `groupOfNames`.

Question H11

Attribute that specifies the user's group memberships.

Question H12

Define, which membership should be used as group. For example, role or group.

3.5 Finishing the Installation

After you have successfully answered all the questions in the interactive installation dialog, an overview showing all configuration properties is displayed in the shell. It includes the values you have entered yourself as well as all default values which have been set by the installer (in accordance with the installation purpose you specified when answering question A1).

To end the interactive dialog and to start the actual installation, carry out the following steps:

1. Check if all settings meet the requirements of your installation.
 - If the settings do meet your requirements, follow the instructions of this section, beginning directly with the next step (step 2).
 - If the settings do not meet your requirements, either:
 - cancel the installation process (pressing CTRL+C), consult the Appendix, sections [Predefined Configuration Settings - Overview \[page 27\]](#) and [Installation Purposes - Overview \[page 27\]](#) to decide if you may need to choose another installation purpose in question A1, and start the installation again (see section [Working with the Interactive Installation Dialog \[page 8\]](#)), or
 - follow the instructions in the rest of this section (from step 2 onwards), and afterwards adapt the file `settings.properties` and start a silent installation as described in section [Silent Installation \[page 25\]](#).
2. Confirm the settings displayed in the shell by pressing ENTER.
 - ⇒ Now the installation process is started. The installation process includes the installation of Professional Exchange Server as well as the installation of all other components (Tomcat, HSQL if required and so on). The settings you entered in the interactive install dialog are used to configure the individual components. During the installation, some debug information is displayed in the shell. You can safely ignore this information.
 - ⇒ After successful installation, the message *Build successful* is displayed in the shell. (In case the installation is not successful, the stack trace of the failure is displayed.)
 - ⇒ A file `settings.properties` has been created in the installation directory of Professional Exchange Server. This file contains all the configuration settings you specified in the interactive installation dialog.



3. Save a backup copy of the file *settings.properties* (in the installation directory) into a directory of your choice. This way you can check your settings at a later time or reuse the settings you specified for the installation of Professional Exchange Server on other machines (see section [Silent Installation \[page 25\]](#)).

**NOTE****settings.properties**

The file *settings.properties* is not used by the application at runtime. All settings are stored internally within the application. The file is only for backup purposes.

**NOTE****Test and demo data**

If you have chosen the installation purpose Test or Sales, the database is prefilled with the necessary test or demo data during the installation.

See also

- [Starting the Installation Program \[page 7\]](#)

3.6 Setting up the environment

Before you can actually start work with Professional Exchange Server, you have to set up the environment of Professional Exchange Server:

1. Install the *autostart* script.

Execute it as root in your target installation directory:

```
su -
```

and then

```
./initd-install.sh
```

2. Install the Apache HTTPD Web server and configure it with AJP connectivity.

For the installation of the Apache HTTPD Web server and the configuration of the AJP connectivity, consult the Apache HTTPD documentation.

4 Upgrading from previous versions

4.1 Upgrade

The Professional Exchange Server automatically detects if an upgrade is possible. To start the upgrade process perform the following steps:

1. Stop the application (stop Tomcat)
2. Backup your database and your application installation folder



CAUTION

Ensure you backup your database and application installation folder. Without a backup you will not be able to rollback the application to a functional state in the event that you have problems during the upgrade process.

3. Now start the normal installation process. If asked for an install path, you have to point to your previous installation directory, otherwise the installer will not be able to detect the upgrade.

The Professional Exchange Server installer carries out the following checks on the install path, before starting the installation:

1. Directory does not exist or is empty - a clean installation will be done.
2. Directory is not empty, a previous installation was found (by checking the `build-info.properties` that exist in the `.war` file) - invoke upgrade.
3. Directory is not empty, no previous, upgradeable installation found - stop installation.

If a previous installation is found, the following checks will be done in interactive mode:

- If an upgrade path was found for the previous version, there are two possibilities:
 1. UPGRADE - An upgrade that requires an application and infrastructure update. The upgrade also requires a database upgrade (only for Oracle).
 - The installer property `upgrade.version` in the file `upgrade.properties` specifies the version, where the installer invokes the upgrade routines.
 - The property `pxs.upgrade.path` in the file `settings.properties` will be set to the previous installed version.
 - The property `database.setup` in the file `settings.properties` will be set to true.
 2. PATCH - the upgrade is just a patch, so only a replacement of the application, without any changes to the database.

- The installer property `patch.versions` in the file `upgrade.properties` specifies the versions (multiple possible), where the installer just replaces the application and the infrastructure, without touching the application.
- The property `database.setup` in the file `settings.properties` will be set to `false`
- If no supported upgrade path is found, the installation is stopped.



NOTE

Upgrade detection is only done in user-interactive mode. In silent-mode, you have to ensure that property `pxs.upgrade.path` and `database.setup` are set correctly.

All custom changes to your Tomcat or webapp will be overridden by the upgrade! Please backup custom changes, before invoking the upgrade.

4.2 Manual upgrade step

Between PXS 3.1 and PXS 3.2, the storage of the creation date of an XDS document has been modified. The migration of this column could not be done by a static SQL upgrade script. After you perform the migration to PXS 3.2, you have to execute the following SQL, to finalize the migration of your existing data.

Before you execute the following SQL command in your Oracle database, you have to adjust two things, depending on your environment:

- If you use a schema prefix (installer question D9), prepend this prefix to the schema `PXS_VMR`.
- Change "YOUR/TIMEZONE" definition to the application time zone, you use (installer question G7)

```
update PXS_VMR.T_RecordEntry set
  C_DocumentationDateIsoDate
=TO_CHAR(FROM_TZ(C_DocumentationTimestamp, 'GMT')
AT TIME ZONE 'YOUR/TIMEZONE',
'yyyy-mm-dd"T"hh24:mi:ss".000"TZH:TZM');
```

5 Starting and Stopping the Application

Starting the Application

You can start the application by proceeding as follows:

1. Make sure your database is online, accessible and started.



CAUTION

Start database before you start Tomcat

The database must be started before you start Tomcat.

If you use HSQL as the database, execute the HSQLDB init script to start HSQL:

```
/etc/init.d/hsqldb<<yoursuffix>> start
```

2. Start Apache Tomcat. To do so, execute the Tomcat init script:

```
/etc/init.d/tomcat<<yoursuffix>> start
```

Professional Exchange Server will be started along with Apache Tomcat.



NOTE

Starting HSQL (if required) and Apache Tomcat by rebooting

Instead of executing the HSQLDB init script (if you use HSQL as database) and the Tomcat init script, you can alternatively just reboot your system to start both components.

3. Call up Professional Exchange Server in your web browser.

⇒ The Login page opens.

Stopping the Application

1. First stop Apache Tomcat. To do so, execute:

```
/etc/init.d/tomcat<<yoursuffix>> stop
```



CAUTION

Stop Tomcat before you stop the database

Tomcat must be stopped before you stop the database.

- 2.

Stop the database if required. If you use HSQL, execute:

```
/etc/init.d/hsqldb<<yoursuffix>> stop
```

6 Special Issues

6.1 Silent Installation

Silent installation allows you to install Professional Exchange Server very swiftly without answering the questions in the interactive installation dialog. Silent installation is very useful if you want to install Professional Exchange Server with exactly the same settings on several machines.



CAUTION

Deletion of data

If you use silent installation to re-install Professional Exchange Server on the same machine, be aware that also silent installation is a complete new installation that will delete all data created by Professional Exchange Server before. All tablespaces in the database will be blank again, all log files will be deleted and so on.

For silent installation, you need to use the file `settings.properties` which contains all your configuration settings.

You can only create this file using the interactive installation dialog. Therefore, you must install the application once by going through the interactive install dialog to create the `settings.properties` file. The file is created in the install directory. All the input you give during the interactive installation is saved to this file and can then easily be re-used during a silent installation.



NOTE

Silent installation only possible when re-installing Professional Exchange Server

`settings.properties` is created when you install Professional Exchange Server with the interactive installation dialog. Therefore, silent installation is only possible when you are re-installing Professional Exchange Server and the file has already been created during an earlier installation using the interactive installation dialog.

To carry out a silent installation, complete the following steps:

- Precondition: Professional Exchange Server has been installed once via the interactive installation dialog and therefore the file `settings.properties` is available.
- 1. Save a backup copy of the file `settings.properties` in a directory of your choice.

2. Create the installation directory you want to use for the installation of Professional Exchange Server.
3. Copy the `settings.properties` file in to the installation directory.
4. Pass the installation path as a command-line argument (since the installer searches the installation directory for the `settings.properties` file):

```
./start.sh "-DinstallPath=<<specify_here_your_installation_path>>"
```

- ⇒ Now the installation process is started. The installation process includes the installation of Professional Exchange Server as well as the installation of all other components (Tomcat, HSQL if required and so on). The settings defined in `settings.properties` are used to configure the individual components. During the the installation, some debug information is displayed in the shell. You can safely ignore this information.
- ⇒ After successful installation, the message *Build successful* is displayed in the shell. (In case the installation is not succesful, the stack trace of the failure is displayed.)



NOTE

Further scenarios for silent installation

In a test environment, silent installation can also be used for automatic re-installation overnight.

Silent installation is also helpful if you want to re-install the application with only slightly modified settings. In this case, you can just adapt the file `settings.properties` to your needs before silent installation. See the *System Administration Manual* for details on how to edit the `settings.properties` file.



CAUTION

No validation of edited `settings.properties` file

Be aware that if you edit the `settings.properties` file directly, your settings will not be validated.

Also keep in mind that all application data (tablespaces, log files and so on) will be overwritten during a silent installation.



7 Appendix

7.1 Installation Purposes - Overview

Purpose Production: This will be the most common installation purpose. If you choose Production, you will have to specify all settings relevant for live operation. An Oracle 10g database instance (running with UTF-8 encoding) has to be available.

Purpose Sales: You choose this installation purpose if you want to demonstrate the advantages of Professional Exchange Server in a sales context. No Oracle database is necessary since the application will run in demo mode and only use the HSQL database which is part of the installation package of Professional Exchange Server. You only have to specify the target installation directory for your Professional Exchange Server instance.

Purpose Trade show: You choose this installation purpose if you want to demonstrate the advantages of Professional Exchange Server at a trade show. No Oracle database is necessary since the application will run in demo mode and only use the HSQL database which is part of the installation package of Professional Exchange Server. You only have to specify the target installation directory for your Professional Exchange Server instance and the web application name .

Purpose Custom: If you choose this installation purpose, you will be asked to set your custom value for **each** configuration property. No preset values will be used. This allows for configurations designed for very specific application scenarios.

Purpose Test: You choose this installation purpose if you want to run the application for tests. You will have to specify the target installation directory, the database you want to use for testing (Oracle or HSQL), the database connection settings if you are using Oracle, the web application name and the session timeout.

7.2 Predefined Installation Settings - Overview

The table below shows which properties can be configured during the interactive installation dialog for each individual installation purpose.

The following symbols are used:

U: User Input required. (In most of these cases, default values are suggested.)

X: Default value (based on the chosen installation purpose) is used for installation, no user input possible.

O: Property is not used.

*****: The asterisk marks properties that have only be configured when installing Professional Exchange Server on Linux.

No.	Name	Production	Custom	Test	Sales	Tradeshow
A1	install type	U	U	U	U	U
A2	install path	U	U	U	U	U
A3	database type	X	U	U	X	X
B1	unauthenticated XDS	U	U	U	X	X
B2	unauthenticated MLLP	U	U	U	X	X
B3	server keystore path	U	U	X	X	X
B4	server keystore password	U	U	X	X	X
B5	truststore path	U	U	X	X	X
B6	truststore password	U	U	X	X	X
B7	client keystore path	U	U	X	X	X
B8	client keystore password	U	U	X	X	X
C1	default admin password	U	U	U	U	U
C2	Integrate Centricity DICOM WebView	U	U	U	U	U
D1	HSQL database port	O	O/U	O/U	O	O
D2	database driver lib path	U	U/X	U/X	X	X
D3	database connection URL	U	U	U/X	X	X
D4	database username	U	U/X	U/X	X	X
D5	database password	U	U/X	U/X	X	X
D6	database system user	U	U/X	U/X	X	X
D7	database system password	U	U/X	U/X	O	O
D8	database tablespace	U	U/X	U/X	O	O
D9	schema prefix	U	U	U	X	X
D10	Oracle ONS configuration	O	U/X	U/X	O	O
D11	Oracle ONS lib	O	U/X	U/X	O	O
D12	application level encryption	U	U	U	X	X
E1	Tomcat http port	X	U	X	X	X
E2	Tomcat https port	X	U	X	X	X
E3	Tomcat AJP port	U	U	X	X	X
E4	JMX JNDI port	U	U	X	X	X

No.	Name	Production	Custom	Test	Sales	Tradeshow
E5	JMX remote port	U	U	X	X	X
E6	MLLP secure port	U	U	X	X	X
E7	MLLP unsecure port	U	U	X	X	X
E8	Authenticated MLLP port for OMI	U	U	X	X	X
E9	Unauthenticated MLLP port for OMI	U	U	X	X	X
F1	Tomcat installation	U	U	X	X	X
F2	Linux autostart script suffix	U*	U*	U*	U*	U*
F3	java heap size	U	U	U	X	X
G1	logging configuration profile	X	U	X	X	X
G2	logfile backup path	U	U/X	O	O	O
G3	URL context path	U	U	U	X	X
G4	Session timeout	U	U	U	X	X
G5	Lucene data dir	U	U	X	X	X
G6	ActiveMQ data dir	U	U	X	X	X
G7	time zone	U	U	U	U	U
G8	affinity domain OID	U	U	U	X	X
G9	document repository OID	U	U	U	X	X
G10	audit repository host	U	U	U	X	X
G11	audit repository port	U	U	U	X	X
G12	audit source ID	U	U	U	X	X
G13	audit enterprise site ID	U	U	U	X	X
G14	default privacy policy	U	U	U	X	X
G15	MPI hostname or IP address for OMI	X	U	X	X	X
G16	MPI port for OMI	X	U	X	X	X
H1	Enable LDAP	U	U	U	O	O
H2	LDAP server type	U	U	U	O	O
H3	LDAP server URL	U	U	U	O	O
H4	Base naming contex	U	U	U	O	O

No.	Name	Production	Custom	Test	Sales	Tradeshow
H5	Distinguished name of the technical user	U	U	U	O	O
H6	Technical user's password	U	U	U	O	O
H7	userDN prefix	U	U	U	O	O
H8	userDN suffix	U	U	U	O	O
H9	Base naming context for user-group	U	U	U	O	O
H10	User-group's object class	U	U	U	O	O
H11	User's group memberships	U	U	U	O	O
H12	Membership to use for group	U	U	U	O	O

Table 1: Predefined installation settings

7.3 Default Port Configuration

Depending on the installation purpose you choose in question A1 of the interactive installation dialog, you will either use the default port configurations provided by Professional Exchange Server or specify your own port configurations when answering the questions of the installation dialog.

The following table lists the default port configurations that are used as long as you have not specified your own port configurations for the individual components.

Port	Purpose
8443	Tomcat SSL
8180	Tomcat HTTP
8009	Tomcat AJP
8479	JMX (RMI Activator)
8480	RMI Registry (intern used by JMX)
3805	secure ITI-8 endpoint (ADT-Module)
3800	non-secure ITI-8 endpoint (ADT-Module)
9999	HSQL
3801	Imaging Order (non secure)
3806	Imaging Order (secure)
3710	MPI Query port for Imaging Order



7.4 Time Zone Names

Below you find a list of valid time zone names in the format Area/Location. You need to specify a time zone during installation (question G7 of the interactive installation dialog).

The valid time zone names are listed in the following table:

TZ	Standard time
Africa/Abidjan	UTC+00
Africa/Accra	UTC+00
Africa/Addis_Ababa	UTC+03
Africa/Algiers	UTC+01
Africa/Asmara	UTC+03
Africa/Bamako	UTC+00
Africa/Bangui	UTC+01
Africa/Banjul	UTC+00
Africa/Bissau	UTC+00
Africa/Blantyre	UTC+02
Africa/Brazzaville	UTC+01
Africa/Bujumbura	UTC+02
Africa/Cairo	UTC+02
Africa/Casablanca	UTC+00
Africa/Ceuta	UTC+01
Africa/Conakry	UTC+00
Africa/Dakar	UTC+00
Africa/Dar_es_Salaam	UTC+03
Africa/Djibouti	UTC+03
Africa/Douala	UTC+01
Africa/El_Aaiun	UTC+00
Africa/Freetown	UTC+00
Africa/Gaborone	UTC+02
Africa/Harare	UTC+02
Africa/Johannesburg	UTC+02

TZ	Standard time
Africa/Kampala	UTC+03
Africa/Khartoum	UTC+03
Africa/Kigali	UTC+02
Africa/Kinshasa	UTC+01
Africa/Lagos	UTC+01
Africa/Libreville	UTC+01
Africa/Lome	UTC+00
Africa/Luanda	UTC+01
Africa/Lubumbashi	UTC+02
Africa/Lusaka	UTC+02
Africa/Malabo	UTC+01
Africa/Maputo	UTC+02
Africa/Maseru	UTC+02
Africa/Mbabane	UTC+02
Africa/Mogadishu	UTC+03
Africa/Monrovia	UTC+00
Africa/Nairobi	UTC+03
Africa/Ndjamena	UTC+01
Africa/Niamey	UTC+01
Africa/Nouakchott	UTC+00
Africa/Ouagadougou	UTC+00
Africa/Porto-Novo	UTC+01
Africa/Sao_Tome	UTC+00
Africa/Tripoli	UTC+02
Africa/Tunis	UTC+01
Africa/Windhoek	UTC+01
America/Adak	UTC-10
America/Anchorage	UTC-09
America/Anguilla	UTC-04
America/Antigua	UTC-04

TZ	Standard time
America/Araguaina	UTC-03
America/Argentina/Buenos_Aires	UTC-03
America/Argentina/Catamarca	UTC-03
America/Argentina/Cordoba	UTC-03
America/Argentina/Jujuy	UTC-03
America/Argentina/La_Rioja	UTC-03
America/Argentina/Mendoza	UTC-03
America/Argentina/Rio_Gallegos	UTC-03
America/Argentina/Salta	UTC-03
America/Argentina/San_Juan	UTC-03
America/Argentina/San_Luis	UTC-04
America/Argentina/Tucuman	UTC-03
America/Argentina/Ushuaia	UTC-03
America/Aruba	UTC-04
America/Asuncion	UTC-04
America/Atikokan	UTC-05
America/Bahia	UTC-03
America/Barbados	UTC-04
America/Belem	UTC-03
America/Belize	UTC-06
America/Blanc-Sablon	UTC-04
America/Boa_Vista	UTC-04
America/Bogota	UTC-05
America/Boise	UTC-07
America/Cambridge_Bay	UTC-07
America/Campo_Grande	UTC-04
America/Cancun	UTC-06
America/Caracas	UTC-04:30
America/Cayenne	UTC-03
America/Cayman	UTC-05

TZ	Standard time
America/Chicago	UTC-06
America/Chihuahua	UTC-07
America/Costa_Rica	UTC-06
America/Cuiaba	UTC-04
America/Curacao	UTC-04
America/Danmarkshavn	UTC+00
America/Dawson	UTC-08
America/Dawson_Creek	UTC-07
America/Denver	UTC-07
America/Detroit	UTC-05
America/Dominica	UTC-04
America/Edmonton	UTC-07
America/Eirunepe	UTC-04
America/El_Salvador	UTC-06
America/Fortaleza	UTC-03
America/Glace_Bay	UTC-04
America/Godthab	UTC-03
America/Goose_Bay	UTC-04
America/Grand_Turk	UTC-05
America/Grenada	UTC-04
America/Guadeloupe	UTC-04
America/Guatemala	UTC-06
America/Guayaquil	UTC-05
America/Guyana	UTC-04
America/Halifax	UTC-04
America/Havana	UTC-05
America/Hermosillo	UTC-07
America/Indiana/Indianapolis	UTC-05
America/Indiana/Knox	UTC-06
America/Indiana/Marengo	UTC-05

TZ	Standard time
America/Indiana/Petersburg	UTC-05
America/Indiana/Tell_City	UTC-06
America/Indiana/Vevay	UTC-05
America/Indiana/Vincennes	UTC-05
America/Indiana/Winamac	UTC-05
America/Inuvik	UTC-07
America/Iqaluit	UTC-05
America/Jamaica	UTC-05
America/Juneau	UTC-09
America/Kentucky/Louisville	UTC-05
America/Kentucky/Monticello	UTC-05
America/La_Paz	UTC-04
America/Lima	UTC-05
America/Los_Angeles	UTC-08
America/Maceio	UTC-03
America/Managua	UTC-06
America/Manaus	UTC-04
America/Marigot	UTC-04
America/Martinique	UTC-04
America/Matamoros	UTC-06
America/Mazatlan	UTC-07
America/Menominee	UTC-06
America/Merida	UTC-06
America/Mexico_City	UTC-06
America/Miquelon	UTC-03
America/Moncton	UTC-04
America/Monterrey	UTC-06
America/Montevideo	UTC-03
America/Montreal	UTC-05
America/Montserrat	UTC-04

TZ	Standard time
America/Nassau	UTC-04
America/New_York	UTC-05
America/Nipigon	UTC-05
America/Nome	UTC-09
America/Noronha	UTC-02
America/North_Dakota/Center	UTC-06
America/North_Dakota/New_Salem	UTC-06
America/Ojinaga	UTC+00
America/Panama	UTC-05
America/Pangnirtung	UTC-05
America/Paramaribo	UTC-03
America/Phoenix	UTC-07
America/Port-au-Prince	UTC-05
America/Port_of_Spain	UTC-04
America/Porto_Velho	UTC-04
America/Puerto_Rico	UTC-04
America/Rainy_River	UTC-06
America/Rankin_Inlet	UTC-06
America/Recife	UTC-03
America/Regina	UTC-06
America/Resolute	UTC-05
America/Rio_Branco	UTC-04
America/Santa_Isabel	UTC-08
America/Santarem	UTC-03
America/Santiago	UTC-04
America/Santo_Domingo	UTC-04
America/Sao_Paulo	UTC-03
America/Scoresbysund	UTC-01
America/Shiprock	UTC-07
America/St_Barthelemy	UTC-04

TZ	Standard time
America/St_Johns	UTC-03:30
America/St_Kitts	UTC-04
America/St_Lucia	UTC-04
America/St_Thomas	UTC-04
America/St_Vincent	UTC-04
America/Swift_Current	UTC-06
America/Tegucigalpa	UTC-06
America/Thule	UTC-04
America/Thunder_Bay	UTC-05
America/Tijuana	UTC-08
America/Toronto	UTC-05
America/Tortola	UTC-04
America/Vancouver	UTC-08
America/Whitehorse	UTC-08
America/Winnipeg	UTC-06
America/Yakutat	UTC-09
America/Yellowknife	UTC-07
Antarctica/Casey	UTC+08
Antarctica/Davis	UTC+07
Antarctica/DumontDUrville	UTC+10
Antarctica/Mawson	UTC+06
Antarctica/McMurdo	UTC+12
Antarctica/Palmer	UTC-04
Antarctica/Rothera	UTC-03
Antarctica/South_Pole	UTC+12
Antarctica/Syowa	UTC+03
Antarctica/Vostok	UTC+00
Arctic/Longyearbyen	UTC+01
Asia/Aden	UTC+03
Asia/Almaty	UTC+06

TZ	Standard time
Asia/Amman	UTC+02
Asia/Anadyr	UTC+12
Asia/Aqtau	UTC+05
Asia/Aqtobe	UTC+05
Asia/Ashgabat	UTC+05
Asia/Baghdad	UTC+03
Asia/Bahrain	UTC+03
Asia/Baku	UTC+04
Asia/Bangkok	UTC+07
Asia/Beirut	UTC+02
Asia/Bishkek	UTC+06
Asia/Brunei	UTC+08
Asia/Choibalsan	UTC+08
Asia/Chongqing	UTC+08
Asia/Colombo	UTC+05:30
Asia/Damascus	UTC+02
Asia/Dhaka	UTC+06
Asia/Dili	UTC+09
Asia/Dubai	UTC+04
Asia/Dushanbe	UTC+05
Asia/Gaza	UTC+02
Asia/Harbin	UTC+08
Asia/Ho_Chi_Minh	UTC+07
Asia/Hong_Kong	UTC+08
Asia/Hovd	UTC+07
Asia/Irkutsk	UTC+08
Asia/Jakarta	UTC+07
Asia/Jayapura	UTC+09
Asia/Jerusalem	UTC+02
Asia/Kabul	UTC+04:30

TZ	Standard time
Asia/Kamchatka	UTC+12
Asia/Karachi	UTC+06
Asia/Kashgar	UTC+08
Asia/Kathmandu	UTC+05:45
Asia/Kolkata	UTC+05:30
Asia/Krasnoyarsk	UTC+07
Asia/Kuala_Lumpur	UTC+08
Asia/Kuching	UTC+08
Asia/Kuwait	UTC+03
Asia/Macau	UTC+08
Asia/Magadan	UTC+11
Asia/Makassar	UTC+08
Asia/Manila	UTC+08
Asia/Muscat	UTC+04
Asia/Nicosia	UTC+02
Asia/Novokuznetsk	UTC+06
Asia/Novosibirsk	UTC+06
Asia/Omsk	UTC+06
Asia/Oral	UTC+05
Asia/Phnom_Penh	UTC+07
Asia/Pontianak	UTC+07
Asia/Pyongyang	UTC+09
Asia/Qatar	UTC+03
Asia/Qyzylorda	UTC+06
Asia/Rangoon	UTC+06:30
Asia/Riyadh	UTC+03
Asia/Sakhalin	UTC+10
Asia/Samarkand	UTC+05
Asia/Seoul	UTC+09
Asia/Shanghai	UTC+08

TZ	Standard time
Asia/Singapore	UTC+08
Asia/Taipei	UTC+08
Asia/Tashkent	UTC+05
Asia/Tbilisi	UTC+04
Asia/Tehran	UTC+03:30
Asia/Thimphu	UTC+06
Asia/Tokyo	UTC+09
Asia/Ulaanbaatar	UTC+08
Asia/Urumqi	UTC+08
Asia/Vientiane	UTC+07
Asia/Vladivostok	UTC+10
Asia/Yakutsk	UTC+09
Asia/Yekaterinburg	UTC+05
Asia/Yerevan	UTC+04
Atlantic/Azores	UTC-01
Atlantic/Bermuda	UTC-04
Atlantic/Canary	UTC+00
Atlantic/Cape_Verde	UTC-01
Atlantic/Faroe	UTC+00
Atlantic/Madeira	UTC+00
Atlantic/Reykjavik	UTC+00
Atlantic/South_Georgia	UTC-02
Atlantic/St_Helena	UTC+00
Atlantic/Stanley	UTC-04
Australia/Adelaide	UTC+09:30
Australia/Brisbane	UTC+10
Australia/Broken_Hill	UTC+09:30
Australia/Currie	UTC+10
Australia/Darwin	UTC+09:30
Australia/Eucla	UTC+08:45

TZ	Standard time
Australia/Hobart	UTC+10
Australia/Lindeman	UTC+10
Australia/Lord_Howe	UTC+10:30
Australia/Melbourne	UTC+10
Australia/Perth	UTC+08
Australia/Sydney	UTC+10
Europe/Amsterdam	UTC+01
Europe/Andorra	UTC+01
Europe/Athens	UTC+02
Europe/Belgrade	UTC+01
Europe/Berlin	UTC+01
Europe/Bratislava	UTC+01
Europe/Brussels	UTC+01
Europe/Bucharest	UTC+02
Europe/Budapest	UTC+01
Europe/Chisinau	UTC+02
Europe/Copenhagen	UTC+01
Europe/Dublin	UTC+00
Europe/Gibraltar	UTC+01
Europe/Guernsey	UTC+00
Europe/Helsinki	UTC+02
Europe/Isle_of_Man	UTC+00
Europe/Istanbul	UTC+02
Europe/Jersey	UTC+00
Europe/Kaliningrad	UTC+02
Europe/Kiev	UTC+02
Europe/Lisbon	UTC+00
Europe/Ljubljana	UTC+01
Europe/London	UTC+00
Europe/Luxembourg	UTC+01

TZ	Standard time
Europe/Madrid	UTC+01
Europe/Malta	UTC+01
Europe/Mariehamn	UTC+02
Europe/Minsk	UTC+02
Europe/Monaco	UTC+01
Europe/Moscow	UTC+03
Europe/Oslo	UTC+01
Europe/Paris	UTC+01
Europe/Podgorica	UTC+01
Europe/Prague	UTC+01
Europe/Riga	UTC+02
Europe/Rome	UTC+01
Europe/Samara	UTC+04
Europe/San_Marino	UTC+01
Europe/Sarajevo	UTC+01
Europe/Simferopol	UTC+02
Europe/Skopje	UTC+01
Europe/Sofia	UTC+02
Europe/Stockholm	UTC+01
Europe/Tallinn	UTC+02
Europe/Tirane	UTC+01
Europe/Uzhgorod	UTC+02
Europe/Vaduz	UTC+01
Europe/Vatican	UTC+01
Europe/Vienna	UTC+01
Europe/Vilnius	UTC+02
Europe/Volgograd	UTC+03
Europe/Warsaw	UTC+01
Europe/Zagreb	UTC+01
Europe/Zaporozhye	UTC+02

TZ	Standard time
Europe/Zurich	UTC+01
Indian/Antananarivo	UTC+03
Indian/Chagos	UTC+06
Indian/Christmas	UTC+07
Indian/Cocos	UTC+06:30
Indian/Comoro	UTC+03
Indian/Kerguelen	UTC+05
Indian/Mahe	UTC+04
Indian/Maldives	UTC+05
Indian/Mauritius	UTC+04
Indian/Mayotte	UTC+03
Indian/Reunion	UTC+04
Pacific/Apia	UTC-11
Pacific/Auckland	UTC+12
Pacific/Chatham	UTC+12:45
Pacific/Easter	UTC-06
Pacific/Efate	UTC+11
Pacific/Enderbury	UTC+13
Pacific/Fakaofo	UTC-10
Pacific/Fiji	UTC+12
Pacific/Funafuti	UTC+12
Pacific/Galapagos	UTC-06
Pacific/Gambier	UTC-09
Pacific/Guadalcanal	UTC+11
Pacific/Guam	UTC+10
Pacific/Honolulu	UTC-10
Pacific/Johnston	UTC-10
Pacific/Kiritimati	UTC+14
Pacific/Kosrae	UTC+11
Pacific/Kwajalein	UTC+12

TZ	Standard time
Pacific/Majuro	UTC+12
Pacific/Marquesas	UTC-09:30
Pacific/Midway	UTC-11
Pacific/Nauru	UTC+12
Pacific/Niue	UTC-11
Pacific/Norfolk	UTC+11:30
Pacific/Noumea	UTC+11
Pacific/Pago_Pago	UTC-11
Pacific/Palau	UTC+09
Pacific/Pitcairn	UTC-08
Pacific/Ponape	UTC+11
Pacific/Port_Moresby	UTC+10
Pacific/Rarotonga	UTC-10
Pacific/Saipan	UTC+10
Pacific/Tahiti	UTC-10
Pacific/Tarawa	UTC+12
Pacific/Tongatapu	UTC+13
Pacific/Truk	UTC+10
Pacific/Wake	UTC+12
Pacific/Wallis	UTC+12