

stages



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1 Terminology

Instructions, warnings and other important notes are marked in this document with the following symbols:



Notice: Shows an additional information



Warning: Indicates that a problem can happen



Important: Indicates an important aspect.



Danger: Indicates that in special cases data loss may happen.



Instructions

Used to show steps to perform



Example

Shows an example

Related links are shown with this icon:



Related Links

[Terminology](#) on page 4

2 Literature

The following documents provide you with information about working with Stages:

User Documentation

Name	Description
<i>Editor Guide</i>	The Editor Guide describes the handling of the Stages Web Editor.
<i>Stages User Guide</i>	The User Guide describes typical work processes which quality managers, project managers and developers carry out on a day-to-day basis using Stages.
<i>Metric Guide</i>	The Metric Guide describes how Stages metric reports can be created.
<i>Script Reference Guide</i>	The Script Reference Guide describes how the Stages scripting API is working.
<i>Process Versioning Guide</i>	The Process Versioning Guide describes how processes can be versioned (baselined).

Configuration/Administration

Name	Description
<i>Upgrade Guide</i>	The Upgrade Guide describes the required steps for upgrading to a newer version of Stages.
<i>System Requirements</i>	Describes the system requirements of the Stages system.
<i>Metamodeling Guide</i>	The Metamodeling Guide will provide you with assistance in defining an appropriate metamodel.
<i>Administration Guide</i>	The Administration Guide gives you guidance in the administration of Stages. Starting with the installation and customization to your company's requirements, chapter two helps you to prepare Stages for the usage.
<i>Issue Tracking Guide</i>	The Issue Tracking Guide provides information about the definition of your specific issue tracking configuration.
<i>PDF Printing Guide</i>	The PDF Printing Guide describes how PDF documents can be created from different process elements.
<i>People Application Guide</i>	The People Application Guide provides information about activating your People Application and how to handle it.
<i>Permissions Guide</i>	The Permissions Guide describes in detail all the different permission settings.
<i>Release Notes</i>	The Release Notes describes the major enhancements and changes of the Stages version.

Name	Description
<i>Last Changes</i>	The Last Changes document is a change log with detailed information about all changes made in this version.

System Integration

Name	Description
<i>Autologin Guide</i>	The Autologin Guide describes the single-sign-on feature of Stages.
<i>ARIS Integration Guide</i>	The ARIS Integration Guide describes how ARIS process models can be imported into Stages.
<i>CMS Prefetch Guide</i>	The CMS Prefetch Guide describes the caching configuration of the CMS status informations.
<i>ClearCase Integration Guide</i>	The ClearCase Integration Guide describes the integration with IBM Rational ClearCase.
<i>PTC Integrity Integration Guide</i>	The PTC Integrity Integration Guide describes the integration with PTC Integrity.
<i>Subversion Integration Guide</i>	The Subversion Integration Guide describes the integration with Subversion.
<i>Sharepoint Integration Guide</i>	The Sharepoint Integration Guide describes the integration with Microsoft Sharepoint.
<i>Serena Dimensions Integration Guide</i>	The Serena Dimensions Integration Guide describes the integration with Serena Dimensions.
<i>LDAP Integration Guide</i>	The LDAP Integration Guide describes how LDAP informations can be imported into Stages.

Application Lifecycle Management Tools

Name	Description
<i>JIRA Configuration Guide</i>	This Guide describes how to configure the ALM Tool JIRA to work with imported Stages Processes.
<i>RTC Configuration Guide</i>	This Guide describes how to configure the ALM Tool RTC to work with imported Stages Processes.

These documents are delivered with Stages. They can be accessed via the Stages Info page.

3 Client Requirements

Stages is a web application system, no special software is required on the client except for a recent web browser.

Stages is known to work with the following web browsers:

Requirements	Description
Microsoft	Internet Explorer 11, Edge
Mozilla	Firefox latest version Stages WebDAV functionality is not supported by Mozilla Firefox
Google	Chrome latest version
Apple	Safari, Safari for IOS



Notice: The browser must have CSS (cascading style sheet), Cookie and JavaScript support enabled.

For some export features the Microsoft Office package is needed.

4 Server Requirements and Recommendation

4.1 Server Requirements

General Server Software Requirements

- Stages is a Java application and is executed within a software application server. The Tomcat application server is automatically installed with Stages.
- The application server also acts as a web server. Thus, no additional web server (i.e. Apache or IIS) is required.
- When using configuration management system integration (e.g. IBM Rational ClearCase, CVS), a client installation of the respective configuration management system is required on the server system.
- When integrating Subversion as configuration management system the subversion server has to be of version 1.6, 1.7, 1.8 or 1.9.

Infrastructure Requirements

- Running Stages with a permanent license requires the Stages server machine to have a fixed IP address.
- If the synchronization of the Stages user database with a Windows Active Directory Server via LDAP is desired, a read-only user account on the ActiveDirectory server is necessary.
- For WebDAV functionality (direct editing without download) the Stages Server must be included in the "Trusted Sites".

Server Hardware Requirements

Requirements	Description
Clock Speed	2 GHz or higher
Main Memory	<ul style="list-style-type: none"> • Test/Demo System: 2 GB minimum. • Productive System: 4 GB minimum, see recommendations.
Disk Space (excluding the database)	4 GB
Supported Virtual Hardware	<ul style="list-style-type: none"> • Test/Demo System: supported • Productive System: supported, if Stages VM is truly isolated from other VMs

Server Software Requirements

Requirements	Description
Supported Operating systems	<ul style="list-style-type: none"> • Windows Server 2003 (32- and 64-Bit) • Windows Server 2008 (32- and 64-Bit) • Windows Server 2012 (32- and 64-Bit) • Windows 7 (32- and 64-Bit) • Windows 10 (32- and 64-Bit) <p>Support for other operating systems, e.g. Linux (32- and 64-Bit), Solaris, is available on request.</p>
Autologin	The system requirements for the autologin feature are listed in the Autologin Guide.

Requirements	Description
Supported JVM/JDK	<ul style="list-style-type: none"> Java SE Development Kit 1.8.0_1 or any higher 1.8.x version (32- or 64-Bit)

4.2 Database Requirements

4.2.1 Oracle Requirements

Stages supports the following Oracle versions:

- 10g
- 11g
- 12c

Stages requires a separate tablespace on the Oracle Server.

To access Oracle with Stages a user with at least the following permissions is necessary:

- CREATE SESSION
- CREATE SEQUENCE
- CREATE TABLE
- CREATE TRIGGER (New in Stages 7.0)
- CREATE PROCEDURE
- CREATE VIEW
- CREATE MATERIALIZED VIEW
- EXECUTE ON CTX_DDL¹
- QUERY REWRITE
- UNLIMITED TABLESPACE (or enough tablespace, resp.)

Also, the *Oracle text package* has to be installed and activated on the Oracle Server (necessary for the Stages search function).



Notice: Please contact the Stages support team to receive an appropriate dump of an empty Stages database.

4.2.2 MySQL Requirements

Stages supports MySQL 5.1 and higher.

The transaction isolation must be set to "READ-COMMITTED" in my.cnf.

Stages 7.0 uses the INNODB instead of the MYISAM engine. This can have impact on the server backup strategy, because INNODB files tend to be very large.

If you run Stages with a MySQL database and have a virus scanner installed on the same server you have to make sure that the virus scanner is not scanning the database directory as this might lead to database inconsistencies.

This problem is a known MySQL error and Oracle is advising to proceed as described.

The Windows 7 search feature causes the same kind of problems as a virus scanner. Please disable this feature on the Stages server.

¹ Hint for 10g: The permission is only visible if the Oracle text package is installed and if the admin is logged in as SYSDBA

4.3 Server Recommendation

4.3.1 Low Range System

Criteria	Server Hardware Recommendations	Server Software Recommendations	Database Recommendations
<p>Users</p> <ul style="list-style-type: none"> less than 10 simultaneous active user sessions less than 100 open sessions less than LDAP 5000 user synchronizations <p>Process</p> <ul style="list-style-type: none"> no parallel baselining and not during business hours Low connected processes with low number of process elements no parallel Update/Import/Export and not during business hours <p>CM Systems</p> <ul style="list-style-type: none"> max. 10 Sandboxes 	<p>VM or Physical Server³</p> <p>RAM</p> <ul style="list-style-type: none"> ≥ 4GB <p>CPU</p> <ul style="list-style-type: none"> 2 Core (2 GHz or higher) <p>Harddisk</p> <ul style="list-style-type: none"> ≥ 4GB (Stages Installation) ~50 GB² (CMS Sandboxes) 	<p>Operating System</p> <ul style="list-style-type: none"> 64 Bit Windows Server 2003/2008/2012⁴ <p>Java Environment</p> <ul style="list-style-type: none"> 64 Bit JDK 1.8.0_1 or any higher 1.8.x version 	<ul style="list-style-type: none"> Separate Oracle 10g/11g/12c Server Separate MySQL Version 5.1 or higher <p>Database Hardware</p> <ul style="list-style-type: none"> Database connection 1GBit Latency time < 1ms (Ping)

4.3.2 Mid Range System

Criteria	Server Hardware Recommendations	Server Software Recommendations	Database Recommendations
<p>Users</p> <ul style="list-style-type: none"> max. 25 simultaneous active user sessions max. 250 open sessions LDAP 15000 user synchronizations <p>Process</p> <ul style="list-style-type: none"> low connected processes with high number of process elements max. 2 parallel Update/Import/Export max. 2 parallel baselining <p>CM Systems</p> <ul style="list-style-type: none"> max. 100 Sandboxes 	<p>Physical Server³</p> <p>RAM</p> <ul style="list-style-type: none"> ≥ 8GB <p>CPU</p> <ul style="list-style-type: none"> 4 Core (2 GHz or higher) <p>Harddisk</p> <ul style="list-style-type: none"> ≥ 4GB (Stages Installation) ~100 GB² (CMS Sandboxes) 	<p>Operating System</p> <ul style="list-style-type: none"> 64 Bit Windows Server 2003/2008/2012⁴ <p>Java Environment</p> <ul style="list-style-type: none"> 64 Bit JDK 1.8.0_1 or any higher 1.8.x version 	<ul style="list-style-type: none"> Separate Oracle 10g/11g/12c Server <p>Oracle Hardware</p> <ul style="list-style-type: none"> 2 Core (2 GHz or higher) ≥ 40 GByte Tablespace Database connection 10 GBit Latency time < 1ms (Ping)

² amount of harddisk space need for CMS sandboxes can be calculated by $\text{sandbox_harddisk_size} = \text{of sandboxes} * \text{max(Sandbox size)}$. Depends on the CM system. The new PTC Integrity integrations needs no sandboxes.

³ The Stages server should be used exclusively for the Stages Application (Stages installation and CMS Client). No other system like Oracle Server, CMS Server Application or other Applications should run on the Stages server hardware.

⁴ Support for other operating systems, e.g Linux, Solaris is available on request

4.3.3 High Performance System

Criteria	Server Hardware Recommendations	Server Software Recommendations	Database Recommendations
<p>Users</p> <ul style="list-style-type: none"> max. 50 simultaneous active user sessions max. 500 open sessions max. LDAP 25000 user synchronizations <p>Process</p> <ul style="list-style-type: none"> highly connected processes with high number of process elements max. 10 parallel Update/Import/Export max. 20 parallel baselining <p>CM Systems</p> <ul style="list-style-type: none"> more than 100 Sandboxes 	<p>Physical Server³</p> <p>RAM</p> <ul style="list-style-type: none"> ≥ 16GB <p>CPU</p> <ul style="list-style-type: none"> 16 Core (2 GHz or higher) <p>Harddisk</p> <ul style="list-style-type: none"> ≥ 4GB (Stages Installation) ~100 GB² (CMS Sandboxes) 	<p>Operating System</p> <ul style="list-style-type: none"> 64 Bit Windows Server 2003/2008/2012⁴ <p>Java Environment</p> <ul style="list-style-type: none"> 64 Bit JDK 1.8.0_1 or any higher 1.8.x version 	<ul style="list-style-type: none"> Separate Oracle 10g/11g/12c Server <p>Oracle Hardware</p> <ul style="list-style-type: none"> 8 Core (2 GHz or higher) ≥ 80 GByte Tablespace Database connection 10 GBit Latency time < 1ms (Ping)

5 Network & Infrastructure Requirements

Starting with version 7.0, Stages uses web sockets to communicate between Stages server and the user's browsers. Web sockets are basically normal TCP/IP HTTP/HTTPS requests, but in some cases firewalls between the server and the browsers might block certain actions or requests.

6 Interface Requirements

Configuration management systems

Requirements	Description
PTC Integrity	Integrity 2009 (min. SP7) and Integrity 2010
Subversion	Subversion 1.6, 1.7, 1.8 and 1.9
Microsoft SharePoint	2007, 2010, 2013 and 2016
CVS	1.11
IBM Rational Clear Case	Version 7 and Version 8
Serena Dimensions	12.2

Microsoft Office

MS Office 2007 and 2010.

IBM Rational Team Concert

Version 4 and Version 5