

# System Recommendations and Supported Platforms

## Introduction

This page includes useful information for the consideration of an environment specification and system recommendation for running Ubisecure Identity Server. Below you will find the currently supported software, actively tested browsers and hardware requirements and recommendations. All recommendations are based on an example reference environment of 100 000 active users with 100 logins per second as normal sustainable, non-impacting load.

These are not intended to highlight the minimum requirements but instead Ubisecure's recommendations in order to effectively run the Identity Server in a production environment. Ubisecure performs release testing on a variety of environments for each release, using a combination of single and dual-node installations on Linux and Windows Server operating systems and with automated and manual regression testing performed by a variety of the listed supported browsers in their latest stable distribution.

Your exact environment needs may need to be reviewed and altered depending on what types of workloads you run. Your workload is influenced for example by these factors (but not limited to):

- Active users having user account in Ubisecure Directory and CustomerID database
- Number of internal and external authentications
- Number of requests to Identity Server APIs
- Number of interactions with CustomerID registration flows and Self-Service UI

## Supported Browsers

Ubisecure Identity Server has been tested with the following desktop browsers

- Google Chrome
- Mozilla Firefox
- Safari
- Microsoft Edge



Ubisecure recommends to use the latest version of each browser

## Supported Operating Systems

Ubisecure Identity Server supports a number of Linux distributions and Microsoft Windows Server



As it was published in the end of December that [CentOS 8 will have an early EOL](#) in 2021, we will during 2021 start evaluating our choices of supported Linux distributions. Note that CentOS 7 is still getting maintenance updates through first half of 2024.

Platform	Distribution	Versions	EOL
Linux distributions	CentOS	7	June 2024
	RedHat Enterprise Linux	7	June 2024
Microsoft Windows	Windows Server	2016	January 2027
		2019	January 2029

## Software Requirements

The following chapter lists the required software that is used to run Ubisecure Identity Server. Ubisecure lists the software that it uses internally to develop, test and operate Identity Server.

### Java

Java 8 is required in order to run Ubisecure applications, including SSO, CustomerID and related components. Identity Server has been tested with the following Java builds

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 During 2021 we will start investigating and testing Ubisecure Identity Server with a later Java version. At this point we are aiming towards Java 11 which is a version that has Long Term Support (LTS).

Build	Version
<a href="#">AdoptOpenJDK</a>	Java 8 (1.8.0_275-b01)
<a href="#">Oracle Corporation</a>	Java 8 (1.8.0_275-b01)

#### RedHat OpenJDK

While we do support Centos 7, unfortunately, RedHat OpenJDK for Java 8 does not support an extensive amount of ciphers. Due to this limitation, we have not tested and therefore cannot recommend using RedHat OpenJDK. Please ensure you implement one of the supported versions of Java 8 shown above.

## Databases

### Ubisecure Directory

Ubisecure Directory requires an LDAP implementation. Identity Server supports the following LDAP implementations

LDAP implementation	Version	Notes
OpenLDAP	2.4.44	Included in the SSO Linux distribution package. The used database backend is currently BerkeleyDB (bdb)
Microsoft AD-LDS	Windows Server 2016, Windows Server 2019	Tested with the version included in the respective Microsoft Windows Server version

### Relational Databases

CustomerID and Accounting support the following Relational Databases

Database	Version	Upgrade	EOL
PostgreSQL	9.6	9.5 9.6	November 2021
PostgreSQL	12.5	9.6 12.5	November 2024

Ubisecure highly recommend using these versions of PostgreSQL as these are used in testing and development. Newer versions of PostgreSQL may work as well but are not recommended as Ubisecure has not tested any other version than the ones listed here.

#### PostgreSQL JDBC Driver

Currently tested PostgreSQL JDBC driver version is 42.2.14

 For upgrading PostgreSQL from 9.6 to 12.5, follow PostgreSQL official documentation for upgrading with pg\_dumpall (<https://www.postgresql.org/docs/12/upgrading.html>). We have created Knowledge Base "How-to" article with information how we have tested the upgrade and also include estimated migration times. See [Upgrade and migrate to new version of PostgreSQL](#)

## Redis

In high-performance deployments Ubisecure Identity Server uses Redis as a session storage. Identity Server has been tested with version 5.0.5. For more information, please refer to [Use Redis with Identity Server](#).

# Hardware recommendations

These hardware recommendations can easily sustain a deployment with 100 000 active users and 100 logins per second.



## Reverse Proxy

Ubisecure recommends always deploying a reverse proxy or load balancer in front of any operational environment. This is useful for security and traffic management of any internet facing environment.

## Storage

### Identities

Ubisecure Identity Server uses two persistent data stores for storing identity related information; PostgreSQL and LDAP. The necessary storage size largely depends on the number of users, roles, organisations and custom attributes stored in the Ubisecure Identity Server.

The following table lists the actual size of data on disk for a typical deployment storing users in 100 different organisations, including 5 roles for each organisation and 5 custom attributes for each user:

Number of user accounts	Ubisecure Directory size (GB)	CustomerID database size (GB)
100 000	1.0	0.4
250 000	2.4	0.8
500 000	4.8	1.6

On average, each LDAP user account entry takes roughly a bit less than 10 kB whereas CustomerID database entry takes roughly 3 kB. Deployments that do not use Redis as a session storage, an additional 10 kB per single-sign-on session should be considered. The single-sign-on sessions are stored in Ubisecure Directory.

### Accounting login events

In addition to identity data, as of IDS 2019.1 login events are collected into the [Accounting Service](#) database. The following table lists the actual size of data on disk for a system which contains roughly 100 000 monthly active users each able to select any of 10 configured authentication methods.

Number of login events	Accounting database size (GB)
100 000	0.2
250 000	0.5
500 000	0.7
1 000 000	1.0
5 000 000	4.0
10 000 000	8.0



## Configure login event data cleanup

It is highly recommended to configure the cleanup of old login event related data. See [Accounting Service additional configuration](#) for more details.

## CPU

Application	CPU cores
SSO and Accounting*	2

CustomerID	2
Ubisecure Directory	2

\*) Currently Accounting is installed alongside SSO thus the processes share the same resources.

## Memory

### Ubisecure applications

For running the Identity Server applications, the following table lists the memory recommendations.

Application	Recommended amount of RAM (GB)
SSO	2
Ubisecure Directory	1
CustomerID	4
Accounting	1

For more information on memory configurations, please refer to

- CustomerID: [Wildfly JVM settings reference](#)
- SSO: [Tomcat memory considerations](#)

### Redis memory considerations

When deploying Redis with Ubisecure Identity Server each single-sign-on session takes maximum of 10 kB of memory in Redis. In a typical Redis deployment (3 primary instances backed up by 3 secondary instances) this would mean

Number of concurrent sessions	Number of Redis primary instances	Memory required per Redis instance (GB)
1 000	3	0.01
10 000	3	0.07
100 000	3	0.67
250 000	3	1.67
500 000	3	3.33
1 000 000	3	6.67

Note that the sessions are sharded between the three primary instances. For more information, please refer to [How to use Redis with Identity Server](#).