



akuiteo
BUSINESS SOFTWARE

General Guide

TECHNICAL RECOMMENDATIONS AND SERVER SETUP

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1 Preface

1.1 REVISIONS

Revision 3	Published in December 2021 <ul style="list-style-type: none">• Added PWA compatibility in the Equipment settings (p. 15) chapter.
Revision 2	Published in July 2020 <ul style="list-style-type: none">• No longer compatible with the Internet Explorer web browser.
Revision 1	Published in June 2020 <ul style="list-style-type: none">• Merge of the <i>Tomcat Setup Guide</i> and the <i>Application Desktop Installation Guide</i>.

1.2 HELP DESK

Akuiteo S.A.S. highly values your satisfaction.

To share your feedback or contact the help desk, feel free to visit our website page:
<https://www.akuiteo.fr/akuiteo.clients/>

Technical recommendations

The infrastructure template described below is for informational purposes. The purpose of these recommendations is to reach an optimal use of the applications, whether in separate or virtualized hardware environments.

Akuiteo advises using different servers to execute the Akuiteo business server and to host the database. Such a structure enables to better distribute the use of resources and offers more flexibility to develop the infrastructure in the long run.

For any other configurations, please contact Akuiteo.

2 Infrastructures

2.1 DATABASE

The database can be hosted on a physical or virtual environment.

Regarding MS SQL Server Express Edition and Oracle XE versions:

Free available versions made by Oracle and Microsoft are limited to a single Tablespace of 10GB for SQL Server Express and of 11GB for Oracle XE. Akuiteo software uses about 50% of database space for its own data, the remaining 50% are used by indexes. Finally, the Express and XE versions only use a single CPU on the host monitor.

These versions are only suitable for small structures.

Number of users / Feature	< 25	25 to 100	> 100
CPU (core)	1 (2 recommended)	2	2 (4 recommended)
RAM	4 GB	8 GB	16 GB
Storage	10 GB	10 GB	20 GB
OS	Windows 2008R2 64 bits Windows 2012R2 64 bits Windows 2016 64 bits Windows 2019 64 bits Compatible with Linux (Oracle)	Windows 2008 R2 64 bits Windows 2012R2 64 bits Windows 2016 64 bits Windows 2019 64 bits Linux – Oracle only (Oracle-certified or Free distributions)	Windows 2008R2 64 bits Windows 2012R2 64 bits Windows 2016 64 bits Windows 2019 64 bits Linux – Oracle only (Oracle-certified or Free distributions)
DBMS To choose	Oracle 11g R2 (64 bits) Oracle 12c (64 bits) MS SQL Server 2008R2 MS SQL Server 2012 SP1 MS SQL Server 2014 MS SQL Server 2016 MS SQL Server 2017 MS SQL Server 2019	Oracle 11g R2 (64 bits) Oracle 12c (64 bits) MS SQL Server 2008R2 MS SQL Server 2012 SP1 MS SQL Server 2014 MS SQL Server 2016 MS SQL Server 2017 MS SQL Server 2019 MS SQL Server Managed	Oracle 11g R2 (64 bits) Oracle 12c (64 bits) MS SQL Server 2008R2 MS SQL Server 2012 SP1 MS SQL Server 2014 MS SQL Server 2016 MS SQL Server 2017 MS SQL Server 2019 MS SQL Server Managed

	MS SQL Server Managed Instance (Azure)	Instance (Azure)	Instance (Azure)
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The Oracle version must be the last patchset provided by Oracle.

These versions are:

Oracle 11gR2: 11.2.0.4 (Akuiteo is not compatible with Oracle 11.2.0.1 and 11.2.0.2) and Oracle 12c: 12.2.0.1.

2.2 APPLICATION SERVER

The table below is for infrastructures based on the Apache Tomcat application server. To use any other application server, please contact Akuiteo.

The business server must also be able to store uploaded or generated documents; therefore disk space takes this into account for "office documents" storage.

If the document database is stored on a dedicated server (NAS, etc.), only the location in brackets must be taken into account.

Number of users / Feature	< 25	25 to 100	> 100
CPU (core)	2	2	2+
RAM	4 GB	6 GB	12 GB+
Storage	10 GB (500 MB)	20 GB (500 MB)	50 GB (500 MB)
OS	Windows 2008 R2 32 or 64 bits Windows 2012 R2 32 or 64 bits Windows Server 2016 Windows Server 2019 Linux 32 or 64 bits	Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows Server 2016 Windows Server 2019 Linux 64 bits	Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows Server 2016 Windows Server 2019 Linux 64 bits
Java	Oracle JDK 1.8 (32 or 64 bits)	Oracle JDK 1.8 (64 bits)	Oracle JDK 1.8 (64 bits)
Software	Apache Tomcat 7*	Apache Tomcat 7*	Apache Tomcat 7*

* is not certified Tomcat 8

2.3 WEB SERVERS

The following web applications are provided by Akuiteo:

- Customer Portal.
- Web Portal

The following data are detailed for RAM and storage, by application. Applications can be shared on the same Tomcat server and instance.

These are standard values that need to be adapted according to the actual activity of each site and the actual number of users.

Number of users / Feature	25 to 100	> 100
CPU (core)	2	4+
RAM	1.5 GB / application	2 GB+ / application
Storage	200 MB / application	200 MB / application
OS	Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows Server 2016 Windows Server 2019 Linux 64 bits	Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows Server 2016 Windows Server 2019 Linux 64 bits
Java	Oracle JDK 1.8 (64 bits)	Oracle JDK 1.8 (64 bits)
Customer Portal browser	Firefox, Safari, Chrome or Edge	Firefox, Safari, Chrome or Edge
Web Portal browser	Firefox, Safari, Chrome or Edge	Firefox, Safari, Chrome or Edge
Software	Apache Tomcat 7*	Apache Tomcat 7*

* is not certified Tomcat 8

2.4 APPLICATION DESKTOP

Font expansion on Windows

On Windows, the Application Desktop is designed to display characters with a font size of 100%. Akuiteo does not recommend using the **Make text bigger** feature and a display of 125% to 150%.

Application Desktop's automatic updates

The Application Desktop offers an automated update feature. To make sure this feature works, the user must have reading / writing permissions on the repository where Akuiteo has been installed.

Monitor	Monitor able to display a minimum resolution of 1280x1024
CPU	2Ghz Dual Core or equivalent
RAM	2GB (4GB recommended)
Hard drive	512 MB

space	This size corresponds to the space needed for Akuiteo's Application Desktop on the hard drive, as well as all the space needed to manage the software's updates and use.
OS	<p>Windows 7 32 or 64 bits</p> <p>Windows 8 32 or 64 bits</p> <p>Windows 8.1 32 or 64 bits</p> <p>Windows 10 32 or 64 bits</p> <p>Mac OS 10.10 (Yosemite) to 10.14 (Mojave) 64 bits</p> <div> <p>Important</p> <p>Akuiteo is not compatible with Mac OS 10.15 (Catalina).</p> </div>
Software	<p>Microsoft Office (Word, Excel, Outlook) 2003 / 2007 / 2010 / 2013 / 2016 / 2019 / O365 or 2011 / 2016 / O365 (Mac)</p> <p>Adobe Reader (7, 8, 9, X, DC) or any other PDF reader</p> <div> <p>Note</p> <p>The choice made for the Office Suite or a PDF reader depends on the report formats set up in Akuiteo. If the Office document format has been chosen, it is required that each monitor is equipped with the Microsoft Office Suite to be able to preview and publish documents generated by Akuiteo.</p> </div>

3 Resource sharing and environment virtualization

3.1 RESOURCE SHARING

Installing Akuiteo requires several environments to be set up. There are 3 of them, generally speaking:

- The test environment: it is used to validate Akuiteo deliverables before getting into production processes.
- The configuration environment: the environment is the same as the production one to validate the setup. This environment is usually not the final one, and often used at the beginning of a project.
- The production environment

To ideally meet these needs, it is not necessary to install separate hardware environments. Test and configuration environments are generally little used and do not require the same resources as the production environment.

The production environments can be designed so as to host test and configuration environments as well.

3.1.1 Database (shared environments)

It is strongly advised to create two separate instances, either on Oracle or SQL Server, to divide test environments from production environments. Therefore, we are going to have a Production instance and a Configuration/Test instance.

If an Oracle XE Express or an SQL Server Express version is used, it is impossible to share multiple databases on the same instance. A second installation on a different machine is therefore necessary.

Number of users / Feature	25 to 100	> 100
CPU (core)	2	4+
RAM	4 GB	8 GB +
Storage	30 GB	80 GB RAID5
OS	Windows 2003 64 bits Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows 2016 64 bits Windows 2019 64 bits	Windows 2003 64 bits Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows 2016 64 bits Windows 2019 64 bits

	Linux (Oracle-certified or Free distributions)	Linux (Oracle-certified or Free distributions)
DBMS	Oracle 11g R2 (64 bits)	Oracle 11g R2 (64 bits)
To choose	Oracle 12c (64 bits)	Oracle 12c (64 bits)
	MS SQL Server 2008R2	MS SQL Server 2008R2
	MS SQL Server 2012 SP1	MS SQL Server 2012 SP1
	MS SQL Server 2014	MS SQL Server 2014
	MS SQL Server 2016	MS SQL Server 2016
	MS SQL Server 2017	MS SQL Server 2017
	MS SQL Server 2019	MS SQL Server 2019
	MS SQL Server Managed Instance (Azure)	MS SQL Server Managed Instance (Azure)

3.1.2 Business server (shared environments)

For sharing business server's environments, it is strongly recommended to have two separate Tomcat instances. This way, testing and configuration environments will not impact production.

In this case, the recommendations are as follows:

Number of users / Feature	25 to 100	> 100
CPU (core)	4	4+
RAM	8 GB	16 GB+
Storage	20 GB	50 GB +
OS	Windows 2003 64 bits Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows 2016 64 bits Windows 2019 64 bits Linux 64 bits	Windows 2003 64 bits Windows 2008 R2 64 bits Windows 2012 R2 64 bits Windows 2016 64 bits Windows 2019 64 bits Linux 64 bits
Java	Oracle JDK 1.7 (64 bits)	Oracle JDK 1.7 (64 bits)
Software	Apache Tomcat 7	Apache Tomcat 7

3.2 VIRTUAL ENVIRONMENTS

This chapter describes the virtualization of server and client environments.

Server environments (database / business server)

The recommendations listed above remain the same for the:

- CPU
- RAM
- Storage space
- OS
- Software

Client environment

The Application Desktop can be installed on an environment like Terminal Server (TSE) or Citrix. In this case, it is necessary to take into account the different elements listed above:

Each virtual desktop must have:

- The office tools needed to display and print the documents generated by Akuiteo: PDF reader, MS Office, etc.
- A temporary storage space of approximately 200 MB to store generated documents. By default, on Windows, it is the TEMP directory.
- Writing permissions on the directory where you installed the Application Desktop. This permission may be granted to an administrator who will be in charge of the client update after an update has been installed.

Read the **Installation Guide** for more information.

4 Sending emails

Akuiteo can work in multi-server. Up to the 3.5 version included, a master server had to be designated to be the only one in charge of sending emails. The other (slave) servers cannot send emails.

Since the 3.6 version, in case of a multi-server configuration, every server can send emails:

- Using a trigger
- Through a logged in client on said server

To identify the server which sent the email, Akuiteo uses the IP address and/or the monitor name.

If it is unable to get this information, the server will stop functioning with a specific message in the error log.

In this case, you must give the `akuiteo.hostname` environment variable to Tomcat, with a unique value.

Example

```
-Dakuiteo.hostname=akuiteoprod1.XXX.lan
```

5 Network prerequisites

Number of users / Feature	< 25	25 to 100	> 100
Server network - Database	1 GB	1 GB	1 GB
Client network - Server *	256 Kbits – 1 Mbit	1Mbit – 4 Mbits	4 Mbits +
Client - Server protocol / communication transport	HTTP – TCP (8080 port by default and configurable)		

* This figure varies depending on the number of users connected simultaneously.

6 Equipment settings

CPU	Dual Core 2GHz or equivalent
RAM	2 free GB (4 GB recommended)
Disk space	512 MB This space corresponds to the space taken by Akuiteo on a disk as well as all needed space for updates and good use of the software in general.
OS	Windows XP Windows Vista 32 or 64 bits Windows 7 32 or 64 bits Windows 8 / 8.1 32 or 64 bits Windows 10 32 or 64 bits Mac OS X 10.7 to 10.11
Software	Microsoft Office 2003 / 2007 / 2010 / 2013 / 2016 (PC) or 2008 / 2011 / 2016 (Mac) Adobe Reader or any other PDF reader The choice made for the Office Suite or a PDF reader depends on the report formats set up in Akuiteo. If the Office document format has been chosen, it is required that each monitor is equipped with the Microsoft Office Suite to be able to preview and publish documents generated by Akuiteo.
Web browser	Firefox 4+ Chrome Edge If specified, minimal version of browser.
PWA (Akuiteo Mobile application)	PWA application: Android 5.0 or + / IOS 11.0 or + Camera module for expense reports: Android 10.0 or + / IOS 13.0 or + Not compatible for tablets
Resolution	1680x1050

Akuiteo offers an automatic update feature. To make sure this feature works, the user must have reading / writing permissions on the repository where Akuiteo has been installed.

Tomcat server setup

After the installation of Akuiteo environment, you must adapt some parameters or Tomcat environment variables specific to the user database configuration.

These variables should be modified only once during the test phase and before the implementation phase.

These parameters have **priority** over the data stored in database.

Important


Akuiteo is not certified for Tomcat 8. Using Apache Tomcat 7 is recommended.

7 Setting up Akuiteo's Tomcat server

In this document, you will find the whole list of parameters that can be defined for Akuiteo's Tomcat server.

- You can modify all the parameters from the `config.xml` or `context.xml` configuration files in the following format:

```
<Environment name="t9-gestion#<NOM_VARIABLE>" override="false" type="java.lang.String" value="<VALEUR_REDEFINIE>"/>
```

- You can also view most of the parameters from the Administration console, that can be accessed via Application Desktop's Akuiteo in **Tools > Utilities** > .

7.1 GENERAL PARAMETERS

Path from the Administration console: **Configuration > General**.

Tomcat parameters	Label in Administration console	Description
<code>server.external.url</code>	External URL of the Akuiteo server	Server's external address used by Google to retrieve a document. To use this parameter, you must also: <ul style="list-style-type: none">• activate the GOOGLE_APPS management rule so that Akuiteo can manage Google applications as office tools.• set Google Apps as the default office tool in Preferences > General > Office automation.
<code>akuiteo.concurrencycheck</code>	Check concurrent accesses to data	Management of concurrent accesses to management objects. Saving a management object is impossible if someone has already modified it after it has been opened. Default value: true

7.2 PARAMETERS TO COMMUNICATE WITH AKUITEO'S APPLICATION DESKTOP

Path from the Administration console: **Configuration > Updates**.

Tomcat parameters	Label in Administration console	Description
<code>config.serveurs.xml</code>	.xml server path	Access path - from the Tomcat server - to the <code>serveur.xml</code> file that contains the list of Akuiteo applications available from the Application Desktop.
<code>config.update.dir</code>	Directories for customer updates	Access path to the IUA archive files from the Tomcat server.

7.3 PARAMETERS TO CONNECT TO AKUITEO

These parameters can only be found in the `config.xml` or `context.xml` configuration files.

Parameters	Description
<code>akuiteo.highsecurity</code>	Switches the server into maximum security level: <ul style="list-style-type: none"> impossible to save a password from the Application Desktop, no automatic authentication. Default value: false
<code>akuiteo.security.timeout</code>	If the parameter <code>akuiteo.highsecurity=true</code> , the logout time after inactivity is expressed in minutes. The password is required once again. Default value: 20

7.4 ACCESS RESTRICTION PARAMETERS

Path from the Administration console: **Connections**.

Tomcat parameters	Label in Administration console	Description
<code>akuiteo.restricted</code>	Lock server button	Switches the server into minimum authentication. Only super administrators can be connected. Default value: false

7.5 PARAMETERS FOR REPORTS LINKED TO AKUITEO

Path from the Administration console: **Configuration > Reports**.

These parameters are associated with the **Open the generated document directly via the network** option that must be activated in **Preferences > General > Documents**.

Tomcat parameters	Label in Administration console	Description
<code>document.template.path</code>	Path to document templates	Path to template files.
<code>document.path</code>	Path to generation directory (temporary)	Temporary folder for multiple usage (storage, report, import, and so on).
<code>gdoc.warehouse.path</code>	Documents storage path	Path to where Akuiteo documents are stored (document management).
<code>gdoc.warehouse.unc.path</code>	UNC path of documents directory	UNC path to access the permanent files folder.
<code>il8n.messages.path</code>	Access path to internationalization files (\$NON-NLS\$ to disable feature)	Path to the file of server properties for specific translations. Default value: \$NON-NLS\$

7.6 PASSWORD PARAMETERS TO ACCESS HELP DESK

Path from the Administration console: **Configuration > Passwords**.

This setup can only be used if the **LDAP option is not active** for employees and external customers.

Tomcat parameters	Label in Administration console	Description
<code>password.uppercase</code>	Force uppercase character	Uppercase character required. Default value: false
<code>password.lowercase</code>	Force lowercase character	Lowercase character required. Default value: false
<code>password.specialchar</code>	Force input of special character (\$, %, μ, *, ^, ", !, /, ., ?, &, @, +, =, °)	Special character (\$, %, μ, *, ^, ", !, /, ., ?, &, @, +, =, °) required. Default value: false
<code>password.numeric</code>	Force number input	Numeric character required. Default value: false

7.7 SMTP SERVER PARAMETERS

Path from the Administration console: **Configuration > Email**.

Tomcat parameters	Label in Administration console	Description
<code>smtp.server.host</code>	SMTP host	Enter the SMTP server's address.
<code>smtp.server.port</code>	SMTP port	Enter the SMTP port.
<code>smtp.server.username</code>	SMTP user	Login to connect to the SMTP server.
<code>smtp.server.password</code>	SMTP password	Password to connect to the SMTP server.
<code>smtp.server.force.postmaster</code>	Force postmaster as sender of all emails checkbox	Define a 'postmaster' as sender. Otherwise, the connected user is considered as the sender by default. Default value: false
<code>mail.postmaster</code>	Mail postmaster	To set up if <code>smtp.server.force.postmaster=true</code>
<code>mail.support.client.active</code>	Send Akuiteo alerts by email checkbox	Automatically send error logs by email.
<code>mail.support.client.recipient</code>	Recipient of Akuiteo Desktop alerts	Error logs are sent to the email address specified.
<code>envoiMail.actif</code>	Process for sending emails activated checkbox	Activates sending of emails. Default value: true
<code>envoiMail.delaiInvalidation</code>	Maximum time (in seconds) after which the system no longer sends default emails	Time in seconds to try to send an error log by email. Default value: 3600
<code>envoiMail.intervalleExecution</code>	Time interval (in seconds) between sending two email campaigns	Time in seconds between two series of emails. Default value: 60

7.8 EXCHANGE SERVER'S CONNECTION PARAMETERS

These parameters can only be found in the `config.xml` or `context.xml` configuration files.

These parameters are used to run a batch to synchronize schedules with the Exchange server.

Tomcat parameters	Description
<code>exchange.user</code>	Exchange user's login.
<code>exchange.password</code>	Exchange user's password.
<code>exchange.url</code>	Exchange server's URL.

8 Setting up the Tomcat server for web applications

This document lists all the Tomcat parameters for the following web applications: Customer Portal, FAQ and Web Portal.

These parameters can only be found in the `config.xml` or `context.xml` configuration files in the following format:

```
<Environment name="t9gestion#<NOM_VARIABLE>" override="false" type="java.lang.String" value="<VALEUR_REDEFINIE>"/>
```

8.1 SHARED PARAMETERS FOR WEB APPLICATIONS

Parameters	Description
<code>t9gest.hostname</code>	Name of the local machine. Default value: localhost
<code>t9gest.port</code>	Port to connect to Akuiteo. Default value: 8080
<code>t9gest.appname</code>	Application name. Default value: akuiteo
<code>t9gest.protocol</code>	Used protocol. Default value: http

8.2 CUSTOMER PORTAL PARAMETERS

Parameters	Description
<code>t9gest.uploadmaxsize</code>	Maximum size authorized for attachments. Default value: 1024000
<code>t9gest.allowext</code>	List of extensions authorized when uploading a file (empty = all). Each extension must be separated by a comma and must be written without the period. Example: jar,xls,doc
<code>t9gest.disallowext</code>	List of extensions prohibited when uploading a file (empty = all). Each

Parameters	Description
	extension must be separated by a comma and must be written without the period. Example: bat,exe,com
<code>t9gest.document.directory</code>	Path to the directory where documents are stored. Default value: C:/Akuiteo/temp
<code>t9gest.document.akuiteocopy</code>	Automatic copy of extranet documents to Akuiteo. Default value: true

8.3 HELP DESK PARAMETERS

Parameters	Description
<code>t9gest.uploadmaxsize</code>	Maximum size authorized for attachments. Default value: 1024000
<code>t9gest.allowext</code>	List of extensions authorized when uploading a file (empty = all). Each extension must be separated by a comma and must be written without the period. Example: jar,xls,doc Default value: empty
<code>t9gest.disallowext</code>	List of extensions prohibited when uploading a file (empty = all). Each extension must be separated by a comma and must be written without the period. Example: bat,exe,com Default value: empty
<code>t9gest.document.directory</code>	Path to the directory where documents are stored. Default value: C:/Docs/TempGMAO
<code>t9gest.document.akuiteocopy</code>	Automatic copy of extranet documents to Akuiteo. Default value: true