Pega Infinity

PLATFORM SUPPORT GUIDE

VERSION 8.4

**Includes Pega Platform versions
8.1 – 8.4**

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PEGA

Pega Platform

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About This Guide

The Pega® Platform is designed as an open system which complies with industry standards to be compatible with 3rd party components such as Server Operating Systems, Databases, Applications Servers, Client Operating Systems, Browsers and Integration Service Components (collectively referred to as "Stack Components" in this guide).

This guide is published in tandem with the release of new versions of the Pega Platform. Between such releases, Pega and our clients continue to deploy and test with new stack component versions and patch levels. As a result, this guide is not intended to be exhaustive or definitive. In general, stack component vendors manage forward and backward compatibility very effectively. This means that most of the time, the Pega Platform will continue to operate correctly when stack components are upgraded to new patch levels or versions.

Pega typically will support deployment on these later versions even if they are not explicitly listed in this guide. Clients are encouraged to upgrade stack components in accord with their IT or business policies, and report any issues via My Support Portal on the Pega Community.

Where known issues exist, they will be included in the next edition of this guide, and in Support Articles on the Pega Community. In these cases, clients may need to upgrade to a more recent Pega Platform release.

Clients may also reach out via the Support Community to ask about the experience of Pega or other clients with stack components.

The Pega Platform has been deployed successfully in tandem with many combination of stack components from this guide – including hybrid heterogeneous combinations of dissimilar servers. Experience shows that successful deployments require attention to details in configuring stack components and are best undertaken by experienced people guided by information provided by Pega on the Pega Community.

In addition:

1. In those rare circumstances where changes are necessary to achieve compatibility, Pegasystems makes commercially reasonable efforts to offer such support within 12 months of GA. This support will only be made available in a new Pega Platform release.

2. **Older Stack Component Versions:** Pegasystems encourages our clients to keep as current as possible with Pega products and with stack components. Failure to do so risks security exposure and possible incorrect operations of the client's applications.

Pegasystems Inc. Statement of Support for Virtualised Environments such as VMWare, OpenStack, PureAPP, Citrix and others

Pegasystems Inc. will support clients who run Pegasystems Inc. products on supported Operating Systems, irrespective of whether they are running in virtualized environments or not.

Virtualization vendor products support a set of certified Operating Systems and Hardware, and the client and vendor will be responsible for any interactions or issues that arise at the Hardware or Operating System layer as a result of their use of such products.

Pegasystems Inc. will not require clients to recreate and troubleshoot every issue in a non-virtualized environment; however, Pegasystems Inc. does reserve the right to request our clients to diagnose certain issues in a native certified Operating System environment, operating without the virtual environment. Pegasystems Inc. will only make this request when there is reason to believe that the virtual environment is a contributing factor to the issue.

Any time spent on investigation of problems that may, in the sole opinion of Pegasystems Inc. be related to a virtualization product, will be handled in the following fashion:

1. Pegasystems Inc. will provide standard support to all Pegasystems Inc. products.

2. If a problem is encountered while a Pegasystems Inc. product is running in a virtualized environment, the client may be asked to recreate the problem on a non-virtualized server unit to assist with diagnostics and remediation.

3. Regardless of the problem type or source, time spent on investigation and resolution will be covered as part of regular maintenance, and support will be provided as usual.

Cloud Choice

Pega Cloud Services

Pega Cloud Services provide industry-leading infrastructure, enterprise-grade services, and operational excellence for the Pega Platform and strategic application solutions in the cloud. For details on the **Pega-managed** cloud solution, please see the *Pega Cloud* landing page on Pega Community.

Client-Managed Solutions

Pega also gives clients the ability to choose **client-managed** or **partner-managed** solutions.

For Pega Platform prior to 8.2, Pega supports deployments on virtual machines in the following environments:

- Amazon Web Services (AWS)

- Pivotal Cloud Foundry

- Microsoft Azure

- Google Cloud Platform (GCP)

For details on these older Cloud Choice options, see *Client managed cloud deployments prior to Pega Platform 8.2* on Pega Community.

Database Services

Pega supports deployments to the following database services for client-managed cloud installations.

	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
Amazon RDS: Amazon Aurora PostgreSQL 9.6.x	supported	supported	supported	supported	
Amazon RDS: PostgreSQL 11	supported	supported	supported	supported	
Microsoft Azure SQL database	supported	supported	supported	supported	For details on using Microsoft Azure, please see the Deploying Pega Platform on Microsoft Azure article on the PDN.

NOTE: User-defined functions (UDFs) are not supported on client-managed cloud. See Understanding user-defined functions on Pega Community.

Docker and Kubernetes

Pega Platform supports deploying Pega Platform on a client-managed cloud environment by using Kubernetes. To support this deployment, Pega maintains the [pega-helm-charts](#) GitHub repository containing required Helm charts that refer appropriately to Pega artifacts used by the deployment.

To support Kubernetes deployments, Pega maintains three types of required Docker images for Client-managed Cloud deployments of Pega Platform, which you must download:

Name	Description
platform/pega	Deploys the Pega Platform with its customized version of the Tomcat application server
platform/search	Deploys the search engine required for the Pega Platform application's search and reporting capabilities. This Docker image contains Elasticsearch and includes all required plugins
platform/installer	A utility image Pega Platform deployments use to install or upgrade all of the Pega-specific rules and database tables in the "Pega" database you have configured for your deployment.

For details, see the examples listed in the runbooks:

- [Preparing your local Linux system](#)

- [Preparing your local Windows 10 system](#)

After downloading these three Pega-provided images, clients push them to their Docker registry so they are available to the deployment. Clients then specify their registry URL, credentials, and the reference to each image in their customized Pega Helm chart. Example usage details to reference each image are included in the appropriate runbook for your type of deployment.

The *readme* file in the GitHub repository provides an overview of the Kubernetes project. For an overview of managing a Pega Platform in the Kubernetes environment of your choice, reference the Pega Community article *[Client-managed cloud](#)*.

Pega Platform 8.4: Supported Server Platform List

[Client Operating System and Browser Requirements](#) **are on a web page on the Pega Community website.**

[Mobile Platform Support](#) **information is also on a web page on the Pega Community website.**

IMPORTANT NOTES:

- The following Platform Options have all been tested by Pegasystems in at least one combination; however, not every combination of all of these options has been tested.

- Any compatible combination should work; but there may be specific setup or configuration requirements for a particular combination.

- Not all features may be available on all platforms.

- **Decision Strategy Manager (DSM)** supports all the platforms supported by Pega Platform – except for WebSphere "classic" on z/OS or WebSphere Liberty on z/OS.

- **Some Industry Applications have refinements on the list of platforms in this Guide.** For specific details, please reference the Installation Guides/Release Notes on Pega Community for the application in question.

Please contact your Pegasystems representative if you have questions about any option.

Server Hardware

IBM System p ("pSeries") or IBM Power Systems

IBM Mainframe System z ("zSeries") with zAAP, zIIP processor[1] or IFL (Integrated Facility

  for Linux)

Oracle Sun Server (SPARC and Intel processors)

Wintel (with Intel or compatible chip – includes IBM System x and Lenovo System X)

Cisco Unified Computing System (UCS)

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[1] Requires a minimum of one IBM System z Application Assist Processor (zAAP) or IBM System z Integrated Information Processor (zIIP). Consult the installation guide and PEGA COMMUNITY for the latest set-up options.

Decision Data Store

Decision Data Store (DDS) data sets in Pega Platform store your data in a Cassandra data store that is part of the platform. Cassandra is a distributed database that is scalable, highly available, and designed to manage big amounts of data.

NOTE: Cassandra data sources are *not* supported as a replacement for the main relational database for Pega Platform, but should only be used for DDS data sets.

When deploying Pega using containers on Kubernetes, you must specify an existing external Cassandra installation to connect to. When using the examples detailed in the Kubernetes deployment guide, you may configure an external Cassandra deployment to be automatically provisioned using Helm. Pega Platform can connect to **any Cassandra version higher than 2.1**.

By default, Cassandra is included as part of Pega Platform, and is accessed through the Decision Data Store dataset type. When deploying directly on Pega infrastructure without the use of containers, this embedded (internal) Cassandra may be used.

Embedded Cassandra versions	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
Cassandra 2.1.14	supported				
Cassandra 2.1.20		supported	supported	supported	
Cassandra 3.11.3			**DEFAULT** supported	**DEFAULT** supported	

When deploying DDS nodes, use either **Oracle JVM** or **OpenJDK JVM**. (The rest of the nodes in the Pega Cluster can run on any of the supported JVM versions documented in this guide.) Additionally, these DDS JVMs must be run on an AIX or Linux platform for best stability.

For deployments where a DDS node and other Pega nodes are running on the same machine, and you need to run the Pega nodes on an IBM JVM, you must also provide either a supported Oracle JVM or OpenJDK JVM on that machine. Once the additional JVM is installed, configure DDS to use it: set the Dynamic System Setting **dnode/cassandra_java_home** to point to the location of the Oracle or OpenJDK JVM. The DDS node on that machine will then use the Oracle or OpenJDK JVM instead of the IBM JVM. (On z/OS, Oracle or OpenJDK JVMs are not supported; in that case, the DDS node must be on an external system.)

Load Balancers

F5 BigIP versions 10.x.x, 11.x.x[2]

Beginning in Pega Platform, production systems may take advantage of high-availability features. Clients using this high-availability functionality *must* use a load balancer that supports:

- session affinity
- pool management (enable, disable, remove servers)
- server monitoring for crash detection

For details, please refer to the *High Availability* guide on Pega Community.

CyberArk

Beginning in Pega Platform version 8.3, you can integrate CyberArk password vault support into your system to use with your Pega Database. With CyberArk, you can store your IBM WebSphere database's passwords in a secure, central location that is independent from your Pega configuration.

NOTE: This support is only available for IBM WebSphere environments.

For configuration information, go to the Deploy Pega Platform page on Pega Community. Select the IBM Websphere Application server and the applicable database for your deployment and click the installation guide link.

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[2] Must include the Local Traffic Manager (LTM) module

A note on the charts: **GREEN** means "support added for this release."

Operating systems

	Pega 8.1 (Sept 30, 2018)	Pega 8.2 (March 22, 2019)	Pega 8.3 (August 13, 2019)	Pega 8.4 (February 25, 2020)	IMPORTANT NOTES
IBM AIX v7.1	supported	supported	supported	supported	
IBM AIX v7.2	supported	supported	supported	supported	
Red Hat Enterprise Linux v6	supported	supported	supported	supported	Pegasystems tests Linux on the Intel and zSeries ("zLinux" or "Linux on System z") platforms.
Red Hat Enterprise Linux v7	supported	supported	supported	supported	
SUSE Linux Enterprise Server 11	supported	supported	supported	supported	Pegasystems tests Linux on the Intel and zSeries ("zLinux" or "Linux on System z") platforms.
SUSE Linux Enterprise Server 12	supported	supported	supported	supported	
Oracle Enterprise Linux v7	supported	supported	supported	supported	
Oracle Solaris 10 (SPARC and Intel edition)	supported	supported	supported	supported	
Oracle Solaris 11 (SPARC and Intel edition)	supported	supported	supported	supported	
Microsoft Windows 2012	supported	supported	supported	supported	
Microsoft Windows 2016	supported	supported	supported	supported	
IBM z/OS v2.2	supported	supported	supported	supported	
IBM z/OS v2.3	supported	supported	supported	supported	

Important O/S Notes:

- The websites of Platform Options vendors may contain additional information about how they work with other hardware or software options on this list. If vendors state a particular

combination will not work or is not supported, that combination will not be supported by Pegasystems.

- Applications built on Pega Platform may not function correctly if run on platforms which are not approved for Pega Platform, although our experience shows that this is very rare.

- Prior versions of Pega Platform may not work with the most recent stack components, although our experience shows this is very rare.

Application Servers

	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
IBM WebSphere 8.5.5 (using IBM Java 8)	supported	supported	supported	supported	Beginning in Pega 7.1.9, IBM Java SE 8 is supported on WebSphere version 8.5.5.9 and later.
IBM WebSphere 9.0.0.x (Classic) (using IBM Java 8)	supported	supported	supported	supported	
IBM WebSphere Liberty (8.5.5, fixpack 6 or higher) (using IBM Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
IBM WebSphere Liberty v16.0.0.x (using IBM Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
IBM WebSphere Liberty v17.0.0.x (using IBM Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
IBM WebSphere Liberty v18.0.0.x (using IBM Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
IBM WebSphere Liberty v19.0.0.x (using IBM Java 8)				supported for WAR installations only	
Oracle WebLogic Server 12c R3 (12.1.3) (using Oracle Java 8)	supported	supported	supported	supported	
Oracle WebLogic Server 12.2.1 (using Oracle Java 8)	supported	supported	supported	supported	

Application Servers	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
JBoss Redhat EAP 6.4.x (using Java 8)	supported	supported	supported	supported	
JBoss Redhat EAP 7.0 (using Java 8)	supported	supported	supported	supported	
JBoss Redhat EAP 7.1 using Java 8)	supported	supported	supported	supported	
JBoss EWS (Enterprise Web Server) 3.0 (using Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
Pivotal tc Server 3.1 (using Oracle Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	The System Management Application (SMA) is *not* supported for this appserver.
Apache Tomcat 8.x (using Java 7 or 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	
Apache Tomcat 9.x (using Java 8)	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	

Important Application Server Notes:

- "Community Editions" of these application servers (such as JBoss or WebSphere) are in use by some clients. Clients choosing to deploy on these versions need to be self-sufficient in their support.

Relational Databases

Relational Databases	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
IBM DB2 for LUW v10.5	supported	supported	supported	supported	
IBM DB2 for LUW v11.1	supported	supported	supported	supported	
IBM DB2 for z/OS v11	supported	supported	supported	supported	
IBM DB2 for z/OS v12	supported	supported	supported	supported	
Oracle 11g R2	supported	supported	supported	supported	PRPC has been successfully deployed in Oracle RAC (Real Application Cluster) configurations, and Pegasystems supports this deployment mode. Future product plans may broaden RAC support to leverage the Oracle Clusterware High Availability API and to publish scalability benchmark data.
Oracle 12c	supported	supported	supported	supported	
Oracle 18c		supported	supported	supported	See important note below about Oracle's Release Plan.
Oracle 19c				supported	See important note below about Oracle's Release Plan.
PostgreSQL 9.4.x Community Edition	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
Postgres Plus Standard Edition (Enterprise DB) 9.4.x	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
PostgreSQL 9.5.x Community Edition	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
Postgres Plus Standard Edition (Enterprise DB) 9.5.x	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.

Relational Databases	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
PostgreSQL 9.6.x Community Edition	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
Postgres Plus Standard Edition (Enterprise DB) 9.6.x	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
Postgres 11	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	supported for WAR installations only	See important PostgreSQL notes below.
Microsoft SQL Server 2012	supported	supported	supported	supported	
Microsoft SQL Server 2014	supported	supported	supported	supported	
Microsoft SQL Server 2016	supported	supported	supported	supported	See important note below about setting the compatibility level.
Microsoft SQL Server 2017		supported	supported	supported	See important note below about setting the compatibility level.

Important Database Notes:

1. None of the "Express" or "Personal" versions of these databases are tested with the Enterprise version of Pega Platform.

2. PostgreSQL is only supported for the Tomcat webserver, or JBoss with WAR installations only.

3. Pega Platform does NOT support PostgreSQL implementations on zLinux.

4. PostgreSQL version 9.6.1 requires the latest PostgreSQL JDBC driver to avoid issues.

5. If you are using Microsoft SQL Server **2016** or **2017**, and you have a Report Definition that is filtering for any of the out-of-the-box date/time values, you may see that no values are returned. This is a known issue beginning in Microsoft SQL Server 2016 with rounding datetime vs. datetime2 values. Details:

   https://social.msdn.microsoft.com/Forums/sqlserver/en-US/de5dbf3e-8c95-40f4-9e31-b71f1f31983d/change-in-datetime2-implementation-in-sql-server-2016?forum=transactsql

This is a deliberate change in SQL 2016, which appears only if you have the compatibility set to **130**, which is the default. The short-term solution is to set the compatibility level to what it was for MSSQL 2014, which was **120**. (MSSQL 2014 does not have this issue.)

To set compatibility, use these commands:

```
ALTER DATABASE database_name
SET COMPATIBILITY_LEVEL=120
```

Any of your DBAs who have "alter" access on the Pega MSSQL 2016 or 2017 database can run these commands from the SQL Server Management Studio. (No reboot is required.)

6. Oracle's new database plan separates releases into two categories:
   - "Long Term Support" (LTS) releases, such as Oracle 19c
   - "Annual" releases, scheduled approximately yearly (e.g. Oracle 18c). Oracle's support plan for Annual releases is shorter: approximately a year. (Please see Oracle's [Release Schedule](#) and their [Lifetime Support Policy](#))

We anticipate most Pega clients will embrace the LTS releases and we will be certifying these Oracle database versions in the latest GA Pega release as we have in the past. The Annual releases, while short-lived, may provide immediate benefits for some clients as well, so we will be testing them and make commercially reasonable efforts to certify them when appropriate.

JDBC Drivers

Database	Java 8	Notes
Oracle	Ojdbc8.jar	For Oracle 11gR2, two Oracle driver versions have a bug which causes updates to fail in Pega Platform. Do not use these versions: • 11.1.0.6.0 • 11.1.0.7.0 For Oracle 12c, using the following version can cause synchronization to fail when adding an offline attachment: • 12.1.0.2.0 Instead, please use **version 12.2.0.1** or later.
MSSQL	Sqljdbc82.jar	Do not use v 3.0.1301.101, as this causes problems with Pega Platform internal system date values.
Db2 LUW	db2jcc4.jar	For details on the latest version of IBM Db2 LUW JDBC drivers, see http://www-01.ibm.com/support/docview.wss?uid=swg21363866
Db2 z/OS	db2jcc4.jar	For Db2 for z/OS, JDBC drivers are only available from the Db2 for z/OS product. Additionally, you need **db2jcc_license_cisuz.jar** in the same directory as db2jcc4.jar.

		When running WebSphere on z/OS (either Classic or Liberty) in Pega 7.2.1 or higher, the z/OS Db2 jar **db2jcc4.jar** must be at level **4.19.56** or higher (prior levels do not work).
PostgreSQL 9.5.x	latest version *(must be at least postgresql-9.4-1211.jre7.jar)*	
PostgreSQL 9.6.x	latest version *(must be at least postgresql- 42.2.2.jar)*	
Postgres 11	Latest version	
Microsoft JDBC Driver 6.0 for SQL Server and Azure	sqljdbc42.jar	

Important Notes for JDBC drivers:

- For better performance, **JDBC 4-compliant drivers** are required.

- **There are several very important properties which must be set in the JDBC URL for Db2, both LUW and z/OS.** Neglecting to set these can cause multiple odd errors. Please see the "Configure the database connection" information in the Install Guide for Db2 (or Db2 z/OS) for details on these properties.

Java Versions

Java Versions - Oracle	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
Java SE 8	supported	supported	supported	supported	

IMPORTANT NOTE REGARDING ORACLE JAVA:

Pega is committed to working with the latest and greatest technology so that our clients' applications are efficient, secure, and robust.

Oracle's new Java plan separates releases into two categories:
- "Long Term Support" (LTS) releases, scheduled approximately every three years (e.g. Java 8 and 11)

- "Feature" releases, scheduled approximately every six months (e.g. Java 9 and 10). Oracle's support plan for Feature releases is short: support ends for the last Feature release as soon as the next Feature version is released.

We anticipate most Pega clients will embrace the LTS releases and we will be certifying these Java versions in the latest GA Pega release as we have in the past. The Feature releases, while short-lived, may provide immediate benefits for some clients as well, so we will be testing them and make commercially reasonable efforts to certify them when appropriate.

Pega Infinity™ supports **Java 8.** We are currently testing **Java 11** and plan to support it in a future release. **Java 9** is out of support as of March 2018, and **Java 10** is out of support as of September 2018, so those versions are not being certified with Pega Infinity. For additional details, please see http://www.oracle.com/technetwork/java/eol-135779.html .

Java Versions - IBM	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
Java SDK 8 (WebSphere Classic and WebSphere Liberty)	supported	supported	supported	supported	See Application Server section of this document for supported WebSphere versions.

IMPORTANT NOTE REGARDING IBM JAVA:

IBM published a note about their response to Oracle's new Java release schedule. Please see https://developer.ibm.com/blogs/java-licensing-is-changing-and-you-could-be-affected/ (the old note for this topic was on the "Developerworks" site, which is being sunset by IBM)

IBM plans to provide "community builds" for their IBM Java 9 and 10 releases, and then will provide a full IBM implementation of the SDK for the next LTS version, which they will call "Java vNext."

Pega Infinity™ supports **IBM Java SDK 8.** We will test **IBM Java 11** when it becomes available, and plan to support it in a future release. As **IBM Java 9** and **Java 10** are "community versions," those versions are not being certified with Pega Infinity.

Java Versions - OpenJDK	Pega 8.1	Pega 8.2	Pega 8.3	Pega 8.4	IMPORTANT NOTES
OpenJDK 1.8	supported	supported	supported	supported	This has not been tested on z/OS.
OpenJDK 1.11		Supported for Kubernetes only	Supported for Kubernetes only	Supported for Kubernetes only	Supported *only* for the Docker/Kubernetes installation

IMPORTANT NOTE REGARDING OPENJDK:

As the release schedules for Oracle Java and OpenJDK are the same, Pega Infinity™ supports **OpenJDK 1.8.** We are currently testing **OpenJDK 11** and plan to support it in a future release. (See *Important Note Regarding Oracle Java* above.)

Notes on Java Virtual Machines (JVMs)

Pega Platform requires Java to be installed on the application server.

1. Pega Platform requires the use of the Java 8 or Java 11 specification (when available) (depending upon the version of Pega Platform, as shown in the charts above). Each of the Java vendors will routinely issue maintenance that addresses security, performance, and stability issues in the JDK. Pegasystems recommends that this maintenance be applied on a periodic basis; *clients' JDKs should never be more than a year behind current JDK maintenance levels*.

2. Pega Platform requires 64-bit JVMs on the platforms your application server supports. We no longer support a 32-bit JVM. Please refer to the support matrix of your application server, and choose one of the Java versions supported by both your application server and Pega Platform.

3. Pega recommends that your verbose GC options be enabled, even in production (this adds negligible overhead).

4. For WebSphere, use the latest approved JVM provided by IBM for that version and patch level of the application server (unless it is specifically stated that it does not run with Pega Platform). For IBM WebSphere Network Deployment, the Deployment Manager, the Node Agent, and the application servers must all be on the same IBM JDK.

5. For WebLogic, Pega has tested both "Hotspot" (Sun/Oracle) JVM and JRockit; either may be used.

6. Tomcat does not bundle a JVM in its application. Pega recommends using either Oracle or IBM Java 8 or Java 11, at the Java vendor's latest patch level (unless it is specifically stated that that patch level does not run with Pega Platform).

7. JBoss does not bundle a JVM in its application. Pega recommends Oracle Java 8 or Java 11, at the latest level (unless it is specifically stated that that level does not run with Pega Platform).

8. The amount of additional memory required for DSM services (what is required *in addition to* the recommendations for Pega Platform, found in the Install Guides) will depend upon your application's use of ADM and VBD. Contact Pega Support for specialized sizing recommendations.

9. Per IBM, when using the Windows platform, the IBM JDK will only support the WebSphere application server. On the Windows platform, use an Oracle JDK for all application servers other than WebSphere.