Abstract

These release notes contain important information related to Red Hat JBoss Enterprise Application Platform 7.0.
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Compatibility and Interoperability

- EJB, JMS, and WS clients will be compatible across all minor and patch releases of JBoss EAP 7.
- A JBoss EAP 7-managed domain administrator can manage JBoss EAP 6 domain hosts and servers.
- A JBoss EAP 7 domain controller can manage other JBoss EAP 7 hosts in a managed domain as long as the domain controller runs the same or a more recent version than the rest of the domain.
- Interoperability of remote EJB invocations between JBoss EAP 5 or JBoss EAP 6 on one side and JBoss EAP 7 on the other side exists if you run the latest version of JBoss EAP 5 or JBoss EAP 6.
  The following scenarios are possible:
  - Method invocation on remote EJBs through RMI, IIOP, or over SOAP web services.
  - Security context propagation.
  - Transaction propagation.
- Remote EJB calls between JBoss EAP 7 and JBoss EAP 5 are now possible over IIOP. Between JBoss EAP 6 and JBoss EAP 7, the invocations are also possible via EJB API calls using JNDI.
- JBoss EAP 5 interoperability is supported using web services in the release.
- JBoss EAP 7 provides messaging consolidation and backwards compatibility with JBoss EAP 6. The JBoss EAP 6 HornetQ codebase was donated to the Apache ActiveMQ project, and the HornetQ community joined to build a next-generation messaging broker. This was materialized in the first major release of the ActiveMQ Artemis project. ActiveMQ Artemis includes many new features, and also retains protocol compatibility with the HornetQ broker. JBoss EAP 7 includes this new exciting project as its JMS broker, and due to the protocol compatibility, it fully replaces the HornetQ project.

JBoss EAP 7 Management

- JBoss EAP 7 includes an updated management console user interface, easier navigation, and enhanced support for large-scale domain configurations.
- The JBoss EAP product version is displayed in the lower-left corner of the management console. Click the link to view profile, version, HAL version, and core version.
- Using the management CLI, administrators can see a history of configuration changes made by other authorized administrators.
- Enhanced logging management includes the ability to view the available log files on a server, define custom formatters for logs in the management console, and configure logging at the subsystem level in the management CLI.
- You can manage a server using the management CLI without having to start the server. This offline management CLI works similar to the admin-only mode but does not require launching the server and using a TCP port. The CLI embeds the server and launches it directly in
admin-only mode.

- If the `picketlink-federation` subsystem is enabled, it can be configured using the management console.

- An administrator can generate an installation summary of standalone and managed domain server instances using the management CLI.

- You can create your own profile by cloning existing JBoss EAP profiles (default, full, ha, full-ha) from the management CLI or the management console.

- The management console home page includes the **Take a Tour** link. Click this link to take a tour of the updated management console.

- An administrator can use the `resolve-expressions` parameter in the management CLI to resolve the expressions of returned attributes to their value on the server.

- In a managed domain, an administrator can create a hierarchy of profiles. This allows the creation of a base profile with common extensions that can be inherited by other profiles.

**NOTE**

For more information about the management console, see the Management Console section in the JBoss EAP Configuration Guide.

For more information about the management CLI, see the JBoss EAP Management CLI Guide.

**Highly Scalable Web Server (Undertow)**

- The web server and servlet implementation has changed from JBoss Web to Undertow. Undertow is a modern NIO web server designed for maximum throughput and scalability, including environments that exceed a million connections. It supports nonblocking and blocking handlers, traditional and asynchronous servlets, and JSR-356 WebSocket.

- Using Undertow, you can configure JBoss EAP 7 to function as a multi-platform load balancer.

- You can share HTTP sessions between multiple WAR modules in the same EAR.

- Undertow includes handlers that replace the functionality provided by JBoss Web valves.

**NOTE**

For more information, see Configuring the Web Server (Undertow) in the JBoss EAP Configuration Guide.

**Java EE 7**

JBoss EAP 7 implements the Java EE 7 Full Platform and Web Profile standards, including:

- Batch 1.0

- JSON-P 1.0
Concurrency 1.0
WebSocket 1.1
JMS 2.0
JPA 2.1
JCA 1.7
JAX-RS 2.0
JAX-WS 2.2
Servlet 3.1
JSF 2.2
JSP 2.3
EL 3.0
CDI 1.2
JTA 1.2
Interceptors 1.2
Common Annotations 1.1
Managed Beans 1.0
EJB 3.2
Bean Validation 1.1

Java SE 8
JBoss EAP 7 requires Java SE 8, and JBoss EAP 7 has been tested with OpenJDK 8, Oracle JDK 8, IBM JDK 8, and HP JDK 8.

Clustering
New optimized session replication and single sign-on implementation using Undertow.
New optimized distributed @Stateful EJB caching implementation.
HA singleton deployments (for failover use cases similar to JBoss EAP 5. For example, EJB deployments enabled in one node in cluster).
New API for HA singleton services.

JCA and Datasources
The enhanced JCA connection manager includes the lazy connection manager extensions.
- The `datasources` and `resource-adapters` subsystems allow you to set capacity policies.

- Disabling enlistment tracing in IronJacamar is fully supported.

- You can execute JDBC statements when a JDBC connection is obtained from a pool and returned to the pool.

- It is now possible to choose a particular `ManagedConnectionPool` implementation class for each datasource and each connection definition of a resource adapter.

- You can configure the fairness setting of the `Semaphore` class using the `datasources` and `resource-adapters` subsystems. This class is used to manage the connection pools in JCA, which provides a performance benefit in some use cases where the order of leasing connections is not required.

**NOTE**

For more information, see Java Connector Architecture (JCA) Management and Datasource Parameters in the JBoss EAP Configuration Guide.

Java EE Security Manager

The provisioning of permissions to deployments is based on the Java EE 7 specification, that is, `META-INF/permissions.xml` in the top level deployment. You can tweak the permissions by using the custom deployment descriptor `META-INF/jboss-permissions.xml` file, which can also be defined for submodules of the deployment. For more information about configuring permissions, see How To Configure Server Security for JBoss EAP.

Modularity Improvements

- You can display module dependencies using the management API.

- Index is generated automatically for static modules. For applications to use Java EE components located in static modules, the static module does not have to include a pre-generated annotation index.

**NOTE**

For more information, see the Modules section in the JBoss EAP Configuration Guide.

Transaction Enhancements

- An `XAResource` that is part of an XA transaction and implements `XAResourceWrapper` will remain synchronized if the XA resource is committed before a transaction manager crashes. This removes the need for manual intervention after the transaction manager restarts.

**NOTE**

This feature does not work for third-party resource managers that do not implement `XAResourceWrapper`. This specifically does not work for resource manager of WebSphere MQ.
Server Suspend Mode/Graceful Shutdown

- The new server suspend mode in JBoss EAP 7, once activated, rejects new requests but allows existing ones to complete. When the suspension process completes, the server can either be stopped without aborting in-flight transactions; left in suspended state while maintenance is performed; or returned to the running state where new requests are again allowed. (Excluding Messaging and Transactions; including Web, EJB, mod_cluster, Batch, Naming, and partially for EE Concurrency).

NOTE

For more information, see Suspend and Shut Down JBoss EAP Gracefully in the JBoss EAP Configuration Guide.

Port Reduction

JBoss EAP 7 now has almost all protocols multiplexed over two ports. The two ports include:

- a management port (HTTP/JSON Management, HTTP Upgraded Remoting - Native Management & JMX, management console).

IIOP Implementation

- The IIOP implementation changed from JacORB to a downstream branch of OpenJDK ORB. This change should lead to better interoperability with the JVM ORB and the Java EE RI.

Batch Enhancements

Batch enhancements include:

- improvements in monitoring, such as the ability to list active jobs, finished jobs, and job execution steps.
- the ability to start, stop, and resume batch jobs using management API.
- the ability to restart batch jobs that failed because of a server failure. It can reset (i.e., ignore/log) the previous status so that the batch job can be executed on another server in the domain server group.

Migration CLI Operations for the discontinued subsystems of JBoss EAP 6

- To help users migrating from old subsystems in JBoss EAP 6, such as JBoss Web, JacORB, and HornetQ, a set of management operations that can convert the old configuration to the new subsystem equivalent has been introduced. Because these operations migrate the underlying management resource model, old CLI scripts or custom provisioning systems can also take advantage of these.

NOTE

For more information, see Management CLI Migration Operation in the JBoss EAP Migration Guide.
Changes to Delivery of JBoss EAP Natives and Apache HTTP Server

JBoss EAP 7 natives are delivered differently in this release than in the past. Some now ship with the new Red Hat JBoss Core Services product, which is a set of supplementary software that is common to many of the Red Hat JBoss middleware products. The new product allows for faster distribution of updates and a more consistent update experience. The JBoss Core Services product is available for download in a different location on the Red Hat Customer Portal.

- The following table lists the differences in the delivery methods between the releases.

<table>
<thead>
<tr>
<th>Package</th>
<th>JBoss EAP 6</th>
<th>JBoss EAP 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIO Natives for Messaging</td>
<td>Delivered with the product in a separate &quot;Native Utilities&quot; download</td>
<td>Included within the JBoss EAP distribution. No additional download required.</td>
</tr>
<tr>
<td>Apache HTTP Server</td>
<td>Delivered with the product in a separate &quot;Apache HTTP Server&quot; download</td>
<td>Delivered with the new JBoss Core Services product</td>
</tr>
<tr>
<td>mod_cluster, mod_jk, isapi, and nsapi connectors</td>
<td>Delivered with the product in a separate &quot;Webserver Connector Natives&quot; download</td>
<td>Delivered with the new JBoss Core Services product</td>
</tr>
<tr>
<td>JSVC</td>
<td>Delivered with the product in a separate &quot;Native Utilities&quot; download</td>
<td>Delivered with the new JBoss Core Services product</td>
</tr>
<tr>
<td>OpenSSL</td>
<td>Delivered with the product in a separate &quot;Native Utilities&quot; download</td>
<td>This was dropped in JBoss EAP 7</td>
</tr>
<tr>
<td>tcnatives</td>
<td>Delivered with the product in a separate &quot;Native Components&quot; download</td>
<td>This was dropped in JBoss EAP 7</td>
</tr>
</tbody>
</table>

- You should also be aware of the following changes:

  - Support was dropped for mod_cluster and mod_jk connectors used with Apache HTTP Server from Red Hat Enterprise Linux RPM channels. If you run Apache HTTP Server from Red Hat Enterprise Linux RPM channels and need to configure load balancing for JBoss EAP 7 servers, you can do one of the following:

    - Use the Apache HTTP Server provided by JBoss Core Services.

    - You can configure JBoss EAP 7 to act as a front-end load balancer. For more information, see Configuring JBoss EAP as a Front-end Load Balancer in the JBoss EAP Configuration Guide.

    - You can deploy Apache HTTP Server on a machine that is supported and certified and then run the load balancer on that machine. For the list of supported configurations, see Overview of HTTP Connectors in the JBoss EAP 7 Configuration Guide.

  - Support was dropped for mod_cluster and mod_jk connectors used with Apache HTTP Server from the HP-UX Web Server Suites. If you run Apache HTTP Server from HP-UX
Web Server Suites and need to configure load balancing for JBoss EAP 7 servers, you can do one of the following:

- You can configure JBoss EAP 7 to act as a front-end load balancer. For more information, see Configuring JBoss EAP as a Front-end Load Balancer in the JBoss EAP Configuration Guide.

- You can deploy Apache HTTP Server on a machine that is supported and certified and then run the load balancer on that machine. For the list of supported configurations, see Overview of HTTP Connectors in the JBoss EAP Configuration Guide.

- You can find more information about JBoss Core Services in the Apache HTTP Server Installation Guide.
CHAPTER 2. TECHNOLOGY PREVIEW

WARNING

The following configurations and features are provided as Technology Preview only. They are not supported for use in a production environment, and may be subject to significant future changes. See this note on the Red Hat Customer Portal on the support scope for Technology Preview features.

Modern Enterprise Web Applications with Server-side JavaScript on JVM (Technology Preview only for JBoss EAP 7.0)

- JBoss EAP 7 allows you to write server-side JavaScript (using JDK 8 Nashorn capabilities) to quickly develop REST endpoints that can pull in CDI beans, perform JNDI lookups, and invoke JPA Entity Beans. The Undertow project provides this capability.

PowerShell Scripts

The PowerShell scripts are available for Technology Preview only and not supported. PowerShell scripts are designed to work correctly with version 2 and newer, because JBoss EAP is supported on Windows Server 2008 R2 Enterprise x86_64 and Windows Server 2012 R2 Standard x86_64.

- By default, Windows Server 2008 R2 Enterprise x86_64 uses PowerShell version 2. Newer version could be installed.

The path of the PowerShell scripts is `EAP_HOME/bin` and you can use the scripts when you want to use modern scripting language on Windows.

Undertow provides support for the HTTP/2 standard

Undertow provides support for the HTTP/2 standard (Technology Preview only for JBoss EAP 7.0). HTTP/2 reduces latency by compressing headers and multiplexing streams over the same TCP connection. It also supports the ability for a server to push resources to the client before it has requested them, leading to faster page loads.

Clustered Singleton MDB

The clustered singleton MDB is a Technology Preview feature in JBoss EAP 7. When an MDB is identified as a clustered singleton and deployed in a cluster, it will always be active only on one node at a time. When the server node fails or is shut down, the clustered singleton MDB is activated on a different node and starts consuming messages on that node.

Datasource Templates in Management Console

The datasource templates provided for creating new datasources in the management console is a Technology Preview feature in JBoss EAP 7.

JCA and Datasources

JBoss EAP 7 supports a `DistributedWorkManager` implementation based on the JGroups project. This is a Technology Preview only.

Transaction Monitoring
JBoss EAP 7 supports transaction monitoring. This is a Technology Preview only. The following two new attributes are added to track the transactions:

- **number-of-system-rollback**: The number of transactions that were rolled back due to an internal system error.
- **average-commit-time**: The average time, in nanoseconds, to commit a transaction. These statistics are available only through the standard JMX client.

**NOTE**
A small number of stuck transactions can skew the overall average-commit-time.

**Configuring Certain Subsystems in the Management Console**
Configuring the following subsystems using the management console is a Technology Preview feature in JBoss EAP 7:

- IO
- Remoting
- BeanValidation
- Jaxrs
- Jdr
- Jsf
- Jsr77
- Naming
- Pojo
- RequestController
- Sar
- SecurityManager
- Singleton
- Weld

**Batch processing (JSR 352) handled by JBeret**
Batch processing (JSR 352) is handled by JBeret. JBeret has the following three helper annotations that may become part of the batch specification in a future release.

- `@org.jberet.cdi.JobScoped`
- `@org.jberet.cdi.StepScoped`
- `@org.jberet.cdi.PartitionScoped`
  These annotations are in the `org.jberet.core` module, which is a private module. These specific annotations are considered only a Technology Preview. In a future release these annotations may be moved to a supported public module. As of now, using these annotations will result in a warning message being logged indicating the `org.jberet.core` module is a private module.

Server-Sent Events in Java (SSE)
An implementation of the Server-Sent Event Model in Java is provided for customers working with mobile and rich clients. This includes only the server implementation. This is a Technology Preview only.

Microsoft Azure Discovery Protocol
The JGroups `AZURE_PING` discovery protocol for Microsoft Azure has undergone minimal testing and is available for Technology Preview only in JBoss EAP 7. For more information, see JBEAP-3327 and the `jgroups-azure` GitHub repository.

JBoss EAP Container Image
The JBoss EAP base image for containers, `registry.access.redhat.com/jboss-eap-7-tech-preview/eap70`, distributed through the Red Hat Docker Registry is Technology Preview and is intended for development use only. It is NOT supported for use in production. For more details on the JBoss EAP container image, see Using the Red Hat JBoss Enterprise Application Platform Docker Image.
CHAPTER 3. UNSUPPORTED AND DEPRECATED FUNCTIONALITY

3.1. UNSUPPORTED FEATURES

Support for some technologies was removed due to the high maintenance cost, low community interest, and much better alternative solutions. The following features are not supported in JBoss EAP 7.

JAX-RPC

- JAX-RPC is no longer supported. JAX-WS offers a more accurate and complete solution.

JSR 88

- JSR 88 had limited adoption.

JBoss Web Services

- Bean Validation 1.1 interceptors and features
- JASPI authentication

Messaging (ActiveMQ Artemis)

- AMQP, Stomp, REST, MQTT, and OpenWire protocol
- Netty over HTTP and Netty Servlet transport
- OIO (Old Java IO) connectors/acceptors type
- Vert.x, AeroGear, Spring and Jolokia integration
- Dynamic queue creation
- Chain cluster
- Using ActiveMQ Artemis Management using JMX
- Use database as shared JDBC store
- Scaling Down in cluster
- Colocated HA topology configured using http-connector/http-acceptor or using replication-colocated/shared-store-colocated
- Configuring multiple cluster connections

3rd JMS Broker Certification

- Generic JMS resource adapter

Management Console

- All flush operations for connection pools
- Red Hat Access integration is dropped in JBoss EAP7

**Resteasy 3**
- jose-jwt
- resteasy-crypto
- resteasy-yaml-provider

**Command Line Interface (CLI)**
- CLI preferences in `.jbossclirc` file
- Simplify working with complex attributes
- CLI tab-completion for attribute name path syntax
- Connection controller alias in `jboss-cli.xml`
- RBAC-based tab completion for the CLI commands

**Clustering**
- Cross-site replication
  - Declarative channels, channel forks, fork protocol stacks and custom JGroups protocols in the `jgroups` subsystem
- Public API for JGroups channel creation
- Runtime management metrics for JGroups channels
- Ability to configure thread pools per protocol stack in the `jgroups` subsystem
- Ability to configure thread pools per cache container in the `infinispan` subsystem

**Transactions**
- Compensable transactions
- REST transactions

**Add user**
- Enable or disable users using `add-user` utility

**Hibernate**
- Generics in Hibernate native API

**PicketLink**
- PicketLink IDM
- PicketLink IDM subsystem
**CHAPTER 3. UNSUPPORTED AND DEPRECATED FUNCTIONALITY**

- STS Client Pooling feature of PicketLink Federation
- PicketLink JEE (CDI Security)

**Natives**

- Support was dropped for mod_cluster and mod_jk connectors used with Apache HTTP Server from Red Hat Enterprise Linux RPM channels.
- Support was dropped for mod_cluster and mod_jk connectors used with Apache HTTP Server from the HP-UX Web Server Suites.
- OpenSSL was dropped in JBoss EAP 7
- `tcnatives` was dropped in JBoss EAP 7

**NOTE**

For more information, see Changes to Delivery of JBoss EAP Natives and Apache HTTP Server.

**Undertow**

- WebDAV functionality is not provided in JBoss EAP 7. In JBoss EAP 7, to add the WebDAV functionality, you need to implement the servlet, which implements the WebDAV functionality.

**ORB**

- JacORB features

### 3.2. DEPRECATED FEATURES

Some features have been deprecated with the release of JBoss EAP 7. This means that no enhancements will be made to these features, and they may be removed in the future, usually the next major release.

Red Hat will continue providing full support and bug fixes under our standard support terms and conditions. For more information about the Red Hat support policy, see the Red Hat JBoss Middleware Product Update and Support Policy article located on the Red Hat Customer Portal.

For details of which features have been deprecated, see the JBoss Enterprise Application Platform Component Details located on the Red Hat Customer Portal.

- All PicketLink modules, including Federation, are deprecated in JBoss EAP 7, which means that they may be removed in future versions of JBoss EAP. JBoss EAP 7 still supports PicketLink Federation.

- `resteasy-jettison-provider` is deprecated in JBoss EAP 7. For more information, see RESTEasy Jettison JSON Provider Changes in the JBoss EAP Migration Guide.
CHAPTER 4. KNOWN ISSUES FOR THE 7.0 RELEASE

Security Manager

JBEAP-408 - Security manager’s maximum-permissions setting does not work

The configuration of an empty security manager maximum set leads to AllPermission being used. If you deliberately configure an empty set, then you are trying to establish an empty permission collection to block any deployments that have declared permissions. The default AllPermission that is assigned forbids this scenario and leads to any declared permission being accepted by the subsystem.

It prevents from blocking deployments that have declared security permissions. There might be a policy to block these deployments and this is not allowed in the current behavior.

Workaround

You can verify if deployments have permissions in META-INF/permissions.xml and simply not deploy them instead of relying on the subsystem to perform this check. Deployments that require security permissions are not deployed.

JBEAP-2770 - FilePermission for XNIO and Marshalling modules are required for Remoting to run with security manager

Security

JBEAP-3997 - Single logout does not fully work on distributed PicketLink Identity Provider

Global Logout (GLO) does not fully work on a distributed PicketLink Identity Provider (IDP) under certain circumstances, for example, if the sticky sessions feature is not used on the load balancer for an IDP application or a node with an IDP that you currently use fails before GLO. If you use different nodes with an IDP for logging in or out from service providers, you can remain logged in at several service providers after GLO, because the list of GLO participants is limited to the IDP where the GLO request was sent.

Domain Management

JBEAP-4125 - RBAC: The two kinds of non-addressability

Some resources are non-addressable to server-group and host scoped roles in order to provide a simplified view of the management model to improve usability. This is distinct from resources that are non-addressable to protect sensitive data.

For server-group scoped roles this means that resources in the profile, socket binding group, deployment, deployment override, server group, server config, and server portions of the management model will not be visible if they are not related to the server-groups specified for the role.

For host-scoped roles this means that resources in the /host=* portion of the management model will not be visible if they are not related to the server groups specified for the role.

However, in some cases, this simplified view can hide information that, while it is outside the scope of what the user is managing, can provide guidance to the user as to a course of action. An example of this is JBEAP-4160 - RBAC: Unable to deploy the same deployment that was already deployed by user from different server-group scope.

In a future release, some of these non-addressable resources might be changed to be addressable but non-readable. This will not affect the security of the server because they were not non-addressable for security reasons. Red Hat recommends that you do not rely on the non-addressability
of resources to hide information unless the non-addressability is defined in a sensitivity constraint.

**JBEAP-4434 - cannot start server with configuration file from EAP 6.4.7 and above**

Change the value of the xmlns attribute on the root xml element to `xmlns="urn:jboss:domain:1.7"` before trying to use it with JBoss EAP7. This should work fine unless your configuration includes items added in the 1.8 version of the schema. Those items are not expected to be commonly used.

**JBEAP-4227 - Reorder JBoss LoginModules via CLI command.**

**Undertow**

**JBEAP-4255 - Add trace logging to the security constraint processing**

This issue can make debugging security issues difficult since important information may not be logged on the instance’s log files.

**Workaround**

The only known workaround at the moment is to use Byteman to try and inject the missing logging statements. For more information, see [https://access.redhat.com/solutions/31283](https://access.redhat.com/solutions/31283).

**JBEAP-2263 - Invalidating a session of an SSO on a different node than where the session was created does not logout the user**

**JBEAP-4425 - EAP 7 HTTP keep-alive performance drop compared to EAP 6.4.7 for default standalone.xml configuration and high number of clients**

**JBEAP-4413 - Undertow mod_cluster: Multiinterface box: Manager-Address always contains hostname**

**JBEAP-4256 - Add trace logging to the SSO code**

In a situation where debugging an SSO issue is required, its resolution may be harder as some statements may not be logged that would help in easier resolution.

**Workaround**

The only workaround at the moment is to use Byteman to try and inject the missing logging statements. For more information, see [https://access.redhat.com/solutions/31283](https://access.redhat.com/solutions/31283).

**Logging**

**JBEAP-4101 - LogContexts are not removed for ear subdeployments**

**JPA/Hibernate**

**JBEAP-1605 - Hibernate Validator cannot introspect Annotated Parameterized Types from method parameters using IBM JDK**

An issue was identified in the IBM JVM implementation, which makes it impossible to introspect annotated parametrized types from method parameters using reflection when running on an IBM JVM. This affects Hibernate Validator, the Bean Validation implementation in JBoss EAP, in a way that custom validation constraints based on type-use annotations on method parameters will not work. For example:

```java
public void addSomeInterestingStrings(List<@Interesting String> strings)
```
Assuming that @Interesting is declared as a validation constraint, this validation constraint will not be applied correctly when validating the "strings" argument. This is an issue in the JVM implementation, was reported to IBM and will be fixed in a future release of IBM Java. This does not affect other JVM implementations.

**JBEAP-3707 - Oracle JDBC driver cannot handle entities with a one-character name in some cases**

A bug was identified in Oracle JDBC driver 12.1.0.2, which causes an exception when trying to create a PreparedStatement for a table whose name contains only one character. This is an issue in the JDBC driver, was reported to Oracle and will be fixed in a later version of the driver.

**Workaround**

A workaround is to not use tables with only one character in their name or to quote the name.

**JBEAP-3993 - naming context is not setup when starting the persistence unit**

**JBEAP-4475 - HHH-5393: Repeated Column in mapping when using MapKeyColumn**

**JBEAP-4179 - HHH-10679: Subselect not used when batch loading by ID**

**Quickstarts**

**JBEAP-4500 - Quickstart ejb-multi-server intermittently fails to deploy with ERROR MSC000001**

**Messaging (ActiveMQ Artemis, JMS)**

**JBEAP-4407 - Consumer crashes with IndexOutOfBoundsException when reading large messages from imported journal**

If ActiveMQ Artemis journal was imported using the `import-journal` CLI operation and the journal contains large messages then consumer receiving those large messages will receive:

```java
java.lang.IndexOutOfBoundsException: readerIndex(22) + length(409600) exceeds writerIndex(3580): UnpooledHeapByteBuf(ridx: 22, widx: 3580, cap: 3580)
at io.netty.buffer.WrappedByteBuf.readBytes(WrappedByteBuf.java:511)
...
```

**Workaround** The workaround is to use JMS Bridges. For more information, see JBoss EAP Migration Guide.

**JBEAP-3998 - Live does not become active after failback if you use replication journal**

If you use replication journal, there is a risk that the live server does not become active after failback.

**JBEAP-4225 - Possible lost message over Failover/Failback using regular JMS Transactions**

**JBEAP-3848 - Artemis Testsuite PagingTest#testDeletePhysicalPages fails**

**JBEAP-3675 - Redistribution loses large messages when server with HA is restarted**
JBEAP-2946 - Exception on subscriber during failback on replication

If you use replication journal with large messages, consumer may get the following exception, which causes its failure:

```java
00:31:52.730 Thread-535 ERROR [org.jboss.qa.hornetq.apps.clients.SubscriberClientAck:207] Exception was thrown during receiving messages:
java.lang.IndexOutOfBoundsException: readerIndex(22) + length(409600) exceeds writerIndex(3580): UnpooledHeapByteBuf(ridx: 22, widx: 3580, cap: 3580)
at io.netty.buffer.WrappedByteBuf.readBytes(WrappedByteBuf.java:511)
at org.apache.activemq.artemis.core.buffers.impl.ChannelBufferWrapper.readSimpleStringInternal(ChannelBufferWrapper.java:86)
at org.apache.activemq.artemis.core.buffers.impl.ChannelBufferWrapper.readNullableSimpleString(ChannelBufferWrapper.java:68)
at org.apache.activemq.artemis.reader.TextMessageUtil.readBodyText(TextMessageUtil.java:37)
at org.apache.activemq.artemis.jms.client.ActiveMQTextMessage.doBeforeReceive(ActiveMQTextMessage.java:112)
at org.apache.activemq.artemis.jms.client.ActiveMQMessageConsumer.getMessage(ActiveMQMessageConsumer.java:204)
at org.apache.activemq.artemis.jms.client.ActiveMQMessageConsumer.receive(ActiveMQMessageConsumer.java:119)
at org.jboss.qa.hornetq.apps.clients.SubscriberClientAck.receiveMessage(SubscriberClientAck.java:326)
at org.jboss.qa.hornetq.apps.clients.SubscriberClientAck.run(SubscriberClientAck.java:169)
Exception in thread "Thread-535" java.lang.RuntimeException: Fatal exception was thrown in subscriber. Subscriber for node: 127.0.0.1
```

Clustering

JBEAP-4386 - session.invalidate() behaviour not conform Servlet specification in HA profile

JBEAP-3954 - EJB Invocation failed on component LocalStatefulSB: TimeoutException: Replication timeout for X

JBEAP-3946 - TimeoutException: Unable to acquire lock after 15 seconds in repl-async stress tests

JBEAP-3926 - ArrayIndexOutOfBoundsException in EJB client in 2-clusters EJB invocation graceful shutdown tests
JBEAP-3779 - Error executing command PrepareCommand/GetKeyValueCommand due to replication timeout

JBEAP-3696 - TimeoutException: Replication timeout when handling request

JBEAP-3583 - Exceptions in 2-clusters EJB invocation graceful shutdown tests

JBEAP-2155 - EJB lookup fails with "No cluster context available"

JBEAP-794 - WARN ISPN000197: Error updating cluster member list at the boot up

JBEAP-444 - WFLYEJB0467: The request was rejected as the container is suspended during server shutdown

JBEAP-4391 - Mutable session variables do not replicate correctly using non-tx session cache

JBEAP-4128 - NPE during Session.requestDone(...) when using <transaction mode="NONE">

</transaction>

Localization
JBEAP-4350 - fr_FR Installer - All strings 'Port Number' should be placed before 'ajp, http, ...' in French in each page.

JBEAP-4336 - ja_JP Installer - Unlocalized 'Quickstarts' page and title name.

JBEAP-4038 - zh_CN Installer - String 'For the list of supported drivers, please visit this link.' displayed as unreadable code or square box in Configure Runtime -> JDBC Driver Setup page.

JBEAP-4037 - ALL_LANG Installer - Page title 'Installation Overview' is unloclaized in Installation Overview page.

JBEAP-4010 - ALL_LANG Installer - Unlocalized strings in Validation warning dialog of Admin User Creation page.

JBEAP-4009 - zh_CN, ja_JP Installer - Chinese and Japanese items displayed as square box in the select language dialog when logged in OS as Chinese or Japanese locale.

Installer
JBEAP-4219 - Shortcuts are not generated by automatic installation script installation

JBEAP-3724 - Unfriendly behavior of jboss-cli and installer.jar on HP-UX boxes

JBEAP-1404 - IOException on Installation quit on Windows

EJB
JBEAP-4167 - Server is unable to invoke @Timeout method after 10 methods are called on Asynchronous bean on IBM JDK

JBEAP-3871 - EJBs accessible too early (spec violation)

JBEAP-3665 - RollbackException is not propagated from remote EJB client

JBEAP-3448 - SessionSynchronization callbacks allow concurrent access to SFSB

JBEAP-165 - Possible trouble of exception cause during error of 2PC

Transactions
JBEAP-4036 - "number-of-application-rollbacks" statistic counted multiple times during single rollback

JBEAP-2833 - Default transaction timeout is not applied for EJB bean when set for second time

JBEAP-1913 - Can’t define absolute path for object store location

JBEAP-3314 - Fix transaction recovery failures involving remote EJB resource

Transaction recovery operations can fail if they involve remote EJB resources that may have crashed. This issue occurs when a connection breaks down between the server and the client. Specifically, when the client crashes and is restarted, the server and the client will not automatically communicate with each other. In such scenarios, the server will not know that the client has restarted, effectively meaning that the EJB tx recovery process will not know, which EJB nodes to communicate with.

Management CLI
JBEAP-3563 - jconsole "JBoss EAP CLI" tab not loading when using remote

JBEAP-4415 - CLI: Unable to set mod_cluster cipher-suite on Windows

JBEAP-4412 - jboss-cli.bat: Setting keystore-path in a new security-realm interprets \ (backslash) in Windows paths

JBEAP-3724 - Unfriendly behavior of jboss-cli and installer.jar on HP-UX boxes

RESTEasy
JBEAP-2963 - RESTEasy-Spring is unable to set mediaTypeMappings in ResteasyDeployment by bean settings

JBEAP-3725 - Log level of error during request on non-existent REST end-point

Patching
JBEAP-2669 - Installing CP over one-off fails if the modules patched by the one-off are not patched in the CP

Remoting
JBEAP-2017 - Endpoint can be closed before doConnect tasks finished causing AbstractHandleableCloseable.close to wait forever

JBEAP-3602 - Infinite wait in AbstractCloseableHandleable

Management Console
JBEAP-3940 - It is not possible to add deployment scanner in web console

You can add this using the management CLI:

/subsystem=deployment-scanner/scanner=new-scanner:add(path=new_deployment_dir,relative-to=jboss.server.base.dir,scan-interval=5000)

JBEAP-2821 - Remove Test connection button from create datasource wizard due to incomprehensible behavior caused by new need to reload after datasource is edited/removed

Server
JBEAP-4409 - Server processing request isn’t stopped immediately but waits for request processing to finish

JBEAP-4410 - EAP 7 with management leaks small portions of memory when delay between requests is large resulting in management becoming unavailable after several days.

For additional details regarding this issue and its resolution, see EAP 7.0.0 GA Management Memory Leak.

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JBEAP-2807 - Problems with jboss-eap-7.0/docs/licenses

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