# Introduction to Liferay DXP Deployment

Liferay DXP is one of the most flexible applications on the market today with respect to database and application server support. Liferay DXP supports a wide variety of databases and application servers, freeing you to use the ones you think are best. Liferay DXP also scales very well. You can install Liferay DXP on a shared hosting account, on a multi-node cluster running a commercial application server, or on anything in between. In fact, Liferay DXP is used successfully in all of these scenarios every day.

## Supported Platforms and Limitations

The list of supported OSes, application servers, databases, and other environments is always available on the Customer Portal at https://www.liferay.com/group/customer under the Support Matrix links.

Applications developed by Liferay, such as Audience Targeting, are available through the Liferay Marketplace. It's possible that some of these applications are supported only on certain environments. This is always specified in the application's description. If you are planning to use these additional products, make sure Liferay DXP is running on a supported environment before installing one of these applications.

## Reference Architecture

When considering deploying Liferay DXP, selecting the right architecture is one of the first decisions you need to make. You need to consider these factors:

- Information Security: Securing sensitive hardware and information from malicious attack and intrusion
- Performance: Supporting the desired number of total users, concurrent transactions, etc.
- Fault Tolerance: Maintaining uptime during unexpected failure or scheduled maintenance
- Flexibility and Scalability: Designing an expandable architecture to support additional features and users without significant redesign

The reference architecture depicted in Figure 1 provides high levels of fault tolerance and flexibility.

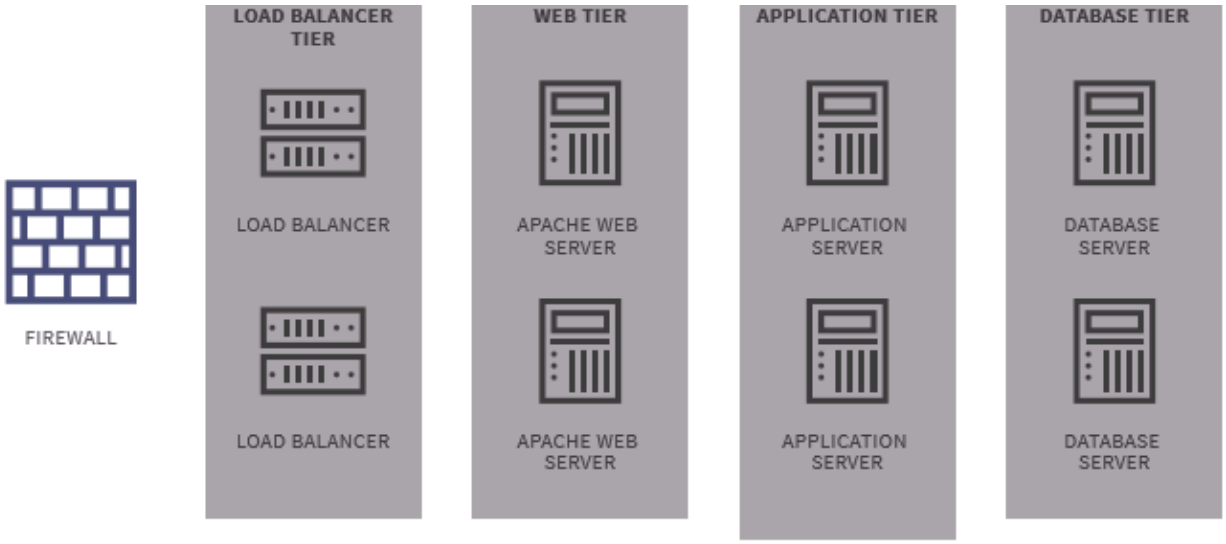



*Figure 1 - Digital Enterprise Reference Architecture*

Figure 1: The Liferay DXP 7.0 reference architecture is scalable.

The architecture contains the following tiers:

- **Firewall:** Intrusion detection and prevention
- **Load Balancer Tier**: Ensures smooth distribution of load between multiple web server resources
- **Web Server Tier**: Delivers static content like images, rich media, CSS files, etc. Also provides integration modules to single sign-on solutions like CA SiteMinder, Oracle Identity, Ping, etc.
- **Application Tier:** Hosts Liferay DXP supported application servers like Tomcat, JBoss, Oracle Weblogic, and IBM WebSphere (please see Liferay DXP 7.0 Compatibility Matrix for additional platforms). Also hosts search engines like Solr and Elasticsearch.
- **Database Tier:** Hosts Liferay DXP supported database servers like MySQL, Oracle, MS SQL Server, IBM DB2, PostgreSQL (please see Liferay DXP 7.0 Compatibility Matrix for additional platforms)

The hardware deployed within each tier varies depending on the type of transactions.

### VIRTUALIZED AND CLOUD DEPLOYMENTS

While the reference architecture describes a physical deployment, the same concepts may be applied to a cloud based or virtualized deployment. Many Liferay DXP customers choose to deploy on public clouds (e.g. Amazon EC2) or their own private clouds (e.g. VMWare VSX based private cloud). Physical machines can be replaced by appropriate quantities of virtual machines.

does not equal to 1 physical CPU or even 1 core on a CPU. In Amazon's terms, each application server equates to roughly a "Cluster Compute Quadruple Extra Large Instance," or 33.5 EC2 Compute Units. Thus, to plan the virtualized / cloud deployment properly, customers must account not only for virtualization overhead, but also for allocation of sufficient CPU resources.

### FAULT TOLERANCE

The reference architecture is fault tolerant at every level. With clusters at the web, application, and database tier, you may suffer a catastrophic hardware failure of any node and continue to serve users with little performance degradation.

The depicted reference architecture represents the minimum deployment units to ensure proper fault tolerance within a single data center. You may increase the number of servers within each tier according to your load patterns to achieve a multiplier effect in the number of users the deployment can support while maintaining sufficient fault tolerance.

Multi-data-center fault tolerant architectures are not provided as part of the reference architecture.

### PERFORMANCE

Each deployment's performance characteristics vary depending on the type of activity and the performance of custom application elements. Liferay Engineering has created a series of scenarios to benchmark Liferay DXP 7.0's out of the box performance characteristics for content management, collaboration and social enterprise scenarios. Results from these reference architectures have indicated Liferay DXP 7.0 can support over 22,000 virtual collaboration users and over 150,000 logins per minute with an average login time of 300 milliseconds. Liferay DXP 7.0 accomplished this load within the reference architecture while using no more than 40% of CPU resources in the Web Tier, 86% of CPU resources in the Application Tier, and 50% of CPU resources in the Database Tier.

### SCALABILITY

Liferay Engineering's testing has shown Liferay DXP 7.0 to scale linearly. Thus, if you know a single application server supports X virtual users and assuming sufficient database and web server resources, you may calculate the total number of application servers required.

### SECURITY

The firewall preceding the Load Balancer Tier provides sufficient intrusion detection and prevention. However, depending on your organization's information security requirements, you may introduce additional firewall layers between each tier to further secure the infrastructure.

### ENVIRONMENT TYPES

Before starting to plan your Liferay DXP deployment, it's important to include different environments to be able to maintain the projects. Liferay uses the following terminology for systems:

**Development:** The environment where the software is written. Most simply it is developer workstations containing integrated development environments with version and dependency handling along with a version control system with working copies on the individual developer workstations.

**SIT (System Integration Testing):** SIT is where the systems delivered are validated. The is an environment for testing the automation of aggregated components and the dependencies between them.

**UAT (User Acceptance Testing):** A QA or Test environment. The developers deploy the software here when it's ready for users to verify its functionality.

**Production Staging:** A pre-production environment that's as close as possible to the production environment for final testing, such as installation, configuration, deployment and load, and performance testing.

**Production:** The environment that's accessed directly by end users. Because this is the live environment, updates are done using a secure process, particularly if it is a complex clustered environment.

Introduction to Deploying Liferay DXP »

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Sí No

Usuarios a los que les pareció útil: 0 de 0

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Forma a tu equipo en los puntos esenciales del uso de Liferay con videos detallados y ejercicios prácticos diseñados para simular una formación presencial

**Liferay Global Services**
Aumenta tu conocimiento sobre el producto y el desarrollo gracias a expertos que te ayudarán a maximizar tu ROI



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