



Migration Guide

Migrating from Oracle DSEE to ForgeRock Directory Service

Support for Oracle® Directory Services Enterprise Edition is being phased out starting December 2019. In preparation of this deadline, it is prudent to fully investigate options and to migrate Oracle DSEE to a directory services solution built on strategic technology.

In this paper, we will discuss:

- › ForgeRock Directory Services features and capabilities
- › Comparing Oracle DSEE to ForgeRock Directory Services
- › ForgeRock Directory Services migration phases

While ForgeRock Identity Platform is a stand alone solution, the ForgeRock Platform™ is also presented at the end of this paper.

ForgeRock Directory Services: Designed for Dynamic Environments

ForgeRock® Directory Services provides secure, reliable access to digital identities and credentials with a directory designed for today's rapidly growing and highly dynamic ecosystem.

Originating from Sun Microsystems's OpenDS project, which was a modern replacement for SUN Directory Server Enterprise Edition, and built from the OpenDJ open source project, ForgeRock Directory Services is a state-of-the-art LDAP directory. It is 100% Java and deployable on many platforms including virtualized environments.

ForgeRock Directory Services is highly scalable and supports a range of developer options including a REST API, SCIM, LDAP, and DSML-based Web Services. Advanced replication options such as Multimaster and Fractional ensure data availability across the organization, including managing instances with geographic separation both on premises and in the cloud. ForgeRock Directory Services is fully LDAP v3 compliant and includes tools for importing both configuration data and user data in standard LDIF format, or via REST from other data sources.

ForgeRock Directory Services includes the following features and capabilities

- High availability through replication: ensure data availability for consistent, reliable access to identity data at all times
- Internet scale capable: scale up as demands increase and provide consistent and reliable data to power people, services, and IoT 'things'
- Password and data encryption: securely deploy directory services on public clouds or use shared file systems infrastructures
- Encryption of data in flight and at rest: provides a critical layer of security from malicious attacks and potential breaches
- Flexible REST, LDAP, SDK and Web Services protocols: enables easy integration for developers
- 100% LDAP directory server with Java architecture: supports SLA environments with high throughput and low response times
- Deployable on-premise or in the cloud: includes AWS, Azure and others
- Dev-Ops friendly: Applies bleeding edge continuous delivery and DevOps patterns to support millions of users
- Privacy and consent mechanisms: offers customers flexible options for sharing personal data with your business and other entities
- Built with open standards: including LDAPv3 and OAuth 2.0

Comparing ForgeRock DS to Oracle DSEE

Unlike some other directory services, ForgeRock Directory Services includes most DSEE features and aims for compatibility with Oracle DSEE. Additionally, all software and data are architecture-independent, so migration to a different operating system or an alternative server is as simple as copying an instance of ForgeRock Directory Services to the new server.

| Component | Oracle DSEE | ForgeRock Directory Services |
|------------------------------------|--|---|
| LDAP v3 | Tolerant of certain errors in schema, syntaxes | <ul style="list-style-type: none"> > Strict compliance (configurable) > Syntax checking can impact data migration for access control instructions (ACIs), schema, DN attributes, and telephone numbers |
| PASSWORD POLICY | Legacy password policy Internet-Draft password policy | <ul style="list-style-type: none"> > Internet-Draft password policy (See Administration Guide > Configuring Password Policy > Subentry-Based Password Policies for more information) > Additional password policy capabilities (See Administration Guide > Configuring Password Policy for more information) > Different configuration attributes than Oracle DSEE |
| REPLICATION | Peer-to-peer Directory Server does everything | <ul style="list-style-type: none"> > Hub and spoke > Replication server hub to disseminate changes > Directory server to post and apply changes > See Administration Guide > Managing Data Replication for more information |
| DATA STORAGE | Berkeley DB (C) Paged based Binary copy only between identical systems | <ul style="list-style-type: none"> > Berkeley DB (Java) > Log based > Portable (See Administration Guide > Moving Servers for more information) > Indexes between DSEE and ForgeRock Directory Services are configured differently (See Administration Guide > Indexing Attribute Values for more information) |
| ROLES | iPlanet implementation | Uses standard groups, plus virtual attributes, such as is Member of (See Administration Guide > Configuring Privileges and Access Control and Migrating Oracle® DSEE roles to OpenDJ for more information) |
| ACCESS CONTROL INSTRUCTIONS | Macro ACIs | <ul style="list-style-type: none"> > A few new features > No macro ACIs > Compatible, but verify ACIs before live migration > See Administration Guide > Configuring Privileges and Access Control for more information. |
| CLASS OF SERVICE | iPlanet implementation | Use standard collective attributes instead (See Migrating Oracle® DSEE CoS to OpenDJ for more information) |
| CERTIFICATES | Network Security Services (NSS) | Java based (keytool, Java certification and security libraries, differing ciphers and policies, etc.) |
| PLUG-IN API | C-based plug-ins | Java-based plug-ins, different plug-in API (need to migrate required plugins that ForgeRock Directory Services cannot replace with added built-in functionality) |
| SOURCE CODE | Closed, C/C++ | Open, pure Java |

Oracle DSEE to ForgeRock Directory Services Migration Phases

Phase 1: Plan

Planning is the most critical phase as it will help to avoid unforeseen issues. The key is to not 'boil the ocean', but rather set realistic targets and timelines. For phase one to go smoothly, it is recommended to have current documentation on the environment/deployment.

Phase 2: Build, Co-Exist, and Migrate

The second phase is about standing up a ForgeRock environment for development and then QA. ForgeRock recommends standing up its environment using a DevOps approach, scripting installation and configuration. The ForgeRock Directory Services may be deployed in any new environment with a hands off approach, minimizing human error and speeding up the deployment and recovery process.

This is also the phase to become familiar with ForgeRock Directory Services. It is highly recommended to undergo ForgeRock training before this phase. It is also advised to plan a pre-production environment in this phase that can be switched to production mode later on.



Four Stages to a Successful Migration

A successful migration from Oracle DSEE to ForgeRock Directory Services follows these stages:

- > Schema migration and correction: Migrate and if necessary correct the schema. Although schema files are compatible, strict LDAP v3 compliance and checking in ForgeRock Directory Services can reject errors that were tolerated by DSEE, therefore the schema might require correction.
- > Data migration export from Oracle DSEE: Add the corrected schema to ForgeRock Directory Services. With syntax checking enabled in ForgeRock Directory Services, attempt the import, observing any errors that arise. Then plan to correct the errors.
- > ACL migration: For more information, see Administration Guide > Configuring Privileges and Access Control
- > Reproduce configuration: Reproduce the configuration of Oracle DSEE on ForgeRock Directory Services, paying particular attention to how certs and indexes are configured, how the server is monitored, and how the server is administered (backups, etc).

In the case of inconsistent data, the details of the reasons for the rejection are provided to the administrator, who can easily correct the data or change the directory configuration to import the rejected data. The administrator can also configure the directory to relax the import rules, which, by default, apply strict compliance with standards.

For more technical details about the data migration, read our Knowledgebase article on the subject.

Any new application can be added in this phase. As a matter of fact, most customers prefer adding at least one new application before migrating an older one. This helps to ensure that urgent business needs identified in Phase 1 are completed.

Finally, in this phase tuning and basic load testing of the ForgeRock environment should be performed to ensure that the impact of variables added in later phases can be measured and corrected if needed.

Phase 3: Migrate Applications in Waves

This phase is to migrate applications identified in Phase 1 to use the new ForgeRock Directory Services environment.

Specific in terms of migrating Oracle DSEE to ForgeRock Directory Services, there are two main strategies: Offline Migration and Live Migration. ForgeRock customers typically implement one of these two strategies depending on the tolerance for downtime, and the complexity of their deployments.

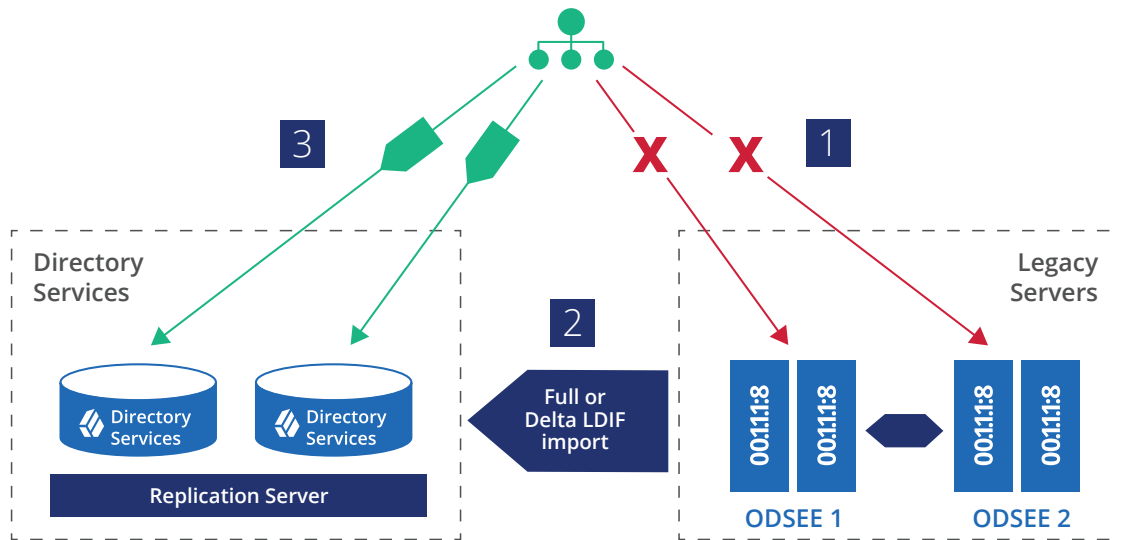


Figure 1: Migration from Oracle DSEE to ForgeRock Directory Services via Full or Delta LDIF Import

Live Migration

Live migration is a process in which both environments will co-exist for some time, and applications will be switched from the old environment to the new one by waves. Live migration requires:

1. Exporting from Oracle DSEE
2. Importing to ForgeRock Directory Services using the ForgeRock tools
3. Syncing between DSEE and ForgeRock Directory Services environments

The DSEE and ForgeRock Directory Services environment synchronization can be based on ForgeRock Identity Management or a custom script (for example Perl), or on a synchronization project such as LSC. (see: <http://tools.lsc-project.org>)

- > Before the switch: Sync Oracle DSEE to ForgeRock Directory Services using Oracle DSEE retro change log or audit log.
- > After the switch: For two-way synchronization, sync from ForgeRock Directory Services to Oracle DSEE using ForgeRock Directory Services external change log.

Offline Migration

Offline Migration switches all applications at once from Oracle DSEE to ForgeRock Directory Services. To do this, first stop all updates to Oracle DSEE (1). Servers can be made read-only, or stop the servers. Next, export the data from Oracle DSEE, process it as detected in the previous phase, and import it into ForgeRock Directory Services (2).

Offline migration is very easy as ForgeRock Directory Services is quite similar to Oracle DSEE and the downtime is short due to ForgeRock Directory Service's write capabilities. Once data has been migrated, start the ForgeRock Directory Services, and point all applications to it (3). This is often done by switching a load-balancer to the new servers.

| Area | Use Case | How |
|-------------|--------------|--|
| Storage | Schema | ForgeRock Directory Services allows for schema updates |
| Replication | Timing Setup | ForgeRock Directory Services replication services |
| Proxy | | Proxy to other directories |

Phase 4: Decommission

The last phase is to decommission Oracle DSEE. To do this, first verify there are no applications currently leveraging Oracle Directory Services. Next, stop and remove all Oracle DSEE servers. Last, stop and remove the synchronisation service.

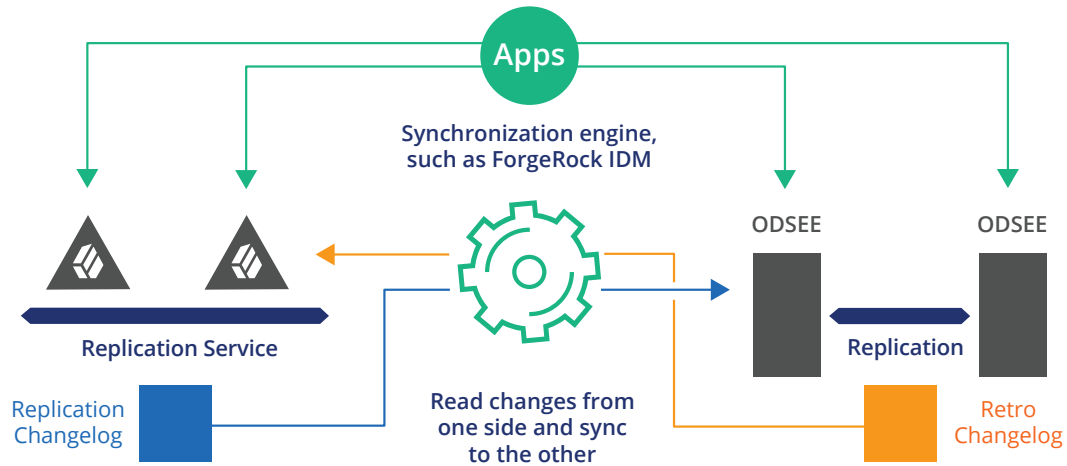


Figure 2: DSEE and ForgeRock Directory Services Environment Synchronization

A Unified Solution: The ForgeRock Identity Platform

ForgeRock Directory Services is available as a standalone solution, yet it is also a part of the ForgeRock Identity Platform™ — the only unified offering for access management, identity management, usermanaged access, directory services, edge security, and an identity gateway.

ForgeRock was the first identity vendor to offer a modern, agile, all-in-one, unified platform for rapidly building identity services that are lightweight, modular, massively scalable, and developer-friendly. Not only can a single deployment cater to internal employee needs, but also for IoT 'things', microservices, and external entities such as customers, patients, and citizens.

Architected to work as a unified solution well into the future, the ForgeRock Identity Platform is designed to deliver secure and trusted digital relationships at scale, and is built with privacy-by-design principles that improve user experience and ultimately drive greater value and revenue. Learn more about the ForgeRock Identity Platform.

Are You Prepared for the Oracle DSEE Phase Out?

Learn More About ForgeRock Today

For more information about migrating Oracle DSEE to ForgeRock Directory Services and the ForgeRock Identity Platform, contact us today.

About ForgeRock

ForgeRock, the leader in digital identity, delivers modern and comprehensive Identity and Access Management solutions for consumers, employees and things to simply and safely access the connected world. Using ForgeRock, more than a thousand global customer organizations orchestrate, manage, and secure the complete lifecycle of identities from dynamic access controls, governance, APIs, and storing authoritative data – consumable in any cloud or hybrid environment. The company is privately held, and headquartered in San Francisco, California, with offices around the world. For more information and free downloads, visit

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