PingFederate®

SSO Integration Overview

Ping Identity®

PingFederate *SSO Integration Overview*
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Contents

Integration Introduction

As a stand-alone server, PingFederate must be integrated programmatically with end-user applications and identity management (IdM) systems to complete the "first- and last-mile" implementation of a federated-identity network. The purpose of this document is to provide an overview of the various approaches to integrating systems and applications with PingFederate for browser-based single sign-on (SSO). To enable both the Identity Provider (IdP) and Service Provider (SP) sides of this integration, PingFederate provides commercial integration kits, which include *adapters* that plug into the PingFederate server and *agents* that interface with local IdM systems or applications.

Tip: Integration kits are available for download at pingidentity.com (`pingidentity.com/support-and-downloads`). Find *User Guides* and other documentation for the kits under Product Documentation on the Web site (`documentation.pingidentity.com/display/LP/Product+Documentation`).

This document covers the integration kits available from Ping Identity for PingFederate. PingFederate also includes a robust software development kit (SDK), which software developers can use to write their own custom interfaces for specific systems. Please refer to the PingFederate SDK Developer's Guide for more information, available in the PingFederate distribution `sdk` directory.

Note: Ping Identity offers separate integration solutions for secure SSO to Software-as-a-Service (SaaS) providers—SaaS Connectors, which include automatic user provisioning at the provider site. In addition, for integration with the PingFederate WS-Trust Security Token Service (STS), we provide a range of *Token Translators*. These plug-in Token Processors (for an IdP) and Generators (for an SP) connect the STS with Web Service Providers and Clients for access to identity-enabled Web Services.

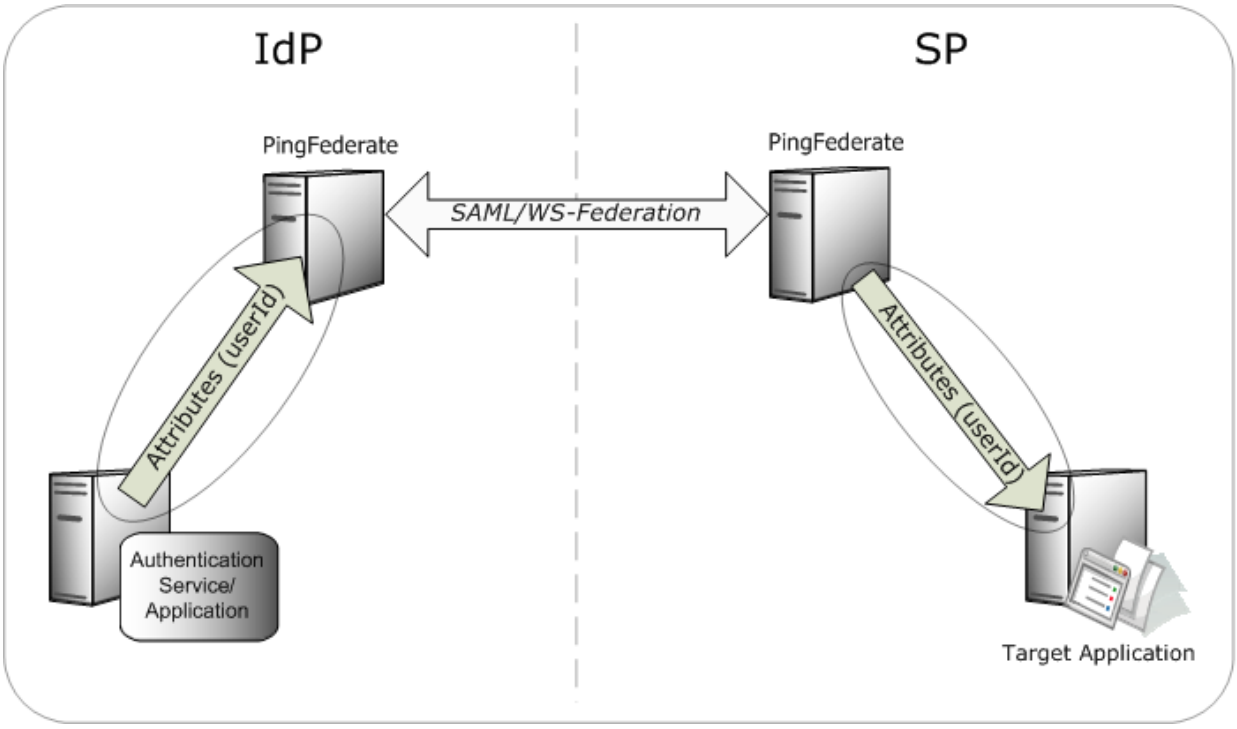
For more information about SaaS Connectors and Token Translators, refer to Key Concepts in the PingFederate *Administrator's Manual*. For lists of available Connectors and Translators, go to Support and Downloads on the Ping Identity Web site (`pingidentity.com/support-and-downloads`).

SSO Integration Concepts

For an IdP, the first step in the integration process involves sending identity attributes from an authentication service or application to PingFederate. PingFederate uses those identity attributes to generate a SAML assertion. (For information about SAML—Security Assertion Markup Language—refer to Supported Standards in *Getting Started*.) IdP integration typically provides a mechanism through which PingFederate can look up a user's current authenticated session data (for example, a cookie) or authenticate a user without such a session.

For an SP, the last step of the integration process involves sending identity attributes from PingFederate to the target application. PingFederate extracts the identity attributes from the incoming SAML assertion and sends them to the target application to set a valid session cookie or other application-specific security context for the user.

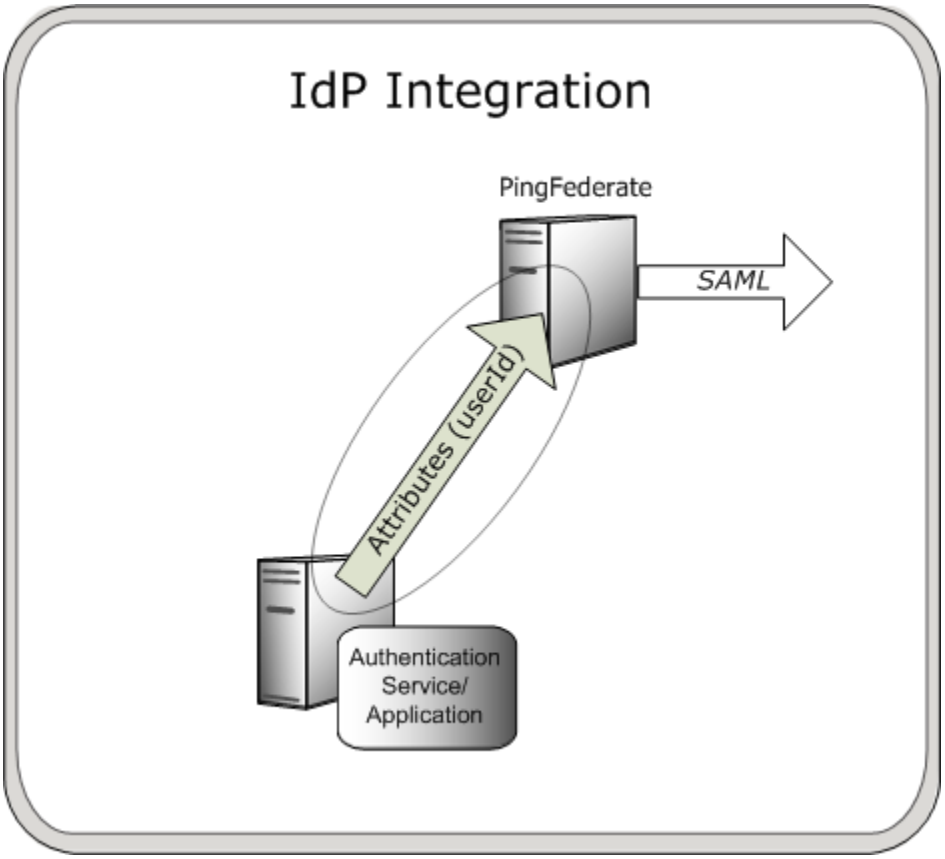
The following diagram illustrates the basic concepts of integration with PingFederate:



Identity Provider Integration

An IdP is a system entity that authenticates a user, or "SAML subject," and transmits referential identity attributes based on that authentication to PingFederate. The IdP integration involves retrieving user-identity attributes from the IdP domain and sending them to the PingFederate server. Typically, the identity attributes are retrieved from an authenticated user session. For IdP integration, a number of attribute-retrieval approaches can be used, depending upon the IdP deployment/implementation environment. Ping Identity offers a broad range of commercial integration kits that address various IdP scenarios, most of which involve either custom-application integration, integration with a commercial IdM product, or integration with an authentication system.

Tip: For IdPs implementing SSO to selected Software-as-a-Service (SaaS) providers—for example, Google Apps and Salesforce—PingFederate also provides for automated user provisioning. See details under Workforce to the Cloud at the Ping Identity Web site.



Custom Applications

A federation partner can use a custom authentication service or application to serve as the IdP role in that federation partnership. Integration with a custom application is handled through application-level integration kits, which allow software developers to integrate their custom applications with a PingFederate server acting as an IdP. Each application-level integration kit includes an agent, which resides with the IdP application and provides a simple programming interface to transfer session and attribute information from the application to the PingFederate IdP server.

Ping Identity provides custom-application integration kits for several programming environments, including:

- Java
- .NET
- PHP

In addition, Ping Identity provides an Agentless Integration Kit, which allows developers to use direct HTTP calls to the PingFederate server to temporarily store and retrieve user attributes securely, eliminating the need for an agent interface.

Identity Management Systems

An IdP enterprise that uses an IdM system can expand the reach of the IdM domain to external partner applications through integration with PingFederate. IdM integration kits typically use the IdM agent

API (if available) to access identity attributes in the IdM proprietary session cookie and transmit those attributes to the PingFederate server.

IdM integration kits do not require any development; integration with PingFederate is accomplished entirely through the PingFederate administrative console.

Ping Identity provides integration kits for many of the leading IdM systems including:

- Oracle Access Manager (COREid)

Authentication Systems

Initial user authentication is normally handled outside of the PingFederate server using an authentication application or service. PingFederate authentication-system integration kits leverage this local authentication to access applications outside the security domain. For example, an integration kit might access authenticated sessions that are validated against a Windows NTLM or Integrated Windows Authentication (IWA) environment, and then pass session attributes to the PingFederate IdP server.

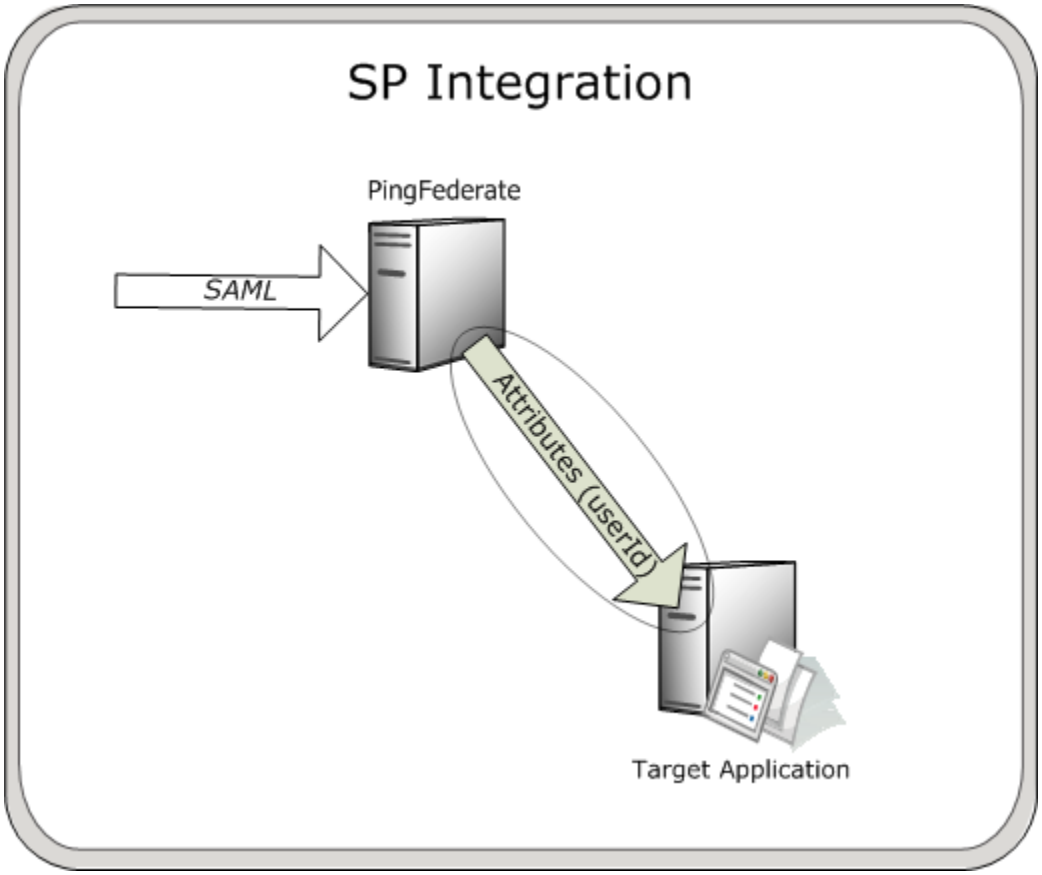
Authentication integration kits do not require any development; integration with PingFederate is accomplished entirely through the PingFederate administrative console. Ping Identity offers integration kits for authentication systems including:

- IWA/NTLM
- X.509 Certificate
- RSA SecurID® Integration Kit
- VeriSign Identity Protection Integration Kit

PingFederate also packages two IdP adapters, an HTML Form Adapter and an HTTP Basic Adapter, which delegate user authentication to plug-in Password Credential Validators. Supplied Validators can use either an LDAP directory or a simple username/password verification system maintained by PingFederate. (Customized Validators may also be developed.) When the PingFederate IdP server receives an authentication request for SP-initiated SSO or a user clicks a link for IdP-initiated SSO, PingFederate invokes the implemented adapter and prompts the user for credentials, if the user is not already logged on.

Service Provider Integration

An SP is the consumer of identity attributes provided by the IdP through a SAML assertion. SP integration involves passing the identity attributes from PingFederate to the target SP application. The SP application uses this information to set a valid session or other security context for the user represented by the identity attributes. Session creation can involve a number of approaches, and as for the IdP, Ping Identity offers commercial integration kits that address the various SP scenarios. Most SP scenarios involve custom-application integration, server-agent integration, integration with an IdM product, or integration with a commercial application.



Custom Applications

Many applications use their own authentication mechanisms, typically through a database or LDAP repository, and are responsible for their own user-session management. Custom-application integration is necessary when there is limited or no access to the Web or application server hosting the application. Integration with these custom applications is handled through application-level integration kits, which allow software developers to integrate their applications with a PingFederate server acting as an SP.

With these integration kits, PingFederate sends the identity attributes from the SAML assertion to the SP application, which can then use them for its own authentication and session management. As for the IdP, application-specific integration kits include an SP agent, which resides with the SP application and provides a simple programming interface to extract the identity attributes sent from the PingFederate server. The information can be used to start a session for the SP application.

Ping Identity provides custom-application integration kits for a variety of programming environments, including:

- Java
- .NET
- PHP

In addition, Ping Identity provides an Agentless Integration Kit, which allows developers to use direct HTTP calls to the PingFederate server to temporarily store and retrieve user attributes securely, eliminating the need for an agent interface.

Server Agents

Server-agent integration with PingFederate allows SP enterprises to accept SAML assertions and provide SSO to all applications running on that Web and/or application server; there is no need to integrate each application. Since integration occurs at the server level, ease of deployment and scalability are maximized. Applications running on the Web/application server must delegate authentication to the server; if the application employs its own authentication mechanism, integration must occur at the application level.

With server-agent integration kits, PingFederate sends the identity attributes from the SAML assertion to the server agent, which is typically a Web filter or JAAS Login Module. The server agent extracts the identity attributes, which the server then uses to authenticate and create a session for the user.

SP server-agent integration kits do not require any development; integration with PingFederate is accomplished entirely through the PingFederate administrative console.

Ping Identity provides integration kits for many Web and application servers, including:

- Internet Information Services (IIS)
- Apache (Red Hat)
- Apache (Windows)
- WebSphere
- SAP NetWeaver®

Identity Management Systems

IdM integration with PingFederate allows an SP enterprise to accept SAML assertions and provide SSO to applications protected by the IdM domain. IdM integration kits typically use the IdM agent API (if available) to create an IdM proprietary session token based on the identity attributes received from PingFederate.

IdM integration kits do not require any development; integration with PingFederate is accomplished through the PingFederate administrative console and the IdM administration tool.

Ping Identity provides integration kits for leading IdM systems including:

- Oracle Access Manager (formerly COREid)

Commercial Applications

Commercial-application integration with PingFederate allows an SP enterprise to accept SAML assertions and provide SSO to those commercial applications.

These integration kits do not require any development; integration with PingFederate is accomplished entirely through the PingFederate administrative console.

Ping Identity offers integration kits for these commercial applications:

- Citrix
- SharePoint
- Salesforce.com

> **Note**: For PingFederate 5.2 and later versions, the Salesforce.com Integration Kit is called the PingFederate Salesforce *Connector*. Connectors feature complete user provisioning for SaaS providers, as well as SSO quick-connection templates.

Summary

The following table summarizes IdP- and SP-integration deployment scenarios and the Ping Identity bundled adapters and integration kits that suit each scenario. Ping Identity continues to develop new bundled adapters (included with PingFederate) and integration kits; check the Ping Identity download site (`www.pingidentity.com/support-and-downloads`) for the most up-to-date list of kits.

Please find *User Guides* and other documentation for current integration kits under Product Documentation on the Web site (`documentation.pingidentity.com/display/LP/Product+Documentation`).

Type	IdP	SP
Custom Application	• Java Integration Kit • .NET Integration Kit • PHP Integration Kit • Agentless Integration Kit	• Java Integration Kit • .NET Integration Kit • PHP Integration Kit • Agentless Integration Kit
Identity Management System (IdM)	• Web Access Management (WAM) Integration Kit	• WAM Integration Kit

Type	IdP	SP
Authentication System	• Windows IWA/NTLM Integration Kit • X.509 Certificate Integration Kit • HTML Form Adapter (Bundled with PingFederate) • HTTP Basic Adapter (Bundled with PingFederate) • RSA SecurID Integration Kit • VeriSign Identity Protection Integration Kit	N/A
Server Agent	Integration Kit for SAP NetWeaver	• IIS Integration Kit • Apache Integration Kit (Red Hat) • Apache Integration Kit (Windows) • WebSphere Integration Kit • Integration Kit for SAP NetWeaver
Commercial Application	N/A	• Salesforce Connector • Citrix Integration Kit • SharePoint Integration Kit