



SSO (Single Sign On) 구현을 위한,

WSO₂ Identity Server

100% Open-source, Identity and Access Management

Powered by OSC Korea

OSC Korea Co.,Ltd info@osckorea.com 070-7757-3980



Over 800 Employees

50% Engineering

[TEAM >](#)



Close to 700 Customers

Around the world (150 new in 2020)

[SUCCESS STORIES >](#)



Open Source

Flexible deployment, faster time to market

[OUR WAY IS OPEN SOURCE >](#)



Founded in 2005

Backed by Cisco, Goldman Sachs, and Toba Capital

[COMPANY >](#)



Sanjiva Weerawarana

To the Clouds and Beyond —
Fueled by \$90 Million in Growth
Capital from Goldman Sachs



Today, we stand on the cusp of an inflection point in WSO2's journey. I am thrilled to announce that we have secured \$90 million in financing from Goldman Sachs. This new investment means our original vision continues to have an enduring purpose, and we could not be more excited to be backed by such a strong institution.

WSO2 Integration Platform

Common Architecture, Common Code Base, Open Source

WSO2 API MANAGER

Addresses full API lifecycle management operations. Open, extensible, customizable.

200K APIs for 20K Orgs

WSO2 ENTERPRISE INTEGRATOR

Hybrid integration platform for quick, iterative integration of any application, data, or system.

6 Trillion Transactions/yr

WSO₂
Open Banking

WSO2 IDENTITY SERVER

Federates and manages identities across both cloud service and enterprise environments.

100M identities managed

개요



WSO2 Identity Server는 확장성을 제공하는 **오픈소스 기반 IAM 솔루션**으로 Identity Federation과 Single Sign-On (SSO)에 최적화되어 있습니다. 포괄적인 기술지원서비스를 비롯하여 **적응형(Adaptive) Multi-Factor 인증 및 API 보안**을 제공합니다.

On-Prem 및 클라우드 환경에서 Identity Federation 환경 및 생태계를 구축, 관리하고 웹/모바일 어플리케이션과 엔드 포인트에 대한 안전한 접근(Access)을 지원합니다.

핵심 코어만 오픈소스로 제공하는 업체와 달리 WSO2 Identity Server는 **코어를 포함한 모든 고급 확장 기능**을 상용서비스에도 쉽게 적용할 수 있는 **Apache 2.0 라이선스**로 제공합니다

주요 특징

100% 오픈소스

(Apache 2.0 오픈소스 라이선스)

맞춤형 IAM 플랫폼 구축을 위한 확장성

전세계 +1억개(100M)의 Identity 관리

+180 글로벌 상용고객 및 +500 교육기관

24*7 기술지원서비스

글로벌 오피스 (USA, UK, Germany, Brazil,
Australia, Sri Lanka)

 **kuppingercole**
ANALYSTS

Overall in LC: Identity API platforms

Product leader in LC: Access
Management and Federation

Innovation leader in LC: CIAM

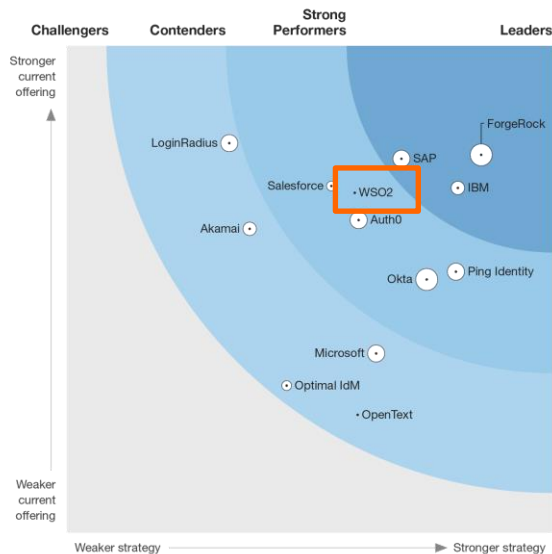
Industry Recognition

2019년 KuppingerCole Analysts의 Access Management and Federation분야 Leader 선정, 2020년 4분기 Forrester Wave Customer Identity and Access Management 분야 Strong Performer 선정

THE FORRESTER WAVE™

Customer Identity And Access Management

Q4 2020



Kuppingercole
ANALYSTS

Leader in KuppingerCole Leadership Compass, 2019 Access Management And Federation

"...WSO2 Identity Server APIs shows strength in interoperability with a large number of other IAM, CIAM, and IDaaS platforms in these markets as well integrations with CRM and other SaaS systems. Overall, WSO2 has consistently made improvements in its Identity Server and has moved it in a positive direction."



주요 고객사

Information
Technology, Services,
e-commerce

NUTANIX

CISCO

Trimble

hp

Banking &
Finance

Standard
Chartered



Deutsche Bank

CALIBER
HOME LOANS

Verifone

Fidelity

Healthcare

KAISER PERMANENTE

IQVIA

align

IDEXX
LABORATORIES

Colorcon

Telecommunication

west

T-Mobile Systems

verizon

Aviation,
Aerospace and
Automotive

JAGUAR

LAND-ROVER

NISSAN
Innovation that excites

Government

حكومة دبي الذكية
Dubai Smart Gov



Australian Government
Department of Health



국내 고객사 : 아모레퍼시픽, 삼성전자 등

주요 고객사 운용현황



106M

사용자

0 ~ 600 동시처리 (TPS)



6M

사용자

0 ~ 400 동시처리 (TPS)



20M

사용자

0 ~ 1,000 동시처리 (TPS)

- 운영현황 정보는 제공에 동의한 고객 중 선정함
- 동시처리는 WSO2 Identity Server가 실제 인증을 처리한 수치로 동접과 무관함 (e.g. 토큰을 발급받은 사용자는 접속중에 Identity Server의 인증을 거치지 않음)

주요 기능



Identity Federation & SSO



Authorization



Identity Bridging



API & Microservices Security



Strong and Adaptive Authentication



Privacy Regulation Compliance



Identity Provisioning & Administration

오픈소스 IAM으로서 WSO2 Identity Server 장점

- Vendor lock-in에서 자유로움
- 소스코드를 임의로 확인 가능
- 라이선스 비용 지불없이 사전 테스트 가능
- 빠른 혁신 : 요구사항에 따라 쉽게 확장 가능
- 기능이나 기간 제한없이 전 기능 사용 가능
- 상용 솔루션 대비 저렴한 TCO (낮은 초기 비용 및 유지보수비용)
- 다양한 Authenticator 및 Federation Target 지원
- 다중 SIEM, 코어시스템 및 어플리케이션 정합 지원



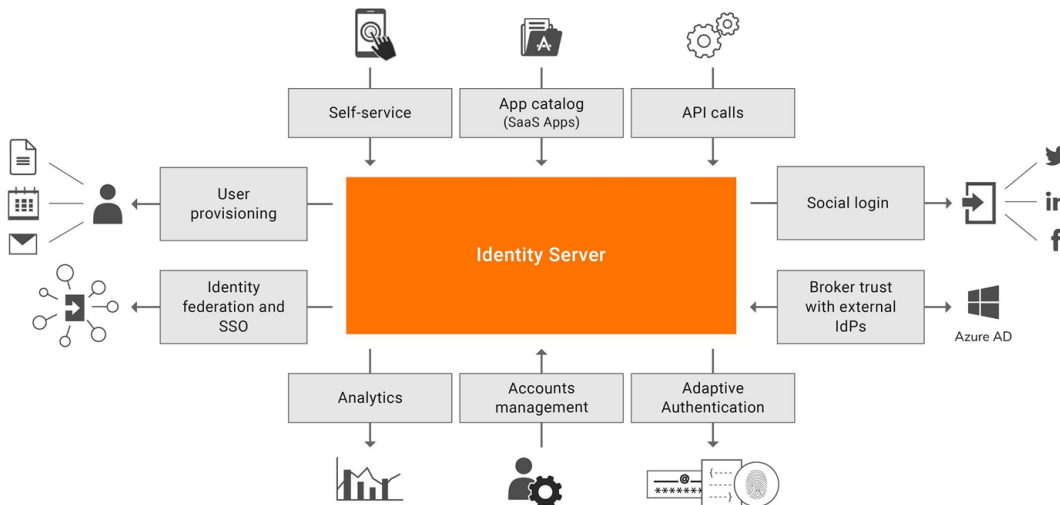
WSO2 Identity & Access Management

WSO2 Identity Server

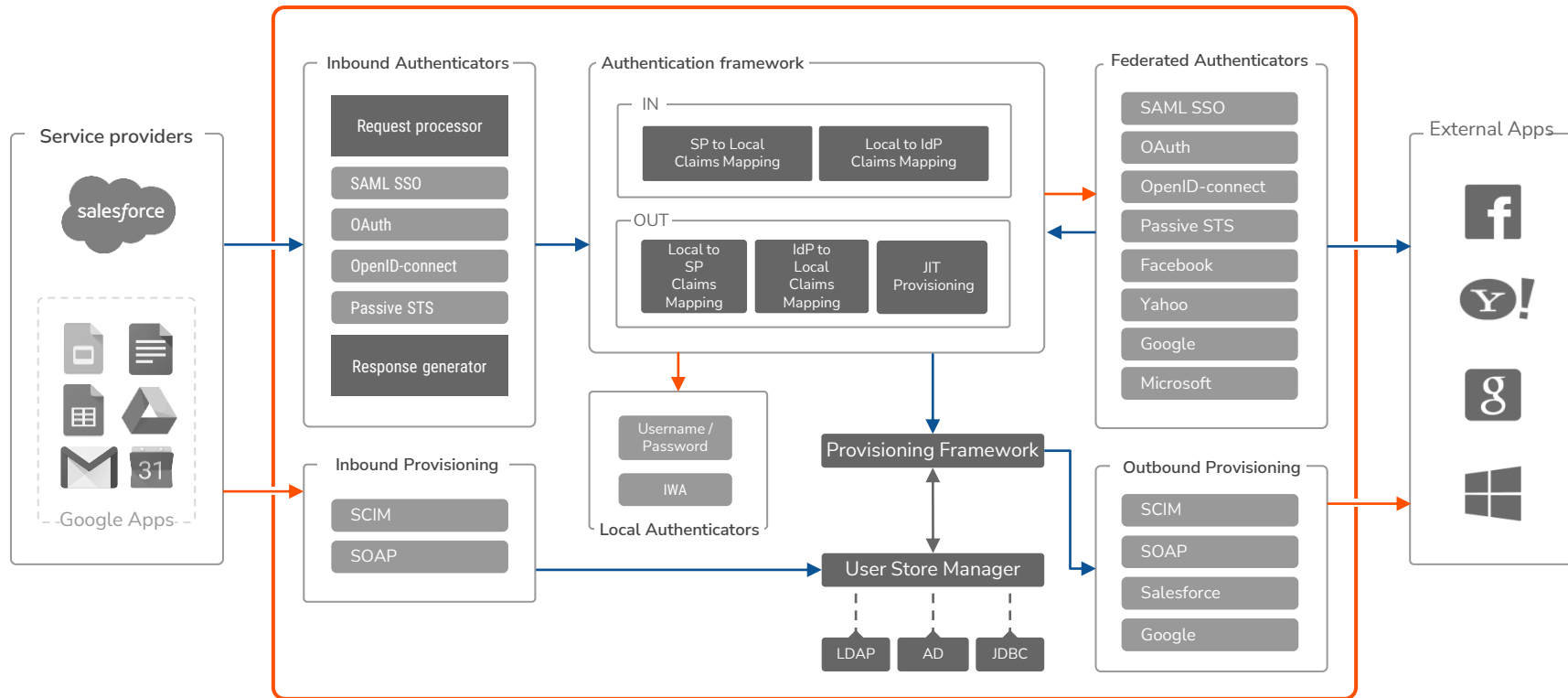
WSO2 Identity Server는 확장 가능한 **오픈소스 기반 IAM 솔루션**으로 Identity Federation과 Single Sign-On (SSO)에 최적화되어 있습니다. 포괄적인 기술지원서비스를 비롯하여 **적응형(Adaptive)**, **Multi-Factor 인증** 및 **API 보안**을 제공합니다.

Highlights

- 포괄적인 Identity Federation
- 폭넓은 적응형(Adaptive) 인증 기능
- API와 Microservices 보안 지원
- 개방형 확장 아키텍처로 비즈니스 요구사항 및 풍부한 Connector 생태계 지원
- 컨테이너 친화적인 구축환경 지원



아키텍처



다양한 설치 옵션

INSTALLATION OPTIONS



AWS Cloud Formation



Kubernetes



Docker



Docker Compose



Helm



CentOS
Installer rpm



Windows X64
Installer msi



Ubuntu
Installer deb



MacOs
Installer pkg



Puppet



Zip Archive

Prerequisites – 설치 요구사항

항목	설명
System Requirements	<ul style="list-style-type: none">• 4 vCPUs• 4 GB RAM• 10 GB Disk Space
Environment compatibility	<ul style="list-style-type: none">• User Store<ul style="list-style-type: none">○ RDBMS (Oracle, PostgreSQL, MySQL, MS SQL, etc)○ An LDAP such as OpenLDAP○ Active Directory
Required applications	<ul style="list-style-type: none">• Java SE Development Kit (JDK)<ul style="list-style-type: none">○ Oracle JDK 8 or JDK 11○ OpenJDK 8 / OpenJDK 11• Web Browser (Management Console 접근용)

<https://is.docs.wso2.com/en/5.11.0/setup/environment-compatibility/>

Identity Server Management Console

WSO2 Identity Server

Management Console

Signed-in as: admin@carbon.super | Sign-out | Docs | About

Home

Identity

Main

Monitor

Configure

Tools

Entitlement

Manage

Workflow Engagements

Workflow Definitions

Challenge Questions

Email Templates

Keystores

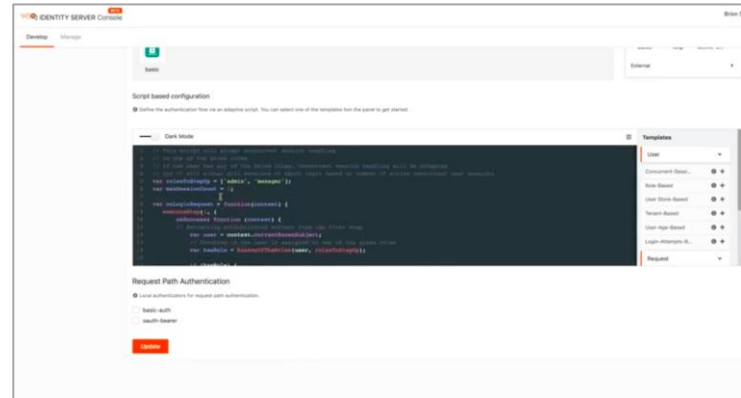
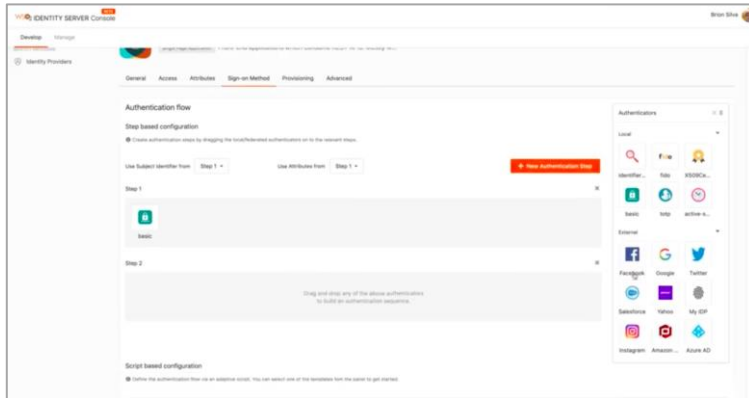
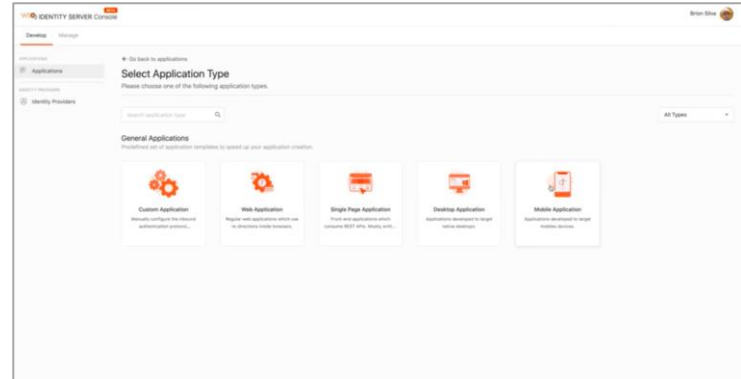
Consent Purposes

WSO2 Identity Server Home

Welcome to the WSO2 Identity Server Management Console

Server	
Host	localhost
Server URL	local://services/
Server Start Time	2019-10-22 15:22:23
System Up Time	0 day(s) 3 hr(s) 15 min(s) 11 sec(s)
Version	5.9.0
Repository Location	file:/Users/somindagamage/product_is/wso2_docs/wso2is-5.9.0.2/repository/deployment/server/
Operating System	
OS Name	Mac OS X
OS Version	10.15
Operating System User	
Country	LK
Home	/Users/somindagamage
Name	somindagamage
Timezone	Asia/Colombo
Java VM	
Java Home	/Library/Java/JavaVirtualMachines/jdk1.8.0_211.jdk/Contents/Home/jre
Java Runtime Name	Java(TM) SE Runtime Environment
Java Version	1.8.0_211
Java Vendor	Oracle Corporation
Java VM Version	25.211-b12
Registry	
DBMS	H2
DBMS Version	1.4.199 (2019-03-13)
DBMS Driver	H2 JDBC Driver
DBMS Driver Version	1.4.199 (2019-03-13)

New UI (Beta)



User Self-care Portal

WSO₂ USER PORTAL

Ayesha Dissanayaka

Overview

Personal Info

Security

Welcome, Ayesha Dissanayaka

Manage your personal information, account security, and privacy

Complete your profile

Your profile completion is at 90%

3 out of 3 mandatory fields completed

2 out of 3 optional fields completed

Account activity

You are currently logged in from the following device

Chrome on Mac OS

Last accessed a few seconds ago

Manage account activity

Account security

Settings and recommendations to help you keep your account secure

Update account security

Consents control

Control the data you want to share with applications

Manage consents

WSO₂ Identity Server © 2020

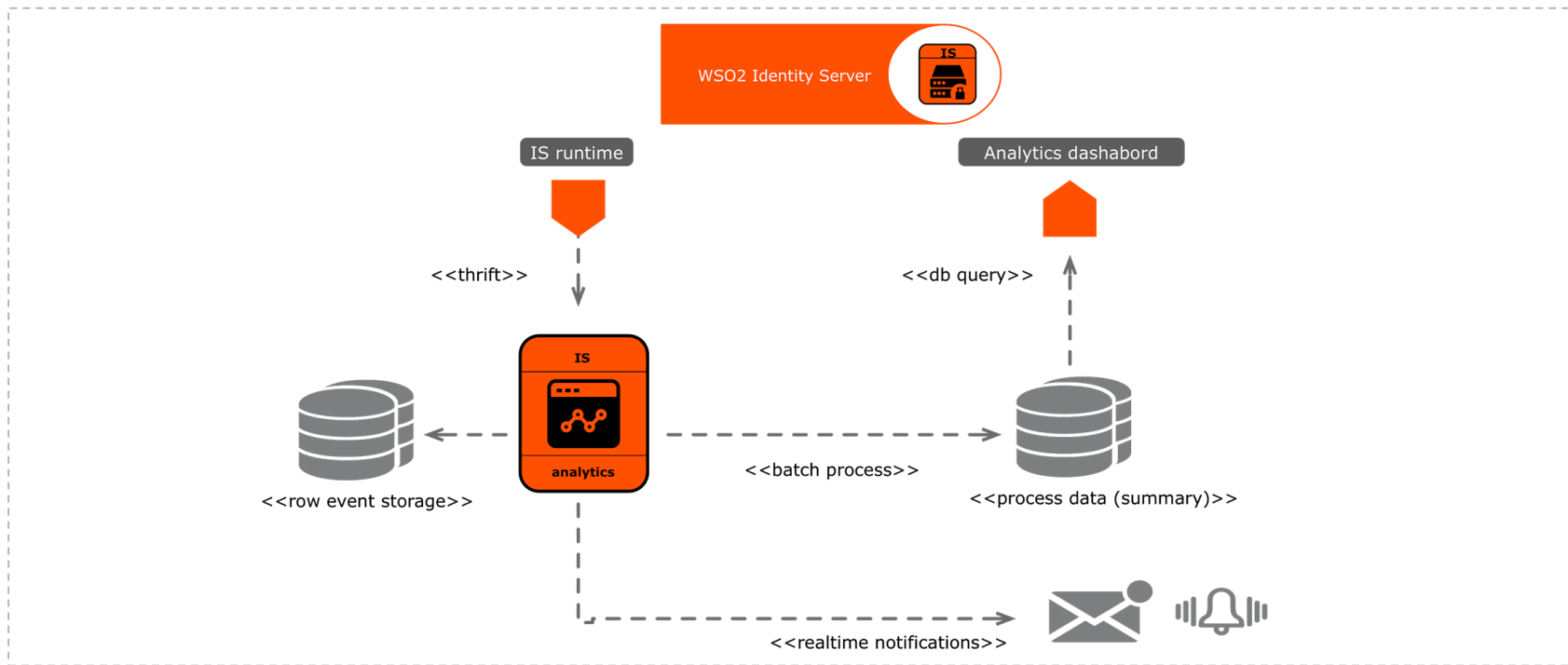
English (US) Privacy

WSO₂

17

Analytics, Alerts 및 Audit-Trail

Analytics 및 모니터링 대시보드

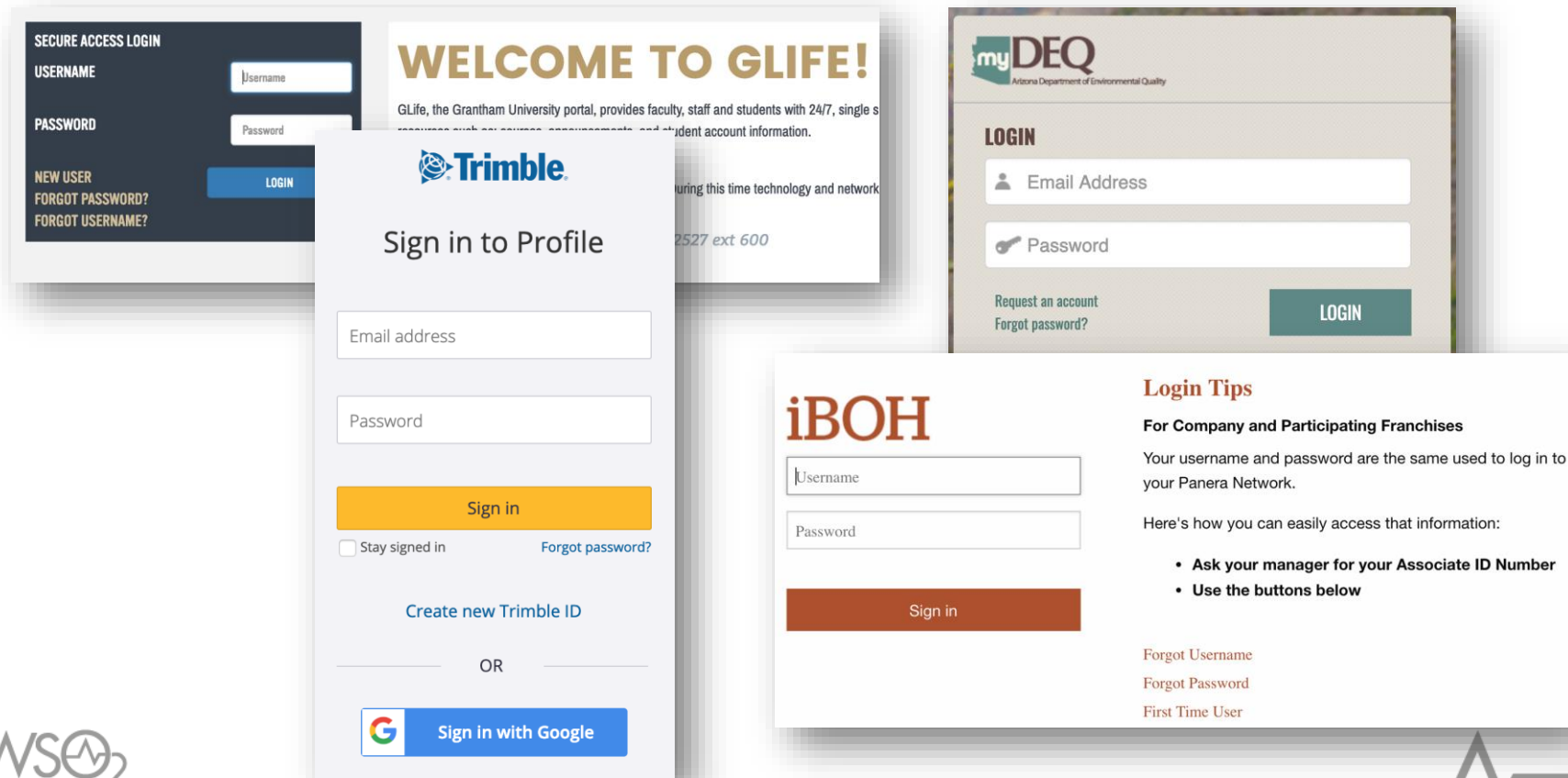


Analytics, Alerts 및 Audit-Trail (계속)

Analytics 및 모니터링 대시보드



커스텀 로그인 페이지



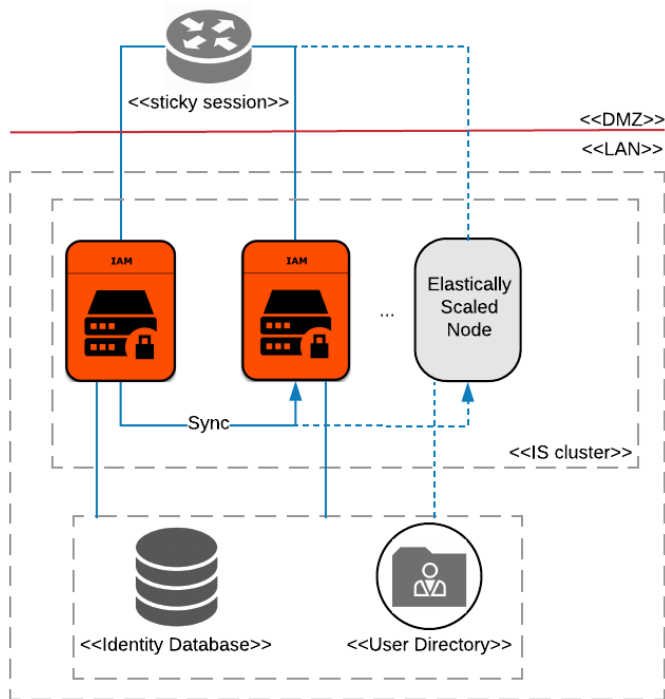
WSO2 Connector 스토어 (+50 Connectors)

The screenshot displays the WSO2 Store interface for IS Connectors. The top navigation bar includes the WSO2 Store logo, a search bar, and links for Sign in and Register. The left sidebar provides filtering options under 'Refine by' (Category, Support Level, Version Support) and 'Tags' (AWS-user-store, Biometric, GSMA, HardwareToken, IS-5.2.0, IS-5.3.0, IS-5.4.0, IS-). The main content area shows a grid of 14 connectors, each with a colored icon, name, version, and star rating. The connectors are: CASQUE SNR Connector (Distributed Management V1.0.0), AWS User Store (WSO2 V1.0.0), Office 365 Provisioning Connector (WSO2 V1.0.0), Nuxeo Authenticator (WSO2 V1.0.0), MongoDB User Store (WSO2 V1.0.0), SCIM2 Provisioning Connector (WSO2 V1.0.0), Private Key JWT Authenticator (WSO2 V1.0.9), Mutual TLS Client Authenticator, SAML Authenticator, CAS Inbound Authenticator, SCIM Provisioning Connector, Mobile Connect Authenticator, Pinterest Authenticator, and FIDO Authenticator. The bottom of the page shows the footer: WSO2 Store | © 2019 WSO2 Inc.

<https://store.wso2.com/store/assets/isconnector/list>

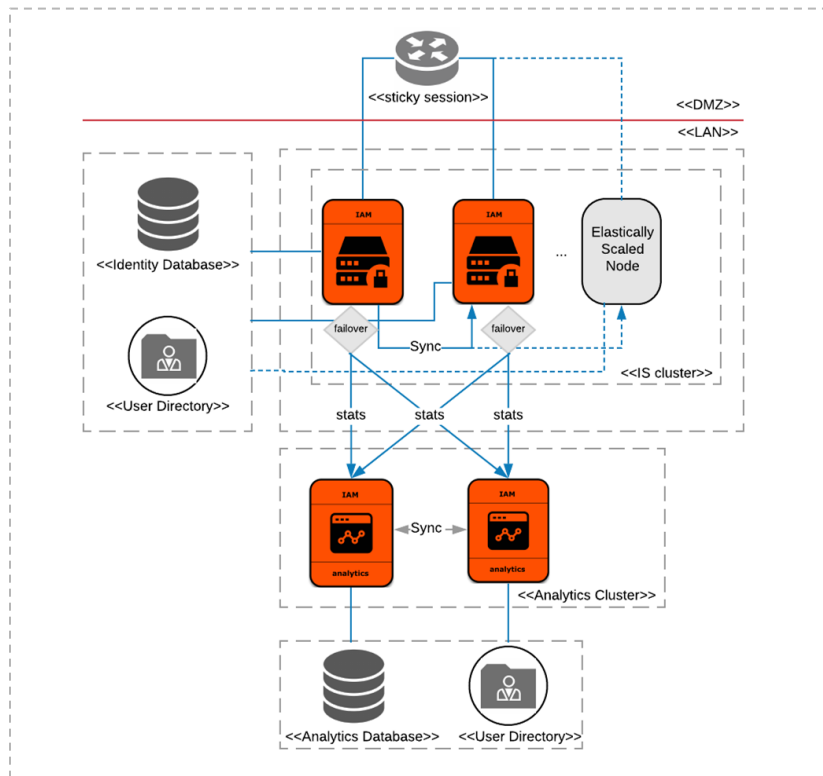
Deployment Patterns

Deployment 패턴 #1



- WSO2 Identity Server HA 구성
 - 최소 권고안 : 2 Active/Active 노드
 - 확장 구성
 - TPS 기반 확장 : 단일 노드에서 일일 34M 인증요청을 처리
 - AWS/Azure/Google App Engine 또는 K8S/Docker 및 OpenShift등 컨테이너 플랫폼을 통한 수평 확장
1. 최대 동시 Login 요청 : 200 Concurrent Logins @ 1,000ms Response Time
 2. 평균 Login 요청 : 50 Concurrent Logins @ Avg. 300ms Response Time
 3. Worst Case Login 요청 : 300 Concurrent Logins @ 2,000ms Response Time

Deployment 패턴 #2



- WSO2 Identity Server 및 Analytics HA 구성
 - 최소 권고안 : 2 Active/Active 노드 + 2 Active/Passive Analytics 노드
- 확장 구성
 - TPS 기반 확장 : 단일 Analytics 노드는 초당 3,000 이벤트 처리
 - Analytics 은 동적 수평확장을 지원하지 않음

요약

- 100% 오픈소스
- 고객 및 업무프로그램 IAM에서 요구되는 주요 기능 제공
- 보안 및 프라이버시 우선 설계
- Identity Federation, SSO, Adaptive MFA 및 세부 (Fine-grained) 접근제어 지원
- 포괄적이며 확장성 있는 Multi-tenant Identity 레이어 제공
- Identity Federation, 접근 제어(Access Control) 및 접근 위임(Access Delegation) 주요 표준 지원
- 대규모 운영 사례를 통해 검증된 확장성
- 클라우드, On-Prem, 하이브리드 환경 등 유연한 운영환경 지원
- +40개 확장 인터페이스 및 +50개 Connector등 폭넓은 Identity 프레임워크 제공
- 다양한 산업에 걸쳐 검증된 솔루션

Discovery Questions

- Business Problem / Pain Points / 해결과제
- 프로젝트 일정 / 현재 Phase / 상용 Launch 일정 / 선정 절차
- Deployment 형태 (on-premise/cloud/hybrid, VM/Container)
- HA/이중화 요구사항
- Pre-production 필요 여부 (dev, test, staging, etc)
- multi-datacenter HA / DR 필요여부
- Targeted user type (internal/external)
- 기능 요구사항 (e.g. SSO, MFA, etc)
- 대상 단말 (PC/Web, Mobile, etc)
- Active User 수 / 전체 User 수 / 사용자 로그인 패턴 (Login / Day) / 최대 동시 Logins / 평균 동시 Logins / 기대 평균 응답시간 / 최대 응답시간

WSO2 Customer Identity and Access Management RFI Template - Non-Functional Requirements				
#	Requirement	Compliance	Level of Compliance	Response
15.0	Developers			
15.1	Architecture			
15.1.1	Provide a diagram of the product architecture and explain.			Reference: https://is.docs.wso2.com/en/latest/get-started/architecture/
15.1.2	Is the solution built within a microservices architecture?	No		The WSO2 Identity Server itself needs to be run on a stable server. It can be scaled up and down but there are limits of reliability if it is scaled down too low and license/subscription fees to pay if it is scaled up beyond what is agreed to in a contract.
15.1.3	Support for serverless architecture patterns	No		Identity Server will have no problem working with serverless applications.
15.1.4	Support for ETL patterns	Yes	With recommended third party tool	Support with WSO2 Enterprise Integrator
15.1.5	Support for connecting and extending to legacy systems and apps through an Identity Gateway (proxy-based federation pattern)	Yes	With recommended third party tool	Proxy-based Federation support is part of the WSO2 Identity Server roadmap.
15.1.6	Support for private-by-design and privacy-by-default principles. E.g. pseudonymized primary identifier of user.	Yes	Out-of-the-box	However, WSO2 has provided similar solutions for customers using plug-ins for Nginx and other proxy servers that can transform standard protocols such as SAML 2.0, OpenID Connect and others to legacy protocols supported by the respective application. As a leading open source Identity and Access Management (IAM) product, WSO2 Identity Server has been designed and architected based on well-known 'Secure by Design' and 'Privacy by Design' principles. All privacy features are enabled in the product as the default options to comply with 'privacy-by-default' principle. The product uses up-to-date algorithms and frameworks for all cryptographic operations such as data encryption, signing, and hashing. References: [1] https://is.docs.wso2.com/en/latest/learn/consent-management/#privacy-by-design [2] https://is.docs.wso2.com/en/latest/compliance/general-data-protection-regulation/#privacy-by-design-and-privacy-by-default
15.1.7	What are the classifications of data that is handled by the system? If Personally Identifiable Information (PII) is handled by the system, what measures are taken to protect customer data privacy and other data that is deemed sensitive?			WSO2 Identity Server broadly handles 3 types of data: user data, configuration data and transaction data. The measures that are built into the product to protect customer data privacy is listed in #13 Data Privacy under 'Functional Requirements', and the measure that are built into the product to protect sensitive data is listed in #20 Security under 'Non-functional Requirements'. Reference: https://is.docs.wso2.com/en/5.11.0/references/default-ports-of-wso2-products/
15.2	Extensibility and Customizability			
15.2.1	Ability to extend or customize the solution for unique business use cases or and/or integration with 3rd party systems	Yes	With extensions	Numerous extension points and flexible plug-in model that will allow customization of certain aspects of the product if required to meet unique business use cases. Reference: https://is.docs.wso2.com/en/latest/develop/extending-the-identity-server/
15.2.2	Ability to support a custom identity federation protocol	Yes	With extensions	References: [1] https://wso2.com/library/articles/2017/04/writing-a-custom-ibound-authenticator-for-wso2-identity-server/ [2] https://is.docs.wso2.com/en/latest/develop/writing-a-custom-federated-authenticator/#writing-a-custom-federated-authenticator
15.2.3	Ability to support a custom authentication mechanism	Yes	With extensions	Reference: https://is.docs.wso2.com/en/latest/develop/writing-a-custom-local-authenticator/
15.2.4	Ability to support custom claims extension	Yes	With extensions	Reference: https://is.docs.wso2.com/en/latest/develop/writing-a-custom-claims-handler/
15.2.5	Ability to support a custom adaptive access control function	Yes	With extensions	Reference: https://is.docs.wso2.com/en/latest/develop/writing-custom-functions-for-adaptive-authentication/
15.2.6	Ability to support a custom captcha implementation	Yes	With extensions	
15.2.7	Ability to support a custom authorization rule in the log-in flow	Yes	With extensions	
15.2.8	Ability to support a custom just-in-time account provisioning listener in the federated log-in flow	Yes	With extensions	

THANK YOU

ws02.com

