



WHITE PAPER

Integration Data Management



CGI recommendation for efficient Enterprise Integration

Integration of business applications that drive critical business processes is one of key task faced by every present-day connected business. Integration platforms are traditionally an integral part of IT architecture because they enable **various systems to communicate** with each other, **regardless the format and technology** they individually use.

At the same time, performance is considered as a crucial factor determining business transactions processing volume as well as their **responsiveness** and **high availability of the solution as a whole**.

Building the architecture based on **WSO2** open source products addresses such requirements by providing not only a **strong middleware platform** but also by eliminating future limitations caused by **performance, functional or financial scalability**.



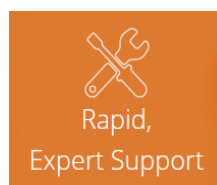
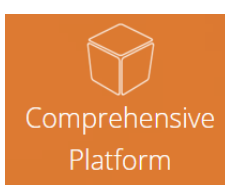
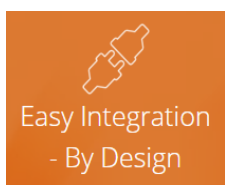
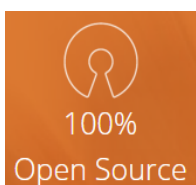
ABOUT CGI

Founded in 1976, CGI is a global IT and business process services provider delivering high-quality business consulting, systems integration and outsourcing services. With 69,000 professionals in 40 countries, CGI has an industry-leading track record of on-time, on-budget projects, aligning our teams with clients' business strategies to achieve top-to-bottom line results.

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CGI has long-term experience with design, implementation and support of Enterprise Integration solutions and also has many years of experience in open source software domain.

WSO2 Platform

WSO2 ORGANIZATION OVERVIEW

WSO2 is an open source software company founded in 2005. Since then, WSO2 specializes itself in providing Service Oriented Architecture solutions for innovative architects, and emphasizes its licensing model which is in compliance with Apache License Version 2.

In 2014, WSO2 has been recognized by Gartner, Inc. as one of the visionaries for On-Premises Application Integration Suites, thus being a serious competitor to commercial solutions.

PRODUCT PORTFOLIO OVERVIEW

WSO2 Platform is built on WSO2 Carbon that follows componentized architecture enabling enterprises to deploy only such components that are necessary at the specified time. This approach allows to implement robust, scalable and sustainable solutions that can seamlessly integrate various internal as well as external systems.

WSO2 Platform is a middleware stack that is composed of a system of individual, yet highly complementary products covering various aspects of data management starting from the Integration itself, followed by Data Access, Monitoring, Analysis, Security, Governance, and not omitting also Internet of Things and Mobile development. All products of the WSO2 Platform follow the SOA principles.

The common platform also provides maximal user comfort in terms of graphical interface and unified configuration approach across all products.

ABOUT THIS DOCUMENT

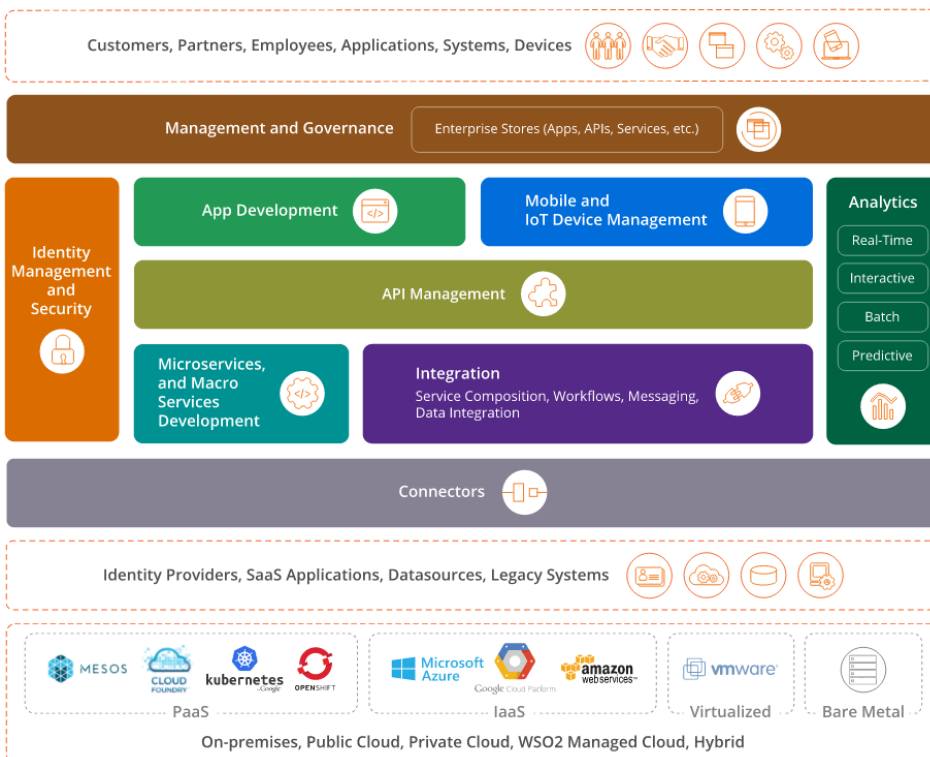
CGI perceives WSO2 platform as an efficient solution for complex integration challenges faced by contemporary businesses.

The purpose of this document is to provide an overview of the WSO2 platform as a whole and present its capabilities to fulfill various needs and requirements Enterprise Integration introduces.

The paper contains a brief description of Enterprise Architecture in general and its relation to the WSO2 platform. It introduces WSO2 organization and its aim as well as the individual products and their mutual interconnection.

Subsequently, the paper describes sample use case scenario where the sample Enterprise Architecture solution is presented utilizing WSO2 products together with several Open Source Software products.

Finally, it refers to the license policy and support subscription possibilities.



ENTERPRISE SERVICE BUS



WSO2 Enterprise Service Bus (WSO2 ESB) forms the backbone of WSO2 middleware. The platform itself is based on WSO2 Carbon technology that emphasizes on complex system performance by utilizing only minimal resources. Thanks to this paradigm, WSO2 ESB is recognized as one of the most high-performing integration middleware platforms that fully respect Service Oriented Architecture principles thus being compliant with various business standards.

API MANAGER



WSO2 API Manager (WSO2 AM) is a complex solution for API lifecycle management, design, administration, and scalable traffic routing. It uses proven and configurable integration patterns and security components for administration of other WSO2 components such as WSO2 ESB or WSO2 Governance Registry.

DATA ANALYTICS SERVER



WSO2 Data Analytics Server (WSO2 DAS) enables to monitor and understand business activities in the organization by monitoring data communication flows not only from IT analyst point of view but also by key business indicators monitoring.

WSO2 DAS is a platform that provides means to capture and store tremendous volumes of data that can be analyzed both predictively and in real time. WSO2 DAS thus addresses the demand for Big Data processing in high traffic areas such as telecommunications or Internet of Things domain.

IDENTITY SERVER



WSO2 Identity Server (WSO2 IS) provides security model that connects multiple identities across business applications, devices or APIs, regardless the standard (e.g. SAML, OpenID Connect etc.). WSO2 IS acts as an Enterprise Identity Bus (EIB) operating as a backbone for identities management that are transparent to the rules they are based on.

DATA SERVICES SERVER



WSO2 Data Services Server (WSO2 DSS) provides support for integrating heterogeneous and disparate data sources such as relational or NoSQL databases, file based content stores or any other forms of data storage into one abstract layer that embeds and exposes any data source via API.

GOVERNANCE REGISTRY



WSO2 Governance Registry (WSO2 GR) is used as a tool for SOA administration, service lifecycle management, and services dependency identification and consumer management. WSO2 GR guarantees integration platform maintenance, configuration management, development and design process support, runtime governance, lifecycle management or collaboration support.

BUSINESS PROCESS SERVER



WSO2 Business Process Server (WSO2 BPS) provides easy management of both business processes and services modeled in WS-BPEL and BPMN standards respectively.

WSO2 BPS provides a complex web-based graphical interface to manage both processes and human tasks, to deploy, view and execute them.

COMPLIANCE WITH INDUSTRY STANDARDS

FULL ENTERPRISE ARCHITECTURE INTEGRATION PATTERNS SUPPORT

- Message Routing, Message Transformation, Message Channeling etc.

RICH TRANSPORT POSSIBILITIES

- HTTP(S), JMS Queues, Virtual File System, FTP, POP3/IMAP, SMTP etc.

STANDARDIZED INTERFACES

- SOAP WS, REST, POX

STANDARD MESSAGE FORMAT SUPPORT

- application/xml, text/xml, application/soap+xml, application/json, text/plain, text/html etc.

RICH SET OF NATIVE CONNECTORS AVAILABLE

- Connectors for WSO2 ESB: SAP, Salesforce CRM, SharePoint, JIRA
- Connectors for WSO2 IS: X509, JWT, OTP Authenticator

COMPLIANCE WITH SECURITY STANDARDS

- Single-Sign-On via OpenID, SAML 2.0, OpenID Connect
- Delegated Access Control via OAuth 1.0a, OAuth 2.0, and OpenID Connect
- Identity Federation via SAML 2.0, WS-Trust and Passive Security Token Service

Sample Use Case

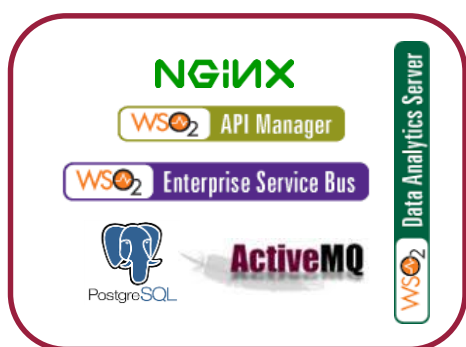
ENTERPRISE INTEGRATION WITH OPEN SOURCE STACK

The basic purpose of middleware stack is integration of relevant systems or applications within Enterprise Architecture – either internal or external ones. Those systems can be ERP, CRM, customized web applications, DMS and many others.

Enterprise Architecture Integration can be achieved by utilizing Open Source Software solutions CGI has extended knowledge and long-term experience with.

The diagram below demonstrates basic EAI solution (dark red box) where following components play their roles within the architecture:

- WSO2 ESB acts as message router, format and protocol transformer and provider of guaranteed message delivery
- WSO2 API Manager acts as a single point of access providing all APIs
- WSO2 DAS provides the monitoring possibilities
- PostgreSQL and ActiveMQ act as a persistence layer for integration platform
- NGinx serves as load balancer and / or reverse proxy



**FOR MORE DETAILS
PLEASE CONTACT**

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Licensing and Support

Although WSO2 is 100% open source middleware supported by wide community of developers, it provides Premium support for its customers. Premium support guarantees the middleware infrastructure to be available 24x7x.365. The support also includes 3 years of backward compatibility and SLA of 1 hour. WSO2 Premium support is used by more than 100 customers employing over 1000 enterprise implementations that are based mainly in USA and UK.

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