Chapter 1
Middleware Architecture Using SOA System

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ABSTRACT
The developer attracted to Service-Oriented Architecture (SOA) because it offers so many advantages almost covers all fields. The resource linking on demand is the basis of enterprise-scale IT architecture. The SOA resources are available to the user according to user specification. This partition is based on value net, enterprises, line of business. This chapter talks about Middleware Architecture and Service Oriented architecture (SOA). This capabilities of the SOA is useful for different application domains. Visibility, communication, and effects reflect major notion for explaining the SOA model. Chapter also covers the assumption related to system execution modeling tools and the significance of security architecture for SOA-based IoT middleware system. The chapter concludes with Concept of oracle fusion middleware.

INTRODUCTION: MIDDLEWARE ARCHITECTURE AND SOA TECHNOLOGY
In the IT world creation of application requires well defined domain. Several domains require well-defined infrastructure of systems of services for device hiding and data management and also support the development of applications. This situation is related to Middleware architecture. And it is a progressively more familiar subject in the world of enterprise IT. Middleware is a system which provides useful hardware and software support in terms of resources and services (Tiburski, et al., 2016). Cloud support many application to work together but looks invisible to user. Cloud is an interface it provides support to run many applications to run and use different resources. Middleware is a name given to describe the software that interacted between a network and database and similar situations.

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There are many reasons why Middleware architecture is important some of them are:

1. SOA or middleware always makes free about services which are simple and easy to access.
2. It is responsible to provide all the functions which are directly available in software using in the system but invisible to the user. As an alternative of disturbing to regarding all of the various information such as authentication handlers and application servers. While making software, developers may focus on making the software as user responsive as possible.
3. As a final point user can focus on making the software rather focusing and wasting their time to understanding the background process.
4. The cost of Middleware services development is very low and effective in case of small number of users We simply use the software applications that are presented to and give slight consideration to how it work but for big IT projects it can means a lot. Rather than go from beginning to end the costly and time overwhelming method of building authentication handlers, application servers, messaging systems and database connection drivers, one can put their own application on pre-built middleware that repeatedly does all these working for developers. There is no need to rediscover the wheel when it is eagerly presented.

**What is Middleware?**

It is software which is used to connect software components or enterprise application. In the distributed system middleware is a software layer that connects both operating system and the applications (Figure 1). In general, it supports complex, business application, distributed enterprise applications. Middleware is the provider, facilitator to developer. It is an environment which promising making of business applications and provides services. There are so many services provided are concurrency, transactions, threading, messaging and the SCA framework in service-oriented architecture (SOA) applications. It

*Figure 1. Middleware architecture*