

An Approach to Enterprise Interoperability Using SOA

Upadrasta Venkatesh

What is SOA?

A Service Oriented Architecture (SOA) is essentially a collection of services. These services communicate with each other. The communication can involve either simple data passing or it could involve two or more services coordinating with each other. SOA also does not impose any technology or operating system restrictions. This implies that SOA is all about connecting autonomous applications together in a seamless manner.

Is SOA a new concept? **Definitely not.** The first “service oriented architecture” was based on the CORBA specification and used with DCOM and Object Request Brokers (ORBs).

Without SOA, application connections tend towards chaos. As more heterogeneous applications are connected to each other, the number of connections increases, and the problem of maintaining the applications increases exponentially. as described in Figure 1.

Gartner projects that “By 2008 more than 75% of then–current application packages either will be natively SOA or will expose SOA interface through a wrapping layer of interfaces.”

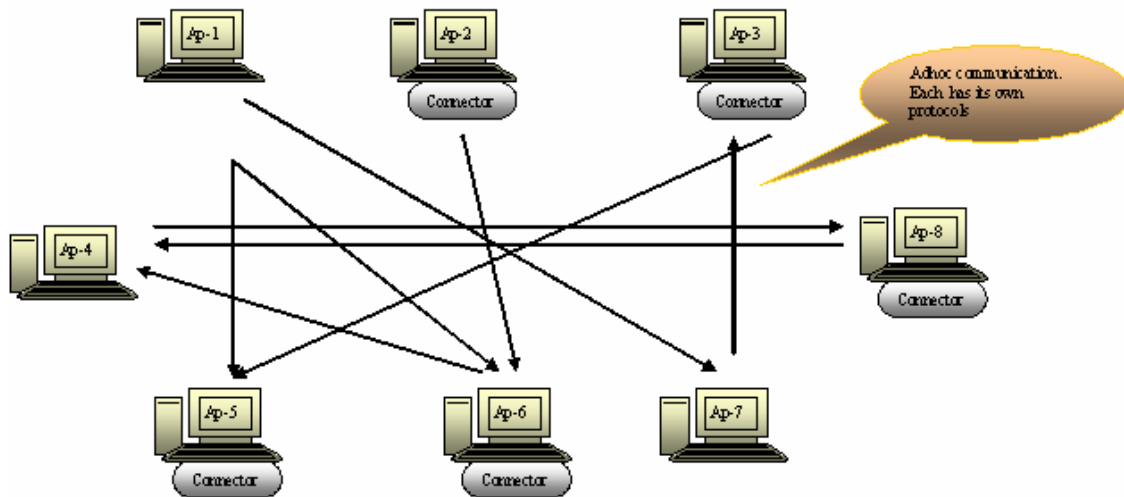


Figure 1. Applications connecting without Service-Oriented Architectures

The Enterprise Interoperability Problem

With service-oriented architecture we can attain a manageable, structured application-to-application communication without any changes to the application. We accomplish this by building an SOA connecting infrastructure that every application plugs into. As application are built or reengineered to adapt service architecture they are plugged into a connecting infrastructure.

The applications built or reengineered to adapt the SOA framework involve upfront development costs, but as the numbers of applications (which contacts the SOA-built applications) increases, there is a significant cost reduction in terms of development. The cost reduction is not only in terms of developments that are positively impacted by using the SOA approach, but there is also a reduction in long-term maintenance costs. With your application adhering to the SOA framework, your application can be pinged by any application in the world without any change to your application.

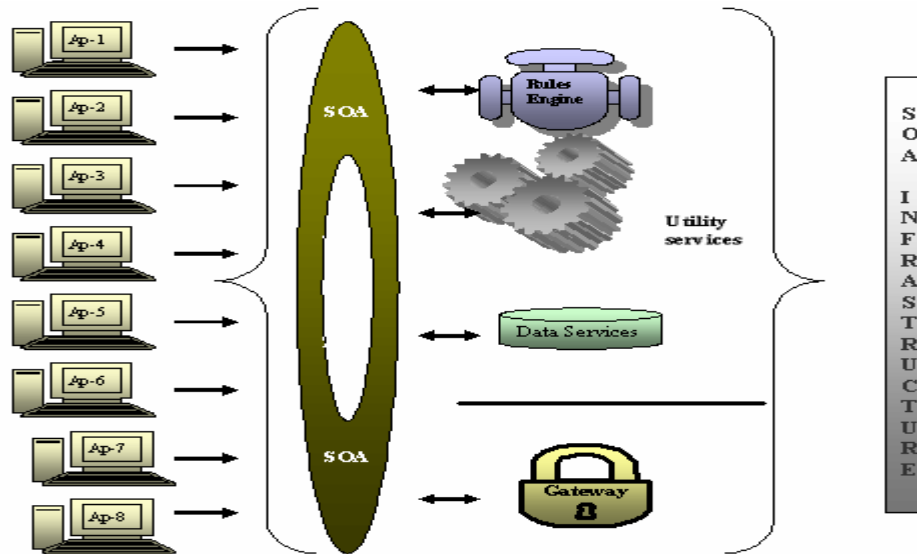


Figure 2. Application Connected Using a Service-Oriented Infrastructure

Building a SOA infrastructure is not simply connecting applications. One should count on the application of high intellect to plug applications without compromising on security, scalability, and/or availability. Focusing on these aspects and their complexities, the Software Fortress Model (SFM) has been evolved. SFM is concerned with how an application would use the SFM to define its interconnection architecture.

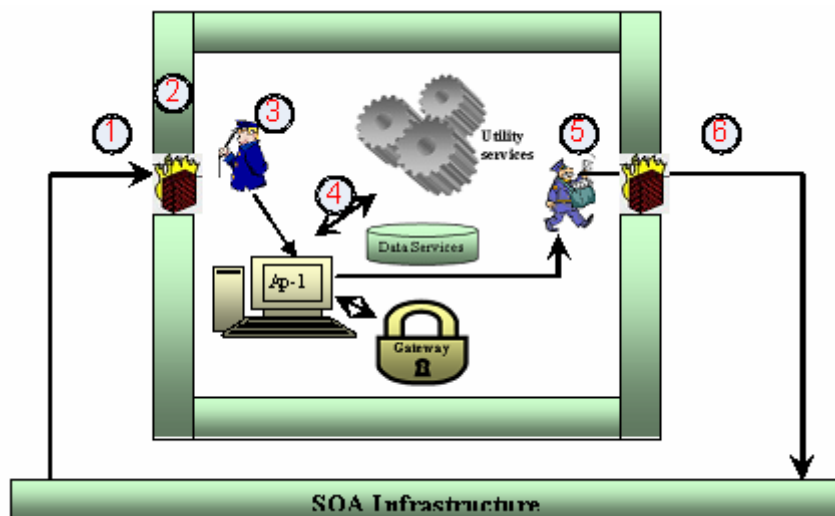


Figure 3. The Software Fortress Model

1. As you can see in the above figure, there are six parts to SFM. Briefly, they are as follows:
2. Single Point of Entry: The gateway through which requests to the applications travel.
3. Firewall: The shield that ensures that all calls to the applications are routed to the Single Point of Entry (1)
4. The security (features) that authenticates the request to the applications
5. Application performs all the processing's in par with the request made
6. Envoy: A focused point of exit from the system
7. Single Point of exit: The gateway through which response is sent from the application to the requester
8. These are the basics of how we will approach enterprise interoperability problem.

Note: I would like to thank my boss, Rane Sandeep (Sr. Manager – Projects), for giving me this opportunity to work in this area

Upadrsta Venkatesh is a Technical Manager at Cognizant Technologies. He can be reached at uvenkat76@yahoo.com or Upadrsta.Venkatesh@cognizant.com Work 91 405 543 2000 x2066; Mobile 91-984 964 3233