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A Quick Chat about SOMF Assets: Atomic, Composite, and Cluster Services

For architects, business analysts, system analysts, software developers, modelers, team leaders, and managers

Use the SOMF modeling capabilities for enterprise architecture, application architecture, service-oriented architecture (SOA), and Cloud Computing projects.

SOMF is empowered by Sparx Systems Enterprise Architect modeling platform

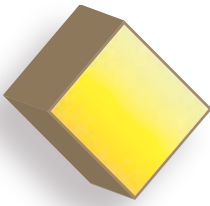
What is a Service?

A service is any piece of software or process that an organization or an individual employs to solve a business or technological problem.

The abstraction level that is presented by this definition is universal enough to enable collaboration of diverse entities to offer a solution. These entities can be a legacy application, JAVA class, software library, business process, store procedure, database process, organizational concept, enterprise service bus, infrastructure facility, middleware, and many more.

What is an Atomic Service

An atomic service is a software component that should be indivisible. In other words, it would be impractical to decompose an atomic service because of its typical fine-grained structure. The term “fine-grained” pertains to a service that offers limited functionality and possesses some few capabilities.

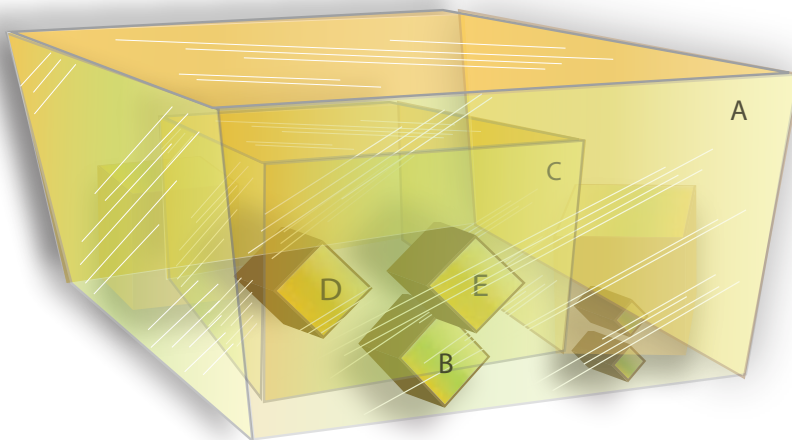


Atomic Service

What is a Composite Service

Now, let us take a look at a composite service. The term “composite” implies that an entity is comprised of one or many internal software components.

In other words, the aggregated child services are contained within a parent service structure, as depicted for example in the illustration below. As apparent, services B, C, D, and E are contained in the parent composite service A.



Composite Service

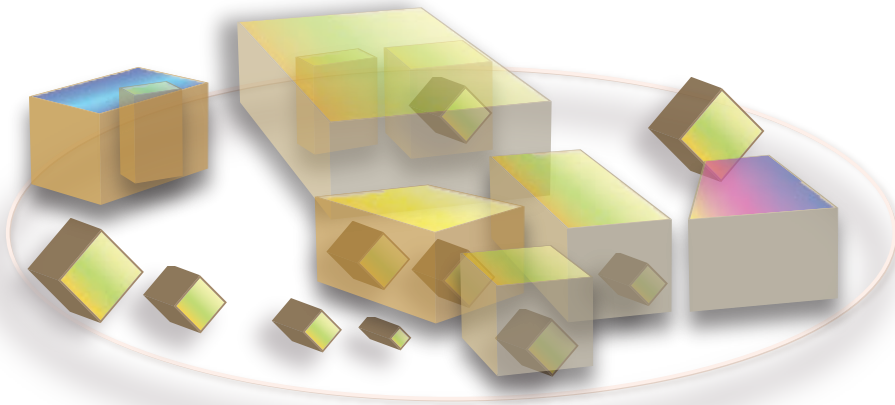
The rule of thumb suggests that a composite service can contain a smaller composite service or an atomic service. If you look closer at the above illustration, you will notice that service C, encompassed in the parent service A, is an internal composite formation that aggregates services D, E, and B.

A composite service may be an application, a software product, an enterprise service bus, an orchestration product that includes a business rules engine, a database that contains multiple components, and more.

What is a Service Cluster

A cluster of services is a collection of software entities, such as atomic and/or composite services that collaboratively provide a solution to an organizational problem. Grouping services to offer a joint solution typically result in a powerful remedy that is contributed by each individual service -- a member of a cluster.

Additionally, each participating service member in a cluster may belong to another application or composite formation. Here the reuse of software assets discipline comes to practice because a service may provide business or technological value to related or even unrelated implementations.



To learn more about many SOMF capabilities, modeling methods and formal notation, and patterns for enterprise architecture, application architecture, service-oriented architecture (SOA), and Cloud Computing refer to these books:

