



IBM® Information Server Services and ASB Agent

What Is IBM Information Server Services?

A service receives a request from an application, and this request will be passed to the processing Information Server product module (DataStage® Jobs or Queries) where the request will be processed and the result will be sent back to the application. Services follow a “request and respond” technique in a service-oriented architecture.

What Is ASB Agent?

ASB stands for “**A**pplication **S**ervice **B**ackbone”. An ASB agent is a Java based background process running on all machines that have an IBM Information Server engine installed. Whenever there is a request for service that needs processing by the IBM Information Server component, ASB agent receives and conveys the request. ASB agent acts as a bus over which the services are delivered. ASB agent is a communicator between the service tier and engine tier within the IBM information server topology. See Figure 1.

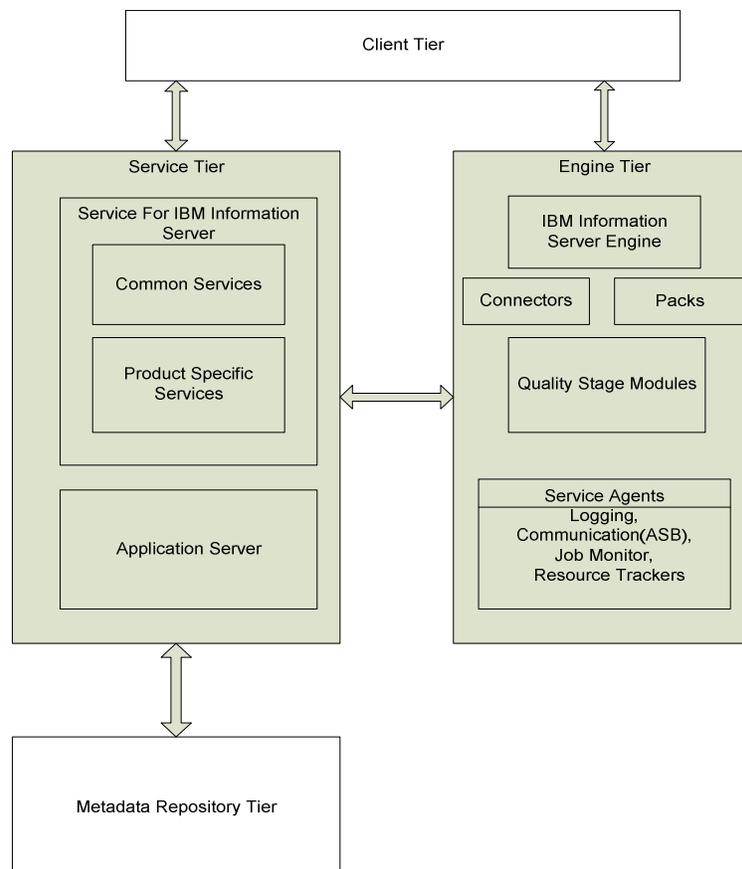


Figure 1: Tiers and Components of IBM Information Server

As shown in Figure 1, the IBM Information Server includes four tiers—Client Tier, Services Tier, Engine Tier, and Metadata Repository Tier. Each of these tiers are described below.

Client Tier

Client tier is used to develop, deploy and administrate the information server. The client tier includes the IBM Information Server Console, IBM WebSphere® DataStage and QualityStage™ and other product client modules. It is important to note that IBM Information Server product client modules are not web based.

Services Tier

Services tier handles common services and product specific services. This tier has access to the Engine tier and Metadata repository tier. This services tier contains IBM WebSphere Application Server, and services for IBM Information Server.

Engine Tier

Engine tier is where all the jobs and other processing will run. This tier includes IBM Information Server Engine and its components. ASB agent is part of IBM WebSphere DataStage Engine; when you install the IBM Information Server Engine, the ASB communication agent will also be installed.

Metadata Repository Tier

Metadata repository is a database that stores the metadata and other data for the IBM Information Server and all product modules. The IBM Information Server services are hosted by Application Server (Service Tier) and connect to the Metadata Repository Tier to store and retrieve data from the database.

All of the above described tiers work closely together to provide services for client applications. ASB agent, as a communicator, receives and conveys the services from the service tier to the engine tier. (This communication agent is only needed if the WebSphere DataStage Server and WebSphere Application Server are on separate machines.)

Service Message Flow and ASB Agent Building Blocks

When a service is requested, a sequence of steps occurs for processing the request. Figure 2 describes two ASB agents with a single Information Services Director server. A service request will arrive at WISD (WebSphere Information Services Director) Endpoint and is handed over to the ASB adapter. The service will carry information about the

requested operation. These operation details are used to determine the providers that will process the request. ASB adaptor will pass the request to ASB agent. If more than one ASB agent is available then the load balancer in the ASB adaptor is used to pass the request to the correct ASB agent.

Once the ASB agent receives the request it will be placed in the operation queue until a slot is available in the pipeline. When a slot is available, the request will be moved from the operation queue to the pipeline. The request will then be processed by DataStage jobs or Queries. See Figure 2.

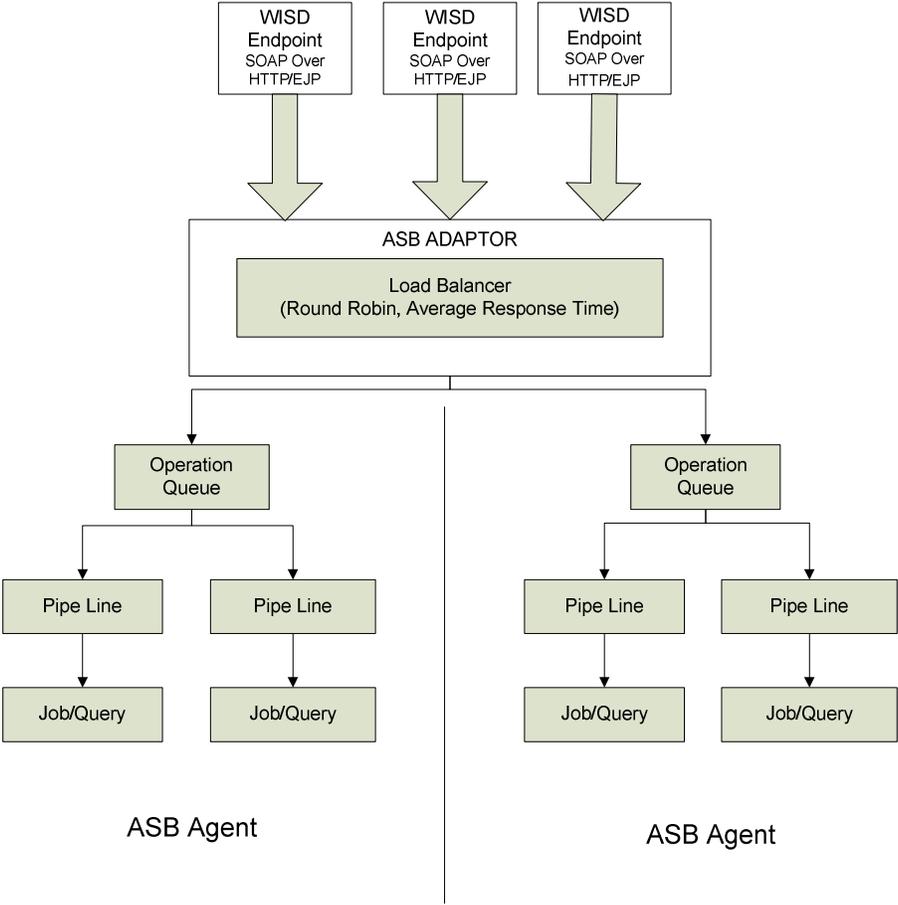


Figure 2: Message Flow and ASB Agent building blocks

Processing a Service Request using a Datastage Job

In the DataStage job, (See Figure 3), a service request enters through WISD_Input stage (as arguments in columns tab). Argument values are interpreted as rows, and mapped to the other stages for processing. Finally, the processed data rows are provided to the client application through the WISD_Output stage

For service-oriented architecture implementation, jobs need to be always running (Always-on behavior). Jobs can also have multiple instances to handle/process many requests.

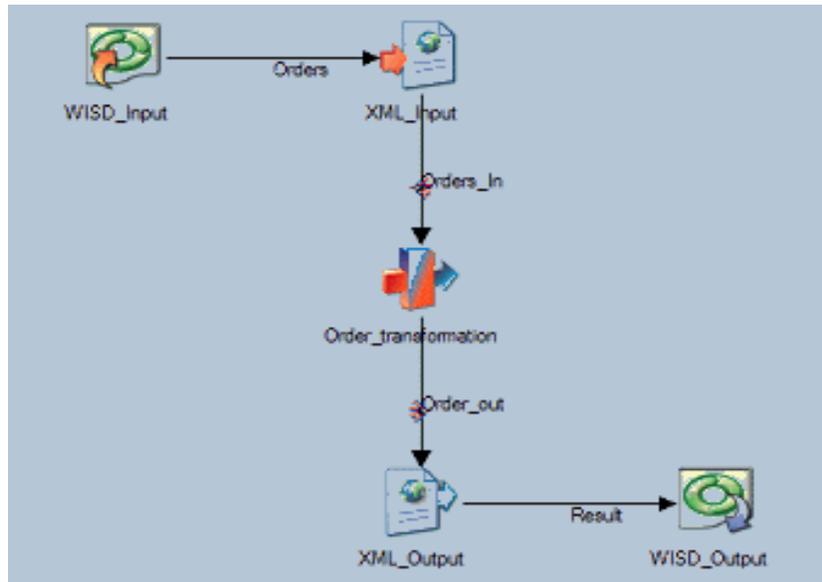


Figure 3: DataStage Job

Role of ASB Agent to Handle Job Instances

ASB agent plays a key role in handling a service request, ASB agent starts the job instances ahead of the service requests to get rid of latency, and to deliver a high throughput rate in messaging/communicating with the service client.

The ASB agent takes care that a minimum number of active instances are available for service requests. At the same time, ASB agent also reduces the active job to a minimum limit. ASB agent never starts a new instance when a maximum active limit is attained.

Summary

The ASB agent is part of the ISF – Information Service Framework, that provides a means of passing requests from the ASB server (i.e. the location where the IBM Information Server is installed) to the remote client (i.e. to where the ASB agent is located) without the need of a complete J2EE Application Server at each client location.

To sum up, the foremost task of the ISF agent (ASB agent) is to route requests and return responses. This is accomplished by ASB agent serving as a communicator

between the service tier and engine tier. This communication occurs via a background process that runs on the IBM Information Server. Finally, ASB agent is only needed when the WebSphere DataStage and Application Servers are on separate machines.

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