

Jakarta Servlet Listener Intro

Jakarta Servlet & JSP

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Why do we need Servlet Listener?

- Suppose your application is database oriented, want to store Database Connection Object into ServletContext.
- Your application has multiple entry points.
- How will you implement?

What is Jakarta Servlet Listener?

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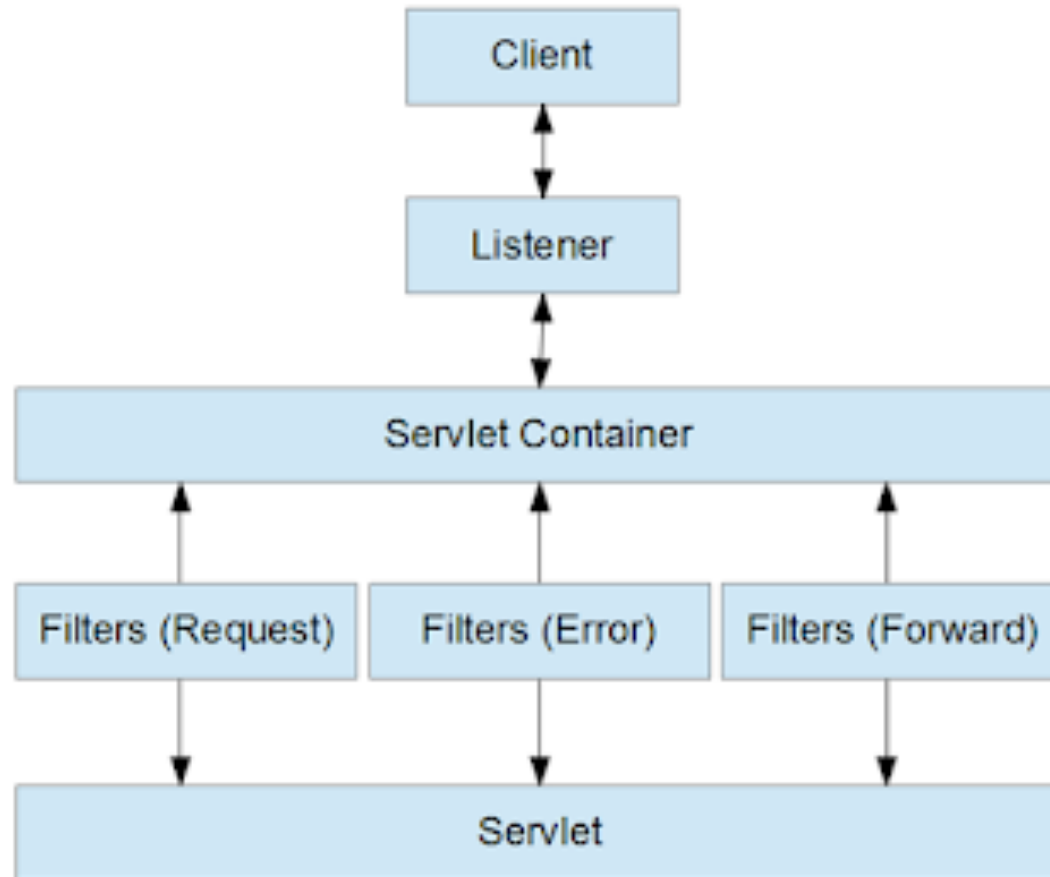
Event

- Something that happens
- In web application, an event can be
 - Initialization of application
 - Destroying an application
 - Request from client
 - Creating/destroying a session
 - Attribute modification in a session

Servlet Listener

- Servlet API provides different kind of listeners for different types of Events.
- Listener interfaces declare methods to work with a group of similar events
 - ServletContextListener is used to listen to startup and shutdown event of context.
 - Every method in listener interface takes Event object as input.
 - Event object works as a wrapper to provide specific object to the listeners.

Servlet Listener Architecture



Jakarta Servlet Listener APIs

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Event Objects in Servlet API

| Event Object | Description |
|---|---|
| jakarta.servlet.AsyncEvent | Event that gets fired when the asynchronous operation initiated on a ServletRequest has completed, timed out, or produced an error. |
| jakarta.servlet.http.HttpSessionBindingEvent | Events of this type are either sent to an object that implements HttpSessionBindingListener when it is bound or unbound from a session, or to a HttpSessionAttributeListener that has been configured in the web.xml when any attribute is bound, unbound or replaced in a session. The session binds the object by a call to HttpSession.setAttribute and unbinds the object by a call to HttpSession.removeAttribute. We can use this event for cleanup activities when object is removed from session. |
| jakarta.servlet.http.HttpSessionEvent | Event notifications for changes to sessions within a web application. |
| jakarta.servlet.ServletContextAttributeEvent | Event notifications about changes to the attributes of the ServletContext of a web application |
| jakarta.servlet.ServletContextEvent | Event notifications about changes to the servlet context of a web application |
| jakarta.servlet.ServletRequestEvent | Event notification about lifecycle of ServletRequest. |
| jakarta.servlet.ServletRequestAttributeEvent | Event class for notifications of changes to the attributes of the servlet request in an application |

Listener interfaces in Servlet API

| Listener Object | Description |
|---|--|
| jakarta.servlet.AsyncListener | Listener that will be notified in the event that an asynchronous operation initiated on a ServletRequest to which the listener had been added has completed, timed out, or resulted in an error |
| jakarta.servlet.ServletContextListener | Interface for receiving notification events about ServletContext lifecycle changes |
| jakarta.servlet.ServletContextAttributeListener | Interface for receiving notification events about ServletContext attribute changes |
| jakarta.servlet.ServletRequestListener | Interface for receiving notification events about requests coming into and going out of scope of a web application |
| jakarta.servlet.ServletRequestAttributeListener | Interface for receiving notification events about ServletRequest attribute changes |
| jakarta.servlet.http.HttpSessionListener | Interface for receiving notification events about HttpSession lifecycle changes |
| jakarta.servlet.http.HttpSessionBindingListener | Causes an object to be notified when it is bound to or unbound from a session. |
| jakarta.servlet.http.HttpSessionAttributeListener | Interface for receiving notification events about HttpSession attribute changes |
| jakarta.servlet.http.HttpSessionActivationListener | Objects that are bound to a session may listen to container events notifying them that sessions will be passivated and that session will be activated. A container that migrates session between VMs or persists sessions is required to notify all attributes bound to sessions implementing HttpSessionActivationListener. |