



IBM Software Group

IBM WebSphere Application Server V6

Work Area Service



@business on demand.

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This presentation will discuss the Work Area Service programming model extension.

Goals

- Understand the Work Area and Work Area Partition Services
- Learn how to enable and access the Work Area



The goals for this presentation are to understand the Work Area and Work Area Partition Services functionality and to be able to activate and access the Work Areas.

Agenda

- Work Area Service Overview
- Enabling and Accessing the Work Area Service
- Work Area Partition Service Overview
- Enabling and Accessing the Work Area Partition Service
- Summary



This presentation will provide a description of the Work Area Service and will describe how to enable and access the Work Area Service. It will also provide a description of the Work Area Partition Service, describe how to enable and access it, and describe the differences between the two services.

Section

Overview Work Area Service



This section will discuss the Work Area Service.

Work Area Service: Overview

- Allows application developers the capability to implicitly propagate application context on the current thread
 - ▶ Application context is strictly scoped to the current thread
- Applications create the work area, set information into it, and then invoke methods on target objects
- Context is available to target objects through the work area, eliminating the need to explicitly program arguments on the method invocations
 - ▶ Example of information that may be set into a work area could include Customer Profile or Employee Department Information
- Work Area Service for Java™ 2 Enterprise Edition (J2EE) JSR 149 <http://www.jcp.org/en/jsr/detail?id=149>



One of the foundations of distributed computing is the ability to pass information, typically in the form of arguments to remote methods, from one process to another. Work Area gives developers a similar facility, however, it allows for the information to be “implicitly” propagated on the current thread, thus eliminating the need to “explicitly” program arguments on the method invocations. Work Areas can hold any kind of information, and they can hold an arbitrary number of individual pieces of data, each stored as a property.

There is a Java Specification Request (JSR) for Work Area Service for J2EE JSR 149 located at URL on this slide.

Work Area: Enabling the service

- From the Application Server Administrative Console, ensure the Work Area Service is enabled

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The work area service manages the scope and implicit propagation of the application context.

Configuration

| General Properties | Additional Properties |
|---|-----------------------------------|
| <input checked="" type="checkbox"/> Enable service at server startup | Custom Properties |
| + Maximum send size 10000 bytes | |
| + Maximum receive size 10000 bytes | |
| <input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/> | |



To use the Work Area Service on the WebSphere Application Server, ensure the service is enabled using the Administrative Console.

Accessing the Work Area Service

- Accessing the UserWorkArea partition

- ▶ Perform a lookup on the JNDI name

```
userWorkArea = (UserWorkArea)jndi.lookup("java:comp/websphere/UserWorkArea");
```

- ▶ Create a new work area which is associated with the calling thread

```
userWorkArea.begin("MySimpleSample");
```

- ▶ Set properties in the work area using key-value-mode arguments

- Property Modes: Normal,Fixed, normalRead-only,Fixed read-only
 - read-only modes forbid changes to the information in the property
 - fixed modes forbid deletion of the property

```
userWorkArea.set("dept", "A1", PropertyModeType.read_only);
```



To access the Work Area Service, you will perform a lookup on the JNDI name. You can then create a new work area. This new work area will automatically be associated with the current thread. Next, you can set properties in the work area. When you invoke a target object, the information set into the work area is implicitly propagated on the current thread. The target object may use the information available in the work area, or it may choose to ignore it. See the WebSphere V6 Information Center for additional information on the UserWorkArea interface.

Accessing the Work Area Service (cont.)

- Accessing the UserWorkArea partition

- ▶ Get properties from the work area using key

```
String dept = (String) userWorkArea.get("dept");
```

- ▶ Complete the work area when you are finished with it

```
userWorkArea.complete();
```



To access the information in the work area, get the work area properties using the key. Finally, to complete a work area when you are finished with it using the `userWorkArea.complete()` method. This command removes the current work area, which in this example is the work area named "MySimpleSample". Note that doing a complete is not strictly enforced; and the work area service will complete any uncompleted work areas on your behalf.

Section

Overview Work Area Partition Service



This section will discuss the Work Area Partition Service.

Work Area Partition Service: Overview

- Work Area Partition Service is an extension of the Work Area Service
 - ▶ Allows for creation of multiple custom work areas
 - ▶ Provides more control over configuration and access to your partition



The Work Area Partition Service is an extension of the Work Area Service that allows for the creation of multiple custom work areas and provides more control over configuration and access to the partition. Just like the UserWorkArea partition, each user-defined partition is defined by the work area APIs. Unlike the UserWorkArea partition, which is publicly known and automatically bound into the JNDI namespace, work area partitions created by the Work Area Partition Service are not automatically bound into the JNDI namespace and are “private”. The word, “private”, in this case, means a partition is accessed by name and as such, anyone who knows the name of the partition can access it. You can bind your partition into JNDI to make it publicly available through JNDI. If you do not, you will use the Partition Manager Interface to access your partition. The Partition Manager Interface is discussed in an upcoming slide.

Work Area Partition Service: Overview

- Partitions can be configured with additional properties
 - ▶ Bidirectional Support
 - When enabled (set to true), context flows downstream (arguments) and upstream (return values)
 - When disabled (default), context flows only downstream
 - ▶ Deferred Attribute Serialization
 - When enabled (set to true), attributes set into the work area are not automatically serialized, rather context serialization is deferred until serialization is necessary
 - In the case of a remote call made across boundaries
 - When disabled (default), work area serializes context immediately upon a “set” and deserializes immediately upon a “get”



The Work Area Partition Service also allows a user to configure partitions with additional properties that are not available on the UserWorkArea partition, such as bidirectional propagation of work area partition context and deferred attribute serialization. These properties are available as configuration properties when creating a partition.

When the bidirectional support option is enabled, or set to true, context flows downstream and upstream. When this support option is disabled, which is the default, context flows only downstream.

When the deferred attribution serialization option is enabled, or set to true, attributes set into the work area are not automatically serialized. In other words, context serialization is deferred until serialization is necessary; for example, in the case of a remote call across process boundaries. When disabled, which is the default, work area serializes context immediately upon a “set” and deserializes context immediately upon a “get”.

Work Area Partition Service: Enabling

Partitions

- ▶ Create your own work area partition isolated from other work area partitions on the same thread
- ▶ Using the Administrative Console, create “New” Work Area Partitions
 - Enable service
 - Optionally select Bidirectional support
 - Optionally select Deferred attribute serialization support

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A work area partition supports custom configuration and isolated work area functionality.

Configuration

General Properties

+ Name

Description

Enable service at server startup

Bidirectional

+ Maximum send size
bytes

+ Maximum receive size
bytes

Deferred attribute serialization

The additional properties will not be available until the general properties for this item are saved.

Additional Properties

■ Custom Properties

Apply OK Reset Cancel

Use the Administrative Console to create a new, custom Work Area Partition. Enable the service at server startup, and optionally select bidirectional and deferred attribute serialization support.

Accessing Work Area Partition

▶ Access with the Partition Manager Interface

```
String jndiName = "java:comp/websphere/WorkAreaPartitionManager";  
WorkAreaPartitionManager partitionManager = null;  
partitionManager = (WorkAreaPartitionManager) initialContext.lookup(jndiName);  
UserWorkArea mwap = (UserWorkAreaPartition)  
    partitionManager.getWorkAreaPartition("MyWAPartition");
```



You may access your custom Work Area Partition using the Partition Manager Interface or with JNDI, if you have bound a name for your partition into the namespace. Once you have a reference available to your partition, you will use it in a similar manner as the UserWorkArea previously described.

Section

Summary

Summary

- Learned about Work Area Service and Work Area Partition Service
- Understand how to enable and use the Service
- Understand the differences in functionality



In this presentation you learned about the Work Area Service and the Work Area Partition Service. While similar in the broad sense, there are differences in functionality between the two services, with the Work Area Partition Service allowing additional capabilities.

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