



## **OSID V3 Specifications resource package**

Version Draft 3

This specifications represent a draft for OSID V3 interface definitions. These definitions may change at any time.

Last Modified: 27 October 2008

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Package Description	osid.resource package
Interfaces	<code>osid.resource.ResourceProfile</code> <code>osid.resource.ResourceManager</code> <code>osid.resource.ResourceProxyManager</code> <code>osid.resource.ResourceLookupSession</code> <code>osid.resource.ResourceSearchSession</code> <code>osid.resource.ResourceAdminSession</code> <code>osid.resource.ResourceNotificationSession</code> <code>osid.resource.GroupSession</code> <code>osid.resource.GroupAssignmentSession</code> <code>osid.resource.ResourceAgentSession</code> <code>osid.resource.ResourceAgentAssignmentSession</code> <code>osid.resource.ResourceBinSession</code> <code>osid.resource.ResourceBinAssignmentSession</code> <code>osid.resource.BinLookupSession</code> <code>osid.resource.BinSearchSession</code> <code>osid.resource.BinAdminSession</code> <code>osid.resource.BinNotificationSession</code> <code>osid.resource.BinHierarchySession</code> <code>osid.resource.BinHierarchyDesignSession</code> <code>osid.resource.Resource</code> <code>osid.resource.ResourceRecord</code> <code>osid.resource.ResourceQuery</code> <code>osid.resource.ResourceQueryRecord</code> <code>osid.resource.ResourceForm</code> <code>osid.resource.ResourceFormRecord</code> <code>osid.resource.ResourceSearchOrder</code> <code>osid.resource.ResourceSearchOrderRecord</code> <code>osid.resource.ResourceSearch</code> <code>osid.resource.ResourceSearchRecord</code> <code>osid.resource.ResourceSearchResults</code> <code>osid.resource.ResourceSearchResultsRecord</code> <code>osid.resource.ResourceReceiver</code> <code>osid.resource.ResourceList</code> <code>osid.resource.Bin</code> <code>osid.resource.BinRecord</code> <code>osid.resource.BinQuery</code> <code>osid.resource.BinQueryRecord</code> <code>osid.resource.BinForm</code> <code>osid.resource.BinFormRecord</code> <code>osid.resource.BinSearchOrder</code> <code>osid.resource.BinSearchOrderRecord</code> <code>osid.resource.BinSearch</code> <code>osid.resource.BinSearchRecord</code> <code>osid.resource.BinSearchResults</code> <code>osid.resource.BinSearchResultsRecord</code>

osid.resource.BinReceiver  
osid.resource.BinList

<b>Package</b>	<b>osid.resource</b>
<b>Title</b>	<b>Resource Open Service Interface Definitions</b>
<b>Version</b>	3.0.0
<b>Description</b>	<p>The Resource OSID defines a service to access and manage a directory of objects. These objects may represent people, places or a set or arbitrary entities that are used throughout the OSIDs as references to indirect objects. In the core OSID, resources have no other meaning other than to provide an identifier and a relation to an authentication principal. Resource Types may define extra data to define an employee, organizational unit or an inventory item.</p> <p>By itself, the Resource OSID can be used to manage inventories or directories of objects. Resources may be mapped into hierarchical Bins for the purpose of cataloging or federation. The Resource OSID in conjunction with other OSIDs simply provides a consistent interface with which to access and manage objects. For example, a Repository OSID may define a Resource OSID that manages authors or a Course OSID may define a Resource OSID to manage students and instructors.</p> <p>A Resource also provides the mapping between an authentication Agent and the entity on whose behalf the agent is acting. An Agent can only map to a single Resource while a Resource can have multiple Agents. An agent that represents the unix login of "vijay" on server due.mit.edu can map to a Resource representing Vijay Kumar, who may also have a campus agent of "vkumar@mit.edu".</p> <p>When a Resource is referenced in another OSID, it is a singular entity. To provide groupings of multiple people or things, a Resource can also be defined as a group of other resources. Whether a resource is a single entity or a group is an attribute of the Resource itself. If a Resource is a group, then its membership can be queried or managed in one of the group sessions. This overloading of the object definition serves to keep the nature of the resource separate from the other OSIDs such that a message to a "group", for example, is referenced as a single resource recipient.</p>

<b>Interface</b>	<b>osid.resource.ResourceProfile</b>	
<b>Implements</b>	<a href="#">osid.OsidProfile</a>	
<b>Description</b>	The resource profile describes interoperability among resource services.	
<b>Method</b>	<b>supportsVisibleFederation</b>	
<b>Description</b>	Tests if federation is visible.	
<b>Return</b>	<a href="#">boolean</a>	true if visible federation is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceLookup</b>	
<b>Description</b>	Tests if resource lookup is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if resource lookup is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceSearch</b>	
<b>Description</b>	Tests if resource search is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if resource search is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceAdmin</b>	
<b>Description</b>	Tests if resource administration is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if resource administration is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceNotification</b>	
<b>Description</b>	Tests if resource notification is supported. Messages may be sent when resources are created, modified, or deleted.	
<b>Return</b>	<a href="#">boolean</a>	true if resource notification is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceBin</b>	
<b>Description</b>	Tests if retrieving mappings of resource and bins is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if resource bin mapping retrieval is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsResourceBinAssignment</b>	
<b>Description</b>	Tests if managing mappings of resources and bins is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if resource bin assignment is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsBinLookup</b>	
<b>Description</b>	Tests if bin lookup is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if bin lookup is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsBinSearch</b>	
<b>Description</b>	Tests if bin search is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if bin search is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsBinAdmin</b>	
<b>Description</b>	Tests if bin administration is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if bin administration is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>supportsBinNotification</b>	
<b>Description</b>	Tests if bin notification is supported. Messages may be sent when Bin objects are created, deleted or updated. Notifications for resources within bins are sent via the resource notification session.	
<b>Return</b>	boolean	true if bin notification is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsBinHierarchy</b>	
<b>Description</b>	Tests if a bin hierarchy traversal is supported.	
<b>Return</b>	boolean	true if a bin hierarchy traversal is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsBinHierarchyDesign</b>	
<b>Description</b>	Tests if a bin hierarchy design is supported.	
<b>Return</b>	boolean	true if a bin hierarchy design is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsBinHierarchySequencing</b>	
<b>Description</b>	Tests if the bin hierarchy supports node sequencing.	
<b>Return</b>	boolean	true if bin hierarchy node sequencing is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getResourceRecordTypes</b>	
<b>Description</b>	Gets all the resource record types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported resource record types
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsResourceRecordType</b>	
<b>Description</b>	Tests if a given resource record type is supported.	
<b>Parameters</b>	osid.type.Type   resourceRecordType	the resource type
<b>Return</b>	boolean	true if the resource record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getResourceSearchRecordTypes</b>	
<b>Description</b>	Gets all the resource search record types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported resource search record types
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsResourceSearchRecordType</b>	
<b>Description</b>	Tests if a given resource search type is supported.	
<b>Parameters</b>	osid.type.Type   resourceSearchRecordType	the resource search type
<b>Return</b>	boolean	true if the resource search record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getBinRecordTypes</b>	
<b>Description</b>	Gets all the bin record types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported bin record types
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsBinRecordType</b>	
<b>Description</b>	Tests if a given bin record type is supported.	
<b>Parameters</b>	osid.type.Type   binRecordType	the bin record type
<b>Return</b>	boolean	true if the bin record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.

Method	getBinSearchRecordTypes	
Description	Gets all the bin search record types supported.	
Return	osid.type.TypeList	the list of supported bin search record types
Compliance	mandatory	
Method	supportsBinSearchRecordType	
Description	Tests if a given bin search record type is supported.	
Parameters	osid.type.Type	binSearchRecordType the bin search record type
Return	boolean	true if the bin search record type is supported, false otherwise
Compliance	mandatory	

<b>Interface</b>	<b>osid.resource.ResourceManager</b>	
<b>Implements</b>	<a href="#">osid.OsidManager</a> <a href="#">osid.resource.ResourceProfile</a>	
<b>Description</b>	<p>The resource manager provides access to resource lookup and creation sessions and provides interoperability tests for various aspects of this service. The sessions included in this manager are:</p> <ul style="list-style-type: none"> <li>• ResourceLookupSession: a session to retrieve resources</li> <li>• ResourceSearchSession: a session to search for resources</li> <li>• ResourceAdminSession: a session to create and delete resources</li> <li>• ResourceNotificationSession: a session to receive notifications pertaining to resource changes</li> <li>• ResourceBinSession: a session to look up resource to bin mappings</li> <li>• ResourceBinAssignmentSession: a session to manage resource to bin mappings</li> <li>• BinLookupSession: a session to retrieve bins</li> <li>• BinSearchSession: a session to search for bins</li> <li>• BinAdminSession: a session to create, update and delete bins</li> <li>• BinNotificationSession: a session to receive notifications pertaining to changes in bins</li> <li>• BinHierarchySession: a session to traverse bin hierarchies</li> <li>• BinHierarchyDesignSession: a session to manage bin hierarchies</li> </ul>	
<b>Method</b>	<b>getResourceLookupSession</b>	
<b>Description</b>	Gets the OsidSession associated with the resource lookup service.	
<b>Return</b>	<a href="#">osid.resource.ResourceLookupSession</a>	a ResourceLookupSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsResourceLookup() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsResourceLookup() is true.
<b>Method</b>	<b>getResourceLookupSessionForBin</b>	
<b>Description</b>	Gets the OsidSession associated with the resource lookup service for the given bin.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId the Id of the bin
<b>Return</b>	<a href="#">osid.resource.ResourceLookupSession</a>	a ResourceLookupSession
<b>Errors</b>	<a href="#">NOT_FOUND</a>	binId not found
	<a href="#">NULL_ARGUMENT</a>	binId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsResourceLookup() or supportsVisibleFederation() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsResourceLookup() and supportsVisibleFederation() are true.
<b>Method</b>	<b>getResourceSearchSession</b>	
<b>Description</b>	Gets a resource search session.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchSession</a>	a ResourceSearchSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsResourceSearch() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsResourceSearch() is true.

Method	getResourceSearchSessionForBin	
Description	Gets a resource search session for the given bin.	
Parameters	osid.id.Id   binId	the Id of the bin
Return	osid.resource.ResourceSearchSession	a ResourceSearchSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	binId not found binId is null unable to complete request supportsResourceSearch() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsResourceSearch() and supportsVisibleFederation() are true.
Method	getResourceAdminSession	
Description	Gets a resource administration session for creating, updating and deleting resources.	
Return	osid.resource.ResourceAdminSession	a ResourceAdminSession
Errors	OPERATION_FAILED UNIMPLEMENTED	unable to complete request supportsResourceAdmin() is false
Compliance	optional	This method must be implemented if supportsResourceAdmin() is true.
Method	getResourceAdminSessionForBin	
Description	Gets a resource administration session for the given bin.	
Parameters	osid.id.Id   binId	the Id of the bin
Return	osid.resource.ResourceAdminSession	a ResourceAdminSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	binId not found binId is null unable to complete request supportsResourceAdmin() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsResourceAdmin() and supportsVisibleFederation() are true.
Method	getResourceNotificationSession	
Description	Gets the notification session for notifications pertaining to resource changes.	
Parameters	osid.resource.ResourceReceiver   receiver	the notification callback
Return	osid.resource.ResourceNotificationSession	a ResourceNotificationSession
Errors	NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	receiver is null unable to complete request supportsResourceNotification() is false
Compliance	optional	This method must be implemented if supportsResourceNotification() is true.
Method	getResourceNotificationSessionForBin	
Description	Gets the resource notification session for the given bin.	
Parameters	osid.resource.ResourceReceiver   receiver osid.id.Id   binId	the notification callback the Id of the bin
Return	osid.resource.ResourceNotificationSession	a ResourceNotificationSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	binId not found receiver or binId is null unable to complete request supportsResourceNotification() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsResourceNotification() and supportsVisibleFederation() are true.

Method	getResourceBinSession	
<b>Description</b>	Gets the session for retrieving resource to bin mappings.	
<b>Return</b>	<a href="#">osid.resource.ResourceBinSession</a>	a ResourceBinSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsResourceBin() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsResourceBin() is true.
Method	getResourceBinAssignmentSession	
<b>Description</b>	Gets the session for assigning resource to bin mappings.	
<b>Return</b>	<a href="#">osid.resource.ResourceBinAssignmentSession</a>	a ResourceBinAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsResourceBinAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsResourceBinAssignment() is true.

Method	getBinLookupSession	
Description	Gets the bin lookup session.	
Return	<a href="#">osid.resource.BinLookupSession</a>	a BinLookupSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinLookup() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinLookup() is true.
Method	getBinSearchSession	
Description	Gets the bin search session.	
Return	<a href="#">osid.resource.BinSearchSession</a>	a BinSearchSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinSearch() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinSearch() is true.
Method	getBinAdminSession	
Description	Gets the bin administrative session for creating, updating and deleteing bins.	
Return	<a href="#">osid.resource.BinAdminSession</a>	a BinAdminSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinAdmin() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinAdmin() is true.
Method	getBinNotificationSession	
Description	Gets the notification session for subscribing to changes to a bin.	
Parameters	<a href="#">osid.resource.BinReceiver</a> receiver	the notification callback
Return	<a href="#">osid.resource.BinNotificationSession</a>	a BinNotificationSession
Errors	<a href="#">NULL_ARGUMENT</a>	receiver is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinNotification() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinNotification() is true.
Method	getBinHierarchySession	
Description	Gets the bin hierarchy traversal session.	
Return	<a href="#">osid.resource.BinHierarchySession</a>	a BinHierarchySession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinHierarchy() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinHierarchy() is true.
Method	getBinHierarchyDesignSession	
Description	Gets the bin hierarchy design session.	
Return	<a href="#">osid.resource.BinHierarchyDesignSession</a>	a BinHierarchyDesignSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsBinHierarchyDesign() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsBinHierarchyDesign() is true.

<b>Interface</b>	<b>osid.resource.ResourceProxyManager</b>													
<b>Implements</b>	<a href="#">osid.OsidProxyManager</a> <a href="#">osid.resource.ResourceProfile</a>													
<b>Description</b>	<p>The resource manager provides access to resource lookup and creation session and provides interoperability tests for various aspects of this service. Methods in this manager support the passing of an Authentication object for the purposes of proxy authentication. The sessions included in this manager are:</p> <ul style="list-style-type: none"> <li>• ResourceLookupSession: a session to retrieve resources</li> <li>• ResourceSearchSession: a session to search for resources</li> <li>• ResourceAdminSession: a session to create and delete resources</li> <li>• ResourceNotificationSession: a session to receive notifications pertaining to resource changes</li> <li>• ResourceBinSession: a session to look up resource to bin mappings</li> <li>• ResourceBinAssignmentSession: a session to manage resource to bin mappings</li> <li>• BinLookupSession: a session to retrieve bins</li> <li>• BinSearchSession: a session to search for bins</li> <li>• BinAdminSession: a session to create, update and delete bins</li> <li>• BinNotificationSession: a session to receive notifications pertaining to changes in bins</li> <li>• BinHierarchySession: a session to traverse bin hierarchies</li> <li>• BinHierarchyDesignSession: a session to manage bin hierarchies</li> </ul>													
<b>Method</b>	<b>getResourceLookupSession</b>													
<b>Description</b>	Gets the OsidSession associated with the resource lookup service.													
<b>Parameters</b>	<a href="#">osid.authentication.Authentication</a> authentication	proxy authentication												
<b>Return</b>	<a href="#">osid.resource.ResourceLookupSession</a>	a ResourceLookupSession												
<b>Errors</b>	<table> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>authentication is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authentication is invalid</td> </tr> <tr> <td><a href="#">UNIMPLEMENTED</a></td> <td>supportsResourceLookup() is false</td> </tr> <tr> <td><a href="#">UNSUPPORTED</a></td> <td>the authentication service is not supported</td> </tr> </table>		<a href="#">NULL_ARGUMENT</a>	authentication is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authentication is invalid	<a href="#">UNIMPLEMENTED</a>	supportsResourceLookup() is false	<a href="#">UNSUPPORTED</a>	the authentication service is not supported		
<a href="#">NULL_ARGUMENT</a>	authentication is null													
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<a href="#">PERMISSION_DENIED</a>	authentication is invalid													
<a href="#">UNIMPLEMENTED</a>	supportsResourceLookup() is false													
<a href="#">UNSUPPORTED</a>	the authentication service is not supported													
<b>Compliance</b>	<a href="#">optional</a> This method must be implemented if supportsResourceLookup() is true.													
<b>Method</b>	<b>getResourceLookupSessionForBin</b>													
<b>Description</b>	Gets the OsidSession associated with the resource lookup service for the given bin.													
<b>Parameters</b>	<a href="#">osid.id.Id</a> binId	the Id of the bin												
	<a href="#">osid.authentication.Authentication</a> authentication	proxy authentication												
<b>Return</b>	<a href="#">osid.resource.ResourceLookupSession</a>	a ResourceLookupSession												
<b>Errors</b>	<table> <tr> <td><a href="#">NOT_FOUND</a></td> <td>binId not found</td> </tr> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>binId or authentication is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authentication is invalid</td> </tr> <tr> <td><a href="#">UNIMPLEMENTED</a></td> <td>supportsResourceLookup() or supportsVisibleFederation() is false</td> </tr> <tr> <td><a href="#">UNSUPPORTED</a></td> <td>the authentication service is not supported</td> </tr> </table>		<a href="#">NOT_FOUND</a>	binId not found	<a href="#">NULL_ARGUMENT</a>	binId or authentication is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authentication is invalid	<a href="#">UNIMPLEMENTED</a>	supportsResourceLookup() or supportsVisibleFederation() is false	<a href="#">UNSUPPORTED</a>	the authentication service is not supported
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<b>Compliance</b>	<a href="#">optional</a> This method must be implemented if supportsResourceLookup() and supportsVisibleFederation() are true.													

Method	getResourceSearchSession		
<b>Description</b>	Gets a resource search session.		
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.resource.ResourceSearchSession</code>		a ResourceSearchSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>		authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsResourceSearch()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
<b>Compliance</b>	<code>optional</code>		This method must be implemented if <code>supportsResourceSearch()</code> is true.
Method	getResourceSearchSessionForBin		
<b>Description</b>	Gets a resource search session for the given bin.		
<b>Parameters</b>	<code>osid.id.Id</code>	binId	the Id of the bin
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.resource.ResourceSearchSession</code>		a ResourceSearchSession
<b>Errors</b>	<code>NOT_FOUND</code>		binId not found
	<code>NULL_ARGUMENT</code>		binId or authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsResourceSearch()</code> or <code>supportsVisibleFederation()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
<b>Compliance</b>	<code>optional</code>		This method must be implemented if <code>supportsResourceSearch()</code> and <code>supportsVisibleFederation()</code> are true.
Method	getResourceAdminSession		
<b>Description</b>	Gets a resource administration session for creating, updating and deleting resources.		
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.resource.ResourceAdminSession</code>		a ResourceAdminSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>		authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsResourceAdmin()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
<b>Compliance</b>	<code>optional</code>		This method must be implemented if <code>supportsResourceAdmin()</code> is true.
Method	getResourceAdminSessionForBin		
<b>Description</b>	Gets a resource administration session for the given bin.		
<b>Parameters</b>	<code>osid.id.Id</code>	binId	the Id of the bin
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.resource.ResourceAdminSession</code>		a ResourceAdminSession
<b>Errors</b>	<code>NOT_FOUND</code>		binId not found
	<code>NULL_ARGUMENT</code>		binId or authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsResourceAdmin()</code> or <code>supportsVisibleFederation()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
<b>Compliance</b>	<code>optional</code>		This method must be implemented if <code>supportsResourceAdmin()</code> and <code>supportsVisibleFederation()</code> are true.

Method	getResourceNotificationSession				
Description	Gets the resource notification session for the given bin.				
Parameters	osid.resource.ResourceReceiver	receiver	notification callback		
	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.resource.ResourceNotificationSession	a ResourceNotificationSession			
Errors	NULL_ARGUMENT	receiver or authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsResourceNotification() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsResourceNotification() is true.			
Method	getResourceNotificationSessionForBin				
Description	Gets the resource notification session for the given bin.				
Parameters	osid.resource.ResourceReceiver	receiver	notification callback		
	osid.id.Id	bin	the Id of the bin		
	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.resource.ResourceNotificationSession	a ResourceNotificationSession			
Errors	NOT_FOUND	binId not found			
	NULL_ARGUMENT	receiver, binId or authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsResourceNotification() or supportsVisibleFederation() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsResourceNotification() and supportsVisibleFederation() are true.			
Method	getResourceBinSession				
Description	Gets the session for retrieving resource to bin mappings.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.resource.ResourceBinSession	a ResourceBinSession			
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsResourceBin() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsResourceBin() is true.			
Method	getResourceBinAssignmentSession				
Description	Gets the session for assigning resource to bin mappings.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.resource.ResourceBinAssignmentSession	a ResourceBinAssignmentSession			
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsResourceBinAssignment() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsResourceBinAssignment() is true.			

Method	getBinLookupSession	
<b>Description</b>	Gets the bin lookup session.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.resource.BinLookupSession</code>	a BinLookupSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid <code>supportsBinLookup()</code> is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsBinLookup()</code> is true.
Method	getBinSearchSession	
<b>Description</b>	Gets the bin search session.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.resource.BinSearchSession</code>	a BinSearchSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid <code>supportsBinSearch()</code> is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsBinSearch()</code> is true.
Method	getBinAdminSession	
<b>Description</b>	Gets the bin administrative session for creating, updating and deleteing bins.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.resource.BinAdminSession</code>	a BinAdminSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid <code>supportsBinAdmin()</code> is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsBinAdmin()</code> is true.
Method	getBinNotificationSession	
<b>Description</b>	Gets the notification session for subscribing to changes to a bin.	
<b>Parameters</b>	<code>osid.resource.BinReceiver</code> <code>osid.authentication.Authentication</code>	receiver notification callback authentication proxy authentication
<b>Return</b>	<code>osid.resource.BinNotificationSession</code>	a BinNotificationSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	receiver or authentication is null unable to complete request authentication is invalid <code>supportsBinNotification()</code> is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsBinNotification()</code> is true.

Method	getBinHierarchySession				
<b>Description</b>	Gets the bin hierarchy traversal session.				
<b>Parameters</b>	<a href="#">osid.authentication.Authentication</a>	authentication	proxy authentication		
<b>Return</b>	<a href="#">osid.resource.BinHierarchySession</a>		a BinHierarchySession		
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	authentication is null			
	<a href="#">OPERATION_FAILED</a>	unable to complete request			
	<a href="#">PERMISSION_DENIED</a>	authentication is invalid			
	<a href="#">UNIMPLEMENTED</a>	supportsBinHierarchy() is false			
	<a href="#">UNSUPPORTED</a>	the authentication service is not supported			
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsBinHierarchy() is true.			
Method	getBinHierarchyDesignSession				
<b>Description</b>	Gets the bin hierarchy design session.				
<b>Parameters</b>	<a href="#">osid.authentication.Authentication</a>	authentication	proxy authentication		
<b>Return</b>	<a href="#">osid.resource.BinHierarchyDesignSession</a>		a BinHierarchyDesignSession		
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	authentication is null			
	<a href="#">OPERATION_FAILED</a>	unable to complete request			
	<a href="#">PERMISSION_DENIED</a>	authentication is invalid			
	<a href="#">UNIMPLEMENTED</a>	supportsBinHierarchyDesign() is false			
	<a href="#">UNSUPPORTED</a>	the authentication service is not supported			
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsBinHierarchyDesign() is true.			

<b>Interface</b>	<b>osid.resource.ResourceLookupSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods for retrieving resources. A Resource is an arbitrary entity that may represent a person, place or thing used to identify an object used in various services.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> <li>• isolated bin view: All resource methods in this session operate, retrieve and pertain to resources defined explicitly in the current bin. Using an isolated view is useful for managing Resources with the ResourceAdminSession.</li> <li>• federated bin view: All resource methods in this session operate, retrieve and pertain to all resources defined in this bin and any other resources implicitly available in this bin through bin inheritance.</li> </ul> <p>The methods <code>useFederatedBinView()</code> and <code>useIsolatedBinView()</code> behave as a radio group and one should be selected before invoking any lookup methods.</p> <p>Resources may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the Resource.</p>	
<b>Method</b>	<b>getBinId</b>	
<b>Description</b>	Gets the Bin Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Bin Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBin</b>	
<b>Description</b>	Gets the Bin associated with this session.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the Bin associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canLookupResources</b>	
<b>Description</b>	Tests if this user can perform Resource lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeResourceView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryResourceView</b>	
<b>Description</b>	A complete view of the Resource returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.

<b>Method</b>	<b>useFederatedBinView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include resources in bins which are children of this bin in the bin hierarchy.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedBinView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this bin only.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>getResource</b>	
<b>Description</b>	Gets the Resource specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Resource may have a different Id than requested, such as the case where a duplicate Id was assigned to a Resource and retained for compatibility.	
<b>Parameters</b>	<b>osid.id.Id</b>	resourceId
	the Id of the Resource to rerieve	
<b>Return</b>	<b>osid.resource.Resource</b>	
	the returned Resource	
<b>Errors</b>	NOT_FOUND	no Resource found with the given Id
	NULL_ARGUMENT	resourceId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getResourcesByIds</b>	
<b>Description</b>	Gets a ResourceList corresponding to the given IdList. In plenary mode, the returned list contains all of the resources specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Resources may be omitted from the list and may present the elements in any order including returning a unique set.	
<b>Parameters</b>	<b>osid.id.IdList</b>	resourceIdList
	the list of Ids to rerieve	
<b>Return</b>	<b>osid.resource.ResourceList</b>	
	the returned Resource list	
<b>Errors</b>	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	resourceIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getResourcesByGenusType</b>	
<b>Description</b>	Gets a ResourceList corresponding to the given resource genus Type which does not include resources of types derived from the specified Type. In plenary mode, the returned list contains all known resources or an error results. Otherwise, the returned list may contain only those resources that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<b>osid.type.Type</b>	resourceGenusType
	a resource genus type	
<b>Return</b>	<b>osid.resource.ResourceList</b>	
	the returned Resource list	
<b>Errors</b>	NULL_ARGUMENT	resourceGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	<b>Compliance</b>	<b>mandatory</b>
	This method must be implemented.	

Method	getResourcesByParentGenusType	
<b>Description</b>	Gets a ResourceList corresponding to the given resource genus Type and include any additional resources with genus types derived from the specified Type. In plenary mode, the returned list contains all known resources or an error results. Otherwise, the returned list may contain only those resources that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceGenusType a resource genus type
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	the returned Resource list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	resourceGenusType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getResourcesByRecordType	
<b>Description</b>	Gets a ResourceList containing the given resource record Type. In plenary mode, the returned list contains all known resources or an error results. Otherwise, the returned list may contain only those resources that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceRecordType a resource record type
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	the returned Resource list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	resourceRecordType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getResources	
<b>Description</b>	Gets all Resources. In plenary mode, the returned list contains all known resources or an error results. Otherwise, the returned list may contain only those resources that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	a list of Resources
<b>Errors</b>	<a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among Resource objects. The search query is constructed using the ResourceQuery interface.</p> <p>getResourcesByQuery() is the basic search method and returns a list of Resources. A more advanced search may be performed with getResourcesBySearch(). It accepts an ResourceSearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getResourcesBySearch() returns an ResourceSearchResults interface that can be used to access the resulting ResourceList or be used to perform a search within the result set through ResourceList.</p> <p>This session defines views that offer differing behaviors for searching.</p> <ul style="list-style-type: none"> <li>• federated bin view: searches include resources in bins of which this bin is an ancestor in the bin hierarchy</li> <li>• isolated bin view: searches are restricted to resources in this bin</li> </ul> <p>Resources may have a record query interface indicated by their respective interface types. The record query interface is accessed via the ResourceQuery.</p>	
<b>Method</b>	<b>getBinId</b>	
<b>Description</b>	Gets the Bin Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Bin Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBin</b>	
<b>Description</b>	Gets the Bin associated with this session.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the Bin associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canSearchResources</b>	
<b>Description</b>	Tests if this user can perform Resource searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedBinView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include resources in bins which are children of this bin in the bin hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedBinView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this bin only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getResourceQuery</b>	
<b>Description</b>	Gets a resource query interface. The returned query will not have an extension query.	
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>	the resource query interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getResourcesByQuery	
<b>Description</b>	Gets a list of Resources matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.resource.ResourceQuery</a>	resourceQuery the search query
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	the returned ResourceList
<b>Errors</b>	NULL_ARGUMENT	resourceQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	resourceQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getResourceSearch	
<b>Description</b>	Gets a resource search interface.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearch</a>	the resource search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getResourceSearchOrder	
<b>Description</b>	Gets a resource search order interface. The ResourceSearchOrder is supplied to a ResourceSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchOrder</a>	the resource search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getResourcesBySearch	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.resource.ResourceQuery</a>	resourceQuery the search query
	<a href="#">osid.resource.ResourceSearch</a>	resourceSearch the search interface
<b>Return</b>	<a href="#">osid.resource.ResourceSearchResults</a>	the returned search results
<b>Errors</b>	NULL_ARGUMENT	resourceQuery or resourceSearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	resourceQuery or resourceSearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session creates and removes resources. The data for create and update is provided via the ResourceForm.</p> <p>The view of the administrative methods defined in this session is determined by the provider. For an instance of this session where no bin has been specified, it may not be parallel to the ResourceLookupSession. For example, a default ResourceLookupSession may view the entire bin hierarchy while the default ResourceAdminSession uses an isolated Bin to create new Resources or a specific bin to operate on a predetermined set of Resources. Another scenario is a federated provider who does not wish to permit administrative operations for the federation unaware.</p>	
<b>Method</b>	<b>getBinId</b>	
<b>Description</b>	Gets the Bin Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Bin Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBin</b>	
<b>Description</b>	Gets the Bin associated with this session.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the Bin associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateResources</b>	
<b>Description</b>	Tests if this user can create Resources. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Resource will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer create operations to an unauthorized user.	
<b>Return</b>	<a href="#">boolean</a>	false if Resource ceration is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateResourceWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Resource using the desired record types. While ResourceManager.getResourceRecordTypes() can be used to examine which record interfaces are supported, this method tests which record(s) are required for creating a specific Resource. Providing an empty array tests if a Resource can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[]</a>	resourceRecordTypes array of types
<b>Return</b>	<a href="#">boolean</a>	true if Resource creation using the specified Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourceFormForCreate</b>	
<b>Description</b>	Gets the resource form for creating new resources. A new form should be requested for each create transaction.	
<b>Return</b>	<a href="#">osid.resource.ResourceForm</a>	the resource form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	createResource	
<b>Description</b>	Creates a new Resource.	
<b>Parameters</b>	<a href="#">osid.resource.ResourceForm</a>	resourceForm
<b>Return</b>	<a href="#">osid.resource.Resource</a>	the new Resource
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a> <a href="#">INVALID_ARGUMENT</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	attempt at duplicating a property the underlying system is enforcing to be unique one or more of the form elements is invalid resourceForm is null unable to complete request authorization failure resourceForm is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	canUpdateResources	
<b>Description</b>	Tests if this user can update Resources. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Resource will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer update operations to an unauthorized user.	
<b>Return</b>	<a href="#">boolean</a>	false if Resource modification is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	canUpdateResource	
<b>Description</b>	Tests if this user can update a specified Resource. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Resource will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an update operation to an unauthorized user for this Resource.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId
<b>Return</b>	<a href="#">boolean</a>	false if resource modification is not authorized, true otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceId is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Provider Notes</b>	If the resourceId is not found, then it is acceptable to return false to indicate the lack of an update available.	
Method	getResourceFormForUpdate	
<b>Description</b>	Gets the resource form for updating an existing resource. A new resource form should be requested for each update transaction.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId
<b>Return</b>	<a href="#">osid.resource.ResourceForm</a>	the resource form
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a>	resourceId is not found resourceId is null unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	updateResource	
<b>Description</b>	Updates an existing resource.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId
	<a href="#">osid.resource.ResourceForm</a>	resourceForm
<b>Errors</b>	<a href="#">INVALID_ARGUMENT</a> <a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	the form contains an invalid value resourceId is not found resourceId or resourceForm is null unable to complete request authorization failure resourceForm is not supported
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canDeleteResources	
Description	Tests if this user can delete Resources. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Resource will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer delete operations to an unauthorized user.	
Return	boolean	false if Resource deletion is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canDeleteResource	
Description	Tests if this user can delete a specified Resource. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Resource will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an delete operation to an unauthorized user for this resource.	
Parameters	osid.id.Id	resourceId
Return	boolean	false if deletion of this Resource is not authorized, true otherwise
Errors	NULL_ARGUMENT	resourceId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the resourceId is not found, then it is acceptable to return false to indicate the lack of an delete available.	
Method	deleteResource	
Description	Deletes a Resource.	
Parameters	osid.id.Id	resourceId
Errors	NOT_FOUND	resourceId not found
	NULL_ARGUMENT	resourceId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	addIdToResource	
Description	Adds an Id to a Resource for the purpose of creating compatibility. The primary Id of the Resource is determined by the provider. The new Id performs as an alias to the primary Id.	
Parameters	osid.id.Id	resourceId
	osid.id.Id	aliasId
Errors	ALREADY_EXISTS	aliasId is already assigned
	NOT_FOUND	resourceId not found
	NULL_ARGUMENT	aliasId or resourceId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on adds/changes to Resource objects in this Bin. This also includes existing resources that may appear or disappear due to changes in the Bin hierarchy. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.</p> <p>The two views defined in this session correspond to the views in the ResourceLookupSession.</p>	
<b>Method</b>	<b>getBinId</b>	
<b>Description</b>	Gets the Bin Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Bin Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBin</b>	
<b>Description</b>	Gets the Bin associated with this session.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the Bin associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canRegisterForResourceNotifications</b>	
<b>Description</b>	Tests if this user can register for Resource notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedBinView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include resources in bins which are children of this bin in the bin hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedBinView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts notifications to this bin only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>registerForNewResources</b>	
<b>Description</b>	Register for notifications of new resources. ResourceReceiver.newResource() is invoked when a new Resource is appears in this bin.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForChangedResources</b>	
<b>Description</b>	Registers for notification of updated resources. ResourceReceiver.changedResource() is invoked when a resource in this bin is changed.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>registerForChangedResource</b>				
<b>Description</b>	Registers for notification of an updated resource. ResourceReceiver.changedResource() is invoked when the specified resource in this bin is changed.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource to monitor		
<b>Errors</b>	NOT_FOUND		a resource was not found in this bin identified by the given Id		
	NULL_ARGUMENT		resourceId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForDeletedResources</b>				
<b>Description</b>	Registers for notification of deleted resources. ResourceReceiver.deletedResource() is invoked when a resource is deleted or removed from this bin.				
<b>Errors</b>	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForDeletedResource</b>				
<b>Description</b>	Registers for notification of a deleted resource. ResourceReceiver.deletedResource() is invoked when the specified resource is deleted or removed from this bin.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource to monitor		
<b>Errors</b>	NOT_FOUND		a resource was not found identified by the given Id		
	NULL_ARGUMENT		resourceId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.resource.GroupSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session provides methods to retrieve Resource to Group mappings. A Resource may appear in multiple resource groups. A group is also represented by a resource itself.	
<b>Method</b>	<b>canLookupResourceMembers</b>	
<b>Description</b>	Tests if this user can perform lookups of resource members. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if looking up members is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeResourceView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryResourceView</b>	
<b>Description</b>	A complete view of the Resource returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useFederatedGroupView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include resources in groups which are children of the specified group in the group hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedGroupView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to the specified group only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getResourceIdsByGroup</b>	
<b>Description</b>	Gets the list of Resource Ids associated with a Resource. In a federated view,	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	groupResourceId
<b>Return</b>	<a href="#">osid.id.IdList</a>	list of member resource Ids
<b>Errors</b>	<a href="#">NOT_FOUND</a>	groupResourceId is not found
	<a href="#">NULL_ARGUMENT</a>	groupResourceId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourcesByGroup</b>	
<b>Description</b>	Gets the list of Resources associated with a Resource.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	groupResourceId
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	list of resourcemembers
<b>Errors</b>	<a href="#">NOT_FOUND</a>	groupResourceId is not found
	<a href="#">NULL_ARGUMENT</a>	groupResourceId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getResourceIdsByGroups	
<b>Description</b>	Gets the list of Resource Ids corresponding to a list of Resource objects.	
<b>Parameters</b>	osid.id.IdList	groupResourceIdList
<b>Return</b>	osid.id.IdList	list of resource Ids
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	groupResourceIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getResourcesByGroups	
<b>Description</b>	Gets the list of Resources corresponding to a list of Resource objects.	
<b>Parameters</b>	osid.id.IdList	groupResourceIdList
<b>Return</b>	osid.resource.ResourceList	list of resources
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	groupResourceIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getGroupIdsByResource	
<b>Description</b>	Gets the list of Resource Ids mapped to a Resource.	
<b>Parameters</b>	osid.id.Id	resourceId
<b>Return</b>	osid.id.IdList	list of group resource Ids
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	resourceId is not found resourceId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getGroupsByResource	
<b>Description</b>	Gets the list of Resource objects mapped to a Resource.	
<b>Parameters</b>	osid.id.Id	resourceId
<b>Return</b>	osid.resource.ResourceList	list of group resources
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	resourceId is not found resourceId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.resource.GroupAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	This session provides methods to re-assign Resources to group Resources.				
<b>Method</b>	<b>canAssignResources</b>				
<b>Description</b>	Tests if this user can change resource group mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer management operations.	<b>Return</b>	boolean false if mapping is not authorized, true otherwise		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>assignResourceToGroup</b>				
<b>Description</b>	Adds an existing Resource to a Resource group.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource		
	<a href="#">osid.id.Id</a>	resourceGroupId	the Id of the Resource group		
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		resourceId or resourceGroupId not found resourceId or resourceGroupId is null unable to complete request authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>unassignResourceFromGroup</b>				
<b>Description</b>	Removes a Resource from a Resource group.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource		
	<a href="#">osid.id.Id</a>	resourceGroupId	the Id of the Repository		
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		resourceId or resourceGroupId not found resourceId or resourceGroupId is null unable to complete request authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.resource.ResourceAgentSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods to retrieve Resource to Agent mappings. An Agent may map to only one Resource while a Resource may map to multiple Agents.</p> <p>This lookup session defines several views</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeAgentView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryAgentView</b>	
<b>Description</b>	A complete view of the Agent returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>canLookupResourceAgentMappings</b>	
<b>Description</b>	Tests if this user can perform lookups of resource/agent mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if looking up mappings is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourceIdByAgent</b>	
<b>Description</b>	Gets the Resource Id associated with the given agent.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	agentId
<b>Return</b>	<a href="#">osid.id.Id</a>	Id of the Agent
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	associated resource
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	agentId is not found agentId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourceByAgent</b>	
<b>Description</b>	Gets the Resource associated with the given agent.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	agentId
<b>Return</b>	<a href="#">osid.resource.Resource</a>	Id of the Agent
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	associated resource
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	agentId is not found agentId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>getAgentIdsByResource</b>	
<b>Description</b>	Gets the list of Agent Ids mapped to a Resource.	
<b>Parameters</b>	<code>osid.id.Id</code>	resourceId
<b>Return</b>	<code>osid.id.IdList</code>	list of agent Ids
<b>Errors</b>	<code>NOT_FOUND</code>	resourceId is not found
	<code>NULL_ARGUMENT</code>	resourceId is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authorization failure
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.
Method	<b>getAgentsByResource</b>	
<b>Description</b>	Gets the list of Agents mapped to a Resource.	
<b>Parameters</b>	<code>osid.id.Id</code>	resourceId
<b>Return</b>	<code>osid.authentication.AgentList</code>	list of agents
<b>Errors</b>	<code>NOT_FOUND</code>	resourceId is not found
	<code>NULL_ARGUMENT</code>	resourceId is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authorization failure
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceAgentAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	This session provides methods to re-assign Resource to Agents. A Resource may be associated with multiple Agents. An Agent may map to only one Resource.				
<b>Method</b>	<b>canAssignAgents</b>				
<b>Description</b>	Tests if this user can alter resource/agent mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known mapping methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.				
<b>Return</b>	<a href="#">boolean</a>	false if mapping is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>assignAgentToResource</b>				
<b>Description</b>	Adds an existing Agent to a Resource.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	agentId	the Id of the Agent		
	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource		
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		this agent is already assigned to a resource		
	<a href="#">NOT_FOUND</a>		agentId or resourceId not found		
	<a href="#">NULL_ARGUMENT</a>		agentId or resourceId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>unassignAgentFromResource</b>				
<b>Description</b>	Removes an Agent from a Resource.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	agentId	the Id of the Agent		
	<a href="#">osid.id.Id</a>	resourceId	the Id of the Resource		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		agentId or resourceId not found		
	<a href="#">NULL_ARGUMENT</a>		agentId or resourceId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.resource.ResourceBinSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods to retrieve Resource to Bin mappings. A Resource may appear in multiple Bins. Each Repository may have its own authorizations governing who is allowed to look at it.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeBinView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryBinView</b>	
<b>Description</b>	A complete view of the Resource and Bin returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>canLookupResourceBinMappings</b>	
<b>Description</b>	Tests if this user can perform lookups of resource/bin mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if looking up mappings is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourceIdsByBin</b>	
<b>Description</b>	Gets the list of Resource Ids associated with a Bin.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	Id of a Bin
<b>Return</b>	<a href="#">osid.id.IdList</a>	list of related resource Ids
<b>Errors</b>	NOT_FOUND	binId is not found
	NULL_ARGUMENT	binId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourcesByBin</b>	
<b>Description</b>	Gets the list of Resources associated with a Bin.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	Id of a Bin
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	list of related resources
<b>Errors</b>	NOT_FOUND	binId is not found
	NULL_ARGUMENT	binId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getResourceIdsByBins	
<b>Description</b>	Gets the list of Resource Ids corresponding to a list of Bin objects.	
<b>Parameters</b>	osid.id.IdList	binIdList
<b>Return</b>	osid.id.IdList	list of bin Ids
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	binIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getAssetsByBins	
<b>Description</b>	Gets the list of Resources corresponding to a list of Bins.	
<b>Parameters</b>	osid.id.IdList	binIdList
<b>Return</b>	osid.resource.ResourceList	list of resources
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	binIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getBinIdsByResource	
<b>Description</b>	Gets the list of Bin Ids mapped to a Resource.	
<b>Parameters</b>	osid.id.Id	resourceId
<b>Return</b>	osid.id.IdList	list of bin Ids
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	resourceId is not found resourceId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getBinsByResource	
<b>Description</b>	Gets the list of Bin objects mapped to a Resource.	
<b>Parameters</b>	osid.id.Id	resourceId
<b>Return</b>	osid.resource.BinList	list of bins
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	resourceId is not found resourceId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

Interface	osid.resource.ResourceBinAssignmentSession				
Implements	<a href="#">osid.OsidSession</a>				
Description	<p>This session provides methods to re-assign Assets to Repositories. An Asset may map to multiple Repository objects and removing the last reference to an Asset is the equivalent of deleting it. Each Repository may have its own authorizations governing who is allowed to operate on it.</p> <p>Moving or adding a reference of an Asset to another Repository is not a copy operation (eg: does not change its Id).</p>				
Method	<b>canAssignAssets</b>				
Description	Tests if this user can alter asset/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known mapping methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.				
Return	<a href="#">boolean</a>	false if mapping is not authorized, true otherwise			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>assignAssetToRepository</b>				
Description	Adds an existing Asset to a Repository.				
Parameters	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
Errors	<a href="#">NOT_FOUND</a>		assetId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>unassignAssetFromRepository</b>				
Description	Removes an Asset from a Repository.				
Parameters	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
Errors	<a href="#">NOT_FOUND</a>		assetId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

Interface	osid.resource.BinLookupSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods for retrieving Bin objects. The Bin represents a collection resources. This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul> <p>Generally, the comparative view should be used for most applications as it permits operation even if there is data that cannot be accessed. For example, a browsing application may only need to examine the Bins it can access, without breaking execution. However, an administrative application may require all Bin elements to be available.</p> <p>Bins may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the Bin.</p>	
Method	<a href="#">canLookupBins</a>	
Description	<p>Tests if this user can perform Bin lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.</p>	
Return	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<a href="#">useComparativeBinView</a>	
Description	<p>The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">usePlenaryBinView</a>	
Description	<p>A complete view of the Bin returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">getRepository</a>	
Description	<p>Gets the Bin specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Bin may have a different Id than requested, such as the case where a duplicate Id was assigned to a Bin and retained for compatibility.</p>	
Parameters	<a href="#">osid.id.Id</a>	Id of the Bin
Return	<a href="#">osid.resource.Bin</a>	the bin
Errors	<a href="#">NOT_FOUND</a>	binId not found
	<a href="#">NULL_ARGUMENT</a>	binId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method is must be implemented.

Method	getRepositoriesByIds	
<b>Description</b>	Gets a RepositoryList corresponding to the given IdList. In plenary mode, the returned list contains all of the repositories specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Repositories may be omitted from the list and may present the elements in any order including returning a unique set.	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	repositoryIdList the list of Ids to retrieve
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the returned Repository list
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	an Id was not found repositoryIdList is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getRepositoriesByGenusType	
<b>Description</b>	Gets a RepositoryList corresponding to the given repository genus Type which does not include repositories of types derived from the specified Type. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryGenusType a repository genus type
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the returned Repository list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	repositoryGenusType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getRepositoriesByParentGenusType	
<b>Description</b>	Gets a RepositoryList corresponding to the given repository genus Type and include any additional repositories with genus types derived from the specified Type. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryGenusType a repository genus type
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the returned Repository list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	repositoryGenusType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getRepositoriesByRecordType	
<b>Description</b>	Gets a BinList containing the given bin record Type. In plenary mode, the returned list contains all known bins or an error results. Otherwise, the returned list may contain only those bins that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryInterfaceType a repository interface type
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the returned Repository list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	repositoryInterfaceType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getRepositories	
Description	Gets all Repositories. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
Return	<a href="#">osid.repository.RepositoryList</a>	a list of Repositories
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among Bin objects. The search query is constructed using the BinQuery interface.</p> <p>getBinsByQuery() is the basic search method and returns a list of Bin objects. A more advanced search may be performed with getBinsBySearch(). It accepts a BinSearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getBinsBySearch() returns a BinSearchResults interface that can be used to access the resulting BinList or be used to perform a search within the result set through BinSearch.</p> <p>Bins may have a record query interface indicated by their respective record types. The record query interface is accessed via the BinQuery.</p>	
<b>Method</b>	<b>canSearchBins</b>	
<b>Description</b>	Tests if this user can perform Bin searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinQuery</b>	
<b>Description</b>	Gets a bin query interface. The returned query will not have an extension query.	
<b>Return</b>	<a href="#">osid.resource.BinQuery</a>	the bin query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinsByQuery</b>	
<b>Description</b>	Gets a list of Bins matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.resource.BinQuery</a>   binQuery	the search query
<b>Return</b>	<a href="#">osid.resource.BinList</a>	the returned BinList
<b>Errors</b>	NULL_ARGUMENT	binQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a binQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinSearch</b>	
<b>Description</b>	Gets a bin search interface.	
<b>Return</b>	<a href="#">osid.resource.BinSearch</a>	the bin search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinSearchOrder</b>	
<b>Description</b>	Gets a bin search order interface. The BinSearchOrder is supplied to a BinSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.resource.BinSearchOrder</a>	the bin search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getBinBySearch	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.resource.BinQuery</a>	binQuery the search query
	<a href="#">osid.resource.BinSearch</a>	binSearch the search interface
<b>Return</b>	<a href="#">osid.resource.BinSearchResults</a> the search results	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	binQuery or binSearch is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
	<a href="#">UNSUPPORTED</a>	binQuery or binSearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a> This method must be implemented.	

<b>Interface</b>	<b>osid.resource.BinAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session creates and removes bins. The data for create and update is provided by the consumer via the form object.	
<b>Method</b>	<b>canCreateBins</b>	
<b>Description</b>	Tests if this user can create Bins. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Bin will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer create operations to unauthorized users.	
<b>Return</b>	<b>boolean</b>	false if Bin creation is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateBinWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Bin using the desired record interface types. While ResourceManager.getBinRecordTypes() can be used to examine which record interfaces are supported, this method tests which record(s) are required for creating a specific Bin. Providing an empty array tests if a Bin can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[]</a>	binRecordTypes
<b>Return</b>	<b>boolean</b>	true if Bin creation using the specified Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	binRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinFormForCreate</b>	
<b>Description</b>	Gets the bin form for creating new bins.	
<b>Return</b>	<a href="#">osid.resource.BinForm</a>	the bin form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>createBin</b>	
<b>Description</b>	Creates a new Bin.	
<b>Parameters</b>	<a href="#">osid.resource.BinForm</a>	binForm
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the new Bin
<b>Errors</b>	ALREADY_EXISTS INVALID_ARGUMENT NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	
	attempt at duplicating a property the underlying system is enforcing to be unique one or more of the form elements is invalid binForm is null unable to complete request authorization failure binForm is not of this service	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canUpdateBins</b>	
<b>Description</b>	Tests if this user can update Bins. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Bin will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.	
<b>Return</b>	<b>boolean</b>	false if Bin modification is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canUpdateBin		
Description	Tests if this user can update a specified Bin. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Bin will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.		
Parameters	osid.id.Id	binId	the Id of the Bin
Return	boolean		false if bin modification is not authorized, true otherwise
Errors	NULL_ARGUMENT		binId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	If the binId is not found, then it is acceptable to return false to indicate the lack of an update available.		
Method	getBinFormForUpdate		
Description	Gets the bin form for updating an existing bin. A new bin form should be requested for each update transaction.		
Parameters	osid.id.Id	binId	the Id of the Bin
Return	osid.resource.BinForm		the bin form
Errors	NOT_FOUND		binId is not found
	NULL_ARGUMENT		binId is null
	OPERATION_FAILED		unable to complete request
Compliance	mandatory		This method must be implemented.
Method	updateBin		
Description	Updates an existing bin.		
Parameters	osid.id.Id	binId	the Id of the Bin
	osid.resource.BinForm	binForm	the form containing the elements to be updated
Errors	INVALID_ARGUMENT		the form contains an invalid value
	NOT_FOUND		binId is not found
	NULL_ARGUMENT		binId or binForm is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
	UNSUPPORTED		binForm is not supported
Compliance	mandatory		This method must be implemented.
Method	canDeleteBins		
Description	Tests if this user can delete Bins. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Bin will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.		
Return	boolean		false if Bin deletion is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	canDeleteBin		
Description	Tests if this user can delete a specified Bin. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Bin will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.		
Parameters	osid.id.Id	binId	the Id of the Bin
Return	boolean		false if deletion of this Bin is not authorized, true otherwise
Errors	NULL_ARGUMENT		binId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	If the binId is not found, then it is acceptable to return false to indicate the lack of an delete available.		

Method	deleteBin	
<b>Description</b>	Deletes a Bin.	
<b>Parameters</b>	osid.id.Id	binId
	NOT_FOUND	binId not found
	NULL_ARGUMENT	binId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	addIdToBin	
<b>Description</b>	Adds an Id to a Bin for the purpose of creating compatibility. The primary Id of the Bin is determined by the provider. The new Id performs as an alias to the primary Id.	
<b>Parameters</b>	osid.id.Id	binId
	osid.id.Id	aliasId
	ALREADY_EXISTS	aliasId is already assigned
	NOT_FOUND	binId not found
	NULL_ARGUMENT	binId or aliasId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session defines methods to receive notifications on adds/changes to Bin objects. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.	
<b>Method</b>	<b>canRegisterForBinNotifications</b>	
<b>Description</b>	Tests if this user can register for Bin notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewBins</b>	
<b>Description</b>	Register for notifications of new bins. BinReceiver.newBin() is invoked when a new Bin is created.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewBinAncestors</b>	
<b>Description</b>	Registers for notification if an ancestor is added to the specified bin in the bin hierarchy. BinReceiver.newBinAncestor() is invoked when the specified bin experiences an addition in ancestry.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   binId	the Id of the bin to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a>	a bin was not found identified by the given Id
	<a href="#">NULL_ARGUMENT</a>	binId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewBinDescendants</b>	
<b>Description</b>	Registers for notification if a descendant is added to the specified bin in the bin hierarchy. BinReceiver.newBinDescendant() is invoked when the specified bin experiences an addition in descendants.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   binId	the Id of the bin to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a>	a bin was not found identified by the given Id
	<a href="#">NULL_ARGUMENT</a>	binId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForChangedBins</b>	
<b>Description</b>	Registers for notification of updated bins. BinReceiver.changedBin() is invoked when a bin is changed.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>registerForChangedBin</b>	
<b>Description</b>	Registers for notification of an updated bin. BinReceiver.changedBin() is invoked when the specified bin is changed.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId the Id of the Bin to monitor
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	a bin was not found identified by the given Id binId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedBins</b>	
<b>Description</b>	Registers for notification of deleted bins. BinReceiver.deletedBin() is invoked when a bin is deleted.	
<b>Errors</b>	OPERATION_FAILED PERMISSION_DENIED	unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedBin</b>	
<b>Description</b>	Registers for notification of a deleted bin. BinReceiver.deletedBin() is invoked when the specified bin is deleted.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId the Id of the Bin to monitor
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	a bin was not found identified by the given Id binId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedBinAncestors</b>	
<b>Description</b>	Registers for notification if an ancestor is removed from the specified bin in the bin hierarchy. BinReceiver.deletedBinAncestor() is invoked when the specified bin experiences a removal of an ancestor.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId the Id of the bin to monitor
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	a bin was not found identified by the given Id binId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedBinDescendants</b>	
<b>Description</b>	Registers for notification if a descendant is removed from the specified bin in the bin hierarchy. BinReceiver.deletedBinDescednант() is invoked when the specified bin experiences a removal of one of its descndents.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId the Id of the bin to monitor
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	a bin was not found identified by the given Id binId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinHierarchySession</b>	
<b>Implements</b>	<a href="#">osid.hierarchy.HierarchyTraversalSession</a>	
<b>Description</b>	<p>This session defines methods for traversing a hierarchy of Bin objects. Each node in the hierarchy is a unique Bin. The hierarchy may be traversed recursively to establish the tree structure through <code>getParents()</code> and <code>getChildren()</code>. To relate these IDs to another OSID, <code>getAncestors()</code> and <code>getDescendants()</code> can be used for retrievals that can be used for bulk lookups in other OSIDs. Any Bin available in the Resource OSID is known to this hierarchy but does not appear in the hierarchy traversal until added as a root node or a child of another node.</p>	
<b>Description</b>	<p>A user may not be authorized to traverse the entire hierarchy. Parts of the hierarchy may be made invisible through omission from the returns of <code>getParents()</code> or <code>getChildren()</code> in lieu of a <code>PERMISSION_DENIED</code> error that may disrupt the traversal through authorized pathways.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: bin elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeBinView</b>	
<b>Description</b>	The returns from the bin methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryBinView</b>	
<b>Description</b>	A complete view of the Bin returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getRootBin</b>	
<b>Description</b>	Gets the root bins in the bin hierarchy. A node with no parents is an orphan. While all bin IDs are known to the hierarchy, an orphan does not appear in the hierarchy unless explicitly added as a root node or child of another node.	
<b>Return</b>	<a href="#">osid.resource.BinList</a>	the root bins
<b>Errors</b>	<a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getParentBins</b>	
<b>Description</b>	Gets the parents of the given bin.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId
<b>Return</b>	<a href="#">osid.resource.BinList</a>	the parents of the bin
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	binId not found binId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getAncestorBins		
Description	Gets the ancestors of the given nin.		
Parameters	osid.id.Id	binId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getParentBins().
Return	osid.resource.BinList		the ancestors of the bin
Errors	NOT_FOUND		binId not found
	NULL_ARGUMENT		binId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getChildBin		
Description	Gets the children of the given bin.		
Parameters	osid.id.Id	binId	the Id to query
Return	osid.resource.BinList		the children of the bin
Errors	NOT_FOUND		binId not found
	NULL_ARGUMENT		binId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getDescendantBins		
Description	Gets the descendants of the given bin.		
Parameters	osid.id.Id	binId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getChildBins().
Return	osid.resource.BinList		the descendants of the bin
Errors	NOT_FOUND		binId not found
	NULL_ARGUMENT		binId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	<b>osid.resource.BinHierarchyDesignSession</b>
Implements	<a href="#">osid.hierarchy.HierarchyDesignSession</a>
Description	This session defines methods for managing a hierarchy of Bin objects. Each node in the hierarchy is a unique Bin.

<b>Interface</b>	<b>osid.resource.Resource</b>	
<b>Implements</b>	<a href="#">osid.OsidObject</a>	
<b>Description</b>	<p>A Resource represents an arbitrary entity. Resources are used to define an object to accompany an OSID Id used in other OSIDs. A resource may be used to represent a meeting room in the Scheduling OSID, or a student in the Course OSID.</p> <p>A Resource may also represent a group or organization. A provider may present such a group in an opaque manner through a single resource definition, or the provider may expose the resource collection for examination or manipulation. If such a resource collection is visible, isGroup() is true and can be used in one of the group sessions available in this OSID.</p>	
<b>isGroup</b>		
<b>Description</b>	Tests if this resource is a group. A resource that is a group can be used in the group sessions.	
<b>Return</b>	<a href="#">boolean</a>	true if this resource is a group, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>getResourceRecord</b>		
<b>Description</b>	Gets the record corresponding to the given Resource record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The resourceRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(resourceRecordType) is true.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceRecordType the resource record type
<b>Return</b>	<a href="#">osid.resource.ResourceRecord</a>	the resource record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	resourceRecordType is null
		unable to complete request
		authorization failure occurred
		hasRecordType(resourceRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a Resource. The methods specified by the record type are available through the underlying object.	
<b>getResource</b>		
<b>Description</b>	Gets the Resource from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.Resource</a>	the resource
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidQuery</a>		
<b>Description</b>	This is the query interface for searching resources. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchGroup</b>		
<b>Description</b>	Matches resources that are also groups.		
<b>Parameters</b>	boolean	match	true for a positive match, false for a negative match
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchAgentId</b>		
<b>Description</b>	Sets the agent Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	agentId	the agent Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		agentId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchAnyAgent</b>		
<b>Description</b>	Matches resources with any agent.		
<b>Parameters</b>	boolean	match	true to match any agent, false to match resources with no agent
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsAgentQuery</b>		
<b>Description</b>	Tests if an AgentQuery is available.		
<b>Return</b>	boolean		true if an agent query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getAgentQuery</b>		
<b>Description</b>	Gets the query interface for an agent. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.authentication.AgentQuery</a>		the agent query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsAgentQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsAgentQuery() is true.
<b>Method</b>	<b>matchBinId</b>		
<b>Description</b>	Sets the bin Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	binId	the bin Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		binId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsBinQuery</b>		
<b>Description</b>	Tests if a BinQuery is available.		
<b>Return</b>	boolean		true if a bin query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	getBinQuery	
<b>Description</b>	Gets the query interface for a bin. Multiple retrievals produce a nested OR term.	
<b>Return</b>	<a href="#">osid.resource.BinQuery</a>	the bin query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	<code>supportsBinQuery()</code> is false
<b>Compliance</b>	<a href="#">optional</a> This method must be implemented if <code>supportsBinQuery()</code> is true.	
Method	getResourceQueryRecord	
<b>Description</b>	Gets the record query interface corresponding to the given Resource record Type. Multiple retrievals produce a nested OR term.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceRecordType a resource record type
<b>Return</b>	<a href="#">osid.resource.ResourceQueryRecord</a>	the resource query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	<code>hasRecordType(resourceRecordType)</code> is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a ResourceQuery. The methods specified by the record type are available through the underlying object.	
<b>getResourceQuery</b>		
<b>Description</b>	Gets the ResourceQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>	the resource query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceForm</b>									
<b>Implements</b>	<a href="#">osid.OsidForm</a>									
<b>Description</b>	This is the form for creating and updating Resources. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the ResourceAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.									
<b>Method</b>	<b>getResourceFormRecord</b>									
<b>Description</b>	Gets the ResourceFormRecord interface corresponding to the given Resource record interface Type.									
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceRecordType								
<b>Return</b>	<a href="#">osid.resource.ResourceFormRecord</a>	the record								
<b>Errors</b>	<table> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>resourceRecordType is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authorization failure occurred</td> </tr> <tr> <td><a href="#">UNSUPPORTED</a></td> <td>hasRecordType(resourceRecordType) is false</td> </tr> </table>		<a href="#">NULL_ARGUMENT</a>	resourceRecordType is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred	<a href="#">UNSUPPORTED</a>	hasRecordType(resourceRecordType) is false
<a href="#">NULL_ARGUMENT</a>	resourceRecordType is null									
<a href="#">OPERATION_FAILED</a>	unable to complete request									
<a href="#">PERMISSION_DENIED</a>	authorization failure occurred									
<a href="#">UNSUPPORTED</a>	hasRecordType(resourceRecordType) is false									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								

<b>Interface</b>	<b>osid.resource.ResourceFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a ResourceForm. The methods specified by the record type are available through the underlying object.	
<b>getResourceForm</b>		
<b>Description</b>	Gets the ResourceForm from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.ResourceForm</a>	the resource form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>orderByAgent</b>	
<b>Description</b>	Groups the search results by agent.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAgentSearchOrder</b>	
<b>Description</b>	Tests if an AgentSearchOrder interface is available.	
<b>Return</b>	<a href="#">boolean</a>	true if an agent order interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAgentSearchOrder</b>	
<b>Description</b>	Gets the order interface for an agent.	
<b>Return</b>	<a href="#">osid.authentication.AgentSearchOrder</a>	the agent search order interface
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	<a href="#">supportsAgentOrder()</a> is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if <a href="#">supportsAgentOrder()</a> is true.
<b>Method</b>	<b>getResourceSearchOrderRecord</b>	
<b>Description</b>	Gets the resource search record interface corresponding to the given resource record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceRecordType a resource record type
<b>Return</b>	<a href="#">osid.resource.ResourceSearchOrderRecord</a>	the resource search order record interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	<a href="#">hasRecordType(resourceRecordType)</a> is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearchOrderRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a ResourceSearchOrder. The methods specified by the record type are available through the underlying object.	
<b>getResourceSearchOrder</b>		
<b>Description</b>	Gets the ResourceSearchOrder from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchOrder</a>	the resource search order
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearch</b>		
<b>Implements</b>	<a href="#">osid.OsidSearch</a>		
<b>Description</b>	The search interface for governing resource searches.		
<b>Method</b>	<b>searchWithinResourceResults</b>		
<b>Description</b>	Execute this search using a previous search result.		
<b>Parameters</b>	<a href="#">osid.resource.ResourceSearchResults</a>	results	results from a query
<b>Errors</b>	<a href="#">INVALID_ARGUMENT</a>	results is not valid	
	<a href="#">NULL_ARGUMENT</a>	results is null	
<b>Compliance</b>	mandatory		
	This method must be implemented.		
<b>Method</b>	<b>searchAmongResources</b>		
<b>Description</b>	Execute this search among the given list of resources.		
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	resourceIds	list of resource Ids
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceIds is null	
	<a href="#">UNSUPPORTED</a>	order is null	
<b>Compliance</b>	mandatory		
	This method must be implemented.		
<b>Method</b>	<b>orderResourceResults</b>		
<b>Description</b>	Specify an ordering to the search results.		
<b>Parameters</b>	<a href="#">osid.resource.ResourceSearchOrder</a>	resourceSearchOrder	resource search order
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	order is null	
	<a href="#">UNSUPPORTED</a>	order is not of this service	
<b>Compliance</b>	mandatory		
	This method must be implemented.		
<b>Method</b>	<b>getResourceSearchRecord</b>		
<b>Description</b>	Gets the record corresponding to the given resource search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.		
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceSearchRecordType	a resource search record type
<b>Return</b>	<a href="#">osid.resource.ResourceSearchRecord</a>		
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceSearchRecordType is null	
	<a href="#">OPERATION_FAILED</a>	unable to complete request	
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred	
	<a href="#">UNSUPPORTED</a>	hasSearchRecordTypeType(resourceSearchRecordType) is false	
<b>Compliance</b>	mandatory		
	This method must be implemented.		

<b>Interface</b>	<b>osid.resource.ResourceSearchRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a ResourceSearch. The methods specified by the record type are available through the underlying object.	
<b>getResourceSearch</b>		
<b>Description</b>	Gets the ResourceSearch from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearch</a>	the resource search
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getResources</b>	
<b>Description</b>	Gets the resource list resulting from a search.	
<b>Return</b>	<a href="#">osid.resource.ResourceList</a>	the resource list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getResourceSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given resource search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	resourceSearchRecordType a resource search record type
<b>Return</b>	<a href="#">osid.resource.ResourceSearchResultsRecord</a>	the resource search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	resourceSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordTypeType(resourceSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.ResourceSearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a ResourceSearchResults. The methods specified by the record type are available through the underlying object.	
<b>getResourceSearchResults</b>		
<b>Description</b>	Gets the ResourceSearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchResults</a>	the resource search results
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

Interface	<b>osid.resource.ResourceReceiver</b>				
Implements	<a href="#">osid.OsidReceiver</a>				
Description	The resource receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Resource objects.				
Method	<b>newResource</b>				
Description	The callback for notifications of new resources.				
Parameters	<a href="#">osid.id.Id</a>	resourceId	the Id of the new Resource		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>changedResource</b>				
Description	The callback for notification of updated resources.				
Parameters	<a href="#">osid.id.Id</a>	resourceId	the Id of the updated Resource		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>deletedResource</b>				
Description	the callback for notification of deleted resources.				
Parameters	<a href="#">osid.id.Id</a>	resourceId	the Id of the deleted Resource		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.resource.ResourceList</b>		
<b>Implements</b>	<a href="#">osid.OsidList</a>		
<b>Description</b>	<p>Like all OsidLists, ResourceList provides a means for accessing Resource elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (arl.hasNext()) {     Resource resource = arl.getNextResource(); }</pre> <p>or</p> <pre>while (arl.hasNext()) {     Resource[] resources = arl.getNextResources(rl.available()); }</pre>		
<b>Method</b>	<b>getNextResource</b>		
<b>Description</b>	Gets the next Resource in this list.		
<b>Return</b>	<a href="#">osid.resource.Resource</a>		the next Resource in this list. The hasNext() method should be used to test that a next Resource is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>		no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getNextResources</b>		
<b>Description</b>	Gets the next set of Resources in this list which must be less than or equal to the return from available().		
<b>Parameters</b>	<a href="#">cardinal</a>	<a href="#">n</a>	the number of Resource elements requested which must be less than or equal to available()
<b>Return</b>	<a href="#">osid.resource.Resource[]</a>		an array of Resource elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>		no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.resource.Bin</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalog</a>	
<b>Description</b>	An inventory defines a collection of resources.	
	<b>getBinRecord</b>	
<b>Description</b>	Gets the record corresponding to the given Bin record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The binRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(binRecordType) is true.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>   binRecordType	the bin record type
<b>Return</b>	<a href="#">osid.resource.BinRecord</a>	the bin record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	binRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(binRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a Bin. The methods specified by the record type are available through the underlying object.	
<b>getBin</b>		
<b>Description</b>	Gets the Bin from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the bin
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidCatalogQuery</a>		
<b>Description</b>	This is the query interface for searching bins. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchResourceId</b>		
<b>Description</b>	Sets the resource Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	a resource Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		resourceId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsResourceQuery</b>		
<b>Description</b>	Tests if a ResourceQuery is available.		
<b>Return</b>	boolean		true if a resource query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getResourceQuery</b>		
<b>Description</b>	Gets the query interface for a resource. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>		the resource query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsResourceQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsResourceQuery() is true.
<b>Method</b>	<b>getBinQueryRecord</b>		
<b>Description</b>	Gets the record query interface corresponding to the given Bin record Type. Multiple retrievals produce a nested OR term.		
<b>Parameters</b>	<a href="#">osid.type.Type</a>	binRecordType	a bin record type
<b>Return</b>	<a href="#">osid.resource.BinQueryRecord</a>		the bin query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		binRecordType is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure occurred
	<a href="#">UNSUPPORTED</a>		hasRecordType(binRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a BinQuery. The methods specified by the record type are available through the underlying object.	
<b>getBinQuery</b>		
<b>Description</b>	Gets the BinQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.BinQuery</a>	the bin query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinForm</b>									
<b>Implements</b>	<a href="#">osid.OsidCatalogForm</a>									
<b>Description</b>	This is the form for creating and updating bins. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the BinAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.									
<b>Method</b>	<b>getBinFormRecord</b>									
<b>Description</b>	Gets the BinFormRecord interface corresponding to the given bin record interface Type.									
<b>Parameters</b>	<a href="#">osid.type.Type</a>	binRecordType the bin record type								
<b>Return</b>	<a href="#">osid.resource.BinFormRecord</a>	the record								
<b>Errors</b>	<table> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>binRecordType is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authorization failure occurred</td> </tr> <tr> <td><a href="#">UNSUPPORTED</a></td> <td>hasRecordType(binRecordType) is false</td> </tr> </table>		<a href="#">NULL_ARGUMENT</a>	binRecordType is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred	<a href="#">UNSUPPORTED</a>	hasRecordType(binRecordType) is false
<a href="#">NULL_ARGUMENT</a>	binRecordType is null									
<a href="#">OPERATION_FAILED</a>	unable to complete request									
<a href="#">PERMISSION_DENIED</a>	authorization failure occurred									
<a href="#">UNSUPPORTED</a>	hasRecordType(binRecordType) is false									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								

<b>Interface</b>	<b>osid.resource.BinFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a BinForm. The methods specified by the record type are available through the underlying object.	
<b>getBinForm</b>		
<b>Description</b>	Gets the BinForm from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.BinForm</a>	the bin form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalogSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>getBinSearchOrderRecord</b>	
<b>Description</b>	Gets the bin search record interface corresponding to the given bin record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a> binRecordType	a bin record type
<b>Return</b>	<a href="#">osid.resource.BinSearchOrderRecord</a>	the bin search order record interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	binRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(binRecordType) is false
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchOrderRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a BinSearchOrder. The methods specified by the record type are available through the underlying object.	
<b>getBinSearchOrder</b>		
<b>Description</b>	Gets the BinSearchOrder from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.BinSearchOrder</a>	the bin search order
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

Interface	osid.resource.BinSearch	
Implements	<a href="#">osid.OsidSearch</a>	
Description	The interface for governing bin searches.	
Method	<b>searchWithinBinResults</b>	
Description	Execute this search using a previous search result.	
Parameters	<a href="#">osid.resource.BinSearchResults</a>	results
Errors	<a href="#">INVALID_ARGUMENT</a>	results is not valid
	<a href="#">NULL_ARGUMENT</a>	results is null
Compliance	mandatory	This method must be implemented.
Method	<b>searchAmongBins</b>	
Description	Execute this search among the given list of bins.	
Parameters	<a href="#">osid.id.IdList</a>	binIds
Errors	<a href="#">NULL_ARGUMENT</a>	binIds is null
Compliance	mandatory	This method must be implemented.
Method	<b>orderBinResults</b>	
Description	Specify an ordering to the search results.	
Parameters	<a href="#">osid.resource.BinSearchOrder</a>	binSearchOrder
Errors	<a href="#">NULL_ARGUMENT</a>	binSearchOrder is null
	<a href="#">UNSUPPORTED</a>	binSearchOrder is not of this service
Compliance	mandatory	This method must be implemented.
Method	<b>getBinSearchRecord</b>	
Description	Gets the record corresponding to the given bin search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
Parameters	<a href="#">osid.type.Type</a>	binSearchRecordType
Return	<a href="#">osid.resource.BinSearchRecord</a>	
Errors	<a href="#">NULL_ARGUMENT</a>	binSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(binSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a BinSearch. The methods specified by the record type are available through the underlying object.	
<b>getBinSearch</b>		
<b>Description</b>	Gets the BinSearch from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.BinSearch</a>	the bin search
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getBins</b>	
<b>Description</b>	Gets the bin list resulting from a search.	
<b>Return</b>	<a href="#">osid.resource.BinList</a>	the bin list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getBinSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given bin search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	binSearchRecordType
	a bin search record type	
<b>Return</b>	<a href="#">osid.resource.BinSearchResultsRecord</a>	the bin search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	binSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(binSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.resource.BinSearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a BinSearchResults. The methods specified by the record type are available through the underlying object.	
<b>getBinSearchResults</b>		
<b>Description</b>	Gets the BinSearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.resource.BinSearchResults</a>	the bin search results
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.resource.BinReceiver				
Implements	<a href="#">osid.OsidReceiver</a>				
Description	The bin receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Bin objects.				
Method	<b>newBin</b>				
Description	The callback for notifications of new bins.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the new Bin		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>newAncestorBin</b>				
Description	The callback for notifications of new bin ancestors.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the Bin		
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the new Bin ancestor		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>newDescendantBin</b>				
Description	The callback for notifications of new bin descendants.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the Bin		
	<a href="#">osid.id.Id</a>	descendantId	the Id of the new Bin descendant		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>changedBin</b>				
Description	The callback for notification of updated bins.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the updated Bin		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>deletedBin</b>				
Description	The callback for notification of deleted bins.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the deleted Bin		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>deletedAncestorBin</b>				
Description	The callback for notifications of deleted bin ancestors.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the Bin		
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the removed Bin ancestor		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>deletedDescendantBin</b>				
Description	The callback for notifications of deleted bin descendants.				
Parameters	<a href="#">osid.id.Id</a>	binId	the Id of the Bin		
	<a href="#">osid.id.Id</a>	descendantId	the Id of the removed Bin descendant		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.resource.BinList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, BinList provides a means for accessing Bin elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (bl.hasNext()) {     Bin bin = bl.getNextBin(); }</pre> <p>or</p> <pre>while (bl.hasNext()) {     Bin[] bins = rl.getNextBin(bl.available()); }</pre>	
<b>Method</b>	<b>getNextBin</b>	
<b>Description</b>	Gets the next Bin in this list.	
<b>Return</b>	<a href="#">osid.resource.Bin</a>	the next Bin in this list. The hasNext() method should be used to test that a next Bin is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getNextBins</b>	
<b>Description</b>	Gets the next set of Bin elements in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	cardinal	n
		the number of Bin elements requested which must be less than or equal to available()
<b>Return</b>	<a href="#">osid.resource.Bin[]</a>	an array of Bin elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.