



## **OSID V3 Specifications logging package**

Version Draft 3

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

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Package Description	osid.logging package
Interfaces	<code>osid.logging.LoggingProfile</code> <code>osid.logging.LoggingManager</code> <code>osid.logging.LoggingProxyManager</code> <code>osid.logging.LoggingSession</code> <code>osid.logging.LogReadingSession</code> <code>osid.logging.LogEntrySearchSession</code> <code>osid.logging.LogEntryAdminSession</code> <code>osid.logging.LogEntryNotificationSession</code> <code>osid.logging.LogLookupSession</code> <code>osid.logging.LogSearchSession</code> <code>osid.logging.LogAdminSession</code> <code>osid.logging.LogNotificationSession</code> <code>osid.logging.LogHierarchySession</code> <code>osid.logging.LogHierarchyDesignSession</code> <code>osid.logging.LogEntry</code> <code>osid.logging.LogEntryQuery</code> <code>osid.logging.LogEntrySearchOrder</code> <code>osid.logging.LogEntrySearch</code> <code>osid.logging.LogEntrySearchRecord</code> <code>osid.logging.LogEntrySearchResults</code> <code>osid.logging.LogEntrySearchResultsRecord</code> <code>osid.logging.LogEntryReceiver</code> <code>osid.logging.LogEntryList</code> <code>osid.logging.Log</code> <code>osid.logging.LogRecord</code> <code>osid.logging.LogQuery</code> <code>osid.logging.LogQueryRecord</code> <code>osid.logging.LogForm</code> <code>osid.logging.LogFormRecord</code> <code>osid.logging.LogSearchOrder</code> <code>osid.logging.LogSearchOrderRecord</code> <code>osid.logging.LogSearch</code> <code>osid.logging.LogSearchRecord</code> <code>osid.logging.LogSearchResults</code> <code>osid.logging.LogSearchResultsRecord</code> <code>osid.logging.LogReceiver</code> <code>osid.logging.LogList</code>

<b>Package</b>	<b>osid.logging</b>
<b>Title</b>	<b>Logging Open Service Interface Definitions</b>
<b>Version</b>	3.0.0
<b>Description</b>	<p>The Logging OSID provides a means to read and write to logs. A Log represents a collection of log entries. Each log entry is composed of a priority Type, timestamp, Agent, and typed content.</p> <p>Logs can be organized into hierarchies for federation. A log that is a parent of another log makes visible the log entries of its children.</p> <p>Example:</p> <pre>LoggingSession out = manager.getLoggingSession(); out.log(warningLogEntryPriorityType, "hello world", stringLogEntryContentType);  LogReadingSession in = manager.getLogReadingSession(); LogEntryList entries = inn.getLogEntries(); while (entries.hasNext()) {     LogEntry entry = entries.getNextLogEntry();     if (entry.implimentsContentType(stringLogEntryType)) {         print (entry.getContent(stringLogEntryType));     } }</pre>

<b>Interface</b>	<b>osid.logging.LoggingProfile</b>	
<b>Implements</b>	<a href="#">osid.OsidProfile</a>	
<b>Description</b>	The logging profile describes the interoperability among logging services.	
<b>Method</b>	<b>supportsVisibleFederation</b>	
<b>Description</b>	Tests if visible federation is supported.	
<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>supportsLogging</b>	
<b>Description</b>	Tests if logging is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if logging is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogReading</b>	
<b>Description</b>	Tests if reading logs is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if reading logs is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogEntrySearch</b>	
<b>Description</b>	Tests if searching log entries is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if searching log entries is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogEntryNotification</b>	
<b>Description</b>	Tests if log entry notification is supported.,	
<b>Return</b>	<a href="#">boolean</a>	true if log entry notification is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogLookup</b>	
<b>Description</b>	Tests for the availability of a log lookup service.	
<b>Return</b>	<a href="#">boolean</a>	true if log lookup is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogSearch</b>	
<b>Description</b>	Tests if searching for logs is available.	
<b>Return</b>	<a href="#">boolean</a>	true if log search is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogAdmin</b>	
<b>Description</b>	Tests for the availability of a log administrative service for creating and deleting logs.	
<b>Return</b>	<a href="#">boolean</a>	true if log administration is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsLogNotification</b>	
<b>Description</b>	Tests for the availability of a log notification service.	
<b>Return</b>	<a href="#">boolean</a>	true if log notification is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented in all providers.
<b>Method</b>	<b>supportsLogHierarchy</b>	
<b>Description</b>	Tests for the availability of a log hierarchy traversal service.	
<b>Return</b>	<a href="#">boolean</a>	true if log hierarchy traversal is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>supportsLogHierarchyDesign</b>	
Description	Tests for the availability of a log hierarchy design service.	
Return	boolean	true if log hierarchy design is available, false otherwise
Compliance	mandatory	This method must be implemented in all providers.
Method	<b>supportsLogHierarchySequencing</b>	
Description	Tests if the log hierarchy supports node sequencing.	
Return	boolean	true if log hierarchy node sequencing is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>getLogEntrySearchRecordTypes</b>	
Description	Gets the supported log entry search record types.	
Return	osid.type.TypeList	a list containing the supported log entry search record types
Compliance	mandatory	This method must be implemented.
Method	<b>supportsLogEntrySearchRecordType</b>	
Description	Tests if the given log entry search record type is supported.	
Parameters	osid.type.Type	logEntrySearchRecordType
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>getLogRecordTypes</b>	
Description	Gets the supported Log record types.	
Return	osid.type.TypeList	a list containing the supported log record types
Compliance	mandatory	This method must be implemented.
Method	<b>supportsLogRecordType</b>	
Description	Tests if the given Log record type is supported.	
Parameters	osid.type.Type	logRecordType
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>getLogSearchRecordTypes</b>	
Description	Gets the supported log search record types.	
Return	osid.type.TypeList	a list containing the supported log search record types
Compliance	mandatory	This method must be implemented.
Method	<b>supportsLogSearchRecordType</b>	
Description	Tests if the given log search record type is supported.	
Parameters	osid.type.Type	logSearchRecordType
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>getPriorityTypes</b>	
Description	Gets the priority types supported, in ascending order of the priority level.	
Return	osid.type.TypeList	a list containing the supported priority types
Compliance	mandatory	This method must be implemented.
Method	<b>supportsPriorityType</b>	
Description	Tests if the priority type is supported.	
Parameters	osid.type.Type	priorityType
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.

Method	<b>getContentTypes</b>	
<b>Description</b>	Gets the log entry content types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	a list containing the supported log entry content types
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>supportsContentType</b>	
<b>Description</b>	Tests if the log entry content type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	contentType
		a Type indicating a log entry content type
<b>Return</b>	<a href="#">boolean</a>	true if the given Type is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.logging.LoggingManager	
Implements	<a href="#">osid.OsidManager</a> <a href="#">osid.logging.LoggingProfile</a>	
Description	<p>The logging manager provides access to logging 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>• LoggingSession: a session to write to a log</li> <li>• LogReadingSession: a session to read a log</li> <li>• LogEntrySearchSession: a session to search a log</li> <li>• LogEntryAdminSession: a session to manage log entries in a log</li> <li>• LogEntryNotificationSession: a session to subscribe to notifications of new log entries</li> <li>• LogLookupSession: a session to retrieve log objects</li> <li>• LogSearchSession: a session to search for logs</li> <li>• LogAdminSession: a session to create, update and delete logs</li> <li>• LogNotificationSession: a session to receive notifications for changes in logs</li> <li>• LogHierarchyTraversalSession: a session to traverse hierarchies of logs</li> <li>• LogHierarchyDesignSession: a session to manage hierarchies of logs</li> </ul> <p>The logging manager also provides a profile for determining the supported search types supported by this service.</p>	
Method	<b>getLoggingSession</b>	
Description	Gets the OsidSession associated with the logging service.	
Return	<a href="#">osid.logging.LoggingSession</a>	a LoggingSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsLogging() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsLogging() is true.
Method	<b>getLoggingSessionForLog</b>	
Description	Gets the OsidSession associated with the logging service for the given log.	
Parameters	<a href="#">osid.id.Id</a>   logId	the Id of the Log
Return	<a href="#">osid.logging.LoggingSession</a>	a LoggingSession
Errors	<a href="#">NOT_FOUND</a>	no Log found by the given Id
	<a href="#">NULL_ARGUMENT</a>	logId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsLogging() or supportsVisibleFederation() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsLogging() and supportsVisibleFederation() are true
Method	<b>getLogReadingSession</b>	
Description	Gets the OsidSession associated with the logging reading service.	
Return	<a href="#">osid.logging.LogReadingSession</a>	a LogReadingSession
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsLogReading() is false
Compliance	<a href="#">optional</a>	This method must be implemented if supportsLogReading() is true.

Method	getLogReadingSessionForLog	
Description	Gets the OsidSession associated with the log reading service for the given log.	
Parameters	osid.id.Id   logId	the Id of the Log
Return	osid.logging.LogReadingSession	a LogReadingSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	no Log found by the given Id logId is null unable to complete request supportsLogReading() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsLogReading() and supportsVisibleFederation() are true
Method	getLogEntrySearchSession	
Description	Gets the OsidSession associated with the logging entry search service.	
Return	osid.logging.LogEntrySearchSession	a LogEntrySearchSession
Errors	OPERATION_FAILED UNIMPLEMENTED	unable to complete request supportsLogEntrySearch() is false
Compliance	optional	This method must be implemented if supportsLogEntrySearch() is true.
Method	getLogEntrySearchSessionForLog	
Description	Gets the OsidSession associated with the log entry search service for the given log.	
Parameters	osid.id.Id   logId	the Id of the Log
Return	osid.logging.LogEntrySearchSession	a LogEntrySearchSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	no Log found by the given Id logId is null unable to complete request supportsLogEntrySearch() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsLogEntrySearch() and supportsVisibleFederation() are true
Method	getLogEntryAdminSession	
Description	Gets the OsidSession associated with the logging entry administrative service.	
Return	osid.logging.LogEntryAdminSession	a LogEntryAdminSession
Errors	OPERATION_FAILED UNIMPLEMENTED	unable to complete request supportsLogEntryAdmin() is false
Compliance	optional	This method must be implemented if supportsLogEntryAdmin() is true.
Method	getLogEntryAdminSessionForLog	
Description	Gets the OsidSession associated with the log entry administrative service for the given log.	
Parameters	osid.id.Id   logId	the Id of the Log
Return	osid.logging.LogEntryAdminSession	a LogEntryAdminSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	no Log found by the given Id logId is null unable to complete request supportsLogEntryAdmin() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsLogEntryAdmin() and supportsVisibleFederation() are true

Method	<b>getLogEntryNotificationSession</b>	
<b>Description</b>	Gets the OsidSession associated with the logging entry notification service.	
<b>Return</b>	<a href="#">osid.logging.LogEntryNotificationSession</a>	a LogEntryNotificationSession
<b>Errors</b>	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogEntryNotification() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogEntryNotification() is true.
Method	<b>getLogEntryNotificationSessionForLog</b>	
<b>Description</b>	Gets the OsidSession associated with the log entry notification service for the given log.	
<b>Parameters</b>	<a href="#">osid.id.Id</a> logId	the Id of the Log
<b>Return</b>	<a href="#">osid.logging.LogEntryNotificationSession</a>	a LogEntryNotificationSession
<b>Errors</b>	NOT_FOUND	no Log found by the given Id
	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogEntryNotification() or supportsVisibleFederation() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogEntryNotification() and supportsVisibleFederation() are true
Method	<b>getLogLookupSession</b>	
<b>Description</b>	Gets the OsidSession associated with the log lookup service.	
<b>Return</b>	<a href="#">osid.logging.LogLookupSession</a>	a LogLookupSession
<b>Errors</b>	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogLookup() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogLookup() is true.
Method	<b>getLogSearchSession</b>	
<b>Description</b>	Gets the OsidSession associated with the log search service.	
<b>Return</b>	<a href="#">osid.logging.LogSearchSession</a>	a LogSearchSession
<b>Errors</b>	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogSearch() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogSearch() is true.
Method	<b>getLogAdminSession</b>	
<b>Description</b>	Gets the OsidSession associated with the log administrative service.	
<b>Return</b>	<a href="#">osid.logging.LogAdminSession</a>	a LogAdminSession
<b>Errors</b>	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogAdmin() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogAdmin() is true.
Method	<b>getLogNotificationSession</b>	
<b>Description</b>	Gets the OsidSession associated with the log notification service.	
<b>Return</b>	<a href="#">osid.logging.LogNotificationSession</a>	a LogNotificationSession
<b>Errors</b>	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsLogNotification() is false
<b>Compliance</b>	optional	
		This method must be implemented if supportsLogNotification() is true.

Method	<b>getLogHierarchySession</b>	
<b>Description</b>	Gets the OsidSession associated with the log hierarchy service.	
<b>Return</b>	<a href="#">osid.logging.LogHierarchySession</a>	a LogHierarchySession for logs
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsLogHierarchy() is false
<b>Compliance</b>	optional	This method must be implemented if supportsLogHierarchy() is true.
Method	<b>getLogHierarchyDesignSession</b>	
<b>Description</b>	Gets the OsidSession associated with the log hierarchy design service.	
<b>Return</b>	<a href="#">osid.logging.LogHierarchyDesignSession</a>	a HierarchyDesignSession for logs
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsLogHierarchyDesign() is false
<b>Compliance</b>	optional	This method must be implemented if supportsLogHierarchyDesign() is true.

Interface	osid.logging.LoggingProxyManager		
Implements	<a href="#">osid.OsidProxyManager</a> <a href="#">osid.logging.LoggingProfile</a>		
Description	<p>The logging manager provides access to logging sessions 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>• LoggingSession: a session to write to a log</li> <li>• LogReadingSession: a session to read a log</li> <li>• LogEntrySearchSession: a session to search a log</li> <li>• LogEntryAdminSession: a session to manage log entries in a log</li> <li>• LogEntryNotificationSession: a session to subscribe to notifications of new log entries</li> <li>• LogLookupSession: a session to retrieve log objects</li> <li>• LogSearchSession: a session to search for logs</li> <li>• LogAdminSession: a session to create, update and delete logs</li> <li>• LogNotificationSession: a session to receive notifications for changes in logs</li> <li>• LogHierarchyTraversalSession: a session to traverse hierarchies of logs</li> <li>• LogHierarchyDesignSession: a session to manage hierarchies of logs</li> </ul> <p>The logging manager also provides a profile for determining the supported search types supported by this service.</p>		
Method	<b>getLoggingSession</b>		
Description	Gets the OsidSession associated with the logging service.		
Parameters	<a href="#">osid.authentication.Authentication</a>	authentication	proxy authentication
Return	<a href="#">osid.logging.LoggingSession</a>		a LoggingSession
Errors	<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>		supportsLogging() is false
	<a href="#">UNSUPPORTED</a>		the authentication service is not supported
Compliance	<a href="#">optional</a>		This method must be implemented if supportsLogging() is true.
Method	<b>getLoggingSessionForLog</b>		
Description	Gets the OsidSession associated with the logging service for the given log.		
Parameters	<a href="#">osid.id.Id</a>	logId	the Id of the Log
	<a href="#">osid.authentication.Authentication</a>	authentication	proxy authentication
Return	<a href="#">osid.logging.LoggingSession</a>		a LoggingSession
Errors	<a href="#">NOT_FOUND</a>		no Log found by the given Id
	<a href="#">NULL_ARGUMENT</a>		logId 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>		supportsLogging() or supportsVisibleFederation() is false
	<a href="#">UNSUPPORTED</a>		the authentication service is not supported
Compliance	<a href="#">optional</a>		This method must be implemented if supportsLogging() and supportsVisibleFederation() are true

Method	getLogReadingSession		
Description	Gets the OsidSession associated with the logging reading service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogReadingSession		
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogReading() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsLogReading() is true.
Method	getLogReadingSessionForLog		
Description	Gets the OsidSession associated with the log reading service for the given log.		
Parameters	osid.id.Id	logId	the Id of the Log
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogReadingSession		
Errors	NOT_FOUND		no Log found by the given Id
	NULL_ARGUMENT		logId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogReading() or supportsVisibleFederation() is false
Compliance	optional		This method must be implemented if supportsLogReading() and supportsVisibleFederation() are true
Method	getLogEntrySearchSession		
Description	Gets the OsidSession associated with the logging entry search service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntrySearchSession		
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntrySearch() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsLogEntrySearch() is true.
Method	getLogEntrySearchSessionForLog		
Description	Gets the OsidSession associated with the log entry search service for the given log.		
Parameters	osid.id.Id	logId	the Id of the Log
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntrySearchSession		
Errors	NOT_FOUND		no Log found by the given Id
	NULL_ARGUMENT		logId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntrySearch() or supportsVisibleFederation() is false
Compliance	optional		This method must be implemented if supportsLogEntrySearch() and supportsVisibleFederation() are true

Method	getLogEntryAdminSession		
Description	Gets the OsidSession associated with the logging entry administrative service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntryAdminSession		a LogEntryAdminSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntryAdmin() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsLogEntryAdmin() is true.
Method	getLogEntryAdminSessionForLog		
Description	Gets the OsidSession associated with the log entry administrative service for the given log.		
Parameters	osid.id.Id	logId	the Id of the Log
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntryAdminSession		a LogEntryAdminSession
Errors	NOT_FOUND		no Log found by the given Id
	NULL_ARGUMENT		logId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntryAdmin() or supportsVisibleFederation() is false
UNSUPPORTED		the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsLogEntryAdmin() and supportsVisibleFederation() are true
Method	getLogEntryNotificationSession		
Description	Gets the OsidSession associated with the logging entry notification service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntryNotificationSession		a LogEntryNotificationSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntryNotification() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsLogEntryNotification() is true.
Method	getLogEntryNotificationSessionForLog		
Description	Gets the OsidSession associated with the log entry notification service for the given log.		
Parameters	osid.id.Id	logId	the Id of the Log
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntryNotificationSession		a LogEntryNotificationSession
Errors	NOT_FOUND		no Log found by the given Id
	NULL_ARGUMENT		logId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogEntryNotification() or supportsVisibleFederation() is false
UNSUPPORTED		the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsLogEntryNotification() and supportsVisibleFederation() are true

Method	getLogLookupSession	
<b>Description</b>	Gets the OsidSession associated with the log lookup service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogLookupSession	a LogLookupSession
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsLogLookup() is false the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogLookup() is true.
Method	getLogSearchSession	
<b>Description</b>	Gets the OsidSession associated with the log search service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogSearchSession	a LogSearchSession
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsLogSearch() is false the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogSearch() is true.
Method	getLogAdminSession	
<b>Description</b>	Gets the OsidSession associated with the log administrative service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogAdminSession	a LogAdminSession
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsLogAdmin() is false the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogAdmin() is true.
Method	getLogNotificationSession	
<b>Description</b>	Gets the OsidSession associated with the log notification service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogNotificationSession	a LogNotificationSession
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsLogNotification() is false the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogNotification() is true.

Method	getLogHierarchySession	
<b>Description</b>	Gets the OsidSession associated with the log hierarchy service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogHierarchySession	a LogHierarchySession for logs
	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
<b>Errors</b>	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsLogHierarchy() is false
	UNSUPPORTED	the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogHierarchy() is true.
Method	getLogHierarchyDesignSession	
<b>Description</b>	Gets the OsidSession associated with the log hierarchy design service.	
<b>Parameters</b>	osid.authentication.Authentication	authentication proxy authentication
<b>Return</b>	osid.logging.LogHierarchyDesignSession	a HierarchyDesignSession for logs
	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
<b>Errors</b>	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsLogHierarchyDesign() is false
	UNSUPPORTED	the authentication service is not supported
<b>Compliance</b>	optional	This method must be implemented if supportsLogHierarchyDesign() is true.

Interface	osid.logging.LoggingSession				
Implements	<a href="#">osid.OsidSession</a>				
Description	This session is used to log entries to a log.				
Method	<b>getLogId</b>				
Description	Gets the Log Id associated with this session.				
Return	<a href="#">osid.id.Id</a>	the Log Id associated with this session			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>getLog</b>				
Description	Gets the Log associated with this session.				
Return	<a href="#">osid.logging.Log</a>	the log			
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.			
Method	<b>canLog</b>				
Description	Tests if this user can log. 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 logging operations.				
Return	<a href="#">boolean</a>	false if logging methods are not authorized, true otherwise			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>log</b>				
Description	Logs an item.				
Parameters	<a href="#">object</a>	content	the entry to log		
	<a href="#">osid.type.Type</a>	contentType	the type of this entry which must be one of the types returned by LoggingManager.getContentTypes()		
Errors	<a href="#">INVALID_ARGUMENT</a>	content is not of contentType			
	<a href="#">NULL_ARGUMENT</a>	content or contentType argument provided			
	<a href="#">OPERATION_FAILED</a>	unable to complete request			
	<a href="#">PERMISSION_DENIED</a>	authorization failure			
	<a href="#">UNSUPPORTED</a>	LoggingManager.supportsContentType(contentType) is false			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>logAtPriority</b>				
Description	Logs an item at a given priority level.				
Parameters	<a href="#">osid.type.Type</a>	priority	the priority of this item		
	<a href="#">object</a>	content	the entry to log		
	<a href="#">osid.type.Type</a>	contentType	the type of this entry which must be one of the types returned by LoggingManager.getContentTypes()		
Errors	<a href="#">INVALID_ARGUMENT</a>	content is not of contentType			
	<a href="#">NULL_ARGUMENT</a>	content or contentType argument provided			
	<a href="#">OPERATION_FAILED</a>	unable to complete request			
	<a href="#">PERMISSION_DENIED</a>	authorization failure			
	<a href="#">UNSUPPORTED</a>	LoggingManager.supportsContentType(contentType) is false			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.logging.LogReadingSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>		
<b>Method</b>	<b>getLogId</b>	
<b>Description</b>	Gets the Log Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Log Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLog</b>	
<b>Description</b>	Gets the Log associated with this session.	
<b>Return</b>	<a href="#">osid.logging.Log</a>	the log
<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>canReadLog</b>	
<b>Description</b>	Tests if this user can read the log. 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 reading operations.	
<b>Return</b>	<a href="#">boolean</a>	false if reading methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeLogEntryView</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>usePlenaryLogEntryView</b>	
<b>Description</b>	A complete view of the LogEntry 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>useFederatedLogView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include entries in logs which are children of this log in the log hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedLogView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts retrievals to this log only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getLogEntry</b>	
<b>Description</b>	Gets the LogEntry specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned LogEntry may have a different Id than requested, such as the case where a duplicate Id was assigned to a LogEntry and retained for compatibility.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logEntryId
<b>Return</b>	<a href="#">osid.logging.LogEntry</a>	the returned LogEntry
<b>Errors</b>	<a href="#">NOT_FOUND</a>	no LogEntry found with the given Id
	<a href="#">NULL_ARGUMENT</a>	logEntryId 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	getLogEntriesByIds	
Description	Gets a LogEntryList corresponding to the given IdList. In plenary mode, the returned list contains all of the entries 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 logentries may be omitted from the list and may present the elements in any order including returning a unique set.	
Parameters	osid.id.IdList	logEntryIdList
Return	osid.logging.LogEntryList	the returned LogEntry list
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	an Id was not found logEntryIdList is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogEntriesByContentType	
Description	Gets a LogEntryList corresponding to the given content Type. In plenary mode, the returned list contains all known entries or an error results. Otherwise, the returned list may contain only those entries that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	contentType
Return	osid.logging.LogEntryList	the returned LogEntry list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	contentType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogEntriesByPriorityType	
Description	Gets a LogEntryList corresponding to the given priority Type. In plenary mode, the returned list contains all known entries or an error results. Otherwise, the returned list may contain only those entries that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	priorityType
Return	osid.logging.LogEntryList	the returned LogEntry list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	contentType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogEntriesByTime	
Description	Gets a LogEntryList corresponding to the given time interval. In plenary mode, the returned list contains all known entries or an error results. Otherwise, the returned list may contain only those entries that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.calendaring.DateTime	start
	osid.calendaring.DateTime	end
Return	osid.logging.LogEntryList	the returned LogEntry list
Errors	INVALID_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	start is greater than end unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogEntries	
Description	Gets all log entries. In plenary mode, the returned list contains all known entries or an error results. Otherwise, the returned list may contain only those entries that are accessible through this session. In both cases, the order of the set is not specified.	
Return	osid.logging.LogEntryList	a list of log emntries
Errors	OPERATION_FAILED PERMISSION_DENIED	unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.logging.LogEntrySearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among log entries. The search query is constructed using the LogEntryQuery interface.</p> <p>getLogEntriesByQuery() is the basic search method and returns a list of log entries. A more advanced search may be performed with getLogEntriesBySearch(). It accepts a LogEntrySearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getLogEntriesBySearch() returns a LogEntrySearchResults interface that can be used to access the resulting LogEntryList or be used to perform a search within the result set through LogEntrySearch.</p> <p>This session defines views that offer differing behaviors for searching.</p> <ul style="list-style-type: none"> <li>• federated log view: searches include entries in repositories of which this log is an ancestor in the log hierarchy</li> <li>• isolated log view: searches are restricted to entries in this log only</li> </ul>	
<b>Method</b>	<b>getLogId</b>	
<b>Description</b>	Gets the Log Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Log Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLog</b>	
<b>Description</b>	Gets the Log associated with this session.	
<b>Return</b>	<a href="#">osid.logging.Log</a>	the Log 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>canSearchLogEntries</b>	
<b>Description</b>	Tests if this user can perform LogEntry 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>useFederatedLogView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include entries in logs which are children of this log in the log hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedLogView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this log only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getLogEntryQuery</b>	
<b>Description</b>	Gets a log entry query interface.	
<b>Return</b>	<a href="#">osid.logging.LogEntryQuery</a>	the log entry query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>getLogEntriesByQuery</b>	
<b>Description</b>	Gets a list of log entries matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.logging.LogEntryQuery</a>	logEntryQuery the search query array
<b>Return</b>	<a href="#">osid.logging.LogEntryList</a>	the returned LogEntryList
<b>Errors</b>	NULL_ARGUMENT	logEntryQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	logEntryQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getLogEntrySearch</b>	
<b>Description</b>	Gets a log entry search interface.	
<b>Return</b>	<a href="#">osid.logging.LogEntrySearch</a>	the log entry search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getLogEntrySearchOrder</b>	
<b>Description</b>	Gets a log entry search order interface. The LogEntrySearchOrder is supplied to an LogEntrySearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.logging.LogEntrySearchOrder</a>	the log entry search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getLogEntriesBySearch</b>	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.logging.LogEntryQuery</a>	logEntryQuery the search query array
	<a href="#">osid.logging.LogEntrySearch</a>	logEntrySearch the search interface
<b>Return</b>	<a href="#">osid.logging.LogEntrySearchResults</a>	the returned search results
<b>Errors</b>	NULL_ARGUMENT	logEntryQuery or logEntrySearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	logEntryQuery or logEntrySearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.logging.LogEntryAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session removes log entries. The data for create and update is provided by the consumer via the form object.	
<b>Method</b>	<b>getLogId</b>	
<b>Description</b>	Gets the Log Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Log Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLog</b>	
<b>Description</b>	Gets the Log associated with this session.	
<b>Return</b>	<a href="#">osid.logging.Log</a>	the Log 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>canDeleteLogEntries</b>	
<b>Description</b>	Tests if this user can delete log entries. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a LogEntry 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.	
<b>Return</b>	<a href="#">boolean</a>	false if LogEntry deletion is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canDeleteLogEntry</b>	
<b>Description</b>	Tests if this user can delete a specified LogEntry. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the LogEntry 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.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   logEntryId	the Id of the LogEntry
<b>Return</b>	<a href="#">boolean</a>	false if deletion of this LogEntry is not authorized, true otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logEntryId is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Provider Notes</b>	If the logEntryId is not found, then it is acceptable to return false to indicate the lack of an delete available.	
<b>Method</b>	<b>deleteLogEntry</b>	
<b>Description</b>	Deletes a LogEntry.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   logEntryId	the Id of the logEntryId to remove
<b>Errors</b>	<a href="#">NOT_FOUND</a>	logEntryId not found
	<a href="#">NULL_ARGUMENT</a>	logEntryId 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>deleteLogEntriesByPriorityType</b>	
<b>Description</b>	Removes log entries based on the priority type. All entries with priorities equal to or less than the supplied priority are deleted.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>   priorityType	the logging priority
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	priorityType 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	<b>deleteLogEntriesByTimestamp</b>				
Description	Removes log entries between the supplied dates.				
Parameters	osid.calendaring.DateTime	start	the start time		
	osid.calendaring.DateTime	end	the end time		
Errors	INVALID_ARGUMENT		start is greater than end		
	OPERATION_FAILED		unable to complete request		
	NULL_ARGUMENT		start or end is null		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	<b>deleteLogEntriesByPriorityAndTimestamp</b>				
Description	Removes log entries between the supplied dates for a given priority type.				
Parameters	osid.type.Type	priorityType	the logging priority		
	osid.calendaring.DateTime	start	the start time		
Errors	osid.calendaring.DateTime	end	the end time		
	INVALID_ARGUMENT		start is greater than end		
	OPERATION_FAILED		unable to complete request		
	NULL_ARGUMENT		priorityType, start or end is null		
Compliance	PERMISSION_DENIED		authorization failure		
	mandatory	This method must be implemented.			
Method	<b>addIdToLogEntry</b>				
Description	Adds an Id to a LogEntry for the purpose of creating compatibility. The primary Id of the LogEntry is determined by the provider. The new Id performs as an alias to the primary Id.				
Parameters	osid.id.Id	logEntryId	the Id of a LogEntry		
	osid.id.Id	aliasId	the alias Id		
Errors	ALREADY_EXISTS		aliasId is already assigned		
	NOT_FOUND		logEntryId not found		
	NULL_ARGUMENT		logEntryId or aliasId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.logging.LogEntryNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on new or deleted log entries. 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>Notifications are triggered with changes to assignments of Ids to this log. For notifications of changes to the Log object use LogNotificationSession.</p>	
<b>Method</b>	<b>getLogId</b>	
<b>Description</b>	Gets the Log Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Log Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLog</b>	
<b>Description</b>	Gets the Log associated with this session.	
<b>Return</b>	<a href="#">osid.logging.Log</a>	the Log 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>canRegisterForLogEntryNotifications</b>	
<b>Description</b>	Tests if this user can register for Log entry 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>useFederatedLogView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include entries from parent logs in the log hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedLogView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts notifications for entries to this log only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>registerForNewLogEntries</b>	
<b>Description</b>	Register for notifications of new log entries. LogEntryReceiver.newLogEntry() is invoked when a new LogEntry 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>registerForDeletedLogEntries</b>	
<b>Description</b>	Registers for notification of deleted log entries. LogEntryReceiver.deletedLogEntry() is invoked when a log entry is deleted.	
<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.

Interface	osid.logging.LogLookupSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods for retrieving Log objects. The Log represents a collection of log entries.</p> <p>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 Logs it can access, without breaking execution. However, an assessment may only be useful if all Logs referenced by it are available, and a test-taking application may sacrifice some interoperability for the sake of precision.</p>	
Method	<b>canLookupLogs</b>	
Description	<p>Tests if this user can perform Log 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	<b>useComparativeLogView</b>	
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	<b>usePlenaryLogView</b>	
Description	<p>A complete view of the Log 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	<b>getLog</b>	
Description	<p>Gets the Log specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Log may have a different Id than requested, such as the case where a duplicate Id was assigned to a Log and retained for compatibility.</p>	
Parameters	<a href="#">osid.id.Id</a>	Id of the Log
Return	<a href="#">osid.logging.Log</a>	the log
Errors	<a href="#">NOT_FOUND</a>	logId not found
	<a href="#">NULL_ARGUMENT</a>	logId 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	getLogsByIds	
Description	Gets a LogList corresponding to the given IdList. In plenary mode, the returned list contains all of the logs 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 Logs may be omitted from the list and may present the elements in any order including returning a unique set.	
Parameters	osid.id.IdList	logIdList
Return	osid.logging.LogList	the returned Log list
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	an Id was not found logIdList is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogsByGenusType	
Description	Gets a LogList corresponding to the given log genus Type which does not include logs of genus types derived from the specified Type. In plenary mode, the returned list contains all known logs or an error results. Otherwise, the returned list may contain only those logs that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	logGenusType
Return	osid.logging.LogList	the returned Log list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	logGenusType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogsByParentGenusType	
Description	Gets a LogList corresponding to the given log genus Type and include any additional logs with genus types derived from the specified Type. In plenary mode, the returned list contains all known logs or an error results. Otherwise, the returned list may contain only those logs that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	logGenusType
Return	osid.logging.LogList	the returned Log list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	logGenusType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getLogsByRecordType	
Description	Gets a LogList containing the given repository record Type. In plenary mode, the returned list contains all known logs or an error results. Otherwise, the returned list may contain only those logs that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	logRecordType
Return	osid.logging.LogList	the returned Log list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	logRecordType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Method	<b>getLogs</b>	
<b>Description</b>	Gets all Logs. In plenary mode, the returned list contains all known logs or an error results. Otherwise, the returned list may contain only those logs that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Return</b>	<a href="#">osid.logging.LogList</a>	a list of Logs
<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>Interface</b>	<b>osid.logging.LogSearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching Log objects. The search query is constructed using the LogQuery interface. The log record Type also specifies the interface for the log query.</p> <p>getLogsByQuery() is the basic search method and returns a list of Log elements. A more advanced search may be performed with getLogsBySearch(). It accepts a LogSearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getLogsBySearch() returns a LogSearchResults interface that can be used to access the resulting LogList or be used to perform a search within the result set through LogSearch.</p> <p>Logs may have a query record indicated by their respective record types. The query record is accessed via the LogQuery. The returns in this session may not be cast directly to these interfaces.</p>	
<b>Method</b>	<b>canSearchLogs</b>	
<b>Description</b>	Tests if this user can perform Log 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>getLogQuery</b>	
<b>Description</b>	Gets a log query interface. The returned query will not have an extension query.	
<b>Return</b>	<a href="#">osid.logging.LogQuery</a>	the log query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogsByQuery</b>	
<b>Description</b>	Gets a list of Logs matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.logging.LogQuery</a> logQuery	the search query array
<b>Return</b>	<a href="#">osid.logging.LogList</a>	the returned LogList
<b>Errors</b>	NULL_ARGUMENT	logQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	logQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogSearch</b>	
<b>Description</b>	Gets a log search interface.	
<b>Return</b>	<a href="#">osid.logging.LogSearch</a>	the log search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogSearchOrder</b>	
<b>Description</b>	Gets a log search order interface. The LogSearchOrder is supplied to a LogSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.logging.LogSearchOrder</a>	the log search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getLogsBySearch	
<b>Description</b>	Gets the search results matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.logging.LogQuery</a>	logQuery the search query array
	<a href="#">osid.logging.LogSearch</a>	logSearch the search interface
<b>Return</b>	<a href="#">osid.logging.LogSearchResults</a>	the search results
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	logQuery or logSearch is null unable to complete request authorization failure logQuery or logSearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.logging.LogAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session creates and removes logs. The data for create and update is provided by the consumer via the form object.	
<b>Method</b>	<b>canCreateLogs</b>	
<b>Description</b>	Tests if this user can create Logs. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Log 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>	<a href="#">boolean</a>	false if Log creation is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateLogWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Log using the desired record interface types. While LoggingManager.getLogRecordTypes() can be used to examine which record interfaces are supported, this method tests which record(s) are required for creating a specific Log. Providing an empty array tests if a Log can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[] logRecordTypes</a>	array of types
<b>Return</b>	<a href="#">boolean</a>	true if Log creation using the specified record Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogFormForCreate</b>	
<b>Description</b>	Gets the log form for creating new logs. A new form should be requested for each create transaction.	
<b>Return</b>	<a href="#">osid.logging.LogForm</a>	the log form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>createLog</b>	
<b>Description</b>	Creates a new Log.	
<b>Parameters</b>	<a href="#">osid.logging.LogForm logForm</a>	the form for this Log
<b>Return</b>	<a href="#">osid.logging.Log</a>	the new Log
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>	attempt at duplicating a property the underlying system is enforcing to be unique
	<a href="#">INVALID_ARGUMENT</a>	one or more of the form elements is invalid
	<a href="#">NULL_ARGUMENT</a>	logForm is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
	<a href="#">UNSUPPORTED</a>	logForm is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canUpdateLogs</b>	
<b>Description</b>	Tests if this user can update Logs. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Log 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>	<a href="#">boolean</a>	false if Log modification is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canUpdateLog	
Description	Tests if this user can update a specified Log. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Log 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 logId	the Id of the Log
Return	boolean	false if log modification is not authorized, true otherwise
Errors	NULL_ARGUMENT	logId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the logId is not found, then it is acceptable to return false to indicate the lack of an update available.	
Method	getLogFormForUpdate	
Description	Gets the log form for updating an existing log. A new log form should be requested for each update transaction.	
Parameters	osid.id.Id logId	the Id of the Log
Return	osid.logging.LogForm	the log form
Errors	NULL_ARGUMENT	logId is null
Compliance	mandatory	This method must be implemented.
Method	updateLog	
Description	Updates an existing log.	
Parameters	osid.id.Id logId osid.logging.LogForm logForm	the Id of the Log the form containing the elements to be updated
Errors	INVALID_ARGUMENT	the form contains an invalid value
	NOT_FOUND	logId is not found
	NULL_ARGUMENT	logId or logForm is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	UNSUPPORTED	logForm is not supported
	mandatory	This method must be implemented.
Method	canDeleteLogs	
Description	Tests if this user can delete Logs. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Log 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 Log deletion is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canDeleteLog	
Description	Tests if this user can delete a specified Log. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Log 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 logId	the Id of the Log
Return	boolean	false if deletion of this Log is not authorized, true otherwise
Errors	NULL_ARGUMENT	logId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the logId is not found, then it is acceptable to return false to indicate the lack of an delete available.	

Method	deleteLog				
<b>Description</b>	Deletes a Log.				
<b>Parameters</b>	osid.id.Id	logId	the Id of the Log to remove		
<b>Errors</b>	NOT_FOUND		logId not found		
	NULL_ARGUMENT		logId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	addIdToLog				
<b>Description</b>	Adds an Id to a Log for the purpose of creating compatibility. The primary Id of the Log is determined by the provider. The new Id performs as an alias to the primary Id.				
<b>Parameters</b>	osid.id.Id	logId	the Id of a Log		
	osid.id.Id	aliasId	the alias Id		
<b>Errors</b>	ALREADY_EXISTS		aliasId is already assigned		
	NOT_FOUND		logId not found		
	NULL_ARGUMENT		logId 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.logging.LogNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on adds/changes to Log 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.</p> <p>Notifications are triggered with changes to the Log object itself. Adding and removing entries result in notifications available from the notification session for log entries.</p>	
<b>Method</b>	<b>canRegisterForLogNotifications</b>	
<b>Description</b>	Tests if this user can register for Log 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>registerForNewLogs</b>	
<b>Description</b>	Register for notifications of new logs. LogReceiver.newLog() is invoked when a new Log 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>registerForNewLogAncestors</b>	
<b>Description</b>	Registers for notification of an updated hierarchy structure that introduces a new ancestor of the specified log. LogReceiver.newAncestorLog() is invoked when the specified log node gets a new ancestor.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId
	<a href="#">NOT_FOUND</a>	a log node was not found identified by the given Id
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logId 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>registerForNewLogDescendants</b>	
<b>Description</b>	Registers for notification of an updated hierarchy structure that introduces a new descendant of the specified log. LogReceiver.newDescendantLog() is invoked when the specified log node gets a new descendant.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId
	<a href="#">NOT_FOUND</a>	a log node was not found identified by the given Id
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logId 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>registerForChangedLogs</b>	
<b>Description</b>	Registers for notification of updated logs. LogReceiver.changedLog() is invoked when a log 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	registerForChangedLog	
<b>Description</b>	Registers for notification of an updated log. LogReceiver.changedLog() is invoked when the specified log is changed.	
<b>Parameters</b>	osid.id.Id	logId
	NOT_FOUND	a log was not found identified by the given Id
	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	registerForDeletedLogs	
<b>Description</b>	Registers for notification of deleted logs. LogReceiver.deletedLog() is invoked when a log is deleted.	
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	registerForDeletedLog	
<b>Description</b>	Registers for notification of a deleted log. LogReceiver.deletedLog() is invoked when the specified log is deleted.	
<b>Parameters</b>	osid.id.Id	logId
	NOT_FOUND	a log was not found identified by the given Id
	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	registerForDeletedLogAncestors	
<b>Description</b>	Registers for notification of an updated hierarchy structure that removes an ancestor of the specified log. LogReceiver.deletedAncestor() is invoked when the specified log node loses an ancestor.	
<b>Parameters</b>	osid.id.Id	logId
	NOT_FOUND	a log node was not found identified by the given Id
	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	registerForDeletedLogDescendants	
<b>Description</b>	Registers for notification of an updated hierarchy structure that removes a descendant of the specified log. LogReceiver.deletedDescendant() is invoked when the specified log node loses a descendant.	
<b>Parameters</b>	osid.id.Id	logId
	NOT_FOUND	a log node was not found identified by the given Id
	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

Interface	osid.logging.LogHierarchySession	
Implements	<a href="#">osid.hierarchy.HierarchyTraversalSession</a>	
Description	<p>This session defines methods for traversing a hierarchy of Log objects. Each node in the hierarchy is a unique Log. 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 Log available in the Log 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> <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: log elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul>	
Method	<a href="#">useComparativeLogView</a>	
Description	The returns from the log 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.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">usePlenaryLogView</a>	
Description	A complete view of the Log 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.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">getRootLogs</a>	
Description	Gets the root logs in the log hierarchy. A node with no parents is an orphan. While all log 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.	
Return	<a href="#">osid.logging.LogList</a>	the root logs
Errors	<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	<a href="#">getParentLogs</a>	
Description	Gets the parent logs of the given id.	
Parameters	<a href="#">osid.id.Id</a>	logId
Return	<a href="#">osid.logging.LogList</a>	the parent logs of the id
Errors	<a href="#">NOT_FOUND</a>	a Log identified by Id is not found
	<a href="#">NULL_ARGUMENT</a>	logId 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	getAncestorLogs				
Description	Gets the ancestor logs of the given id.				
Parameters	osid.id.Id	logId	the Id of the Log to query		
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getParentLogs().		
Return	osid.logging.LogList				
Errors	NOT_FOUND	a Log identified by Id is not found			
	NULL_ARGUMENT	logId is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authorization failure			
Compliance	mandatory				
Method	getChildLogs				
Description	Gets the child logs of the given id.				
Parameters	osid.id.Id	logId	the Id of the Log to query		
Return	osid.logging.LogList				
Errors	NOT_FOUND	a Log identified by Id is not found			
	NULL_ARGUMENT	logId is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authorization failure			
Compliance	mandatory				
Method	getDescendantLogs				
Description	Gets the descendant logs of the given id.				
Parameters	osid.id.Id	logId	the Id of the Log to query		
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getChildLogs().		
Return	osid.logging.LogList				
Errors	NOT_FOUND	a Log identified by Id is not found			
	NULL_ARGUMENT	logId is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authorization failure			
Compliance	mandatory				

Interface	<b>osid.logging.LogHierarchyDesignSession</b>
Implements	<a href="#">osid.hierarchy.HierarchyDesignSession</a>
Description	This session manages a hierarchy of logs. Logs may be organized into a hierarchy for organizing or federating. A parent Log includes all of the Ids of its children such that a single root node contains all of the Ids of the federation.

<b>Interface</b>	<b>osid.logging.LogEntry</b>	
<b>Implements</b>		
<b>Description</b>	A log entry consists of a time, an agent, and some content.	
<b>Method</b>	<b>getId</b>	
<b>Description</b>	Gets the Id associated with this instance of this log entry. Persisting any reference to this object is done by persisting the Id returned from this method. The Id returned may be different than the Id used to query this object. In this case, the new Id should be preferred over the old one for future queries.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Id
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getPriority</b>	
<b>Description</b>	Gets the priority level of this entry.	
<b>Return</b>	<a href="#">osid.type.Type</a>	the priority level
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getTimestamp</b>	
<b>Description</b>	Gets the time this entry was logged.	
<b>Return</b>	<a href="#">osid.calendaring.DateTime</a>	the time stamp of this entry
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAgentId</b>	
<b>Description</b>	Gets the agent Id who created this entry.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the agent id
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAgent</b>	
<b>Description</b>	Gets the Agent who created this entry.	
<b>Return</b>	<a href="#">osid.authentication.Agent</a>	the Agent
<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>getContentType</b>	
<b>Description</b>	Gets the type implemented by the entry content. The Type explicitly indicates the specification of the object and implicitly may define an object family. The interface Type returned may be a child in a type hierarchy. Interoperability with the typed interface to the content should be performed through <code>implementsContentType()</code> .	
<b>Return</b>	<a href="#">osid.type.Type</a>	the type implemented in the content
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>hasContentType</b>	
<b>Description</b>	Tests if the content supports the given Type. The given type may be supported by the content through interface/type inheritance. This method should be checked before retrieving the typed interface extension.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	contentType
		a type
<b>Return</b>	<a href="#">boolean</a>	true if the content implements the given Type, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	contentType is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>getContent</b>		
<b>Description</b>	Gets the content of this log entry as specified by the interface type.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	contentType the type of the object to retrieve
<b>Return</b>	<a href="#">object</a>	the log entry content
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	contentType is null unable to complete request authorization failure occurred hasContentType(contentype) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.logging.LogEntryQuery				
Implements					
Description	This is the query interface for searching log entries. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.				
Method	<b>getStringMatchTypes</b>				
Description	Gets the string matching types supported. A string match type specifies the syntax of the string query, such as matching a word or including a wildcard or regular expression.				
Return	osid.type.TypeList	a list containing the supported string match types			
Compliance	mandatory	This method must be implemented.			
Method	<b>supportsStringMatchType</b>				
Description	Tests if the given string matching type is supported.				
Parameters	osid.type.Type	searchType	a Type indicating a string match type		
Return	boolean	true if the given Type is supported, false otherwise			
Compliance	mandatory	This method must be implemented.			
Method	<b>matchKeyword</b>				
Description	Adds a keyword to match. Multiple keywords can be added to perform a boolean OR among them. A keyword may be applied to any of the elements defined in this object such as the display name, description or any method defined in an interface implemented by this object.				
Parameters	string	keyword	keyword to match		
	osid.type.Type	stringMatchType	the string match type		
	boolean	match	true for a positive match, false for a negative match		
Errors	INVALID_ARGUMENT	keyword is not of stringMatchType			
	NULL_ARGUMENT	keyword or stringMatchType is null			
	UNSUPPORTED	supportsStringMatchType(stringMatchType) is false			
Compliance	mandatory	This method must be implemented.			
Method	<b>matchPriority</b>				
Description	Matches a priority Type for the log entry.				
Parameters	osid.type.Type	priorityType	Type to match		
	boolean	match	true if for a positive match, false for negative match		
Errors	NULL_ARGUMENT	priorityType is null			
Compliance	mandatory	This method must be implemented.			
Method	<b>matchTimestamp</b>				
Description	Matches a priority Type in this log entry.				
Parameters	osid.calendaring.DateTime	startTime	start time		
	osid.calendaring.DateTime	endTime	end time		
	boolean	match	true if for a positive match, false for negative match		
Errors	INVALID_ARGUMENT	startTime is greater than endTime			
	NULL_ARGUMENT	startTime or endTime is null			
Compliance	mandatory	This method must be implemented.			
Method	<b>matchAgentId</b>				
Description	Matches an agent in this log entry.				
Parameters	osid.id.Id	agentId	Id to match		
	boolean	match	true if for a positive match, false for negative match		
Errors	NULL_ARGUMENT	agentId is null			
Compliance	mandatory	This method must be implemented.			

<b>Method</b>	<b>supportsAgentQuery</b>	
<b>Description</b>	Tests if an AgentQuery is available for querying agents.	
<b>Return</b>	<code>boolean</code>	true if an agent query interface is available, false otherwise
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.
<b>Method</b>	<b>getAgentQuery</b>	
<b>Description</b>	Gets the query interface for an agent.	
<b>Return</b>	<code>osid.authentication.AgentQuery</code>	the agent query
<b>Errors</b>	<code>UNIMPLEMENTED</code>	<code>supportsAgentQuery()</code> is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAgentQuery()</code> is true.
<b>Method</b>	<b>matchContentType</b>	
<b>Description</b>	Matches the content type for this log entry.	
<b>Parameters</b>	<code>osid.type.Type</code>	<code>contentType</code>
	<code>boolean</code>	true if for a positive match, false for negative match
<b>Errors</b>	<code>NULL_ARGUMENT</code>	
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.
<b>Method</b>	<b>supportsContentQuery</b>	
<b>Description</b>	Tests if a content query is available.	
<b>Return</b>	<code>boolean</code>	true if a content query is available, false otherwise
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.
<b>Method</b>	<b>getContentQuery</b>	
<b>Description</b>	Gets the content query record corresponding to the content interface Type provided in the search session. Multiple retrievals produce a nested boolean OR term.	
<b>Return</b>	<code>object</code>	the content query
<b>Errors</b>	<code>UNIMPLEMENTED</code>	<code>supportsContentQuery()</code> is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsContentQuery()</code> is true.

<b>Interface</b>	<b>osid.logging.LogEntrySearchOrder</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>orderByPriorityType</b>	
<b>Description</b>	Specifies a preference for ordering log entries by priority type.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByTime</b>	
<b>Description</b>	Specifies a preference for ordering log entries by time.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByAgent</b>	
<b>Description</b>	Specifies a preference for ordering log entries by agent.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByContentType</b>	
<b>Description</b>	Specifies a preference for ordering log entries by content type.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>geContentSearchOrder</b>	
<b>Description</b>	Gets the composition search order record corresponding to the given repository record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	contentType
	a content record type	
<b>Return</b>	<a href="#">object</a>	the content search order record interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	contentType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasContentType(contentRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.logging.LogEntrySearch	
Implements	<a href="#">osid.OsidSearch</a>	
Description	The search interface for governing log entry searches.	
Method	searchWithinLogEntryResults	
Description	Execute this search using a previous search result.	
Parameters	osid.logging.LogEntrySearchResults	results
Errors	INVALID_ARGUMENT NULL_ARGUMENT	results is not valid results is null
Compliance	mandatory	This method must be implemented.
Method	searchAmongLogEntries	
Description	Execute this search among the given list of log entries.	
Parameters	osid.id.IdList	logEntryIds
Errors	NULL_ARGUMENT	logEntryIds is null
Compliance	mandatory	This method must be implemented.
Method	orderLogEntryResults	
Description	Specify an ordering to the search results.	
Parameters	osid.logging.LogEntrySearchOrder	logEntrySearchOrder
Errors	NULL_ARGUMENT UNSUPPORTED	logEntrySearchOrder is null logEntrySearchOrder is not of this service
Compliance	mandatory	This method must be implemented.
Method	getLogEntrySearchRecord	
Description	Gets the record corresponding to the given log entry 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	osid.type.Type	logEntrySearchRecordType
Return	<a href="#">osid.logging.LogEntrySearchRecord</a>	
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSPECIFIED	logEntrySearchRecordType is null unable to complete request authorization failure occurred hasSearchRecordType(logEntrySearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.LogEntrySearchResults</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>getLogEntries</b>	
<b>Description</b>	Gets the log entry list resulting from a search.	
<b>Return</b>	<a href="#">osid.logging.LogEntryList</a>	the log entry list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogEntrySearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given log entry 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>	logEntrySearchRecordType a log entry search record type
<b>Return</b>	<a href="#">osid.logging.LogEntrySearchResultsRecord</a>	the log entry search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logEntrySearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(logEntrySearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.LogEntryReceiver</b>		
<b>Implements</b>	<a href="#">osid.OsidReceiver</a>		
<b>Description</b>	The log entry receiver is the consumer supplied interface for receiving notifications pertaining to new log entries.		
<b>Method</b>	<b>newLogEntry</b>		
<b>Description</b>	The callback for notifications of new log entries.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	registeredLogId	the Id of the registered Log
	<a href="#">osid.id.Id</a>	logId	the Id of the Log that triggered this event. May be the same as the registered log or one of its descendants.
	<a href="#">osid.id.Id</a>	entryId	the Id of the new entry
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedLogEntry</b>		
<b>Description</b>	the callback for notification of deleted log entries.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	registeredLogId	the Id of the registered Log
	<a href="#">osid.id.Id</a>	logId	the Id of the Log that triggered this event. May be the same as the registered log or one of its descendants.
	<a href="#">osid.id.Id</a>	entryId	the Id of the deleted entry
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.Log</b>									
<b>Implements</b>	<a href="#">osid.OsidCatalog</a>									
<b>Description</b>	A Log represents a collection of entries. Like all OSID objects, a Log is identified by its Id and any persisted references should use the Id.									
<b>getLogRecord</b>										
<b>Description</b>	Gets the record corresponding to the given Log record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The logRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(logRecordType) is true.									
<b>Parameters</b>	<a href="#">osid.type.Type</a>	logRecordType the type of log record to retrieve								
<b>Return</b>	<a href="#">osid.logging.Log</a>	the log record								
<b>Errors</b>	<table> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>logRecordType 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(logRecordType) is false</td> </tr> </table>		<a href="#">NULL_ARGUMENT</a>	logRecordType is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred	<a href="#">UNSUPPORTED</a>	hasRecordType(logRecordType) is false
<a href="#">NULL_ARGUMENT</a>	logRecordType is null									
<a href="#">OPERATION_FAILED</a>	unable to complete request									
<a href="#">PERMISSION_DENIED</a>	authorization failure occurred									
<a href="#">UNSUPPORTED</a>	hasRecordType(logRecordType) is false									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								

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

<b>Interface</b>	<b>osid.logging.LogQuery</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalogQuery</a>	
<b>Description</b>	This is the query interface for searching for logs. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.	
<b>Method</b>	<b>supportsLogEntryQuery</b>	
<b>Description</b>	Tests if a log entry query is available.	
<b>Return</b>	<a href="#">boolean</a>	true if a log entry query is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogEntryQuery</b>	
<b>Description</b>	Gets the query interface for a log entry.	
<b>Return</b>	<a href="#">osid.logging.LogEntryQuery</a>	the log entry query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	supportsLogEntryQuery() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsLogEntryQuery() is true.
<b>Method</b>	<b>getLogQueryRecord</b>	
<b>Description</b>	Gets the record query interface corresponding to the given Log record Type. Multiple record retrievals produce a nested boolean OR term.	
<b>Parameters</b>	<a href="#">osid.type.Type</a> logRecordType	a log record type
<b>Return</b>	<a href="#">osid.logging.LogQueryRecord</a>	the log query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	logRecordType is null unable to complete request authorization failure occurred hasRecordType(logRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

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

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

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

<b>Interface</b>	<b>osid.logging.LogSearchOrder</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>getLogSearchOrderRecord</b>	
<b>Description</b>	Gets the log search record order corresponding to the given log record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a> logRecordType	a log record type
<b>Return</b>	<a href="#">osid.logging.LogSearchOrderRecord</a>	the log search order record interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(logRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.LogSearch</b>	
<b>Implements</b>	<a href="#">osid.OsidSearch</a>	
<b>Description</b>	The search interface for governing log searches.	
<b>Method</b>	<b>searchWithinLogResults</b>	
<b>Description</b>	Execute this search using a previous search result.	
<b>Parameters</b>	<a href="#">osid.logging.LogSearchResults</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>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>searchAmongLogs</b>	
<b>Description</b>	Execute this search among the given list of logs.	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	logIds
		list of logs
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logIds is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderLogResults</b>	
<b>Description</b>	Specify an ordering to the search results.	
<b>Parameters</b>	<a href="#">osid.logging.LogSearchOrder</a>	logSearchOrder
		log search order
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logSearchOrder is null
	<a href="#">UNSUPPORTED</a>	logSearchOrder is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogSearchRecord</b>	
<b>Description</b>	Gets the record corresponding to the given log 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>	logSearchRecordType
		a log search record type
<b>Return</b>	<a href="#">osid.logging.LogSearchRecord</a>	the log search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(logSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.LogSearchResults</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>getLogs</b>	
<b>Description</b>	Gets the log list resulting from a search.	
<b>Return</b>	<a href="#">osid.logging.LogList</a>	the log list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getLogSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given log 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>	logSearchRecordType a log search record type
<b>Return</b>	<a href="#">osid.logging.LogSearchResultsRecord</a>	the log search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	logSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(logSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

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

<b>Interface</b>	<b>osid.logging.LogReceiver</b>				
<b>Implements</b>	<a href="#">osid.OsidReceiver</a>				
<b>Description</b>	The log receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Log objects.				
<b>Method</b>	<b>newLog</b>				
<b>Description</b>	The callback for notifications of new logs.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the new Log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>newAncestorLog</b>				
<b>Description</b>	The callback for notifications of new ancestors of a log.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the registered Log		
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the new ancestor log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>newDescendantLog</b>				
<b>Description</b>	The callback for notifications of new descendant of a log.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the registered Log		
	<a href="#">osid.id.Id</a>	descendantId	the Id of the new descendant log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>changedLog</b>				
<b>Description</b>	The callback for notification of updated logs.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the updated Log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>deletedLog</b>				
<b>Description</b>	the callback for notification of deleted logs.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the registered Log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>deletedAncestorLog</b>				
<b>Description</b>	The callback for notifications of deleted ancestors of a log.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the registered Log		
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the removed ancestor log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>deletedDescendantLog</b>				
<b>Description</b>	The callback for notifications of deleted descendants of a log.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	logId	the Id of the registered Log		
	<a href="#">osid.id.Id</a>	descendantId	the Id of the deleted descendant log		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

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