



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>

Package	osid.logging
Title	Logging Open Service Interface Definitions
Version	3.0.0
Description	<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>

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

Method	supportsLogHierarchyDesign	
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	supportsLogHierarchySequencing	
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	getLogSearchRecordTypes	
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	supportsLogEntrySearchRecordType	
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	getLogRecordTypes	
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	supportsLogRecordType	
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	getLogSearchRecordTypes	
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	supportsLogSearchRecordType	
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	getPriorityTypes	
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	supportsPriorityType	
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	getContentTypes	
Description	Gets the log entry content types supported.	
Return	osid.type.TypeList	a list containing the supported log entry content types
Compliance	mandatory	This method must be implemented.
Method	supportsContentType	
Description	Tests if the log entry content type is supported.	
Parameters	osid.type.Type	contentType
		a Type indicating a log entry content type
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.logging.LoggingProxyManager		
Implements	osid.OsidProxyManager osid.logging.LoggingProfile		
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"> • LoggingSession: a session to write to a log • LogReadingSession: a session to read a log • LogEntrySearchSession: a session to search a log • LogEntryAdminSession: a session to manage log entries in a log • LogEntryNotificationSession: a session to subscribe to notifications of new log entries • LogLookupSession: a session to retrieve log objects • LogSearchSession: a session to search for logs • LogAdminSession: a session to create, update and delete logs • LogNotificationSession: a session to receive notifications for changes in logs • LogHierarchyTraversalSession: a session to traverse hierarchies of logs • LogHierarchyDesignSession: a session to manage hierarchies of logs <p>The logging manager also provides a profile for determining the supported search types supported by this service.</p>		
Method	getLoggingSession		
Description	Gets the OsidSession associated with the logging service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LoggingSession		a LoggingSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsLogging() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsLogging() is true.
Method	getLoggingSessionForLog		
Description	Gets the OsidSession associated with the logging service for the given log.		
Parameters	osid.id.Id	logId	the Id of the Log
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LoggingSession		a LoggingSession
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		supportsLogging() or supportsVisibleFederation() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		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		a 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
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogReadingSession		a 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		a 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
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.logging.LogEntrySearchSession		a 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	
Description	Gets the OsidSession associated with the log lookup service.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.logging.LogLookupSession	a LogLookupSession
Errors	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
Compliance	optional	This method must be implemented if supportsLogLookup() is true.
Method	getLogSearchSession	
Description	Gets the OsidSession associated with the log search service.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.logging.LogSearchSession	a LogSearchSession
Errors	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
Compliance	optional	This method must be implemented if supportsLogSearch() is true.
Method	getLogAdminSession	
Description	Gets the OsidSession associated with the log administrative service.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.logging.LogAdminSession	a LogAdminSession
Errors	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
Compliance	optional	This method must be implemented if supportsLogAdmin() is true.
Method	getLogNotificationSession	
Description	Gets the OsidSession associated with the log notification service.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.logging.LogNotificationSession	a LogNotificationSession
Errors	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
Compliance	optional	This method must be implemented if supportsLogNotification() is true.

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

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

Interface	osid.logging.LogReadingSession	
Implements	osid.OsidSession	
Description		
Method	getLogId	
Description	Gets the Log Id associated with this session.	
Return	osid.id.Id	the Log Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getLog	
Description	Gets the Log associated with this session.	
Return	osid.logging.Log	the log
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canReadLog	
Description	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.	
Return	boolean	false if reading methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useComparativeLogEntryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	usePlenaryLogEntryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useFederatedLogView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedLogView	
Description	Isolates the view for methods in this session. An isolated view restricts retrievals to this log only.	
Compliance	mandatory	This method is must be implemented.
Method	getLogEntry	
Description	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.	
Parameters	osid.id.Id	logEntryId
Return	osid.logging.LogEntry	the returned LogEntry
Errors	NOT_FOUND	no LogEntry found with the given Id
	NULL_ARGUMENT	logEntryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	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.

Interface	osid.logging.LogEntrySearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching among log entries. The search query is constructed using the LogEntryQuery interface. Multiple LogEntryQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single LogEntryQuery, these elements form a boolean AND.</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"> • federated log view: searches include entries in repositories of which this log is an ancestor in the log hierarchy • isolated log view: searches are restricted to entries in this log only 	
Method	getLogId	
Description	Gets the Log Id associated with this session.	
Return	osid.id.Id	the Log Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getLog	
Description	Gets the Log associated with this session.	
Return	osid.logging.Log	the Log associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canSearchLogEntries	
Description	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.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedLogView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedLogView	
Description	Isolates the view for methods in this session. An isolated view restricts lookups to this log only.	
Compliance	mandatory	This method is must be implemented.
Method	getLogEntryQuery	
Description	Gets a log entry query interface. The returned query will not have a query for the content type.	
Return	osid.logging.LogEntryQuery	the log entry query
Compliance	mandatory	This method must be implemented.

Method	getLogEntriesByQuery	
Description	Gets a list of log entries matching the given search interface. Each element in the array is OR'd.	
Parameters	osid.logging.LogEntryQuery[]	logEntryQueries the search query array
Return	osid.logging.LogEntryList	the returned LogEntryList
Errors	NULL_ARGUMENT	logEntryQueries is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a logEntryQuery is not of this service
Compliance	mandatory	This method must be implemented.
Method	getLogEntrySearch	
Description	Gets a log entry search interface. The returned query only makes available the core LogEntry interface and does not support additional search interface types. <code>getLogEntrySearchForInterfaceType()</code> should be used if additional interface types are required.	
Return	osid.logging.LogEntrySearch	the log entry search interface
Compliance	mandatory	This method must be implemented.
Method	getLogEntrySearchOrder	
Description	Gets a log entry search order interface. The LogEntrySearchOrder is supplied to an LogEntrySearch to specify the ordering of results.	
Return	osid.logging.LogEntrySearchOrder	the log entry search order interface
Compliance	mandatory	This method must be implemented.
Method	getLogEntriesBySearch	
Description	Gets the search results matching the given search query using the given search. Each element in the query array is OR'd.	
Parameters	osid.logging.LogEntryQuery[]	logEntryQueries the search query array
	osid.logging.LogEntrySearch	logEntrySearch the search interface
Return	osid.logging.LogEntrySearchResults	the returned search results
Errors	NULL_ARGUMENT	logEntryQueries or logEntrySearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a logEntryQuery or logEntrySearch is not of this service
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.LogEntryAdminSession	
Implements	osid.OsidSession	
Description	This session removes log entries. The data for create and update is provided by the consumer via the form object.	
Method	getLogId	
Description	Gets the Log Id associated with this session.	
Return	osid.id.Id	the Log Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getLog	
Description	Gets the Log associated with this session.	
Return	osid.logging.Log	the Log associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canDeleteLogEntries	
Description	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.	
Return	boolean	false if LogEntry deletion is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canDeleteLogEntry	
Description	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.	
Parameters	osid.id.Id logEntryId	the Id of the LogEntry
Return	boolean	false if deletion of this LogEntry is not authorized, true otherwise
Errors	NULL_ARGUMENT	logEntryId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the logEntryId is not found, then it is acceptable to return false to indicate the lack of an delete available.	
Method	deleteLogEntry	
Description	Deletes a LogEntry.	
Parameters	osid.id.Id logEntryId	the Id of the logEntryId to remove
Errors	NOT_FOUND	logEntryId not found
	NULL_ARGUMENT	logEntryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	deleteLogEntriesByPriorityType	
Description	Removes log entries based on the priority type. All entries with priorities equal to or less than the supplied priority are deleted.	
Parameters	osid.type.Type priorityType	the logging priority
Errors	NULL_ARGUMENT	priorityType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	deleteLogEntriesByTimestamp				
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	deleteLogEntriesByPriorityAndTimestamp				
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	addIdToLogEntry				
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.			

Interface	osid.logging.LogEntryNotificationSession	
Implements	osid.OsidSession	
Description	<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>	
Method	getLogId	
Description	Gets the Log Id associated with this session.	
Return	osid.id.Id	the Log Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getLog	
Description	Gets the Log associated with this session.	
Return	osid.logging.Log	the Log associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canRegisterForLogEntryNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedLogView	
Description	Federates the view for methods in this session. A federated view will include entries from parent logs in the log hierarchy.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedLogView	
Description	Isolates the view for methods in this session. An isolated view restricts notifications for entries to this log only.	
Compliance	mandatory	This method is must be implemented.
Method	registerForNewLogEntries	
Description	Register for notifications of new log entries. LogEntryReceiver.newLogEntry() is invoked when a new LogEntry is created.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedLogEntries	
Description	Registers for notification of deleted log entries. LogEntryReceiver.deletedLogEntry() is invoked when a log entry is deleted.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.LogLookupSession									
Implements	osid.OsidSession									
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition <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	canLookupLogs									
Description	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.									
Return	boolean	false if lookup methods are not authorized, true otherwise								
Compliance	mandatory	This method must be implemented.								
Method	useComparativeLogView									
Description	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.									
Compliance	mandatory	This method is must be implemented.								
Method	usePlenaryLogView									
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	mandatory	This method is must be implemented.								
Method	getLog									
Description	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.									
Parameters	osid.id.Id	Id of the Log								
Return	osid.logging.Log	the log								
Errors	<table border="1"> <tr> <td>NOT_FOUND</td> <td>logId not found</td> </tr> <tr> <td>NULL_ARGUMENT</td> <td>logId is null</td> </tr> <tr> <td>OPERATION_FAILED</td> <td>unable to complete request</td> </tr> <tr> <td>PERMISSION_DENIED</td> <td>authorization failure</td> </tr> </table>		NOT_FOUND	logId not found	NULL_ARGUMENT	logId is null	OPERATION_FAILED	unable to complete request	PERMISSION_DENIED	authorization failure
NOT_FOUND	logId not found									
NULL_ARGUMENT	logId is null									
OPERATION_FAILED	unable to complete request									
PERMISSION_DENIED	authorization failure									
Compliance	mandatory	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 the list of Ids to retrieve
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 a log genus type
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 a log genus type
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 a log record type
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	getLogs	
Description	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.	
Return	osid.logging.LogList	a list of Logs
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.LogSearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching Log objects. The search query is constructed using the LogQuery interface. Multiple LogQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single LogQuery these elements form a boolean AND. The log interface 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 interface indicated by their respective interface types. The typed query interface is accessed via the LogQuery. The returns in this session may not be cast directly to these interfaces.</p>	
Method	canSearchLogs	
Description	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.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getLogQuery	
Description	Gets a log query interface. The returned query will not have an extension query.	
Return	osid.logging.LogQuery	the log query
Compliance	mandatory	This method must be implemented.
Method	getLogsByQuery	
Description	Gets a list of Logs matching the given search interface. Each element in the array is OR'd.	
Parameters	osid.logging.LogQuery[] logQueries	the search query array
Return	osid.logging.LogList	the returned LogList
Errors	NULL_ARGUMENT	logQueries is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a logQuery is not of this service
Compliance	mandatory	This method must be implemented.
Method	getLogSearch	
Description	Gets a log search interface. The returned query only makes available the core LogSearch interface and does not support additional interface types. getLogSearchForInterfaceType() should be used if additional interface types are required.	
Return	osid.logging.LogSearch	the log search interface
Compliance	mandatory	This method must be implemented.
Method	getLogSearchOrder	
Description	Gets a repository search order interface. The LogSearchOrder is supplied to a LogSearch to specify the ordering of results.	
Return	osid.logging.LogSearchOrder	the log search order interface
Compliance	mandatory	This method must be implemented.

Method	getLogsBySearch		
Description	Gets the search results matching the given search interface. Each element in the array is OR'd.		
Parameters	osid.logging.LogQuery[]	logQueries	the search query array
	osid.logging.LogSearch	logSearch	the search interface
Return	osid.logging.LogSearchResults		the search results
Errors	NULL_ARGUMENT	logQueries or logSearch is null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authorization failure	
	UNSUPPORTED	a logQuery or logSearch is not of this service	
Compliance	mandatory	This method must be implemented.	

Interface	osid.logging.LogAdminSession													
Implements	osid.OsidSession													
Description	This session creates and removes logs. The data for create and update is provided by the consumer via the form object.													
Method	canCreateLogs													
Description	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.													
Return	boolean	false if Log creation is not authorized, true otherwise												
Compliance	mandatory	This method must be implemented.												
Method	canCreateLogWithRecordTypes													
Description	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.													
Parameters	osid.type.Type[] logRecordTypes	array of types												
Return	boolean	true if Log creation using the specified record Types is supported, false otherwise												
Errors	NULL_ARGUMENT	logRecordTypes is null												
Compliance	mandatory	This method must be implemented.												
Method	getLogFormForCreate													
Description	Gets the log form for creating new logs. A new form should be requested for each create transaction.													
Return	osid.logging.LogForm	the log form												
Compliance	mandatory	This method must be implemented.												
Method	createLog													
Description	Creates a new Log.													
Parameters	osid.logging.LogForm logForm	the form for this Log												
Return	osid.logging.Log	the new Log												
Errors	<table> <tr> <td>ALREADY_EXISTS</td> <td>attempt at duplicating a property the underlying system is enforcing to be unique</td> </tr> <tr> <td>INVALID_ARGUMENT</td> <td>one or more of the form elements is invalid</td> </tr> <tr> <td>NULL_ARGUMENT</td> <td>logForm is null</td> </tr> <tr> <td>OPERATION_FAILED</td> <td>unable to complete request</td> </tr> <tr> <td>PERMISSION_DENIED</td> <td>authorization failure</td> </tr> <tr> <td>UNSUPPORTED</td> <td>logForm is not of this service</td> </tr> </table>		ALREADY_EXISTS	attempt at duplicating a property the underlying system is enforcing to be unique	INVALID_ARGUMENT	one or more of the form elements is invalid	NULL_ARGUMENT	logForm is null	OPERATION_FAILED	unable to complete request	PERMISSION_DENIED	authorization failure	UNSUPPORTED	logForm is not of this service
ALREADY_EXISTS	attempt at duplicating a property the underlying system is enforcing to be unique													
INVALID_ARGUMENT	one or more of the form elements is invalid													
NULL_ARGUMENT	logForm is null													
OPERATION_FAILED	unable to complete request													
PERMISSION_DENIED	authorization failure													
UNSUPPORTED	logForm is not of this service													
Compliance	mandatory	This method must be implemented.												
Method	canUpdateLogs													
Description	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.													
Return	boolean	false if Log modification is not authorized, true otherwise												
Compliance	mandatory	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				
Description	Deletes a Log.				
Parameters	osid.id.Id	logId	the Id of the Log to remove		
Errors	NOT_FOUND		logId not found		
	NULL_ARGUMENT		logId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	addIdToLog				
Description	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.				
Parameters	osid.id.Id	logId	the Id of a Log		
Errors	osid.id.Id	aliasId	the alias Id		
	ALREADY_EXISTS		aliasId is already assigned		
	NOT_FOUND		logId not found		
	NULL_ARGUMENT		logId or aliasId is null		
	OPERATION_FAILED		unable to complete request		
Compliance	PERMISSION_DENIED		authorization failure		
	mandatory	This method must be implemented.			

Interface	osid.logging.LogNotificationSession	
Implements	osid.OsidSession	
Description	<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>	
Method	canRegisterForLogNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	registerForNewLogs	
Description	Register for notifications of new logs. LogReceiver.newLog() is invoked when a new Log is created.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForNewLogAncestors	
Description	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.	
Parameters	osid.id.Id	logId
	NOT_FOUND	a log node was not found identified by the given Id
Errors	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForNewLogDescendants	
Description	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.	
Parameters	osid.id.Id	logId
	NOT_FOUND	a log node was not found identified by the given Id
Errors	NULL_ARGUMENT	logId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForChangedLogs	
Description	Registers for notification of updated logs. LogReceiver.changedLog() is invoked when a log is changed.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	registerForChangedLog	
Description	Registers for notification of an updated log. LogReceiver.changedLog() is invoked when the specified log is changed.	
Parameters	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedLogs	
Description	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedLog	
Description	Registers for notification of a deleted log. LogReceiver.deletedLog() is invoked when the specified log is deleted.	
Parameters	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedLogAncestors	
Description	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.	
Parameters	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedLogDescendants	
Description	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.	
Parameters	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
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.LogHierarchySession	
Implements	osid.hierarchy.HierarchyTraversalSession	
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"> • comparative view: log elements may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition 	
Method	useComparativeLogView	
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	mandatory	This method is must be implemented.
Method	usePlenaryLogView	
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	mandatory	This method is must be implemented.
Method	getRootLogs	
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	osid.logging.LogList	the root logs
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method is must be implemented.
Method	getParentLogs	
Description	Gets the parent logs of the given id.	
Parameters	osid.id.Id	logId
Return	osid.logging.LogList	the parent logs of the id
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	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	osid.logging.LogHierarchyDesignSession
Implements	osid.hierarchy.HierarchyDesignSession
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.

Interface	osid.logging.LogEntry	
Implements		
Description	A log entry consists of a time, an agent, and some content.	
Method	getPriority	
Description	Gets the priority level of this entry.	
Return	osid.type.Type	the priority level
Compliance	mandatory	This method must be implemented.
Method	getTimestamp	
Description	Gets the time this entry was logged.	
Return	osid.calendaring.DateTime	the time stamp of this entry
Compliance	mandatory	This method must be implemented.
Method	getAgentId	
Description	Gets the agent Id who created this entry.	
Return	osid.id.Id	the agent id
Compliance	mandatory	This method must be implemented.
Method	getAgent	
Description	Gets the Agent who created this entry.	
Return	osid.authentication.Agent	the Agent
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getContentType	
Description	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> .	
Return	osid.type.Type	the type implemented in the content
Compliance	mandatory	This method must be implemented.
Method	hasContentType	
Description	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.	
Parameters	osid.type.Type	contentType
Return	boolean	true if the content implements the given Type, false otherwise
Errors	NULL_ARGUMENT	contentType is null
Compliance	mandatory	This method must be implemented.
	getContent	
Description	Gets the content of this log entry as specified by the interface type.	
Parameters	osid.type.Type	contentType
Return	object	the log entry content
Errors	NULL_ARGUMENT	contentType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	<code>hasContentType(contenttype)</code> is false
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.LogEntryQuery	
Implements		
Description	This is the query interface for searching log entries. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the LogEntryQuery record.	
Method	getId	
Description	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.	
Return	osid.id.Id	the Id
Compliance	mandatory	This method must be implemented.
Method	getStringMatchTypes	
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	supportsStringMatchType	
Description	Tests if the given string matching type is supported.	
Parameters	osid.type.Type	searchType
Return	boolean	true if the given Type is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	matchKeyword	
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
	osid.type.Type	stringMatchType
	boolean	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	matchPriority	
Description	Matches a priority Type for the log entry.	
Parameters	osid.type.Type	priorityType
	boolean	match
Errors	NULL_ARGUMENT	priorityType is null
Compliance	mandatory	This method must be implemented.
Method	matchTimestamp	
Description	Matches a priority Type in this log entry.	
Parameters	osid.calendaring.DateTime	startTime
	osid.calendaring.DateTime	endTime
	boolean	match
Errors	INVALID_ARGUMENT	startTime is greater than endTime
	NULL_ARGUMENT	startTime or endTime is null
Compliance	mandatory	This method must be implemented.

Method	matchAgentId		
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.
Method	supportsAgentQuery		
Description	Tests if an AgentQuery is available for querying agents.		
Return	boolean		true if an agent query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getAgentQuery		
Description	Gets the query interface for an agent.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.authentication.AgentQuery		the agent query
Errors	UNIMPLEMENTED		supportsAgentQuery() is false
Compliance	optional		This method must be implemented if supportsAgentQuery() is true.
Method	matchContentType		
Description	Matches the content type for this log entry.		
Parameters	osid.type.Type	contentType	Type to match
	boolean	match	true if for a positive match, false for negative match
Errors	NULL_ARGUMENT		contentType is null
Compliance	mandatory		This method must be implemented.
Method	supportsContentQuery		
Description	Tests if a content query is available.		
Return	boolean		true if a content query is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getContentQuery		
Description	Gets the content query interface corresponding to the content interface Type provided in the search session. An object is returned from the search session is only required to implement the root LogQuery interface. This method must be used to retrieve a query object implementing the interface specified when retrieving this object from the search session along with all of its ancestor interfaces. Multiple retrievals of this interface may return the same underlying object and do not result in adding terms to the query.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	object		the content query
Errors	UNIMPLEMENTED		supportsContentQuery() is false
Compliance	optional		This method must be implemented if supportsContentQuery() is true.

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

Interface	osid.logging.LogEntrySearch	
Implements	osid.OsidSearch	
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	osid.logging.LogEntrySearchRecord	
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.

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

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

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

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

Interface	osid.logging.LogEntryList	
Implements	osid.OsidList	
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	getNextLogEntry	
Description	Gets the next LogEntry in this list.	
Return	osid.logging.LogEntry	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	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextLogEntries	
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	osid.logging.LogEntry[]	an array of LogEntry elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.logging.Log	
Implements	osid.OsidCatalog	
Description	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.	
getLogRecord		
Description	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.	
Parameters	osid.type.Type	logRecordType the type of log record to retrieve
Return	osid.logging.Log	the log record
Errors	NULL_ARGUMENT	logRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasRecordType(logRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.logging.LogQuery		
Implements	osid.OsidCatalogQuery		
Description	This is the query interface for searching for logs. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the LogQuery record.		
Method	matchLogEntryId		
Description	Matches a log entry Id in this log. Multiple Ids are treated as a boolean OR.		
Parameters	osid.id.Id	id	Id to match
	boolean	match	true if for a positive match, false for negative match
Errors	NULL_ARGUMENT		id is null
Compliance	mandatory		This method must be implemented.
Method	supportsLogEntryQuery		
Description	Tests if a log entry query is available.		
Return	boolean		true if a log entry query is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getLogEntryQuery		
Description	Gets the query interface for a log entry.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.logging.LogEntryQuery		the log entry query
Errors	UNIMPLEMENTED		supportsLogEntryQuery() is false
Compliance	optional		This method must be implemented if supportsLogEntryQuery() is true.
Method	getLogQueryRecord		
Description	Gets the record query interface corresponding to the given Log record Type. Multiple record retrievals of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this query.		
Parameters	osid.type.Type	logRecordType	a log record type
Return	osid.logging.LogQueryRecord		the log query record
Errors	NULL_ARGUMENT		logRecordType is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure occurred
	UNSUPPORTED		hasRecordType(logRecordType) is false
Compliance	mandatory		This method must be implemented.

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

Interface	osid.logging.LogForm	
Implements	osid.OsidCatalogForm	
Description	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.	
Method	getLogFormRecord	
Description	Gets the LogFormRecord interface corresponding to the given log record interface Type.	
Parameters	osid.type.Type	logRecordType the log record type
Return	osid.logging.LogFormRecord	the record
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	logRecordType is null unable to complete request authorization failure occurred hasRecordType(logRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.logging.LogSearchOrder	
Implements	osid.OsidCatalogSearchOrder	
Description	An interface for specifying the ordering of search results.	
Method	getLogSearchOrderRecord	
Description	Gets the log search record order corresponding to the given log record Type. Multiple retrievals return the same underlying object.	
Parameters	osid.type.Type	logRecordType a log record type
Return	osid.logging.LogSearchOrderRecord	the log search order record interface
Errors	NULL_ARGUMENT	logRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasRecordType(logRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

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

Interface	osid.logging.LogSearchResults	
Implements	osid.OsidSearchResults	
Description	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.	
Method	getLogs	
Description	Gets the log list resulting from a search.	
Return	osid.logging.LogList	the log list
Compliance	mandatory	This method must be implemented.
Method	getLogSearchResultsRecord	
Description	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.	
Parameters	osid.type.Type	logSearchRecordType a log search record type
Return	osid.logging.LogSearchResultsRecord	the log search interface
Errors	NULL_ARGUMENT	logSearchRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasSearchRecordType(logSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.logging.LogList	
Implements	osid.OsidList	
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	getNextLog	
Description	Gets the next Log in this list.	
Return	osid.logging.Log	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	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextLogs	
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	osid.logging.Log[]	an array of Log elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.