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iLab Interactive Architecture

Interactive Ticketing and Integrated Management

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Service Broker Ticketing APIs

This document is a specification of the Ticketing APIs for the iLab interactive architecture. It is divided into three sections. The first describes the common data structures shared in the web services presented by Service Brokers and service providers. The second specifies the ticketing web service presented by Service Brokers, and the third the ticketing web service presented by other service providers. Readers are assumed to be familiar with the two overview documents:

1. *iLab Interactive Services — Overview*
2. *iLab Interactive Ticketing and Integrated Management — Overview*

Data Structures:

ProcessAgent

Members:

string agentGuid

A GUID that identifies the process agent

string agentName

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A human readable name used in administrative interfaces to identify this process agent

string type

A string drawn from a fixed set that specifies the type of process agent

string description

A string that provides a brief description of the function of the agent in its domain

string infoUrl

A string containing the URL that points to a web document that provides further information about the agent

string contactEmail

An email address through which the administrator of the agent can be reached

string webApplicationUrl

*A string containing the URL that points to the home page of the agent's web application; **null** if the agent only presents a web service*

string webServiceUrl

*A string containing the URL that points to the home page of the agent's web service; **null** if the agent only presents a web application*

float timezone

*A **float** that indicates the delta from GMT*

Coupon

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Members:

long couponId

An ID unique in the domain of the issuer that identifies the associated ticket collection

long passkey

A security passkey that must always accompany the couponId to retrieve tickets; note it is not guaranteed to be unique, just hard to guess

string issuerGuid

*A GUID in **string** form that identifies the Service Broker that issued the associated ticket collection*

Ticket

Members:

long ticketId

An ID unique in the domain of the issuer that identifies the this ticket

string type

A string drawn from a fixed set that specifies the type of operation authorized by this ticket

string sponsorGuid

*A GUID in **string** form that identifies the sponsor that created this ticket*

string redeemerGuid

*A GUID in **string** form that identifies the service provider for which this ticket authorizes an operation*

long creationTime

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Specifies when the sponsor created this ticket
long expirationTime
*Specifies when the authorization specified by this ticket expires; the value **-1** indicates that the ticket has no expiration and will remain valid until it is cancelled*
string payload
An XML encoded string that specifies the details of the authorization specified by the ticket
boolean isCancelled
true if the ticket has been cancelled

Registration

Members:

string serviceProviderInfo
An XML-encoded string that describes the services provided by the service provider described by this registration entry
Coupon coupon
An optional ticket coupon that can be used to redeem the described services.
string address
An optional ID or name that can be used by a nonlocal Service Broker to route the entry to the process agent that will redeem the described service.

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Ticket Issuer Ticketing API

This section describes the API of the service presented by the Service Brokers to other service providers. It assumes that each web service call to a method in this API includes the credential set (**Coupon providerCoupon**) initially provided by the Service Broker in the SOAP header of the request. See the description of the **InstallDomainCredentials** method in the Service Provider API (part 3 of this document).

This API assumes that most ticket collections will consist of a single ticket so it provides a number of convenience methods (e.g., **CreateTicket**) to minimize the web service calls to create them.

Ticket Sponsor Methods:

AddTicket

Purpose: Used by a ticket sponsor to add a new ticket to a preexisting open ticket collection managed by a Service Broker

Arguments:

Coupon coupon
string redeemerGuid
string type
long expirationTime /* in seconds */
string payload

Returns:

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boolean success /* **true** if the ticket is successfully added;
false if a ticket of the given type and with the same
redeemerGuid already exists in the collection */

Errors: If the ticket collection is unknown or the passkey is incorrect an exception will be thrown.

CreateTicket

Purpose: Used by a ticket sponsor to create a ticket on a Service Broker as part of a new ticket collection

Arguments:

string redeemerGuid
string type
long expirationTime
string payload

Returns:

Coupon theCoupon

RequestTicketCancellation

*Purpose: Used by a ticket sponsor to request the cancellation of a ticket. The Service Broker carries the actual ticket cancellation on the agent where it is installed by calling **CancelTicket** on the relevant iLab Agent.*

Arguments:

Coupon coupon
string type

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string redeemerGuid

Returns:

boolean /* **true** if the ticket was successfully cancelled; **false** otherwise */

Errors: If the ticket collection is unknown or the passkey is incorrect an exception will be thrown.

Ticket Redeemer Methods:

RedeemTicket

Purpose: Used by a ticket redeemer to obtain the definitive version of a ticket of the specified type from its local Service Broker. If the local Service Broker is not the issuer of the requested ticket, it will attempt to retrieve the ticket from the issuer and then return it to ticket redeemer that made the original call.

Arguments:

Coupon coupon
string type

Returns:

Ticket /* **null** if no ticket of the specified type exists in the collection */

Errors: If the ticket collection is unknown, the passkey is incorrect, or the caller is not the redeemer of the given ticket an exception will be thrown.

Service Broker Methods:

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Register

*Purpose: Used by a Service Broker to convey 1 or more sets of registration information (**Registration[]**) to a service provider in another domain. The method is invoked on the Service Broker of the destination domain, which then uses the local version of the same web method to convey the registration information to the destination service provider.*

Arguments:

Registration[] values

Returns:

none

*see also, **InstallDomainCredentials***

Purpose: This method is discussed under the Service Provider Ticketing API below. It can be used in two modes:

- 1. called by a Service Broker on a Service Provider;*
- 2. called by a Service Broker on a Service Broker in another ticketing domain.*

In the latter case, the call introduces the calling Service Broker to the target Service Broker and enables retrieval of tickets from the invoking Service Broker's domain.

Process Agent Ticketing API

This section describes the API of the service presented to the Service Broker by other service providers. The initial authentication of a Service Broker to service providers in its own domain or to Service Brokers in other domains is accomplished through the **InstallDomainCredentials** method that is secured by a one time passkey

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conveyed out of band to the administrators of the Service Broker by the administrators of the target service provider/Service Broker. The passkey is placed in the SOAP header of this initial call. Subsequent calls by the originating Service Broker are secured by placing the **inIdentCoupon** argument from the **InstallDomainCredentials** call in the later SOAP headers.

InstallDomainCredentials

Purpose: Used by a Service Broker to install the initial tickets (Service Broker and Service Provider ticket collection identifiers) on a service provider to make it a member of a domain. The call is authenticated by an initial passkey communicated out of band to the Service Broker administrator by the service provider administrator. This passkey is sent in the SOAP header of this method call, and is never used subsequently.

Arguments:

ProcessAgent broker /* SB's info */
Coupon inIdentCoupon
Coupon outIdentCoupon

Returns:

ProcessAgent provider /* provider's info */

Register

*Purpose: Used by a Service Broker to convey 1 or more sets of registration information (**Registration[]**) to a service provider in another domain. The method is invoked on the Service Broker of the destination domain, which then uses the local version of the same web method to convey the registration information to the destination service provider.*

Arguments:

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Registration[] values

Returns: none

CancelTicket

Purpose: Used by a ticket sponsor or other process agent to cancel a ticket issued by a Service Broker; the invoker must be the issuer of the ticket to be cancelled.

Arguments:

**Coupon coupon
string type**

Returns:

boolean success */* true if the ticket was successfully cancelled or is unknown; false otherwise. The Service broker should continue to invoke this method at periodic intervals until a return of true is obtained or until the ticket has expired. */*

Errors: If the ticket collection is unknown or the passkey is incorrect an exception will be thrown.

GetServiceTime

Purpose: Used by members of a domain to calculate the time skew between systems.

Arguments: none

Returns:

DateTime now

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