# AddressAllocation

Class will ask to the message node for addresses

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/registry/AddressAllocation.js~AddressAllocation.html#instance-constructor-constructor)(url: URL.URL, bus: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html))

Create an Address Allocation

## Member Summary

Public Members public get

[url](../../../class/src/registry/AddressAllocation.js~AddressAllocation.html#instance-get-url): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

get the URL value

## Method Summary

Public Methods public

[create](../../../class/src/registry/AddressAllocation.js~AddressAllocation.html#instance-method-create)(domain: Domain, number: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<HypertyURL>

Ask for creation of a number of Hyperty addresses, to the domain message node.

## Public Constructors

### public constructor(url: URL.URL, bus: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)) [source](../../../file/src/registry/AddressAllocation.js.html#lineNumber17)

Create an Address Allocation

#### Params:

Name Type Attribute Description url URL.URL url from who is sending the message

bus [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html) MiniBus used for address allocation

## Public Members

### public get url: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/registry/AddressAllocation.js.html#lineNumber31)

get the URL value

#### Return:

|  |  |
| --- | --- |
| [string](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | The url value; |

## Public Methods

### public create(domain: Domain, number: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<HypertyURL> [source](../../../file/src/registry/AddressAllocation.js.html#lineNumber39)

Ask for creation of a number of Hyperty addresses, to the domain message node.

#### Params:

Name Type Attribute Description domain Domain Domain of the message node.

number [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number) Number of addresses to request

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan><HypertyURL&g t; | A list of HypertyURL’s |

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# BloomFilter

Implements a Bloom filter.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-constructor-constructor)(m: \*, k: \*)

## Member Summary

Public Members public

[buckets](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-member-buckets): \*

public

[k](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-member-k): \*

public

[m](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-member-m): \*

## Method Summary

Public Methods public

[add](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-add)(v: \*)

public

[addBloomFilter](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-addBloomFilter)(v: \*)

public

[fnv1a](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-fnv1a)(v: \*): \*

public

[fnv1ab](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-fnv1ab)(a: \*): \*

public

[fnvmix](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-fnvmix)(a: \*): \*

public

[fnvmultiply](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-fnvmultiply)(a: \*): \*

public

[locations](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-locations)(v: \*): \*

public

[popcnt](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-popcnt)(v: \*): \*

public

[size](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-size)(): \*

public

[test](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html#instance-method-test)(v: \*): [boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean)

## Public Constructors

### public constructor(m: \*, k: \*) [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber47)

#### Params:

Name Type Attribute Description m \* k \*

## Public Members

### public buckets: \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber66)

### public k: \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber60)

### public m: \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber59)

## Public Methods

### public add(v: \*) [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber93)

#### Params:

Name Type Attribute Description v \*

### public addBloomFilter(v: \*) [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber115)

#### Params:

Name Type Attribute Description v \*

### public fnv1a(v: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber139)

#### Params:

Name Type Attribute Description v \*

#### Return:

|  |
| --- |
| \* |

### public fnv1ab(a: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber156)

#### Params:

Name Type Attribute Description a \*

#### Return:

|  |
| --- |
| \* |

### public fnvmix(a: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber161)

#### Params:

Name Type Attribute Description a \*

#### Return:

|  |
| --- |
| \* |

### public fnvmultiply(a: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber151)

#### Params:

Name Type Attribute Description a \*

#### Return:

|  |
| --- |
| \* |

### public locations(v: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber79)

#### Params:

Name Type Attribute Description v \*

#### Return:

|  |
| --- |
| \* |

### public popcnt(v: \*): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber132)

#### Params:

Name Type Attribute Description v \*

#### Return:

|  |
| --- |
| \* |

### public size(): \* [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber124)

#### Return:

|  |
| --- |
| \* |

### public test(v: \*): [boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean) [source](../../../file/src/graphconnector/BloomFilter.js.html#lineNumber100)

#### Params:

Name Type Attribute Description v \*

#### Return:

|  |
| --- |
| [boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean) |

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# Bus

#### Direct Subclass:

[MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html), [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)

#### Indirect Subclass:

[Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html)

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/bus/Bus.js~Bus.html#instance-constructor-constructor)

## Method Summary

Public Methods public

[addListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addListener)(url: URL, listener: Listener): MsgListener

Register listener to receive message when “msg.to === url”.

public

[addResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number), responseListener: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

Manually add a response listener.

public

[bind](../../../class/src/bus/Bus.js~Bus.html#instance-method-bind)(outUrl: URL, inUrl: URL, target: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)): Bound

Helper method to bind listeners (in both directions) into other MiniBus target.

public

[postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)(msg: Message, responseCallback: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)): [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)

Send messages to local listeners, or if not exists to external listeners.

public

[removeAllListenersOf](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeAllListenersOf)(url: URL)

Remove all existent listeners for the URL

public

[removeResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number))

Remove the response listener.

## Public Constructors

### public constructor [source](../../../file/src/bus/Bus.js.html#lineNumber17)

## Public Methods

### public addListener(url: URL, listener: Listener): MsgListener [source](../../../file/src/bus/Bus.js.html#lineNumber35)

Register listener to receive message when “msg.to === url”. Special url “\*” for default listener is accepted to intercept all messages.

#### Params:

Name Type Attribute Description url URL Address to intercept, tha is in the message “to”

listener Listener listener

#### Return:

|  |  |
| --- | --- |
| MsgListener | instance of MsgListener |

### public addResponseListener(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number), responseListener: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)) [source](../../../file/src/bus/Bus.js.html#lineNumber57)

Manually add a response listener. Only one listener per message ID should exist. ATENTION, there is no timeout for this listener. The listener should be removed with a removeResponseListener, failing to do this will result in a unreleased memory problem.

#### Params:

Name Type Attribute Description url URL Origin address of the message sent, “msg.from”.

msgId [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number) Message ID that is returned from the postMessage.

responseListener [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function) Callback function for the response

### public bind(outUrl: URL, inUrl: URL, target: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)): Bound [source](../../../file/src/bus/Bus.js.html#lineNumber85)

Helper method to bind listeners (in both directions) into other MiniBus target.

#### Params:

Name Type Attribute Description outUrl URL Outbound URL, register listener for url in direction “this -> target”

inUrl URL Inbound URL, register listener for url in direction “target -> this”

target [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html) The other target MiniBus

#### Return:

|  |  |
| --- | --- |
| Bound | an object that contains the properties [thisListener, targetListener] and the unbind method. |

### public postMessage(msg: Message, responseCallback: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)): [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number) [source](../../../file/src/bus/Bus.js.html#lineNumber200)

Send messages to local listeners, or if not exists to external listeners. It’s has an optional mechanism for automatic management of response handlers. The response handler will be unregistered after receiving the response, or after response timeout (default to 3s).

#### Params:

Name Type Attribute Description msg Message Message to send. Message ID is automatically added to the message.

responseCallback [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function) Optional parameter, if the developer what’s automatic response management.

#### Return:

|  |  |
| --- | --- |
| [number](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/Number)</spa n> | Returns the message ID, in case it should be needed for manual management of the response handler. |

### public removeAllListenersOf(url: URL) [source](../../../file/src/bus/Bus.js.html#lineNumber74)

Remove all existent listeners for the URL

#### Params:

Name Type Attribute Description url URL Address registered

### public removeResponseListener(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)) [source](../../../file/src/bus/Bus.js.html#lineNumber66)

Remove the response listener.

#### Params:

Name Type Attribute Description url URL Origin address of the message sent, “msg.from”.

msgId [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number) Message ID that is returned from the postMessage

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# EventEmitter

#### Direct Subclass:

[Registry](../../../class/src/registry/Registry.js~Registry.html)

EventEmitter All classes which extends this, can have addEventListener and trigger events;

## Method Summary

Public Methods public

[addEventListener](../../../class/src/utils/EventEmitter.js~EventEmitter.html#instance-method-addEventListener)(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), cb: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

addEventListener listen for an eventType

public

[trigger](../../../class/src/utils/EventEmitter.js~EventEmitter.html#instance-method-trigger)(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), params: [object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object))

Invoke the eventType

## Public Methods

### public addEventListener(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), cb: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)) [source](../../../file/src/utils/EventEmitter.js.html#lineNumber12)

addEventListener listen for an eventType

#### Params:

Name Type Attribute Description eventType [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) listening for this type of event

cb [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function) callback function will be executed when the event it is invoked

### public trigger(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), params: [object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object)) [source](../../../file/src/utils/EventEmitter.js.html#lineNumber22)

Invoke the eventType

#### Params:

Name Type Attribute Description eventType [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) event will be invoked

params [object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object) parameters will be passed to the addEventListener

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# GlobalRegistryRecord

Represents the user’s information for the global registry.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/graphconnector/GlobalRegistryRecord.js~GlobalRegistryRecord.html#instance-constructor-constructor)

Constructs a new empty object.

## Member Summary

Public Members public

[userIDs](../../../class/src/graphconnector/GlobalRegistryRecord.js~GlobalRegistryRecord.html#instance-member-userIDs): \*

## Method Summary

Public Methods public

[getRecord](../../../class/src/graphconnector/GlobalRegistryRecord.js~GlobalRegistryRecord.html#instance-method-getRecord)(): [Object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object)

Constructs a new object representing information about one contact.

## Public Constructors

### public constructor [source](../../../file/src/graphconnector/GlobalRegistryRecord.js.html#lineNumber10)

Constructs a new empty object.

## Public Members

### public userIDs: \* [source](../../../file/src/graphconnector/GlobalRegistryRecord.js.html#lineNumber13)

## Public Methods

### public getRecord(): [Object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object) [source](../../../file/src/graphconnector/GlobalRegistryRecord.js.html#lineNumber25)

Constructs a new object representing information about one contact.

#### Return:

|  |  |
| --- | --- |
| [Object](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/Object)</spa n> | object A JavaScript Object with all fields for the Global Registry Record. |

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# GraphConnector

The Graph Connector contains the contact list/address book.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-constructor-constructor)(HypertyRuntimeURL: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), MessageBus: [messageBus](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-get-messageBus))

Constructs a new and empty Graph Connector.

## Member Summary

Public Members public

[contacts](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-member-contacts): \*

public

[contactsBloomFilter1Hop](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-member-contactsBloomFilter1Hop): \*

public

[globalRegistryRecord](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-member-globalRegistryRecord): \*

public

[groups](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-member-groups): \*

public

[lastCalculationBloomFilter1Hop](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-member-lastCalculationBloomFilter1Hop): \*

public get

[messageBus](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-get-messageBus)(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \*

Returns the MessageBus.

public set

[messageBus](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-set-messageBus)(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \*

Sets the MessageBus.

## Method Summary

Public Methods public

[addContact](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-addContact)(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), firstName: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), lastname: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String))

Add a contact to the Graph Connector.

public

[addUserID](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-addUserID)(userID: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String))

Adds a UserID for the user.

public

[calculateBloomFilter1Hop](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-calculateBloomFilter1Hop)()

Calculates the Bloom filter containing all non-private contacts.

public

[checkGUID](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-checkGUID)(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): array

Checks, if the given GUID is known and returns a list of contacs that are direct connections as well as a list of contacts that (most likely) know the given contact.

public

[generateGUID](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-generateGUID)(): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)

Generates a GUID and returns a mnemonic from which the GUID can be re-created later.

public

[getContact](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-getContact)(name: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): array

Gets contacts by name.

public

[queryGlobalRegistry](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-queryGlobalRegistry)(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Queries the Global Registry for a given GUID.

public

[removeContact](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-removeContact)(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String))

Remove a contact from the Graph Connector.

public

[removeUserID](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-removeUserID)(userID: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String))

Removes a UserID for the user.

public

[sendGlobalRegistryRecord](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-sendGlobalRegistryRecord)(jwt: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): Propmise

Takes the Global Registry Record as a signed JWT and sends it to the Global Registry via the MessageBus.

public

[signGlobalRegistryRecord](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-signGlobalRegistryRecord)(): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)

SignGenerates a public/private key pair from a given mnemonic.

public

[useGUID](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-method-useGUID)(mnemonicAndSalt: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Generates a public/private key pair from a given mnemonic (16 words).

## Public Constructors

### public constructor(HypertyRuntimeURL: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), MessageBus: [messageBus](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-get-messageBus)) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber23)

Constructs a new and empty Graph Connector.

#### Params:

Name Type Attribute Description HypertyRuntimeURL [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The Hyperty Runtime URL.

MessageBus [messageBus](../../../class/src/graphconnector/GraphConnector.js~GraphConnector.html#instance-get-messageBus) The Message Bus.

## Public Members

### public contacts: \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber24)

### public contactsBloomFilter1Hop: \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber368)

### public globalRegistryRecord: \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber27)

### public groups: \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber30)

### public lastCalculationBloomFilter1Hop: \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber25)

### public get messageBus(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber43)

Returns the MessageBus.

### public set messageBus(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \* [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber51)

Sets the MessageBus.

## Public Methods

### public addContact(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), firstName: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), lastname: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber331)

Add a contact to the Graph Connector.

#### Params:

Name Type Attribute Description guid [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) GUID of the new contact.

firstName [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) First name of the new contact.

lastname [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) Last name of the new contact.

### public addUserID(userID: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber300)

Adds a UserID for the user.

#### Params:

Name Type Attribute Description userID [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The UserID for a Domain Registry to add for the user.

### public calculateBloomFilter1Hop() [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber358)

Calculates the Bloom filter containing all non-private contacts.

### public checkGUID(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): array [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber393)

Checks, if the given GUID is known and returns a list of contacs that are direct connections as well as a list of contacts that (most likely) know the given contact.

#### Params:

Name Type Attribute Description guid [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) GUID of the contact to look for.

#### Return:

|  |  |
| --- | --- |
| array | relatedContacts List of related direct contacts and of related friends-of-friends contacts.The format is: RelatedContacts<Direct<GraphCo nnectorContactData>,FoF<GraphC onnectorContactData>>. |

### public generateGUID(): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber59)

Generates a GUID and returns a mnemonic from which the GUID can be re-created later.

#### Return:

|  |  |
| --- | --- |
| [string](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | mnemonic A string with 16 words. |

### public getContact(name: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): array [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber377)

Gets contacts by name.

#### Params:

Name Type Attribute Description name [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) First or last name to look for in the contact list.

#### Return:

|  |  |
| --- | --- |
| array | matchingContacts Contacts matching the given name. The format is: Contacts<GraphConnectorContactDat a>. |

### public queryGlobalRegistry(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber254)

Queries the Global Registry for a given GUID. Returns a Graph Connector Contact Data as a Promise.

#### Params:

Name Type Attribute Description guid [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The GUID to query the Global Registry for

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan> | Promise Graph Connector Contact Data containing UserIDs. |

### public removeContact(guid: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber343)

Remove a contact from the Graph Connector.

#### Params:

Name Type Attribute Description guid [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) GUID of the user to be removed.

### public removeUserID(userID: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber317)

Removes a UserID for the user.

#### Params:

Name Type Attribute Description userID [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The UserID to remove.

### public sendGlobalRegistryRecord(jwt: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): Propmise [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber214)

Takes the Global Registry Record as a signed JWT and sends it to the Global Registry via the MessageBus. Returns the response code of the REST-interface of the Global Registry as a Promise.

#### Params:

Name Type Attribute Description jwt [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The Global Registry Record as a signed JWT.

#### Return:

|  |  |
| --- | --- |
| Propmise | Promise Response Code from Global Registry. |

### public signGlobalRegistryRecord(): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber198)

SignGenerates a public/private key pair from a given mnemonic.

#### Return:

|  |  |
| --- | --- |
| [string](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | JWT JSON Web Token ready to commit to Global Registry. |

### public useGUID(mnemonicAndSalt: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/graphconnector/GraphConnector.js.html#lineNumber92)

Generates a public/private key pair from a given mnemonic (16 words). Expects a string containing 16 words seperated by single spaces. Retrieves data from the Global Registry.

#### Params:

Name Type Attribute Description mnemonicAndSalt [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) A string of 16 words.

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan> | Promise Global Registry Record. |

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# GraphConnectorContactData

Represents information about a contact.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-constructor-constructor)(guid: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), firstName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), lastName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String))

Constructs a new object representing information about one contact.

## Member Summary

Public Members public set

[contactsBloomFilter1Hop](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-contactsBloomFilter1Hop)(bf: [BloomFilter](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html)): \*

Sets the friends-of-friends Bloom filter containing the hashed GUIDs of the contacts for the contact.

public get

[contactsBloomFilter1Hop](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-contactsBloomFilter1Hop): [BloomFilter](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html): \*

Returns the Bloom filter containing the hashed GUIDs of the contacts for the contact.

public get

[firstName](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-firstName): [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

Returns the first name.

public set

[firstName](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-firstName)(firstName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \*

Sets the first name.

public set

[groups](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-groups)(groups: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>): \*

Sets the groups.

public get

[groups](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-groups): List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>: \*

Returns the groups.

public get

[guid](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-guid): [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

Returns the GUID.

public set

[guid](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-guid)(GUID: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \*

Sets the GUID.

public set

[lastName](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-lastName)(lastName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \*

Sets the last name.

public get

[lastName](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-lastName): [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

Returns the last name.

public set

[privateContact](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-privateContact)(boolPrivate: [Boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean)): \*

Sets the privacy status of the contact according to the given Boolean value.

public get

[privateContact](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-privateContact): [Boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean): \*

Returns the privacy status of the contact.

public get

[residenceLocation](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-residenceLocation): [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

Returns the geohash of the residence location.

public set

[residenceLocation](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-residenceLocation)(geohash: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \*

Sets the geohash of the residence location.

public set

[userIDs](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-set-userIDs)(userIDs: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>): \*

Sets the userIDs.

public get

[userIDs](../../../class/src/graphconnector/GraphConnectorContactData.js~GraphConnectorContactData.html#instance-get-userIDs): List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>: \*

Returns the user IDs.

## Public Constructors

### public constructor(guid: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), firstName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), lastName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)) [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber13)

Constructs a new object representing information about one contact.

#### Params:

Name Type Attribute Description guid [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The GUID of the new contact.

firstName [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The first name of the new contact.

lastName [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) The last name of the new contact.

## Public Members

### public set contactsBloomFilter1Hop(bf: [BloomFilter](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber118)

Sets the friends-of-friends Bloom filter containing the hashed GUIDs of the contacts for the contact.

### public get contactsBloomFilter1Hop: [BloomFilter](../../../class/src/graphconnector/BloomFilter.js~BloomFilter.html): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber110)

Returns the Bloom filter containing the hashed GUIDs of the contacts for the contact.

#### Return:

|  |  |
| --- | --- |
| [BloomFilter](../../../class/s%20%20rc/graphconnector/BloomFilter.js~%20Blo%20omFilter.html) | bf Bloom filter for the contact. |

### public get firstName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber62)

Returns the first name.

#### Return:

|  |  |
| --- | --- |
| [String](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | firstName First name of the contact. |

### public set firstName(firstName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber70)

Sets the first name.

### public set groups(groups: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber151)

Sets the groups.

### public get groups: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>: \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber143)

Returns the groups.

#### Return:

|  |  |
| --- | --- |
| List<[String](https://developer.mozilla.org/en-US/%20%20docs/Web/JavaScript/Reference/Glo%20bal%20_Objects/String)> | groups Groups of the contact. |

### public get guid: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber29)

Returns the GUID.

#### Return:

|  |  |
| --- | --- |
| [String](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | GUID GUID of the contact. |

### public set guid(GUID: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber37)

Sets the GUID.

### public set lastName(lastName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber86)

Sets the last name.

### public get lastName: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber78)

Returns the last name.

#### Return:

|  |  |
| --- | --- |
| [String](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | lastName Last name of the contact. |

### public set privateContact(boolPrivate: [Boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber102)

Sets the privacy status of the contact according to the given Boolean value.

### public get privateContact: [Boolean](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Boolean): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber94)

Returns the privacy status of the contact.

#### Return:

|  |  |
| --- | --- |
| [Boolean](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Boole%20an)</s pan> | privateContact True/false value indicating the privacy status of the contact. |

### public get residenceLocation: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber127)

Returns the geohash of the residence location.

#### Return:

|  |  |
| --- | --- |
| [String](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | geohash Geohash of the residence location. |

### public set residenceLocation(geohash: [String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber135)

Sets the geohash of the residence location.

### public set userIDs(userIDs: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>): \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber53)

Sets the userIDs.

### public get userIDs: List<[String](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>: \* [source](../../../file/src/graphconnector/GraphConnectorContactData.js.html#lineNumber45)

Returns the user IDs.

#### Return:

|  |  |
| --- | --- |
| List<[String](https://developer.mozilla.org/en-US/%20%20docs/Web/JavaScript/Reference/Glo%20bal%20_Objects/String)> | userIDs UserIDs of the contact. |

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# HypertyDiscovery

Core HypertyDiscovery interface Class to allow applications to search for hyperties using the message bus

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/registry/HypertyDiscovery.js~HypertyDiscovery.html#instance-constructor-constructor)(msgbus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html), runtimeURL: RuntimeURL)

To initialise the HypertyDiscover, which will provide the support for hyperties to query users registered in outside the internal core.

## Method Summary

Public Methods public

[discoverHypertyPerUser](../../../class/src/registry/HypertyDiscovery.js~HypertyDiscovery.html#instance-method-discoverHypertyPerUser)(email: email): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

function to request about users registered in domain registry, and return the hyperty instance if found.

## Public Constructors

### public constructor(msgbus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html), runtimeURL: RuntimeURL) [source](../../../file/src/registry/HypertyDiscovery.js.html#lineNumber15)

To initialise the HypertyDiscover, which will provide the support for hyperties to query users registered in outside the internal core.

#### Params:

Name Type Attribute Description msgbus [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html) msgbus

runtimeURL RuntimeURL runtimeURL

## Public Methods

### public discoverHypertyPerUser(email: email): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/registry/HypertyDiscovery.js.html#lineNumber29)

function to request about users registered in domain registry, and return the hyperty instance if found.

#### Params:

Name Type Attribute Description email email

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan> | Promise |

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# HypertyInstance

#### Extends:

[RegistryDataModel](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html) → HypertyInstance

@author: Gil Dias (gil.dias@tecnico.ulisboa.pt) HypertyInstance Data Model used to model instances of Hyperties running in devices and servers.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/registry/HypertyInstance.js~HypertyInstance.html#instance-constructor-constructor)(id: \*, url: \*, descriptor: \*, hypertyURL: \*, user: \*, guid: \*, runtime: \*, context: \*)

## Member Summary

Public Members public get

[hypertyURL](../../../class/src/registry/HypertyInstance.js~HypertyInstance.html#instance-get-hypertyURL): \*

public set

[user](../../../class/src/registry/HypertyInstance.js~HypertyInstance.html#instance-set-user): \*

public get

[user](../../../class/src/registry/HypertyInstance.js~HypertyInstance.html#instance-get-user): \*

## Inherited Summary

From class [RegistryDataModel](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html) public get

[descriptor](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-descriptor): \*

public get

[id](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-id): \*

public get

[url](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-url): \*

## Public Constructors

### public constructor(id: \*, url: \*, descriptor: \*, hypertyURL: \*, user: \*, guid: \*, runtime: \*, context: \*) [source](../../../file/src/registry/HypertyInstance.js.html#lineNumber9)

#### Override:

[RegistryDataModel#constructor](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-constructor-constructor)

#### Params:

Name Type Attribute Description id \* url \* descriptor \* hypertyURL \* user \* guid \* runtime \* context \*

## Public Members

### public get hypertyURL: \* [source](../../../file/src/registry/HypertyInstance.js.html#lineNumber29)

### public set user: \* [source](../../../file/src/registry/HypertyInstance.js.html#lineNumber19)

### public get user: \* [source](../../../file/src/registry/HypertyInstance.js.html#lineNumber24)

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# IdentityModule

The Identity Module (Id Module) is the component responsible for handling the user identity and the association of this identity with the Hyperty instances, in order to make Hyperty instances identifiable. The identity in the reTHINK project is not fixed to a unique Identity Service Provider, but obtained through several different Identity sources. With this approach, the Id Module provides to the user the option to choose the preferred method for authentication. This module will thus able to support multiple Identity acquisition methods, such as OpenID connect 1.0, Kerberos System, or authentication through smart cards. For example, a user with a Google account can use the Google as an Identity Provider to provide Identity Tokens, which can be used by the Identity Module to associate it with a Hyperty instance. The Identity Module uses a node package, the HelloJS, which is a client-side JavaScript API for authentication that facilitates the requests for the OpenID connect protocol. This method allows for some abstraction when making requests for different Identity Providers, such as OpenID connect used by Google, Facebook, Microsoft, for example. When a request for a user identity is made using the method loginWithRP(identifier, scope), this method will analyse the Identity Provider chosen to obtain an identity and will use the HelloJS node package with the selected Identity Provider and identity scope. After the HelloJS request for an Access Token to the Identity Providers, the user will be prompted to authenticate towards the Identity Provider. Upon receiving the Access Token, this token is validated with a RESTful web service request to an endpoint on the Identity Provider Authorization Server, and after the validation is done, an ID token is obtained with the information according to the scope required. This ID token is then preserved in this module that can obtained through the getIdentities() and is passed as return value of the loginWithRP function. The methods generateAssertion and validateAssertion have not yet been developed.

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-constructor-constructor)

This is the constructor to initialise the Identity Module it does not require any input.

## Method Summary

Public Methods public

[generateAssertion](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-generateAssertion)(contents: DOMString, origin: DOMString, usernameHint: DOMString): IdAssertion

Generates an Identity Assertion

public

[getAssertionTrustLevel](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-getAssertionTrustLevel)(assertion: DOMString)

Trust level evaluation of a received IdAssertion

public

[getIdentities](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-getIdentities)(): [Array](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array)<Identities>

Function to return all the identities registered within a session by a user.

public

[loginWithRP](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-loginWithRP)(identifier: Identifier, scope: Scope): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Function to request an ID Token from a user.

public

[registerIdentity](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-registerIdentity)()

Register a new Identity with an Identity Provider

public

[registerWithRP](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-registerWithRP)()

In relation with a classical Relying Party: Registration

public

[setHypertyIdentity](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-setHypertyIdentity)()

In relation with a Hyperty Instance: Associate identity

public

[validateAssertion](../../../class/src/identity/IdentityModule.js~IdentityModule.html#instance-method-validateAssertion)(assertion: DOMString): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Function to validate an identity assertion generated previously.

## Public Constructors

### public constructor [source](../../../file/src/identity/IdentityModule.js.html#lineNumber36)

This is the constructor to initialise the Identity Module it does not require any input.

## Public Methods

### public generateAssertion(contents: DOMString, origin: DOMString, usernameHint: DOMString): IdAssertion [source](../../../file/src/identity/IdentityModule.js.html#lineNumber219)

Generates an Identity Assertion

#### Params:

Name Type Attribute Description contents DOMString contents

origin DOMString origin

usernameHint DOMString usernameHint

#### Return:

|  |  |
| --- | --- |
| IdAssertion | IdAssertion |

### public getAssertionTrustLevel(assertion: DOMString) [source](../../../file/src/identity/IdentityModule.js.html#lineNumber241)

Trust level evaluation of a received IdAssertion

#### Params:

Name Type Attribute Description assertion DOMString assertion

### public getIdentities(): [Array](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array)<Identities> [source](../../../file/src/identity/IdentityModule.js.html#lineNumber61)

Function to return all the identities registered within a session by a user. These identities are returned in an array containing a JSON package for each user identity.

#### Return:

|  |  |
| --- | --- |
| [Array](https://developer.mozi%20%20lla.org/en-US/docs/Web/JavaScript%20/Re%20ference/Global_Objects/Array)< /span> <Identities> | Array Identities |

### public loginWithRP(identifier: Identifier, scope: Scope): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/identity/IdentityModule.js.html#lineNumber76)

Function to request an ID Token from a user. If no token exists, the Identity Module will try to obtain one from an Identity Provider, and the user will be asked to authenticate towards the Identity Provider. The function returns a promise with a token containing the user information.

#### Params:

Name Type Attribute Description identifier Identifier identifier

scope Scope scope

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan> | Promise IDToken containing the user information |

### public registerIdentity() [source](../../../file/src/identity/IdentityModule.js.html#lineNumber45)

Register a new Identity with an Identity Provider

### public registerWithRP() [source](../../../file/src/identity/IdentityModule.js.html#lineNumber52)

In relation with a classical Relying Party: Registration

### public setHypertyIdentity() [source](../../../file/src/identity/IdentityModule.js.html#lineNumber207)

In relation with a Hyperty Instance: Associate identity

### public validateAssertion(assertion: DOMString): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/identity/IdentityModule.js.html#lineNumber233)

Function to validate an identity assertion generated previously. Returns a promise with the result from the validation.

#### Params:

Name Type Attribute Description assertion DOMString

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan> | Promise promise with the result from the validation |

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# MessageBus

#### Extends:

[Bus](../../../class/src/bus/Bus.js~Bus.html) → MessageBus

Message BUS Interface is an extension of the MiniBus It doesn’t support the default ‘\*’ listener, instead it uses the registry.resolve(..)

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/bus/MessageBus.js~MessageBus.html#instance-constructor-constructor)(registry: \*)

## Member Summary

Public Members public get

[pipeline](../../../class/src/bus/MessageBus.js~MessageBus.html#instance-get-pipeline): \*

## Method Summary

Public Methods public

[addForward](../../../class/src/bus/MessageBus.js~MessageBus.html#instance-method-addForward)(from: \*, to: \*): \*

public

[postMessage](../../../class/src/bus/MessageBus.js~MessageBus.html#instance-method-postMessage)(inMsg: \*, responseCallback: \*): \*

## Inherited Summary

From class [Bus](../../../class/src/bus/Bus.js~Bus.html) public

[addListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addListener)(url: URL, listener: Listener): MsgListener

Register listener to receive message when “msg.to === url”.

public

[addResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number), responseListener: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

Manually add a response listener.

public

[bind](../../../class/src/bus/Bus.js~Bus.html#instance-method-bind)(outUrl: URL, inUrl: URL, target: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)): Bound

Helper method to bind listeners (in both directions) into other MiniBus target.

public

[postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)(msg: Message, responseCallback: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)): [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)

Send messages to local listeners, or if not exists to external listeners.

public

[removeAllListenersOf](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeAllListenersOf)(url: URL)

Remove all existent listeners for the URL

public

[removeResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number))

Remove the response listener.

## Public Constructors

### public constructor(registry: \*) [source](../../../file/src/bus/MessageBus.js.html#lineNumber19)

#### Override:

[Bus#constructor](../../../class/src/bus/Bus.js~Bus.html#instance-constructor-constructor)

#### Params:

Name Type Attribute Description registry \*

## Public Members

### public get pipeline: \* [source](../../../file/src/bus/MessageBus.js.html#lineNumber29)

## Public Methods

### public addForward(from: \*, to: \*): \* [source](../../../file/src/bus/MessageBus.js.html#lineNumber55)

#### Params:

Name Type Attribute Description from \* to \*

#### Return:

|  |
| --- |
| \* |

### public postMessage(inMsg: \*, responseCallback: \*): \* [source](../../../file/src/bus/MessageBus.js.html#lineNumber31)

#### Override:

[Bus#postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)

#### Params:

Name Type Attribute Description inMsg \* responseCallback \*

#### Return:

|  |
| --- |
| \* |

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# MiniBus

#### Extends:

[Bus](../../../class/src/bus/Bus.js~Bus.html) → MiniBus

#### Direct Subclass:

[Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html)

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/bus/MiniBus.js~MiniBus.html#instance-constructor-constructor)

## Method Summary

Public Methods public

[postMessage](../../../class/src/bus/MiniBus.js~MiniBus.html#instance-method-postMessage)(inMsg: \*, responseCallback: \*): \*

## Inherited Summary

From class [Bus](../../../class/src/bus/Bus.js~Bus.html) public

[addListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addListener)(url: URL, listener: Listener): MsgListener

Register listener to receive message when “msg.to === url”.

public

[addResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number), responseListener: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

Manually add a response listener.

public

[bind](../../../class/src/bus/Bus.js~Bus.html#instance-method-bind)(outUrl: URL, inUrl: URL, target: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)): Bound

Helper method to bind listeners (in both directions) into other MiniBus target.

public

[postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)(msg: Message, responseCallback: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)): [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)

Send messages to local listeners, or if not exists to external listeners.

public

[removeAllListenersOf](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeAllListenersOf)(url: URL)

Remove all existent listeners for the URL

public

[removeResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number))

Remove the response listener.

## Public Constructors

### public constructor [source](../../../file/src/bus/MiniBus.js.html#lineNumber5)

#### Override:

[Bus#constructor](../../../class/src/bus/Bus.js~Bus.html#instance-constructor-constructor)

## Public Methods

### public postMessage(inMsg: \*, responseCallback: \*): \* [source](../../../file/src/bus/MiniBus.js.html#lineNumber9)

#### Override:

[Bus#postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)

#### Params:

Name Type Attribute Description inMsg \* responseCallback \*

#### Return:

|  |
| --- |
| \* |

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# ObjectAllocation

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/syncher/ObjectAllocation.js~ObjectAllocation.html#instance-constructor-constructor)(url: URL.URL, bus: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html))

Create an Object Allocation

## Member Summary

Public Members public get

[url](../../../class/src/syncher/ObjectAllocation.js~ObjectAllocation.html#instance-get-url): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \*

get the URL value

## Method Summary

Public Methods public

[create](../../../class/src/syncher/ObjectAllocation.js~ObjectAllocation.html#instance-method-create)(domain: Domain, number: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<ObjectURL>

Ask for creation of a number of Object addresses, to the domain message node.

## Public Constructors

### public constructor(url: URL.URL, bus: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)) [source](../../../file/src/syncher/ObjectAllocation.js.html#lineNumber12)

Create an Object Allocation

#### Params:

Name Type Attribute Description url URL.URL url from who is sending the message

bus [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html) MiniBus used for address allocation

## Public Members

### public get url: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String): \* [source](../../../file/src/syncher/ObjectAllocation.js.html#lineNumber23)

get the URL value

#### Return:

|  |  |
| --- | --- |
| [string](https://developer.moz%20%20illa.org/en-US/docs/Web/JavaScrip%20t/R%20eference/Global_Objects/String)</spa n> | The url value; |

## Public Methods

### public create(domain: Domain, number: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<ObjectURL> [source](../../../file/src/syncher/ObjectAllocation.js.html#lineNumber31)

Ask for creation of a number of Object addresses, to the domain message node.

#### Params:

Name Type Attribute Description domain Domain Domain of the message node.

number [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number) Number of addresses to request

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan><ObjectURL&gt ; | A list of ObjectURL’s |

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# Pipeline

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/bus/Pipeline.js~Pipeline.html#instance-constructor-constructor)(\_onFail: \*)

## Method Summary

Public Methods public

[process](../../../class/src/bus/Pipeline.js~Pipeline.html#instance-method-process)(msg: \*, onDeliver: \*)

## Public Constructors

### public constructor(\_onFail: \*) [source](../../../file/src/bus/Pipeline.js.html#lineNumber12)

#### Params:

Name Type Attribute Description \_onFail \*

## Public Methods

### public process(msg: \*, onDeliver: \*) [source](../../../file/src/bus/Pipeline.js.html#lineNumber19)

#### Params:

Name Type Attribute Description msg \* onDeliver \*

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# PolicyEngine

Core Policy Engine (PDP/PEP) Interface According to: <https://github.com/reTHINK-project/core-framework/blob/master/docs/specs/runtime/runtime-apis.md#core-policy-engine-pdppep-interface>

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/policy/PolicyEngine.js~PolicyEngine.html#instance-constructor-constructor)(IdentityModule: \*, Registry: \*)

To initialise the Policy Engine

## Method Summary

Public Methods public

[addPolicies](../../../class/src/policy/PolicyEngine.js~PolicyEngine.html#instance-method-addPolicies)(hyperty: URL.HypertyURL, policies: HypertyPolicyList)

To add policies to be enforced for a certain deployed Hyperty Instance Example of an hyperty: hyperty-instance://tecnico.pt/e1b8fb0b-95e2-4f44-aa18-b40984741196 Example of a policy: {subject: ‘message.header.from’, target: ‘blacklist’, action: ‘deny’}

public

[authorise](../../../class/src/policy/PolicyEngine.js~PolicyEngine.html#instance-method-authorise)(message: Message.Message): AuthorisationResponse

Authorisation request to accept a Subscription for a certain resource.

public

[checkPolicies](../../../class/src/policy/PolicyEngine.js~PolicyEngine.html#instance-method-checkPolicies)(message: \*): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)

public

[removePolicies](../../../class/src/policy/PolicyEngine.js~PolicyEngine.html#instance-method-removePolicies)(hyperty: URL.HypertyURL)

To remove previously added policies for a certain deployed Hyperty Instance

## Public Constructors

### public constructor(IdentityModule: \*, Registry: \*) [source](../../../file/src/policy/PolicyEngine.js.html#lineNumber12)

To initialise the Policy Engine

#### Params:

Name Type Attribute Description IdentityModule \* identityModule identityModule

Registry \* runtimeRegistry runtimeRegistry

## Public Methods

### public addPolicies(hyperty: URL.HypertyURL, policies: HypertyPolicyList) [source](../../../file/src/policy/PolicyEngine.js.html#lineNumber29)

To add policies to be enforced for a certain deployed Hyperty Instance Example of an hyperty: hyperty-instance://tecnico.pt/e1b8fb0b-95e2-4f44-aa18-b40984741196 Example of a policy: {subject: ‘message.header.from’, target: ‘blacklist’, action: ‘deny’}

#### Params:

Name Type Attribute Description hyperty URL.HypertyURL hyperty

policies HypertyPolicyList policies

### public authorise(message: Message.Message): AuthorisationResponse [source](../../../file/src/policy/PolicyEngine.js.html#lineNumber48)

Authorisation request to accept a Subscription for a certain resource. Returns a Response Message to be returned to Subscription requester

#### Params:

Name Type Attribute Description message Message.Message message

#### Return:

|  |  |
| --- | --- |
| AuthorisationResponse | AuthorisationResponse |

### public checkPolicies(message: \*): [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) [source](../../../file/src/policy/PolicyEngine.js.html#lineNumber90)

#### Params:

Name Type Attribute Description message \*

#### Return:

|  |
| --- |
| [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) |

### public removePolicies(hyperty: URL.HypertyURL) [source](../../../file/src/policy/PolicyEngine.js.html#lineNumber38)

To remove previously added policies for a certain deployed Hyperty Instance

#### Params:

Name Type Attribute Description hyperty URL.HypertyURL hyperty

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# Registry

#### Extends:

[EventEmitter](../../../class/src/utils/EventEmitter.js~EventEmitter.html) → Registry

Runtime Registry Interface

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/registry/Registry.js~Registry.html#instance-constructor-constructor)(msgbus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html), runtimeURL: HypertyRuntimeURL, appSandbox: AppSandbox, remoteRegistry: DomainURL)

To initialise the Runtime Registry with the RuntimeURL that will be the basis to derive the internal runtime addresses when allocating addresses to internal runtime component.

## Member Summary

Public Members public get

[messageBus](../../../class/src/registry/Registry.js~Registry.html#instance-get-messageBus)(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \*

return the messageBus in this Registry

public set

[messageBus](../../../class/src/registry/Registry.js~Registry.html#instance-set-messageBus)(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \*

Set the messageBus in this Registry

## Method Summary

Public Methods public

[discoverProtostub](../../../class/src/registry/Registry.js~Registry.html#instance-method-discoverProtostub)(DomainURL: DomainURL): RuntimeURL

To discover protocol stubs available in the runtime for a certain domain.

public

[getAppSandbox](../../../class/src/registry/Registry.js~Registry.html#instance-method-getAppSandbox)(): \*

This function is used to return the sandbox instance where the Application is executing.

public

[getSandbox](../../../class/src/registry/Registry.js~Registry.html#instance-method-getSandbox)(DomainURL: DomainURL): RuntimeSandbox

To discover sandboxes available in the runtime for a certain domain.

public

[getUserHyperty](../../../class/src/registry/Registry.js~Registry.html#instance-method-getUserHyperty)(email: \*): \*

Function to query the Domain registry, with an user email.

public

[onEvent](../../../class/src/registry/Registry.js~Registry.html#instance-method-onEvent)()

To receive status events from components registered in the Registry.

public

[registerHyperty](../../../class/src/registry/Registry.js~Registry.html#instance-method-registerHyperty)(sandbox: [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html), HypertyCatalogueURL: HypertyCatalogueURL): HypertyURL

To register a new Hyperty in the runtime which returns the HypertyURL allocated to the new Hyperty.

public

[registerPEP](../../../class/src/registry/Registry.js~Registry.html#instance-method-registerPEP)(postMessage: Message.Message, HypertyURL: HypertyURL): HypertyRuntimeURL

To register a new Policy Enforcer in the runtime including as input parameters the function to postMessage, the HypertyURL associated with the PEP, which returns the RuntimeURL allocated to the new Policy Enforcer component.

public

[registerStub](../../../class/src/registry/Registry.js~Registry.html#instance-method-registerStub)(Sandbox: [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html), DomainURL: DomainURL): RuntimeProtoStubURL

To register a new Protocol Stub in the runtime including as input parameters the function to postMessage, the DomainURL that is connected with the stub, which returns the RuntimeURL allocated to the new ProtocolStub.

public

[resolve](../../../class/src/registry/Registry.js~Registry.html#instance-method-resolve)(url: URL.URL): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<URL.URL>

To verify if source is valid and to resolve target runtime url address if needed (eg protostub runtime url in case the message is to be dispatched to a remote endpoint).

public

[unregisterHyperty](../../../class/src/registry/Registry.js~Registry.html#instance-method-unregisterHyperty)(HypertyURL: HypertyURL): \*

To unregister a previously registered Hyperty

public

[unregisterPEP](../../../class/src/registry/Registry.js~Registry.html#instance-method-unregisterPEP)(HypertyRuntimeURL: HypertyRuntimeURL): \*

To unregister a previously registered protocol stub

public

[unregisterStub](../../../class/src/registry/Registry.js~Registry.html#instance-method-unregisterStub)(HypertyRuntimeURL: HypertyRuntimeURL): \*

To unregister a previously registered protocol stub

## Inherited Summary

From class [EventEmitter](../../../class/src/utils/EventEmitter.js~EventEmitter.html) public

[addEventListener](../../../class/src/utils/EventEmitter.js~EventEmitter.html#instance-method-addEventListener)(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), cb: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

addEventListener listen for an eventType

public

[trigger](../../../class/src/utils/EventEmitter.js~EventEmitter.html#instance-method-trigger)(eventType: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), params: [object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object))

Invoke the eventType

## Public Constructors

### public constructor(msgbus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html), runtimeURL: HypertyRuntimeURL, appSandbox: AppSandbox, remoteRegistry: DomainURL) [source](../../../file/src/registry/Registry.js.html#lineNumber20)

To initialise the Runtime Registry with the RuntimeURL that will be the basis to derive the internal runtime addresses when allocating addresses to internal runtime component. In addition, the Registry domain back-end to be used to remotely register Runtime components, is also passed as input parameter.

#### Params:

Name Type Attribute Description msgbus [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html) msgbus

runtimeURL HypertyRuntimeURL runtimeURL

appSandbox AppSandbox appSandbox

remoteRegistry DomainURL remoteRegistry

## Public Members

### public get messageBus(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \* [source](../../../file/src/registry/Registry.js.html#lineNumber56)

return the messageBus in this Registry

### public set messageBus(messageBus: [MessageBus](../../../class/src/bus/MessageBus.js~MessageBus.html)): \* [source](../../../file/src/registry/Registry.js.html#lineNumber65)

Set the messageBus in this Registry

## Public Methods

### public discoverProtostub(DomainURL: DomainURL): RuntimeURL [source](../../../file/src/registry/Registry.js.html#lineNumber224)

To discover protocol stubs available in the runtime for a certain domain. If available, it returns the runtime url for the protocol stub that connects to the requested domain. Required by the runtime BUS to route messages to remote servers or peers (do we need something similar for Hyperties?).

#### Params:

Name Type Attribute Description DomainURL DomainURL url

#### Return:

|  |  |
| --- | --- |
| RuntimeURL | RuntimeURL |

### public getAppSandbox(): \* [source](../../../file/src/registry/Registry.js.html#lineNumber77)

This function is used to return the sandbox instance where the Application is executing. It is assumed there is just one App per Runtime instance.

#### Return:

|  |
| --- |
| \* |

### public getSandbox(DomainURL: DomainURL): RuntimeSandbox [source](../../../file/src/registry/Registry.js.html#lineNumber356)

To discover sandboxes available in the runtime for a certain domain. Required by the runtime UA to avoid more than one sandbox for the same domain.

#### Params:

Name Type Attribute Description DomainURL DomainURL url

#### Return:

|  |  |
| --- | --- |
| RuntimeSandbox | RuntimeSandbox |

### public getUserHyperty(email: \*): \* [source](../../../file/src/registry/Registry.js.html#lineNumber85)

Function to query the Domain registry, with an user email.

#### Params:

Name Type Attribute Description email \*

#### Return:

|  |
| --- |
| \* |

### public onEvent() [source](../../../file/src/registry/Registry.js.html#lineNumber347)

To receive status events from components registered in the Registry.

#### Params:

Name Type Attribute Description Message.Message Message.Message event

### public registerHyperty(sandbox: [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html), HypertyCatalogueURL: HypertyCatalogueURL): HypertyURL [source](../../../file/src/registry/Registry.js.html#lineNumber121)

To register a new Hyperty in the runtime which returns the HypertyURL allocated to the new Hyperty.

#### Params:

Name Type Attribute Description sandbox [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html) sandbox

HypertyCatalogueURL HypertyCatalogueURL descriptor

#### Return:

|  |  |
| --- | --- |
| HypertyURL | HypertyURL |

### public registerPEP(postMessage: Message.Message, HypertyURL: HypertyURL): HypertyRuntimeURL [source](../../../file/src/registry/Registry.js.html#lineNumber312)

To register a new Policy Enforcer in the runtime including as input parameters the function to postMessage, the HypertyURL associated with the PEP, which returns the RuntimeURL allocated to the new Policy Enforcer component.

#### Params:

Name Type Attribute Description postMessage Message.Message postMessage

HypertyURL HypertyURL hyperty

#### Return:

|  |  |
| --- | --- |
| HypertyRuntimeURL | HypertyRuntimeURL |

### public registerStub(Sandbox: [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html), DomainURL: DomainURL): RuntimeProtoStubURL [source](../../../file/src/registry/Registry.js.html#lineNumber247)

To register a new Protocol Stub in the runtime including as input parameters the function to postMessage, the DomainURL that is connected with the stub, which returns the RuntimeURL allocated to the new ProtocolStub.

#### Params:

Name Type Attribute Description Sandbox [Sandbox](../../../class/src/sandbox/Sandbox.js~Sandbox.html) DomainURL DomainURL service provider domain

#### Return:

|  |
| --- |
| RuntimeProtoStubURL |

### public resolve(url: URL.URL): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<URL.URL> [source](../../../file/src/registry/Registry.js.html#lineNumber401)

To verify if source is valid and to resolve target runtime url address if needed (eg protostub runtime url in case the message is to be dispatched to a remote endpoint).

#### Params:

Name Type Attribute Description url URL.URL url

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan><URL.URL> | Promise <URL.URL> |

### public unregisterHyperty(HypertyURL: HypertyURL): \* [source](../../../file/src/registry/Registry.js.html#lineNumber191)

To unregister a previously registered Hyperty

#### Params:

Name Type Attribute Description HypertyURL HypertyURL url url

#### Return:

|  |
| --- |
| \* |

### public unregisterPEP(HypertyRuntimeURL: HypertyRuntimeURL): \* [source](../../../file/src/registry/Registry.js.html#lineNumber327)

To unregister a previously registered protocol stub

#### Params:

Name Type Attribute Description HypertyRuntimeURL HypertyRuntimeURL HypertyRuntimeURL

#### Return:

|  |
| --- |
| \* |

### public unregisterStub(HypertyRuntimeURL: HypertyRuntimeURL): \* [source](../../../file/src/registry/Registry.js.html#lineNumber288)

To unregister a previously registered protocol stub

#### Params:

Name Type Attribute Description HypertyRuntimeURL HypertyRuntimeURL hypertyRuntimeURL

#### Return:

|  |
| --- |
| \* |

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# RegistryDataModel

#### Direct Subclass:

[HypertyInstance](../../../class/src/registry/HypertyInstance.js~HypertyInstance.html)

@author: Gil Dias (gil.dias@tecnico.ulisboa.pt) Registry Data Model includes all Objects to be handled by the Registry functionality including

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-constructor-constructor)(id: \*, url: \*, descriptor: \*, startingTime: \*, lastModified: \*, status: \*, stubs: \*, stubsConfiguration: \*)

## Member Summary

Public Members public get

[descriptor](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-descriptor): \*

public get

[id](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-id): \*

public get

[url](../../../class/src/registry/RegistryDataModel.js~RegistryDataModel.html#instance-get-url): \*

## Public Constructors

### public constructor(id: \*, url: \*, descriptor: \*, startingTime: \*, lastModified: \*, status: \*, stubs: \*, stubsConfiguration: \*) [source](../../../file/src/registry/RegistryDataModel.js.html#lineNumber7)

#### Params:

Name Type Attribute Description id \* url \* descriptor \* startingTime \* lastModified \* status \* stubs \* stubsConfiguration \*

## Public Members

### public get descriptor: \* [source](../../../file/src/registry/RegistryDataModel.js.html#lineNumber30)

### public get id: \* [source](../../../file/src/registry/RegistryDataModel.js.html#lineNumber20)

### public get url: \* [source](../../../file/src/registry/RegistryDataModel.js.html#lineNumber25)

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# RuntimeCatalogue

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-constructor-constructor)

## Member Summary

Public Members public set

[runtimeURL](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-set-runtimeURL): \*

public get

[runtimeURL](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-get-runtimeURL): \*

## Method Summary

Public Methods public

[getDataSchemaDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-getDataSchemaDescriptor)(dataSchemaURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get DataSchemaDescriptor

public

[getHypertyDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-getHypertyDescriptor)(hypertyURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get HypertyDescriptor

public

[getHypertyRuntimeURL](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-getHypertyRuntimeURL)(): \*

Get hypertyRuntimeURL

public

[getSourcePackageFromURL](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-getSourcePackageFromURL)(sourcePackageURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get source Package from a URL

public

[getStubDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-getStubDescriptor)(stubURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get StubDescriptor

public

[mockupDataSchemaDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-mockupDataSchemaDescriptor)()

public

[mockupHypertyDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-mockupHypertyDescriptor)()

public

[mockupStubDescriptor](../../../class/src/runtime/RuntimeCatalogue-Local.js~RuntimeCatalogue.html#instance-method-mockupStubDescriptor)()

## Public Constructors

### public constructor [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber6)

## Public Members

### public set runtimeURL: \* [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber44)

### public get runtimeURL: \* [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber54)

## Public Methods

### public getDataSchemaDescriptor(dataSchemaURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber339)

Get DataSchemaDescriptor

#### Params:

Name Type Attribute Description dataSchemaURL \* e.g. mydomain.com/.well-known/dataschema/MyDataSchema

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getHypertyDescriptor(hypertyURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber182)

Get HypertyDescriptor

#### Params:

Name Type Attribute Description hypertyURL \* e.g. mydomain.com/.well-known/hyperty/MyHyperty

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getHypertyRuntimeURL(): \* [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber62)

Get hypertyRuntimeURL

#### Return:

|  |
| --- |
| \* |

### public getSourcePackageFromURL(sourcePackageURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber241)

Get source Package from a URL

#### Params:

Name Type Attribute Description sourcePackageURL \* e.g. mydomain.com/.well-known/hyperty/MyHyperty/sourcePackage

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getStubDescriptor(stubURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber281)

Get StubDescriptor

#### Params:

Name Type Attribute Description stubURL \* e.g. mydomain.com/.well-known/protostub/MyProtostub

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public mockupDataSchemaDescriptor() [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber34)

### public mockupHypertyDescriptor() [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber13)

### public mockupStubDescriptor() [source](../../../file/src/runtime/RuntimeCatalogue-Local.js.html#lineNumber24)

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# RuntimeCatalogue

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-constructor-constructor)(nodeHttp: \*, nodeHttps: \*)

## Member Summary

Public Members public set

[runtimeURL](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-set-runtimeURL): \*

public get

[runtimeURL](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-get-runtimeURL): \*

## Method Summary

Public Methods public

[getDataSchemaDescriptor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getDataSchemaDescriptor)(dataSchemaURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get DataSchemaDescriptor

public

[getHypertyDescriptor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getHypertyDescriptor)(hypertyURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get HypertyDescriptor

public

[getHypertyRuntimeURL](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getHypertyRuntimeURL)(): \*

Get hypertyRuntimeURL

public

[getRuntimeDescriptor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getRuntimeDescriptor)(runtimeURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get RuntimeDescriptor

public

[getSourceCodeFromDescriptor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getSourceCodeFromDescriptor)(descriptor: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Returns the sourceCode of a given descriptor

public

[getSourcePackageFromURL](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getSourcePackageFromURL)(sourcePackageURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get source Package from a URL

public

[getStubDescriptor](../../../class/src/runtime/RuntimeCatalogue.js~RuntimeCatalogue.html#instance-method-getStubDescriptor)(stubURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)

Get StubDescriptor

## Public Constructors

### public constructor(nodeHttp: \*, nodeHttps: \*) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber7)

#### Params:

Name Type Attribute Description nodeHttp \* nodeHttps \*

## Public Members

### public set runtimeURL: \* [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber15)

### public get runtimeURL: \* [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber20)

## Public Methods

### public getDataSchemaDescriptor(dataSchemaURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber251)

Get DataSchemaDescriptor

#### Params:

Name Type Attribute Description dataSchemaURL \* e.g. mydomain.com/.well-known/dataschema/MyDataSchema

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getHypertyDescriptor(hypertyURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber145)

Get HypertyDescriptor

#### Params:

Name Type Attribute Description hypertyURL \* e.g. mydomain.com/.well-known/hyperty/MyHyperty

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getHypertyRuntimeURL(): \* [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber28)

Get hypertyRuntimeURL

#### Return:

|  |
| --- |
| \* |

### public getRuntimeDescriptor(runtimeURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber193)

Get RuntimeDescriptor

#### Params:

Name Type Attribute Description runtimeURL \* e.g. mydomain.com/.well-known/runtime/MyRuntime

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getSourceCodeFromDescriptor(descriptor: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber391)

Returns the sourceCode of a given descriptor

#### Params:

Name Type Attribute Description descriptor \* Catalogue Object that was retrieved using e.g. getHypertyDescriptor()

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getSourcePackageFromURL(sourcePackageURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber298)

Get source Package from a URL

#### Params:

Name Type Attribute Description sourcePackageURL \* e.g. mydomain.com/.well-known/hyperty/MyHyperty/sourcePackage

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

### public getStubDescriptor(stubURL: \*): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) [source](../../../file/src/runtime/RuntimeCatalogue.js.html#lineNumber327)

Get StubDescriptor

#### Params:

Name Type Attribute Description stubURL \* e.g. mydomain.com/.well-known/protostub/MyProtostub

#### Return:

|  |
| --- |
| [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise) |

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# RuntimeUA

Runtime User Agent Interface will process all the dependecies of the core runtime;

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-constructor-constructor)(sandboxFactory: sandboxFactory, domainURL: domain)

Create a new instance of Runtime User Agent

## Method Summary

Public Methods public

[checkForUpdate](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-method-checkForUpdate)(url: CatalogueURL)

Used to check for updates about components handled in the Catalogue including protocol stubs and Hyperties.

public

[discoverHiperty](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-method-discoverHiperty)(descriptor: CatalogueDataObject.HypertyDescriptor)

Accomodate interoperability in H2H and proto on the fly for newly discovered devices in M2M

public

[loadHyperty](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-method-loadHyperty)(hyperty: URL.HypertyCatalogueURL): \*

Deploy Hyperty from Catalogue URL

public

[loadStub](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-method-loadStub)(domain: URL.URL): \*

Deploy Stub from Catalogue URL or domain url

public

[registerHyperty](../../../class/src/runtime/RuntimeUA.js~RuntimeUA.html#instance-method-registerHyperty)(Object: [Object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object), descriptor: URL.HypertyCatalogueURL)

Register Hyperty deployed by the App that is passed as input parameter.

## Public Constructors

### public constructor(sandboxFactory: sandboxFactory, domainURL: domain) [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber35)

Create a new instance of Runtime User Agent

#### Params:

Name Type Attribute Description sandboxFactory sandboxFactory Specific implementation for the environment where the core runtime will run;

domainURL domain specify the domain base for the runtime;

## Public Methods

### public checkForUpdate(url: CatalogueURL) [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber456)

Used to check for updates about components handled in the Catalogue including protocol stubs and Hyperties. check relationship with lifecycle management provided by Service Workers

#### Params:

Name Type Attribute Description url CatalogueURL url

### public discoverHiperty(descriptor: CatalogueDataObject.HypertyDescriptor) [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber119)

Accomodate interoperability in H2H and proto on the fly for newly discovered devices in M2M

#### Params:

Name Type Attribute Description descriptor CatalogueDataObject.HypertyDescriptor descriptor

### public loadHyperty(hyperty: URL.HypertyCatalogueURL): \* [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber136)

Deploy Hyperty from Catalogue URL

#### Params:

Name Type Attribute Description hyperty URL.HypertyCatalogueURL hypertyDescriptor url;

#### Return:

|  |
| --- |
| \* |

### public loadStub(domain: URL.URL): \* [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber302)

Deploy Stub from Catalogue URL or domain url

#### Params:

Name Type Attribute Description domain URL.URL domain

#### Return:

|  |
| --- |
| \* |

### public registerHyperty(Object: [Object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object), descriptor: URL.HypertyCatalogueURL) [source](../../../file/src/runtime/RuntimeUA.js.html#lineNumber128)

Register Hyperty deployed by the App that is passed as input parameter. To be used when App and Hyperties are from the same domain otherwise the RuntimeUA will raise an exception and the App has to use the loadHyperty(..) function.

#### Params:

Name Type Attribute Description Object [Object](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Object) hypertyInstance

descriptor URL.HypertyCatalogueURL descriptor

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# Sandbox

#### Extends:

[Bus](../../../class/src/bus/Bus.js~Bus.html) → [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html) → Sandbox

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/sandbox/Sandbox.js~Sandbox.html#instance-constructor-constructor)

## Method Summary

Public Methods public

[deployComponent](../../../class/src/sandbox/Sandbox.js~Sandbox.html#instance-method-deployComponent)(componentSourceCode: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), componentURL: URL, configuration: Config): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<[string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>

Deploy an instance of the component into the sandbox.

public

[removeComponent](../../../class/src/sandbox/Sandbox.js~Sandbox.html#instance-method-removeComponent)(componentURL: URL): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<[string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)>

Remove the instance of a previously deployed component.

## Inherited Summary

From class [Bus](../../../class/src/bus/Bus.js~Bus.html) public

[addListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addListener)(url: URL, listener: Listener): MsgListener

Register listener to receive message when “msg.to === url”.

public

[addResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-addResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number), responseListener: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function))

Manually add a response listener.

public

[bind](../../../class/src/bus/Bus.js~Bus.html#instance-method-bind)(outUrl: URL, inUrl: URL, target: [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html)): Bound

Helper method to bind listeners (in both directions) into other MiniBus target.

public

[postMessage](../../../class/src/bus/Bus.js~Bus.html#instance-method-postMessage)(msg: Message, responseCallback: [Function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Function)): [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number)

Send messages to local listeners, or if not exists to external listeners.

public

[removeAllListenersOf](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeAllListenersOf)(url: URL)

Remove all existent listeners for the URL

public

[removeResponseListener](../../../class/src/bus/Bus.js~Bus.html#instance-method-removeResponseListener)(url: URL, msgId: [number](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number))

Remove the response listener.

From class [MiniBus](../../../class/src/bus/MiniBus.js~MiniBus.html) public

[postMessage](../../../class/src/bus/MiniBus.js~MiniBus.html#instance-method-postMessage)(inMsg: \*, responseCallback: \*): \*

## Public Constructors

### public constructor [source](../../../file/src/sandbox/Sandbox.js.html#lineNumber11)

#### Override:

[MiniBus#constructor](../../../class/src/bus/MiniBus.js~MiniBus.html#instance-constructor-constructor)

## Public Methods

### public deployComponent(componentSourceCode: [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String), componentURL: URL, configuration: Config): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<[string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)> [source](../../../file/src/sandbox/Sandbox.js.html#lineNumber29)

Deploy an instance of the component into the sandbox.

#### Params:

Name Type Attribute Description componentSourceCode [string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String) Component source code (Hyperty, ProtoStub, etc)

componentURL URL Hyperty, ProtoStub, or any other component address.

configuration Config Config parameters of the component

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan><[string](https://de%20vel%20oper.mozilla.org/en-US/docs/We%20b/Java%20Script/Reference/Global_Obj%20ects/Stri%20ng)> | return deployed if successful, or any other string with an error |

### public removeComponent(componentURL: URL): [Promise](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Promise)<[string](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String)> [source](../../../file/src/sandbox/Sandbox.js.html#lineNumber62)

Remove the instance of a previously deployed component.

#### Params:

Name Type Attribute Description componentURL URL Hyperty, ProtoStub, or any other component address.

#### Return:

|  |  |
| --- | --- |
| [Promise](https://developer.mo%20%20zilla.org/en-US/docs/Web/JavaScri%20pt/%20Reference/Global_Objects/Promi%20se)</s pan><[string](https://de%20vel%20oper.mozilla.org/en-US/docs/We%20b/Java%20Script/Reference/Global_Obj%20ects/Stri%20ng)> | return undeployed if successful, or any other string with an error |

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# SandboxRegistry

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/sandbox/SandboxRegistry.js~SandboxRegistry.html#instance-constructor-constructor)(bus: \*)

## Member Summary

Public Members public get

[components](../../../class/src/sandbox/SandboxRegistry.js~SandboxRegistry.html#instance-get-components): \*

## Public Constructors

### public constructor(bus: \*) [source](../../../file/src/sandbox/SandboxRegistry.js.html#lineNumber13)

#### Params:

Name Type Attribute Description bus \*

## Public Members

### public get components: \* [source](../../../file/src/sandbox/SandboxRegistry.js.html#lineNumber36)

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# SyncherManager

## Constructor Summary

Public Constructor public

[constructor](../../../class/src/syncher/SyncherManager.js~SyncherManager.html#instance-constructor-constructor)(runtimeURL: \*, bus: \*, registry: \*, catalog: \*, allocator: \*)

## Member Summary

Public Members public get

[url](../../../class/src/syncher/SyncherManager.js~SyncherManager.html#instance-get-url): \*

## Public Constructors

### public constructor(runtimeURL: \*, bus: \*, registry: \*, catalog: \*, allocator: \*) [source](../../../file/src/syncher/SyncherManager.js.html#lineNumber18)

#### Params:

Name Type Attribute Description runtimeURL \* bus \* registry \* catalog \* allocator \*

## Public Members

### public get url: \* [source](../../../file/src/syncher/SyncherManager.js.html#lineNumber50)

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