

# **GT 4.2 Guide to Public Interfaces: Java WS Core**

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# Table of Contents

1. APIs .....	1
1. Programming Model Overview .....	1
2. Component API .....	1
2. Services and WSDL .....	4
3. Configuring .....	5
1. Configuration overview .....	5
2. Syntax of the interface: .....	5
3. Configuring an <code>/etc/init.d</code> entry for the standalone container .....	13
4. Environment variable interface .....	14
1. Environmental variables for Java WS Core .....	14
I. Java WS Core Commands .....	?
<code>globus-start-container</code> .....	17
<code>globus-stop-container</code> .....	18
<code>globus-start-container-detached</code> .....	20
<code>globus-stop-container-detached</code> .....	21
<code>wsrp-destroy</code> .....	22
<code>wsrp-set-termination-time</code> .....	24
<code>wsrp-query</code> .....	26
<code>wsrp-get-property</code> .....	28
<code>wsrp-get-properties</code> .....	30
<code>wsrp-insert-property</code> .....	32
<code>wsrp-update-property</code> .....	34
<code>wsrp-delete-property</code> .....	36
<code>wsn-get-current-message</code> .....	38
<code>wsn-pause-subscription</code> .....	40
<code>wsn-resume-subscription</code> .....	42
<code>wsn-subscribe</code> .....	44
<code>globus-deploy-gar</code> .....	46
<code>globus-undeploy-gar</code> .....	48
<code>globus-check-environment</code> .....	50
<code>globus-check-remote-environment</code> .....	51
<code>globus-update-client-config</code> .....	52
<code>globus-validate-descriptors</code> .....	53
<code>globus-reload-container</code> .....	54
<code>globus-remote-undeploy-gar</code> .....	56
<code>globus-remote-deploy-gar</code> .....	58
<code>ws-enumerate-start</code> .....	60
<code>ws-enumerate</code> .....	62
<code>ws-enumerate-end</code> .....	64
<code>globus-xpath-query</code> .....	66
Common Java Client Options .....	69
A. Errors .....	70
Glossary .....	73

## List of Tables

3.1. General configuration parameters .....	5
3.2. Standalone/embedded container-specific configuration parameters .....	6
3.3. Container Thread Parameters .....	7
3.4. Default container thread pool settings .....	7
3.5. Axis Standard Parameters .....	9
3.6. Java WS Core Parameters .....	9
3.7. ResourceHomeImpl parameters .....	11
4.1. Globus standard environment variables .....	14
4.2. Launch script specific environment variables .....	14
4.3. Options supported by the GLOBUS_OPTIONS environment property .....	15
11. Options .....	17
12. Common options .....	19
13. Shutdown options .....	19
14. Options .....	20
15. Options .....	21
16. Common options .....	23
17. Command-specific options .....	24
18. Common options .....	25
19. Common options .....	27
20. Common options .....	29
21. Common options .....	31
22. Common options .....	33
23. Common options .....	35
24. Common options .....	37
25. Common options .....	39
26. Common options .....	41
27. Common options .....	43
28. Command-specific options .....	44
29. Common options .....	45
30. Options .....	46
31. Supported property-value pairs .....	46
32. Options .....	48
33. Options .....	51
34. Options .....	52
35. Options .....	53
36. Common options .....	55
37. Common options .....	57
38. Command-specific options .....	58
39. Common options .....	59
40. Common options .....	61
41. Command-specific options .....	62
42. Common options .....	63
43. Common options .....	65
44. Command-specific options .....	66
45. Common options .....	67
46. Common options .....	69
A.1. Java WS Core Errors .....	71

# Chapter 1. APIs

## 1. Programming Model Overview

There are two main parts to the Java WS Core programming model: the service and the resource. The service performs the business logic on the resource, and the resource represents the managed state.

The web service is just a *stateless* POJO (Plain Old Java Object) that discovers the resource associated with the request and then performs operations on that resource.

The resources are managed and discovered via `ResourceHome` implementations. The `ResourceHome` implementations can also be responsible for creating new resources, performing operations on a set of resources at a time, etc.

The `ResourceHome` implementations are configured in *JNDI* and are associated with a particular web service. *JNDI* is a central transient registry that is mainly used for discovery of `ResourceHome` implementations but it can be used to store and retrieve arbitrary information.

The web services are configured in the Web Services Deployment Descriptor (WSDD).

*WSDL* in document/literal style is assumed as a starting point for writing a service. A number of generic interfaces are defined so that custom implementations of these interfaces can be used instead of the default implementations included in the Java WS Core. No special base classes are required for a web service or resource implementation. However, the resource object at minimal must implement the `org.globus.wsrp.Resource` interface (it defines no operations; it is used just as a marker interface). The service developer can pick and choose which other resource interfaces the resource object should implement to tailor the implementation to his/her needs.

## 2. Component API

- Stable API:
  - `org.globus.wsrp.Resource`
  - `org.globus.wsrp.ResourceKey`
  - `org.globus.wsrp.ResourceProperty`
  - `org.globus.wsrp.ResourcePropertyMetaData`
  - `org.globus.wsrp.ResourcePropertySet`
  - `org.globus.wsrp.ResourceProperties`
  - `org.globus.wsrp.ResourceHome`
  - `org.globus.wsrp.ResourceLifetime`
  - `org.globus.wsrp.ResourceIdentifier`
  - `org.globus.wsrp.ResourceContext`
  - `org.globus.wsrp.RemoveCallback`
  - `org.globus.wsrp.PersistentCallback`

- org.globus.wsrp.Subscription
- org.globus.wsrp.Topic
- org.globus.wsrp.TopicList
- org.globus.wsrp.TopicListMetaData
- org.globus.wsrp.TopicAccessor
- org.globus.wsrp.TopicListener
- org.globus.wsrp.TopicListenerList
- Less stable API:
  - org.globus.wsrp.NotificationConsumerCallbackManager
  - org.globus.wsrp.NotificationConsumerManager
  - org.globus.wsrp.NotifyCallback
  - org.globus.wsrp.encoding.ObjectSerializer
  - org.globus.wsrp.encoding.ObjectDeserializer
  - org.globus.wsrp.impl.SimpleResourceKey
  - org.globus.wsrp.impl.BaseResourceProperty
  - org.globus.wsrp.impl.ReflectionResourceProperty
  - org.globus.wsrp.impl.SimpleResourceProperty
  - org.globus.wsrp.impl.SimpleResourcePropertyMetaData
  - org.globus.wsrp.impl.SimpleResourcePropertySet
  - org.globus.wsrp.impl.ResourceContextImpl
  - org.globus.wsrp.impl.ResourceHomeImpl
  - org.globus.wsrp.impl.SingletonResourceHome
  - org.globus.wsrp.impl.ServiceResourceHome
  - org.globus.wsrp.impl.ResourcePropertyTopic
  - org.globus.wsrp.impl.SimpleTopic
  - org.globus.wsrp.impl.SimpleTopicList
  - org.globus.wsrp.impl.SimpleTopicListMetaData
  - org.globus.wsrp.query.QueryEngine
  - org.globus.wsrp.query.ExpressionEvaluator

- `org.globus.wsrftopicexpression.TopicExpressionEngine`
- `org.globus.wsrftopicexpression.TopicExpressionEvaluator`
- `org.globus.wsrftools.FaultHelper`
- `org.globus.wsrftools.XmlUtils`
- `org.globus.wsrftools.AddressingUtils`
- `org.globus.wsrftools.container.ServiceHost`

The complete Java WS Core API<sup>1</sup>.

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<sup>1</sup> <http://www.mcs.anl.gov/~gawor/javawscore/HEAD/doc/javadocs/>

## Chapter 2. Services and WSDL

Java WS Core contains an implementation of the following specifications. Please see the corresponding specifications for details:

- WSRF<sup>1</sup>
  - WS-Resource (WSRF-Resource) specification<sup>2</sup> [[wsdl](#)<sup>3</sup> | [xsd](#)<sup>4</sup>]
  - WS-ResourceProperties (WSRF-RP) specification<sup>5</sup> [[wsdl](#)<sup>6</sup> | [xsd](#)<sup>7</sup>]
  - WS-ResourceLifetime (WSRF-RL) specification<sup>8</sup> [[wsdl](#)<sup>9</sup> | [xsd](#)<sup>10</sup>]
  - WS-ServiceGroup (WSRF-SG) specification<sup>11</sup> [[wsdl](#)<sup>12</sup> | [xsd](#)<sup>13</sup>]
  - WS-BaseFaults (WSRF-BF) specification<sup>14</sup> [[wsdl](#)<sup>15</sup> | [xsd](#)<sup>16</sup>]
- WSN<sup>17</sup>
  - WS-BaseNotification specification<sup>18</sup> [[wsdl](#)<sup>19</sup> | [xsd](#)<sup>20</sup>]
  - WS-Topics specification<sup>21</sup> [[xsd](#)<sup>22</sup>]
- WSA<sup>23</sup>
  - WSA Core<sup>24</sup> [[xsd](#)<sup>25</sup>]
  - WSA SOAP Binding<sup>26</sup> [[xsd](#)<sup>27</sup>]

<sup>1</sup> [http://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=wsrf](http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsrf)

<sup>2</sup> [http://docs.oasis-open.org/wsrf/wsrf-ws\\_resource-1.2-spec-os.pdf](http://docs.oasis-open.org/wsrf/wsrf-ws_resource-1.2-spec-os.pdf)

<sup>3</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/resource/rw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>4</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/resource/r-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>5</sup> [http://docs.oasis-open.org/wsrf/wsrf-ws\\_resource\\_properties-1.2-spec-os.pdf](http://docs.oasis-open.org/wsrf/wsrf-ws_resource_properties-1.2-spec-os.pdf)

<sup>6</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/properties/rpw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>7</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/properties/rp-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>8</sup> [http://docs.oasis-open.org/wsrf/wsrf-ws\\_resource\\_lifetime-1.2-spec-os.pdf](http://docs.oasis-open.org/wsrf/wsrf-ws_resource_lifetime-1.2-spec-os.pdf)

<sup>9</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/lifetime/rlw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>10</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/lifetime/rl-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>11</sup> [http://docs.oasis-open.org/wsrf/wsrf-ws\\_service\\_group-1.2-spec-os.pdf](http://docs.oasis-open.org/wsrf/wsrf-ws_service_group-1.2-spec-os.pdf)

<sup>12</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/servicegroup/sgw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>13</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/servicegroup/sg-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>14</sup> [http://docs.oasis-open.org/wsrf/wsrf-ws\\_base\\_faults-1.2-spec-os.pdf](http://docs.oasis-open.org/wsrf/wsrf-ws_base_faults-1.2-spec-os.pdf)

<sup>15</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/faults/bfw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>16</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/faults/bf-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>17</sup> [http://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=wsn](http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsn)

<sup>18</sup> [http://docs.oasis-open.org/wsn/wsn-ws\\_base\\_notification-1.3-spec-os.pdf](http://docs.oasis-open.org/wsn/wsn-ws_base_notification-1.3-spec-os.pdf)

<sup>19</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/notification/bw-2.wsdl?revision=1.2&view=markup&pathrev=HEAD>

<sup>20</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/notification/b-2.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>21</sup> [http://docs.oasis-open.org/wsn/wsn-ws\\_topics-1.3-spec-os.pdf](http://docs.oasis-open.org/wsn/wsn-ws_topics-1.3-spec-os.pdf)

<sup>22</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/wsrf/notification/t-1.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>23</sup> <http://www.w3.org/TR/ws-addr-core/>

<sup>24</sup> <http://www.w3.org/TR/ws-addr-core/>

<sup>25</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/ws/addressing/ws-addr.xsd?revision=1.2&view=markup&pathrev=HEAD>

<sup>26</sup> <http://www.w3.org/TR/ws-addr-soap/>

<sup>27</sup> <http://viewcvs.globus.org/viewcvs.cgi/wsrf/schema/ws/addressing/ws-addr-wsdl.xsd?revision=1.2&view=markup&pathrev=HEAD>

# Chapter 3. Configuring

## 1. Configuration overview

Java WS Core provides per-`gar` configuration and supports configuration profiles. The configuration information of a service is mainly encapsulated in two separate configuration files:

- `server-config.wsdd` (*Web Service Deployment Descriptor*) - contains information about the web service.
- `jndi-config.xml` (*JNDI configuration file*) - contains information about the resource management.

A service that supports security might also have the `security-config.xml` (security deployment descriptor) file. Please see [Java WS A&A Security Descriptor Framework](#) for details.

All these configuration files are dropped into the `$GLOBUS_LOCATION/etc/<gar.id>/` directory during the deployment process.

## 2. Syntax of the interface:

### 2.1. Global Configuration

The global properties are specified in the `<globalConfiguration>` section of `*server-config.wsdd` files in the `$GLOBUS_LOCATION/etc/globus_wsrf_core/` directory. The configuration item `name` corresponds to the "`name`" attribute in a `<parameter>` sub element, and the `value` is put as a "`value`" attribute within the same parameter element.

**Table 3.1. General configuration parameters**

Name	Value	Description	Comments
<code>logicalHost</code>	<code>&lt;hostname&gt;</code>	This parameter specifies the hostname to use instead of the default local host. It is equivalent to setting the <code>GLOBUS_HOSTNAME</code> environment property. Can be FQDN or just hostname.	Optional
<code>disableDNS</code>	<code>&lt;boolean&gt;</code>	This parameter specifies whether to perform DNS lookup on the <code>logicalHost</code> parameter. By default, " <code>false</code> " is assumed (DNS lookup is performed).	Optional
<code>domainName</code>	<code>&lt;domain name&gt;</code>	This parameter specifies the domain name to append to the host name if the host name is not qualified by a domain.	Optional
<code>publishHost-Name</code>	<code>&lt;boolean&gt;</code>	This parameter specifies whether to publish the hostname or the ip address. It is only used when DNS lookups are enabled ( <code>disableDNS</code> is false).	Optional
<code>server.id</code>	<code>&lt;string&gt;</code>	This parameter specifies the server id. The server id is used to uniquely identify each container instance. For example, each container gets its own persistent directory based on the server id. By default, the standalone container server id is " <code>&lt;ip&gt;-&lt;containerPort&gt;</code> ". In Tomcat, the server id will default to " <code>&lt;ip&gt;-&lt;webApplicationName&gt;</code> ".	Optional

**Table 3.2. Standalone/embedded container-specific configuration parameters**

Name	Value	Description	Comments
<i>container-Timeout</i>	<int>	This parameter controls the container timeout. That is, the maximum amount of time the container will wait to receive a message from the client. By default it is set to 3 minutes.	Optional
<i>webContext</i>	<name>	This parameter specifies the context name under which the services are published under: <code>http://&lt;host&gt;:&lt;port&gt;/&lt;webContext&gt;/services/MyService</code> . By default "wsrf" name is used. In Tomcat, this parameter is set to the web application's name.	Optional

## 2.2. Container Performance Tuning

While there aren't a large number of parameters which you can use to tune the container for performance, configuring your container in a manner appropriate to the needs of your application can yield significant benefits. Having said that, these are very general guidelines which may not apply to every situation. In addition, many commonly used services have configuration recommendations. It is strongly suggested that you check the performance tuning guide for your particular service before attempting to change these settings on your own.

### 2.2.1. JVM Parameters

The first major parameters you can adjust are not strictly container parameters, but tweaking the parameters of the JVM in which your container is running can provide significant performance benefits. Each implementation of the JVM has its own set of parameters which can be modified, however, all JVM's have parameters to change the heap memory usage. By default, the JVM claims 64 MB from the operating system. This will be too small for any real deployment of the container. For a service such as GRAM, which expects to process large numbers of jobs which may exist for an extended period of time, we recommend specifying at least 1024 MB for the maximum heap memory. In addition, you should specify the minimum amount of heap memory your container will use. To set these values for the container, execute this command:

```
GLOBUS_OPTIONS="-Xms256M -Xmx1024M"
```

This will tell the virtual machine to claim 256 MB as the minimum heap size and 1024 MB as the maximum heap size. As a general rule of thumb, if you specify more memory, your performance will improve. Of course, this is only the case if your machine has sufficient memory.

In addition, certain JVM implementations have additional parameters which can improve performance. The most notable is in the Sun JVM implementation. Specifying the process to be `-server` allows the JVM to run in "server" mode. The JVM will typically perform better on CPU intensive tasks (like most GT containers) when in "server" mode. To set this value, add `-server` to your `GLOBUS_OPTIONS` variable:

```
GLOBUS_OPTIONS="$GLOBUS_OPTIONS -server"
```

### 2.2.2. Container Parameters

The Container parameters also play a significant role in the performance of your container. The main parameters relate to threads.

Setting up threads for a container is as much an art as a science, so here are some guidelines for configuring your container. The number of threads determines how many concurrent requests your container can service. However, just setting this number to a high value is not a good solution, because each thread takes resources. Ideally, you would want to set this number to be equal to the number of processors your machine has, because that would mean that each thread is being serviced all the time (of course, that is assuming that your computer isn't doing anything else, which is never. That's why this is "ideally"). However, unless you are getting only 1 or 2 requests at a time, this will prevent requests from being processed in a timely manner. So, when configuring this value, you will generally want to find a balance between the number of requests you expect to receive and the resources available on the machine. You should usually try to set this value as low as you can. Having said that, if you expect a large number of requests and those requests are either completed quickly or do the work in a separate thread, the default value of 20 maximum threads is usually sufficient. However, in that scenario, you will probably want to set the minimum number of threads to 20 as well. That way you won't take time starting and stopping threads.

So, as a basic rule of thumb, the default thread configuration will be sufficient unless, you a) expect to receive a large number of concurrent requests which can be processed quickly (in which case you should make the minimum and maximum number of threads equal) or b) you will have a low number of concurrent requests that can be processed quickly (in which case, you might consider reducing the maximum number of threads) or c) you will receive a large number of concurrent requests which take a long time to process (in which case you should increase the maximum number of threads). The third situation listed is definitely not ideal, because it will put a heavy load on the server with no real way to balance it. In this scenario, you should consider passing the processing from your service to the Work-Manager. The specific configuration parameters are listed below.

**Table 3.3. Container Thread Parameters**

Name	Value	Description	Comments
<i>containerThreads</i>	<int>	This parameter controls the initial thread pool size for the container. If not set, it defaults to 1.	Optional
<i>containerThreadsMax</i>	<int>	This parameter sets the maximum number of threads for the container. By default it is set to 4 * the <code>containerThread</code> setting.	Optional
<i>containerThreadsHighWaterMark</i>	<int>	This parameter controls when the thread pool of the container should start shrinking (if the number of idle threads exceeds this number). By default it is set to 2 * the <code>containerThread</code> setting.	Optional

The default Thread settings are as follows:

**Table 3.4. Default container thread pool settings**

Type	Min. threads	Max. threads
<i>standalone</i>	2	20
<i>embedded</i>	1	3

### 2.2.3. Client Parameters

The connection timeout parameter in the client can also play a role in tuning performance. This is a new feature in the 4.2 release. It allows a client to keep the http connection open to the server across multiple requests. Setting this to a higher value will mean the same connection is used for longer. This can positively impact performance by eliminating some of the overhead involved in connecting to the server. However, this is not a magic bullet, so don't expect to see huge improvements from this parameter. If you have a long running task on the server, you will probably see modest improvement in the time required to actually submit the request to the server, but the latency in your request will likely

make that mostly moot. Also, if you keep a connection open, you will be limiting the ability of other clients to connect. So this is a parameter that should be changed carefully, depending on your particular circumstances.

## 2.3. Service Configuration

### 2.3.1. WSDD

An example of a deployment descriptor for a CounterService:

```
<service name="CounterService" provider="Handler" use="literal" style="document"> <parameter
    value="org.globus.wsrp.samples.counter.CounterService" />
    <parameter name="handlerClass" value="org.globus.axis.providers.RPCProvider" />
    <parameter name="scope" value="Application" />
    <wsdlFile>share/schema/core/samples/counter/counter_service.wsdl</wsdlFile>
    <parameter name="allowedMethodsClass" value="com.counter.CounterPortType" />
    <parameter name="providers" value=" DestroyProvider SetTerminationTimeProvider
        GetRPPProvider SubscribeProvider GetCurrentMessageProvider" />
</service>
```

Services are defined in a `<service>` element. The `"name"` attribute of the `<service>` element defines the remotely accessible name of the service. The service handle will have the form of `<hosting environment URL>/foo`, where:

- the hosting environment URL typically is `http://<host>:<port>/wsrf/services`.
- `foo` is the name of the service (`<service name="foo" ...>`).

The `use` attribute should be set to *literal* and the `style` attribute to *document* for all WSRF/WSN based services. The configuration information for a service is defined by various `<parameter>` sub-elements within a `<service>` element. The configuration item `name` corresponds to the `"name"` attribute in a `<parameter>` sub element, and the `value` is put as a `"value"` attribute within the same parameter element.

**Table 3.5. Axis Standard Parameters**

Name	Value	Description	Comments
<i>className</i>	<class>	This parameter specifies a class that implements the web service methods.	Required
<i>handler-Class</i>	<class>	This parameter specifies what dispatcher to use to send a request to a service method. This parameter is required if the <i>provider</i> attribute of the <i>service</i> is set to <code>Provider</code> . The default dispatcher we provide is called <i>org.globus.axis.providers.RPCProvider</i> . It enables special features such as operation providers or security support.	Recommended in our environment
<i>scope</i>	<value>	Scope value can be one of: <i>Request</i> (the default), <i>Application</i> , or <i>Session</i> . If <i>Request</i> scope is used, a new service object is created for each SOAP request that comes in for the service. If <i>Application</i> scope is used, only a single instance of the service object is created and used for all SOAP requests that come in for the service. If <i>Session</i> scope is used, a new service object is created for each session-enabled client who accesses the service. <i>Note: Only Request and Application scopes are supported when used with org.globus.axis.providers.RPCProvider handlerClass.</i>	<i>Application</i> scope is recommended
<i>wSDLFile</i>	<path>	This parameter points to a wSDL file for the service. The wSDL file must contain the <i>wSDL:service</i> entry. The file location can be relative or absolute. A relative file location is recommended.	Required in our environment
<i>allowedMethods</i>	<list of methods>	This parameter specifies a space or comma separated list of method names that can be called via SOAP. "*" indicates that all methods of the service class can be invoked via SOAP.	Optional. By default all methods are allowed.

**Table 3.6. Java WS Core Parameters**

Name	Value	Description	Comments
<i>loadOnStartup</i>	<boolean>	If set to <i>true</i> this parameter will cause the web service and the corresponding ResourceHome (if any) to be initialized (with proper security settings if configured) at container startup. This is useful for restarting some tasks, etc. at container startup without having to call the service. Please check <a href="#">Section 1.1, "How can I force my service to initialize when the container starts?"</a> for details.	Optional
<i>allowedMethodsClass</i>	<class>	This parameter is similar to the <i>allowedMethods</i> standard Axis property but it specifies a Java class or an interface that is introspected to come up with a list of allowed methods that can be called remotely on the service. It is useful for easily restricting the SOAP-accessible methods of the service. Usually the class specified in this parameter would be the remote interface class generated for the service. This parameter only has effect if used with <i>org.globus.axis.providers.RPCProvider</i> handlerClass.	Optional
<i>providers</i>	<list of providers>	This parameter specifies a space separated list of provider names or class names. Please see the <a href="#">Operation provider support</a> section for details. This parameter only has effect if used with <i>org.globus.axis.providers.RPCProvider</i> handlerClass.	Optional

Please see [Custom Deployment](#)<sup>1</sup> for details on Axis Web Services Deployment Descriptor.

## 2.3.2. JNDI

An example of a JNDI configuration bit for a CounterService:

```
<service name="CounterService"> <resource name="home"
    type="org.globus.wsrfl.samples.counter.CounterHome"> <resourceParams>
    <parameter> <name>factory</name>
    <value>org.globus.wsrfl.jndi.BeanFactory</value>
    </parameter> <parameter>
    <name>resourceClass</name>
    <value>org.globus.wsrfl.samples.counter.PersistentCounter</value>
    </parameter> <parameter>
    <name>resourceKeyName</name>
    <value>{http://counter.com}CounterKey</value>
    </parameter> <parameter>
    <name>resourceKeyType</name>
    <value>java.lang.Integer</value> </parameter>
    </resourceParams> </resource> </service>
```

Each service in WSDD should have a matching entry in the JNDI configuration file with the same name. Under each service entry in JNDI different resource objects or entries might be defined. Please see [Section 7, “JNDI, Resources and Objects”](#) for details. Each service entry in JNDI should have a resource defined called "home". That resource is the *ResourceHome* implementation for the service (as specified by the type attribute). Depending on the ResourceHome implementation different options can be configured for the ResourceHome. Currently we have two main base ResourceHome implementations: `org.globus.wsrfl.impl.ResourceHomeImpl` and `org.globus.wsrfl.impl.ServiceResourceHome`.

*Note:* All "home" resources must specify a factory parameter with `org.globus.wsrfl.jndi.BeanFactory` value.

### 2.3.2.1. ResourceHomeImpl

The *ResourceHomeImpl* is a generic and reusable *ResourceHome* implementation. It supports persistent resources, resource caching, resource sweeper, etc.

---

<sup>1</sup> <http://ws.apache.org/axis/java/user-guide.html#PublishingServicesWithAxis>

**Table 3.7. ResourceHomeImpl parameters**

<i>Name</i>	<i>Value</i>	<i>Description</i>	<i>Comments</i>
<i>resourceKey-Name</i>	<qname>	This parameter specifies a QName of the resource key. The namespace is specified in the { }. For example, this QName will be used to discover the SOAP header that contains the key of the resource in the request.	Required
<i>resourceKey-Type</i>	<class>	This parameter specifies the type of the resource key as a Java class. The key XML element is deserialized into this Java type. The Java type can be for any simple Java type, Axis generated bean, or a class with a type mapping.	Optional. Defaults to <code>java.lang.String</code>
<i>resourceClass</i>	<class>	This parameter specifies the classname of the resource object. This is used to ensure that right type of resource object is added to resource home and to instantiate the right object if the resource supports persistence.	Required
<i>sweeperDelay</i>	<long>	This parameter specifies how often the resource sweeper runs in milliseconds.	Optional. Defaults to 1 minute
<i>cacheLocation</i>	<jndi path>	This parameter specifies the JNDI location of the resource cache for this resource home. Please see <a href="#">Configuring Resource Cache</a> below for details.	Optional

### 2.3.2.1.1. Configuring Resource Cache

If *ResourceHomeImpl* is configured with resource class that implements the *PersistenceCallback* interface it will store the resource objects wrapped in [Java SoftReference](#)<sup>2</sup>. That allows the JVM to automatically reclaim these resource objects, thus reducing the memory usage. Since the JVM can decide to reclaim these objects at any point, sometimes a resource object can be reclaimed between two subsequent invocations on the same resource. This for example can cause the state of the resource to be reloaded from disk on each call. To prevent the JVM from reclaiming the resource objects so quickly a cache can be setup up to hold direct references to these objects. A basic LRU (least recently used) cache implementation is provided. Other cache implementations can be used as long as they implement the *org.globus.wsrfultils.cache.Cache* interface.

To configure a cache for *ResourceHomeImpl* first define a cache resource entry in JNDI, for example:

```
<resource name="cache" type="org.globus.wsrfultils.cache.LRUCache">
  <resourceParams>
    <parameter>
      <name>factory</name>
      <value>org.globus.wsrfultils.jndi.BeanFactory</value>
    </parameter>
    <parameter>
      <name>timeout</name>
      <value>120000</value>
    </parameter>
    <parameter>
      <name>maxSize</name>

```

<sup>2</sup> <http://java.sun.com/j2se/1.4.2/docs/api/java/lang/ref/SoftReference.html>

```

        <value>1000</value>
    </parameter>
</resourceParams>
</resource>

```

The *"timeout"* parameter (in ms) is used to specify the idle time of the resource object before it is removed from the cache. Also, the *"maxSize"* parameter can be used to specify the maximum size of the cache. By default the cache is configured without any size limit and 5 minutes timeout.

Once the cache resource entry is defined add the *"cacheLocation"* parameter to the service *home* resource. The *"cacheLocation"* parameter value is the JNDI name of the cache resource:

```

<service name="CounterService">
  <resource name="home" type="...">
    <resourceParams>
      ...
      <parameter>
        <name>cacheLocation</name>
        <value>java:comp/env/services/CounterService/cache</value>
      </parameter>
      ...
    </resourceParams>
  </resource>
  ...
  <resource name="cache" type="org.globus.wsrflib.cache.LRUCache">
    ...
  </resource>
</service>

```

Please note that once the object is removed from the cache it is still up to the JVM to actually reclaim the object. Also, the same cache resource can be reused in different services but usually one cache per service should be configured.

### 2.3.2.2. ServiceResourceHome

This implementation does not accept any special parameters.

## 2.4. Usage Statistics Configuration

Java WS Core container and other GT services are configured to send out usage statistics. Please see the [Usage Statistics](#) section in the [Java WS Core Admin Guide](#) for more information.

The targets to which the usage statistics are sent to are configured via the *usageStatisticsTargets* parameter defined in the `<globalConfiguration>` section of the `$GLOBUS_LOCATION/etc/globus_wsrflib_core/server-config.wsdd` file. The *usageStatisticsTargets* parameter specifies a space separated list of targets to which the usage statistics of various components will be sent to. Each target is of form: `host[:port]` (port is optional, if not specified a default port will be assumed). By default usage statistics are sent to `usage-stats.globus.org:4810`.

To disable sending of the usage statistics remove this parameter, comment it out, or remove all of its values.

## 2.5. Configuration Profiles

Configuration profiles allow for the same Java WS Core installation to have multiple configurations. That is, the same installation can be used to run different containers each with different configuration.

When a `.gar` file is deployed, a `-Dprofile` option can be specified to deploy the configuration files under a specific profile name. If the profile name is specified, the deploy operation will drop the configuration file as `$GLOBUS_LOCATION/etc/<gar.id>/<profile.name>-server-config.wsdd` and/or `$GLOBUS_LOCATION/etc/<gar.id>/<profile.name>-jndi-config.xml`. The configuration profiles can also be created by hand simply by copying and/or renaming the configuration files appropriately. Each configuration profile should duplicate the contents of `$GLOBUS_LOCATION/etc/globus_wsrf_core/server-config.wsdd` and `$GLOBUS_LOCATION/etc/globus_wsrf_core/jndi-config.xml` in order to have the basic functionality work properly.

Once a configuration profile is created, the `standalone container` can be started with a `-profile` option to load configuration files in a specific profile.

## 3. Configuring an `/etc/init.d` entry for the standalone container

To create an `/etc/init.d` entry for the standalone container do the following steps:

1. As root create `/etc/init.d/gt4container` script with the following contents:

```
ACCOUNT=globus GLOBUS_LOCATION=<globusLocation>
INIT=$GLOBUS_LOCATION/etc/init.d/globus-ws-java-container su $ACCOUNT -c "$INIT $*"
```

2. Set executable permissions on the `/etc/init.d/gt4container` script and register it with the `init.d` system:

```
$ chmod +x /etc/init.d/gt4container $ /sbin/chkconfig -a gt4container
```

After this step the container should start automatically after the next reboot. Make sure the container is configured with a global security descriptor that explicitly points to long term credentials.

To start the container by hand run:

```
$ /etc/init.d/gt4container start
```

To stop the container by hand run:

```
$ /etc/init.d/gt4container stop
```

# Chapter 4. Environment variable interface

## 1. Environmental variables for Java WS Core

**Table 4.1. Globus standard environment variables**

<i>Name</i>	<i>Value</i>	<i>Description</i>	<i>Comments</i>
GLOBUS_LOCATION	<path>	The <path> is the root location of the Java WS Core installation. Must be an absolute path.	Required
GLOBUS_TCP_PORT_RANGE	<min,max>	The <min,max> is the minimum and maximum port range for TCP server sockets (useful for systems behind firewalls). For example, if set, the notification sink on the client will be started within that port range.	Optional
GLOBUS_TCP_SOURCE_PORT_RANGE	<min,max>	The <min,max> is the minimum and maximum port range for TCP outgoing sockets (useful for systems behind firewalls).	Optional
GLOBUS_UDP_SOURCE_PORT_RANGE	<min,max>	The <min,max> is the minimum and maximum port range for UDP outgoing sockets (useful for systems behind firewalls).	Optional
GLOBUS_HOSTNAME	<host>	The <host> is either a hostname or ip address. The host ip address under which the container and services will be exposed.	Optional

**Table 4.2. Launch script specific environment variables**

<i>Name</i>	<i>Value</i>	<i>Description</i>	<i>Comments</i>
GLOBUS_OPTIONS	<arguments>	The <arguments> are arbitrary arguments that can be passed to the JVM. See below for a detailed list of supported options.	Optional
JAVA_HOME	<path>	The <path> is the root location of the JVM installation. If set, the JVM from that installation will be used. Otherwise, the first one found in path will be used.	Optional
CLASSPATH	<classpath>	This environment property is ignored by launch scripts.	Ignored

**Table 4.3. Options supported by the GLOBUS\_OPTIONS environment property**

<i>Name</i>	<i>Value</i>	<i>Description</i>
-Dorg.globus.wsrf.proxy.port	int	This property specifies the port number of the proxy server. The proxy server must run on the same machine as the container. This setting will cause the service address to have the port of the proxy instead of the container (only applies to code that uses the <code>ServiceHost</code> or <code>AddressingUtils</code> API).
-Dorg.globus.wsrf.container.server.id	string	This property specifies the server id. The server id is used to uniquely identify each container instance. For example, each container gets its own persistent directory based on the server id. By default the standalone container will store the persistent resources under the <code>~/ .globus/persisted/&lt;ip&gt;-&lt;containerPort&gt;</code> directory. While in Tomcat the <code>~/ .globus/persisted/&lt;ip&gt;-&lt;webApplicationName&gt;</code> directory will be used instead. This property overwrites the default server id and therefore indirectly controls which storage directory is used by the container. If set, the container will store the persisted resources under <code>~/ .globus/persisted/&lt;server . id&gt;/</code> instead. Note, that if somehow multiple containers running as the same user on the same machine end up with the same server id / persistent directory they might overwrite each other's persistent data.
-Dorg.globus.wsrf.container.persistence.dir	directory	This property specifies the base directory that will be used for storing the persistent resources. This property overwrites the default ( <code>~/ .globus/persisted/</code> ) base directory assumed by the container.

Any JVM options can also be passed using the GLOBUS\_OPTIONS environment property.

# Java WS Core Commands

These command line tools are available on Unix and Windows platforms and will work in the same way (of course within the platform rules - the path syntax, variable definitions, etc.).

The wsrf-\* and wsn-\* clients should work against any service that supports the given WSRF or WSN operations.

DRAFT

# Name

`globus-start-container --` Starts standalone container

`globus-start-container`

## Tool description

Starts a standalone container. By default a secure container is started on port 8443 and is accessible via HTTPS. On successful startup a list of services will be displayed on the console. By default the non secure (HTTP) container is started on port 8080.

## Command syntax

```
globus-start-container [options]
```

**Table 11. Options**

<b>-help</b>	Displays help information about the command.
<b>-p &lt;port&gt;</b>	Sets the port number for the container.
<b>-i &lt;address&gt;</b>	Binds container to the specified network address.
<b>-quiet</b>	Does not show a list of services at startup.
<b>-debug</b>	Enables debug mode.
<b>-nosec</b>	Starts a non secure (HTTP) container. Please note that this option only disables transport security. Message security can still be used.
<b>-containerDesc &lt;file&gt;</b>	Specifies a container security descriptor file.
<b>-profile &lt;name&gt;</b>	Specifies a configuration profile name for the container.

# Name

`globus-stop-container --` Stops standalone container

`globus-stop-container`

## Tool description

Stops a standalone container. By default this command will attempt to stop a container running on **localhost:8443** and perform a **soft** shutdown.

The **globus-stop-container** command invokes a **ShutdownService** running in the container. By default that service is configured to perform **self** authorization and therefore the **globus-stop-container** must be executed with the same credentials as the container it is running with. Alternatively, the service can be configured with a gridmap file to allow a subset of users (with their own credentials) to invoke the service (please see the service security deployment descriptor for details).

## Command syntax

`globus-stop-container [options] ['soft' | 'hard']`

DRAFT

**Table 12. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

**Table 13. Shutdown options**

<b>'soft'</b>	This option lets the threads die naturally.
<b>'hard'</b>	This option forces an immediate JVM shutdown.

Example:

```
$ globus-stop-container soft
```

Please see the [troubleshooting section](#) if you are having problems with `globus-stop-container`.

## Name

`globus-start-container-detached --` Starts standalone container detached from controlling TTY

`globus-start-container-detached`

## Tool description

Starts a standalone container detached from the controlling TTY. This can be useful for long running containers or when started from `init.d` scripts. Container log goes to `$GLOBUS_LOCATION/var/container.log` and a PID file is written to `$GLOBUS_LOCATION/var/container.pid`. `globus-start-container-detached` is just a wrapper around `globus-start-container` so see [globus-start-container](#) for more information and options.



### Note

Note that this tool is only available after doing a full Globus install. It is not available in Java WS Core only installs.

## Command syntax

```
globus-start-container-detached [options] | [arguments to container]
```

**Table 14. Options**

<b>-logfile &lt;file&gt;</b>	Specifies an alternate container log file.
<b>-append</b>	Do not overwrite the existing log file.
<b>-pidfile &lt;file&gt;</b>	Specifies an alternate PID file location.

# Name

`globus-stop-container-detached --` Stops standalone container detached from controlling TTY

`globus-stop-container-detached`

## Tool description

Stops a standalone container detached from the controlling TTY. `$GLOBUS_LOCATION/var/container.pid` is used to find the PID of the running container and signals are sent to stop the container.



### Note

Note that this tool is only available after doing a full Globus install. It is not available in Java WS Core only installs.

## Command syntax

`globus-stop-container-detached [options]`

**Table 15. Options**

<code>-pidfile &lt;file&gt;</code>	Specifies an alternate PID file location.
------------------------------------	---

## Name

`wsrf-destroy --` Destroys a resource

`wsrf-destroy`

## Tool description

Destroys a resource.

## Command syntax

`wsrf-destroy [options]`

DRAFT

**Table 16. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsrfl-destroy -s http://localhost:8080/wsrfl/services/CounterService \ -k
  "{http://counter.com}CounterKey" 123
```

# Name

`wsrf-set-termination-time` -- Sets termination time of a resource

`wsrf-set-termination-time`

# Tool description

Sets a termination time of a resource.

# Command syntax

`wsrf-set-termination-time` [options] <seconds> | 'infinity'

The following are command-specific options in addition to the common options:

**Table 17. Command-specific options**

<b>-u, --utc</b>	Display time in UTC.
------------------	----------------------

**Table 18. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"   123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsrfl-set-termination-time -s http://localhost:8080/wsrfl/services/CounterService \ -k
  "{http://counter.com}CounterKey" 123 30
```

## Name

`wsrf-query` -- Performs query on a resource property document

`wsrf-query`

## Tool description

Queries the resource property document of a resource. By default, a simple XPath query is assumed that returns the entire resource property document.

## Command syntax

```
wsrf-query [options] [query expression] [dialect]
```

DRAFT

**Table 19. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Examples:

```
$ wsrif-query -s https://127.0.0.1:8443/wsrif/services/DefaultIndexService \
  "count(//*[local-name()='Entry'])"
```

```
$ wsrif-query -s https://127.0.0.1:8443/wsrif/services/DefaultIndexService \
  "number(//*[local-name()='GLUECE']/glue:ComputingElement/glue:State/@glue:FreeCPUs)=0"
```

```
$ wsrif-query -s http://localhost:8080/wsrif/services/ContainerRegistryService \
  "/*/*/*/*[local-name()='Address']"
```

# Name

`wsrp-get-property --` Gets values of a single resource property

`wsrp-get-property`

## Tool description

Gets a single resource property from a resource.

## Command syntax

`wsrp-get-property [options] <property>`

The `<property>` is a QName of the resource property in the string form: `{namespaceURI}localPart`.

DRAFT

**Table 20. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsrif-get-property -s http://localhost:8080/wsrif/services/CounterService \ -k
  "{http://counter.com}CounterKey" 123 \
  "{http://docs.oasis-open.org/wsrif/2004/06/wsrif-WS-ResourceLifetime-1.2-draft-01.xsd}Cu
```

## Name

`wsrfe-get-properties --` Gets values of multiple resource properties

`wsrfe-get-properties`

## Tool description

Gets multiple resource properties from a resource.

## Command syntax

```
wsrfe-get-properties [options] <property1> [<property2>...  
  <propertyN>]
```

Each `<propertyN>` is a QName of the resource property in the string form: `{namespaceURI}localPart`.

DRAFT

**Table 21. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  -k "{http://www.globus.org}MyKey" 123
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsrif-get-properties -s http://localhost:8080/wsrif/services/CounterService \ -k
  "{http://counter.com}CounterKey" 123 \
  "{http://docs.oasis-open.org/wsrif/2004/06/wsrif-WS-ResourceLifetime-1.2-draft-01.xsd}Cu
  \
  "{http://docs.oasis-open.org/wsrif/2004/06/wsrif-WS-ResourceLifetime-1.2-draft-01.xsd}Te
```

## Name

`wsr-insert-property` -- Inserts values into a resource property

`wsr-insert-property`

## Tool description

Inserts a property into the resource property document of a resource.

## Command syntax

```
wsr-insert-property [options] <propertyValueFile>
```

The **<propertyValueFile>** is an XML file that contains the value of the resource property. The QName of the property is the outer most element.

DRAFT

**Table 22. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example: Contents of **in.xml**:

```
<doc> <ns1:foo xmlns:ns1="http://widgets.com"> Value1
  </ns1:foo> <ns1:foo xmlns:ns1="http://widgets.com"> Value2
</ns1:foo> </doc>
```

```
$ wsrf-insert-property -s http://localhost:8080/wsrf/services/WidgetService \ -k
  "{http://www.globus.org/namespaces/2004/06/core}WidgetKey" 123 \ in.xml
```

## Name

wsrf-update-property -- Updates value of a resource property

wsrf-update-property

## Tool description

Updates the property value in the resource property document of a resource.

## Command syntax

```
wsrf-update-property [options] <propertyValueFile>
```

The **<propertyValueFile>** is an XML file that contains the value of the resource property. The QName of the property is the outermost element.

DRAFT

**Table 23. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example: Contents of **in.xml**:

```
<doc> <ns1:foo xmlns:ns1="http://widgets.com"> Value
  </ns1:foo> </doc>
```

```
$ wsrfe-update-property -s http://localhost:8080/wsrfe/services/WidgetService \ -k
  "{http://www.globus.org/namespaces/2004/06/core}WidgetKey" 123 \ in.xml
```

## Name

`wsrf-delete-property --` Deletes a resource property

`wsrf-delete-property`

## Tool description

Deletes a resource property from the resource property document of a resource.

## Command syntax

```
wsrf-delete-property [options] <property>
```

The `<property>` is a QName of the resource property in the string form: `{namespaceURI}localPart`.

DRAFT

**Table 24. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsrfl-delete-property -s http://localhost:8080/wsrfl/services/WidgetService \ -k
  "{http://www.globus.org/namespaces/2004/06/core}WidgetKey" 123 \
  "{http://widgets.com}foo"
```

## Name

`wsn-get-current-message --` Gets a current message associated with a topic

`wsn-get-current-message`

## Tool description

Gets the current message associated with the specified topic.

## Command syntax

`wsn-get-current-message [options] <topic>`

The `<topic>` is a QName of the resource property in the string form: `{namespaceURI}localPart`.

DRAFT

**Table 25. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsn-get-current-message -s
  http://localhost:8080/wsrf/services/CounterService \ -k "{http://counter.com}CounterK
  "{http://counter.com}Value"
```

## Name

`wsn-pause-subscription --` Pauses a subscription

`wsn-pause-subscription`

## Tool description

Pauses a subscription (notifications on that subscription will not be sent out until it is resumed).

## Command syntax

`wsn-pause-subscription [options]`

DRAFT

**Table 26. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  -k "{http://www.globus.org}MyKey" 123
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either ' <b>limited</b> ' or ' <b>full</b> '. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be ' <b>msg</b> ' for GSI Secure Message, or ' <b>conv</b> ' for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be ' <b>sig</b> ' for signature or ' <b>enc</b> ' for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be ' <b>self</b> ', ' <b>host</b> ', ' <b>none</b> ', or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsn-pause-subscription -s
  http://localhost:8080/wsrf/services/SubscriptionManagerService \ -k
  "{http://www.globus.org/namespaces/2004/06/core}acc271c0-4df9-11d9-ab19-87da3bc7cf28"
```

## Name

`wsn-resume-subscription --` Resumes a subscription

`wsn-resume-subscription`

## Tool description

Resumes a subscription (notifications on that subscription will be sent out again).

## Command syntax

`wsn-resume-subscription [options]`

DRAFT

**Table 27. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsn-resume-subscription -s
  http://localhost:8080/wsrf/services/SubscriptionManagerService \ -k
  "{http://www.globus.org/namespaces/2004/06/core}acc271c0-4df9-11d9-ab19-87da3bc7cf28"
```

## Name

wsn-subscribe -- Subscribes to a topic

wsn-subscribe

## Tool description

Subscribes to a topic.

## Command syntax

```
wsn-subscribe [options] <topic>
```

The <topic> is a QName of the resource property in the string form: **{namespaceURI}localPart**.

The following are subscribe-specific options in addition to the common options:

**Table 28. Command-specific options**

<b>-r, --resDescFile &lt;file&gt;</b>	Specifies a file containing a resource security descriptor for the notification consumer resource.
<b>-b, --subEpr &lt;file&gt;</b>	Specifies a file to which the subscription resource EPR will be saved.

**Table 29. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ wsn-subscribe -s http://localhost:8080/wsrf/services/CounterService \ -k
  "{http://counter.com}CounterKey" 123 \ "{http://counter.com}Value"
```

## Name

globus-deploy-gar -- Deploys a GAR file (locally)

globus-deploy-gar

## Tool description

Deploys a GAR file (locally) into Java WS Core or Apache Tomcat container.

## Command syntax

```
globus-deploy-gar [options] <gar.file>
```

The `<gar.file>` is the path to the GAR file to be deployed.

**Table 30. Options**

<b>-help</b>	Displays help information about the command.
<b>-debug</b>	Enables debug mode.
<b>-verbose</b>	Enables verbose mode.
<b>-backup</b>	Creates backup of existing configuration files.
<b>-overwrite</b>	Overwrite existing deployment.
<b>-profile &lt;name&gt;</b>	Specifies the profile name under which the configuration files in the GAR will be deployed. Please see "Configuration Profiles" under <a href="#">Configuring Java WS Core</a> for details.
<b>-tomcat &lt;dir&gt;</b>	Deploys a GAR file to Apache Tomcat. The <code>&lt;dir&gt;</code> argument must point to the Tomcat installation directory. <i>Note:</i> Java WS Core must be already deployed in Tomcat. Please see <a href="#">Deploying into Tomcat</a> section for details.
<b>-D&lt;property&gt;=&lt;value&gt;</b>	Passes arbitrary property-value pairs. See below for the list of <a href="#">currently supported properties</a> .

**Table 31. Supported property-value pairs**

<b>-Dall.scripts=true</b>	Causes Windows and Unix launcher scripts to be generated.
<b>-DdoValidation=false</b>	Turns off automatic validation of service configuration files.



### Note

Since GT 4.2, **globus-deploy-gar** command will NOT overwrite the existing deployment unless `-overwrite` option is specified. It is recommended to undeploy the existing deployment first. The container must be off to deploy a GAR file.

Example 1:

```
$ globus-deploy-gar /tmp/gars/globus_wsrf_core_samples_counter.gar
```

The above command will deploy the `globus_wsrf_core_samples_counter.gar` into Java WS Core installation directory. The above command invokes the `deployGar` task in the `build-packages.xml` Ant build file. The above example is equivalent to running:

```
$ ant -f $GLOBUS_LOCATION/share/globus_wsrf_common/build-packages.xml deployGar \  
-Dgar.name=/tmp/gars/globus_wsrf_core_samples_counter.gar
```

The profile name can be passed using the **-Dprofile** Ant option. To enable back up of the existing configuration files add the **-DcreateBackup=true** Ant option. Make sure to use the *absolute* path name for the gar file when using Ant directly.

Example II:

```
$ globus-deploy-gar -tomcat /soft/tomcat-5.5.20 \  
/tmp/gars/globus_wsrf_core_samples_counter.gar
```

The above command will deploy the `globus_wsrf_core_samples_counter.gar` into Apache Tomcat. The above command invokes the `deployGar` task in the `tomcat-service.xml` Ant build file. The above example is equivalent to running:

```
$ ant -f $GLOBUS_LOCATION/share/globus_wsrf_common/tomcat/tomcat-service.xml deployGar \  
-Dgar.name=/tmp/gars/globus_wsrf_core_samples_counter.gar \ -Dtomcat.dir=/soft/tomcat-
```

By default the GAR file will be deployed under the "wsrf" web application. To specify a different web application name use **-Dwebapp.name=<name>** option.

# Name

globus-undeploy-gar -- Undeploys a GAR file (locally)

globus-undeploy-gar

## Tool description

Undeploys a GAR file (locally) from Java WS Core or Apache Tomcat container.

## Command syntax

```
globus-undeploy-gar [options] <gar.id>
```

The <gar.id> is the base name of the GAR file without the **.gar** extension to undeploy. For example if the GAR file is "foo.gar", then the GAR id is "foo". The directory names under **\$GLOBUS\_LOCATION/etc/globus\_packages/** are the GAR ids of the undeployable items.

**Table 32. Options**

<b>-help</b>	Displays help information about the command.
<b>-debug</b>	Enables debug mode.
<b>-verbose</b>	Enables verbose mode.
<b>-tomcat &lt;dir&gt;</b>	Undeploy a GAR file from Apache Tomcat. The <dir> argument must point to the Tomcat installation directory.
<b>-D&lt;property&gt;=&lt;value&gt;</b>	Passes arbitrary property-value pairs.



### Note

The container must be off to undeploy a GAR file.

Example I:

```
$ globus-undeploy-gar globus_wsrf_core_samples_counter
```

The above command will undeploy globus\_wsrf\_core\_samples\_counter GAR from Java WS Core installation directory. The above command invokes the **undeployGar** task in the build-packages.xml Ant build file. The above example is equivalent to running:

```
$ ant -f $GLOBUS_LOCATION/share/globus_wsrf_common/build-packages.xml undeployGar \
  -Dgar.id=globus_wsrf_core_samples_counter
```

Example II:

```
$ globus-undeploy-gar -tomcat /soft/tomcat-5.5.20 \ globus_wsrf_core_samples_counter
```

The above command will undeploy globus\_wsrf\_core\_samples\_counter GAR from Apache Tomcat. The above command invokes the **undeployGar** task in the tomcat-service.xml Ant build file. The above example is equivalent to running:

```
$ ant -f $GLOBUS_LOCATION/share/globus_wsrf_common/tomcat/tomcat-service.xml undeployGar \
  \ -Dgar.id=globus_wsrf_core_samples_counter \ -Dtomcat.dir=/soft/tomcat-5.5.20
```

By default the GAR file will be undeployed under the "wsrf" web application. To specify a different web application name use **-Dwebapp.name=<name>** option.

DRAFT

## Name

globus-check-environment -- Displays component version information and validates JVM version.

globus-check-environment

## Tool description

Displays component version information and validates the JVM version. This tool is primarily used for debugging purposes.

DRAFT

# Name

globus-check-remote-environment -- Displays remote component version information.

globus-check-remote-environment

# Tool description

Displays remote component version information.

# Command syntax

```
globus-check-environment [-help] -s endpoint -z authz
```

**Table 33. Options**

<b>-help</b>	Displays help information about the command.
<b>-s endpoint</b>	Remote endpoint to print version information about. It should be of the format protocol://host:port, example https://localhost:8443.
<b>-z authz</b>	Sets authorization, can be 'self', 'host', 'hostOrSelf' or 'none' or a string specifying the expected identity of the remote party. Defaults to no authorization.

## Name

`globus-update-client-config --` Merges `client-config.wsdd` files from deployed modules into the global `client-config.wsdd` configuration file

```
globus-update-client-config
```

## Tool description

Merges multiple `client-config.wsdd` files from deployed modules into the global configuration file. Scans each `$GLOBUS_LOCATION/etc/<modulename>/client-config.wsdd` and merges the contents into `$GLOBUS_LOCATION/client-config.wsdd`. This tool is primarily intended for use by administrators and automation tools to facilitate the adding and removing of module specific type-mapping and/or other client-side configuration from the global `client-config.wsdd` file used by the Globus installation.

## Command syntax

```
globus-update-client-config [<filename>]
```

**Table 34. Options**

<code>&lt;filename&gt;</code>	Optional argument that specifies an alternate path to write the result <code>client-config.wsdd</code> file. By default, running the program with no arguments will write the file to <code>\$GLOBUS_LOCATION/client-config.wsdd</code>
-------------------------------	---

# Name

globus-validate-descriptors -- Validate configuration files of all services

globus-validate-descriptors

# Tool description

Validates the Web Services Deployment Descriptor (.wsdd) files, JNDI configuration files (jndi-config.xml), and security descriptors for all services.

# Command syntax

```
globus-validate-descriptors [options]
```

**Table 35. Options**

<b>-help</b>	Displays help information about the command.
<b>-debug</b>	Enables debug mode.
<b>-verbose</b>	Enables verbose mode.
<b>-D&lt;property&gt;=&lt;value&gt;</b>	Passes arbitrary property-value pairs.

# Name

globus-reload-container -- Reinitializes standalone container

globus-reload-container

## Tool description

Invokes the **reload()** operation on the **DeployService** running in the remote container. It tells the container to reinitialize all of its services, re-read its and service configuration files, etc. For example, the administrator can change the security descriptor of a service and then use the **globus-reload-container** command to force the container to load the updated configuration without restarting the container.

By default the **DeployService** is configured to perform **self** authorization and therefore the **globus-reload-container** must be executed with the same credentials as the container it is running with. Alternatively, the service can be configured with a gridmap file to allow a subset of users (with their own credentials) to invoke the service (please see the service security deployment descriptor for details).



### Note

This command only works with the standalone container. Please see the [Java WS Core Dynamic Deploy Design Document](#) for more information.

## Command syntax

globus-reload-container [options]

**Table 36. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ globus-reload-container
```

## Name

`globus-remote-undeploy-gar --` Undeploys a GAR file (remotely)

`globus-remote-undeploy-gar`

## Tool description

The **globus-remote-undeploy-gar** command undeploys a GAR file remotely. It invokes the **undeploy()** operation on the **DeployService** running in the remote container. It works just like the `globus-undeploy-gar` command but the GAR file is undeployed remotely.

By default the **DeployService** is configured to perform **self** authorization and therefore the **globus-remote-undeploy-gar** must be executed with the same credentials as the container it is running with. Alternatively, the service can be configured with a gridmap file to allow a subset of users (with their own credentials) to invoke the service (please see the service security deployment descriptor for details).



### Note

This command only works with the standalone container. Please see the [Java WS Core Dynamic Deploy Design Document](#) for more information.

## Command syntax

```
globus-remote-undeploy-gar [options] <gar.id>
```

The `<gar.id>` is the base name of the GAR file without the `.gar` extension to undeploy. For example if the GAR file is `"foo.gar"`, then the GAR id is `"foo"`.

**Table 37. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ globus-remote-undeploy-gar globus_wsrf_core_samples_counter
```

To see what GAR files can be undeployed on the remote container run the following query on the **DeployService**, for example:

```
$ wsrf-query -z hostSelf -s https://127.0.0.1:8443/wsrf/services/DeployService
```

## Name

globus-remote-deploy-gar -- Deploys a GAR file (remotely)

globus-remote-deploy-gar

## Tool description

The **globus-remote-deploy-gar** command deploys a GAR file remotely. It first transfers the GAR file to the **DeployService** running in the remote container and then it deploys it using the **deploy()** operation of the service (the tool can also perform these two operations separately).

By default the **DeployService** is configured to perform **self** authorization and therefore the **globus-remote-deploy-gar** must be executed with the same credentials as the container it is running with. Alternatively, the service can be configured with a gridmap file to allow a subset of users (with their own credentials) to invoke the service (please see the service security deployment descriptor for details).



### Note

This command only works with the standalone container. Please see the [Java WS Core Dynamic Deploy Design Document](#) for more information.

## Command syntax

```
globus-remote-deploy-gar [options] <gar>
```

The **<gar>** can be either an URL or a file location. If a file location is passed to the tool, it will transfer the file to the service via SOAP with Attachments (the **upload()** function) using the **MTOM** format. If an URL is passed, the tool will call the **download()** function of the service, and let the service download the GAR file.

The following are command-specific options in addition to the common options:

**Table 38. Command-specific options**

<b>-n, --transfer</b>	Transfer GAR file only.
<b>-y, --deploy</b>	Deploy GAR file only (assumes the GAR is already transferred to the <b>DeployService</b> ).
<b>-o, --overwrite</b>	Overwrite existing deployment.
<b>-b, --backup</b>	Creates backup of existing configuration files

**Table 39. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Examples:

```
$ globus-remote-deploy-gar /tmp/myService.gar
```

```
$ globus-remote-deploy-gar gsiftp://localhost/tmp/myService.gar
```

To see what GAR files have been transferred but not yet deployed on the remote container run the following query on the **DeployService**, for example:

```
$ wsrfl-query -z hostSelf -s https://127.0.0.1:8443/wsrfl/services/DeployService
```

## Name

`ws-enumerate-start --` Starts an enumeration

`ws-enumerate-start`

## Tool description

Creates a new enumeration context and prints it out to the console.



### Note

The remote service must support the **enumerate** operation of the WS-Enumeration specification.

## Command syntax

`ws-enumerate-start [options]`

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**Table 40. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ ws-enumerate-start -s http://localhost:8080/wsrfl/services/ContainerRegistryService \
> enum.context
```

The created enumeration context will be stored in the `enum.context` file which then can be passed to `ws-enumerate` and `ws-enumerate-end` command line clients.

## Name

ws-enumerate -- Retrieves enumeration data

ws-enumerate

## Tool description

Retrieves the next set of enumeration data and prints it out to the console.



### Note

The remote service must implement the WS-Enumeration specification.

## Command syntax

```
ws-enumerate [options] <enumContextFile>
```

The **<enumContextFile>** is a file that contains the enumeration context.

The following are command-specific options in addition to the common options:

**Table 41. Command-specific options**

<b>-i, --items &lt;int&gt;</b>	Specifies the total number of enumeration items to retrieve. The parameter value can be <b>'all'</b> to retrieve the all the enumeration data. By default, only one element is retrieved.
<b>-r, --maxCharacters &lt;int&gt;</b>	Specifies the maximum number of characters (in Unicode) of the enumeration data that the client can accept at a time. By default, there is no limit on the size of the elements.
<b>-n, --maxElements &lt;int&gt;</b>	Specifies the maximum number of enumeration items to fetch at a time. By default, one element is retrieved at a time.
<b>-o, --maxTime &lt;int&gt;</b>	Specifies the maximum amount of time (in milliseconds) in which the enumeration data must be assembled. By default, there is no time limit.

**Table 42. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  -k "{http://www.globus.org}MyKey" 123
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ ws-enumerate -s http://localhost:8080/wsrf/services/ContainerRegistryService \ -i 10
-n 5 enum.context
```

This command will display 10 elements of the enumeration data obtaining 5 elements at a time from the service.

## Name

`ws-enumerate-end --` Stops an enumeration

`ws-enumerate-end`

## Tool description

Releases an enumeration context.



### Note

The remote service must implement the WS-Enumeration specification.

## Command syntax

`ws-enumerate-end [options] <enumContextFile>`

The `<enumContextFile>` is a file that contains the enumeration context.

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**Table 43. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Example:

```
$ ws-enumerate-end -s http://localhost:8080/wsrf/services/ContainerRegistryService \
  enum.context
```

# Name

globus-xpath-query -- Performs XPath query on a resource property document

globus-xpath-query

## Tool description

The **globus-xpath-query** uses a custom query dialect implementation called TargetedXPath to query the resource property document of a resource. Please see the [querying resource properties using XPath](#) section for more details.

## Command syntax

```
globus-xpath-query [options] [query expression] [rpQName]
```

The **query expression** is an XPath expression. The **rpQName** is a resource property QName. If a resource property is specified only that resource property within the resource property document will be queried. Otherwise, the entire resource property document will be queried. By default, a simple XPath query is assumed that returns the entire resource property document.

**Table 44. Command-specific options**

<b>-n, --nsMapFile &lt;file&gt;</b>	Specifies a file that contains namespace mappings. By default, the <code>etc/globus_wsrf_core/namespace-mappings.xml</code> file is used.
<b>-u, --enumerate</b>	Enumerate the query results. The query response will contain an enumeration context through which the actual query results can be obtained. The returned enumeration context can be used with the <a href="#">ws-enumerate</a> command line tool. Also, please note that by default the enumeration context will expire in 30 minutes.

**Table 45. Common options**

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either <b>'limited'</b> or <b>'full'</b> . Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be <b>'msg'</b> for GSI Secure Message, or <b>'conv'</b> for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be <b>'sig'</b> for signature or <b>'enc'</b> for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be <b>'self'</b> , <b>'host'</b> , <b>'none'</b> , or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

Examples:

```
$ globus-xpath-query -s http://localhost:8080/wsrfl/services/ContainerRegistryService \
  "/wssg:MemberServiceEPR/wsa:Address"
```

The above command will query the entire resource property document of the service.

```
$ globus-xpath-query -s http://localhost:8080/wsrfl/services/ContainerRegistryService \
  "/wssg:MemberServiceEPR/wsa:Address" wssg:Entry
```

The above command will query only the `wssg:Entry` resource property of the resource property document of the service.

```
$ globus-xpath-query -s http://localhost:8080/wsrf/services/ContainerRegistryService \  
-u "//wssg:MemberServiceEPR/wsa:Address" > enum.context $ ws-enumerate \  
-s http://localhost:8080/wsrf/services/ContainerRegistryService \ -i all enum.context
```

The first command will create an enumeration for the query results and store the returned enumeration context in a file. The second command will use the enumeration context stored in that file to retrieve the actual query results.

DRAFT

# Name

Common Java Client Options -- list of common options across commands

## Common Java Client Options

Table 46. Common options

<b>-h, --help</b>	Displays help information about the command.
<b>-d, --debug</b>	Enables debug mode. For example, full stack traces of errors will be displayed.
<b>-e, --eprFile &lt;file&gt;</b>	Specifies an <i>XML</i> file that contains the <i>WS-Addressing</i> endpoint reference.
<b>-s, --service &lt;url&gt;</b>	Specifies the service URL.
<b>-k, --key &lt;name value&gt;</b>	Specifies the resource key. The <b>name</b> is the QName of the resource key in the string form: <b>{namespaceURI}localPart</b> , while the <b>value</b> is the simple value of the key. For complex keys, use the <b>--eprFile</b> option. Example:  <pre>-k "{http://www.globus.org}MyKey"     123</pre>
<b>-f, --descriptor &lt;file&gt;</b>	Specifies a client security descriptor. Overrides all other security settings.
<b>-a, --anonymous</b>	Enables anonymous authentication. Only supported with transport security or the GSI Secure Conversation authentication mechanism.
<b>-g, --delegation &lt;mode&gt;</b>	Enables delegation. <b>mode</b> can be either ' <b>limited</b> ' or ' <b>full</b> '. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-l, --contextLifetime &lt;value&gt;</b>	Sets the lifetime of the client security context. <b>value</b> is in milliseconds. Only supported with the GSI Secure Conversation authentication mechanism.
<b>-m, --securityMech &lt;type&gt;</b>	Specifies the authentication mechanism. <b>type</b> can be ' <b>msg</b> ' for GSI Secure Message, or ' <b>conv</b> ' for GSI Secure Conversation.
<b>-c, --serverCertificate &lt;file&gt;</b>	Specifies the server's <i>certificate</i> file used for encryption. Only needed for the GSI Secure Message authentication mechanism.
<b>-p, --protection &lt;type&gt;</b>	Specifies the protection level. <b>type</b> can be ' <b>sig</b> ' for signature or ' <b>enc</b> ' for encryption.
<b>-x, --proxyFilename &lt;value&gt;</b>	Sets the proxy file to use as client credential.
<b>-z, --authorization &lt;type&gt;</b>	Specifies authorization type. <b>type</b> can be ' <b>self</b> ', ' <b>host</b> ', ' <b>none</b> ', or a string specifying the expected identity of the remote party.
<b>-t, --timeout &lt;timeout&gt;</b>	Specifies client timeout (in seconds). The client will wait maximum of the timeout value for a response from the server before returning an error. By default the timeout value is 10 minutes.

# Appendix A. Errors

DRAFT

**Table A.1. Java WS Core Errors**

Error Code	Definition
Failed to acquire notification consumer home instance from registry	Caused by <code>javax.naming.NameNotFoundException</code> : Name <code>services</code> is not bound in
The <code>WS-Addressing 'To'</code> request header is missing	This warning is logged by the container if the request did not contain the necessary <code>WS-Addressing</code> headers, those headers at all or is somehow misconfigured.
<code>java.io.IOException: Token length X &gt; 33554432</code>	If you see this error in the container log, it usually means you are trying to connect to HTTPS server using <code>https</code> specifies 8443 as a port number and <code>http</code> as the protocol name.
<code>java.lang.NoSuchFieldError: DOCUMENT</code>	This error usually indicates a mismatch between the version of Apache Axis that the code was compiled with and the version currently running with.
<code>org.globus.wsrfl.InvalidResourceKeyException: Argument key is null / Resource key is missing</code>	These errors usually indicate that a resource key was not passed with the request or that an invalid resource key was used (the element <code>QName</code> of the resource key did not match what the service expected).
Unable to connect to <code>localhost:xxx</code>	Cannot resolve <code>localhost</code> . The machine's <code>/etc/hosts</code> isn't set up correctly and/or you do not have DNS for <code>localhost</code> .
<code>org.globus.common.ChainedIOException: Failed to initialize security context</code>	This may indicate that the user's proxy is invalid.
Error: <code>org.xml.sax.SAXException: Unregistered type: class xxx</code>	This may indicate that an Axis generated XML type, defined by the WS RLS XSD, was not properly registered upon deployment without intervention by the user, sometimes they do not.
No socket factory for <code>'https'</code> protocol	When a client fails with the following exception: <pre>java.io.IOException: No socket factory for 'https' protocol at   org.apache.axis.transport.http.HTTPSender.getSocket(HTTPSender.java:100)   org.apache.axis.transport.http.HTTPSender.writeToSocket(HTTPSender.java:110)   org.apache.axis.transport.http.HTTPSender.invoke(HTTPSender.java:120)</pre> <p>FIXME - it may have happened because...</p>

Error Code	Definition
No client transport named 'https' found	<p>When a client fails with the following exception:</p> <pre>No client transport named 'https' found at   org.apache.axis.client.AxisClient.invoke(AxisClient.java:170) at   org.apache.axis.client.Call.invokeEngine(Call.java:2726)</pre> <p>The client is most likely loading an incorrect client-config.wsdd configuration file.</p>
ConcurrentModificationException in Tomcat 5.0.x	<p>If the following exception is visible in the Tomcat logs at startup, it might cause the HTTPSValve to fail:</p> <pre>java.util.ConcurrentModificationException at   java.util.HashMap\$HashIterator.nextEntry(HashMap.java:782) at   java.util.HashMap\$EntryIterator.next(HashMap.java:824) at   java.util.HashMap.putAllForCreate(HashMap.java:424) at   java.util.HashMap.clone(HashMap.java:656) at   mx4j.server.DefaultMBeanRepository.clone(DefaultMBeanRepository.</pre> <p>The HTTPSValve might fail with the following exception:</p> <pre>java.lang.NullPointerException at   org.apache.coyote.tomcat5.CoyoteRequest.setAttribute(CoyoteRequestFacade.java:100) at   org.apache.coyote.tomcat5.CoyoteRequestFacade.setAttribute(CoyoteRequestFacade.java:100) at   org.globus.tomcat.coyote.valves.HTTPSValve.expose(HTTPSVAlve.java:100)</pre> <p>These exceptions will prevent the transport security from working properly in Tomcat.</p>
java.net.SocketException: Invalid argument or cannot assign requested address	<p>FIXME - what causes this?</p>
GAR deploy/undeploy fails with container is running error	<p>A GAR file can only be deployed or undeployed locally while the container is off. However, GAR deployments fail with this error even if the container is off. This usually happens if the container has crashed or was stopped from cleaning up its state files.</p>

# Glossary

## C

certificate A public key plus information about the certificate owner bound together by the digital signature of a CA. In the case of a CA certificate, the certificate is self signed, i.e. it was signed using its own private key.

## G

GAR The GAR (Grid ARchive) file is a single file which contains all the files and information that the container needs to deploy a service. See the Java WS Core Developer's Guide for details.

## J

JNDI Java Naming and Directory Interface (JNDI) API are used to access a central transient container registry. The registry is mainly used for discovery of the *ResourceHome* implementations. However, the registry can also be used store and retrieve arbitrary information. The *jndi-config.xml* files are used to populate the registry. See the [JNDI Tutorial](#)<sup>3</sup> for details.

jndi-config.xml It is an XML-based configuration file used to populate the container registry accessible via the JNDI API. See in the Java WS Core Developer's Guide] for details.

## R

ResourceHome In Java WS Core, resources are managed and discovered via *ResourceHome* implementations. The *ResourceHome* implementations can also be responsible for creating new resources, performing operations on a set of resources at a time, etc. *ResourceHomes* are configured in JNDI and are associated with a particular web service.

## S

server-config.wsdd Axis server-side WSDD configuration file. It contains information about the services, the type mappings and various handlers.

## W

Web Services Addressing (WSA) The WS-Addressing specification defines transport-neutral mechanisms to address web services and messages. Specifically, it defines XML elements to identify web service endpoints and to secure end-to-end endpoint identification in messages. See the [W3C WS Addressing Working Group](#)<sup>14</sup> for details.

<sup>3</sup> <http://java.sun.com/products/jndi/tutorial/>

<sup>14</sup> <http://www.w3.org/2002/ws/addr/>

Web Services Description Language (WSDL)

WSDL is an XML document for describing Web services. Standardized binding conventions define how to use WSDL in conjunction with SOAP and other messaging substrates. WSDL interfaces can be compiled to generate proxy code that constructs messages and manages communications on behalf of the client application. The proxy automatically maps the XML message structures into native language objects that can be directly manipulated by the application. The proxy frees the developer from having to understand and manipulate XML. See the [WSDL 1.1 specification](#)<sup>15</sup> for details.

## X

XML

Extensible Markup Language (XML) is standard, flexible, and extensible data format used for web services. See the [W3C XML site](#)<sup>20</sup> for details.

---

<sup>15</sup> <http://www.w3.org/TR/wsdl>

<sup>20</sup> <http://www.w3.org/XML/>