jGlobus API Changes

> ⛔ **Draft**
> This document is a draft, work-in-progress, and will be updated as prototypes of the changes are completed. Until a beta version of the software is released, the proposed API could change.

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Introduction

Overview

The following is a package and class overview and describes which components of the old jglobus will be ported/deprecated/left out. The packages are split into 3 groups:

1. Alpha version of jGlobus: Security-related packages/classes that must/may/may not be ported for the inital, GSI-focused version of the new jGlobus library.
2. Beta version of jGlobus: Packages/classes that are not relevant for the inital, GSI-focused version of the new jGlobus library, but will be evaluated and ported after NCSA worked on `org.globus.gsi.gssapi`. This is mostly the GRAM/FTP/GridFTP API.
3. Packages/classes that will never be ported, either because the stuff is no longer in use or because it's outdated.

The document covers the first alpha release and the discontinued classes. Beta version information will be presented soon.

Unit test packages/classes are not included in the package/class listing.

Change summary

- We won't be 100% backwards-compatible with the old CoG-jglobus, but try to stay backwards-compatible where it makes sense.
- Package names stay the same.
- A lot of classes will be ported just to be backwards-compatible. Many classes will be deprecated and will be replaced by new functionality in the future. Some replacement code has been written, and we'll provide adapters for this code
- The minimal required Java version will be 1.5

Document Legend

To be able to identify the status of the individual packages/classes with respect to porting requirements more easily, the status is color-encoded:

Status	Meaning
Discontinue	Will not be ported to new jGlobus library
Port	Will be ported to new jGlobus library
Deprecate	Will be ported, but will be marked as deprecated. Adapter classes will be provided, but maybe not in the Alpha version
Evaluate	Yet to be evaluated.

Alpha version of jGlobus

Each table lists the package name, current usage in the library, and the class status in the new library. Last column provides **internal** notes on port to new library.

org.globus.common

Class name	Use in current library	Status	Comments for new library port
ChainedCertificateException	Used in `org.globus.gsi.bc.BouncyCastleUtil`.	Deprecate	Ported Deprecated
ChainedException	Relict from Java 1.3- where there were no chained exceptions (Throwable with a Throwable as cause). Used in many packages: `org.globus.gatekeeper`, `org.globus.gram`, `org.globus.gsi`, `org.globus.io`, `org.globus.mds`, `org.globus.myproxy`.	Deprecate	Ported Deprecated
ChainedGeneralSecurityException	Used in `org.globus.common`, `org.globus.proxy` and `org.globus.ptls`.	Deprecate	Ported Deprecated
ChainedIOException	Used in many packages: `org.globus.gsi`, `org.globus.io.streams`, `org.globus.net`.	Deprecate	Ported. Java 1.5 does not support chained IOExceptions, but Java 1.6 does. Ported and not deprecated for now.
CoGProperties	Responsible for managing the properties file `~/.globus/cog.properties`, which holds information about various properties needed by the security classes. These properties include: • the location of the user certificate file • the location of the user key file • the location of the CA certificates • the location of the proxy file • the tcp port range • the local ip address for DHCP systems • the socket timeout when connecting to a myproxy host Command-line tools and e.g. the GridFTP API e.g. make use of this mechanism to e.g. indicate that a non-default CA cert directory should be used?	Port	Ported. Removed deprecated and MDS-related methods.
ConditionVariable	Unused.	Discontinue.	Removed
ConstrainedMVHashtable	Unused.	Discontinue	Removed
MVHashtable	Used in `org.globus.mds`.	Discontinue	Removed

`ResourceManagerContact`	Used in `org.globus.gram.Gram`.	Port	Ported. Should be moved into `org.globus.gram`.
`Version`	Version information of the JGlobus module, composed as MAJOR.MINOR.PATCH.	Port	Ported

org.globus.gsi

Class name	Use in current library	Status	Comments for new libra
`CertificateRevocationLists`	Used in `org.globus.gsi.GlobusCredential`, `org.globus.gsi.gssapi.GlobusGSSContextImpl`, `org.globus.gsi.proxy.ProxyPathValidator`	Deprecate	Ported. Deprecated. Has CertStore from the Globus
`CertUtil`	Used a lot in `org.globus.gsi` and sub-packages, and `org.globus.tools`	Deprecate	Ported. Deprecated. Has certificate utils `org.globus.gsi.util` `org.globus.gsi.util` `org.globus.gsi.util` `org.globus.gsi.util` These new utility classes
`GSIConstants`	Used all over the place.	Port	Ported. Deprecated proxy integer constants, and ad and `DelegationType`.
`GlobusCredential`	Used in `org.globus.gsi`, `org.globus.myproxy`, `org.globus.tools`	Deprecate	Ported. Deprecated. Has `X509Credential` interna used instead.
`GlobusCredentialException`	Only in `org.globus.gsi.GlobusCredential` and `org.globus.gsi.gssapi.GlobusGSSManagerImpl`	Deprecate	Ported. Deprecated.
`OldCertUtil`	Not used.	Discontinue	Removed
`OpenSSLKey`	Used in `org.globus.gsi`, `org.globus.gsi.bc`, `org.globus.myproxy`, `org.globus.tools`	Port	Ported.
`SigningPolicy`	Used in `org.globus.gsi.TrustedCertificates`, `org.globus.gsi.proxy.ProxyPathValidator`, `org.globus.gsi.ptls.PureTLSTrustedCertificates` and tests	Port	Ported. Has been replace class, which is not backwa
`SigningPolicyParser`	Used in `org.globus.gsi.SigningPolicy` and `org.globus.gsi.TrustedCertificates` and tests.	Deprecate.	Ported. Has been replace SigningPolicyParser whicl to the old one.
`SigningPolicyParserException`	Used in `org.globus.gsi.SigningPolicy` and `org.globus.gsi.TrustedCertificates` and tests.	Discontinue	Has been replaced by `org.globus.security`
`TrustedCertificates`	Used in `org.globus.gsi` and sub-packages and `org.globus.tools`	Deprecate	Ported. Deprecated. Has KeyStore from the Globus
`X509Extension`	Used in `org.globus.gsi` and sub-packages and `org.globus.tools`	Port	Ported. Maybe move to us org.bouncycastle.asn1.x5
`X509ExtensionSet`	Used in `org.globus.gsi`, `org.globus.gsi.bc` and `org.globus.tools`	Port	Ported.

org.globus.gsi.bc

Check if we can use BouncyCastle features directly, instead of providing BouncyCastle utils.

Used in `org.globus.gsi`, `org.globus.myproxy`, `org.globus.tools`

Class name	Use in current library	Status	Comments for new library port

`BouncyCastleCertProcessingFactory`	Used in `org.globus.gsi.bc`, `org.globus.gsi.gssapi`, `org.globus.myproxy`, `org.globus.tools`	Port	Ported. Removed deprecated methods. Not backwards-compatible: Instead of an integer variabl CertificateType enum is expected in various methoc
`BouncyCastleOpenSSLKey`		Port	Ported. Overwritten with new class from crux-securi `org.globus.security.bc.BouncyCastleOpe`) (same functionality)
`BouncyCastleUtil`		Port	Ported. Not backwards-compatible: removed methoc getCertificateType(...) that took a TBSCertificateStru parameter. Methods getCertificateType(...) return a CredentialType enum instead of an integer.
`BouncyCastleX509Extension`	Used in `org.globus.gsi.proxy.ext` and a test	Evaluate	Ported. Seems useful to keep, but depends on the E extension implementation and its use. I don't think th to be ported, if it is replaced by BC functionality - ca this being used directly.
`X509NameHelper`		Port	Ported. (Moved `org.globus.security.util.X509NameHelpe` `org.globus.gsi.bc` and added old methods (toS constructor))

org.globus.gsi.gssapi*

This package and its sub-packages are used all over the place.

Class name	Use in current library	Status	Comments for new library port
GSS-API package. NCSA will work on this.			

org.globus.gsi.jaas

This package is only used within `org.globus.gsi.gssapi`.

Class name	Use in current library	Status	Comments for new library port
`GlobusPrincipal`		Port	Ported (Removed `org.globus.security.jaas.GlobusPrincipal`)
`GlobusSubject`		Port	Ported (Removed `org.globus.security.jaas.GlobusSubject`)
`JaasGssUtil`	A utility class for handling JAAS Subject with GSSCredential.	Port	Moved to gss module, because it depends on classes from this module.
`JaasSubject`		Port	Ported (Removed `org.globus.security.jaas.JaasSubject`)
`PasswordCredential`		Port	Ported (Removed `org.globus.security.jaas.PasswordCredential`)
`SimplePrincipal`		Port	Ported (Removed `org.globus.security.jaas.SimplePrincipal`)
`StandardSubject`		Port	Ported (Removed `org.globus.security.jaas.StandardSubject`)
`UserNamePrincipal`		Port	Ported (Removed `org.globus.security.jaas.UserNamePrincipal`)

org.globus.gsi.proxy

Class name	Use in current library	Status	Comments for new library port

IgnoreProxyPolicyHandler	Not used in jglobus	Port	Ported. Not backwards-compatible: implements new ProxyPolicyHandler).
ProxyPathValidator	Used in several packages in `org.globus.gsi` and in `org.globus.gsi.tools`	Deprecate	Ported. Deprecated. Refactored to use `org.globus.gsi.trustmanager.X509ProxyCertPathVa` internally. Not fully backwards-compatible, because `ProxyPathValidatorException` that is being thrown by var methods does not contain various error codes but just a single e `ProxyPathValidatorException.FAILURE` for all errors tha happen. This is because the new code does not throw exceptior error types.
ProxyPathValidatorException	Used in some packages in `org.globus.gsi` and in `org.globus.gsi.tools`	Deprecate	Ported Deprecated
ProxyPolicyHandler	Used in some packages in `org.globus.gsi` and in `org.globus.gsi.tools`	Port	Ported. Interface change. Not backwards-compatible.

org.globus.gsi.proxy.ext

Class name	Use in current library	Status	Comments for new library port
GlobusProxyCertInfoExtension	Used in `org.globus.gsi.bc` and in `org.globus.tools`	Port	Ported
ProxyCertInfo	Used a lot in `org.globus.gsi` and in `org.globus.tools`	Port	Ported. (Moved `org.globus.security.proxyExtension.ProxyCertI` into `org.globus.gsi.proxy.ext`)
ProxyCertInfoExtension	Used in `org.globus.gsi.bc`, `org.globus.gsi.proxy.ext` and in `org.globus.tools`	Port	Ported
ProxyPolicy	Used in `org.globus.gsi`, `org.globus.gsi.bc`, `org.globus.gsi.proxy` and in `org.globus.tools`	Port	Ported. (Moved (`org.globus.security.proxyExtensi` into `org.globus.gsi.proxy.ext`)

org.globus.gsi.ptls

Comment	Status in new jGlobus	Comment
New jGlobus won't rely on the PureTLS library anymore	Discontinue	Moved to gss module, because this module has not bee refactored yet and still relies on PureTLS

org.globus.myproxy

Comment	Status in new jGlobus
This package provides an API for communicating with MyProxy servers. Will be maintained by NCSA.	

org.globus.net

`org.globus.ftp`, `org.globus.gatekeeper`, `org.globus.gram`, `org.globus.io` depends on some of these classes.
Depends on GSS-API. Moved to gss module for now.

Class name	Use in current library	Status	Comments for new library port
BaseServer	Used in `org.globus.gatekeeper`, `org.globus.gram`, `org.globus.io`	Evaluate	

`DatagramSocketFactory`	Not used.	Evaluate	
`GSIHttpURLConnection`	Used in `org.globus.net.protocol.httpg.Handler`	Evaluate	
`GSIURLConnection`	Used in `org.globus.net.GSIHttpURLConnection`	Evaluate	
`GlobusURLStreamHandlerFactory`	Not used, except in a test (`GSIHttpURLConnectionTest`)	Evaluate	
`PortRange`	Used in `org.globus.net` itself.	Evaluate	
`ServerSocketFactory`	Used in `org.globus.ftp`, `org.globus.gsi.gssapi` and `org.globus.net`	Evaluate	
`SocketFactory`	Used in `org.globus.net`	Evaluate	
`WrappedSocket`	Used in `org.globus.gsi.gssapi` and `org.globus.net`	Evaluate	

org.globus.net.protocol.httpg

Moved to gss module for now.

Class name	Use in current library	Status	Comments for new library port
`Handler`	Used in `org.globus.net.GlobusURLStreamHandlerFactory`	Evaluate	Ported. Discontinue if GRAM doesn't require it

org.globus.net.protocol.https

Moved to gss module for now.

Class name	Use in current library	Status	Comments for new library port
`Handler`	Not used in jglobus	Port	Ported

org.globus.security.gridmap

Class name	Use in current library	Status	Comments for new library port
`GridMap`	Used only by `org.globus.gatekeeper` package	Port	Ported
`GridMapLocal`	Unused	Port	Ported

org.globus.tools

Various command-line clients.

Check with Stu/Raj on Gram/GridFTP command-line tools

Class name	Use in current library	Status	Comments for new library port
`CertInfo`	Displays certificate information, both for proxy and regular certs	Port	Ported
`ChangePassPhrase`	Changes the passphrase that protects the private key.	Port	Ported
`GassServer`	Controls a GASS Server.	Evaluate	
`GassServerShutdown`	Allows the user to shut down a (remotely) running GASS server, started with client-shutdown permissions	Evaluate	
`GlobusRun`	GlobusRun command-line tool implementation in Java.	Evaluate	
`GlobusUrlCopy`	globus-url-copy command line tool.	Evaluate	
`GridCertRequest`	Create a grid certificate request.	Port	Ported

`GridInfoSearch`	MDS2 tool. Performs an LDAP search.	Discontinue	Removed
`KeyStoreConvert`	Converts Globus credentials (user key and certificate) into Java keystore format (JKS format supported by Sun)	Port	Ported
`MyProxy`	MyProxy command line client	Evaluate NCSA	
`ProxyDestroy`	Destroys a proxy certificate file.	Port	Ported
`ProxyInfo`	Displays information about a proxy certificate.	Port	Ported
`ProxyInit`	Initializes/creates a new globus proxy certificate.	Port	Ported. Move away from ProxyPathValidator.

org.globus.util

Class name	Use in current library	Status	Comments for new librar
`Base64`	Used by `org.glous.ftp`, `org.globus.gsi`, `org.globus.myproxy`, `org.globus.tools`.	Discontinue	Removed. Replaced by us `org.bouncycastle.uti` .
`CircularBuffer`	Used only in `org.globus.ftp` package	Evaluate	Ported. Move to `org.glob`
`ClassLoaderUtils`	Used only by `org.globus.util.I18n`	Discontinue	Ported
`ConfigUtil`	Used in `org.globus.common`, `org.globus.ftp.test`, `org.globus.security`, `org.globus.tools`, `org.globus.util`	Evaluate	Ported
`GlobusURL`	Used in `org.globus.util`	Evaluate	Ported. Removed deprecat
`I18n`	Used all over the place in `org.globus.gsi` and sub-packages and `org.globus.security.gridmap`	Evaluate New class (`org.globus.util.I18n`)	Ported
`PEMUtils`	Used in `org.globus.gsi` and in `org.globus.tools`	Port	Ported
`QuotedStringTokenizer`	Used in `org.globus.gatekeeper.GateKeeperServer` and `org.globus.security.gridmap.GridMap`	Evaluate	Ported
`SortedVector`	Unused	Discontinue	Removed
`Tail`	Used by `org.globus.gatekeeper.AbstractJobManager`	Evaluate	Depends on GRAM
`TestUtil`	Convenience util to load and deal with properties. Used in various junit test classes	Discontinue	Removed
`TimestampEntry`	Used in `org.globus.gsi.CertificateRevocationLists` and `org.globus.gsi.TrustedCertificates` to document when a file was last modified	Evaluate	Ported. Might have to depr
`Util`	Used in many packages.	Evaluate	Ported. Internal API, chang

org.gridforum.jgss

If at all, it will be managed by NCSA

Class name	Use in current library	Status	Comments for new library port
`ExtendedGSSContext`			
`ExtendedGSSCredential`			
`ExtendedGSSManager`			

Proposed package list to discontinue

org.globus.mds*

Comment	Status in new jGlobus	Comments for new library port
MDS2 client API. Will not be included in new jGlobus library.	Discontinue	Removed

org.globus.gatekeeper*

Comment	Status in new jGlobus
Seems to be an implementation of the GateKeeper and JobManager (server-side GRAM2). Check with Stu if this should make it into a gram module.	Evaluate

org.globus.tools.proxy

Comment	Status in new jGlobus	Comments for new library port
GUI to generate a proxy certificate (AWT, Swing) including MyProxy support. Not used anywhere in jglobus.	Discontinue	Removed

org.globus.tools.ui*

Comment	Status in new jGlobus	Comments for new library port
Helper classes for GUI to generate a proxy certificate in `org.globus.tools.proxy`. Only used by `org.globus.tools.proxy`	Discontinue	Removed

org.globus.util.debug

Comment	Status in new jGlobus	Comments for new library port
Pre-Log4j logging.	Discontinue	Removed

org.globus.util.log4j

Comment	Status in new jGlobus	Comments for new library port
Log4j related classes. Will not be included in new jGlobus library, because log4j won't be used for logging.	Discontinue	Evaluate Removed for now.

org.globus.example

Comment	Status in new jGlobus	Comments for new library port
Nothing in here.	Discontinue	Removed