Hosting Environment (Daemon) Services Reference Manual

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Data Structures

- class **DREWebService**
- class **PerlProcessor**
- class **Task**
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5.1.1 Detailed Description

Implementation of a simple echo service

The reply of the echo service contains the string which was send to it.

Chapter 6

Hosting Environment (Daemon) Services Data Structure Documentation

6.1 ARex::ARexJob Class Reference

`#include <job.h>`

Public Member Functions

- **ARexJob (const std::string &id, ARexGMConfig &config, Arc::Logger &logger, bool fast_auth_check=false)**
- **ARexJob (Arc::XMLNode jsdl, ARexGMConfig &config, const std::string &credentials, const std::string &clientid, Arc::Logger &logger, Arc::XMLNode migration=Arc::XMLNode())**
- **std::string Failure (void)**
- **std::string ID (void)**
- **bool GetDescription (Arc::XMLNode &jsdl)**
- **bool Cancel (void)**
- **bool Clean (void)**
- **bool Resume (void)**
- **std::string State (void)**
- **std::string State (bool &job_pending)**
- **bool Failed (void)**
- **std::string SessionDir (void)**
- **std::string LogDir (void)**
- **int CreateFile (const std::string &filename)**
- **int OpenFile (const std::string &filename, bool for_read, bool for_write)**
- **int OpenLogFile (const std::string &name)**
- **Glib::Dir * OpenDir (const std::string &dirname)**
- **std::list< std::string > LogFiles (void)**
- **bool UpdateCredentials (const std::string &credentials)**
- **bool ChooseSessionDir (const std::string &jobid, std::string &sessiondir)**

Static Public Member Functions

- static int **TotalJobs (ARexGMConfig &config, Arc::Logger &logger)**
- **static std::list< std::string > Jobs (ARexGMConfig &config, Arc::Logger &logger)**

6.1.1 Detailed Description

This class represents convenience interface to manage jobs handled by Grid Manager. It works mostly through corresponding classes and functions of Grid Manager.

6.1.2 Constructor & Destructor Documentation

6.1.2.1 ARex::ARexJob::ARexJob (const std::string & *id*, ARexGMConfig & *config*, Arc::Logger & *logger*, bool *fast_auth_check* = `false`)

Create instance which is an interface to existing job

6.1.2.2 ARex::ARexJob::ARexJob (Arc::XMLNode *jsdl*, ARexGMConfig & *config*, const std::string & *credentials*, const std::string & *clientid*, Arc::Logger & *logger*, Arc::XMLNode *migration* = `Arc::XMLNode()`)

Create new job with provided JSDL description

6.1.3 Member Function Documentation

6.1.3.1 bool ARex::ARexJob::Cancel (void)

Cancel processing/execution of job

6.1.3.2 bool ARex::ARexJob::ChooseSessionDir (const std::string & *jobid*, std::string & *sessiondir*)

Select a session dir to use for this job

6.1.3.3 bool ARex::ARexJob::Clean (void)

Remove job from local pool

6.1.3.4 int ARex::ARexJob::CreateFile (const std::string & *filename*)

Creates file in job's session directory and returns handler

6.1.3.5 bool ARex::ARexJob::Failed (void)

Returns true if job has failed

6.1.3.6 std::string ARex::ARexJob::Failure (void) `[inline]`

Returns textual description of failure of last operation

6.1.3.7 bool ARex::ARexJob::GetDescription (Arc::XMLNode & *jsdl*)

Fills provided jsdl with job description

6.1.3.8 std::string ARex::ARexJob::ID (void) [inline]

Return ID assigned to job

6.1.3.9 static std::list<std::string> ARex::ARexJob::Jobs (ARexGMConfig & *config*, Arc::Logger & *logger*) [static]

Returns list of user's jobs. Fine-grained ACL is ignored.

6.1.3.10 std::string ARex::ARexJob::LogDir (void)

Returns name of virtual log directory

6.1.3.11 std::list<std::string> ARex::ARexJob::LogFiles (void)

Returns list of existing log files

6.1.3.12 Glib::Dir* ARex::ARexJob::OpenDir (const std::string & *dirname*)

Opens directory inside session directory

6.1.3.13 int ARex::ARexJob::OpenFile (const std::string & *filename*, bool *for_read*, bool *for_write*)

Opens file in job's session directory and returns handler

6.1.3.14 int ARex::ARexJob::OpenLogFile (const std::string & *name*)

Opens log file in control directory

6.1.3.15 bool ARex::ARexJob::Resume (void)

Resume execution of job after error

6.1.3.16 std::string ARex::ARexJob::SessionDir (void)

Returns path to session directory

6.1.3.17 std::string ARex::ARexJob::State (bool & *job_pending*)

Returns current state of job and sets job_pending to true if job is pending due to external limits

6.1.3.18 std::string ARex::ARexJob::State (void)

Returns current state of job

6.1.3.19 static int ARex::ARexJob::TotalJobs (ARexGMConfig & *config*, Arc::Logger & *logger*) [static]

Return number of jobs associated with this configuration. TODO: total for all user configurations.

6.1.3.20 bool ARex::ARexJob::UpdateCredentials (const std::string & *credentials*)

Updates job credentials

The documentation for this class was generated from the following file:

- job.h

6.2 CacheConfig Class Reference

`#include <conf_cache.h>`

Public Member Functions

- **CacheConfig (const GMEnvironment &env, std::string username="")**
- **CacheConfig ()**
- **void parseINIConf (std::string username, ConfigSections *cf)**
- **void setCacheDirs (std::vector< std::string > cache_dirs)**

6.2.1 Detailed Description

Reads conf file and provides methods to obtain cache info from it.

6.2.2 Constructor & Destructor Documentation

6.2.2.1 CacheConfig::CacheConfig (const GMEnvironment & *env*, std::string *username* = "")

Create a new **CacheConfig** (p. 17) instance. Read the config file and fill in private member variables with cache parameters. If different users are defined in the conf file, use the cache parameters for the given username.

6.2.2.2 CacheConfig::CacheConfig () `[inline]`

Empty **CacheConfig** (p. 17)

6.2.3 Member Function Documentation

6.2.3.1 void CacheConfig::parseINIConf (std::string *username*, ConfigSections * *cf*)

Parsers for the two different conf styles

6.2.3.2 void CacheConfig::setCacheDirs (std::vector< std::string > *cache_dirs*) `[inline]`

To allow for substitutions done during configuration

The documentation for this class was generated from the following file:

- conf_cache.h

6.3 CacheConfigException Class Reference

`#include <conf_cache.h>`

6.3.1 Detailed Description

Exception thrown by constructor caused by bad cache params in conf file

The documentation for this class was generated from the following file:

- conf_cache.h

6.4 Cache::CacheService Class Reference

`#include <CacheService.h>`

Public Member Functions

- **CacheService (Arc::Config ∗cfg)**
- **virtual ∼CacheService (void)**
- **virtual Arc::MCC_Status process (Arc::Message &inmsg, Arc::Message &outmsg)**
- **bool RegistrationCollector (Arc::XMLNode &doc)**
- **operator bool ()**
- **bool operator! ()**

Protected Member Functions

- Arc::MCC_Status **CacheCheck (Arc::XMLNode in, Arc::XMLNode out, const JobUser &user)**
- **Arc::MCC_Status CacheLink (Arc::XMLNode in, Arc::XMLNode out, const JobUser &user, const Arc::User &mapped_user)**

6.4.1 Detailed Description

CacheService (p. 19) provides functionality for A-REX cache operations that can be performed by remote clients. It currently consists of two operations: CacheCheck - allows querying of the cache for the presence of files. CacheLink - enables a running job to dynamically request cache files to be linked to its working (session) directory. This is especially useful in the case of pilot job workflows where job submission does not follow the usual ARC workflow. In order for input files to be available to jobs, the pilot job can call the cache service to prepare them. If requested files are not present in the cache, they can be downloaded by the cache service if requested, using the A-REX downloader utility.

6.4.2 Constructor & Destructor Documentation

6.4.2.1 Cache::CacheService::CacheService (Arc::Config ∗ *cfg*)

Make a new **CacheService** (p. 19). Reads the configuration and determines the validity of the service.

6.4.2.2 virtual Cache::CacheService::∼CacheService (void) `[virtual]`

Destroy the **CacheService** (p. 19)

6.4.3 Member Function Documentation

6.4.3.1 Arc::MCC_Status Cache::CacheService::CacheCheck (Arc::XMLNode *in*, Arc::XMLNode *out*, const JobUser & *user*) `[protected]`

Check whether the URLs supplied in the input are present in any cache. Returns in the out message for each file true or false, and if true, the size of the file on cache disk.

Parameters:

user A-REX user configuration for the mapped user

6.4.3.2 Arc::MCC_Status Cache::CacheService::CacheLink (Arc::XMLNode *in*, Arc::XMLNode *out*, const JobUser & *user*, const Arc::User & *mapped_user*) [protected]

This method is used to link cache files to the session dir. A list of URLs is supplied and if they are present in the cache and the user calling the service has permission to access them, then they are linked to the given session directory. If the user requests that missing files be staged, then a downloader process is launched to obtain them.

Parameters:

user A-REX user configuration for the mapped user

mapped_user The local user to which the client DN was mapped

6.4.3.3 Cache::CacheService::operator bool (void) [inline]

Returns true if the **CacheService** (p. 19) is valid.

6.4.3.4 bool Cache::CacheService::operator! (void) [inline]

Returns true if the **CacheService** (p. 19) is not valid.

6.4.3.5 virtual Arc::MCC_Status Cache::CacheService::process (Arc::Message & *inmsg*, Arc::Message & *outmsg*) [virtual]

Main method called by HED when **CacheService** (p. 19) is invoked. Directs call to appropriate **CacheService** (p. 19) method.

6.4.3.6 bool Cache::CacheService::RegistrationCollector (Arc::XMLNode & *doc*)

Supplies information on the service for use in the information system.

The documentation for this class was generated from the following file:

- CacheService.h

6.5 ArcSec::Charon Class Reference

`#include <charon.h>`

Data Structures

- class **PolicyLocation**

6.5.1 Detailed Description

A Service which includes the ArcPDP functionality; it can be deployed as an independent service to provide request evaluation functionality for the other remote services

The documentation for this class was generated from the following file:

- charon.h

6.6 ARex::Config Class Reference

`#include <configcore.h>`

Public Member Functions

- const std::list< ConfGrp > & **GetConfigs () const**
- **std::list< std::string > ConfValue (const std::string &path) const**
- **std::string FirstConfValue (const std::string &path) const**

6.6.1 Detailed Description

Core configuration class.

6.6.2 Member Function Documentation

6.6.2.1 std::list<std::string> ARex::Config::ConfValue (const std::string & *path*) const

Get the configuration values from key.

6.6.2.2 std::string ARex::Config::FirstConfValue (const std::string & *path*) const

Get the first configuration value from key. This is meant as a short cut when it is known that the key is not multivalued.

6.6.2.3 const std::list<ConfGrp>& ARex::Config::GetConfigs () const

Returns the parsed options.

The documentation for this class was generated from the following file:

- **configcore.h**

6.7 ARex::ConfigError Class Reference

`#include <configcore.h>`

Public Member Functions

- **ConfigError (std::string message)**

6.7.1 Detailed Description

Error configuration class.

6.7.2 Constructor & Destructor Documentation

6.7.2.1 ARex::ConfigError::ConfigError (std::string *message*) [inline]

Constructor for the **ConfigError** (p. 23) exception. Calls the corresponding constructor in ARCLibError.

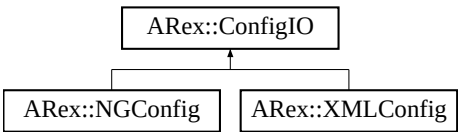
The documentation for this class was generated from the following file:

- **configcore.h**

6.8 ARex::ConfigIO Class Reference

`#include <configio.h>`

Inheritance diagram for ARex::ConfigIO::



Public Member Functions

- virtual **Config Read (std::istream &is)=0**
- **virtual void Write (const Config &conf, std::ostream &os)=0**

6.8.1 Detailed Description

Virtual base-class for reading and writing configuration files. Concrete instances include **NGConfig** (p. 38) and **XMLConfig** (p. 47).

6.8.2 Member Function Documentation

6.8.2.1 virtual Config ARex::ConfigIO::Read (std::istream & *is*) [pure virtual]

Read the named configuration source.

Implemented in **ARex::NGConfig** (p. **38**), **and ARex::XMLConfig** (p. **47**).

6.8.2.2 virtual void ARex::ConfigIO::Write (const Config & *conf*, std::ostream & *os*) [pure virtual]

Write configuration to named configuration destination.

Implemented in ARex::NGConfig (p. **38**), **and ARex::XMLConfig** (p. **47**).

The documentation for this class was generated from the following file:

- **configio.h**

6.9 DTRGenerator Class Reference

`#include <dtr_generator.h>`

Public Member Functions

- **DTRGenerator (const JobUsers &users, void(∗kicker_func)(void ∗)=NULL, void ∗kicker_arg=NULL)**
- **∼DTRGenerator ()**
- **virtual void receiveDTR (DataStaging::DTR &dtr)**
- **void receiveJob (const JobDescription &job)**
- **void cancelJob (const JobDescription &job)**
- **bool queryJobFinished (JobDescription &job)**
- **int checkUploadedFiles (JobDescription &job)**

6.9.1 Detailed Description

A-REX implementation of DTR Generator.

6.9.2 Constructor & Destructor Documentation

6.9.2.1 DTRGenerator::DTRGenerator (const JobUsers & *users*, void(∗)(void ∗) *kicker_func* = NULL, void ∗ *kicker_arg* = NULL)

Start up Generator.

Parameters:

user **JobUsers for this Generator.**

kicker_func **Function to call on completion of all DTRs for a job**

kicker_arg **Argument to kicker function**

6.9.2.2 DTRGenerator::∼DTRGenerator ()

Stop Generator

6.9.3 Member Function Documentation

6.9.3.1 void DTRGenerator::cancelJob (const JobDescription & *job*)

This method is used by A-REX to cancel on-going DTRs. A cancel request is made for each DTR in the job and the method returns. The Scheduler asychronously deals with cancelling the DTRs.

Parameters:

job **The job which is being cancelled**

6.9.3.2 int DTRGenerator::checkUploadedFiles (JobDescription & *job*)

Utility method to check that all files the user was supposed to upload with the job are ready.

Parameters:

job **Job description, failures will be reported directly in this object.**

Returns:

0 if file exists, 1 if it is not a proper file or other error, 2 if the file not there yet

6.9.3.3 bool DTRGenerator::queryJobFinished (JobDescription & *job*)

Query status of DTRs in job. If all DTRs are finished, returns true, otherwise returns false. If true is returned, the JobDescription should be checked for whether the staging was successful or not by checking GetFailure().

Parameters:

job **Description of job to query. Can be modified to add a failure reason.**

Returns:

True if all DTRs in the job are finished, false otherwise.

6.9.3.4 virtual void DTRGenerator::receiveDTR (DataStaging::DTR & *dtr*) [virtual]

Callback called when DTR is finished. This DTR is marked done in the DTR list and if all DTRs for the job have completed, the job is marked as done.

Parameters:

dtr **DTR object sent back from the Scheduler**

6.9.3.5 void DTRGenerator::receiveJob (const JobDescription & *job*)

A-REX sends data transfer requests to the data staging system through this method. It reads the job.id.input/output files, forms DTRs and sends them to the Scheduler.

Parameters:

job **Job description object.**

The documentation for this class was generated from the following file:

- **dtr_generator.h**

6.10 DTRInfo Class Reference

`#include <dtr_generator.h>`

Public Member Functions

- **DTRInfo (const JobUsers &users)**

6.10.1 Detailed Description

DTRInfo (p. **27**) **passes state information from data staging to A-REX via the defined callback, called when the DTR passes to the certain processes. It could for example write to files in the control directory, and this information can be picked up and published by the info system.**

6.10.2 Constructor & Destructor Documentation

6.10.2.1 DTRInfo::DTRInfo (const JobUsers & *users*)

JobUsers is needed to find the correct control dir

The documentation for this class was generated from the following file:

- **dtr_generator.h**

6.11 ARex::FileChunks Class Reference

Representation of delivered file chunks.

`#include <FileChunks.h>`

Public Member Functions

- **std::string Path (void)**
- **void Size (off_t size)**
- **off_t Size (void)**
- **void Add (off_t start, size_t csize)**
- **bool Complete (void)**
- **void Print (void)**
- **void Release (void)**
- **void Remove (void)**

6.11.1 Detailed Description

Representation of delivered file chunks.

6.11.2 Member Function Documentation

6.11.2.1 void ARex::FileChunks::Add (off_t *start*, size_t *csize*)

Report one more delivered chunk.

6.11.2.2 bool ARex::FileChunks::Complete (void)

Returns true if all chunks were delivered.

6.11.2.3 std::string ARex::FileChunks::Path (void) [inline]

Returns assigned file path (id of file).

6.11.2.4 void ARex::FileChunks::Print (void)

Prints chunks delivered so far. For debuging purposes.

6.11.2.5 void ARex::FileChunks::Release (void)

Release reference obtained through FileChunksList::Get() (p. 30) method. This operation may lead to destruction of FileChunk instance hence previously obtained refrence mus tnot be used.

6.11.2.6 void ARex::FileChunks::Remove (void)

Relases reference obtained through Get() method and destroys its instance. Normally this method to be called instead of Release() (p. 28) after whole file is delivered in order to free resources associated with FileChunks (p. 28) instance.

6.11.2.7 off_t ARex::FileChunks::Size (void) [inline]

Returns assigned file size.

6.11.2.8 void ARex::FileChunks::Size (off_t *size*)

Assign file size.

The documentation for this class was generated from the following file:

- **FileChunks.h**

6.12 ARex::FileChunksList Class Reference

Container for FileChunks (p. 28) instances.

`#include <FileChunks.h>`

Public Member Functions

- **FileChunks & Get (std::string path)**
- **void Timeout (int t)**
- **FileChunks * GetStuck (void)**
- **FileChunks * GetFirst (void)**

6.12.1 Detailed Description

Container for FileChunks (p. 28) instances.

6.12.2 Member Function Documentation

6.12.2.1 FileChunks& ARex::FileChunksList::Get (std::string *path*)

Returns previously created FileChunks (p. 28) object with associated path. If such instance does not exist new one is created. Obtained reference may be used for other operations. Obtained reference must be Release()ed after it is not longer needed.

6.12.2.2 FileChunks* ARex::FileChunksList::GetFirst (void)

Returns pointer to first in a list created FileChunks (p. 28) instance.

6.12.2.3 FileChunks* ARex::FileChunksList::GetStuck (void)

Returns pointer to first stuck file. File is considred stuck if its Add method was last called more timeout seconds ago.

6.12.2.4 void ARex::FileChunksList::Timeout (int *t*) `[inline]`

Assign timeout value (seconds) for file transfers.

The documentation for this class was generated from the following file:

- **FileChunks.h**

6.13 Janitor Class Reference

Class to communicate with Janitor (p. 31) - Dynmaic Runtime Environment handler.

`#include <janitor.h>`

Public Member Functions

- **Janitor (const std::string &id, const std::string &cdir, const GMEnvironment &env)**
- **bool enabled ()**
- **operator bool (void)**
- **bool operator! (void)**
- **bool deploy (void)**
- **bool remove (void)**
- **bool wait (int timeout)**
- **Result result (void)**

6.13.1 Detailed Description

Class to communicate with Janitor (p. 31) - Dynmaic Runtime Environment handler.

6.13.2 Constructor & Destructor Documentation

6.13.2.1 Janitor::Janitor (const std::string & *id*, const std::string & *cdir*, const GMEnvironment & *env*)

Creates instance representing job entry in Janitor (p. 31) database.

Takes id for job identifier and cdir for the control directory of A-Rex. constructor does not register job in the Janitor (p. 31). It only associates job with this instance.

6.13.3 Member Function Documentation

6.13.3.1 bool Janitor::deploy (void)

Registers associated job with Janitor (p. 31) and deploys dynamic RTEs.

This operation is asynchronous. Returned true means Janitor (p. 31) will be contacted and deployemnt will start soon. For obtaining result of operation see methods wait() (p. 32) and result() (p. 32). During this operation janitor utility is called with command register and optionally deploy.

6.13.3.2 bool Janitor::enabled () `[inline]`

Returns true if janitor is enabled in the config file.

6.13.3.3 Janitor::operator bool (void) `[inline]`

Returns true if instance is valid.

6.13.3.4 bool Janitor::operator! (void) [inline]

Returns true if instance is invalid.

6.13.3.5 bool Janitor::remove (void)

Removes job from those handled by Janitor (p. **31**) **and releases associated RTEs.**

This operation is asynchronous. Returned true means Janitor (p. **31**) **will be contacted and removal will start soon. For obtaining result of operation see methods wait**() (p. **32**) **and result**() (p. **32**)**. During this operation janitor utility is called with command remove.**

6.13.3.6 Result Janitor::result (void)

Returns true if operation initiated by deploy() (p. **31**) **or remove**() (p. **32**) **succeeded.**

It should be called after wait() (p. **32**) **returned true.**

6.13.3.7 bool Janitor::wait (int *timeout*)

Wait till operation initiated by deploy() (p. **31**) **or remove**() (p. **32**) **finished.**

This operation returns true if operation finished or false if timeout seconds passed. It may be called repeatedly and even after it previously returned true. If no operation is running it returns true immeaditely.

The documentation for this class was generated from the following file:

- **janitor.h**

6.14 JobLog Class Reference

`#include <job_log.h>`

6.14.1 Detailed Description

Put short information into log when every job starts/finishes. And store more detailed information for Reporter.

The documentation for this class was generated from the following file:

- **job_log.h**

6.15 JobsListConfig Class Reference

`#include <states.h>`

6.15.1 Detailed Description

Class to represent information read from configuration.

The documentation for this class was generated from the following file:

- **states.h**

6.16 gridftpd::LdapQuery Class Reference

`#include <ldapquery.h>`

Public Types

- **enum Scope**

Public Member Functions

- **LdapQuery (const std::string &ldaphost, int ldapport, bool anonymous=true, const std::string &usersn="", int timeout=20)**
- **~LdapQuery ()**
- **void Query (const std::string &base, const std::string &filter="(objectclass=*)", const std::vector< std::string > &attributes=std::vector< std::string >(), Scope scope=subtree) throw (LdapQueryError)**
- **void Result (ldap_callback callback, void *ref) throw (LdapQueryError)**
- **std::string Host ()**

6.16.1 Detailed Description

LdapQuery (p. **35**) **class; querying of LDAP servers.**

6.16.2 Member Enumeration Documentation

6.16.2.1 enum gridftpd::LdapQuery::Scope

Scope for a LDAP queries. Use when querying.

6.16.3 Constructor & Destructor Documentation

6.16.3.1 gridftpd::LdapQuery::LdapQuery (const std::string & *ldaphost*, int *ldapport*, bool *anonymous* = `true`, const std::string & *usersn* = `""`, int *timeout* = `20`)

Constructs a new LdapQuery (p. **35**) **object and sets connection options. The connection is first established when calling Query.**

6.16.3.2 gridftpd::LdapQuery::~LdapQuery ()

Destructor. Will disconnect from the ldapserver if stll connected.

6.16.4 Member Function Documentation

6.16.4.1 std::string gridftpd::LdapQuery::Host ()

Returns the hostname of the ldap-server.

6.16.4.2 void gridftpd::LdapQuery::Query (const std::string & *base*, const std::string & *filter* = "(objectclass=*)", const std::vector< std::string > & *attributes* = std::vector< std::string >(), Scope *scope* = subtree) throw (LdapQueryError)

Queries the ldap server.

6.16.4.3 void gridftpd::LdapQuery::Result (ldap_callback *callback*, void * *ref*) throw (LdapQueryError)

Retrieves the result of the query from the ldap-server.

The documentation for this class was generated from the following file:

- **ldapquery.h**

6.17 gridftpd::LdapQueryError Class Reference

`#include <ldapquery.h>`

Public Member Functions

- **LdapQueryError (std::string message)**

6.17.1 Detailed Description

LdapQuery (p. **35**) **exception. Gets thrown whan an error occurs in a query.**

6.17.2 Constructor & Destructor Documentation

6.17.2.1 gridftpd::LdapQueryError::LdapQueryError (std::string *message*) [inline]

Standard exception class constructor.

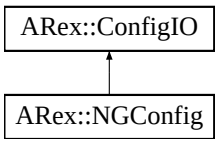
The documentation for this class was generated from the following file:

- **ldapquery.h**

6.18 ARex::NGConfig Class Reference

`#include <ngconfig.h>`

Inheritance diagram for ARex::NGConfig::



Public Member Functions

- **Config Read (std::istream &is)**
- **void Write (const Config &config, std::ostream &os)**

6.18.1 Detailed Description

Configuration class used for reading configuration files ARC-style.

6.18.2 Member Function Documentation

6.18.2.1 Config ARex::NGConfig::Read (std::istream & *is*) [virtual]

Read old arc.conf style configuration.

Implements ARex::ConfigIO (p. **24**).

6.18.2.2 void ARex::NGConfig::Write (const Config & *config*, std::ostream & *os*) [virtual]

Write configuration to named file.

Implements ARex::ConfigIO (p. **24**).

The documentation for this class was generated from the following file:

- **ngconfig.h**

6.19 gridftpd::ParallelLdapQueries Class Reference

`#include <ldapquery.h>`

6.19.1 Detailed Description

General method to perform parallel ldap-queries to a set of clusters

The documentation for this class was generated from the following file:

- **ldapquery.h**

6.20 Hopi::PayloadFile Class Reference

`#include <PayloadFile.h>`

Public Member Functions

- **PayloadFile (const char ∗filename, Size_t start, Size_t end)**
- **virtual ∼PayloadFile (void)**

6.20.1 Detailed Description

Implementation of PayloadRawInterface which provides access to ordinary file. Currently only read-only mode is supported.

6.20.2 Constructor & Destructor Documentation

6.20.2.1 Hopi::PayloadFile::PayloadFile (const char ∗ *filename*, Size_t *start*, Size_t *end*)

Creates object associated with file for reading from it. Use end=-1 for full size.

6.20.2.2 virtual Hopi::PayloadFile::∼PayloadFile (void) [virtual]

Creates object associated with file for writing into it. Use size=-1 for undefined size.

The documentation for this class was generated from the following file:

- **hopi/PayloadFile.h**

6.21 ARex::PayloadFile Class Reference

`#include <PayloadFile.h>`

Public Member Functions

- **PayloadFile (const char ∗filename, Size_t start, Size_t end)**
- **virtual ∼PayloadFile (void)**

6.21.1 Detailed Description

Implementation of PayloadRawInterface which provides access to ordinary file. Currently only read-only mode is supported.

6.21.2 Constructor & Destructor Documentation

6.21.2.1 ARex::PayloadFile::PayloadFile (const char ∗ *filename*, Size_t *start*, Size_t *end*)

Creates object associated with file for reading from it. Use end=-1 for full size.

6.21.2.2 virtual ARex::PayloadFile::∼PayloadFile (void) [virtual]

Creates object associated with file for writing into it. Use size=-1 for undefined size.

The documentation for this class was generated from the following file:

- **a-rex/PayloadFile.h**

6.22 ArcSec::Service_AA Class Reference

`#include <aaservice.h>`

6.22.1 Detailed Description

A Service which includes the AttributeAuthority functionality; it accepts the <samlp:AttributeQuery> which includes the <Subject> of the principal from the request and <Attribute> which the request would get; it access some local attribute database and returns <samlp:Assertion> which includes the <Attribute>

The documentation for this class was generated from the following file:

- **aaservice.h**

6.23 ArcSec::Service_SLCS Class Reference

`#include <slcs.h>`

6.23.1 Detailed Description

A Service which signs the short-lived certificate; it accepts the certificate signing request (CSR) from from client side through soap, signs a short-lived certificate and sends back through soap. This service is supposed to be deployed together with the SPService and saml2sso.serviceprovider handler, in order to sign certificate based on the authentication result from saml2sso profile. Also the saml attribute (inside the saml assertion from saml2sso profile) will be put into the signed short-lived certificate. By deploying this service together with SPService and saml2sso.serviceprovider handler, we can get the convertion from username/password ——> x509 certificate.

The documentation for this class was generated from the following file:

- **slcs.h**

6.24 SPService::Service_SP Class Reference

`#include <SPService.h>`

Public Member Functions

- **Service_SP (Arc::Config *cfg)**
- **virtual Arc::MCC_Status process (Arc::Message &, Arc::Message &)**

6.24.1 Detailed Description

This is service which accepts HTTP request from user agent (web browser) in the client side and processes the functionality of Service Provider in SAML2 SSO profile — composing <AuthnRequest> Note: the IdP name is provided by the user agent directely when it gives a request, instead of the WRYF(where are you from) or Discovery Service in other implementation

6.24.2 Constructor & Destructor Documentation

6.24.2.1 SPService::Service_SP::Service_SP (Arc::Config * *cfg*)

Constructor

6.24.3 Member Function Documentation

6.24.3.1 virtual Arc::MCC_Status SPService::Service_SP::process (Arc::Message &, Arc::Message &) [virtual]

Service request processing routine

The documentation for this class was generated from the following file:

- **SPService.h**

6.25 voms Struct Reference

`#include <auth.h>`

Data Fields

- **std::string server**
- **std::string voname**
- **std::vector< voms_attrs > std**

6.25.1 Detailed Description

VOMS data

6.25.2 Field Documentation

6.25.2.1 std::string voms::server

The VOMS server DN, as from its certificate

6.25.2.2 std::vector<voms_attrs> voms::std

User's characteristics

6.25.2.3 std::string voms::voname

The name of the VO to which the VOMS belongs

The documentation for this struct was generated from the following file:

- **auth.h**

6.26 voms_attrs Struct Reference

`#include <auth.h>`

Data Fields

- **std::string group**
- **std::string role**
- **std::string cap**

6.26.1 Detailed Description

VOMS attributes

6.26.2 Field Documentation

6.26.2.1 std::string voms_attrs::cap

user's capability

6.26.2.2 std::string voms_attrs::group

user's group

6.26.2.3 std::string voms_attrs::role

user's role

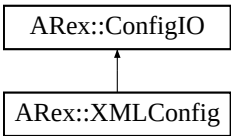
The documentation for this struct was generated from the following file:

- **auth.h**

6.27 ARex::XMLConfig Class Reference

`#include <xmlconfig.h>`

Inheritance diagram for ARex::XMLConfig::



Public Member Functions

- **Config Read (std::istream &is)**
- **void Write (const Config &config, std::ostream &os)**

6.27.1 Detailed Description

Class for reading in configuration files in xml-format. It uses libxml2 for xml-parsing.

6.27.2 Member Function Documentation

6.27.2.1 Config ARex::XMLConfig::Read (std::istream & *is*) [virtual]

Read configuration.

Implements ARex::ConfigIO (p. 24)**.**

6.27.2.2 void ARex::XMLConfig::Write (const Config & *config*, std::ostream & *os*) [virtual]

Write configuration.

Implements ARex::ConfigIO (p. 24)**.**

The documentation for this class was generated from the following file:

- **xmlconfig.h**

6.28 ZeroUInt Class Reference

`#include <states.h>`

6.28.1 Detailed Description

ZeroUInt (p. **48**) **is a wrapper around unsigned int. It provides a consistent default value, as int type variables have no predefined value assigned upon creation. It also protects from potential counter underflow, to stop counter jumping to MAX_INT.**

The documentation for this class was generated from the following file:

- **states.h**

Chapter 7

Hosting Environment (Daemon) Services File Documentation

7.1 configcore.h File Reference

```
#include <iostream>
#include <list>
#include <map>
#include <string>
#include <arc/Logger.h>
```

Namespaces

- **namespace ARex**

Data Structures

- **class ARex::ConfigError**
- **class ARex::Option**
- **class ARex::ConfGrp**
- **class ARex::Config**

Functions

- **Config ARex::ReadConfig (std::istream &is)**
- **Config ARex::ReadConfig (const std::string &filename)**

7.1.1 Detailed Description

This file describes the core configuration

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