

sibilla

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Hierarchical Index

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This inheritance list is sorted roughly, but not completely, alphabetically:

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Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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Chapter 4

Namespace Documentation

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Packages

- package [sibilla](#)

4.2 Package quasylab.sibilla

Packages

- package [core](#)

4.3 Package quasylab.sibilla.core

Packages

- package [network](#)

4.4 Package quasylab.sibilla.core.network

Packages

- package [client](#)
- package [communication](#)
- package [compression](#)
- package [master](#)
- package [serialization](#)
- package [slave](#)
- package [util](#)

Classes

- class [ComputationResult](#)
- class [HostLoggerSupplier](#)
- class [NetworkInfo](#)
- class [NetworkTask](#)
- class [SimulationDataSet](#)

4.4.1 Detailed Description

Contains all the network related classes of the library.

Author

Belenchia Matteo
Stelluti Francesco Pio
Zamponi Marco

4.5 Package `quasylab.sibilla.core.network.client`

Classes

- enum [ClientCommand](#)
- class [ClientSimulationEnvironment](#)

4.5.1 Detailed Description

Contains the classes that manage the behavior of a client that submits simulations to a master server.

Author

Stelluti Francesco Pio
Zamponi Marco

4.6 Package `quasylab.sibilla.core.network.communication`

Classes

- interface [NetworkManagerType](#)
- class [TCPDefaultNetworkManager](#)
- interface [TCPNetworkManager](#)
- enum [TCPNetworkManagerType](#)
- class [TCPSecureNetworkManager](#)
- class [UDPDefaultNetworkManager](#)
- interface [UDPNetworkManager](#)
- enum [UDPNetworkManagerType](#)

4.6.1 Detailed Description

Contains the classes that manage the communication between hosts in the network.

@author Belenchia Matteo

Author

Stelluti Francesco Pio

Zamponi Marco

4.7 Package `quasylab.sibilla.core.network.compression`

Classes

- class [Compressor](#)

4.7.1 Detailed Description

Contains the classes that manage the data compression and decompression.

Author

Stelluti Francesco Pio

Zamponi Marco

4.8 Package `quasylab.sibilla.core.network.master`

Classes

- enum [MasterCommand](#)
- class [MasterServerSimulationEnvironment](#)
- class [MasterState](#)
- class [NetworkSimulationManager](#)
- class [SimulationState](#)

4.8.1 Detailed Description

Contains the classes that manage the behavior of a master that submits clients' simulations received to registered slave servers.

Author

Stelluti Francesco Pio

Zamponi Marco

4.9 Package quasylab.sibilla.core.network.serialization

Classes

- class [ClassBytesLoader](#)
- class [CustomClassLoader](#)
- class [Serializer](#)

4.9.1 Detailed Description

Contains the classes that manage the data serialization.

Author

Stelluti Francesco Pio
Zamponi Marco

4.10 Package quasylab.sibilla.core.network.slave

Classes

- class [BasicSimulationServer](#)
- class [DiscoverableBasicSimulationServer](#)
- interface [SimulationServer](#)
- enum [SlaveCommand](#)
- class [SlaveState](#)

4.10.1 Detailed Description

Contains the classes that manage the behavior of a slave that receives submitted simulations from a master server.

Author

Belenchia Matteo
Stelluti Francesco Pio
Zamponi Marco

4.11 Package quasylab.sibilla.core.network.util

Classes

- class [NetworkUtils](#)
- class [SSLUtils](#)
- class [StartupUtils](#)

4.11.1 Detailed Description

Contains utility classes that are used in the library.

Author

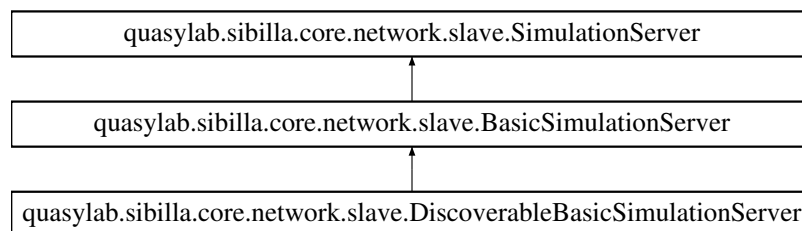
Stelluti Francesco Pio
Zamponi Marco

Chapter 5

Class Documentation

5.1 `quasylab.sibilla.core.network.slave.BasicSimulationServer` Class Reference

Inheritance diagram for `quasylab.sibilla.core.network.slave.BasicSimulationServer`:



Public Member Functions

- `BasicSimulationServer` (`TCPNetworkManagerType` networkManagerType)
- void `start` (int port)

Protected Attributes

- Logger `LOGGER`
- `NetworkInfo` `localServerInfo`

5.1.1 Detailed Description

Represent a simple server that executes the simulations passed by a master server

Author

Belenchia Matteo
Stelluti Francesco Pio
Zamponi Marco

5.1.2 Constructor & Destructor Documentation

5.1.2.1 BasicSimulationServer()

```
quasylab.sibilla.core.network.slave.BasicSimulationServer.BasicSimulationServer (
    TCPNetworkManagerType networkManagerType )
```

Creates a simulation server with the given network manager type

Parameters

<i>networkManagerType</i>	type of the network manager
---------------------------	-----------------------------

5.1.3 Member Function Documentation

5.1.3.1 start()

```
void quasylab.sibilla.core.network.slave.BasicSimulationServer.start (
    int port )
```

Creates and starts the slave server on the given port.

Parameters

<i>port</i>	port used by the slave server to manage the incoming requests from the master servers
-------------	---

Exceptions

<i>IOException</i>	when problems arise in network interfaces usage
--------------------	---

Implements [quasylab.sibilla.core.network.slave.SimulationServer](#).

5.1.4 Member Data Documentation

5.1.4.1 localServerInfo

```
NetworkInfo quasylab.sibilla.core.network.slave.BasicSimulationServer.localServerInfo [protected]
```

Slave server network communication related info.

5.1.4.2 **LOGGER**

Logger quasylab.sibilla.core.network.slave.BasicSimulationServer.LOGGER [protected]

Class logger.

5.2 quasylab.sibilla.core.network.serialization.ClassBytesLoader Class Reference

Static Public Member Functions

- static byte[] [loadClassBytes](#) (String className) throws IOException

5.2.1 Detailed Description

Utility class used to extract the data associated to the .class file of a compiled Java class.

Author

Belenchia Matteo
Stelluti Francesco Pio
Zamponi Marco

5.2.2 Member Function Documentation

5.2.2.1 **loadClassBytes()**

```
static byte [] quasylab.sibilla.core.network.serialization.ClassBytesLoader.loadClassBytes (  
    String className ) throws IOException [static]
```

Parameters

<i>className</i>	of the class which data need to be extracted.
------------------	---

Returns

byte array containing the data associated to the .class file related to the qualified name passed as an argument.

Exceptions

<i>IOException</i>	
--------------------	--

5.3 quasylib.sibilla.core.network.client.ClientCommand Enum Reference

Public Attributes

- [INIT](#)
- [DATA](#)
- [PING](#)
- [CLOSE_CONNECTION](#)

5.3.1 Detailed Description

All the possible command that can be sent from a client.

Author

Stelluti Francesco Pio
Zamponi Marco

5.3.2 Member Data Documentation

5.3.2.1 CLOSE_CONNECTION

```
quasylib.sibilla.core.network.client.ClientCommand.CLOSE_CONNECTION
```

The command sent by a client to inform that the connection with an host will be closed.

5.3.2.2 DATA

```
quasylib.sibilla.core.network.client.ClientCommand.DATA
```

The command sent by a client to signal that data will be passed over the network.

5.3.2.3 INIT

```
quasylib.sibilla.core.network.client.ClientCommand.INIT
```

The command sent by a client to initiate a new connection over the network.

5.3.2.4 PING

```
quasylib.sibilla.core.network.client.ClientCommand.PING
```

The command sent by a client to ping an host which has a connection open with.

5.4 quasylab.sibilla.core.network.client.ClientSimulationEnvironment< S extends State > Class Template Reference

Public Member Functions

- [ClientSimulationEnvironment](#) (RandomGenerator random, ModelDefinition< S > modelDefinition, Model< S > model, S initialState, SamplingFunction< S > sampling_function, int replica, double deadline, [NetworkInfo](#) masterNetworkInfo)

5.4.1 Detailed Description

Manages the connection with a master server to submit simulations and retrieve related results.

Parameters

<S>	The quasylab.sibilla.core.past.State of the simulation model.
-----	---

Author

Stelluti Francesco Pio
Zamponi Marco

5.4.2 Constructor & Destructor Documentation

5.4.2.1 ClientSimulationEnvironment()

```
quasylab.sibilla.core.network.client.ClientSimulationEnvironment< S extends State >.ClientSimulationEnvironment
(
    RandomGenerator random,
    ModelDefinition< S > modelDefinition,
    Model< S > model,
    S initialState,
    SamplingFunction< S > sampling_function,
    int replica,
    double deadline,
    NetworkInfo masterNetworkInfo )
```

Initiates a new client that submits simulations using the parameters of the simulation to execute and the network related data of the master server that will manage such simulation.

Parameters

<i>random</i>	org.apache.commons.math3.random.RandomGenerator of the simulation.
<i>modelDefinition</i>	quasylab.sibilla.core.models.ModelDefinition that defines the simulation model to be sent.
<i>model</i>	The quasylab.sibilla.core.models.Model of the simulation.
<i>initialState</i>	The initial quasylab.sibilla.core.past.State of the model.
<i>sampling_function</i>	The quasylab.sibilla.core.simulator.sampling.SamplingFunction that will be used to collect data.
<i>replica</i>	Repetitions of the simulation.
<i>deadline</i>	Time interval between two samplings.
<i>masterNetworkInfo</i>	quasylab.sibilla.core.network.NetworkInfo of the master to be reached.

5.5 quasylab.sibilla.core.network.compression.Compressor Class Reference

Static Public Member Functions

- static byte[] [compress](#) (byte[] decompressedData)
- static byte[] [decompress](#) (byte[] compressedData)

5.5.1 Detailed Description

Utility class used to compress and decompress byte arrays containing data. The class operations are based upon the tool GZIP.

Author

Stelluti Francesco Pio
Zamponi Marco

5.5.2 Member Function Documentation

5.5.2.1 `compress()`

```
static byte [] quasylab.sibilla.core.network.compression.Compressor.compress (  
    byte[] decompressedData ) [static]
```

Compresses a byte array.

Parameters

<i>decompressedData</i>	byte array to be compressed
-------------------------	-----------------------------

Returns

compressed byte array

5.5.2.2 `decompress()`

```
static byte [] quasylab.sibilla.core.network.compression.Compressor.decompress (  
    byte[] compressedData ) [static]
```

Decompresses a byte array.

Parameters

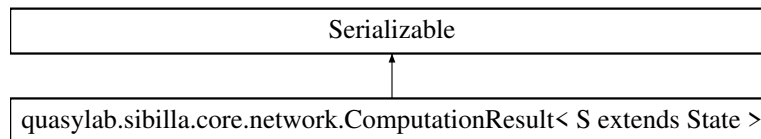
<i>compressedData</i>	byte array to be decompressed
-----------------------	-------------------------------

Returns

decompressed byte array

5.6 quasylib.sibilla.core.network.ComputationResult< S extends State > Class Template Reference

Inheritance diagram for quasylib.sibilla.core.network.ComputationResult< S extends State >:



Public Member Functions

- [ComputationResult](#) (LinkedList< Trajectory< S >> results)
- List< Trajectory< S > > [getResults](#) ()

5.6.1 Detailed Description

Class that stores the results of a simulation executed by a slave.

Parameters

<S>	The quasylib.sibilla.core.past.State of the simulation model.
-----	---

Author

Belenchia Matteo

Stelluti Francesco Pio

Zamponi Marco

5.6.2 Constructor & Destructor Documentation

5.6.2.1 ComputationResult()

```
quasylab.sibilla.core.network.ComputationResult< S extends State >.ComputationResult (
    LinkedList< Trajectory< S >> results )
```

Creates a new [ComputationResult](#) object with the list of trajectories passed in input

Parameters

<i>results</i>	list of trajectories that compose the result of a simulation
----------------	--

5.6.3 Member Function Documentation

5.6.3.1 getResults()

```
List<Trajectory<S> > quasylib.sibilla.core.network.ComputationResult< S extends State >.get↔
Results ( )
```

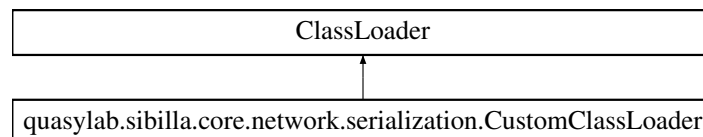
Returns the list of trajectories of a simulation

Returns

list of trajectories that compose the result of a simulation

5.7 quasylib.sibilla.core.network.serialization.CustomClassLoader Class Reference

Inheritance diagram for quasylib.sibilla.core.network.serialization.CustomClassLoader:



Static Public Member Functions

- static byte[] [loadClassBytes](#) (String className)
- static byte[] [removeClassBytes](#) (String className)
- static void [defClass](#) (String name, byte[] b)

5.7.1 Detailed Description

Utility class used to load the data associated to a .class file into the memory.

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.7.2 Member Function Documentation

5.7.2.1 defClass()

```
static void quasylib.sibilla.core.network.serialization.CustomClassLoader.defClass (
    String name,
    byte[] b ) [static]
```

Loads into memory the data associated to a .class file

Parameters

<i>name</i>	of the class to be loaded in memory.
<i>b</i>	byte array containing the data of the class to be loaded in memory.

5.7.2.2 loadClassBytes()

```
static byte [] quasylib.sibilla.core.network.serialization.CustomClassLoader.loadClassBytes (
    String className ) [static]
```

Retrieves the byte array associated to a class name that was previously loaded through this loader.

Parameters

<i>className</i>	the name of the class which byte array data needs to be retrieved.
------------------	--

Returns

byte array associated with the requested class name.

5.7.2.3 removeClassBytes()

```
static byte [] quasylib.sibilla.core.network.serialization.CustomClassLoader.removeClassBytes
(
    String className ) [static]
```

Deletes the byte array associated to a class name that was previously loaded through this loader.

Parameters

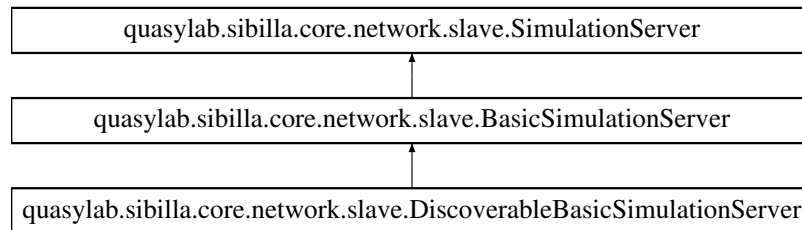
<i>className</i>	the name of the class which byte array data needs to be deleted.
------------------	--

Returns

byte array associated with the requested class name or null if the class wasn't loaded using this loader.

5.8 quasylab.sibilla.core.network.slave.DiscoverableBasicSimulationServer Class Reference

Inheritance diagram for quasylab.sibilla.core.network.slave.DiscoverableBasicSimulationServer:



Public Member Functions

- [DiscoverableBasicSimulationServer](#) (int localDiscoveryPort, [TCPNetworkManagerType](#) simulationNetworkManager, [UDPNetworkManagerType](#) discoveryNetworkManager)

Additional Inherited Members

5.8.1 Detailed Description

Extensions of a simple server that executes the simulations passed by a master server. It replies to discovery messages sent from master servers.

Author

Stelluti Francesco Pio
Zamponi Marco

5.8.2 Constructor & Destructor Documentation

5.8.2.1 DiscoverableBasicSimulationServer()

```

quasylab.sibilla.core.network.slave.DiscoverableBasicSimulationServer.DiscoverableBasicSimulationServer (
    int localDiscoveryPort,
    TCPNetworkManagerType simulationNetworkManager,
    UDPNetworkManagerType discoveryNetworkManager )
  
```

5.9 quasylab.sibilla.core.network.HostLoggerSupplier Class Reference

Public Member Functions

- Logger [getLogger](#) ()

Static Public Member Functions

- static [HostLoggerSupplier getInstance](#) (String hostName)
- static [HostLoggerSupplier getInstance](#) ()

5.9.1 Detailed Description

Class that supplies a singleton Logger instance to be used to log all host's activities. The log is done both on file and console.

Author

Stelluti Francesco Pio

Zamponi Marco

5.9.2 Member Function Documentation

5.9.2.1 [getInstance\(\)](#) [1/2]

```
static HostLoggerSupplier quasylab.sibilla.core.network.HostLoggerSupplier.getInstance ( )  
[static]
```

5.9.2.2 [getInstance\(\)](#) [2/2]

```
static HostLoggerSupplier quasylab.sibilla.core.network.HostLoggerSupplier.getInstance (  
    String hostName ) [static]
```

5.9.2.3 [getLogger\(\)](#)

```
Logger quasylab.sibilla.core.network.HostLoggerSupplier.getLogger ( )
```


5.10 quasylab.sibilla.core.network.master.MasterCommand Enum Reference

Public Attributes

- [INIT](#)
- [PING](#)
- [TASK](#)
- [RESULTS](#)
- [PONG](#)
- [INIT_RESPONSE](#)
- [DATA_RESPONSE](#)
- [CLOSE_CONNECTION](#)

5.10.1 Detailed Description

All the possible command and signals that can be sent from a master server.

Author

Stelluti Francesco Pio
Zamponi Marco

5.10.2 Member Data Documentation

5.10.2.1 CLOSE_CONNECTION

```
quasylab.sibilla.core.network.master.MasterCommand.CLOSE_CONNECTION
```

The command sent by a master server to inform that the connection with an host will be closed.

5.10.2.2 DATA_RESPONSE

```
quasylab.sibilla.core.network.master.MasterCommand.DATA_RESPONSE
```

The command sent by a master server that has received a DATA command from a client.

5.10.2.3 INIT

```
quasylab.sibilla.core.network.master.MasterCommand.INIT
```

The command sent by a master server to initiate a new connection over the network.

5.10.2.4 INIT_RESPONSE

```
quasylab.sibilla.core.network.master.MasterCommand.INIT_RESPONSE
```

The command sent by a master server that has received an INIT command from a client.

5.10.2.5 PING

```
quasylab.sibilla.core.network.master.MasterCommand.PING
```

The command sent by a master server to ping an host which has a connection open with.

5.10.2.6 PONG

```
quasylab.sibilla.core.network.master.MasterCommand.PONG
```

The command sent by a master server to reply to a ping request received by an host.

5.10.2.7 RESULTS

```
quasylab.sibilla.core.network.master.MasterCommand.RESULTS
```

The command sent by a master server to inform that a batch of simulations' results will be sent over the network connection.

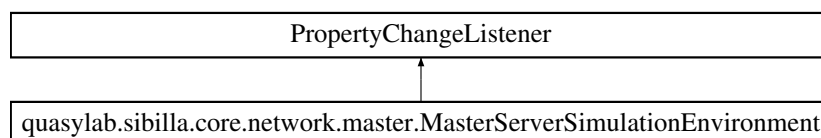
5.10.2.8 TASK

```
quasylab.sibilla.core.network.master.MasterCommand.TASK
```

The command sent by a master server to inform that a batch of tasks will be sent over the network connection.

5.11 quasylab.sibilla.core.network.master.MasterServerSimulationEnvironment Class Reference

Inheritance diagram for quasylab.sibilla.core.network.master.MasterServerSimulationEnvironment:



Public Member Functions

- [MasterServerSimulationEnvironment](#) (int localDiscoveryPort, int remoteDiscoveryPort, [UDPNetworkManagerType](#) discoveryNetworkManager, int localSimulationPort, [TCPNetworkManagerType](#) simulationNetworkManager, PropertyChangeListener... listeners)
- void [propertyChange](#) (PropertyChangeEvent evt)

5.11.1 Detailed Description

Manages connection with clients and slave servers to execute and manage the simulations' tasks and their results over network connections.

Author

Stelluti Francesco Pio

Zamponi Marco

5.11.2 Constructor & Destructor Documentation

5.11.2.1 MasterServerSimulationEnvironment()

```
quasylib.sibilla.core.network.master.MasterServerSimulationEnvironment.MasterServerSimulationEnvironment (
    int localDiscoveryPort,
    int remoteDiscoveryPort,
    UDPNetworkManagerType discoveryNetworkManager,
    int localSimulationPort,
    TCPNetworkManagerType simulationNetworkManager,
    PropertyChangeListener... listeners )
```

Creates and starts up a master server with the given parameters.

Parameters

<i>localDiscoveryPort</i>	port used by the master server to manage the incoming slave servers' registration requests.
<i>remoteDiscoveryPort</i>	port used by the slave servers to manage the incoming master server discovery message.
<i>discoveryNetworkManager</i>	quasylib.sibilla.core.network.communication.UDPNetworkManagerType of UDP network communication that will be used during the slave servers' discovery by the master.
<i>localSimulationPort</i>	port used by the master server to manage the incoming clients' simulation requests.
<i>simulationNetworkManager</i>	quasylib.sibilla.core.network.communication.TCPNetworkManagerType of TCP network communication that will be used between master server and clients.
<i>listeners</i>	java.beans.PropertyChangeListener instances that will be updated about the state of this master server.

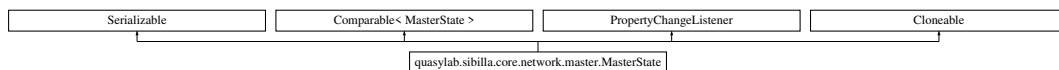
5.11.3 Member Function Documentation

5.11.3.1 propertyChange()

```
void quasylab.sibilla.core.network.master.MasterServerSimulationEnvironment.propertyChange (
    PropertyChangeEvent evt )
```

5.12 quasylab.sibilla.core.network.master.MasterState Class Reference

Inheritance diagram for quasylab.sibilla.core.network.master.MasterState:



Public Member Functions

- [MasterState](#) ([NetworkInfo](#) masterNetworkInfo)
- synchronized void [addSimulation](#) ([SimulationState](#) simulationState)
- synchronized Set< [NetworkInfo](#) > [getSlaveServersNetworkInfos](#) ()
- synchronized Set< [SimulationState](#) > [getSimulationStates](#) ()
- synchronized boolean [removeSimulation](#) ([SimulationState](#) simulationState)
- synchronized void [addPropertyChangeListener](#) (String property, [PropertyChangeListener](#) pcl)
- synchronized void [increaseExecutedSimulations](#) ()
- synchronized boolean [addSlaveServer](#) ([NetworkInfo](#) slaveNetworkInfo)
- synchronized boolean [removeSlaveServer](#) ([NetworkInfo](#) slaveNetworkInfo)
- void [propertyChange](#) ([PropertyChangeEvent](#) evt)
- synchronized [NetworkInfo](#) [getMasterNetworkInfo](#) ()
- synchronized int [getConnectedSlaveServers](#) ()
- synchronized int [getExecutedSimulations](#) ()
- synchronized Date [getMasterServerStartDate](#) ()
- [MasterState](#) [clone](#) ()
- boolean [equals](#) (Object o)
- int [hashCode](#) ()
- int [compareTo](#) ([MasterState](#) masterState)

5.12.1 Detailed Description

Wraps the state of a master server. Its updates can be listened by `java.beans.PropertyChangeListener` instances.

Author

Stelluti Francesco Pio
Zamponi Marco

5.12.2 Constructor & Destructor Documentation

5.12.2.1 MasterState()

```
quasylib.sibilla.core.network.master.MasterState.MasterState (
    NetworkInfo masterNetworkInfo )
```

Initializes the state.

Parameters

<i>masterNetworkInfo</i>	The network related informations about this master server.
--------------------------	--

5.12.3 Member Function Documentation

5.12.3.1 addPropertyChangeListener()

```
synchronized void quasylib.sibilla.core.network.master.MasterState.addPropertyChangeListener (
    String property,
    PropertyChangeListener pcl )
```

5.12.3.2 addSimulation()

```
synchronized void quasylib.sibilla.core.network.master.MasterState.addSimulation (
    SimulationState simulationState )
```

Registers a client submitted simulation.

Parameters

<i>simulationState</i>	state associated with the simulation.
------------------------	---------------------------------------

5.12.3.3 addSlaveServer()

```
synchronized boolean quasylib.sibilla.core.network.master.MasterState.addSlaveServer (
    NetworkInfo slaveNetworkInfo )
```

Registers a new slave server.

Parameters

<i>slaveNetworkInfo</i>	related to the to be registered slave server.
-------------------------	---

Returns

java.lang.Boolean that indicates the result of the operation.

5.12.3.4 clone()

```
MasterState quasylib.sibilla.core.network.master.MasterState.clone ( )
```

5.12.3.5 compareTo()

```
int quasylib.sibilla.core.network.master.MasterState.compareTo (
    MasterState masterState )
```

Compares two master states for ordering.

Parameters

<i>masterState</i>	the quasylib.sibilla.core.network.master.MasterState to be compared.
--------------------	--

Returns

the result of the compareTo method called on the masterServerStartDate instance.

5.12.3.6 equals()

```
boolean quasylib.sibilla.core.network.master.MasterState.equals (
    Object o )
```

5.12.3.7 getConnectedSlaveServers()

```
synchronized int quasylib.sibilla.core.network.master.MasterState.getConnectedSlaveServers ( )
```

Returns

the number of slave servers currently registered.

5.12.3.8 getExecutedSimulations()

```
synchronized int quasylib.sibilla.core.network.master.MasterState.getExecutedSimulations ( )
```

Returns

The number of client submitted simulations that have been executed since the startup of the master server.

5.12.3.9 getMasterNetworkInfo()

```
synchronized NetworkInfo quasylib.sibilla.core.network.master.MasterState.getMasterNetworkInfo  
( )
```

Returns

the network related informations about this master server.

5.12.3.10 getMasterServerStartDate()

```
synchronized Date quasylib.sibilla.core.network.master.MasterState.getMasterServerStartDate ( )
```

Returns

The date the master server started its execution.

5.12.3.11 getSimulationStates()

```
synchronized Set<SimulationState> quasylib.sibilla.core.network.master.MasterState.getSimulation↔  
States ( )
```

Returns

java.util.Set related to submitted simulation states.

5.12.3.12 getSlaveServersNetworkInfos()

```
synchronized Set<NetworkInfo> quasylib.sibilla.core.network.master.MasterState.getSlaveServersNetworkInfos ( )
```

Returns

java.util.Set related to registered slave servers.

5.12.3.13 hashCode()

```
int quasylib.sibilla.core.network.master.MasterState.hashCode ( )
```

5.12.3.14 increaseExecutedSimulations()

```
synchronized void quasylib.sibilla.core.network.master.MasterState.increaseExecutedSimulations ( )
```

Increases the number of client submitted simulations that have been executed since the startup of the master server.

5.12.3.15 propertyChange()

```
void quasylib.sibilla.core.network.master.MasterState.propertyChange (
    PropertyChangeEvent evt )
```

5.12.3.16 removeSimulation()

```
synchronized boolean quasylib.sibilla.core.network.master.MasterState.removeSimulation (
    SimulationState simulationState )
```

Removes a [quasylib.sibilla.core.network.master.SimulationState](#).

Parameters

<i>simulationState</i>	the state to be removed.
------------------------	--------------------------

Returns

java.lang.Boolean that indicates the result of the operation.

5.12.3.17 removeSlaveServer()

```
synchronized boolean quasylib.sibilla.core.network.master.MasterState.removeSlaveServer (
    NetworkInfo slaveNetworkInfo )
```

Unregisters a slave server.

Parameters

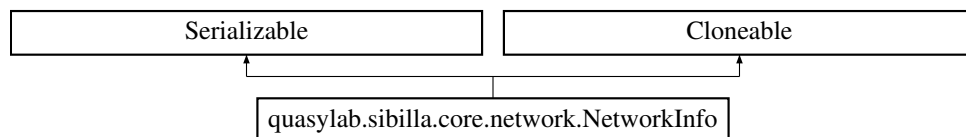
<i>slaveNetworkInfo</i>	related to the to be unregistered slave server.
-------------------------	---

Returns

java.lang.Boolean that indicates the result of the operation.

5.13 quasylib.sibilla.core.network.NetworkInfo Class Reference

Inheritance diagram for quasylib.sibilla.core.network.NetworkInfo:



Public Member Functions

- [NetworkInfo](#) (InetAddress address, int port, [NetworkManagerType](#) serType)
- InetAddress [getAddress](#) ()
- int [getPort](#) ()
- [NetworkManagerType](#) [getType](#) ()
- String [toString](#) ()
- int [hashCode](#) ()
- boolean [equals](#) (Object obj)
- [NetworkInfo](#) [clone](#) ()

5.13.1 Detailed Description

Class that stores info about the connection with a server

Author

Stelluti Francesco Pio
Zamponi Marco

5.13.2 Constructor & Destructor Documentation

5.13.2.1 NetworkInfo()

```
quasylab.sibilla.core.network.NetworkInfo.NetworkInfo (
    InetAddress address,
    int port,
    NetworkManagerType serType )
```

Creates a new [NetworkInfo](#) object with the parameters given in input

Parameters

<i>address</i>	address of the server
<i>port</i>	port the server listens to
<i>serType</i>	type of the network manager used by the server

5.13.3 Member Function Documentation

5.13.3.1 clone()

```
NetworkInfo quasylab.sibilla.core.network.NetworkInfo.clone ( )
```

5.13.3.2 equals()

```
boolean quasylab.sibilla.core.network.NetworkInfo.equals (
    Object obj )
```

5.13.3.3 getAddress()

```
InetAddress quasylab.sibilla.core.network.NetworkInfo.getAddress ( )
```

Returns the address of the server

Returns

address of the server

5.13.3.4 getPort()

```
int quasylib.sibilla.core.network.NetworkInfo.getPort ( )
```

Returns the port the server listens to

Returns

port the server listens to

5.13.3.5 getType()

```
NetworkManagerType quasylib.sibilla.core.network.NetworkInfo.getType ( )
```

Returns the type of network manager used by the server.

Returns

type of network manager used by the server.

5.13.3.6 hashCode()

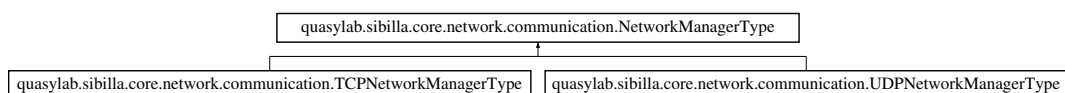
```
int quasylib.sibilla.core.network.NetworkInfo.hashCode ( )
```

5.13.3.7 toString()

```
String quasylib.sibilla.core.network.NetworkInfo.toString ( )
```

5.14 quasylib.sibilla.core.network.communication.NetworkManagerType Interface Reference

Inheritance diagram for quasylib.sibilla.core.network.communication.NetworkManagerType:



5.14.1 Detailed Description

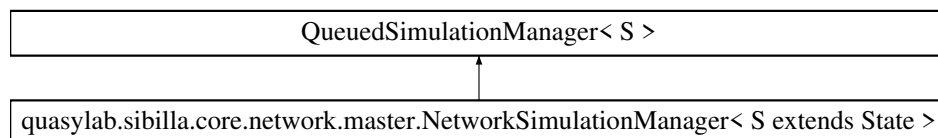
Interface that needs to be implemented by all of the enum classes related to communication oriented classes that are based upon TCP/IP transport layer protocols.

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.15 quasylib.sibilla.core.network.master.NetworkSimulationManager< S extends State > Class Template Reference

Inheritance diagram for quasylib.sibilla.core.network.master.NetworkSimulationManager< S extends State >:



Public Member Functions

- [NetworkSimulationManager](#) (RandomGenerator random, Consumer< Trajectory< S >> consumer, SimulationMonitor monitor, ModelDefinition< S > modelDefinition, [SimulationState](#) simulationState)
- synchronized void [join](#) () throws InterruptedException

Static Public Member Functions

- static SimulationManagerFactory [getNetworkSimulationManagerFactory](#) ([SimulationState](#) simulationState)

Protected Member Functions

- void [startTasksHandling](#) ()

5.15.1 Detailed Description

Handles and coordinates a simulation between the slave servers

Parameters

<S>	The quasylib.sibilla.core.past.State of the simulation model.
-----	---

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.15.2 Constructor & Destructor Documentation

5.15.2.1 NetworkSimulationManager()

```

quasylab.sibilla.core.network.master.NetworkSimulationManager< S extends State >.NetworkSimulationManager
(
    RandomGenerator random,
    Consumer< Trajectory< S >> consumer,
    SimulationMonitor monitor,
    ModelDefinition< S > modelDefinition,
    SimulationState simulationState )
  
```

Creates a [NetworkSimulationManager](#) with the parameters given in input

Parameters

<i>random</i>	RandomGenerator used in the simulation
<i>consumer</i>	
<i>monitor</i>	TODO
<i>modelDefinition</i>	model definition that represent the Model used in the simulation
<i>simulationState</i>	state of the simulation that is being executed

5.15.3 Member Function Documentation

5.15.3.1 getNetworkSimulationManagerFactory()

```

static SimulationManagerFactory quasylab.sibilla.core.network.master.NetworkSimulationManager<
S extends State >.getNetworkSimulationManagerFactory (
    SimulationState simulationState ) [static]
  
```

5.15.3.2 join()

```

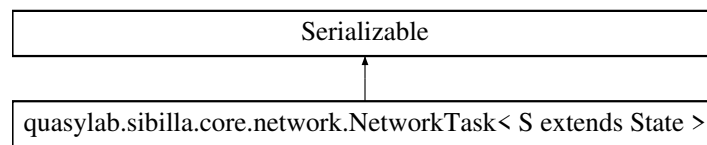
synchronized void quasylab.sibilla.core.network.master.NetworkSimulationManager< S extends
State >.join ( ) throws InterruptedException
  
```

5.15.3.3 startTasksHandling()

```
void quasylib.sibilla.core.network.master.NetworkSimulationManager< S extends State >.startTasksHandling ( ) [protected]
```

5.16 quasylib.sibilla.core.network.NetworkTask< S extends State > Class Template Reference

Inheritance diagram for quasylib.sibilla.core.network.NetworkTask< S extends State >:



Public Member Functions

- [NetworkTask](#) (List< SimulationTask< S >> tasks)
- List< SimulationTask< S >> [getTasks](#) ()

5.16.1 Detailed Description

Class that stores a list of tasks sent through network.

Parameters

<S>	The quasylib.sibilla.core.past.State of the simulation model.
-----	---

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.16.2 Constructor & Destructor Documentation

5.16.2.1 NetworkTask()

```
quasylib.sibilla.core.network.NetworkTask< S extends State >.NetworkTask (
    List< SimulationTask< S >> tasks )
```

Creates a [NetworkTask](#) object from a list of tasks

Parameters

<i>tasks</i>	list of tasks to be executed by a slave server
--------------	--

5.16.3 Member Function Documentation

5.16.3.1 getTasks()

```
List<SimulationTask<S> > quasylab.sibilla.core.network.NetworkTask< S extends State >.get↔
Tasks ( )
```

Returns the list of tasks to be executed by a slave server

Returns

list of tasks to be executed by a slave server

5.17 quasylab.sibilla.core.network.util.NetworkUtils Class Reference

Static Public Member Functions

- static InetAddress [getLocalAddress](#) () throws SocketException
- static List< InetAddress > [getBroadcastAddresses](#) () throws SocketException

5.17.1 Detailed Description

Utility class used to manage and find the local ip of the host and its interfaces in an easy way

Author

Stelluti Francesco Pio
Zamponi Marco

5.17.2 Member Function Documentation

5.17.2.1 getBroadcastAddresses()

```
static List<InetAddress> quasylab.sibilla.core.network.util.NetworkUtils.getBroadcastAddresses
( ) throws SocketException [static]
```

Returns a list of the broadcast addresses linked to each network interface on the host.

Returns

list of broadcast addresses linked to the network interfaces of the host

Exceptions

<i>SocketException</i>	if the host has no network interfaces configured or if an I/O exception happens
------------------------	---

5.17.2.2 getLocalAddress()

```
static InetAddress quasylib.sibilla.core.network.util.NetworkUtils.getLocalAddress ( ) throws
SocketException [static]
```

Returns the local IPV4 address of the machine.

Returns

local IPV4 address of the machine.

Exceptions

<i>SocketException</i>	if the host has no network interfaces configured or if an I/O exception happens
------------------------	---

5.18 quasylib.sibilla.core.network.serialization.Serializer Class Reference

Static Public Member Functions

- static byte[] [serialize](#) (Serializable toSerialize)
- static Serializable [deserialize](#) (byte[] toDeserialize)

5.18.1 Detailed Description

Utility class used to serialize and deserialize data. The class operations are based upon the Apache's [Serialization](#)↔Utils suite.

Author

Stelluti Francesco Pio
Zamponi Marco

5.18.2 Member Function Documentation**5.18.2.1 deserialize()**

```
static Serializable quasylib.sibilla.core.network.serialization.Serializer.deserialize (
    byte[] toDeserialize ) [static]
```

Deserializes a byte array.

Parameters

<i>toDeserialize</i>	byte array to be deserialized
----------------------	-------------------------------

Returns

deserialized Serializable instance

5.18.2.2 `serialize()`

```
static byte [] quasylab.sibilla.core.network.serialization.Serializer.serialize (
    Serializable toSerialize ) [static]
```

Serializes a Serializable instance.

Parameters

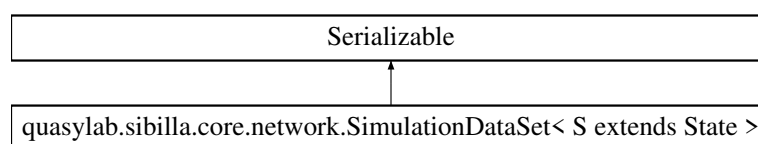
<i>toSerialize</i>	instance to be compressed
--------------------	---------------------------

Returns

serialized byte array

5.19 quasylab.sibilla.core.network.SimulationDataSet< S extends State > Class Template Reference

Inheritance diagram for quasylab.sibilla.core.network.SimulationDataSet< S extends State >:



Public Member Functions

- [SimulationDataSet](#) (RandomGenerator random, ModelDefinition< S > modelDefinition, Model< S > model, S initialState, SamplingFunction< S > sampling_function, int replica, double deadline)
- int [hashCode](#) ()
- boolean [equals](#) (Object obj)
- RandomGenerator [getRandomGenerator](#) ()
- ModelDefinition< S > [getModelDefinition](#) ()
- Model< S > [getModel](#) ()
- S [getModelInitialState](#) ()
- SamplingFunction< S > [getModelSamplingFunction](#) ()
- int [getReplica](#) ()
- double [getDeadline](#) ()
- String [toString](#) ()

5.19.1 Detailed Description

Class that stores info about the simulation that is executed by slaves.

Parameters

<S>	The quasylab.sibilla.core.past.State of the simulation model.
-----	---

Author

Stelluti Francesco Pio

Zamponi Marco

5.19.2 Constructor & Destructor Documentation

5.19.2.1 SimulationDataSet()

```
quasylab.sibilla.core.network.SimulationDataSet< S extends State >.SimulationDataSet (
    RandomGenerator random,
    ModelDefinition< S > modelDefinition,
    Model< S > model,
    S initialState,
    SamplingFunction< S > sampling_function,
    int replica,
    double deadline )
```

Creates a [SimulationDataSet](#) object with the parameters given in input.

Parameters

<i>random</i>	RandomGenerator used by the simulation
<i>modelDefinition</i>	quasylab.sibilla.core.models.ModelDefinition that represent the Model used in the simulation
<i>model</i>	quasylab.sibilla.core.models.Model used in the simulation
<i>initialState</i>	Initial state of the model
<i>sampling_function</i>	quasylab.sibilla.core.simulator.sampling.SamplingFunction used to sample the model
<i>replica</i>	Number of times the simulation is executed
<i>deadline</i>	The deadline of the simulation

5.19.3 Member Function Documentation

5.19.3.1 equals()

```
boolean quasylab.sibilla.core.network.SimulationDataSet< S extends State >.equals (
    Object obj )
```

5.19.3.2 getDeadline()

```
double quasylab.sibilla.core.network.SimulationDataSet< S extends State >.getDeadline ( )
```

Returns the deadline of the simulation.

Returns

deadline of the simulation

5.19.3.3 getModel()

```
Model<S> quasylab.sibilla.core.network.SimulationDataSet< S extends State >.getModel ( )
```

quasylab.sibilla.core.models.Model used in the simulation.

Returns

Model used in the simulation

5.19.3.4 getModelDefinition()

```
ModelDefinition<S> quasylab.sibilla.core.network.SimulationDataSet< S extends State >.get↵  
ModelDefinition ( )
```

Returns the quasylab.sibilla.core.models.ModelDefinition that represent the Model used in the simulation.

Returns

ModelDefinition that represent the Model used in the simulation

5.19.3.5 getModelInitialState()

```
S quasylab.sibilla.core.network.SimulationDataSet< S extends State >.getModelInitialState ( )
```

Returns the initial state of the model.

Returns

initial state of the model

5.19.3.6 getModelSamplingFunction()

```
SamplingFunction<S> quasylib.sibilla.core.network.SimulationDataSet< S extends State >.get↔  
ModelSamplingFunction ( )
```

Returns the quasylib.sibilla.core.simulator.sampling.SamplingFunction used to sample the model.

Returns

SamplingFunction used to sample the model

5.19.3.7 getRandomGenerator()

```
RandomGenerator quasylib.sibilla.core.network.SimulationDataSet< S extends State >.getRandom↔  
Generator ( )
```

Returns the RandomGenerator used in the simulation.

Returns

RandomGenerator used in the simulation

5.19.3.8 getReplica()

```
int quasylib.sibilla.core.network.SimulationDataSet< S extends State >.getReplica ( )
```

Return the number of times the simulation is executed.

Returns

number of times the simulation is executed

5.19.3.9 hashCode()

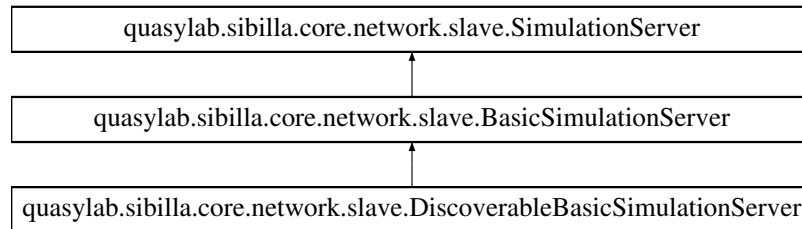
```
int quasylib.sibilla.core.network.SimulationDataSet< S extends State >.hashCode ( )
```

5.19.3.10 toString()

```
String quasylib.sibilla.core.network.SimulationDataSet< S extends State >.toString ( )
```

5.20 quasylab.sibilla.core.network.slave.SimulationServer Interface Reference

Inheritance diagram for quasylab.sibilla.core.network.slave.SimulationServer:



Public Member Functions

- void [start](#) (int port) throws `IOException`

5.20.1 Detailed Description

Interface for slave servers that execute simulations

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.20.2 Member Function Documentation

5.20.2.1 start()

```
void quasylab.sibilla.core.network.slave.SimulationServer.start (
    int port ) throws IOException
```

Creates and starts the slave server on the given port.

Parameters

<i>port</i>	port used by the slave server to manage the incoming requests from the master servers
-------------	---

Exceptions

<i>IOException</i>	when problems arise in network interfaces usage
--------------------	---

Implemented in [quasylab.sibilla.core.network.slave.BasicSimulationServer](#).

5.21 quasylab.sibilla.core.network.master.SimulationState Class Reference

Inheritance diagram for quasylab.sibilla.core.network.master.SimulationState:



Public Member Functions

- [SimulationState](#) ([MasterState](#) masterState, [NetworkInfo](#) masterNetworkInfo, [NetworkInfo](#) clientNetworkInfo, [Set](#)< [NetworkInfo](#) > slaveNetworkInfos, [MasterServerSimulationEnvironment](#) masterServerSimulationEnvironment)
- String [getSimulationModelName](#) ()
- void [setSimulationModelName](#) (String simulationModelName)
- void [propertyChange](#) (PropertyChangeEvent propertyChangeEvent)
- int [compareTo](#) ([SimulationState](#) simulationState)
- synchronized void [addPropertyChangeListener](#) (String property, PropertyChangeListener pcl)
- synchronized void [increaseRunningServers](#) ()
- synchronized void [decreaseRunningServers](#) ()
- synchronized [SlaveState](#) [getSlaveStateByServerInfo](#) ([NetworkInfo](#) slaveNetworkInfo)
- synchronized [Set](#)< [SlaveState](#) > [getSlaveServersStates](#) ()
- synchronized [NetworkInfo](#) [getMasterNetworkInfo](#) ()
- synchronized [NetworkInfo](#) [getClientNetworkInfo](#) ()
- synchronized int [getRegisteredSlaveServers](#) ()
- synchronized int [getRunningSlaveServers](#) ()
- synchronized Date [getSimulationStartDate](#) ()
- synchronized Date [getLastUpdate](#) ()
- synchronized int [getPendingTasks](#) ()
- synchronized void [setPendingTasks](#) (int pendingTasks)
- synchronized int [getTotalSimulationTasks](#) ()
- boolean [isConcluded](#) ()
- synchronized void [setConcluded](#) ()
- [SimulationDataSet](#)<?> [simulationDataSet](#) ()
- void [setSimulationDataSet](#) ([SimulationDataSet](#)<?> simulationDataSet)
- [TCPNetworkManager](#) [clientConnection](#) ()
- void [setClientConnection](#) ([TCPNetworkManager](#) clientConnection)
- [SimulationState](#) [clone](#) ()
- boolean [equals](#) (Object o)
- int [hashCode](#) ()

5.21.1 Detailed Description

Wraps the state of a client submitted simulation. Its updates can be listened by java.beans.PropertyChangeListener instances.

Author

Stelluti Francesco Pio
Zamponi Marco

5.21.2 Constructor & Destructor Documentation

5.21.2.1 SimulationState()

```
quasylib.sibilla.core.network.master.SimulationState.SimulationState (
    MasterState masterState,
    NetworkInfo masterNetworkInfo,
    NetworkInfo clientNetworkInfo,
    Set< NetworkInfo > slaveNetworkInfos,
    MasterServerSimulationEnvironment masterServerSimulationEnvironment )
```

Initializes the state

Parameters

<i>masterState</i>	the state of the master that initiated the simulation. It will be updated at every simulation update.
<i>masterNetworkInfo</i>	related to the master that initiated the simulation.
<i>clientNetworkInfo</i>	related to the client that submitted the simulation.
<i>slaveNetworkInfos</i>	related to the slave servers the simulation will be submitted to.
<i>masterServerSimulationEnvironment</i>	the environment that manages the simulation. It will be updated at every simulation update.

5.21.3 Member Function Documentation

5.21.3.1 addPropertyChangeListener()

```
synchronized void quasylib.sibilla.core.network.master.SimulationState.addPropertyChangeListener(
    Listener (
        String property,
        PropertyChangeListener pcl )
```

5.21.3.2 clientConnection()

```
TCPNetworkManager quasylib.sibilla.core.network.master.SimulationState.clientConnection ( )
```

Returns

The client communication related manager.

5.21.3.3 clone()

```
SimulationState quasylib.sibilla.core.network.master.SimulationState.clone ( )
```

Returns

a deep clone of the quasylib.sibilla.core.network.master.SimulationState in which is called.

5.21.3.4 compareTo()

```
int quasylib.sibilla.core.network.master.SimulationState.compareTo (
    SimulationState simulationState )
```

Compares two simulation states for ordering.

Parameters

<i>simulationState</i>	the quasylib.sibilla.core.network.master.SimulationState to be compared.
------------------------	--

Returns

the result of the compareTo method called on the lastUpdate instance.

5.21.3.5 decreaseRunningServers()

```
synchronized void quasylib.sibilla.core.network.master.SimulationState.decreaseRunningServers
( )
```

Decreases the number of slave servers that are executing simulations.

5.21.3.6 equals()

```
boolean quasylib.sibilla.core.network.master.SimulationState.equals (
    Object o )
```

5.21.3.7 getClientNetworkInfo()

```
synchronized NetworkInfo quasylib.sibilla.core.network.master.SimulationState.getClient←
NetworkInfo ( )
```

Returns

Network related infos about the client that submitted the simulation.

5.21.3.8 getLastUpdate()

```
synchronized Date quasylab.sibilla.core.network.master.SimulationState.getLastUpdate ( )
```

Returns

The last time the state was updated.

5.21.3.9 getMasterNetworkInfo()

```
synchronized NetworkInfo quasylab.sibilla.core.network.master.SimulationState.getMaster↵  
NetworkInfo ( )
```

Returns

Network related infos about the master server that initiated the simulation.

5.21.3.10 getPendingTasks()

```
synchronized int quasylab.sibilla.core.network.master.SimulationState.getPendingTasks ( )
```

Returns

The number of pending simulation tasks.

5.21.3.11 getRegisteredSlaveServers()

```
synchronized int quasylab.sibilla.core.network.master.SimulationState.getRegisteredSlave↵  
Servers ( )
```

Returns

the number of registered and running slave servers.

5.21.3.12 getRunningSlaveServers()

```
synchronized int quasylab.sibilla.core.network.master.SimulationState.getRunningSlaveServers ( )
```

Returns

The number of slave servers that are currently executing the simulation.

5.21.3.13 getSimulationModelName()

```
String quasylab.sibilla.core.network.master.SimulationState.getSimulationModelName ( )
```

Returns

the simulation model name.

5.21.3.14 getSimulationStartDate()

```
synchronized Date quasylab.sibilla.core.network.master.SimulationState.getSimulationStartDate  
( )
```

Returns

The date the simulation was initiated.

5.21.3.15 getSlaveServersStates()

```
synchronized Set<SlaveState> quasylab.sibilla.core.network.master.SimulationState.getSlave←  
ServersStates ( )
```

Returns

java.util.Set related to registered slave servers' states.

5.21.3.16 getSlaveStateByServerInfo()

```
synchronized SlaveState quasylab.sibilla.core.network.master.SimulationState.getSlaveStateBy←  
ServerInfo (   
    NetworkInfo slaveNetworkInfo )
```

Returns the state associated with a specific slave server.

Parameters

<i>slaveNetworkInfo</i>	related to the slave.
-------------------------	-----------------------

Returns

[quasylab.sibilla.core.network.slave.SlaveState](#) associated with the slave, null if the slave requested was not present.

5.21.3.17 getTotalSimulationTasks()

```
synchronized int quasylab.sibilla.core.network.master.SimulationState.getTotalSimulationTasks  
( )
```

Returns

The number of total simulation tasks.

5.21.3.18 hashCode()

```
int quasylab.sibilla.core.network.master.SimulationState.hashCode ( )
```

5.21.3.19 increaseRunningServers()

```
synchronized void quasylab.sibilla.core.network.master.SimulationState.increaseRunningServers  
( )
```

Increases the number of slave servers that are executing simulations.

5.21.3.20 isConcluded()

```
boolean quasylab.sibilla.core.network.master.SimulationState.isConcluded ( )
```

Returns

if the simulation is concluded.

5.21.3.21 propertyChange()

```
void quasylab.sibilla.core.network.master.SimulationState.propertyChange (   
    PropertyChangeEvent propertyChangeEvent )
```

5.21.3.22 setClientConnection()

```
void quasylab.sibilla.core.network.master.SimulationState.setClientConnection (   
    TCPNetworkManager clientConnection )
```

Sets a new client communication related manager.

Parameters

<i>clientConnection</i>	the manager to be set.
-------------------------	------------------------

5.21.3.23 setConcluded()

```
synchronized void quasylib.sibilla.core.network.master.SimulationState.setConcluded ( )
```

Marks the simulation related to this state as concluded.

5.21.3.24 setPendingTasks()

```
synchronized void quasylib.sibilla.core.network.master.SimulationState.setPendingTasks (
    int pendingTasks )
```

Sets the value of pending simulation tasks.

Parameters

<i>pendingTasks</i>	the value to be set.
---------------------	----------------------

5.21.3.25 setSimulationDataSet()

```
void quasylib.sibilla.core.network.master.SimulationState.setSimulationDataSet (
    SimulationDataSet<?> simulationDataSet )
```

Sets a new simulation data set.

Parameters

<i>simulationDataSet</i>	the set to be set.
--------------------------	--------------------

5.21.3.26 setSimulationModelName()

```
void quasylib.sibilla.core.network.master.SimulationState.setSimulationModelName (
    String simulationModelName )
```

Sets the simulation model name.

Parameters

<code>simulationModelName</code>	the name to be set.
----------------------------------	---------------------

5.21.3.27 simulationDataSet()

```
SimulationDataSet<?> quasylab.sibilla.core.network.master.SimulationState.simulationDataSet (
)
```

Returns

The wrapper related to the simulation datas.

5.22 quasylab.sibilla.core.network.slave.SlaveCommand Enum Reference

Public Attributes

- [PONG](#)
- [INIT_RESPONSE](#)
- [CLOSE_CONNECTION](#)

5.22.1 Detailed Description

All the possible command and signals that can be sent from a slave server.

Author

Stelluti Francesco Pio

Zamponi Marco

5.22.2 Member Data Documentation**5.22.2.1 CLOSE_CONNECTION**

```
quasylab.sibilla.core.network.slave.SlaveCommand.CLOSE_CONNECTION
```

The command sent by a slave server to inform that the connection with an host will be closed.

5.22.2.2 INIT_RESPONSE

`quasylab.sibilla.core.network.slave.SlaveCommand.INIT_RESPONSE`

The command sent by a slave server to respond to a master server init command.

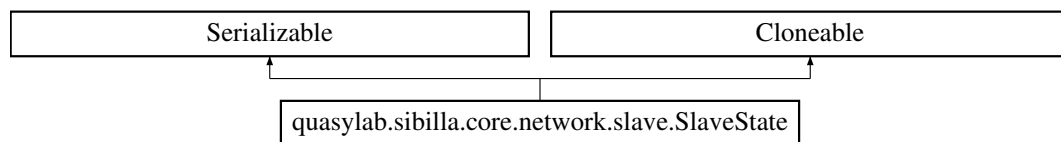
5.22.2.3 PONG

`quasylab.sibilla.core.network.slave.SlaveCommand.PONG`

The command sent by a slave server respond to a master server ping command.

5.23 quasylab.sibilla.core.network.slave.SlaveState Class Reference

Inheritance diagram for `quasylab.sibilla.core.network.slave.SlaveState`:



Public Member Functions

- [SlaveState](#) ([SimulationState](#) simulationState, [NetworkInfo](#) slaveInfo)
- boolean [equals](#) (Object o)
- int [hashCode](#) ()
- void [update](#) (long elapsedTime, int tasksSent)
- void [forceExpiredTimeLimit](#) ()
- void [migrate](#) ([NetworkInfo](#) newSlaveInfo)
- double [getTimeout](#) ()
- double [getTimeLimit](#) ()
- boolean [canCompleteTask](#) (int tasks)
- synchronized void [addPropertyChangeListener](#) (String property, PropertyChangeListener pcl)
- [NetworkInfo](#) [getSlaveInfo](#) ()
- int [getExpectedTasks](#) ()
- boolean [isTimeout](#) ()
- boolean [isRemoved](#) ()
- void [setRemoved](#) ()
- void [timedOut](#) ()
- String [toString](#) ()
- [SlaveState](#) [clone](#) ()

Public Attributes

- double [devRTT](#)
- double [estimatedRTT](#)

5.23.1 Detailed Description

Wraps the state of a slave server. Its updates can be listened by `java.beans.PropertyChangeListener` instances.

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.23.2 Constructor & Destructor Documentation

5.23.2.1 SlaveState()

```
quasylab.sibilla.core.network.slave.SlaveState.SlaveState (
    SimulationState simulationState,
    NetworkInfo slaveInfo )
```

5.23.3 Member Function Documentation

5.23.3.1 addPropertyChangeListener()

```
synchronized void quasylab.sibilla.core.network.slave.SlaveState.addPropertyChangeListener (
    String property,
    PropertyChangeListener pcl )
```

5.23.3.2 canCompleteTask()

```
boolean quasylab.sibilla.core.network.slave.SlaveState.canCompleteTask (
    int tasks )
```

Gets the possibility to complete a certain number of tasks for this server within the time limit

Parameters

<i>tasks</i>	number of tasks to be executed
--------------	--------------------------------

Returns

whether the server can execute these tasks in time or not

5.23.3.3 clone()

```
SlaveState quasylib.sibilla.core.network.slave.SlaveState.clone ( )
```

5.23.3.4 equals()

```
boolean quasylib.sibilla.core.network.slave.SlaveState.equals (
    Object o )
```

5.23.3.5 forceExpiredTimeLimit()

```
void quasylib.sibilla.core.network.slave.SlaveState.forceExpiredTimeLimit ( )
```

Lowers the expected tasks following the TCP window size algorithm and signals it to the listeners

5.23.3.6 getExpectedTasks()

```
int quasylib.sibilla.core.network.slave.SlaveState.getExpectedTasks ( )
```

Returns

number of tasks that the slave server is expected to execute within the set time limit.

5.23.3.7 getSlaveInfo()

```
NetworkInfo quasylib.sibilla.core.network.slave.SlaveState.getSlaveInfo ( )
```

Returns

the network related info about this slave server.

5.23.3.8 getTimeLimit()

```
double quasylab.sibilla.core.network.slave.SlaveState.getTimeLimit ( )
```

Gets the time limit of this server after which the expected tasks are halved

Returns

time limit length of this server

5.23.3.9 getTimeout()

```
double quasylab.sibilla.core.network.slave.SlaveState.getTimeout ( )
```

Gets timeout time of this server after which the server is removed

Returns

timeout length of this server

5.23.3.10 hashCode()

```
int quasylab.sibilla.core.network.slave.SlaveState.hashCode ( )
```

5.23.3.11 isRemoved()

```
boolean quasylab.sibilla.core.network.slave.SlaveState.isRemoved ( )
```

Returns

whether this slave server has been removed from the master server known slaves.

5.23.3.12 isTimeout()

```
boolean quasylab.sibilla.core.network.slave.SlaveState.isTimeout ( )
```

Returns

whether this slave server didn't send computation results to a master within time limit.

5.23.3.13 migrate()

```
void quasylab.sibilla.core.network.slave.SlaveState.migrate (
    NetworkInfo newSlaveInfo )
```

Migrates the network info from this slave server to another slave server

5.23.3.14 setRemoved()

```
void quasylab.sibilla.core.network.slave.SlaveState.setRemoved ( )
```

Sets this server as removed and updates his listeners

5.23.3.15 timedOut()

```
void quasylab.sibilla.core.network.slave.SlaveState.timedOut ( )
```

Sets this server as timed out and updates his listeners

5.23.3.16 toString()

```
String quasylab.sibilla.core.network.slave.SlaveState.toString ( )
```

5.23.3.17 update()

```
void quasylab.sibilla.core.network.slave.SlaveState.update (
    long elapsedTime,
    int tasksSent )
```

Updates the state of the slave server given the data about new executions

Parameters

<i>elapsedTime</i>	time used to execute the tasks
<i>tasksSent</i>	number of tasks executed

5.23.4 Member Data Documentation

5.23.4.1 devRTT

```
double quasylab.sibilla.core.network.slave.SlaveState.devRTT
```

The standard deviation of the round trip time of the simulation tasks execution

5.23.4.2 estimatedRTT

```
double quasylib.sibilla.core.network.slave.SlaveState.estimatedRTT
```

The estimated round trip time of the simulation tasks to be executed

5.24 quasylib.sibilla.core.network.util.SSLUtils Class Reference

Public Member Functions

- void [setKeyStorePath](#) (String keyStorePath)
- void [setKeyStorePass](#) (String keyStorePass)
- void [setKeyStoreType](#) (String keyStoreType)
- void [setTrustStorePath](#) (String trustStorePath)
- void [setTrustStorePass](#) (String trustStorePass)
- void [setTrustStoreType](#) (String trustStoreType)
- SSLContext [createSSLContext](#) () throws IOException

Static Public Member Functions

- static [SSLUtils getInstance](#) ()

5.24.1 Detailed Description

Utility class used to store the data used to initiate a TLS connection and to easily create SSLContext instances

Author

Stelluti Francesco Pio

Zamponi Marco

5.24.2 Member Function Documentation

5.24.2.1 createSSLContext()

```
SSLContext quasylib.sibilla.core.network.util.SSLUtils.createSSLContext ( ) throws IOException
```

Creates the SSLContext with the parameters that has been set previously.

Returns

SSLContext used to create a secure connection

Exceptions

<i>IOException</i>	when TrustStores and KeyStores filer are invalid.
--------------------	---

5.24.2.2 getInstance()

```
static SSLUtils quasylab.sibilla.core.network.util.SSLUtils.getInstance ( ) [static]
```

5.24.2.3 setKeyStorePass()

```
void quasylab.sibilla.core.network.util.SSLUtils.setKeyStorePass (
    String keyStorePass )
```

5.24.2.4 setKeyStorePath()

```
void quasylab.sibilla.core.network.util.SSLUtils.setKeyStorePath (
    String keyStorePath )
```

5.24.2.5 setKeyStoreType()

```
void quasylab.sibilla.core.network.util.SSLUtils.setKeyStoreType (
    String keyStoreType )
```

5.24.2.6 setTrustStorePass()

```
void quasylab.sibilla.core.network.util.SSLUtils.setTrustStorePass (
    String trustStorePass )
```

5.24.2.7 setTrustStorePath()

```
void quasylab.sibilla.core.network.util.SSLUtils.setTrustStorePath (
    String trustStorePath )
```

5.24.2.8 setTrustStoreType()

```
void quasylab.sibilla.core.network.util.SSLUtils.setTrustStoreType (
    String trustStoreType )
```

5.25 quasylab.sibilla.core.network.util.StartupUtils Class Reference

Static Public Member Functions

- static Map< String, String > [parseOptions](#) (String[] args)
- static [TCPNetworkManagerType](#) [TCPNetworkManagerParser](#) (String type)
- static [UDPNetworkManagerType](#) [UDPNetworkManagerParser](#) (String type)

5.25.1 Detailed Description

Utility class used to create startup classes for new masters, slaves and servers.

Author

Stelluti Francesco Pio
Zamponi Marco

5.25.2 Member Function Documentation

5.25.2.1 parseOptions()

```
static Map<String, String> quasylab.sibilla.core.network.util.StartupUtils.parseOptions (
    String[] args ) [static]
```

Parameters

<i>args</i>	from the console
-------------	------------------

Returns

Map containing all the console startup args and the related values

5.25.2.2 TCPNetworkManagerParser()

```
static TCPNetworkManagerType quasylab.sibilla.core.network.util.StartupUtils.TCPNetwork↵
ManagerParser (
    String type ) [static]
```

Parameters

<i>type</i>	name of the quasylab.sibilla.core.network.communication.TCPNetworkManagerType to obtain
-------------	---

Returns

[quasylab.sibilla.core.network.communication.TCPNetworkManagerType](#) related to the name passed as argument

5.25.2.3 UDPNetworkManagerParser()

```
static UDPNetworkManagerType quasylab.sibilla.core.network.util.StartupUtils.UDPNetworkManagerParser (
    String type ) [static]
```

Parameters

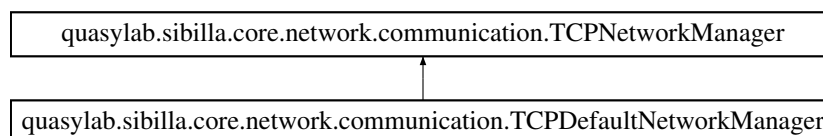
<i>type</i>	name of the quasylab.sibilla.core.network.communication.UDPNetworkManagerType to obtain
-------------	---

Returns

[quasylab.sibilla.core.network.communication.UDPNetworkManagerType](#) related to the name passed as argument

5.26 quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager Class Reference

Inheritance diagram for [quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager](#):



Public Member Functions

- [TCPDefaultNetworkManager](#) (Socket socket) throws IOException
- byte[] [readObject](#) () throws IOException
- void [writeObject](#) (byte[] toWrite) throws IOException
- Socket [getSocket](#) ()
- void [closeConnection](#) () throws IOException
- [TCPNetworkManagerType](#) [getType](#) ()

Additional Inherited Members

5.26.1 Detailed Description

Simple TCP based communication class.

Author

Belenchia Matteo
Stelluti Francesco Pio
Zamponi Marco

5.26.2 Constructor & Destructor Documentation

5.26.2.1 TCPDefaultNetworkManager()

```
quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.TCPDefaultNetworkManager  
(  
    Socket socket ) throws IOException
```

Initiates the manager. The socket upon which the communication is based has already been built.

Parameters

<i>socket</i>	upon which the network communication will be based
---------------	--

Exceptions

<i>IOException</i>	
--------------------	--

5.26.3 Member Function Documentation

5.26.3.1 closeConnection()

```
void quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.closeConnection ( )  
throws IOException
```

Closes the network communication.

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.26.3.2 `getSocket()`

```
Socket quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.getSocket ( )
```

Returns

the Socket upon which is based the network communication.

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.26.3.3 `getType()`

```
TCPNetworkManagerType quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.↔
getType ( )
```

Returns

the [quasylab.sibilla.core.network.communication.TCPNetworkManagerType](#) associated with the [quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager](#) implementation.

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.26.3.4 `readObject()`

```
byte [] quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.readObject ( )
throws IOException
```

Reads incoming data from the network.

Returns

byte array of the data read from the network

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.26.3.5 writeObject()

```
void quasylab.sibilla.core.network.communication.TCPDefaultNetworkManager.writeObject (
    byte[] toWrite ) throws IOException
```

Sends data through the network.

Parameters

<i>toWrite</i>	byte array of data that will be sent over
----------------	---

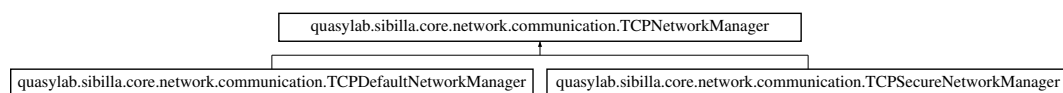
Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.27 quasylab.sibilla.core.network.communication.TCPNetworkManager Interface Reference

Inheritance diagram for quasylab.sibilla.core.network.communication.TCPNetworkManager:



Public Member Functions

- byte[] [readObject](#) () throws IOException
- void [writeObject](#) (byte[] toWrite) throws IOException
- Socket [getSocket](#) ()
- default [NetworkInfo](#) [getNetworkInfo](#) ()
- void [closeConnection](#) () throws IOException
- [TCPNetworkManagerType](#) [getType](#) ()

Static Public Member Functions

- static [TCPNetworkManager](#) [createNetworkManager](#) ([NetworkInfo](#) info) throws IOException
- static [TCPNetworkManager](#) [createNetworkManager](#) ([TCPNetworkManagerType](#) networkType, Socket socket) throws IOException
- static ServerSocket [createServerSocket](#) ([TCPNetworkManagerType](#) networkType, int port) throws IOException

5.27.1 Detailed Description

Interface that needs to be extended from all of the communication related classes that are based upon the TCP transport protocol.

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.27.2 Member Function Documentation

5.27.2.1 closeConnection()

```
void quasylib.sibilla.core.network.communication.TCPNetworkManager.closeConnection ( ) throws
IOException
```

Closes the network communication.

Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylib.sibilla.core.network.communication.TCPSecureNetworkManager](#), and [quasylib.sibilla.core.network.commu](#)

5.27.2.2 createNetworkManager() [1/2]

```
static TCPNetworkManager quasylib.sibilla.core.network.communication.TCPNetworkManager.↔
createNetworkManager (
    NetworkInfo info ) throws IOException [static]
```

Factory method used to obtain quasylib.sibilla.core.network.communication.TCPNetworkManager implementations' instances. Used in classes that want to initiate a network communication.

Parameters

<i>info</i>	The network related infos about the connection that the manager will manage
-------------	---

Returns

quasylib.sibilla.core.network.communication.TCPNetworkManager that will manage the requested connection

Exceptions

<i>IOException</i>	
--------------------	--

5.27.2.3 createNetworkManager() [2/2]

```
static TCPNetworkManager quasylab.sibilla.core.network.communication.TCPNetworkManager.createNetworkManager (
    TCPNetworkManagerType networkType,
    Socket socket ) throws IOException [static]
```

Factory method used to obtain quasylab.sibilla.core.network.communication.TCPNetworkManager implementations' instances. Used in classes that want to initiate a network communication.

Parameters

<i>networkType</i>	the type associated with the implementation of quasylab.sibilla.core.network.communication.TCPNetworkManager that will be instantiated
<i>socket</i>	upon which the network communication will be based

Returns

quasylab.sibilla.core.network.communication.TCPNetworkManager that will manage the requested connection

Exceptions

<i>IOException</i>	
--------------------	--

5.27.2.4 createServerSocket()

```
static ServerSocket quasylab.sibilla.core.network.communication.TCPNetworkManager.createServerSocket (
    TCPNetworkManagerType networkType,
    int port ) throws IOException [static]
```

Factory method used to obtain ServerSocket instances. Used in classes that want to accept incoming network communications.

Parameters

<i>networkType</i>	the type associated with the implementation of quasylab.sibilla.core.network.communication.TCPNetworkManager that will be instantiated
<i>port</i>	used to listen for incoming connections

Returns

ServerSocket used to accept incoming connections

Exceptions

<i>IOException</i>	
--------------------	--

5.27.2.5 getNetworkInfo()

```
default NetworkInfo quasylib.sibilla.core.network.communication.TCPNetworkManager.getNetworkInfo ( )
```

Returns

a copy of the [quasylib.sibilla.core.network.NetworkInfo](#) instance associated with the manager.

5.27.2.6 getSocket()

```
Socket quasylib.sibilla.core.network.communication.TCPNetworkManager.getSocket ( )
```

Returns

the Socket upon which is based the network communication.

Implemented in [quasylib.sibilla.core.network.communication.TCPSecureNetworkManager](#), and [quasylib.sibilla.core.network.communication.TCPNetworkManager](#)

5.27.2.7 getType()

```
TCPNetworkManagerType quasylib.sibilla.core.network.communication.TCPNetworkManager.getType ( )
```

Returns

the [quasylib.sibilla.core.network.communication.TCPNetworkManagerType](#) associated with the quasylib.sibilla.core.network.communication.TCPNetworkManager implementation.

Implemented in [quasylib.sibilla.core.network.communication.TCPSecureNetworkManager](#), and [quasylib.sibilla.core.network.communication.TCPNetworkManager](#)

5.27.2.8 readObject()

```
byte [ ] quasylib.sibilla.core.network.communication.TCPNetworkManager.readObject ( ) throws IOException
```

Reads incoming data from the network.

Returns

byte array of the data read from the network

Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylab.sibilla.core.network.communication.TCPSecureNetworkManager](#), and [quasylab.sibilla.core.network.commu](#)

5.27.2.9 writeObject()

```
void quasylab.sibilla.core.network.communication.TCPNetworkManager.writeObject (
    byte[] toWrite ) throws IOException
```

Sends data through the network.

Parameters

<i>toWrite</i>	byte array of data that will be sent over
----------------	---

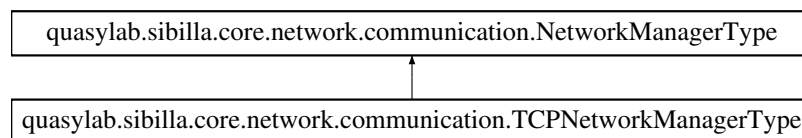
Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylab.sibilla.core.network.communication.TCPSecureNetworkManager](#), and [quasylab.sibilla.core.network.commu](#)

5.28 quasylab.sibilla.core.network.communication.TCPNetworkManagerType Enum Reference

Inheritance diagram for quasylab.sibilla.core.network.communication.TCPNetworkManagerType:



Public Attributes

- [DEFAULT](#)
- [SECURE](#)

5.28.1 Detailed Description

All of the names associated to the classes that implement [quasylab.sibilla.core.network.communication.TCPNetworkManager](#) and are based upon the TCP transport protocol.

Author

Belenchia Matteo
 Stelluti Francesco Pio
 Zamponi Marco

5.28.2 Member Data Documentation

5.28.2.1 DEFAULT

`quasylab.sibilla.core.network.communication.TCPNetworkManagerType.DEFAULT`

The simplest interface implementation.

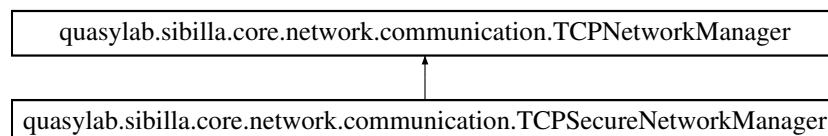
5.28.2.2 SECURE

`quasylab.sibilla.core.network.communication.TCPNetworkManagerType.SECURE`

The implementation that relies upon SSL.

5.29 [quasylab.sibilla.core.network.communication.TCPSecureNetworkManager](#) Manager Class Reference

Inheritance diagram for `quasylab.sibilla.core.network.communication.TCPSecureNetworkManager`:



Public Member Functions

- [TCPSecureNetworkManager](#) ([NetworkInfo](#) networkInfo) throws `IOException`
- [TCPSecureNetworkManager](#) (`Socket` socket) throws `IOException`
- `byte[]` [readObject](#) () throws `IOException`
- `void` [writeObject](#) (`byte[]` toWrite) throws `IOException`
- `Socket` [getSocket](#) ()
- `void` [closeConnection](#) () throws `IOException`
- [TCPNetworkManagerType](#) [getType](#) ()

Additional Inherited Members

5.29.1 Detailed Description

TCP based communication class that relies on TLS protocol.

Author

Stelluti Francesco Pio

Zamponi Marco

5.29.2 Constructor & Destructor Documentation

5.29.2.1 TCPSecureNetworkManager() [1/2]

```
quasylib.sibilla.core.network.communication.TCPSecureNetworkManager.TCPSecureNetworkManager (
    NetworkInfo networkInfo ) throws IOException
```

Initiates the manager as a client. The socket upon which the communication is based will be built.

Parameters

<i>networkInfo</i>	The network related infos about the connection that the manager will manage
--------------------	---

Exceptions

<i>IOException</i>	
--------------------	--

5.29.2.2 TCPSecureNetworkManager() [2/2]

```
quasylib.sibilla.core.network.communication.TCPSecureNetworkManager.TCPSecureNetworkManager (
    Socket socket ) throws IOException
```

Initiates the manager as a server. The socket upon which the communication is based has already been built.

Parameters

<i>socket</i>	upon which the network communication will be based
---------------	--

Exceptions

<i>IOException</i>	
--------------------	--

5.29.3 Member Function Documentation

5.29.3.1 closeConnection()

```
void quasylab.sibilla.core.network.communication.TCPSecureNetworkManager.closeConnection ( )
throws IOException
```

Closes the network communication.

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.29.3.2 getSocket()

```
Socket quasylab.sibilla.core.network.communication.TCPSecureNetworkManager.getSocket ( )
```

Returns

the Socket upon which is based the network communication.

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.29.3.3 getType()

```
TCPNetworkManagerType quasylab.sibilla.core.network.communication.TCPSecureNetworkManager.↔
getType ( )
```

Returns

the [quasylab.sibilla.core.network.communication.TCPNetworkManagerType](#) associated with the [quasylab.sibilla.core.network.communication.TCPNetworkManager](#) implementation.

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.29.3.4 readObject()

```
byte [ ] quasylab.sibilla.core.network.communication.TCPSecureNetworkManager.readObject ( )
throws IOException
```

Reads incoming data from the network.

Returns

byte array of the data read from the network

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.29.3.5 writeObject()

```
void quasylab.sibilla.core.network.communication.TCPSecureNetworkManager.writeObject (
    byte[] toWrite ) throws IOException
```

Sends data through the network.

Parameters

<i>toWrite</i>	byte array of data that will be sent over
----------------	---

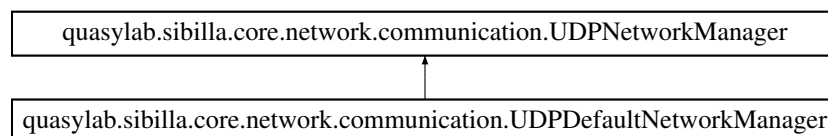
Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.TCPNetworkManager](#).

5.30 quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager Class Reference

Inheritance diagram for quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager:

**Public Member Functions**

- [UDPDefaultNetworkManager](#) (DatagramSocket socket)
- byte[] [readObject](#) () throws IOException
- void [writeObject](#) (byte[] toWrite, InetAddress address, int port) throws IOException
- void [closeConnection](#) () throws IOException

Additional Inherited Members

5.30.1 Detailed Description

Simple communication class based upon the UDP transport protocol.

Author

Stelluti Francesco Pio
Zamponi Marco

5.30.2 Constructor & Destructor Documentation

5.30.2.1 UDPDefaultNetworkManager()

```
quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager.UDPDefaultNetworkManager
(
    DatagramSocket socket )
```

Initiates the manager as a client. The socket upon which the communication is based has already been built.

Parameters

<i>socket</i>	upon which the network communication will be based
---------------	--

5.30.3 Member Function Documentation

5.30.3.1 closeConnection()

```
void quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager.closeConnection ( )
throws IOException
```

Closes the network communication.

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.UDPNetworkManager](#).

5.30.3.2 readObject()

```
byte [] quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager.readObject ( )  
throws IOException
```

Reads incoming data from the network.

Returns

byte array of the data read from the network

Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.UDPNetworkManager](#).

5.30.3.3 writeObject()

```
void quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager.writeObject (   
    byte[] toWrite,  
    InetAddress address,  
    int port ) throws IOException
```

Sends data through the network.

Parameters

<i>toWrite</i>	byte array of data that will be sent over
<i>address</i>	used as destination of the data
<i>port</i>	used as destination of the data

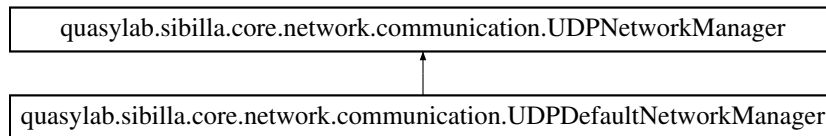
Exceptions

<i>IOException</i>	
--------------------	--

Implements [quasylab.sibilla.core.network.communication.UDPNetworkManager](#).

5.31 quasylab.sibilla.core.network.communication.UDPNetworkManager Interface Reference

Inheritance diagram for quasylab.sibilla.core.network.communication.UDPNetworkManager:



Public Member Functions

- byte[] [readObject](#) () throws IOException
- void [writeObject](#) (byte[] toWrite, InetAddress address, int port) throws IOException
- void [closeConnection](#) () throws IOException

Static Public Member Functions

- static [UDPNetworkManager createNetworkManager](#) ([NetworkInfo](#) info, boolean toBroadcast) throws SocketException
- static [UDPNetworkManager createNetworkManager](#) ([UDPNetworkManagerType](#) networkType, DatagramSocket datagramSocket)

5.31.1 Detailed Description

Interface that needs to be extended from all of the communication related classes that are based upon the UDP transport protocol.

Author

Stelluti Francesco Pio
Zamponi Marco

5.31.2 Member Function Documentation

5.31.2.1 closeConnection()

```
void quasylab.sibilla.core.network.communication.UDPNetworkManager.closeConnection ( ) throws
IOException
```

Closes the network communication.

Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylab.sibilla.core.network.communication.UDPDefaultNetworkManager](#).

5.31.2.2 createNetworkManager() [1/2]

```
static UDPNetworkManager quasylab.sibilla.core.network.communication.UDPNetworkManager.↵  
createNetworkManager (   
    NetworkInfo info,   
    boolean toBroadcast ) throws SocketException [static]
```

Factory method used to obtain [quasylab.sibilla.core.network.communication.TCPNetworkManager](#) implementations' instances. Used in classes that want to initiate a network communication.

Parameters

<i>info</i>	The network related infos about the connection that the manager will manage
<i>toBroadcast</i>	to mark if the manager will have to send broadcast messages

Returns

[quasylab.sibilla.core.network.communication.UDPNetworkManager](#) that will manage the requested connection

Exceptions

<i>SocketException</i>	
------------------------	--

5.31.2.3 createNetworkManager() [2/2]

```
static UDPNetworkManager quasylab.sibilla.core.network.communication.UDPNetworkManager.↵  
createNetworkManager (   
    UDPNetworkManagerType networkType,   
    DatagramSocket datagramSocket ) [static]
```

Factory method used to obtain [quasylab.sibilla.core.network.communication.TCPNetworkManager](#) implementations' instances. Used in classes that want to initiate a network communication.

Parameters

<i>networkType</i>	the type associated with the implementation of quasylab.sibilla.core.network.communication.UDPNetworkManager that will be instantiated
<i>datagramSocket</i>	upon which the network communication will be based

Returns

[quasylab.sibilla.core.network.communication.UDPNetworkManager](#) that will manage the requested connection

5.31.2.4 readObject()

```
byte [] quasylib.sibilla.core.network.communication.UDPNetworkManager.readObject ( ) throws
IOException
```

Reads incoming data from the network.

Returns

byte array of the data read from the network

Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylib.sibilla.core.network.communication.UDPDefaultNetworkManager](#).

5.31.2.5 writeObject()

```
void quasylib.sibilla.core.network.communication.UDPNetworkManager.writeObject (
    byte[] toWrite,
    InetAddress address,
    int port ) throws IOException
```

Sends data through the network.

Parameters

<i>toWrite</i>	byte array of data that will be sent over
<i>address</i>	used as destination of the data
<i>port</i>	used as destination of the data

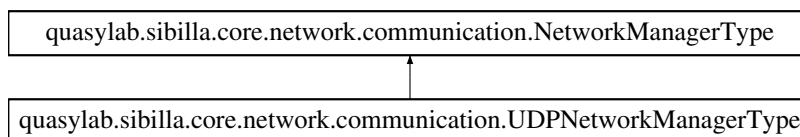
Exceptions

<i>IOException</i>	
--------------------	--

Implemented in [quasylib.sibilla.core.network.communication.UDPDefaultNetworkManager](#).

5.32 quasylib.sibilla.core.network.communication.UDPNetworkManagerType Enum Reference

Inheritance diagram for quasylib.sibilla.core.network.communication.UDPNetworkManagerType:



Public Attributes

- [DEFAULT](#)

5.32.1 Detailed Description

All of the names associated to the classes that implement [quasylab.sibilla.core.network.communication.UDPNetworkManager](#) and are based upon the UDP transport protocol.

Author

Stelluti Francesco Pio

Zamponi Marco

5.32.2 Member Data Documentation

5.32.2.1 DEFAULT

`quasylab.sibilla.core.network.communication.UDPNetworkManagerType.DEFAULT`

The simplest interface implementation.

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