



Google Talk for Developers g+1 0

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Open Communications

libjingle

Developer Guide

Changelist

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How libjingle

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Task Class

Task is a base class for multi-part, asynchronous tasks. **Task** provides two main benefits to its subclasses:

- **Task** objects let you break a task into smaller components and handle them separately. Each **Task** object can have child **Task** objects that handle a smaller part of a job. (These children can in turn have their own **Task** children). **Task** objects handle cleanup of their children when they complete or are abandoned. Therefore, management of a task is relatively simple because only the top level **Task** object need be controlled.
- **Task** objects are multithreaded state machines, and good for handling very asynchronous tasks, such as sending and receiving XMPP stanzas. In fact, libjingle defines a specialized task type, **XmppTask**, for sending and receiving XMPP messages.

All tasks are managed by the **TaskRunner** class. A **Task** object should either be the child of an object that implements **TaskRunner**, or it should implement **TaskRunner** itself. To start a task, call its **Start** method, after calling any required methods to set required values. Example task-based objects include **SessionSendTask**, which sends an XMPP message and waits for a reply, and **Receiver**, which listens to all incoming XMPP stanzas.

A **Task** implementation overrides the base **ProcessStart** method, which returns a value indicating the status of the process. When the task returns **STATE_DONE**, it is complete, and the **TaskRunner** object will delete it from the queue. See the code comments in task.h for more information. Example **Task** objects include **Receiver** and **SessionSendTask**. Example **TaskRunner** objects include **XmppPump**.

The basic state values that a **Task** object can return are defined by the following nameless enum in task.h

```
enum {
    STATE_BLOCKED = -1,
    STATE_INIT = 0,
    STATE_START = 1,
    STATE_DONE = 2,
    STATE_ERROR = 3,
    STATE_RESPONSE = 4,
    STATE_NEXT = 5, // Subclasses which need more states start here and higher
};
```

Additional state values can be defined by overriding classes.

XmppTask is a specialized subclass that handles incoming XMPP stanzas. The task manager for all **XmppTask** objects is **XmppClient**. When **XmppClient** receives a new XMPP stanza from the network, it queries each of its child **XmppTask** objects to see which one can handle it. Child

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Class	tasks are queried in order of the priority hard-coded in their constructor code. As soon as one of the child tasks indicates that it will handle the stanza (by returning true for HandleStanza) XmppClient will stop querying the other children.
Connection Class	
FileStream Class	
HttpPortAllocator Class	Syntax
MediaChannel Class	<pre>class Task</pre>
MediaEngine Class	Signals
MemoryStream Class	SignalTimeout Sent when the task times out. Sets the state to STATE_DONE.
P2PTransportCha...	Attributes: public
Port Class	
PresenceOutTask Class	Declaration file: talk/base/task.h
PresencePushTask Class	
Session Class	
SessionClient Class	
SessionManager Class	
SessionSendTask Class	
StreamEvent Enumeration	
StreamInterface Class	
StreamResult Enumeration	
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- Jingle Server
- Discovery
- Gmail Notifications
- Shared Status
- Messages
- Extended Contact
- Attributes
- JID Domain Discovery
- Voicemail
- OAuth 2.0
- Authorization

Additional Resources

- Other IM Clients
- Accessories
- Google Talk Blog

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