

Client/Server Requirements

The Client/Server package will be a generic package that will provide users with the ability to easily create client/server applications that can be used on UNIX (IBM, SGI, Digital, Linux) and NT systems without any change to their source code.

Client Requirements:

- Connect/Disconnect to one (or more) server process(es).
 - ❖ Provides automatic reconnection to a server if connection is lost and notifies the user that connection has been lost or re-established.
 - ❖ Connect to server by name.
- Send/Receive messages of arbitrary size and format.
 - ❖ Synchronous and asynchronous should both be supported.

Server Requirements:

- Advertises service availability by name.
- Receive incoming connections from clients.
 - ❖ Should also be allowed to disconnect or reject any connection at any time.
- Send/Receive messages of arbitrary size and format.
 - ❖ Synchronous and asynchronous should both be supported.
 - ❖ Key messages by connection.
- Respond to high priority requests.
- Controllable from outside expert program.
 - ❖ Can clear queues if they are full.
 - ❖ Can disconnect a client if the connection is causing problems.

General Requirements:

- User should not need to know what communications protocol is being used.
 - ❖ Should allow user to specify a protocol
 - ❖ Should at minimum support TCP, UDP and NT named pipes (for L3).
- User independence from underlying implementation.
 - ❖ User should not need to know whether or not threads are running behind the scenes.
- Handle events common to all Client/Server applications.
 - ❖ Connection established/failed.
 - ❖ Disconnection occurred.
- Allow user to provide callbacks if common event occurs.
 - ❖ e.g. Want to display to the user that a connection has been made.
- Timeout on activities which may or may not block.
- Provide statistics and monitoring capability.
 - ❖ Get message counts, rates.
 - ❖ Get status of Client or Server process.
 - ◆ Number of threads running.
 - ◆ Status of each thread.
 - ❖ Allow developers the ability to add in more information.