Note: The security header is not included in the protocol format. Each protocol will have a prefix of [4] Security Header, [4] Msg Length and [4] Protocol, and a suffix of [4] Security Header so it is not necessary to include it in every protocol description.

Example:

[4] Security Header

[4] Message Length of (Protocol Length + Data Length)

[4] Protocol

[N] Data

[4] Security Header

CLIENT TO SERVER Protocols

|  |  |
| --- | --- |
| **CS\_Protocol** | **Description** |
| Connection Oriented |  |
| **CLOSE\_GAME** | Will close the game for the player, and the connection to the server.  ***void CloseGame(string playerName)***  [1] Player Name Length, [N] Player Name |
| **LOGIN\_PLAYER** | Sends a request to the server for the player to connect.  ***boolean LoginPlayer(string playerName)***  [1] Player Name length, [N] Player Name |
| **LOGOUT\_PLAYER** | Requests that the server disconnect the player.  ***void LogoutPlayer(string playerName)***  [1] Player Name Length, [N] Player Name |
|  |  |
| Game Viewer |  |
| **REFRESH\_GAMES** | Sends a request for a list of refreshed games.  ***void RefreshGames(string playerName, uint32 lobbyID)***  [1] Player Name Length, [N] Player Name, [4] LobbyID |
| **JOIN\_GAME** | Requests that the player joins the selected game.  ***boolean JoinGame(string playerName, uint32 gameID)***  [1] Player Name Length, [N] Player Name, [4] GameID |
| **CREATE\_GAME** | Request sent to the server to create a game with the player as the host.  ***boolean CreateGame(string playerName)***  [1] Player Name Length, [N] Player Name |
|  |  |
| Game Lobby |  |
| **LEAVE\_GAME** | Requests that the player leave the game they are currently in.  ***void LeaveGame(string playerName, uint32 gameID)*** |
| **DISBAND\_GAME** | Requests that the game is disbanded.  ***boolean CreateGame(uint gameID)*** |
| **JOIN\_TEAM** | Requests that the player joins the team they have selected  ***boolean JoinTeam(string playerName, uint lobbyID, uint teamID)*** |
| **READY\_STATUS** | Updates the player ready status, and sends it to the server  ***void UpdatePlayerReady(string playerName, boolean readyStatus)*** |
| **BENCH\_PLAYER** | Requests that the player is sent back to the bench if they are currently on a team.  ***boolean BenchPlayer(string playerName, uint lobbyID)*** |
| **SET\_GAMEPLAY\_OPTIONS** | *Host of game only.* Will send to the server the new gameplay options for the players.  ***void SetGameplayOptions(uint gameID, ????? options)*** |
|  |  |
| Chat |  |
| **SEND\_MESSAGE\_IG** | Will send a message to the server meant for all the players within that game.  ***void BroadcastMessage\_Game(string senderName, uint gameID, string message)*** |
| **SEND\_MESSAGE\_GL** | Will send a message to the server meant for all the players within the game prep. lobby.  ***void BroadcastMessage\_Lobby(string senderName, uint lobbyID, string message)*** |
| **SEND\_WHISPER** | Will send a whisper request to the server for a specified person.  ***bool Whisper(string senderName, string recipientName)***  *returns false if recipient is not found* |
| **SEND\_PARTY\_MSG\_IG** | Will send a message to the server meant for players in the same party - while in game.  ***void BroadcastMessage\_Team(string senderName, uint teamID, string message)*** |
| **SEND\_PARTY\_MSG\_GL** | Will send a message to the server meant for players in the same party - while in the game lobby.  ***void PartyMessage\_Lobby(string senderName, uint lobbyID, string message)*** |
|  |  |
| In-Game Commands |  |
| **KICK\_PLAYER** | Requests to the server that a designated player is kicked from the match.  *server:* ***void KickPlayer(string playerName)*** |
| **PAUSE\_GAME** | A request sent to the server to pause the game. - When two are received in X amount of time the game will pause.  ***boolean PauseRequest(string playerName, uint gameID)*** |
| **END\_GAME** | *Game host only.* Will send a request to the server to save and quit the current game.  ***boolean SaveAndQuit(uint gameID)*** |
| **RESUME\_GAME** | *Game host only.* Will send a request to server to resume game from a paused status.  ***boolean ResumeGame(string hostPlayerName)*** |
| **QUIT\_GAME** | Tells the server that a player has left the game  ***boolean QuitGame(string playerName, uint gameID)*** |
|  |  |
| Gameplay |  |
| **PLACE\_TOWER** | Sends a requests to the server to place a tower in the designated spot.  ***boolean PlaceTower (string playerName, uint towerID, uint gridspace)***  *returns true if the tower placement is allowed and false if not allowed* |
| **SUMMON\_MINION** | Sends a request to the server to place a minion at the starting portal.  ***boolean SummonMinion(uint teamID, string playerName, uint minionID)***  summons a minion for team by player at startPortal  returns true if successful |
| **RESEARCH\_MINION** | Sends a request to research a minion for the team.  ***boolean ResearchMinion(string playerName, uint minionID)***  *returns true if successful* |
| **RESEARCH\_TOWER** | Sends a request to research a tower for the team.  ***boolean ResearchTower(string playerName, uint towerID)***  unlocks the tower type for the player if successful  returns true if successful |

SERVER TO CLIENT Protocols

|  |  |
| --- | --- |
| **Protocol** | **Description** |
| Connection |  |
| **RETURN\_LOGIN\_PLAYER** | Returns information for successful/unsuccessful login  ***void PlayerLogin(boolean response, uint gameID)***  [1] Username Length [N] Username [1] Successful/UnSuccessful |
| **CLIENT\_LOST** | Sends info to all clients in the case that someone disconnects.  [1] Username Length, [N] Username |
| **CLIENT\_REJOIN** | Sends info to all clients in the case someone reconnects  [1] Username Length, [N] Username |
|  |  |
| Game Viewer |  |
| **POPULATE\_GAMES** | Sends the current available games from the server to the client to be viewed.  ***void RefreshGames(string playerName, uid lobbyID, ??????[ ] games)*** |
| **RETURN\_JOIN\_GAME\_STATUS** | Sends over a notification letting the player know if they were able to join the selected game or not.  ***void PlayerJoinedGame( boolean response, uint gameID)***  [1] Boolean, [4] GameID |
| **RETURN\_CREATED\_GAME** | Sends over a notification letting the player know if their game was created or not.  ***void PlayerCreatedGame( boolean response, uint gameID)*** |
|  |  |
| Game lobby |  |
| **REFRESH\_LOBBY** | Allows the server to send the data of all the clients viewing/joined the selected game.  ***void UpdateLobby(????? LobbyInfo)*** |
| **RETURN\_DISBAND\_GAME** | Returns the response to the host if the game was disbanded or not.  ***void PlayerDisbandedGame( boolean response)***  [1] Boolean |
| **BROADCAST\_DISBAND\_GAME** | Will notify all other players in the game lobby that the game has been disbanded, and should return to game viewer. |
| **RETURN\_JOIN\_TEAM** | Returns the response to the player if they were able to join the team or not.  ***void PlayerJoinedTeam( boolean response, uint teamID)***  [1] Boolean |
| **RETURN\_BENCH\_PLAYER** | Returns the response for the player that requested to be benched, and if it was successful.  ***void PlayerBenched(string playerName, boolean response)***  [1] Boolean |
| **UPDATE\_GAMEPLAY\_OPTIONS** | When the gameplay options are updated by the host, this will be sent to all the clients within the game and notify them of the changes. |
|  |  |
| Chat |  |
| **BROADCAST\_MESSAGE\_IG** | Will send a message to all players in the specified game.  ***void UserChatMessage(string playerName, string senderName, string message, MessageType type)*** |
| **BROADCAST\_MESSAGE\_GL** | Will send a message to all players within the same game lobby. |
| **DISPLAY\_WHISPER** | Will send the whisper to the chat box of the specified player.  [1] Username Length [N] Username [1] Reciever Name Length [N] Reciever Name |
| **BROADCAST\_PARTY\_MSG\_IG** | Broadcasts the message to all players in the party while in game.. |
| **BROADCAST\_PARTY\_MSG\_GL** | Broadcasts the message to all players in the party while in the game lobby. |
|  |  |
| In-Game Commands |  |
| **RETURN\_PAUSE\_GAME** | Relays information back to the player requestion to pause the game.  ***void PlayerPausedGame(boolean response)***  [1] Boolean |
| **RETURN\_END\_GAME** | Relays information back to the player requesting to end the game.  ***void PlayerEndedGame(boolean response)*** |
| **RETURN\_RESUME\_GAME** | Relays information back to the player requestion to resume the game  ***void PlayerResumedGame(boolean response, GameInfo gameInfo)*** |
| **RETURN\_QUIT\_GAME** | Relays the response to the player that requested to quit the game.  ***void PlayerQuitGame(boolean response)***  [1] Boolean |
| **RETURN\_KICK\_STATUS** | Relays information about the person to be kicked back to the host. |
|  |  |
| Gameplay |  |
| **SUMMON\_MINION** | Notifies the player if the server was able to summon the minion or not  ***void sendMinionInfo(string playerName, boolean minionAcknowledgement)***  [1] Boolean |
| **BROADCAST\_SUMMON\_MINION** | Broadcasts the information of the minions being summoned to all the players in the game.  ***void SendMinionToClient(Connection user, Command command, Message arguments)***  gets called multiple times by BroadcastMinionToGame(); |
| **TOWER\_PLACED** | Notifies the player if the server was unable or able to place the tower.  [1] Boolean |
| **BROADCAST\_TOWER\_PLACED** | Broadcasts the information of the tower to all the players in the game if the placement was successful.  ***void SendTowerToClient(Connection user, Command command, Message arguments)***  gets called multiple times by BroadcastTowerToGame(); |
| **UPDATE\_ECONOMY** | ***void UpdateClientEconomy(Connection client, uint[] economyValues)***  updates one client’s economy  called multiple times by UpdateEconomy(); |
| **UPDATE\_BASE\_HP** | ***void UpdateBaseHP(uint TeamID)***  updates remaining HP for the 2 main bases |
| **ASSIGN\_RESOURCE\_NODE** | ***void AssignResourceNode(uint TeamID, uint ResourceNodeID)***  Assigns a particular resource node to a particular team once they have captured it using their ZoI |
| **RESEARCH\_MINION** | Returns the results if the minion was successfully researched or not.  [1] Boolean |
| **RESEARCH\_TOWER** | Returns the results if the tower was successfully researched or not.  [1] Boolean |