

MYTEAMS COMMUNICATION PROTOCOL

Introduction

This protocol is used to communicate between myTeams (CLI) Client and the server. Every possible action uses the same data transfer protocol. The protocol uses bytes to transfer information instead of plain text which make it more efficient in terms of data storage / transfer and faster to interpret.

Data Transfer Protocol

1) Packets Structure

Client and Server packets are constructed the same way.

Here's the structure of a packet:

For each argument						

Packet Size	Code	Arguments Number	Argument Size N	Argument N	...	
8 bytes	1	2	2	Arg Size N	...	

Data Type of each segment:

+ - - - - - +		
Packet Size:	uint64	
Code:	int8	
Arguments Number:	uint16	
Argument Size:	uint16	
Argument:	void*	
+ - - - - - +		

Packets with a variadic number of arguments must contain the maximum number of arguments of the command. Meaning that if 2 out of 3 arguments are given by the user of the client, the last one must be present in the packet, and must be of size 1 and a null byte as argument data.

2) Data Object Structure

Every object in this list are stored using an UUID to make them unique:

- User
- Team
- Channel
- Thread
- Replies
- Messages

Features

1) Supported Commands

This protocol supports every of these following commands sent from the (CLI) Client:

- **/help**: Show help
- **/login** ["user_name"]: Login user with the given username
- **/logout**: Disconnect the client from the server
- **/users**: Get the list of all existing users on the domain
- **/user** ["user_uuid"]: Get details about the specified user
- **/send** ["user_uuid"] ["message"]: Send a message to the user
- **/messages** ["user_uuid"]: List all messages exchanged with the user
- **/subscribe** ["team_uuid"]: Subscribe to the events of a team and its sub directories (i.e: User joined team, ...)
- **/subscribed** ?["team_uuid"]: List all subscribed teams or list all users subscribed to a team
- **/unsubscribe** ["team_uuid"]: Unsubscribe from a team
- **/use** ?["team_uuid"] ?["channel_uuid"] ?["thread_uuid"]: Sets the command context to a team / channel / thread
- **/create**: See part 2)
- **/list**: See part 2)
- **/info**: See part 2)

2) Context Based Commands

The following command actions are based on the current client context: No Context / Team / Channel / Thread.

/create

No context:

- **/create** ["team_name"] ["team_description"]: Create a new team

Team context:

- **/create** ["channel_name"] ["channel_description"]: Create a new channel

Channel context:

- **/create** ["thread_title"] ["thread_message"] : Create a new thread

Thread context:

- **/create** ["comment"]: Create a new reply

/list

No context:

- **/list**: List all existing teams

Team context:

- **/list**: List all existing channels

Channel context:

- **/list**: List all existing threads

Thread context:

- **/list**: List all existing replies

/info

No context:

- **/info**: Display currently logged-in user details

Team context:

- **/info**: Display currently selected team details

Channel context:

- **/info**: Display currently selected channel details

Thread context:

- **/info**: Display currently selected thread details

Request Codes

Codes to be sent by the Client whenever a command is entered.

0	Help	/help
1	Login	/login
2	Logout	/logout
3	Users	/users
4	User	/user
5	Send	/send
6	Messages	/messages
7	Subscribe	/subscribe
8	Subscribed	/subscribed
9	Unsubscribe	/unsubscribe
10	Use	/use
11	Create	/create
12	List	/list
13	Info	/info

Replies

Replies received by the Client after sending a command or from a server event (SE). Server events are sent every time an action is performed on the server. Clients will receive server events even if they are not responsible for the action.

1) Reply Packets Arguments

- **Help** ["help_body"]
- **Login** ["user_uuid"] ["user_name"]
- **Logout** ["user_uuid"] ["user_name"]
- **Message Received** ["sender_uuid"] ["message_body"]

- **(SE) Reply Created** ["team_uuid"] ["thread_uuid"] ["user_uuid"] ["reply content"]
- **Reply Created** ["thread_uuid"] ["user_uuid"] [time_t]reply_timestamp ["thread_title"]

- **(SE) Team Created** ["team_uuid"] ["team_name"] ["team_description"]
- **Team Created** ["team_uuid"] ["team_name"] ["team_description"]

- **(SE) Channel Created** ["channel_uuid"] ["channel_name"] ["channel_description"]
- **Channel Created** ["channel_uuid"] ["channel_name"] ["channel_description"]

- **(SE) Thread Created** ["thread_uuid"] ["client_uuid"] [time_t]thread_timestamp ["thread_title"] ["thread_message"]
- **Thread Created** ["thread_uuid"] ["client_uuid"] [time_t]thread_timestamp ["thread_title"] ["thread_message"]

- **List Users** [{"userN_uuid"} ["userN_name"] [int32t]userN_is_connected, ...]
- **List Teams** [{"teamN_uuid"} ["teamN_name"] ["teamN_description"], ...]
- **List Channels** [{"channelN_uuid"} ["channelN_name"] ["channelN_description"], ...]

- **List Threads** ["threadN_uuid"] ["threadN_creator_uuid"]
[time_t]threadN_timestamp ["threadN_title"]
["threadN_message"], ...]
- **List Replies** ["replyN_thread_uuid"] ["replyN_sender_uuid"]
[time_t]replyN_timestamp ["replyN_content"], ...]
- **List Messages** ["messageN_uuid_sender"]
[time_t]messageN_timestamp ["messageN_content"], ...]
- **Unknown Team UUID /**
- **Unknown Channel UUID /**
- **Unknown Thread UUID /**
- **Unknown User UUID /**
- **Unauthorized /**
- **Unknown Command /**
- **Already Exists /**
- **User Info** ["user_uuid"] ["user_name"]
[int32t]user_is_connected
- **Team Info** ["team_uuid"] ["team_name"] ["team_description"]
- **Channel Info** ["channel_uuid"] ["channel_name"]
["channel_description"]
- **Thread Info** ["thread_uuid"] ["thread_creator_uuid"]
[time_t]thread_timestamp ["thread_title"] ["thread_message"]
- **User Subscribed** ["user_uuid"] ["team_uuid"]
- **User Unsubscribed** ["user_uuid"] ["team_uuid"]

2) Reply codes

Codes:

0	Help	/help command reply
1	Logged In	/login success
2	Logged Out	/logout success
3	Message Received	Message received from a user
4	(SE) Reply Created	Reply created in the user context
5	Reply Created	/create success
6	(SE) Team Created	Team created in the user context
7	Team Created	/create success
8	(SE) Channel Created	Channel created in the user context
9	Channel Created	/create success
10	(SE) Thread Created	Thread created in the user context
11	Thread Created	/create success
12	List Users	/list success
13	List Teams	/list success
14	List Channels	/list success
15	List Threads	/list success
16	List Replies	/list success
17	List Messages	/list success
18	Unknown Team UUID	-
19	Unknown Channel UUID	-
20	Unknown Thread UUID	-
21	Unknown User UUID	-
22	Unauthorized	Action not allowed (i.e: Not logged in)
23	Unknown Command	Command not supported
24	Already Exists	Team / Channel /... name already exists
25	User Info	/info success
26	Team Info	/info success
27	Channel Info	/info success
28	Thread Info	/info success
29	User Subscribed	/subscribe success
30	User Unsubscribed	/unsubscribe success