
MODULE *Client*

EXTENDS *Messages, Server*

The set of client *IDs*

CONSTANTS *Client*

VARIABLE *client*

VARIABLE *clientCommand*

$clientVars \triangleq \langle client, clientCommand \rangle$

$InitClientVars \triangleq$
 $\wedge client = [i \in Client \mapsto [id \mapsto Nil]]$
 $\wedge clientCommand = 1$

$OpenSession(c, s) \triangleq$
 $\wedge client[c].id = Nil$
 $\wedge Send([mtype \mapsto OpenSessionRequest,$
 $\quad msource \mapsto c,$
 $\quad mdest \mapsto s])$
 $\wedge UNCHANGED \langle clientVars \rangle$

$CloseSession(c, s) \triangleq$
 $\wedge client[c].id \neq Nil$
 $\wedge Send([mtype \mapsto CloseSessionRequest,$
 $\quad msession \mapsto client[c].id,$
 $\quad msource \mapsto c,$
 $\quad mdest \mapsto s])$
 $\wedge UNCHANGED \langle clientVars \rangle$

$ClientRequest(c, s) \triangleq$
 $\wedge client[c].id \neq Nil$
 $\wedge Send([mtype \mapsto CommandRequest,$
 $\quad msession \mapsto client[c].id,$
 $\quad mcommand \mapsto clientCommand,$
 $\quad msource \mapsto c,$
 $\quad mdest \mapsto s])$
 $\wedge clientCommand' = clientCommand + 1$
 $\wedge UNCHANGED \langle client \rangle$

$HandleOpenSessionResponse(c, m) \triangleq$

$$\begin{aligned} & \wedge \text{client}' = [\text{client} \text{ EXCEPT } ![c] = [id \mapsto m.msession]] \\ & \wedge \text{Discard}(m) \\ & \wedge \text{UNCHANGED } \langle \text{clientCommand} \rangle \end{aligned}$$

$$\begin{aligned} \text{HandleCloseSessionResponse}(c, m) & \triangleq \\ & \wedge \text{client}' = [\text{client} \text{ EXCEPT } ![c] = [id \mapsto \text{Nil}]] \\ & \wedge \text{Discard}(m) \\ & \wedge \text{UNCHANGED } \langle \text{clientCommand} \rangle \end{aligned}$$

$$\begin{aligned} \text{HandleCommandResponse}(c, m) & \triangleq \\ & \wedge \text{Discard}(m) \\ & \wedge \text{UNCHANGED } \langle \text{clientVars} \rangle \end{aligned}$$

$$\begin{aligned} \text{ClientReceive}(m) & \triangleq \\ & \wedge \text{LET } c \triangleq m.mdest \\ & \text{IN} \\ & \quad \vee \wedge m.mtype = \text{OpenSessionResponse} \\ & \quad \quad \wedge \text{HandleOpenSessionResponse}(c, m) \\ & \quad \vee \wedge m.mtype = \text{CloseSessionResponse} \\ & \quad \quad \wedge \text{HandleCloseSessionResponse}(c, m) \\ & \quad \vee \wedge m.mtype = \text{CommandResponse} \\ & \quad \quad \wedge \text{HandleCommandResponse}(c, m) \end{aligned}$$

\ * Modification History
\ * Last modified Tue Jan 30 22:18:13 PST 2018 by jordanhalterman
\ * Created Tue Jan 30 15:04:21 PST 2018 by jordanhalterman