
MODULE *Topo*

LOCAL INSTANCE *Naturals*

LOCAL INSTANCE *Sequences*

LOCAL INSTANCE *TLC*

CONSTANT *Nil*

CONSTANT *CreateRequest*,
 CreateResponse,
 UpdateRequest,
 UpdateResponse,
 DeleteRequest,
 DeleteResponse,
 GetRequest,
 GetResponse,
 ListRequest,
 ListResponse,
 WatchRequest,
 WatchResponse

CONSTANT *Kind*,
 Entity,
 Relation

VARIABLES *topoSbConn*

TopoSB \triangleq INSTANCE *Messaging* WITH *Nil* \leftarrow "<nil>", *conn* \leftarrow *topoSbConn*

TopoHandleCreateRequest(*c*, *m*) \triangleq
 \wedge *TopoSB*!Receive(*c*)
 \wedge UNCHANGED $\langle \rangle$

TopoHandleUpdateRequest(*c*, *m*) \triangleq
 \wedge *TopoSB*!Receive(*c*)
 \wedge UNCHANGED $\langle \rangle$

TopoHandleDeleteRequest(*c*, *m*) \triangleq
 \wedge *TopoSB*!Receive(*c*)
 \wedge UNCHANGED $\langle \rangle$

TopoHandleGetRequest(*c*, *m*) \triangleq
 \wedge *TopoSB*!Receive(*c*)

$$\begin{aligned}
& \wedge \text{UNCHANGED } \langle \rangle \\
\text{TopoHandleListRequest}(c, m) & \triangleq \\
& \wedge \text{TopoSB!Receive}(c) \\
& \wedge \text{UNCHANGED } \langle \rangle \\
\text{TopoHandleWatchRequest}(c, m) & \triangleq \\
& \wedge \text{TopoSB!Receive}(c) \\
& \wedge \text{UNCHANGED } \langle \rangle \\
\text{TopoHandleMessage}(c, m) & \triangleq \\
& \wedge \vee \wedge m.type = \text{CreateRequest} \\
& \quad \wedge \text{TopoHandleCreateRequest}(c, m) \\
& \vee \wedge m.type = \text{UpdateRequest} \\
& \quad \wedge \text{TopoHandleUpdateRequest}(c, m) \\
& \vee \wedge m.type = \text{DeleteRequest} \\
& \quad \wedge \text{TopoHandleDeleteRequest}(c, m) \\
& \vee \wedge m.type = \text{GetRequest} \\
& \quad \wedge \text{TopoHandleGetRequest}(c, m) \\
& \vee \wedge m.type = \text{ListRequest} \\
& \quad \wedge \text{TopoHandleListRequest}(c, m) \\
& \vee \wedge m.type = \text{WatchRequest} \\
& \quad \wedge \text{TopoHandleWatchRequest}(c, m) \\
& \wedge \text{UNCHANGED } \langle \rangle
\end{aligned}$$

$$\begin{aligned}
\text{TopoInit} & \triangleq \\
& \wedge \text{TopoSB!Init}
\end{aligned}$$

$$\begin{aligned}
\text{TopoNext} & \triangleq \\
& \vee \exists c \in \text{TopoSB!Connections} : \text{TopoSB!Disconnect}(c) \\
& \vee \exists c \in \text{TopoSB!Connections} : \text{TopoSB!Handle}(c, \text{TopoHandleMessage})
\end{aligned}$$

\ * Modification History
\ * Last modified *Thu Aug 12 17:19:10 PDT 2021* by *jordanhalterman*
\ * Created *Tue Aug 10 04:55:19 PDT 2021* by *jordanhalterman*