```
MODULE Topo

EXTENDS API

LOCAL INSTANCE Naturals

LOCAL INSTANCE Sequences

LOCAL INSTANCE FiniteSets

CONSTANT Nodes

ASSUME  ∧ IsFiniteSet(Nodes)
        ∧ ∀ n ∈ Nodes : n ∈ STRING

vars ≜ ⟨⟩

  MODULE Store

  Create(m)  ≜ [status ↦ OK]

  Update(m)  ≜ [status ↦ OK]

  Delete(m)  ≜ [status ↦ OK]

  Get(m) ≜ [status ↦ OK]

  List(m) ≜ [status ↦ OK]

  Watch(m) ≜ [status ↦ OK]

  Init  ≜ TRUE

  Next ≜ FALSE

LOCAL Store ≜ INSTANCE Store

  MODULE NB

  HandleCreateRequest(c, m) ≜
      ∧ LET r ≜ Store!Create(m)
        IN   API!Topo!Server!Send!CreateResponse(c, r)
      ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

  HandleUpdateRequest(c, m) ≜
      ∧ LET r ≜ Store!Update(m)
        IN   API!Topo!Server!Send!UpdateResponse(c, r)
      ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

  HandleDeleteRequest(c, m) ≜
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    ∧ LET r ≜ Store!Delete(m)
      IN  API!Topo!Server!Send!DeleteResponse(c, r)
    ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

HandleGetRequest(c, m) ≜
    ∧ LET r ≜ Store!Get(m)
      IN  API!Topo!Server!Send!GetResponse(c, r)
    ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

HandleListRequest(c, m) ≜
    ∧ LET r ≜ Store!List(m)
      IN  API!Topo!Server!Send!ListResponse(c, r)
    ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

HandleWatchRequest(c, m) ≜
    ∧ LET r ≜ Store!Watch(m)
      IN  API!Topo!Server!Send!WatchResponse(c, r)
    ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

Serve(s) ≜
   ∧ API!Topo!Server!Serve(s)
   ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

Servers ≜ API!Topo!Servers

Stop(s) ≜
   ∧ API!Topo!Server!Stop(s)
   ∧ UNCHANGED ⟨e2apApiVars, e2tApiVars⟩

Connections ≜ API!Topo!Connections

Init ≜
   ∧ TRUE

Next ≜
   ∨ ∃ s ∈ Nodes : Serve(s)
   ∨ ∃ s ∈ Servers : Stop(s)
   ∨ ∃ c ∈ Connections :
        ∨ API!Topo!Server!Receive!CreateRequest(c, HandleCreateRequest)
        ∨ API!Topo!Server!Receive!UpdateRequest(c, HandleUpdateRequest)
        ∨ API!Topo!Server!Receive!DeleteRequest(c, HandleDeleteRequest)
        ∨ API!Topo!Server!Receive!GetRequest(c, HandleGetRequest)
        ∨ API!Topo!Server!Receive!ListRequest(c, HandleListRequest)
        ∨ API!Topo!Server!Receive!WatchRequest(c, HandleWatchRequest)

LOCAL NB ≜ INSTANCE NB
```

$$\begin{aligned}
&\mathit{Init} \triangleq \\
&\quad \land \mathit{NB}!\mathit{Init} \\
&\quad \land \mathit{Store}!\mathit{Init}
\end{aligned}$$

$$\begin{aligned}
&\mathit{Next} \triangleq \\
&\quad \lor \mathit{NB}!\mathit{Next} \\
&\quad \lor \mathit{Store}!\mathit{Next}
\end{aligned}$$

* Modification History
* Last modified Sat *Aug* 14 12:30:32 *PDT* 2021 by *jordanhalterman*
* Created *Fri Aug* 13 09:50:50 *PDT* 2021 by *jordanhalterman*