
MODULE *Configuration*

INSTANCE *Naturals*

INSTANCE *FiniteSets*

INSTANCE *Sequences*

INSTANCE *TLC*

An empty constant
CONSTANT *Nil*

Status constants
CONSTANTS
 Pending,
 InProgress,
 Complete

Status \triangleq
 {*Pending*,
 InProgress,
 Complete}

Variables defined by other modules.
VARIABLES
 mastership,
 conn,
 target

A record of per-target configurations
VARIABLE *configuration*

TypeOK \triangleq
 $\wedge \text{configuration.state} \in \text{Status}$
 $\wedge \text{configuration.term} \in \text{Nat}$
 $\wedge \text{configuration.committed.index} \in \text{Nat}$
 $\wedge \text{configuration.committed.revision} \in \text{Nat}$
 $\wedge \forall p \in \text{DOMAIN } \text{configuration.committed.values} :$
 $\wedge \text{configuration.committed.values}[p].\text{index} \in \text{Nat}$
 $\wedge \text{configuration.committed.values}[p].\text{value} \neq \text{Nil} \Rightarrow$
 $\text{configuration.committed.values}[p].\text{value} \in \text{STRING}$
 $\wedge \text{configuration.applied.index} \in \text{Nat}$
 $\wedge \text{configuration.applied.revision} \in \text{Nat}$
 $\wedge \text{configuration.applied.target} \in \text{Nat}$

$$\begin{aligned}
\text{LOCAL CurrState} &\triangleq [\\
&\quad \text{configuration} \mapsto \text{configuration}, \\
&\quad \text{mastership} \quad \mapsto \text{mastership}, \\
&\quad \text{conn} \quad \quad \mapsto \text{conn}, \\
&\quad \text{target} \quad \quad \mapsto \text{target}] \\
\text{LOCAL SuccState} &\triangleq \\
&\langle \rangle @@ \\
&(\text{IF } \text{configuration}' \neq \text{configuration} \text{ THEN } [\text{configuration} \mapsto \text{configuration}'] \text{ ELSE } \langle \rangle) @@ \\
&(\text{IF } \text{mastership}' \neq \text{mastership} \text{ THEN } [\text{mastership} \mapsto \text{mastership}'] \text{ ELSE } \langle \rangle) @@ \\
&(\text{IF } \text{conn}' \neq \text{conn} \text{ THEN } [\text{conn} \mapsto \text{conn}'] \text{ ELSE } \langle \rangle) @@ \\
&(\text{IF } \text{target}' \neq \text{target} \text{ THEN } [\text{target} \mapsto \text{target}'] \text{ ELSE } \langle \rangle) \\
\text{Test} &\triangleq \text{INSTANCE Test WITH} \\
&\quad \text{File} \leftarrow \text{"Configuration.log"}
\end{aligned}$$
[illegible]