

This module specifies the southbound interface of $\mu\text{ONOS Config}$.

MODULE *Target*

INSTANCE *Naturals*

An empty constant

CONSTANT *Nil*

The set of possible master nodes

CONSTANT *Node*

The target state

VARIABLE *target*

A record of connections between nodes and the target

VARIABLE *conns*

This section specifies the behavior of configuration targets.

Start \triangleq

$\wedge \neg \text{target.running}$
 $\wedge \text{target}' = [\text{target} \text{ EXCEPT } !.id = \text{target.id} + 1,$
 $\quad \quad \quad !.running = \text{TRUE}]$
 $\wedge \text{UNCHANGED } \langle \text{conns} \rangle$

Stop \triangleq

$\wedge \text{target.running}$
 $\wedge \text{target}' = [\text{target} \text{ EXCEPT } !.running = \text{FALSE},$
 $\quad \quad \quad !.values = [p \in \{ \} \mapsto [index \mapsto 0, value \mapsto Nil]]]$
 $\wedge \text{conns}' = [n \in \text{Node} \mapsto [\text{conns}[n] \text{ EXCEPT } !.connected = \text{FALSE}]]$

This section specifies the behavior of connections to the target.

Connect(*n*) \triangleq

$\wedge \neg \text{conns}[n].connected$
 $\wedge \text{target.running}$
 $\wedge \text{conns}' = [\text{conns} \text{ EXCEPT } ![n].id = \text{conns}[n].id + 1,$
 $\quad \quad \quad ![n].connected = \text{TRUE}]$
 $\wedge \text{UNCHANGED } \langle \text{target} \rangle$

Disconnect(*n*) \triangleq

$\wedge \text{conns}[n].connected$
 $\wedge \text{conns}' = [\text{conns} \text{ EXCEPT } ![n].connected = \text{FALSE}]$

$\wedge \text{UNCHANGED } \langle target \rangle$

$TypeOK \triangleq$
 $\wedge target.id \in Nat$
 $\wedge \forall p \in \text{DOMAIN } target.values :$
 $\wedge target.values[p].index \in Nat$
 $\wedge target.values[p].value \in \text{STRING}$
 $\wedge target.running \in \text{BOOLEAN}$
 $\wedge \forall n \in \text{DOMAIN } conns :$
 $\wedge n \in Node$
 $\wedge conns[n].id \in Nat$
 $\wedge conns[n].connected \in \text{BOOLEAN}$

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