

Admin/Oper parameters in P802.1Qbv

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The intent

- Allow a new configuration to be set up and adjusted via the “Admin” parameters
- Allow the manager to press the “go” button (ConfigChange -> TRUE) when the new config is ready to roll
- When ConfigChange is set TRUE, ConfigChangeTime (the time when the configuration change will occur) is set to occur on a cycle boundary for the new cycle:
 - If AdminBaseTime is in the past: Set ConfigChangeTime to be AdminBaseTime plus $N \times \text{AdminCycleTime}$ (with N chosen such that ConfigChangeTime will be less than AdminCycleTime nanoseconds in the future)
 - If AdminBaseTime is now or in the future: Set ConfigChangeTime equal to AdminBaseTime
- Keep using the old parameters (the existing “oper” parameters) until ConfigChangeTime is reached, then install the new parameters and start using them.
- Two cases occur when the old and new cycle boundaries don’t line up perfectly:
 - The final “old” cycle before the first “new” cycle would be smaller than OperCycleTimeSlop: instead, extend the final “old” cycle rather than have a very short final “old” cycle
 - The final “old” cycle would be greater than OperCycleTimeSlop: the final “old” cycle will be short, at least OperCycleTimeSlop in length, but not longer than the old OperCycleTime

The parameters (1)

- GateActive: Determines whether (or not) gating is in operation for the Port
- ConfigChange: Asserted (by the manager) when the Admin parameters for a new cycle configuration have been programmed and are to be used
- ConfigChangeTime: The time at which the new configuration (specified by the Admin parameters) is to be copied across to the corresponding Oper parameters, after ConfigChange has been asserted

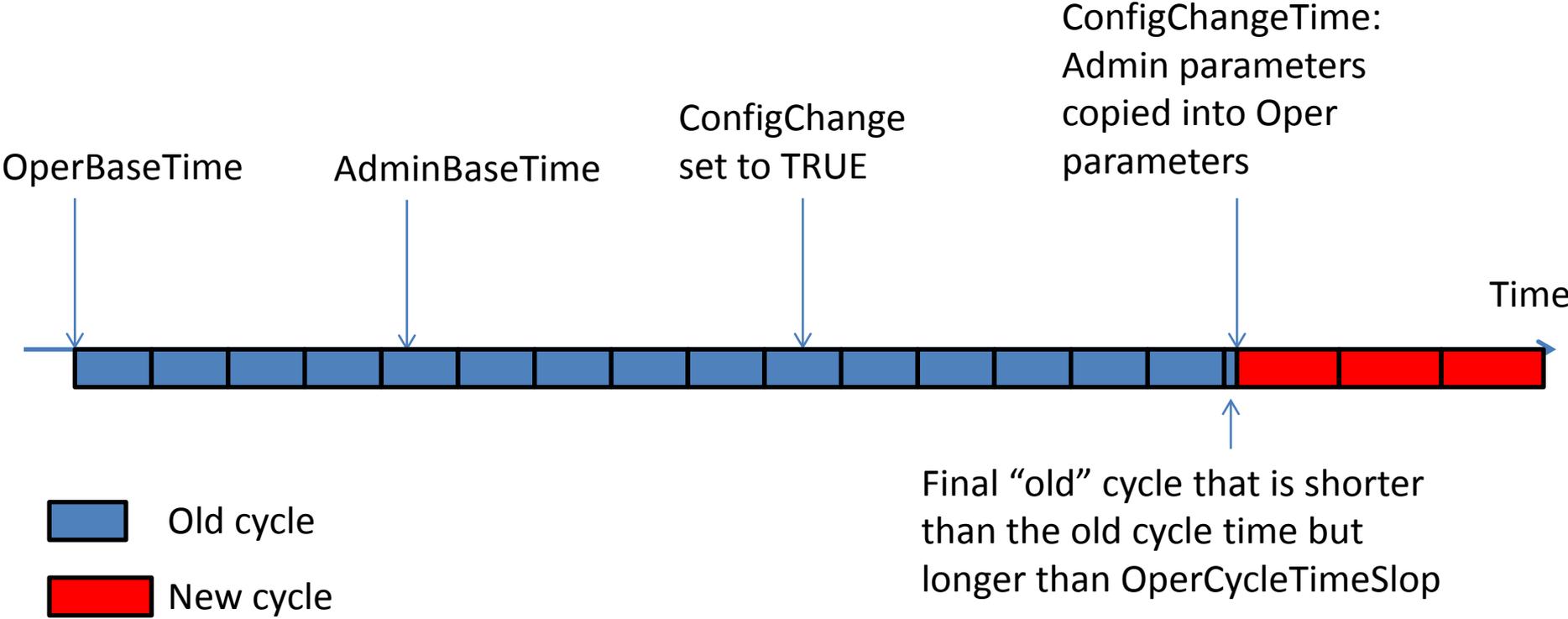
The parameters (2)

- AdminGateStates: Determines the initial state of the gates for the Port when the system is initialized. (Note that this parameter isn't one of the set of Admin parameters that get copied across to the corresponding Oper params as part of a new cycle configuration)
- OperGateStates: The current (active) states of the gates for the Port, as controlled by the gate cycle

The parameters (3)

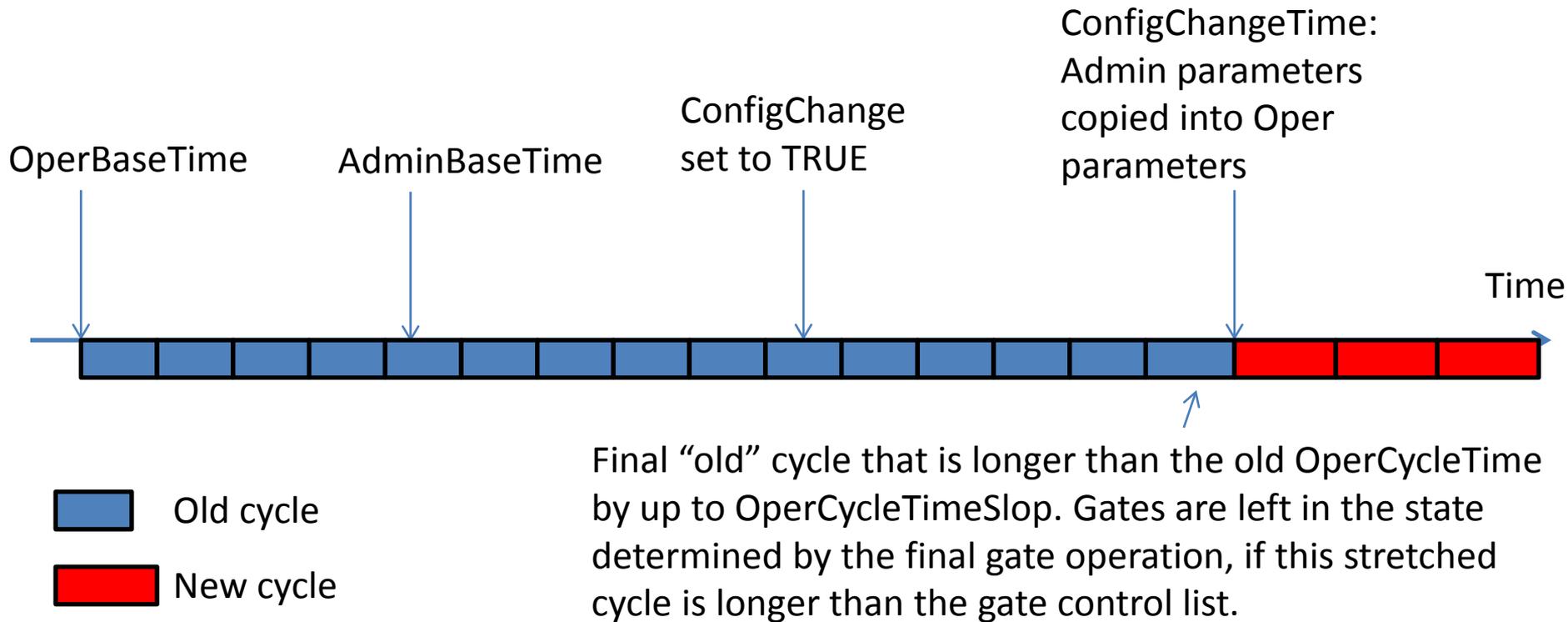
- AdminBaseTime: The admin value of OperBaseTime.
- OperBaseTime: The base time against which the start time of each cycle is calculated.
- AdminControlList: The admin value of OperControlList.
- OperControlList: The active gate control list.
- AdminListMax: The admin value of OperListMax.
- OperListMax: The number of entries in the active gate control list.
- AdminCycleTime: The admin value of OperCycleTime.
- OperCycleTime: The length of the active gate control cycle.
- AdminCycleTimeSlop: The admin value of OperCycleTimeSlop.
- OperCycleTimeSlop: A fudge factor to prevent creating a really short cycle using the old cycle parameters just before the new cycle parameters kick in.

Case 1: No “Slop” adjustment



The time interval between AdminBaseTime and ConfigChangeTime is an integer multiple of AdminCycleTime

Case 2: With “Slop” adjustment



The time interval between AdminBaseTime and ConfigChangeTime is an integer multiple of AdminCycleTime