



**Canon**

# New Command Proposal for Variable *MAX\_TASK\_SET\_SIZE*

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## ☆ Queue and *MAX\_TASK\_SET\_SIZE*

### ➤ Definitions from the last PWG meeting...

- *Queue*: An ordered set of ORB's that does not block with respect to other queues
- *Connection*: A queue or two queues that affords to access to a service

### ⇒ Relation to *MAX\_TASK\_SET\_SIZE*

- Number of connection and number of queue are not related to *MAX\_TASK\_SET\_SIZE*,  
*as long as* the following condition is satisfied

$$(\text{Number of queues}) \leq \text{MAX\_TASK\_SET\_SIZE}$$



## ☆ Characteristics and Problems

### ➤ Number of Queues

- *Dynamically* increases/decreases during logged-in period (via connect/disconnect).

### ➤ MAX\_TASK\_SET\_SIZE

- *Static* (fixed value) during logged-in period and determined by the target prior to connections.
- Accompanied with *resource allocation* on the target.

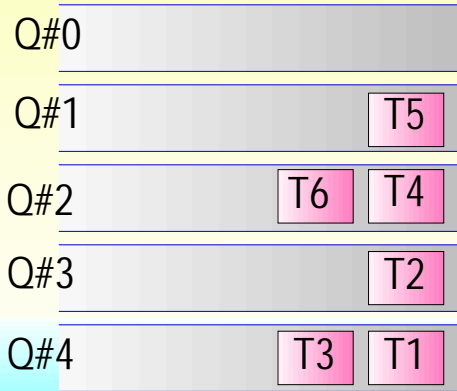
### ⇒ Characteristics difference

- makes task assignments **difficult** for initiator
- **prevents** efficient resource use on target side

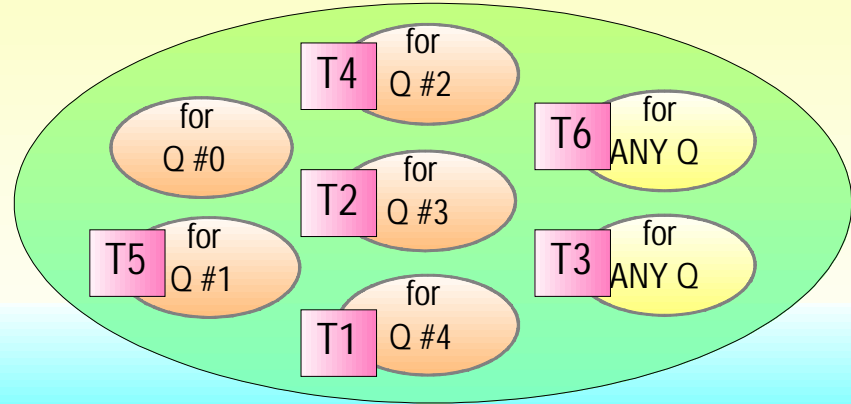
# ★ Assignment Example



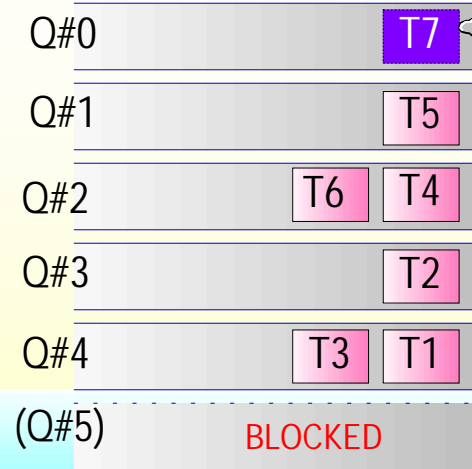
CURRENT TASKS = 6



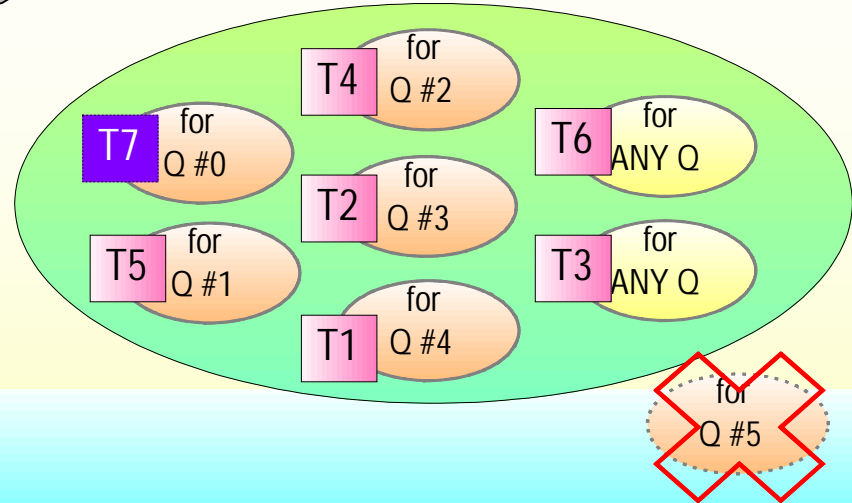
MAX\_TASK\_SET\_SIZE=7



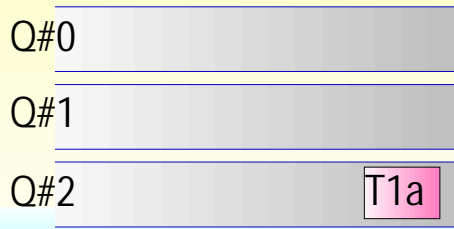
CURRENT TASKS = 7



MAX\_TASK\_SET\_SIZE=7

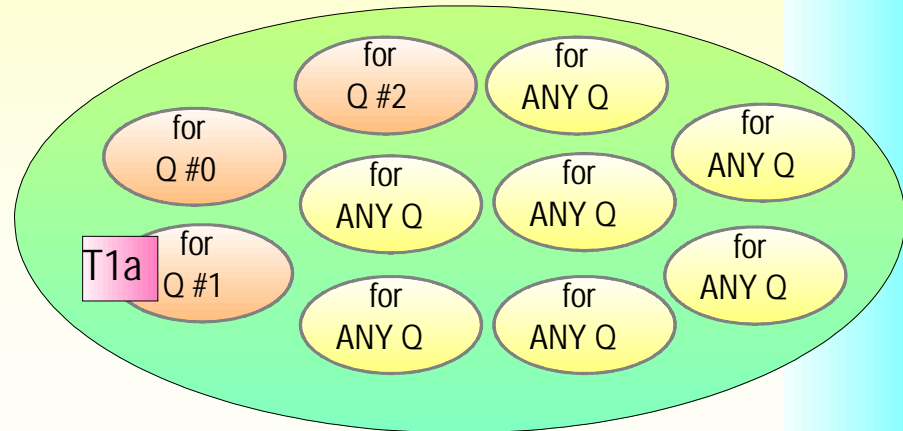


# ★ Target Resource Example

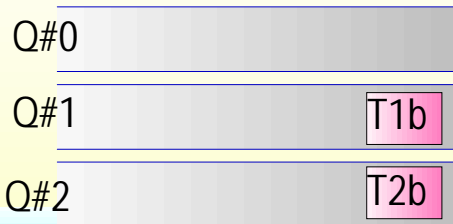


Initiator A

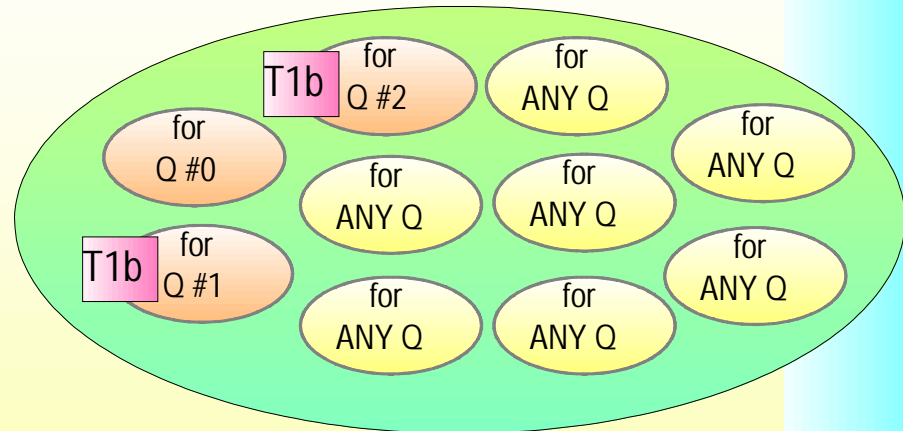
MAX\_TASK\_SET\_SIZE=10  
for Initiator A



MAX\_TASK\_SET\_SIZE=10  
for Initiator B



Initiator B





## ☆New Command Proposal

### ➤ A Command updates `MAX_TASK_SET_SIZE`

- Add new command (to queue #0) that requests the target to **update `MAX_TASK_SET_SIZE` parameter at any time.** (Target updates maximum number of re-orderable task with allocating / freeing its resources.)
- This Command is independent of connect/disconnect
  - ➔ allows initiator to decide action taken if the command failed.
  - ➔ allows initiator to decrease when space becomes available.

#### Command Example

`Update_Parameter(ParamID, new_value)`

returns “success” or “fail”.

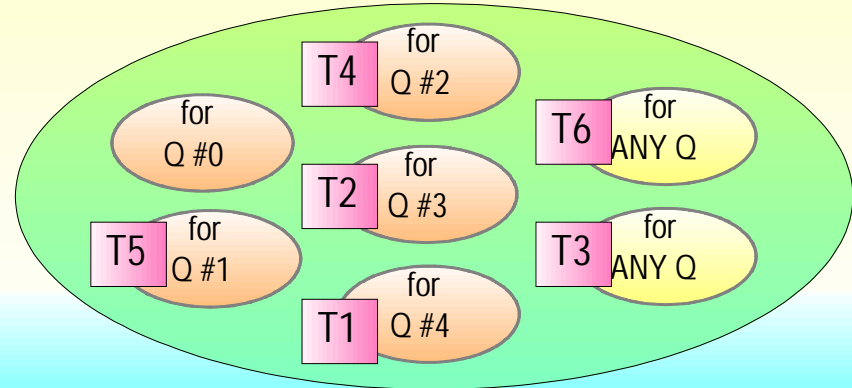


# ☆ Assignment with New Command

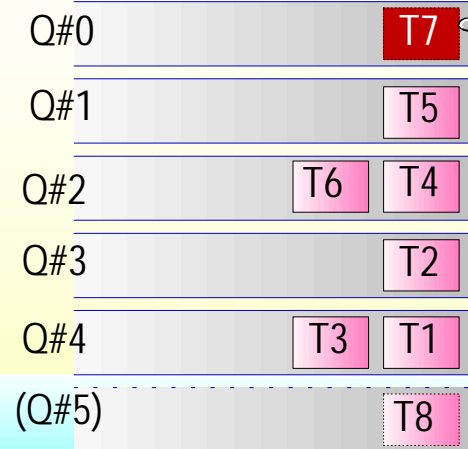
CURRENT TASKS = 6



MAX\_TASK\_SET\_SIZE=7

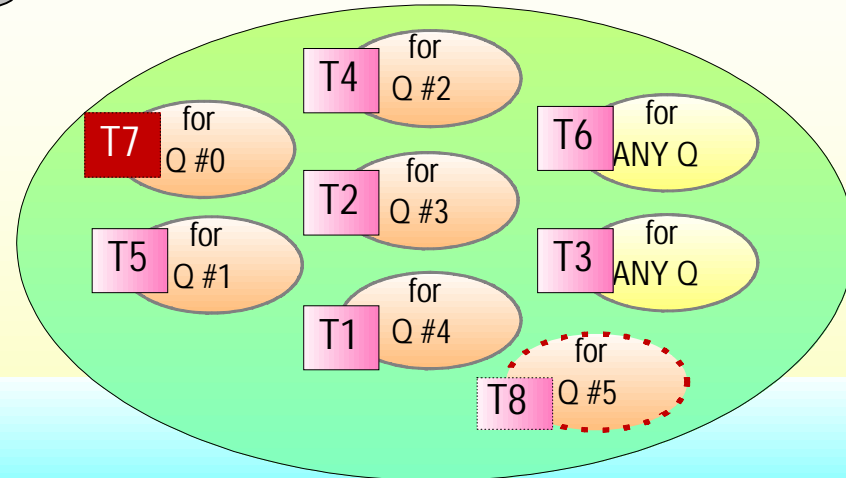


CURRENT TASKS = 7



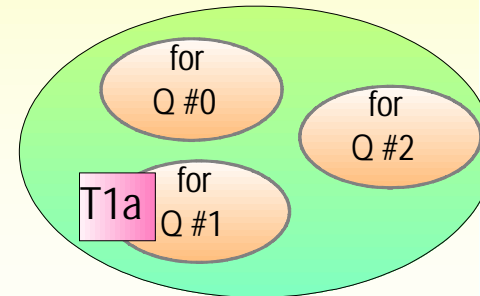
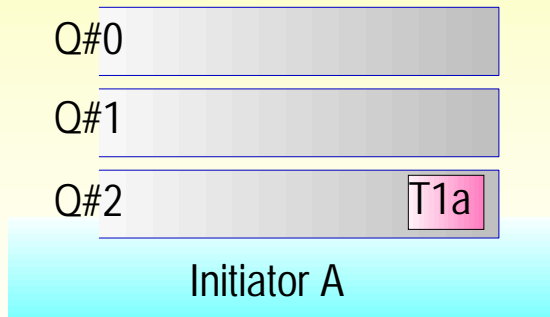
MAX\_TASK\_SET\_SIZE

7-> 8

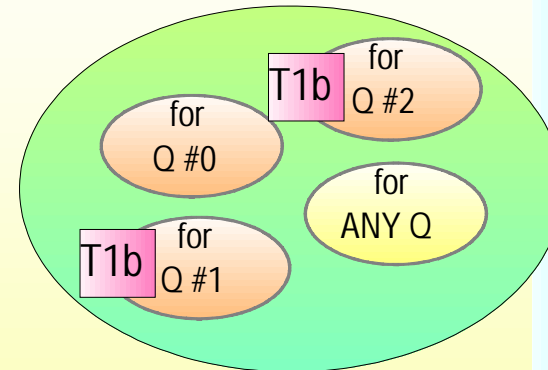
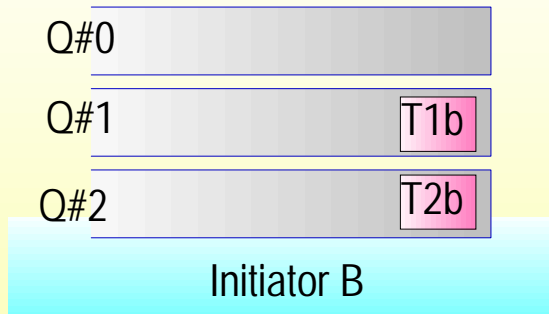


# ☆ Target Resource with New Command

MAX\_TASK\_SET\_SIZE=3  
for Initiator A



MAX\_TASK\_SET\_SIZE=4  
for Initiator B







## ★ Conclusion

- By adding this command,
  - “Number of queues” and MAX\_TASK\_SET\_SIZE both become “*dynamic*”.
- ⇒ This new command
  - makes task assignments **simple** for initiator
  - allows **efficient** resource use on target side