1. Delegation Lock Introduction
    1. Advantages
    2. Problems
2. Problem
    1. Usage Fairness
    2. Scheduling Subversion
3. Solution
    1. Banning
        1. Advantage
            1. Easy to implement
        2. Disadvantage
            1. May create gap that prevents all threads from getting the lock
    2. Lock-Free Priority Queue
        1. Advantage
            1. No gap
            2. Simple Idea
        2. Challenges
            1. Multi-threaded lock-free implementation is complex and slow
    3. Serilized Priority Queue
        1. Advantage
            1. No gap
            2. Fair
            3. Single-threaded implementation is fast
        2. Challenges
            1. Hard to design protocol for threads to publish to pririty queue
            2. How to elect the combiner thread?
            3. How to cache node.
    4. Other Scheduling Mechanism
4. Protocol Design
    1. Idea
        1. Thread publish job to combiner in non-scheduled state
        2. Combiner schedule the job in order
    2. Job publish
        1. A MPSC channel
    3. Responsibility
        1. Combiner Election
            1. A single `AtomicBool`
        2. Combiner
            1. Maintain a priority queue
            2. Poll a channel to get new node from submitter
            3. de-activate node (when?)
        3. Waiter
            1. Publish a node to a channel (MPSC channel)
    4. Challenges
        1. Publishing node can be expensive
            1. May cache a node belongs to the thread
        2. When do combiner check the channel
        3. When a thread is about to enter sleep state
5. Delegation Styled Lock Job Post Type

1. Thread Level Queue
    1. Flat Combining
    2. node → thread
    3. Advantage
        1. Simple
        2. Fast
    4. Challenges
        1. thread sparsely enter the queue, it may starve
2. Job Level Queue
    1. CCSynch
    2. node → job
    3. Advantage
        1. no need to iterate over thread that hasn't published job
    4. Challenges
        1. More complex
        2. Hard to design protocol for threads to publish job