#12: What are the primary advantages and disadvantages in “process cloning” (compared with “process migration”)?

**Advantage:** Processes can be executed at more than one host computer at a time, exploiting parallel execution.

**Disadvantage:** Synchronization in multiple instances of a process becomes an issue (data consistency). There can be cases race condition is an issue (since “the same variable” can be updated by multiple instances of a process). Developing programs is more difficult for cloning, compared with migration.

#13: What are the primary advantages and disadvantages in “process migration” (compared with “process cloning”)?

**Advantage:** Since only one instance of a process is being executed at a given time, there is no synchronization or race condition issue. Developing programs is easier for migration, compared with cloning.

**Disadvantage:** We can not exploit parallel execution, since only one instance of a process can be active at a time.

#22: What are the primary advantages in “pull-model migration/cloning” (compared with “push-model”)?

In the push-model, network host computers need to find the best migration/cloning remote host computers when they are already busy and finding best remote computers may take time. In the pull-model, the remote computers that are willing to accept migration/cloning voluntarily advertise their willingness to do so. Thus, finding best remote computers for migration/cloning takes less time (easy to find).

#25: What is the primary advantage and disadvantage in “strong mobility” (compared with “weak mobility”)?

**Advantage:** In strong mobility, processes can be migrated/cloned any time. Thus, strong mobility allows more flexible migration and cloning. For example, when the workload at a host computer suddenly increases without prediction in advance (e.g., some processes suddenly start using more processor resource than anticipated), strong mobility lets each computer adapt to such unpredicted increase in workload, which is relatively harder to be done by weak mobility.

**Disadvantage:** Since strong mobility allows processes to be migrated/cloned after they start running, not only the codes in processes, but their data, as well as their data (the one produced after programs start running), will be transferred for most of the time. This increases the volume of network transmission.