

Chapter 9 Proportional Share

- The proportional share scheduler is also known as the fair share scheduler.
- The lottery scheduler is an example of one.
 - Every so often hold a lottery which determines the process that gets to run next.
 - adjust the lottery odds with the priority of the process.

9.1 Tickets Represent Your Share

- Tickets are the underlying concept.
 - Used to represent the share of a resource that a process should receive.
 - The percent of tickets a process has represents its share of the system resource in question.
- Randomness is used to meet the desired percentage of use.

9.2 Ticket Mechanisms

- Lottery scheduling provides a number of mechanisms to manipulate tickets.
 - Ticket Currency:
 - Currency allows a user with a set of tickets to allocate tickets among their own jobs in whatever currency they would like.
 - The system automatically converts the currency into the correct global value.
 - Ticket Transfer:
 - A process can temporarily hand off its tickets to another

process.

- Useful in a client/server setting.
 - The client can request the server perform a functionf or it and pass tickets to the server to give it time to perform it.
- Ticket Inflation:
 - A process can temporarily raise or lower the number of tickets it owns.
 - Useful when a group of processes trust one another.

9.3 Implementation

- Lottery has a very simple implementation.
 - Needs a good random number generator to pick the winning ticket.
 - A data structure to keep track of the system processes.
 - The total number of tickes.