

CSE 430 Summer 2014 - Homework 1

Ryan Dougherty

Question 1.13

The issue of resource utilization shows up in different forms in different types of operating systems. List what resources must be managed carefully in the following settings: (a) Mainframe or minicomputer systems, (b) Workstations connected to servers, (c) Mobile computers (a) (b) (c)

Question 1.22

Many SMP systems have different levels of caches; one level is local to each processing core, and another level is shared among all processing cores. Why are caching systems designed this way?

Question 1.23

Consider an SMP system similar to the one shown in Figure 1.6. Illustrate with an example how data residing in memory could in fact have a different value in each of the local caches.

Question 1.25

Describe a mechanism for enforcing memory protection in order to prevent a program from modifying the memory associated with other programs.

Question 2.5

What is the purpose of the command interpreter? Why is it usually separate from the kernel?

Question 2.17

Would it be possible for the user to develop a new command interpreter using the system-call interface provided by the operating system?

Question 2.18

What are the two models of interprocess communication? What are the strengths and weaknesses of the two approaches?