

CS312 Homework #5

March 2, 2016

Instructions

Please submit all answers as a single text file via T.E.A.C.H using the naming format `$onidusername-hw5.txt`. This homework is due at 4pm on Wednesday, Mar 9th.

Questions

1. Load balancers are designed to help with vertical scaling.
 - (a) True
 - (b) False
2. Layer 7 load balancers allow you to use both connection tracking and inspection of packets including modification of packets.
 - (a) True
 - (b) False
3. Linux containers do not require hypervisors
 - (a) True
 - (b) False

4. The RUN command can be used more than once in a Dockerfile.
 - (a) True
 - (b) False
5. The PID Namespace allows users to see processes from other containers
 - (a) True
 - (b) False
6. Paravirtualization uses CPU supported virtualization.
 - (a) True
 - (b) False
7. Which software load balancer primarily acts as an HTTP accelerator **and** a static cache server?
 - (a) HAProxy
 - (b) Apache
 - (c) nginx
 - (d) Varnish
8. Which of the following is **not true** about Linux Containers?
 - (a) Operating system level virtualization
 - (b) Provides little overhead
 - (c) Fully emulates an operating system
 - (d) Allows limits to resources with cgroups
9. Which service describes a virtual computing platform?
 - (a) IaaS
 - (b) PaaS
 - (c) SaaS
 - (d) VaaS

10. Describe the potential problems of using Round Robin DNS.
11. Which scheduling algorithm is generally preferred if the web application uses sessions?
12. Which HAProxy configuration section allows you to define a complete proxy?
13. Name the two components of the Linux Kernel that are required to make Linux containers function.
14. Define what a hypervisor is.
15. Provide an example of a Type 2 hypervisor.
16. Explain the relationship between KVM and QEMU in detail.
17. Explain the relationship with Libvirt and KVM in detail.
18. What are the primary differences between Ganeti and Openstack?
19. Define in detail what a cloud or machine image is.
20. Name three useful features that distributed systems tend to support.