Technical Screen

Please do your best to complete the following questions and exercises. It is acceptable to skip sections if you do not have experience in a certain area. If you find anything too vague, feel free to ask for clarification or simply state your assumptions. Expect to discuss your answers during an in-person interview.

Linux

- How do you get the exit status of the last command that was run in a Linux bash shell.
- What is the difference between a copy, hard link and a soft link?
- What is an 'inode'? How do you find the inode for '/etc/passwd'?
- What information can be found within the /proc filesystem.
- There is a process running on tcp port 1234. How do you identify which process it is?

Jenkins

- What is the primary use case for using a Jenkins 'matrix' job?
- Name two to three CI systems and tell us the pros and cons of each, with a bias towards personal experiences.
- Identify a few key benefits of using Jenkins Job DSL (or similar technology) to define jobs vs using the GUI for configuration
- Bonus questions:
    1. Explain how you would use Jenkins Job DSL to create a dozen similar jobs with slight variations.
    2. How would you use Jenkins Job DSL to create jobs across multiple development branches?

Networking

- What is an arp table?
- What is DNS?
- You know a server is up and normally responds to pings, what are some reasons why you can no longer ping it?
- How can you discover what ports are listening on a server?
- Describe how you would troubleshoot networking problems including the tools you would use

Puppet

- Identify a few key benefits of using configuration management tools, such as Puppet.
- Name some common resource types in Puppet.
- In Puppet how do you make sure a certain version of a package is installed?
- In Puppet how do you define dependencies between resources?

AWS

- What is an AMI?
- What is the value of having multiple EC2 instance types?
- What is an EC2 ‘Reserved Instance’?
- What is the primary difference between an EC2 ‘Reserved’ and ‘On-Demand’ instances?

Coding

Using the language of your choice, write solutions to the following problems:

- Given a text file that contains one integer per line, write a function that sums up the integers and prints the result and the number of integers found in the file.

For the following problems, please consider the efficiency and complexity of your solutions, in particular consider how your solution would scale with a very large data set.

- Find the largest integer value in an array of integers.
- Given an ordered list such as [1, 2, 3, 5] find any pair of numbers that sum to 8.
    1. Run your above solution with the list [1,2,4,4]
    2. Bonus: find a pair of values that sum to 8 in an *unordered* list such as [5, 4, 1, 3]