1. How can model-based testing be used to test non-functional requirements, such as performance and reliability?

Model-based testing can be used to test non-functional requirements by incorporating them into the test model. The test model can include performance and reliability constraints and requirements, such as response times, throughput, and availability.

To test performance, the test model can include inputs that stress the system, such as a large number of simultaneous requests or high data volumes. By simulating these conditions in the test model, it is possible to identify performance issues before deployment.

To test reliability, the test model can include inputs that simulate different error conditions, such as network failures or data corruption. By simulating these error conditions, it is possible to identify how the system handles errors and whether it meets the reliability requirements.

In addition, tools such as load generators and fault injectors can be used in conjunction with the model to generate realistic loads and error conditions, and measure the system's response. By incorporating non-functional requirements into the test model, it is possible to identify and address performance and reliability issues early in the development cycle, reducing the risk of failure in production.