# 2

**Scalability test**

The purpose of scalability testing is to test how well the system can be scaled up to process the increased workload.

**Stress test**
The purpose of stress testing is to test how well the system can perform acceptably under worse-case condition. The system is deliberately stressed by pushing it to and beyond its specific limits for a while in order to identify some bugs related to memory, e.g. memory leaks. Knowing the worst case here can be hard as one would have to predict the future interest of a given event.

**Load and stability test**
These tests are developed in order to make sure the system will perform over time. This is especially important with services that need 24/7 uptime, e.g. cloud services. The results from this can often show how often the system should be restarted, even if the specific problems are not found.

**User acceptance test**
These tests are performed by users to see if their needs are met. This involves making sure that the functionality is as they expect and they understand how to use the system. This is not, however, based on requirements specifically, as that would be *requirement testing*. Rather, it tries to find out if the *functions* are correct according to the user.

**Operational acceptance test**
Operational acceptance testing is to make sure the system is ready to operate. This involves:

- Making sure there are backup facilities in case of irrecoverable incidents.
- Procedures for disaster recovery, e.g. an overload occurs.
- Training or manual for end-users to make sure they can easily learn the system and look up any difficulties they may have.
- Security procedures, meaning what to do if any part of the system has been compromised.

# 2

**Scalability test**
To perform scalability testing, the testers can gradually increase the

workload to the system, and also add more servers and workload managers, in order to measure how well the system can process the increased workload through adding more servers.

**Stress test**

Apache jmeter can be used for stress testing by ramping up the number of virtual "users" until a breaking point is found. This is works essentially like a DDOS (Distributed Denial Of Service) attack, except the number of connections is slowly ramped up instead of all at once.

**Load and stability test**

These tests can inform about issues where the cause may or may not be known, by measuring how long time has passed and/or how loaded the system was over the given time.

**User acceptance test**

A user acceptance test would be performed simply by handing the system with a user interface over to the end user. He would then explore the different parts of the system and evaluate it based on how he expects the functionality to work.

**Operational acceptance test**

This can be tested by allowing testers to intentionally breaking the system in the mentioned relevant ways, and then seeing how well the developers and maintaners are able to recover using the procedures.