Integration Testing

What is Integration Testing?

Integration testing is a key step in a SaaS applications' development process. It detects if there are any errors where software components and system interfaces work together.

In other words testing two or more separate functions, or component groups to ensure they work as expected when integrated.

Why is Integration Testing useful?

Integration testing makes sure integrated components work as intended.
As well as helping components interact with APIs or other third-party applications.

Unit Tests

Integration Tests

It is an efficient option as it covers a large portion of the system.
It also detects any issues related to the interface between components.

What is the process of Integration Testing?

The process of integration testing includes a range of frameworks and continuous integration.

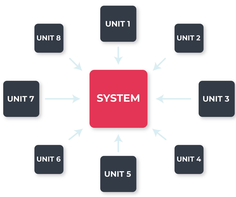
1. Start by preparing a test integration plan and the frameworks to be used.
2. Decide on the type of integration testing approach, this could be Big Bang, Top-Down, Bottom-Up, or Sandwich Testing.
3. You'll need to design test cases, scenarios and test scripts.
4. You'll need to deploy the chosen components together to run the integration testing.
5. Track any errors and record the testing results.
6. Repeat the process until the entire system is tested.

Types of Integration Testing

Big Bang Testing

Big Bang testing is one of the testing approaches that could be used. When all the components have been developed and tested individually they are integrated once and tested together.

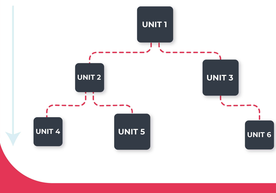
This approach is ideal for smaller systems, but it is however difficult to locate a fault or the root cause of an issue.



Top-Down Testing

The top-down approach is as it sounds, testing the top-most components and moving down to the lowest components.

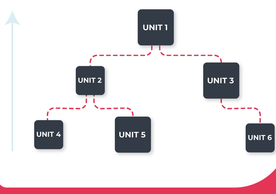
This makes fault locating easier, and early detection of design flaws.



Bottom-Up Testing

The bottom-up approach, again as it sounds, tests the lowest components of the application and moves upward.

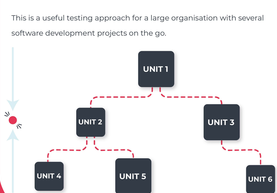
The benefit of this approach is that development and testing can be done simultaneously for efficiency.



Sandwich Approach

The sandwich approach is considered a hybrid of the previously mentioned testing approaches. The top-down approach is applied from the top to the middle layer. The bottom-up approach is used on the layer from the bottom to the middle. With the big bang approach used on the components in the middle.

This is a useful testing approach for a large organisation with several software development projects on the go.



Prior to any software release it undergoes extensive testing, iteration and further development. Testing is designed to **highlight** any **errors**, **evaluate** the systems **behaviour**, and the software applications **performance**. It is a **crucial** process in software development.