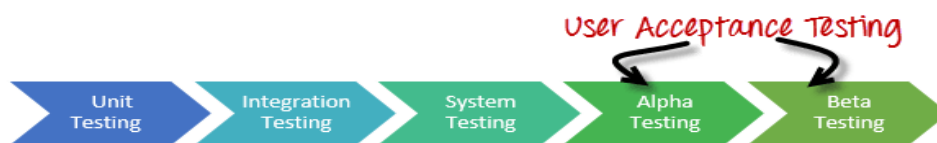


Alpha Testing:

Alpha Testing is a type of acceptance testing; performed to identify all possible issues and bugs before releasing the final product to the end users. Alpha testing is carried out by the testers who are internal employees of the organization. The main goal is to identify the tasks that a typical user might perform and test them. To put it as simple as possible, this kind of testing is called alpha only because it is done early on, near the end of the development of the software, and before beta testing. The main focus of alpha testing is to simulate real users by using a black box and white box techniques.

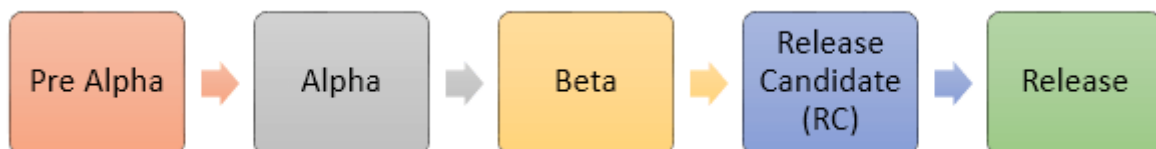


Alpha testing is simulated or real operational testing at an in-house site. It comes after the unit testing, integration testing, etc. Alpha testing used after all the testing are executed.

It can be a white box, or Black-box testing depends on the requirements - particular lab environment and simulation of the actual environment required for this testing.

Phases of Testing

Alpha and Beta tests are typically carried for “off-the-shelf” software or product-oriented companies. The Phases of Testing for a product company typically varies from a service-oriented organization. Following is the testing phase adopted by product firms



Pre-Alpha:- Software is a prototype. UI is complete. But not all features are completed. At this stage, software is not published.

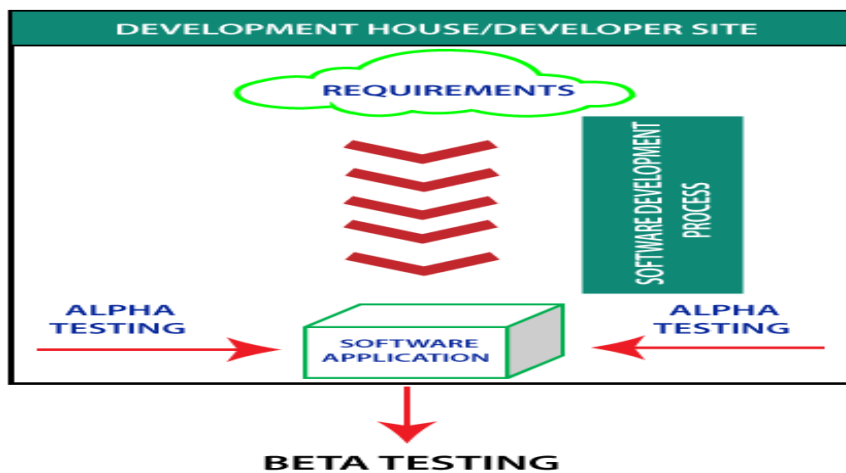
Alpha: Software is near its development and is internally tested for bugs/issues

Beta: Software is stable and is released to a limited user base. The goal is to get customer feedback on the product and make changes in software accordingly

Release Candidate (RC): Based on the feedback of Beta Test, you make changes to the software and want to test out the bug fixes. At this stage, you do not want to make radical changes in functionality but just check for bugs. RC is also put out to the public

Release: All works, software is released to the public.

Note: Above is a standard definition of the Testing stages but in order to garner marketing buzz, companies combine stages like “pre-alpha beta”, “pre-beta” etc.

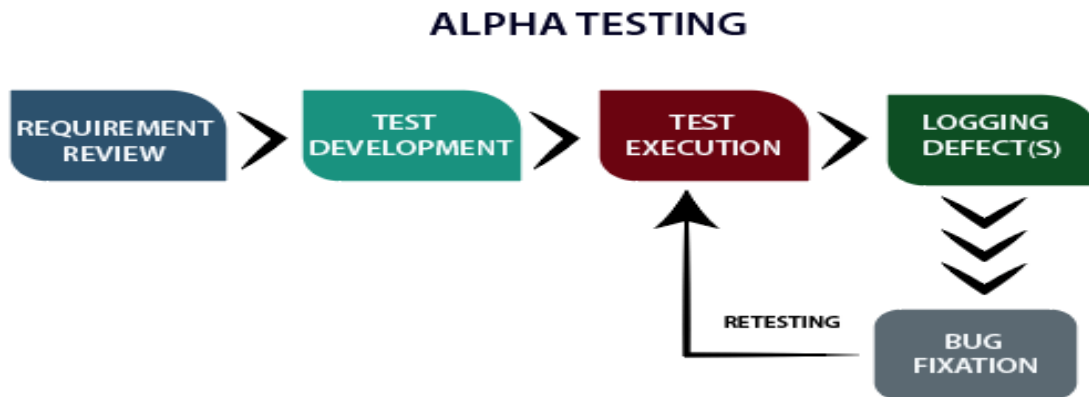


Alpha testing process:

Alpha testing follows the following process:

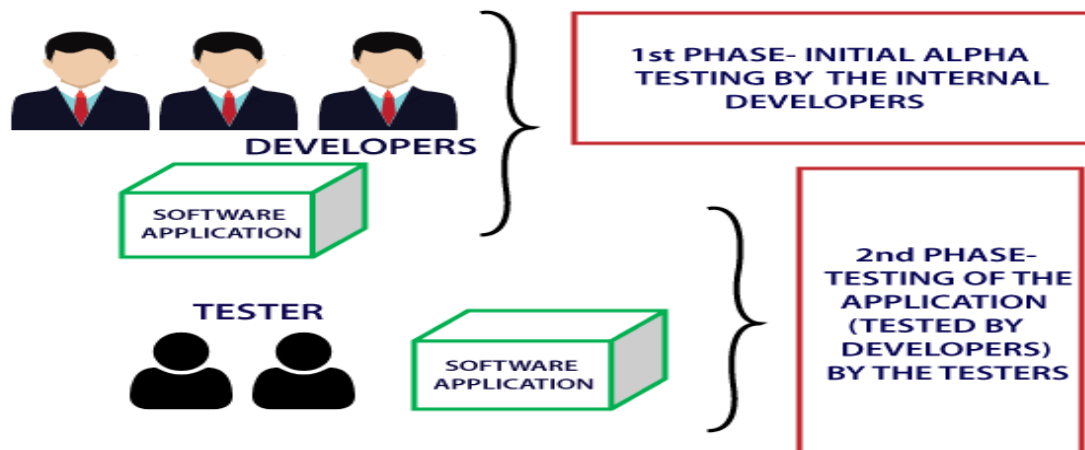
1. **Requirement Review:** Review the design of the specification and functional requirement
2. **Test Development:** Test development is base on the outcome of the requirement review. Develop the test cases and test plan.
3. **Test case design:** Execute the test plan and test cases.
4. **Logging Defects:** Logging the identified and detected bug found in the application.
5. **Bug Fixation:** When all the bugs are identified and logged, then there is a need to fix the bug.

6. **Retesting:** When all the issues are solved, and fixed retesting is done.



Phases of alpha testing:

Alpha testing ensures that the software performs flawlessly and does not impact the reputation of the organization; the company implements final testing in the form of alpha testing. This testing executed into two phases.

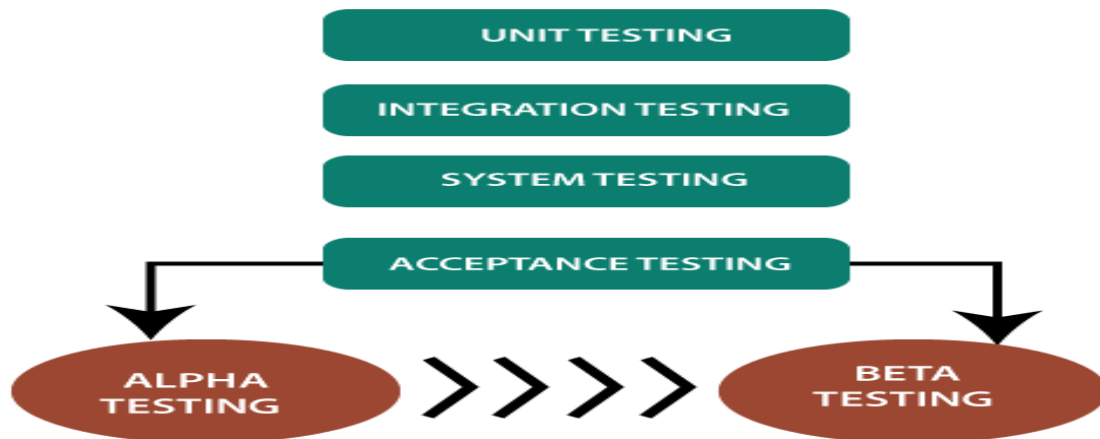


There are two phases of alpha testing.

First Phase: In-house developers or software engineers do the first phase of testing. In this phase, the tester used hardware debugger or hardware aided debugger to catch the bugs quickly. During the alpha testing, a tester finds a lot of bugs, crashes, missing features, and docs.

Second Phase: The second phase involves the quality assurance staff performing the alpha testing by involving black box and white box techniques.

When to perform alpha testing?



Alpha testing is user acceptance testing. Alpha testing performed once the product has gone through stages of testing and prepared for release. It is executing before beta testing, which is also a part of acceptance testing and can define as field testing. During this testing, we can make changes in the software to improve its quality and functionality. Alpha testing done from the developer's site where independent developers can monitor and record user experience and make necessary changes to enhance the performance.

Reasons to perform Alpha Testing

Alpha testing is the final stage of the testing. Alpha testing is an essential and popular testing technique that helps the team to deliver quality and useful software. This testing performed before the release of the product. Alpha testing can define as the first round of independent testing that ensures that the software run as per the requirement plan.

Reasons for alpha testing are:

- Refines the software product by finding and rectifying bugs that weren't discovered through previous tests.
- Alpha testing allows the team to test the software in a real-world environment.
- One of the reasons to do alpha testing is to ensure the success of the software product.
- Alpha testing validates the quality, functionality of the software, and effectiveness of the software before it released in the real world.

Features of Alpha Testing

- Alpha testing is a type of acceptance testing.
- Alpha testing is happening at the stage of the completion of the software product.
- Alpha testing is in the labs where we provide a specific and controlled environment.
- Alpha testing is in-house testing, which is performed by the internal developers and testers within the organization.
- There is not any involvement of the public.
- Alpha testing helps to gain confidence in the user acceptance of the software product.
- With the help of black box and white box technique, we can achieve the alpha testing.
- Alpha testing ensures the maximum possible quality of the software before releasing it to market or client for beta testing.
- Developers perform alpha testing at developer's site; it enables the developer to record the error with the ease to resolve found bugs quickly.
- Alpha testing is doing after the unit testing, integration testing, system testing but before the beta testing.
- Alpha testing is for testing the software application, products, and projects.

Entry Criteria for Alpha Testing:

- Software requirements document or Business requirements specification
- Test Cases for all the requirements
- Testing Team with good knowledge about the software application
- Test Lab environment setup
- QA Build ready for execution
- Test Management tool for uploading test cases and logging defects
- Traceability Matrix to ensure that each design requirement has atleast one [Test Case](#) that verifies it

Exit Criteria for Alpha testing

- All the test cases have been executed and passed.
- All severity issues need to be fixed and closed

- Delivery of Test summary report
- Make sure that no more additional features can be included
- Sign off on Alpha testing

Advantages of alpha testing :

- One of the benefits of alpha testing is it reduces the delivery time of the project.
- It provides a complete test plan and test cases.
- Free the team member for another project.
- Every feedback helps to improve software quality.
- It provides a better observation of the software's reliability and accountability.

Disadvantages of alpha testing :

- Alpha testing does not involve in-depth testing of the software.
- The difference between the tester's tests the data for testing the software and the customer's data from their perspective may result in the discrepancy in the software functioning.
- The lab environment is used to simulate the real environment. But still, the lab cannot furnish all the requirement of the real environment such as multiple conditions, factors, and circumstances.

Beta Testing:

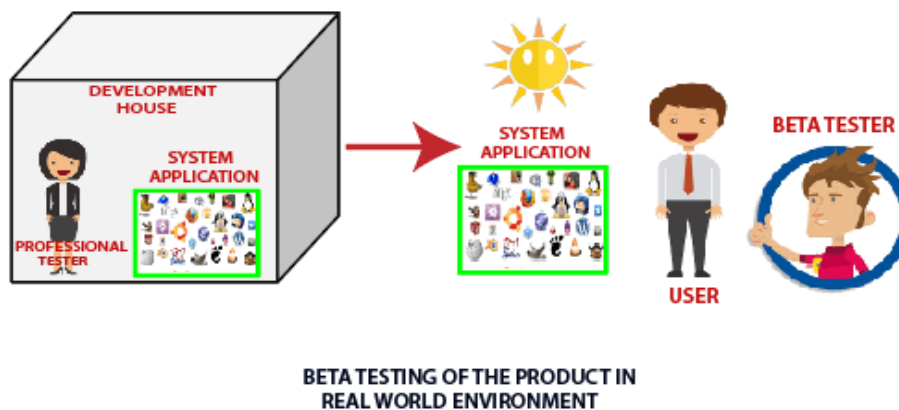
Beta Testing is performed by “real users” of the software application in “real environment” and it can be considered as a form of external [User Acceptance Testing](#). It is the final test before shipping a product to the customers. Direct feedback from customers is a major advantage of Beta Testing. This testing helps to test products in customer’s environment.

Beta version of the software is released to a limited number of end-users of the product to obtain feedback on the product quality. Beta testing reduces product failure risks and provides increased quality of the product through customer validation.

Beta testing is a type of **User Acceptance Testing** among the most crucial testing, which performed before the release of the software. Beta Testing is a type of Field Test. This testing performs at the end of the *software* testing life cycle. This type of testing can be considered as external user acceptance testing.

It is a type of salient testing. Real users perform this testing. This testing executed after the alpha testing. In this the new version, beta testing is released to a limited audience to check the accessibility, usability, and functionality, and more.

- Beta testing is the last phase of the testing, which is carried out at the client's or customer's site.



Features of beta testing are:

- Beta testing used in a real environment at the user's site. Beta testing helps in providing the actual position of the quality.
- Testing performed by the client, stakeholder, and end-user.
- Beta testing always is done after the alpha testing, and before releasing it into the market.
- Beta testing is black-box testing.
- Beta testing performs in the absence of tester and the presence of real users
- Beta testing is performed after alpha testing and before the release of the final product.
- Beta testing generally is done for testing software products like utilities, operating systems, and applications, etc.

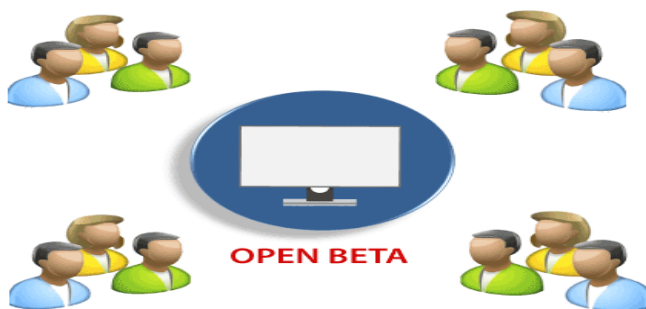
What is a beta version of the software?

The beta version of the software is delivered to a restricted number of users to accept their feedback and suggestions on quality improvement. Hence, there are two types of beta version:

1) Closed beta version: Closed beta version, also known as a private beta, it is released to a group of selected and invited people. Those people will test the software and evaluate their features and specifications. This beta version represents the software which is capable of delivering value, but it is not ready to be used by everyone. Because it shows the issues like lack of documentation or missing vital features.



2) Open beta version: Open beta is also known as a public beta. The open beta is opened to the public. Any user as a tester can assess the beta version to provide the relevant feedback and reviews. Open beta version improves the quality of the final release. This version helps to find the various undetected errors and issues.



The beta testing process orients this beta version.

What is the lifecycle of Beta Testing?

A group of end-users performs beta testing. This process can't execute without any strategy or test plan. Before the testers, the end-user executes this type of testing.

The process of beta testing follows the following steps:

1. **Planning:** Like another testing process, beta testing also supports proper planning. In this stage, the team prepares a testing strategy and defines the goal of testing. In this case, the team establishes the need of users for testing, duration, and necessary details related to the process.
2. **Participant Recruitment:** This is the second stage of the beta process in which the team recruits a group of selected end-users for testing. This group can change as per the requirement of the organization and the product.
3. **Product Launch:** When a team of users (testers) recruited. The beta version of the product is launched or installed at the client or user side, and users will test the product for quality assurance.
4. **Collect and Evaluate Feedback:** When the testing finished, developers will collect the feedback provided by the testers and evaluate it. In the end, based on the feedback, issues, and bugs are fixed and resolved by the responsible individual team.
5. **Closure:** When all the problems fixed and the organization meets the exit criteria, beta testing achieved, and the rewards offered to the testing team.

Types of Beta Testing:

There are different types of Beta tests in software testing, and they are as follows:

1. **Open Beta Testing:** Open beta testing involves testing the software product by a large number of people before the final release. The organization decides to make a software product open to the public before releasing the product. Open Beta includes the extensive participation of the public to use and evaluate software product accordingly. Users report the bug to the organization, along with a suggestion to improve the quality of the software.
2. **Closed Beta Testing:** Opposite to the open beta testing. Closed beta testing performed by the selective and limited number of persons. The organization recruits these. In this testing software product is not open to the public.
3. **Traditional Beta Testing:** Product is distributed to the target market, and related data is gathered in all aspects. This data can be used for Product improvement.

4. **Public Beta Testing:** Product is publicly released to the outside world via online channels and data can be gathered from anyone. Based on feedback, product improvements can be done. For example, Microsoft conducted the largest of all Beta Tests for its OS — Windows 8 before officially releasing it.
5. **Technical Beta Testing:** Product is released to the internal group of an organization and gathers feedback/data from the employees of the organization.
6. **Focused Beta:** Product is released to the market for gathering feedback on specific features of the program. For example, important functionality of the software.
7. **Post-release Beta:** Product is released to the market and data is gathered to make improvements for the future release of the product.

When to perform Beta Testing?

Acceptance testing is the final phase of the testing, which combines both alpha and beta testing to ensure that the product released flawlessly. Beta testing performed at the user's end. This testing always performed after the alpha testing, but before the product released to the market. In this stage, the product is expected to be 90% to 95% completed.

Any product undergoing to beta test should be reviewed for the entire checklist before launching it.

Some of them are:

- All the component of the product is ready to start this testing.
- Documentation which is going to end-user should be kept ready - Setup, installation, usage, Uninstallation should be in detail.
- The product management team should review that all the functionality is in good condition.
- Procedure to collect bugs, feedback, etc. should be identified before publishing it.

What are the stakeholders and participants in the Beta Testing?

The product management, quality management, and user experience teams are the stakeholder in beta testing, and they closely monitor every move of the phase.

The real users who use the product are the participants.

Beta test strategy

- Business objective for the product.
- Beta test plan
- The testing approach followed by participants.
- Tools used to detect bugs, measure productivity, collect feedback.
- When and how to end this testing phase?

Beta Test plan:

A beta test plan can be written in many ways,

Objective: We should have to mention the aim of the project why there is a need for beta testing even after performing the internal testing.

Scope: In this plan, we should mention the areas to be tested or not.

Test Approach: We should have to mention clearly that the testing is in the deep, what to focus on - functionality, UI, response, etc.

Schedule: We have to specify, clearly the start and ending date with time, number of cycles, and duration per cycle.

Tools: Bug logging tools and the usage of the machines should identify.

Budget: Incentive of the bugs based on the severity.

Feedback: Collecting feedback and evaluating methods.

- *Identify and review the entry and exit criteria.*

Entry criteria for Beta Testing:

- Sign off the document from alpha testing.
- Beta version of the software should ready.
- The environment should be ready to release the software application to the public.
- To capture the real-time faults environment should be ready.

Exit criteria for Beta Testing:

- All the major and minor issues resolved.
- The feedback report should prepare.
- The delivery of beta test summary report.

Advantages of Beta Testing

Beta testing performed at the end of the software testing lifecycle. Beta testing offers numerous benefits to testers, software developer, as well as the users. In the assistance of this type of testing, it enables developers, testers to test the product before its release in the market. The

1. Beta testing focuses on the customer's satisfaction.
2. It helps to reduce the risk of product failure via user validations.
3. Beta testing helps to get direct feedback from users.
4. It helps to detect the defect and issues in the system, which is overlooked and undetected by the team of software testers.
5. Beta testing helps the user to install, test, and send feedback regarding the developed software.

Disadvantages of Beta Testing

1. In this type of testing, a software engineer has no control over the process of the testing, as the users in the real-world environment perform it.
2. This testing can be a time-consuming process and can delay the final release of the product.
3. Beta testing does not test the functionality of the software in depth as software still in development.
4. It is a waste of time and money to work on the feedback of the users who do not use the software themselves properly.

Differences between the Alpha testing and Beta testing are:

Sr. No.	Alpha Testing	Beta Testing
1.	Alpha testing performed by a team of	Beta testing performed by clients or end-users

	highly skilled testers who are usually the internal employee of the organization.	in a real-time environment, who is not an employee of the organization.
2.	Alpha testing performed at the developer's site; it always needs a testing environment or lab environment.	Beta testing doesn't need any lab environment or the testing environment; it is performed at a client's location or end-user of the product.
3.	Reliability or security testing not performed in-depth in alpha testing.	Reliability, security, and robustness checked during beta testing.
4.	Alpha testing involves both white box and black-box techniques.	Beta testing uses only black-box testing.
5.	Long execution cycles maybe require for alpha testing.	Only a few weeks are required for the execution of beta testing.
6.	Critical issues or fixes can be identified by developers immediately in alpha testing.	Most of the issues or feedback is collecting from the beta testing will be implemented for the future versions of the product.
7.	Alpha testing performed before the launch of the product into the market.	At the time of software product marketing.
8.	Alpha testing focuses on the product's quality before going to beta testing.	Beta testing concentrates on the quality of the product, but gathers users input on the product and ensures that the product is ready for real-time users.
9.	Alpha testing performed nearly the end of the software development.	Beta testing is a final test before shipping a product to the customers.
10.	Alpha testing is conducting in the presence of developers and the absence of end-users.	Beta testing reversed of alpha testing.