

What's a Professional Testing Plan

- Li Jin

Agenda

- What is a Testing Plan
- Importance of Testing Plan
- How to make professional Testing Plan
 - Analyze the Product
 - Develop Test Strategy
 - Define Test Criteria
 - Develop a Schedule
 - Define Roles and Responsibilities
 - Anticipate Risks
 - Test deliverables

What is a Test Plan?

Test plan



Test cases

What is a Test Plan?

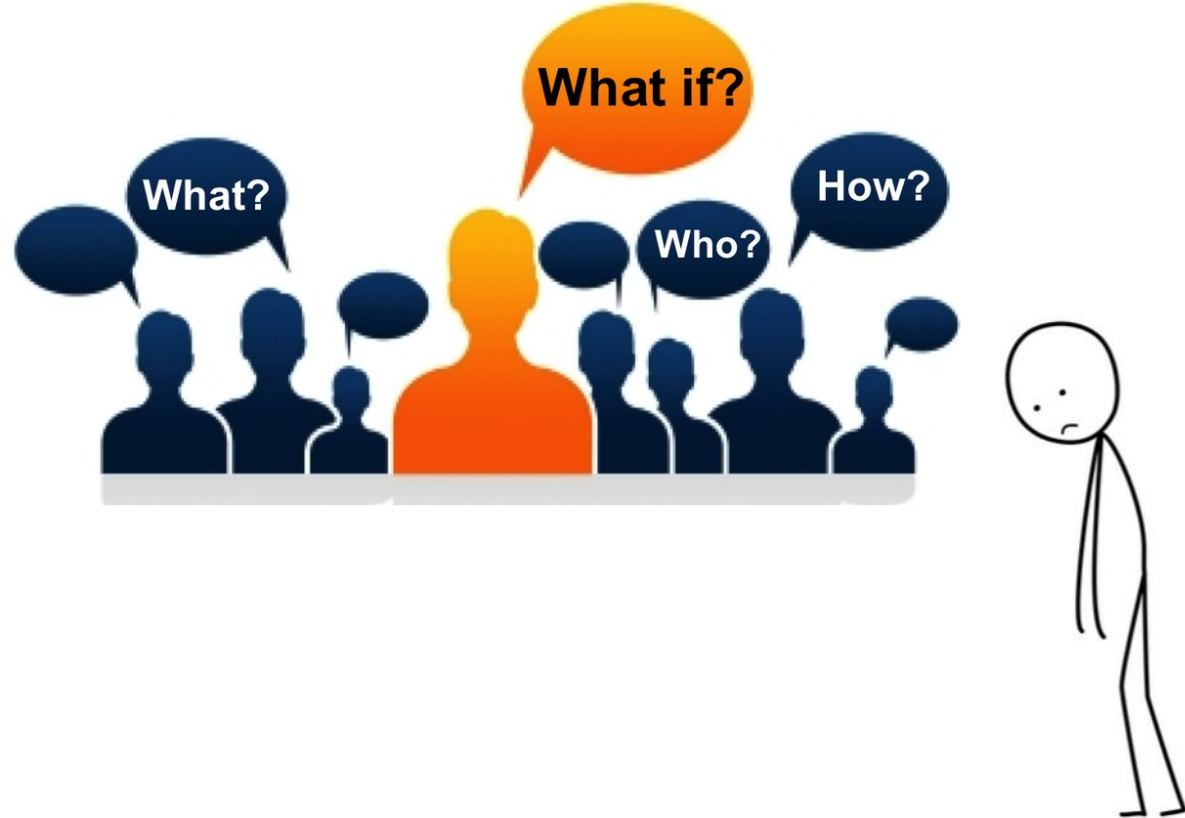
- A test plan is a document detailing the **objectives, resources, and processes** for a specific test for a software or hardware product. The plan typically contains a detailed understanding of the eventual workflow.
- A test plan documents the **strategy** that will be used to verify and ensure that a product or system **meets** its design **specifications** and other **requirements**.
- A Test plan is a document that outlines the **strategy** of how a given project or product will be tested. The Test plan is also a guidebook for **testing process** and is vital to keep testing process on the right track.
- **The test plan serves as a blueprint to conduct software testing activities as a defined process** which is minutely monitored and controlled by the test manager/project lead/group lead.
- A test plan defines the **scope, approach, resources, responsibilities, Effort Estimation, and risk management** for a project.

Importance of Test Plan

- It is the guide book for the **testing process**. It directs your testing approach and describes the testing practices to be followed.
- It contains details of the **testing scope** which prevents team from putting any efforts in testing 'Out of scope' functionalities.
- It helps to determine the **time and effort** required for testing the product.
- It clearly defines **roles and responsibilities** of every team member so every individual in the testing team knows what is required of him.
- It provides **schedule** for testing activities. Hence, it provides you a baseline schedule to control and track your team's testing progress.
- It outlines the **resource** requirements and equipment needs which are essential to carry out the testing process.
- It can be shared with your client to give them insight about your testing process and gain their **confidence**.

Importance of Test Plan

- Your managers
- Developers
- New fresher
- Colleagues from other teams
- Automation developer
- Customers
- etc.



What's a Professional Test Plan?

All stakeholders can find what they want in your test plan!

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How To Make a Test Plan?

Software testing standard:

- IEEE 829-2008
- ISO/IEC/IEEE 29119-3:2013
 - based on existing standards such as the IEEE 829, IEEE 1008, and the BS 7925-1 and -2

According to IEEE standard, the essential elements of a test plan include **test plan identifier, introduction, test items, features to be tested, features not to be tested, approach, item pass/fail Criteria, suspension criteria and resumption requirements, test deliverables, testing tasks, environmental needs, responsibilities, staffing and training needs, schedule, risks and contingencies, approvals.**



How To Make a Test Plan?

1. **Analyze the Product**
2. **Develop Test Strategy**
3. **Define Scope**
4. **Define Test Criteria**
5. **Develop a Schedule**
6. **Define Roles and Responsibilities**
7. **Anticipate Risks**
8. **Test deliverables**

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How To Make a Test Plan? - Analyze the product

- What is the feature?
- What is it used for?
- How it works?

How To Make a Test Plan? - Analyze the product

You can use the following approach to analyze the test target:

- read the product/test target documentation or requirement specification/user manual
- talk to developer, designer or product manager
- expand and improve test plan by following tips:
 - All bugs fixed in the last release
 - New feature list and bug list planned for upcoming release
 - Latest commit of upstream code



How To Make a Test Plan? - Analyze the product

List related references

- Requirement specification
- Design document
- Project plan
- User guides
- Process documents etc

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How To Make a Test Plan? - Develop Test Strategy

Test Strategy is a critical step in making a Test Plan. A Test Strategy document, is a high-level document. This document defines:

- The project's testing scope and the means to achieve them
- Determines testing effort and costs

Description of overall strategy and approach to testing are included by breaking down the huge task into small and manageable tasks.

- It identifies the right type of testing to effectively test a given specification of feature.
- The techniques, testing tools, automation (if any) are included.
- List of Non- Functional tests to be performed.

How To Make a Test Plan? - Develop Test Strategy

Testing techniques:

- Identification of Test Scenarios - specification, condition, branch
- Use Case-based Testing
- Decision Table Testing/Cause Effect Graph - complicated to simple
- Automated Testing
- Experience-based Testing

Conditions	R1	R2	R3
Withdrawal Amount <= Balance	T	F	F
Credit granted	-	T	F
Actions			
Withdrawal granted	T	T	F

How To Make a Test Plan? - Develop Test Strategy

Define Scope of Testing

- Scope is about what features to be tested and what features will not be tested.
- Get from requirements specifications
- Hardware, software, middleware, host arch, guest os, etc.
- In scope list
- Out of scope list

How To Make a Test Plan? - Develop Test Strategy

Identify Testing Type

- Test type[1]
 - Choose the right test type according to scope
 - Functional test, performance test, stress test, compatibility test, longevity test, integration test, security test, etc.
- Set priority
 - Exhaustive testing is impossible

[1] <https://mojo.redhat.com/docs/DOC-982605>

How To Make a Test Plan? - Develop Test Strategy

Define test cases

- Test case is set of activities with expected and actual results executed in sequence to validate the feature of an application.
- Test case id
- Test case Title
- Test case Description
- Setup
- **Test Steps**
 - *Proper case Granularity*
- **Expected Result**
 - Check point clear and complete
- Teardown
- Comments

[1]<https://docs.google.com/document/d/1wpy9kfK-pH6iPOdd3uLD7l6vXnsaFWRta8UiFzfyfMk/edit?ts=5ba1f8b2#heading=h.n0roi71c4hhz>

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How To Make a Test Plan? - Define Test Criteria

Entry criteria:

A set of guidelines used to determine whether a system under test is ready to move or enter a particular phase of testing.

E.g: longevity, compatibility, integration test

Release Criteria:

The release criteria is the final step before it is handed over for further process. It contains percentage of test cases passed, known defects to be covered in the next release, Risks associated and their contingencies. The below are few of them.

- Zero high priority bugs
- For all open bugs, documentation in release notes with workarounds.
- All planned QA tests run, at least ninety percent pass
- Number of open defects.

Suspension Criteria:

The testing process is suspended when no further testing is feasible. It can happen due to several reasons like the system under test repeatedly fails or crashes (due to defect).

Resumption Criteria:

When the defect is fixed and testing can be resumed, is known as resumption criteria.

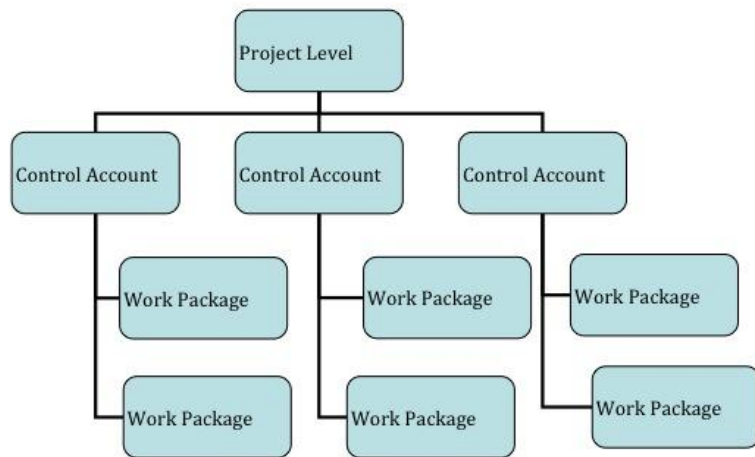
These criteria's are normally mentioned in the test plan which helps to save the project time and cost.

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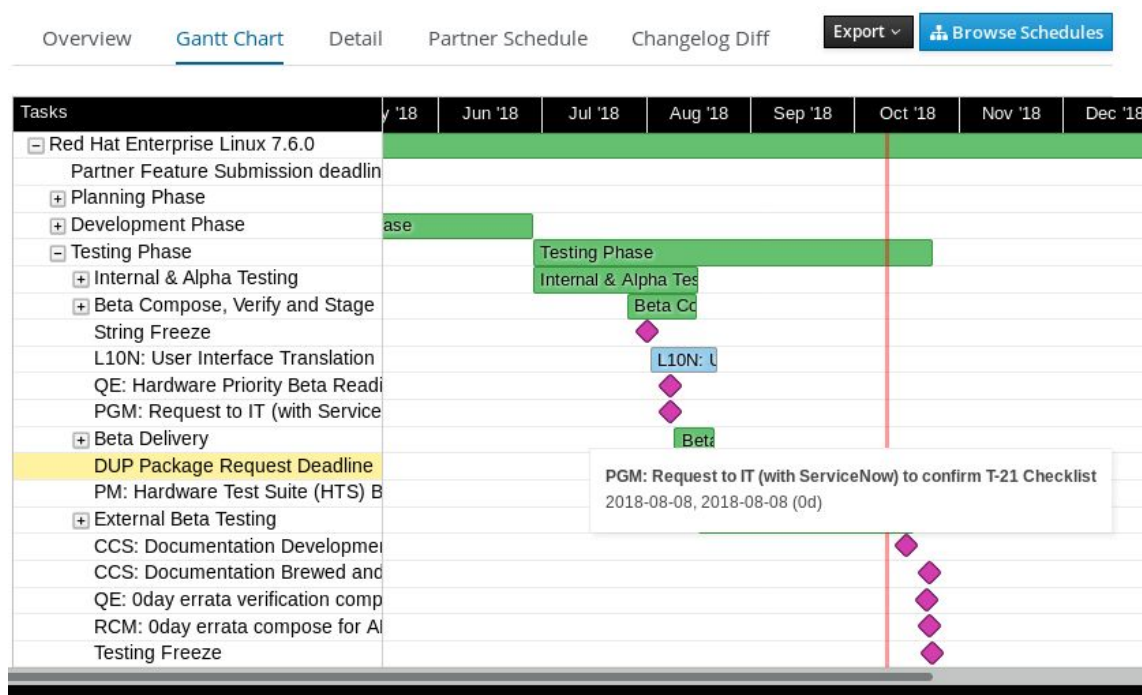
How To Make a Test Plan? - Develop a schedule

Divide the work into testing activities and estimate the required effort.



How To Make a Test Plan? - Develop a schedule

Make a schedule based on product testing phase



How To Make a Test Plan? - Develop a schedule

We can also estimate the required resources for each task.

Resource Requirements:

Facilities required , Hardware required, Software required, Special requirements such as purchasing the licenses based on certain needs are considered.

Training Needs:

Specify test needs by skill level and identifying training options for providing necessary skills. Team without proper skills for the project tend to lag in delivery within time lines.

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How To Make a Test Plan? - Define roles and responsibilities

Responsibilities :

Identify the groups responsible for:

- Managing, designing, developing/fixing, preparing, executing, witnessing, and checking
- The group may include the developers, testers, IT operations staff, user representatives, technical Support, data base team etc.

Approval Information:

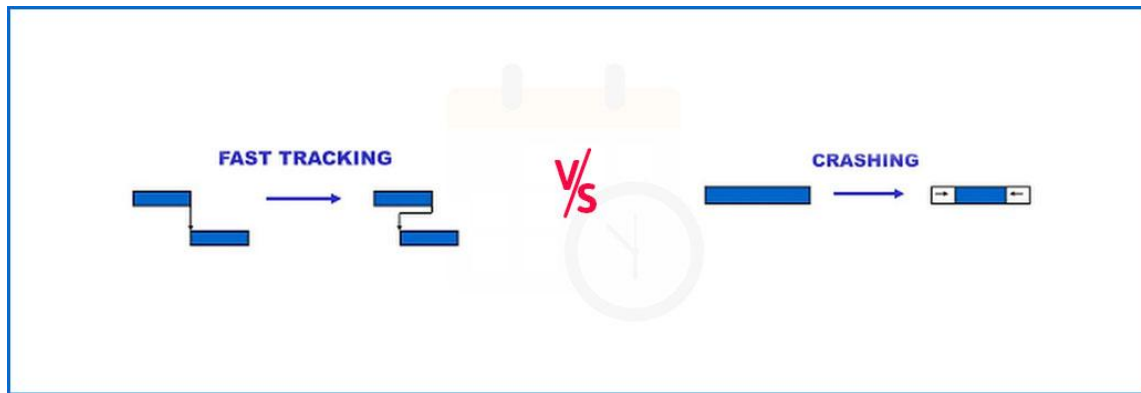
Who has approved , when it is approved, will be maintained in this section. The sign off and approval is the first step to start testing.

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How To Make a Test Plan? - Anticipate risks

- Schedule Risk
 - Focus on high priority testing
 - Fast tracking(identify all possible opportunities on the **critical path** that has the potential to be performed in **parallel**.)
 - Crashing(add extra resources to the project to compress the schedule.)
- Budget Risk
- Operational Risks
- Technical risks
- Programmatic Risks



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How To Make a Test Plan? - Test deliverables

Test Deliverables are the artifacts which are given to the stakeholders of software project during the software development lifecycle.

- Test plan, Test Design Specification, Test case documents
- Test logs, Test execution reports, Bug Reports, Test summary reports, Test data sheet etc.

Thanks