ALTIRAY™

Actioning Tomorrow

3i Infotech®
LIMITLESS EXCELLENCE

In today's rapidly evolving technology world, every application needs to up its performance speed to respond to the user's interaction. Thick client applications respond slower when compared to thin client applications. With an exponential growth in the diversity and number of end users in almost all sectors, requirements are fluctuating and demanding too. The ultimate aim remains to satisfy the end user. Consequently, all sectors are approaching user friendly Web/Mobile apps to facilitate their customers. In the app delivery process, software testing has reached undisputed importance. Software testers are pushed to adopt multi-layered testing approach above the regular load and stress testing schedules.

3i Infotech has identified Performance Testing as an essential integral part of the Software testing life cycle and has built a framework using industry leading Open source Performance testing tool, JMeter with reduced scripting cost and improved efficiency.

A Unified approach for Performance testing with Open source tools

PERFORMANCE TESTING

An application's performance and its quality attributes deliver a successful product. Adopting performance test processes improves the probability of a product's success. We follow stringent performance testing processes to eventually highlight outcomes of each activity performed and business impacts before an application or product goes to market. Our dedicated Performance Quality Assurance team is well informed on current business trends, technologies that impact your Performance Testing needs

Some common areas where performance issues are known to be extensive are

| Application Code | Application Server | Database Server | Web Server | Network Problems | Integration Problems |

3i Infotech focuses on and specializes in Functional, Automation, Performance and Security Testing services providing a value add to the clients by enhancing their testing capabilities. Our focus is on rigorous analytics which helps identify loopholes and breakpoints of the application code and hardware. This enables a better diagnostics and re-calibration of the application, thus leveraging our Dedicated Load Testing lab and SME support. Our expertise lies in

CAPABILITY SNAPSHOT

Load Testing • Stress Testing • Spike Testing • Endurance Testing • Scalability Testing

WE DELIVER SPEED, STABILITY AND SCALABILITY

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Flexib
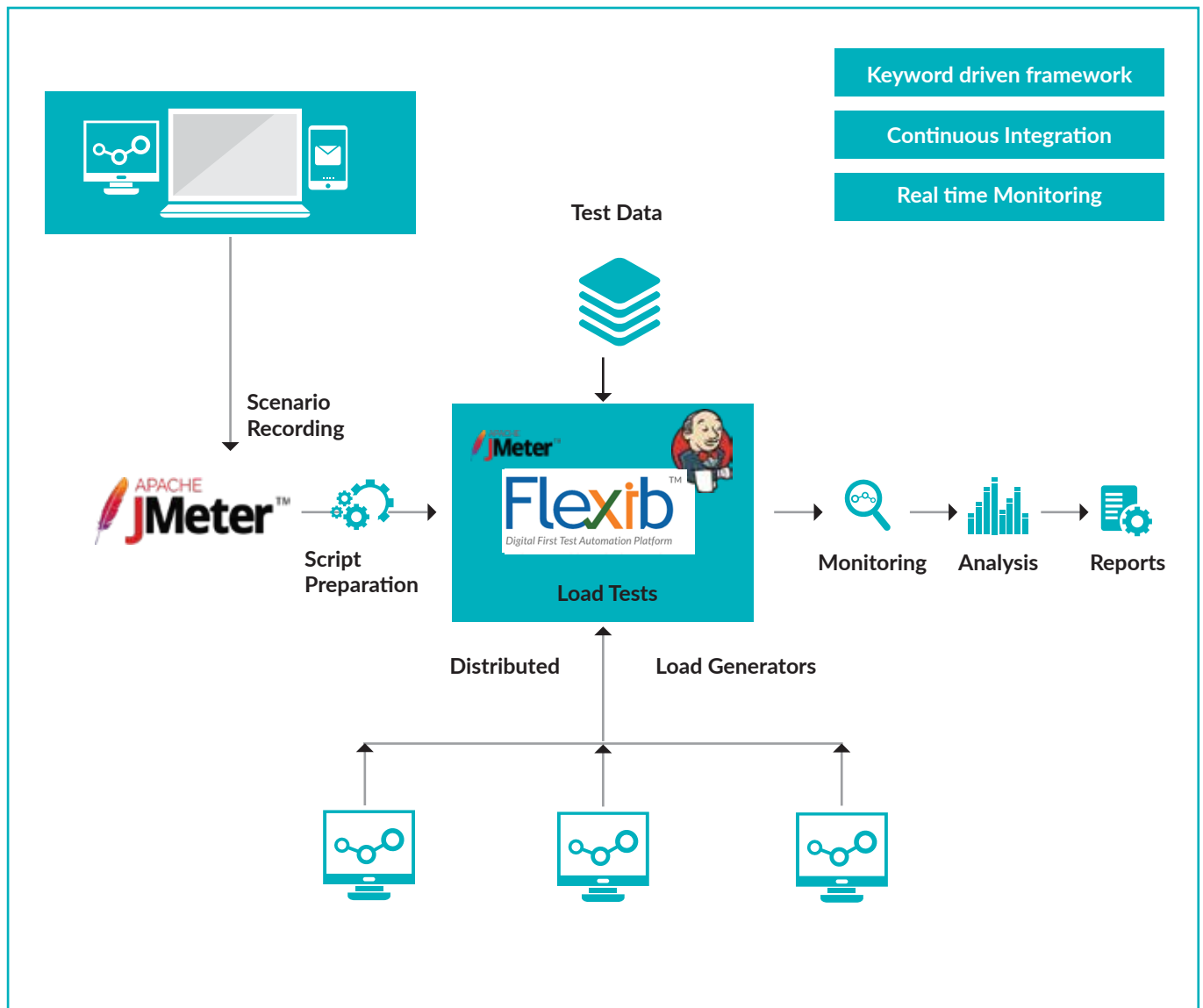### Digital First Test Automation Platform

In the recent times, compressed product release cycles, where the project deliverables are aggressive, put intense pressure on QA Processes. To overcome the time consumed through individual testing, 3i Infotech has introduced a unified Web platform integrating Open source and Commercial Automation, Performance and Security testing tools under a single framework named "Flexib, Swift Test Automation" .

Flexib is a unified framework that consists of a combination of Keyword driven and Data driven capabilities to automate the testing. The framework is cost effective, customer centric, provides high quality delivery and easily readable technical and professional reports.

Flexib ensures your testing processes are methodical and detailed in the most challenging of environments. Flexib aims to recognize and mitigate risks thereby

Customer centric and customizable

Dashboard and Reporting

Performance Automation

Automated Vulnerability Assessment Penetration Testing

Flexib
Digital First Test Automation Platform

Integrates with leading commercial and Open source tools

Automated Mobile Testing

Modular and Hybrid Framework

Supports Continuous Integration & Continuous Testing

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ARCHITECTURE

The architectural diagram depicts the Performance testing activities using Open source tool JMeter for Performance test scripting, Flexib framework for continuous testing and monitoring along with Jenkins for Continuous Integration. Load testing and monitoring on the fly is an added asset.

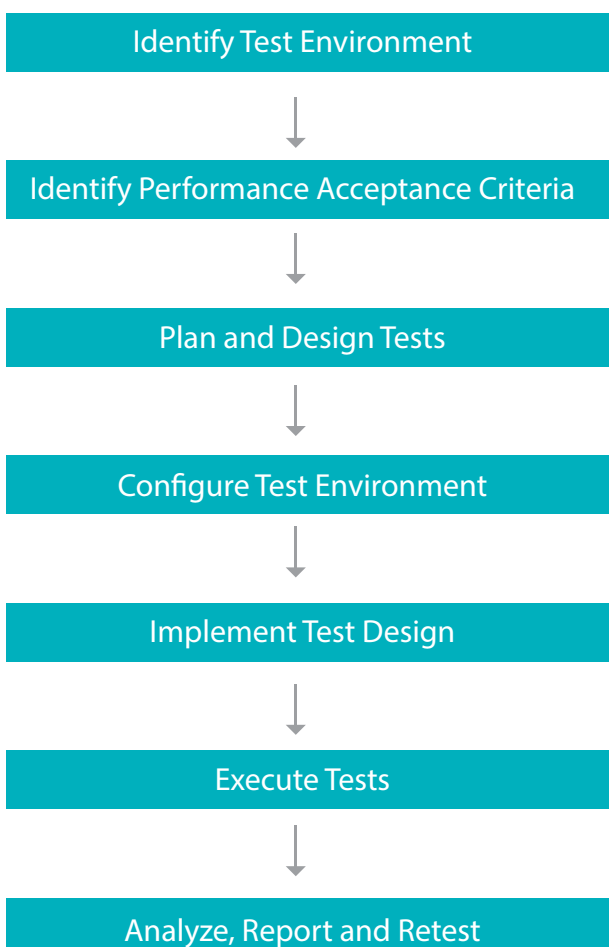JMeter can be utilized for scripting the Web/Mobile apps, Database and Web services (SOAP/REST).

Flexib can be deployed with all the necessary integrations of various tools on Cloud/Intranet/Internet as per the requirement. Access can be given to various stake holders as per the client's interest.

FRAMEWORK

Our hybrid approach is Key word driven and considers Data driven constraints framed under a single roof using open source tool Jmeter. We also offer a single platform for Continuous Integration and Delivery with our web platform, Flexib. The Flexib framework provides flexibility in service and pricing by delivering application testing services as a highly available, off the shelf, pay-as-you-go model, ensuring speed,stability and scalability of the Application under test. It also lowers the cost of entry to full service testing options and helps you implement best Performance Quality management processes.

The Flexib framework can be implemented in the projects following Waterfall, DevOps and Agile scrum methodology with Web/Mobile apps, Database and Web services such as SOAP and REST.

OUR APPROACH

Identify Test Environment

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Identify Performance Acceptance Criteria

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Plan and Design Tests

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Configure Test Environment

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Implement Test Design
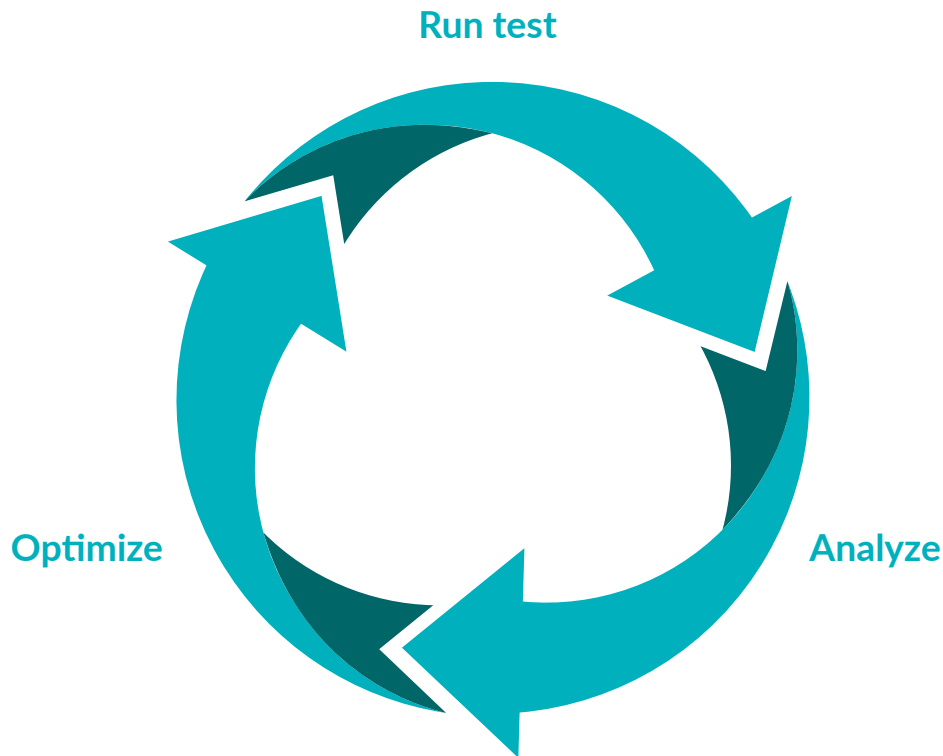
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Execute Tests

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Analyze, Report and Retest

INHERENT BEST PRACTICES

- Identify critical Business transactions and focus areas
- Setup test data and utilize effectively in scenarios
- Run baseline test with single user to validate the script
- Use Ramp up and Ramp down approach for Load tests
- Ignore results collected during Ramp up and Ramp down periods for analysis
- Run Benchmark test with 20 percent of desired Load and validate the system metrics at lower load and check the system readiness for higher load
- Run individual tests before combining them in a single Load test
- Repeat the Load tests at least 2 times to verify the results
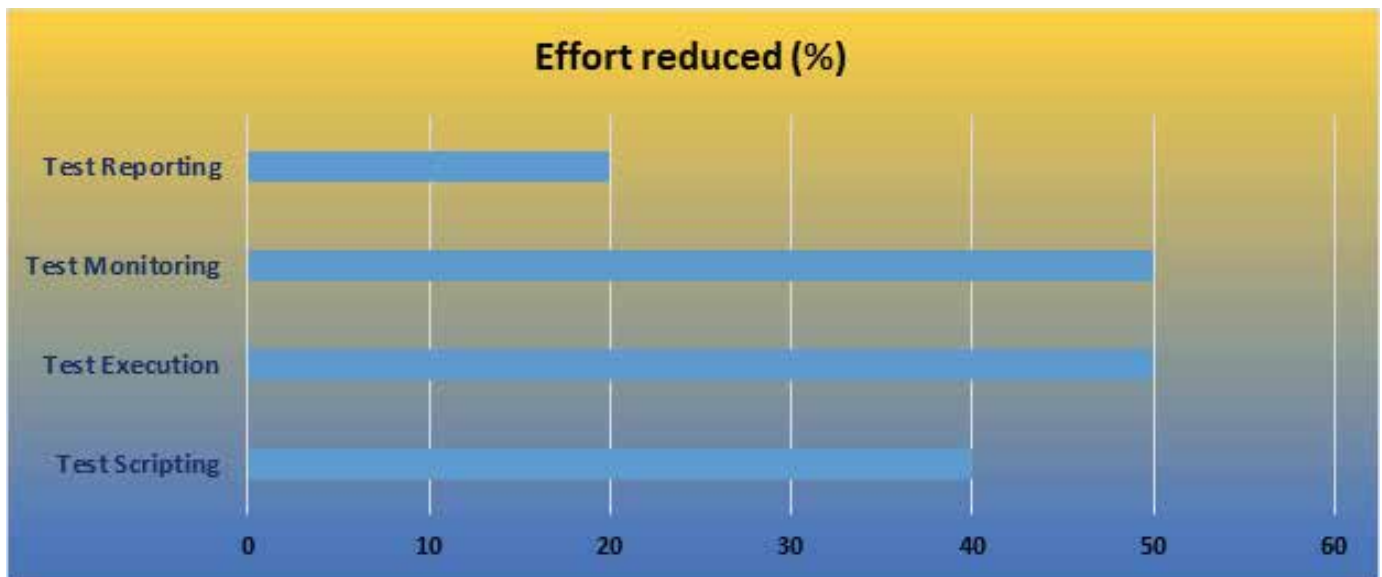- Keyword driven framework provides re-usability of test scripts

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PROCESS

In a DevOps world, we follow 3 parameters in a continuous engagement of activities of Performance testing.

Run test

Optimize

Analyze

KEY OFFERINGS

- In House Load test Methodology and Best Practices
- Support for Web/ Mobile apps, Database and Web services (SOAP/REST)
- Ensured Application Speed, Stability & Scalability
- Keyword driven and Data driven Hybrid framework implementation
- Reduced time of test scripting
- Enhanced Load testing capability
- Integration with a global web platform FLEXIB for execution and Monitoring
- Integration with Jenkins for Continuous delivery
- Visualized monitoring and Analysis
- Detailed test reports
- Reduced Operating costs
- Advanced support for Capacity planning
- Flexibility of Resource utilization on the fly

BENEFITS

- Hybrid Framework reduces the time consumption for Performance test scripting
- Flexib platform enables tester to execute the Load tests on demand
- Continuous integration and continuous monitoring facilitates by Flexib and Jenkins integration
- In house off the mark Technical and Professional reporting and Analysis

USE CASES

1. Obtaining a Baseline with new systems integration for a Financial Lending organization.
2. Stress testing on the Application to determine the breakdown point for a reputed Banking firm.
3. Load test on a Financial Trading application of a National Government Organization to determine the stability of the application with fixed load.
4. Scalability test on a students schemes application for a state Government.
5. Endurance testing for a state Government financial schemes application to ensure the stability of the application.

CASE STUDY: AUTOMATED PERFORMANCE TESTING FOR CONTINUOUS INTEGRATION AND DELIVERY

THE CLIENT:

An Indian State Government offers Campus Labs, a global platform, to its students and Faculty to enable services like Registrations, Attendance Management, Results, Seminars scheduling, Feedback and the like. Around 160,000 students from 460 Government colleges across the state were expected to register online.

THE OBJECTIVE:

Objective of the effort was to plan the expected server capacity to handle 10,000 concurrent students and 100 concurrent Faculty members by simulating real-time system usage for identified critical transactions. A series of Load tests were to be conducted through a gradual increase in the users to 10,000 and increase in the server capacity to handle the peak load. The server capacity for 160,000 students was to be extrapolated.

THE SOLUTION:

The challenge of scripting for number of Business scenarios was completed using Flexib's Hybrid framework using open source Performance testing tool JMeter. The test scripts were integrated and enabled to perform Continuous Integration and Continuous delivery using Jenkins on demand.

Ensured the Average Response time and Transaction Throughput were consistent with increase or decrease of server hardware.

Performance Tool used - JMeter v3.1, Shell scripts for LINUX OS to monitor system hardware metrics. Results were analyzed after each round of testing and easy-to-understand reports and recommendations were provided

THE BENEFITS:

Flexib's integration with Hybrid framework and Continuous integrations with Jenkins reduced almost 40% of the efforts in Performance test scripting and execution. Timely reports and recommendations were achieved with reduced efforts.

ALTIRAY™
Actioning Tomorrow

Altiray™, 3i Infotech's Services landscape, is well integrated across domains and emerging technologies. Our digital frameworks are optimized to deliver the much-needed core transformation in businesses. Based on a curated technology stack, the solutions enable easy technology adoption and are effortlessly scalable. Mobility, together with new-age technologies like Blockchain, Artificial Intelligence, IoT, Augmented / Virtual Reality (AR/VR), are an imperative part of digital transformation, and Altiray™'s offerings cater to all levels of the mobility maturity curve, covering Consulting, Design & Development, Data Testing, Support, Data Intelligence & Co-Innovation.

3i Infotech®
LIMITLESS EXCELLENCE

| Extensive domain Knowledge | Experienced technology experts | Smart technology solutions | 20+ IP based software products | 1200+ customers 50 countries |

ASIA PACIFIC l SOUTH ASIA l NORTH AMERICA l MIDDLE EAST, AFRICA l WESTERN EUROPE

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