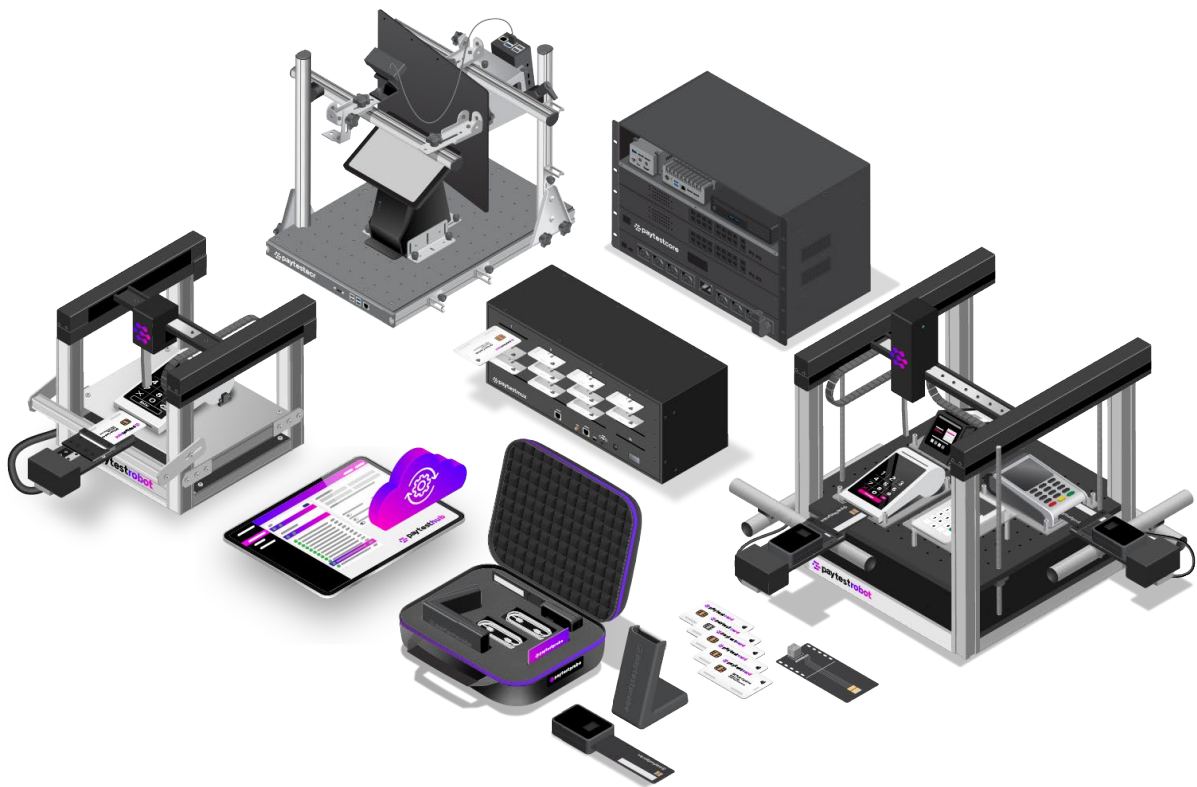




Advanced Automation for Real-World Payment Terminal Testing



White Paper

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Management Summary

This whitepaper details PaytestLab's innovative approach to transforming payment software automated testing. It addresses critical challenges faced by a rapidly evolving industry, where the increasing complexity of payment systems and the unyielding demand for flawless transactions in today's digital economy necessitate robust and reliable testing solutions. Traditional manual payment testing methods are often inconsistent, time-consuming, partial, and prone to human error, particularly when complex physical interactions with payment terminals are required. Furthermore, as development teams become increasingly global, the logistics and costs associated with managing physical testing hardware present significant hurdles.

PaytestLab tackles these issues head-on with its pioneering solutions, which uniquely combine specialized physical robots, such as the PaytestRobot, designed to meticulously mimic human interactions with payment terminals, with robust software platforms like PaytestHub and PaytestAPI, enabling comprehensive terminal test automation. This integrated ecosystem extends Robotic Process Automation (RPA) principles into the physical realm, guaranteeing unparalleled consistency, accuracy, and repeatability in test execution.

The benefits derived from PaytestLab's products and solutions are substantial, including significant reductions in testing timeframes and associated costs, accelerated release cycles, and comprehensive test coverage across all payment scenarios, specifically enhancing regression testing for payments capabilities. A groundbreaking development is the new Testing as a Service (TaaS) model, which hosts physical robots and payment terminals in centralized labs. This provides 24/7 remote accessibility for global teams, eliminates the need for physical shipping, and considerably reduces operational expenses and customs/tariff issues.

PaytestLab advocates for a strategic three-phase implementation approach, enabling organizations to achieve rapid initial successes, expand test coverage systematically, and gain immediate feedback through overnight testing. Success stories from customers like Revel Systems, KoCo Connector GmbH, Nexi Switzerland, Abrantix, and Ingenico Switzerland underscore the tangible positive impact of PaytestLab's solutions on software quality, reliability, and market agility, effectively revolutionizing payment software testing. PaytestLab is dedicated to setting the global standard in payment software automated testing, empowering businesses to confidently navigate the complexities of the payment acceptance landscape.

1. About PaytestLab

PaytestLab is a pioneering technology company specializing in payment software automated testing solutions. Established in 2024, built upon decades of collective expertise, the company has risen to prominence as a leading provider of innovative automation products, catering to the unique challenges faced by payment software application manufacturers and suppliers. With a team comprising of highly skilled engineers and domain experts, PaytestLab has solidified its reputation for delivering reliable and cutting-edge solutions that optimize testing processes and elevate product quality.

PaytestLab has honed its expertise in developing payment software automated testing solutions. These solutions streamline testing procedures throughout the product development lifecycle, right from inception to final production. Leveraging artificial intelligence, machine learning, and robotics, PaytestLab equips its clients with state-of-the-art products that significantly reduce testing timeframes and costs while maintaining the highest quality standards.

As a company deeply entrenched in the payment landscape, PaytestLab understands the complexities of testing processes, enabling them to offer bespoke solutions that address the specific needs of their clients. Their unwavering commitment to continuous research and development ensures that their products remain at the forefront of industry advancements, empowering clients with a competitive advantage in a rapidly evolving market.

PaytestLab's Mission and Vision:

PaytestLab's mission is to set the industry standard and become the global leader in the field of payment software automated testing. It is driven by a passion for innovation and excellence and is committed to redefining how businesses and industries ensure the efficiency and security of their payment solutions. By aspiring to set the industry standard, PaytestLab pledges to be a pioneer in its field, continuously pushing the boundaries of what's possible. The company's goal is to provide cutting-edge solutions that not only meet current needs but also anticipate future challenges, helping its clients stay ahead of the curve.

2. Test Automation Challenges and Solutions

Common Challenges in Test Automation

Testing is an indispensable part of the software development process and if done right, it can improve efficiency and streamline repetitive tasks. However, it comes with its own set of challenges that need to be addressed for successful implementation.

- **Inconsistent Test Quality:** One of the primary challenges in testing is ensuring consistent and reliable test results. Often, the quality of tests varies depending on the person conducting them. This inconsistency can lead to false positives or negatives, making it difficult to trust the test outcomes.
- **Difficult and Inaccurate Reporting:** Manually generating test reports can be a time-consuming and error-prone task. Accurate reporting is essential to analyze the test results effectively and identify areas for improvement. However, with manual reporting, there's always a risk of missing crucial details or making mistakes during documentation.
- **Time-Consuming Manual Tests:** Traditional manual testing demands significant time, effort, and attention from testers. As humans perform these tests, there's always a chance of human error, especially when repetitive tasks are involved. These errors can impact the accuracy and reliability of the test results. Furthermore, scaling manual testing to meet the demands of complex, evolving payment systems is often impractical, leading to bottlenecks, performing only partial testing and delayed releases.

How PaytestLab Addresses These Challenges

PaytestLab, with its advanced test automation solutions, offers robust strategies to tackle the common challenges faced during the testing process.

- **Consistent Test Execution:** PaytestLab leverages robotic automation to execute test cases with unparalleled consistency. The robot follows the same predefined steps in each test case, ensuring that the tests are conducted uniformly and accurately. By eliminating human intervention, PaytestLab guarantees the highest level of accuracy and repeatability.
- **Automated and Comprehensive Reporting:** With PaytestLab's test automation, reporting becomes effortless and precise. Each test step is automatically recorded and documented in detail. The automation platform generates comprehensive reports that include pass/fail results for individual steps, along with the corresponding log data, receipts and images captured during testing. This comprehensive reporting simplifies analysis and decision-making.
- **Time Efficiency and Increased Productivity:** By automating repetitive test scenarios, PaytestLab significantly reduces the time and effort required for testing. Testers can now focus on creating additional tests to improve overall software quality or allocate more time to software development and enhancements. This increased productivity leads to quicker release cycles and shorter time-to-market.

3. Test Automation Products offered by PaytestLab

PaytestLab's comprehensive suite of test automation products are engineered to meet the unique demands of payment software testing, ensuring accuracy, efficiency, and scalability across the entire development lifecycle.

- **PaytestHub:** A centralized cloud platform for managing the entire test automation process. It acts as a powerful test orchestration solution, allowing you to orchestrate thousands of tests across various terminals simultaneously, manage complex test data, and generate comprehensive, actionable reports at a glance.
- **PaytestRobot:** A cutting-edge physical robot designed for precise, repeatable interaction with payment terminals. It excels at performing countless card insertions, taps, swipes, and PIN entries overnight without human intervention, ensuring tireless and consistent execution.
- **PaytestProbe:** Specializing in advanced protocol analysis and certification. This tool is instrumental in automating the complex EMV L3 test automation and certification process, significantly reducing compliance costs and accelerating time-to-market.
- **PaytestMUX:** This product hosts up to 16 dual interface cards in one Multiplexor, which then can be shared across multiple PaytestProbe. With that setup, it is easy to share cards across multiple payment terminals being tested on different PaytestRobot, maximizing hardware utilization and test throughput.
- **PaytestPlayer:** An interface between PaytestHub and the EMV L3 certification tools, enabling the automation of the certification test case. The PaytestPlayer pulls the ICS file into PaytestHub and executes the test cases without writing them. Once executed, the result is being validated and logged back into the EMV L3 tool for certification purpose.
- **PaytestCore:** A server in a rack solution providing all necessary infrastructure to host the PaytestLab products. It comes with a computer, firewall, switchboard and USB hub, as well as all necessary software preinstalled and configured. This setup allows zero-day trust environments and remote access for service, maintenance and support.

Benefits of using PaytestLab's Test Automation products:

- **Unparalleled Consistency:** Robotic precision eliminates human error and ensures repeatable results.
- **Rapid Execution:** Automate hundreds of tests in minutes or hours, dramatically speeding up test and release cycles for faster time-to-market.
- **Cost Reduction:** This rapid execution also contributes to significant cost reduction by minimizing resource expenditure.
- **Comprehensive Test Coverage:** Create test cases on different payment terminals with various payment methods to ensure that all possible tests are being covered. Automated reporting provides immediate, clear feedback for quick remediation.
- **Resource Optimization:** Free up valuable human capital from mundane tasks for strategic initiatives. Those freed up resources can be allocated for more valuable tasks such as development or improving your test coverage.
- **Continuous Integration / Continuous Deployment (CI/CD):** Utilizing robotic solutions in combination with software allows to implement CI/CD solutions into a software development and testing process, streamlining the testing even further. For more details on CI/CD please refer to section 5.

4. What is Robotic Process Automation (RPA) and How PaytestLab Extends It to Physical Payment Testing

Traditional Robotic Process Automation (RPA) and Robot Desktop Automation (RDA) involve using software robots to automate repetitive tasks by mimicking human interactions with digital interfaces. RPA often spans multiple systems for end-to-end business processes, while RDA typically focuses on tasks within a single desktop application. Both technologies aim to enhance efficiency, accuracy, and productivity by eliminating manual errors in digital workflows.

Beyond the Desktop: Physical Robotic Automation for Payments

While RPA and RDA excel in software-only environments, payment software testing presents a unique challenge: it demands precise, repeatable physical interaction with payment terminals and devices. This is where PaytestLab takes the core principles of robotic automation and extends them into the physical realm.

The PaytestRobot acts as a specialized physical robot, functioning as a highly efficient acceptance device testing robot, meticulously designed to mimic human interactions with unparalleled accuracy and consistency. Just as a software RPA bot navigates a user interface, PaytestRobot precisely performs physical tasks like:

- **Card Interactions:** Precisely inserts, removes, taps, and swipes various payment cards (contact, contactless, magnetic stripe), achieving full payment terminal automation.
- **Payment Terminal Interface Control:** Accurately taps touchscreens, presses physical buttons, and navigates menus on the payment terminal. In addition, the robot inserts, taps or swipes probes for payment transactions.

This physical automation is seamlessly combined with software solutions (such as UI automation for Point-of-Sale systems, backend integration via PaytestAPI, and comprehensive test management in PaytestHub) to provide a complete, end-to-end payment testing solution. This unique blend ensures that both the digital and physical aspects of every transaction are rigorously and consistently tested.

PaytestLab's Integrated Robotic Framework

At PaytestLab, the "Robot Framework" isn't just about software; it's an integrated ecosystem that orchestrates both physical and digital test execution. This overarching system seamlessly combines robotic precision for physical interactions with robust software solutions for comprehensive payment testing. This approach guarantees:

- **Unmatched Accuracy:** Eliminating human error and inconsistencies in physical interactions.
- **Superior Repeatability:** Performing the exact same test sequence every single time, crucial for regression testing and certification.
- **Accelerated Testing:** Rapid execution of thousands of physical transactions, significantly reducing test cycles and time-to-market.
- **Comprehensive Coverage:** Rigorous testing of complex scenarios involving both software and hardware interactions, ideally implemented within a CI/CD pipeline for the best result.

By extending RPA/RDA concepts to include precise physical robotics, PaytestLab empowers payment software testers to achieve levels of automation, accuracy, and confidence simply unattainable with manual methods alone.

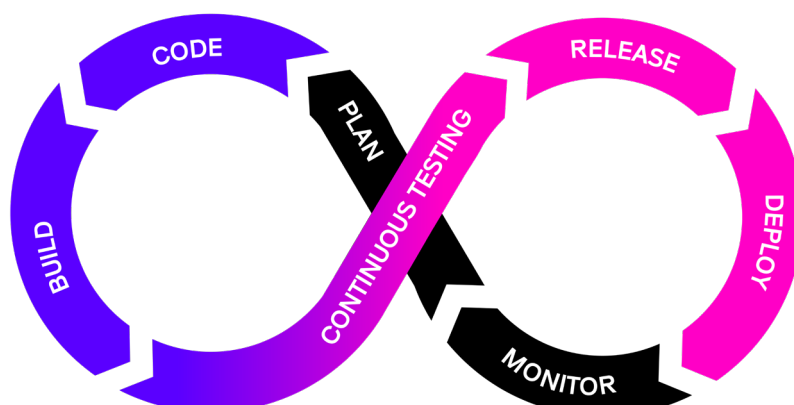
5. Continuous development and Continuous Integration

While Continuous Integration and Continuous Delivery are widely adopted, payment software testing often faces unique challenges in achieving full automation within these pipelines, particularly due to the inherent need for precise physical interaction with terminals. PaytestLab's integrated suite of products are specifically designed to bridge this gap, allowing for seamless, end-to-end automation of even the most complex physical payment tests directly within your existing CI/CD workflows.

PaytestLab's solutions serve as critical enablers for a robust payment CI/CD pipeline, ensuring both efficiency and scalability in automated testing:

- **PaytestHub as the Orchestration Platform:** PaytestHub acts as the central brain of your payment test automation, enabling precise payment testing orchestration. It integrates directly with popular CI/CD platforms (e.g., Jenkins, GitLab CI/CD, Azure DevOps) to automatically trigger comprehensive test suites upon code commitments or scheduled builds. Its powerful test management, scheduling, and reporting capabilities ensure that continuous feedback is instantly available to development teams, identifying issues early in the cycle.
- **Seamless Integration via PaytestAPI:** The comprehensive PaytestAPI is key to enabling smooth, programmatic integration. It allows your CI/CD pipelines to trigger test runs on physical terminals via PaytestHub, retrieve real-time results, and integrate test outcomes directly into your build status dashboards and bug tracking systems. This eliminates manual intervention and ensures a fully automated feedback loop.
- **PaytestRobot for Physical Continuity:** The PaytestRobot seamlessly brings the crucial element of physical interaction into your automated pipeline. It performs precise, repeatable actions with payment terminals 24/7, allowing for continuous execution of thousands of physical tests as part of every build. This capability ensures that regressions on physical devices are caught immediately, a critical factor often overlooked in traditional software-centric CI/CD.
- **Comprehensive Test Coverage with PaytestProbe & PaytestMUX:** These products further enhance your CI/CD capabilities by enabling automated EMV L3 certification tests (PaytestProbe and PaytestPlayer) and parallel testing across multiple terminals (PaytestMUX) with a variety of test cards. This ensures that your continuous integration efforts extend to the deepest levels of payment protocol and hardware compatibility, providing unparalleled test coverage within your automated pipeline.

By leveraging PaytestLab's integrated solutions, organizations can achieve a truly continuous, fully automated payment testing pipeline that accelerates releases, enhances product quality, and significantly reduces the risks associated with manual testing, ensuring confidence with every deployment.



6. Test Data Management in PaytestHub

Test data management is a critical aspect of the test automation process that plays a significant role in ensuring the efficiency, accuracy, and reliability of software testing. This whitepaper delves into how PaytestHub, a powerful testing product from PaytestLab, facilitates test data management in the context of test automation. It also explores how tests are written in YAML language, the benefits of bundling test cases into test sets, and how automated reports are generated to streamline testing processes and enhance collaboration among teams.

Tests Written in YAML Language

PaytestHub simplifies test automation by allowing tests to be written in the YAML language, a user-friendly and intuitive scripting language. The YAML language provides developers with a set of simple commands to execute specific actions, making it easy to create test cases without the need for complex coding knowledge. This empowers testing teams to focus on the logic of test scenarios, accelerating the test creation process and increasing overall productivity. The PaytestAPI documentation gives more insight into this: <https://docs.paytesthub.cloud/>

Test Case Replication and Bundling

One of the key advantages of using PaytestHub is the ability to replicate test cases effortlessly. Once a test case is written and verified, it can be duplicated and easily adjusted to suit different test scenarios. This feature significantly reduces the time and effort required for creating new test cases, enabling teams to multiply test cases efficiently over time and cover a wide range of test scenarios.

Furthermore, PaytestHub enables test cases to be grouped together into test sets. A test set is a collection of related test cases that can be executed simultaneously in one test run. This bundling of test cases streamlines the testing process, allowing teams to execute multiple test scenarios at once and obtain consolidated results in one comprehensive report.
















Automated Test Reporting and Data Retention

PaytestHub excels in generating automated reports that provide crucial insights into the test execution process. Once a test run is completed, the platform automatically generates a detailed report that includes test results, execution times, and information about who initiated the test run. This visibility into test execution allows teams to track progress, identify potential bottlenecks, and make data-driven decisions to improve testing efficiency.

Moreover, PaytestHub ensures data retention and easy access to these reports. The automated reports are stored along with the test results for a duration of 90 days, providing teams with sufficient time to review historical data. Additionally, the reports can be exported and used for various purposes, such as storing results offline for an extended period, including them as release notes with the software, or sharing them with internal stakeholders for further analysis and decision-making.

Efficient test data management is essential for successful test automation, and PaytestHub offers a robust solution to simplify and optimize this process. By leveraging the YAML language, test case replication, and bundling test sets, testing teams can accelerate test creation and execution, leading to enhanced productivity and software quality. This streamlined data management directly contributes to overall testing efficiency. The automated test reporting and data retention capabilities of PaytestHub empower teams with valuable insights, enabling them to make informed decisions, improve collaboration, and ultimately deliver reliable and high-quality software products.

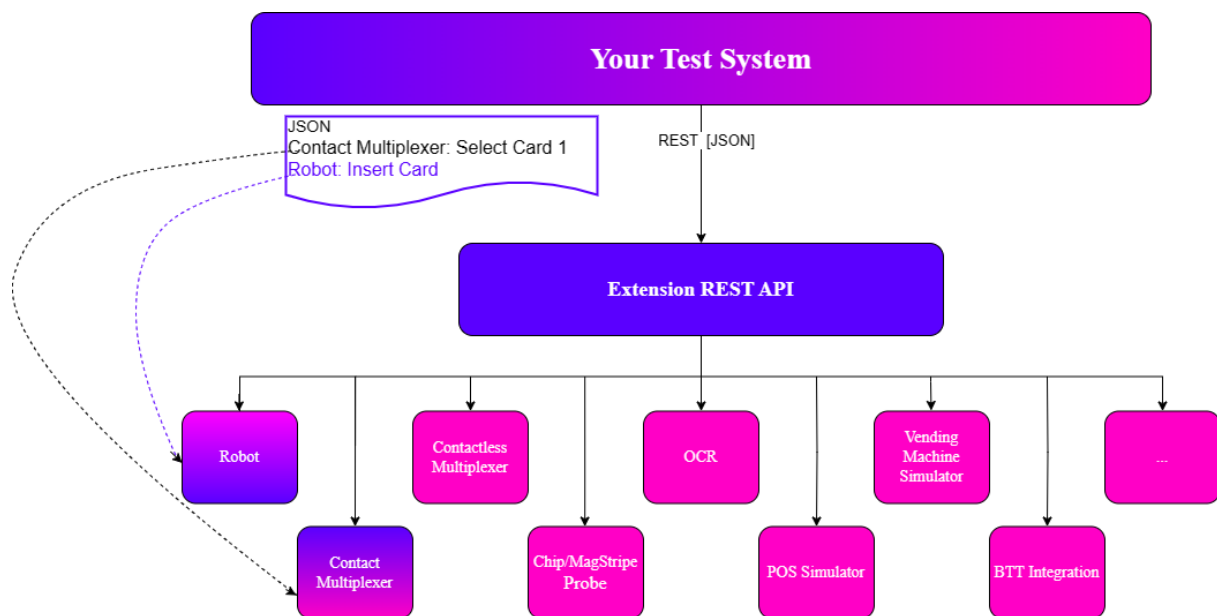
This is a sample testcase conducting a purchase transaction with a contact chip card and PIN entry event.

- ▼  Start a transaction
 - ADB-1** press --text "Transactions" --timeout 15
 - ADB-1** press --text "Purchase" --timeout 15
- ▼  Select currency -> CHF
 - ADB-1** press --text "CHF" --timeout 15
- ▼  Enter Amount -> 15.90
 - ADB-1** wait --text "Amount" --timeout 15
 - ADB-1** press --text "1;5;.;9;0;OK" --timeout 15
- ▼  Capture Terminal Display on Amount
 - ADB-1** get --screen
- ▼  Select card
 - PROBE-1** select --label MASTERCARD --interface contact
- ▼  Wait for Present Card
 - ADB-1** wait --text "Present Card" --timeout 15
- ▼  Robot T1 Insert
 - ROBOT-1** Insert
- ▼  Wait for Mastercard
 - ADB-1** wait --text "Mastercard" --timeout 15
- ▼  Enter PIN: 1234
 - ROBOT-1** \$(PinEntry)
- ▼  Wait for Remove card
 - ADB-1** wait --text "Remove" --timeout 15
- ▼  Eject Payment Card
 - ROBOT-1** Eject
- ▼  Press No copy
 - ADB-1** press --text "no copy" --timeout 15
- ▼  Wait for purchase
 - ADB-1** wait --text "Purchase" --timeout 15
- ▼  Press Back button
 - ADB-1** press --text "Back" --exact
- ▼  Robot Home

7. Integration with PaytestAPI

The PaytestAPI documentation (<https://docs.PaytestHub.cloud/>) provides comprehensive and detailed information about the various endpoints and functionalities offered by the PaytestAPI. PaytestAPI is a powerful solution designed to facilitate seamless and efficient testing of payment terminals and transaction systems. With this API, developers can easily integrate their applications with PaytestLab products to automate payment testing and streamline the testing process.

The API documentation covers essential aspects such as authentication, request and response formats, error handling, and a list of available API endpoints. It offers step-by-step guidance on how to make API calls, interpret responses, and handle errors effectively. Developers can leverage documentation to integrate PaytestAPI into their testing workflow, ensuring the robustness and reliability of their payment systems.



User Guide for PaytestAPI Documentation

- **Introduction:** Get acquainted with PaytestAPI's capabilities and advantages in streamlining payment testing. Discover how this powerful testing tool can enhance the reliability of your payment systems.
- **Authentication:** Learn about the different authentication methods, such as API keys and OAuth, and follow the guidelines provided to securely manage your API credentials.
- **Endpoints:** Explore a comprehensive list of API endpoints tailored to different payment testing functionalities, ensuring you can effectively test various aspects of your payment gateway.
- **Request Format:** Review the structure and parameters necessary for making API requests, ensuring your calls include all the required data for successful testing.
- **Response Format:** Understand the format of API responses and how to interpret the information they provide, enabling you to extract relevant data from the test results.
- **Error Handling:** Familiarize yourself with the types of errors that might occur during API interactions and implement effective error handling mechanisms to address issues promptly.

- **Making API Calls:** Follow code snippets and examples provided in the documentation to make your first API calls. Test your integration and validate responses to ensure seamless functionality.
- **Best Practices:** Benefit from valuable tips and best practices that optimize your usage of the PaytestHub API, ensuring efficient testing and maintainable code.
- **Troubleshooting:** Access resources to troubleshoot common issues or unexpected behavior. Utilize debugging techniques to identify and resolve problems effectively.
- **API Reference:** Dive into the detailed API reference, including parameter descriptions and response schemas, to find comprehensive information about each API endpoint.
- **Support and Community:** Seek assistance from PaytestHub 's support team for any API-related queries. Join the developer community to share experiences, collaborate, and learn from other users.

By following this user guide, developers can successfully integrate the PaytestAPI into their testing workflow, ensuring thorough and reliable testing of payment gateways and transaction systems. The documentation provides a valuable resource for optimizing the testing process, identifying and resolving issues, and ultimately delivering a robust payment solution for end-users.

8. Test Automation Best Practices: A Three-Phase Approach

Successful implementation of test automation involves a strategic, phased approach to streamline processes, ensure accessibility, and leverage cloud-native technologies. This structured method helps organizations overcome challenges, enhance software quality, accelerate development cycles, and boost productivity.

Phase 1: Start with Easy Tests for Quick Wins

Organizations should begin the automation process by focusing on the simplest and most repetitive test cases. This approach yields quick and positive results, enhancing team confidence and motivation. Initial successes with foundational tests provide a solid base, making it easier to build and expand the test suite.

Phase 2: Expand Test Coverage

Once the initial easy tests are in place, the next phase involves broadening test coverage across various software functionalities. Comprehensive testing enhances software quality, stability, and customer satisfaction. PaytestLab's products facilitate the execution of a wide range of test cases, including those for legacy software, across multiple terminals simultaneously, ensuring thorough validation and robustness.

Phase 3: Run Tests Overnight for Rapid Feedback

In the final phase, automation should be utilized to run tests overnight, providing immediate feedback by the next morning. Early insights into the software's health allow for proactive issue resolution, minimizing development cycle delays. Addressing issues promptly in the morning significantly shortens release cycle times, contributing to a more efficient development process.

By following this three-phase approach for test automation implementation, organizations can achieve quick wins, comprehensive coverage, and rapid feedback. PaytestLab's reliable automation solutions, combined with these best practices, ensure consistent test outcomes, increased productivity, accelerated software development, and overall improvement in software quality. Embracing this phased approach to test automation leads to greater efficiency and success in software testing and development.

9. Testing as a Service (TaaS): Remote Physical Payment Testing with PaytestLab

As payment software development scales globally, distributed teams often face the significant challenge of accessing and managing physical payment terminals for comprehensive testing. Traditional setups involving shipping hardware across borders lead to delays, logistical complexities, and escalating costs, hindering agile development and continuous integration efforts.

PaytestLab addresses this critical bottleneck by introducing a robust **Testing as a Service (TaaS)** model tailored specifically for physical payment test automation. PaytestLab provides a centralized, secure, and highly available remote testing environment, serving as a robust cloud-based payment test management solution that eliminates the need for organizations to manage physical hardware on-premises or ship equipment worldwide.

The TaaS offering is centered around strategically located labs, where PaytestLab hosts dedicated PaytestRobot units and a comprehensive suite of payment terminals, offering advanced remote EMV testing solutions. This infrastructure is securely connected and accessible to your authorized teams from anywhere in the world, around the clock.

Key advantages of PaytestLab's TaaS for physical payment testing include:

- **No Shipping or Logistics:** Completely eliminates the need to physically ship robots or payment terminals to your various team locations, saving immense time, cost, and mitigating customs/tariff issues.
- **24/7 Global Accessibility:** Your distributed development and QA teams gain on-demand, real-time access to physical test environments, ensuring that testing can occur around the clock, regardless of geographical location or time zone.
- **Reduced Operational Costs:** By offloading the maintenance, setup, and support of physical test hardware to PaytestLab, you significantly reduce internal operational expenses and free up valuable resources.
- **Streamlined Collaboration:** A centralized remote platform fosters seamless collaboration among dispersed teams, providing consistent access and visibility across all testing activities.
- **Accelerated Release Cycles:** With continuous, unconstrained access to physical testing infrastructure, you can integrate physical tests into your CI/CD pipelines more effectively, accelerating feedback loops and time-to-market.
- **Scalability:** The TaaS model provides a highly scalable solution, allowing organizations to easily expand their testing capacity without significant upfront investment in physical hardware or infrastructure.

By embracing PaytestLab's Testing as a Service, organizations can achieve a truly scalable and efficient payment testing infrastructure that works like modern software products, unlocking unparalleled flexibility, speed, and quality for global payment software deployment.

10. Case studies and success stories

PaytestLab's commitment to revolutionizing payment software automated testing is best demonstrated through the successes of various customers. These case studies showcase how PaytestLab's innovative solutions address real-world challenges, streamline testing processes, and significantly enhance product quality and time-to-market.

Revel Systems

Revel Systems, a leading cloud POS platform provider, faced significant hurdles in fully automating their payment terminal testing, particularly for chip-based transactions that required complex physical card interactions. This limitation hindered comprehensive test coverage and overall efficiency. By integrating PaytestLab's PaytestRobot T1s, PaytestMux, and PaytestProbe with their existing Ranorex framework via custom API calls, Revel achieved complete automation. This collaboration dramatically reduced their regression test time from 40 hours to just 4 hours, enabled highly stable and efficient chip transaction testing, and provided flexibility to test on virtually any terminal type.

KoCo Connector GmbH

KoCo Connector GmbH grappled with manual testing of their complex TI Connector product, which involved approximately 3000 continually expanding test cases. This labor-intensive process consumed excessive time and resources, impeding timely project delivery and quality assurance. By adopting PaytestLab's automation solution, which leverages PaytestRobot's for tasks like precise card insertion and PIN entry, KoCo Connector GmbH achieved consistent, 24/7 test execution. This transformation significantly reduced manual workload, freed up valuable resources for strategic initiatives, and led to higher accuracy and reliability in test execution, ultimately enhancing product quality and customer satisfaction.

Nexi Switzerland

Nexi Switzerland encountered substantial challenges with their manual testing procedures for new software releases, which often doubled their workload and stretched testing efforts over several weeks across both pin pad and server components. This approach introduced risks of human error and compromised their agility. Through the implementation of PaytestLab's PaytestRobot T4, PaytestMux, and PaytestHub, Nexi was able to streamline their testing processes and ensure consistent, automated execution. This automation enabled tasks to be completed in a fraction of the time, facilitated overnight testing for faster certification (targeting 2-2.5 days for phase two), improved the detection of interface changes, and allowed resources to be reallocated to strategic tasks, significantly enhancing efficiency and reporting quality.

Abrantix

Abrantix's testing relied on a manual, labor-intensive process that was prone to human error and lacked scalability, taking a full week for only 30-50 test cases and limiting them to just two major annual releases. To overcome this, Abrantix deployed ten PaytestRobot solutions, including the high-capacity PaytestRobot T4 (for multi-terminal testing), seamlessly orchestrated by PaytestHub, along with PaytestMux and PaytestProbe. This transition enabled a fully automated, continuous testing environment that executes hundreds of tests overnight across seven terminal models. As a result, Abrantix now benefits from 24/7 testing capabilities, rapid feedback loops, accelerated release cycles, and significantly enhanced test coverage, directly improving software quality and customer satisfaction.

Ingenico Switzerland

Ingenico Switzerland faced a critical challenge in identifying subtle yet impactful memory leaks within their payment software, particularly in older C-code platforms, which manual testing struggled to expose effectively. By integrating a PaytestRobot, Ingenico was able to conduct continuous, high-volume stress tests, initiating thousands of transactions over extended periods (nights or weeks). This automated approach proved significantly more efficient than manual efforts for stress and random testing, enabling proactive detection and remediation of memory issues, ultimately improving software quality, and allowing QA teams to allocate time to more strategic activities.

For a deeper dive into these and other success stories, visit the case study library on the PaytestLab website: <https://paytestlab.com/library/case-studies/>