

IDC MarketScape

IDC MarketScape: Worldwide Cloud Testing 2022 Vendor Assessment – Empowering Business Velocity

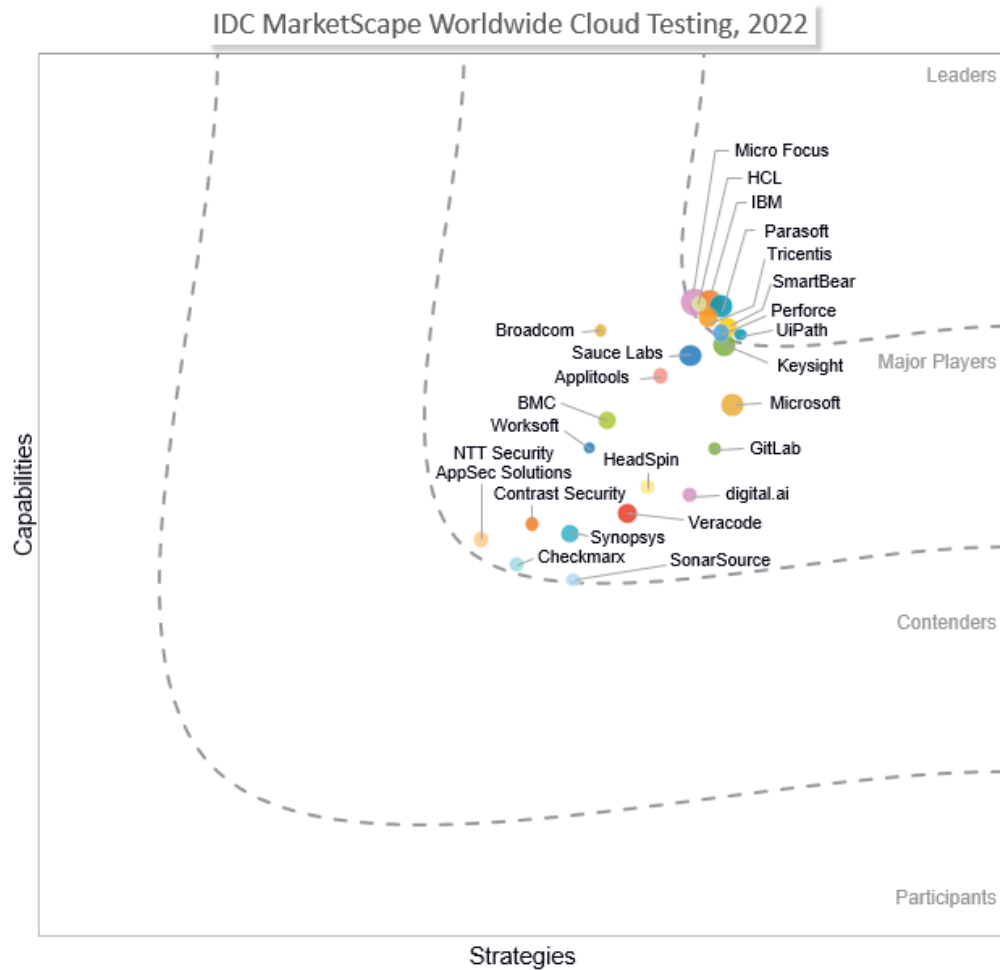
Melinda-Carol Ballou

THIS IDC MARKETSCAPE EXCERPT FEATURES PARASOFT

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Cloud Testing Vendor Assessment



Source: IDC, 2022

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Cloud Testing 2022 Vendor Assessment – Empowering Business Velocity (Doc # US47097221). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1.

IDC OPINION

Cloud development and engagement empowered and enabled our shift to digitization and to distributed, hybrid work over the past two years and will continue to do so moving into 2H22 and beyond. IDC research indicates that the top 3 drivers for cloud adoption include improving productivity, increasing the pace of innovation, and enabling greater use of automation (see IDC's August 2021 *Future Enterprise Resiliency and Spending Survey, Wave 7*, n = 920 for worldwide). Demand for solutions to test applications on the cloud and for the cloud is growing significantly as high-quality, well-performing software increasingly deployed in the cloud drives business innovation and competitive positioning (see *Market Analysis Perspective: Worldwide Platform as a Service, 2021*, IDC #US48223121, September 2021).

Companies investing in software in an unpredictable, volatile world economy with limited resources and complex software release challenges are benefitting from and committing to automated software quality (ASQ) products and providers to enable visibility and analytics for these applications, as well as adaptive testing infrastructure support for and in the cloud. With a shift to microservices and no-code development, additional challenges need to be addressed to encompass quality needs for a mix of native cloud, hybrid, and on-premises approaches. This dynamic cloud testing market is evolving rapidly with strong demand and adoption, so the current IDC MarketScape includes a focused analysis to support users in their strategy and purchase decisions.

As organizations create branding on mobile and other multimodal platforms that deploy for and in the cloud, IDC sees urgent need for approaches to software quality that extend cloud testing. These areas include an imperative for software resilience, service virtualization, and coordination with the DevOps pipeline and the emergence of intelligent analytics with machine learning (ML) and artificial intelligence (AI), leveraging process automation techniques such as robotic process automation (RPA) and functionality that addresses quality for nonhuman interfaces (such as API testing) and human interfaces (e.g., user interfaces [UIs] and user experience [UX]). User engagement is driving adoption and uptake in this area for automated software quality.

Specifically, benefits and growth factors for cloud testing "in" the cloud and "of" cloud applications include the following:

- Cloud testing enables rapid, flexible access to both quality solutions and virtual support infrastructure to sustain complex software sourcing and distributed development. ASQ SaaS and cloud testing provide ease of access, increased management efficiency, fewer needed resources, and less capital expenditure compared with on-premises ASQ.

- Coordination between DevOps pipelines and cloud testing tools enables user visibility, analytics across areas, and improved execution. Service virtualization can provide continuous integration (CI) for DevOps and virtual test environments (and is an adoption driver in this arena and criteria for evaluation).
- With a dramatic shift to microservices, developers must address consequences like the need for quality coordination across cloud native, hybrid, and on premises (including back-end nonfunctional requirements such as API testing, as well as UI and user experience testing).
- IDC sees increased adoption and improving automation capabilities for smart analytics, such as ML and AI to make cloud test data visible and pragmatically actionable. Users should also evaluate opportunities for increased efficiency of scale with RPA for cloud testing in a range of emerging areas for developers and businesses and to facilitate infrastructure provisioning.
- Architecting, designing, and developing secure and resilient cloud applications benefit from automation and DevSecOps strategies; we include application security testing (AST) vendors as part of this analysis to underscore that imperative.
- Enterprises, small and medium-sized businesses (SMBs), and managed service providers leverage cloud testing to lower costs and increase flexibility for testing where on-premises solutions are prohibitively cumbersome given the need for velocity and cost savings.
- Large service and solution providers see cloud testing as an opportunity to evolve and bundle new quality services together to target emerging markets for additional value-add and service offerings. This complements well the quality needs for mobile, ERP, security, and other areas (regulatory compliance, VoIP, etc.). Benefits of self-service infrastructure provisioning are key across areas (cost, adaptability, flexibility, and dynamism).
- We also see increasing demand for analysis of the readiness of existing "noncloud" legacy applications for migration to the cloud. Tools that enable analysis of the quality of cloud applications are also assessed in this IDC MarketScape.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

IDC evaluated 24 vendors for inclusion in this IDC MarketScape for cloud testing and ASQ SaaS. Vendors needed to have sufficient cloud testing automated software quality capabilities available in key areas of concern (e.g., test infrastructure provisioning and configuration management; deep analytics for analysis of performance optimization, service virtualization, and architectural and other analysis to enable visibility into the health of applications deployed in native and hybrid cloud; readiness for software targeting the cloud; and/or delivery of their ASQ software solution in the cloud with partner integration for other capabilities) for IDC clients. (Security is a key concern, so we included application security testing providers as part of this assessment, even where cloud testing is not a primary focus.) Vendors needed to appear in IDC discussions with end-user clients as part of RFP and other inquiry for cloud testing during 2021-2022 and needed minimum overall revenue of \$20 million for CY20, with at least \$5 million of that revenue from ASQ. Smaller, targeted vendors with engaging functionality and focus were also included in this study to provide context for emerging areas of importance (even if they do not have a full portfolio of enterprise capabilities). Vendors evaluated in this IDC MarketScape are Applitools, BMC, Broadcom, Checkmarx, Contrast Security, digital.ai, GitLab, HCL, HeadSpin, IBM, Keysight (formerly Eggplant), Micro Focus, Microsoft, NTT Security AppSec Solutions (formerly WhiteHat Security), Parasoft, Perforce, Sauce Labs, SmartBear, SonarSource, Synopsys, Tricentis, UiPath, Veracode, and Worksoft.

IDC structured its approach to inclusion of vendors in the cloud testing category based on the strength of their products' ASQ cloud capabilities and strategy, revenue share in part (as indicators of adoption and staying power), and differentiated position and capabilities in emerging markets of concern. Examples of additional providers not evaluated as part of this assessment (those that could also be considered for aspects of cloud testing) include BrowserStack and CAST Software. The focus of IDC for leaders has been on cloud testing breadth and depth, scalability, coordination with end-to-end life-cycle management, API testing, service virtualization, and strong data analytics with emerging and existing ML, AI, and also RPA capabilities; managing IT infrastructure as workflow; and process support for systemic adoption and engagement, which have been key drivers for leadership.

ADVICE FOR TECHNOLOGY BUYERS

Cloud testing facilitates the release and provisioning process through improved infrastructure availability and management for testing pre- and post-production. Service virtualization plays a role for both test labs and release management/provisioning. For this reason, IDC includes assessment of coordination for cloud testing solutions pre- and post-deployment as a criterion.

In addition, we see broader use of ASQ in coordination with application life-cycle management DevOps solutions. These products – which include requirements, testing, software change management, version control, release management and deployment, and in some instances, project portfolio and agile process management – can help provide granular metrics for the assessment of IT software quality project delivery and/or delays. These quantitative metrics can provide guidance for both cloud testing and ASQ SaaS success and failure and the effectiveness of internal and external resources being used to execute on software quality initiatives. Those metrics then help enable qualitative choices about risk, compliance, and where additional resources may be needed to troubleshoot quality problem for challenging delayed software programs. Test data management plays a role here as well. (Typically, the projects with the greatest business value and dynamism involve greater risk for which quality needs to be monitored effectively.) These metrics can also help inform choices about internal resources and service providers where outsourcing is a key element for software portfolio execution.

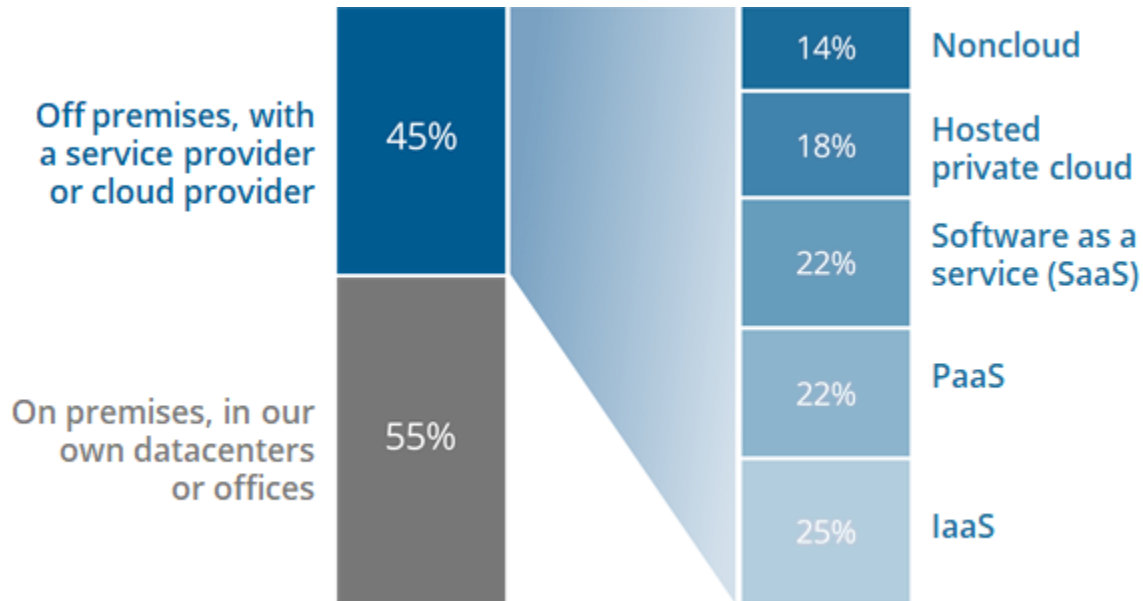
These market factors and end-user demands informed IDC's choices about focus and weighting for this IDC MarketScape for cloud testing and ASQ SaaS assessment framework.

This study evaluates the principal vendors participating in cloud testing areas and applies that lens to the overall IDC MarketScape for ASQ series (including separate documents on enterprise ASQ, security testing, and mobile and digital quality; see the Appendix for the definition and criteria for the cloud testing analysis). At a time of global disruption (with the ongoing health crisis, as well as environmental and geopolitical upheaval) and increased technology complexity, businesses require the capability to be able to effectively test and optimize cloud software that drives business innovation. IDC research indicates that around half of organizations are deploying core applications in the cloud (see Figure 2). We see automation evolving to address a range of technical and other challenges as organizations leverage mixed environments with cloud-native deployments, combined with hybrid and on premises. As an example, areas of focus for cloud-native application testing include microservices, E2E and exploratory testing, chaos/fuzz testing and recovery, stress, load, and elasticity testing, A/B, and continuous integration/continuous delivery (CD).

FIGURE 2

Core Applications Deployed in Cloud

- Q. For 2020, what percentage of the applications in production were for the following environments. (n = 998)
- Q. For 2020, what percentage of the off-premises applications in production were for the following environments. (n = 985)



n = 998 for the applications in production, n = 985 for off-premises applications in production

Note: For more information, see *PaaSView and the Developer 2021: Worldwide Banner Tables* (IDC #US47957121, June 2021).

Source: IDC's *PaaSView and the Developer Survey*, May 2021

Augmenting test infrastructure with testing in the cloud is an obvious benefit at a time of constrained resources with ongoing volatility globally. Companies have little leeway for poor software quality as they push forward competitively. Resources for both development and quality assurance and quality control remain highly constrained. Companies must make appropriate test automation strategy decisions for their businesses in response to both dramatically increased technology complexity and severe competitive and innovation pressures. IDC's cloud testing evaluation is based on a comprehensive framework and a set of parameters to assess vendors relative to one another and to those factors expected to be most conducive to user demand and to market and competitive success for the short term and the long term.

Overall, cloud testing excellence for this research must encompass strong capabilities for testing of applications in the cloud and cloud test infrastructure management and dynamic provisioning, SaaS options for ASQ, and testing of target cloud applications. With a rise in complex sourcing, we increasingly see the need for metrics and service-level agreements (SLAs) that incorporate visibility into application performance in the cloud. This can facilitate evaluation of internal and external resources with testing metrics while improving assessment of consistent quality execution for

successful software and effective software performance optimization with the use of adaptive cloud infrastructure.

The focus for this IDC MarketScape for cloud testing and ASQ SaaS (and for the companion IDC MarketScape for ASQ documents) was chosen based on IDC's assessment of evolving market demand and user input. Additional ASQ perspectives may be needed and are available on a custom basis. Context and analysis for these ASQ views are key; however, a single view (or narrow combination of views) by itself is inadequate for ASQ purchase decisions. These decisions must be made in the context of user organizational and process maturity, most pressing immediate and long-term demand and gap assessment, and dialogue with solution providers, analysts, and user references (and communities) with comparable needs.

Note: Those vendors rated most highly in this analysis have focused strategically on cloud testing both in the cloud and of cloud applications with examples of multi-thousand, cross-geographic, and multimodal quality cloud deployments and emerging technology support in key related areas (including managing IT infrastructure as workflow).

VENDOR SUMMARY PROFILES

This section explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

Parasoft

Parasoft is positioned in the Leaders category in the 2022 IDC MarketScape for worldwide cloud testing.

Parasoft products considered as part of this vendor assessment in this research initiative include the following as part of Parasoft's Continuous Quality Suite: Parasoft C/C++test, Parasoft Jtest, Parasoft dotTEST, Parasoft Insure++, Parasoft DTP, Parasoft CTP, Parasoft Selenic, Parasoft SOAtest and Load Test, and Parasoft Virtualize.

Parasoft was founded in 1987 and is headquartered in Monrovia, California, with around 250 employees and an established customer base of approximately 2,400 and close to 40,000 seats as of 1Q22. The company's ASQ growth resulted from its product portfolio technical depth and breadth for testing across categories (from capabilities for functional, performance, and software static code analysis to SOA testing and service virtualization) and related areas of smart analytics and development with Parasoft DTP. Parasoft's synergistic and broad partnering strategy includes relationships with ARM, Green Hills Software, IAR Systems, Lauterbach, TASKING, Texas Instruments, Wind River, Jama Software, Eclipse Foundation, OWASP, PCI, MISRA, Coveros, IOVIO, HackEDU, Microsoft, Siemens, Conformiq, Ranorex, Lattix, Auriga, and DLT.

Company Strategy

Parasoft has traditionally been strong in the IT developer market, and this remains the case. At the same time, it has also targeted the burgeoning edge and embedded space with its testing and validation tools and by forging and leveraging partnerships with providers (mentioned previously and also including support for modern cloud-based CI/CD workflows for collaborative development, including common tools such as GitHub, GitLab, and Azure DevOps). On the IT side, Parasoft serves

industries including banking/financial services, insurance, healthcare, telecommunications, and ecommerce. With its embedded/edge capabilities, it is also focusing on safety-critical industries including automotive, railways, medical devices, and aerospace.

Delineators for Parasoft include its reporting, analytics, and compliance dashboard, Parasoft DTP. DTP can aggregate quality data across test automation tools, practices, and metrics, including Parasoft's static analysis, code metrics, unit testing, functional testing, manual testing, and code coverage. (Parasoft incorporates security practices and results into standard quality processes, with the goal to make them an integral part of the pipeline instead of coming at the end.) And via integration, DTP can correlate that data with source code from SCM and user stories/requirements from agile planning and requirements management systems over time and across builds (combining unit and functional test results with code coverage and code analysis). This can help users identify risky code changes, give visibility into unstable tests, and help increase efficiency by focusing on test impact analysis and traceability. DTP also can provide dashboard, widget, and report templates for specific use cases (e.g., compliance, traceability), practices (e.g., static analysis, test automation), and standards for safety and security (e.g., OWASP, CWE, CERT, MISRA, AUTOSAR). Parasoft also supports testing for Web Content Accessibility Guidelines (WCAG) and has applied these accessibility guidelines to its own applications as well.

Parasoft's DTP provides analytics and reporting capabilities and users can also customize and augment existing analytics workflows to define new reports, import/export data, and add new analytics. One specific use of AI within DTP is applying machine learning to help understand and predict behavior when addressing static analysis violations. This can enable context to improve execution for DevSecOps initiatives and safety-critical certification. A benefit of Parasoft's capabilities here includes correlation of these testing approaches with security industry risk models, leveraging AI/ML to help predict impact of specific violations and violation patterns by modeling developer behavior, by determination of best-suited developer to fix a particular violation (based on history) and via violation hotspots where a single small fix could remove many violations. DTP can also help users track progress and demonstrate compliance across sprints and releases.

Incorporation of AI and ML capabilities in other areas has enabled Parasoft to engage those with less technical experience to create, run, and manage UI tests and to help maintain API tests across the CI/CD pipeline with SOAtest. (For instance, Parasoft has added AI/ML capabilities across a number of testing practices, including UI testing, API testing, functional testing, and static analysis, seeking to make it easier for developers to create, maintain, and execute tests and remediate the findings.) Parasoft's engagement with open source includes helping improve Selenium testing via Selenic, with AI-generated recommendations that can improve test maintenance and UI "self-healing" support. Leverage of AI and ML to improve the quality of safety-critical, complex applications (including IoT) is a key area of active research for Parasoft and others, coordinating a range of devices and API infrastructure and virtualization and incorporating resilience/security and dev testing.

SOAtest includes support for around 120 protocols and an open extension framework for API testing. SOAtest combines breadth and depth with ease of use, evolving beyond testing of simple REST-based services to meet higher-end needs. SOAtest's application of AI/ML to the creation of API test scenarios simplifies the process of creating real-world test scenarios and can also speed up testing by giving context to help determine which tests need to be executed for a specific change instead of having to run the whole suite. SOAtest can help provide ease of use via simple web-based tools for low-code/no-code testing and IDE integration for developers.

In 3Q21, Parasoft expanded its API and SAST testing with augmented OWASP support (by integrating SOAtest and Smart API Test Generator with OWASP ZAP). Parasoft industry safety and security standards (listed previously) that are deployed in a standards-native format use the conventions from the standards being tested, so users have context for which security and safety requirements they're working on as well as reporting for traceability and audit. For API security, Parasoft supports the OWASP API Top 10 with both SAST and DAST. Penetration testing is provided via integration with OWASP ZAP tool (which performs attacks based on users' existing test scenarios, saving time in test creation and using knowledge about the business logic contained in the functional tests). Parasoft Virtualize service virtualization software enables development and quality assurance teams to capture relevant system behavior of applications and to provision virtual assets to help execute complex test scenarios (with additional control of test environments, including third-party components). The product enables graphical setup for provisioning of virtual and physical environments, with the context of dependent application behaviors. Parasoft's Community Edition gives an on-ramp for access to the company's service virtualization solution for HTTP-based XML/JSON services, which can be upgraded and scaled to cover broader business requirements.

Parasoft CTP enables cross-team collaboration for API testing (leveraging SOAtest) and service virtualization (leveraging Virtualize), promoting the reuse of both test artifacts and virtual assets across test environments and teams.

Parasoft positions SOAtest and Virtualize as SaaS offerings via the AWS and Azure marketplaces. Its solutions are designed to be containerized and cloud deployed (public, private, or hybrid), enabling flexible deployment. Both Parasoft SOAtest and Parasoft Virtualize support microservices architectures.

Overall, Parasoft's capabilities and breadth as an ASQ company resulted in the company's positive positioning for this IDC research study series. Parasoft's static and dynamic analysis positions the company for code analytics, SOAtest and service virtualization capabilities enable effective cloud testing capabilities, and the company's breadth of functionality in other areas enable decent positioning for mobile and digital quality and for enterprise ASQ.

Customers cited responsive, highly collaborative customer support; product ease of use; and configurability of products such as CTP and SOAtest (along with SOAtest's breadth of language support rather than having to use coding or specific languages for adoption) as benefits. One user mentioned how teams previously required 2.5 weeks for 1 regression testing cycle (when using a competitive tool), which now requires 8 hours with Parasoft, describing how they have now completed 17,000 test cases facilitated by automation and leverage of proxy environments and CI/CD guidance and integration from Parasoft. Another user described the advantages of being able to use the same tests for both functional and performance testing to increase efficiency. It also mentioned leveraging combined product automation capabilities and strategic support from Parasoft to execute for efficient CI/CD and software deployment. One company emphasized Parasoft's ease of use to "get across the finish line" with little to no coding and strategic support to enable website performance analysis prior to a major Black Friday deadline. Customers also gave Parasoft high marks for provisioning of new portals and low-cost or no-cost access to pilot new versions of its tools. Customers would like to see additional AI-based functionality to expand self-healing and other capabilities moving forward. Overall, users cited the depth of Parasoft's products to meet key quality needs and partnerships or leverage of other products for supplementary and additional areas. As of 1Q22, Parasoft has enhanced its forums, including user participation in ideation and increased content available via online training videos, and is building a customer advisory board.

Strengths

Parasoft has primarily evolved its product portfolio organically with a strong foundation of core testing technical expertise and over three decades of experience and research. The strengths for Parasoft are in the depth of its functionality for the ASQ areas covered – for API testing and integration testing and service virtualization especially, along with the breadth of capability from runtime and static analysis to functional, unit, and focused testing and validation solutions to support both developer and tester needs. These include integration with CI/CD pipeline and software development life cycle. Parasoft's analytics strategy increasingly incorporates ML and AI capabilities, with a solid road map moving into 2022-2023. Parasoft's testing solutions can help organizations increase productivity by enabling context about where to focus testing efforts (on areas of change and greater value and/or risky areas of code).

Parasoft's technical strength for the company's automated quality product portfolio has positioned the company well for its core areas of focus. The company has significant internal experience, patents, and knowledge on the problem space and can partner with organizations to help them through difficult transformations (agile, continuous testing for DevOps, etc.) leveraging both its automated tools and a targeted services team. As a small, accessible organization, user references described Parasoft as highly responsive and able to delve into individualized demands as needed.

Challenges

While Parasoft has depth and breadth in the areas in which it has invested, it has chosen to partner for other areas (such as test management, test data management, mobile testing and mobile device support and architectural analysis) or to not expand into and/or deepen into broader areas for application security testing (such as DAST and IAST). This means reliance on partners or others gives Parasoft opportunities to broaden execution. In addition, Parasoft's technical strength and differentiation are not as visible to the broader market, so those unfamiliar with Parasoft don't have the opportunity to engage. Its messaging and trajectory are solid, and the company would do well to publicly broaden its user base and build on growth and engagement. Ease of use and addressing the business side, which is more involved with edge and also RPA technology opportunities, will need to be addressed as this segment grows. The adoption of the product line within edge and embedded environments is not straightforward and will necessitate additional process and organizational change (to enable collaboration across diverse teams for product life cycle across software, systems, electrical, mechanical engineering, and business development). That said, while the adoption of tools in embedded environments can be complex, many embedded organizations are moving to a more modern development environment including cloud-based CI/CD, which Parasoft supports and is expanding.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share and usage of each individual vendor within the specific market segment being assessed.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

The automated software quality (ASQ) SaaS and cloud testing market is a competitive market representing software as a service covering the automated software quality functional market and also revenue from the worldwide security and vulnerability management functional market including SaaS products sold providing code analytics as part of software quality, analysis, and measurement functionality.

Automated software quality tools support software unit testing, system testing, or both; they also support software quality assurance. Functions such as test specification, generation, execution, and results analysis, as well as test and QA management, are included in this category. ASQ SaaS and testing in the cloud (private, public, and hybrid) – and virtual test lab management as well as software quality analysis and measurement – are included in this category. Emerging platform support for mobile, video, crowdsourcing, end-user experience, embedded software quality, and other areas will be considered. The software quality analysis and measurement aspect of ASQ consists of software tools that enable organizations to observe, measure, and evaluate software complexity, size, productivity, and risk.

To qualify as a software-as-a-service solution, the offering is provided by a third-party, offsite provider and is not deployed internally by the end user. It is also required to support the majority of the following attributes:

- Is a shared one-to-many service built for a public market, not for a single customer (We also see the emergence of private cloud and hybrid cloud testing solutions.)
- Is provided as a "turnkey" solution that integrates required resources
- Provides dynamic, fine-grained service "scaling" associated with the needs of the business, the numbers of users, and so forth
- Supports user-oriented pricing, utilization, and cost tracking
- Enables self-service provisioning with cloud testing (although some onboarding may be necessary with staff support for more complex customizations)

SaaS and emerging cloud testing offerings often bundle hardware, services, and software licenses into an annual (or sometimes monthly) subscription fee, though in some cases, the user may license the software separately from the supporting infrastructure and services. SaaS can act as an on-ramp to cloud testing. Testing is particularly well suited to a cloud delivery model, given the need to mirror production systems with appropriate infrastructure to support consistent, well-managed, quality approaches. IDC's estimates for this market include all revenue associated with the delivery of services that support the functionality described previously. While the majority of revenue presented here is in SaaS, we expect increasing revenue for cloud testing offerings and user uptake to continue through 2022 and beyond.

LEARN MORE

Related Research

- *IDC MarketScape: Worldwide Application Security Testing, Code Analytics, and Software Composition Analysis 2022 Vendor Assessment - Coordinating Security and Quality for Resilience and DevSecOps* (IDC #US47097521, forthcoming)
- *IDC MarketScape: Worldwide Mobile Testing and Digital Quality 2022 Vendor Assessment - Enabling Multimodal Dynamism for Digital Innovation* (IDC #US47097321, forthcoming)
- *Addressing Quality for Customer Communications Infrastructure and Engagement: Strategies to Manage Complexity and Optimize the Business* (IDC #US48467821, December 2021)
- *Worldwide Competitive Public Cloud Platform as a Service Forecast, 2021-2025* (IDC #US47999021, September 2021)
- *Market Analysis Perspective: Worldwide Agile ALM, Quality, and Portfolio Strategies, 2021 - Dynamic Coordination for Quality DevOps Delivery* (IDC #US47148721, September 2021)
- *Worldwide Automated Software Quality Forecast, 2021-2025: Digital Transformation Demands Quality and Drives Growth* (IDC #US47916121, June 2021)
- *Worldwide Automated Software Quality Market Shares, 2020: Rapid Digitization Impels Ongoing Quality Adoption* (IDC #US47916021, June 2021)
- *IDC PeerScape: Practices for Enabling Innovation with Agile Quality, Continuous Testing and Modern Development* (IDC #US47917321, June 2021)
- *IDC's Worldwide Software Taxonomy, 2021* (IDC #US47588620, April 2021)

Synopsis

This IDC study uses the IDC MarketScape model to provide an assessment for cloud testing and ASQ SaaS, evaluating automated tools capabilities for enabling virtual testing infrastructure in the cloud, service virtualization, and testing of cloud applications as one of four key assessments of the IDC MarketScape series for ASQ to provide a comprehensive view across key areas of the market – enterprise ASQ/DevOps, quality/security, and mobile testing and digital quality. Organizations seeking processes, services, and product automation capabilities for ASQ come to their decision making with varying levels of maturity, differing pain points, and challenges. This is even more the case in a volatile global context as companies continue to struggle with unpredictability of the pandemic, complex deployment needs and sourcing, limited QA resources, and varying levels of flexibility to meet business and competitive pressures. The intent with IDC's cloud testing ASQ criteria and our four-document report series is to demonstrate weighting approaches for the areas of greatest importance that come up for

users making ASQ selections currently with transformative demands for mobile, cloud, IoT, and other areas. Too frequently, users and vendors see "one" sample market assessment diagram and assume that a single model for the market will directly address all their needs (with no context for user-specific challenges or variegated maturity levels). We believe that in-context weighting and analysis is optimal to enable pragmatic insight for users making decisions in a dynamic, increasingly chaotic, complex global competitive and geo-political environment. Additional weighting and visibility are available individually – yet publishing multiple IDC MarketScape documents for ASQ can enable decision makers to "see" varying approaches based on their peers' experiences, as they consider IDC's analysis.

"IDC has seen a dramatic increase in multimodal development and complex sourcing for software projects. This continues the existing trend for combining internal resources with contractors, onshore/offshore providers, and use of open source multicloud and cross-cloud environments. With continuous integration and agile DevOps approaches along with the need for DevSecOps, the demand for effective quality has increased geometrically," said Melinda Ballou, program director for IDC's Application Life-Cycle Management and Executive Strategies service. "Creating strategies that enable cloud testing with virtual infrastructure and service virtualization as well as testing of cloud applications for visibility into their health enable broader portfolio coordination with ALM and capabilities for emerging platforms with mobile, cloud, IoT, and other areas. It is in part due to this increase in vulnerabilities and complexity for software development and deployment projects that IDC has chosen to prioritize combined capabilities for ASQ with additional life-cycle areas. Cloud testing solutions in this context can provide a basis for collaboration to enable continuous quality as part of end-to-end DevOps. While this IDC MarketScape focuses on cloud testing, IDC has chosen the context of three additional sample weighting strategies that have currency in 2022 and are frequently requested by users speaking with us – mobile testing and digital quality; security testing, code analytics, and software composition analysis; and enterprise ASQ. Global organizations seeking to coordinate continuous DevOps and other areas demand high levels of functionality, scalability, and maturity overall to execute well."

About IDC

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