Key Traits of Effective Performance Engineers

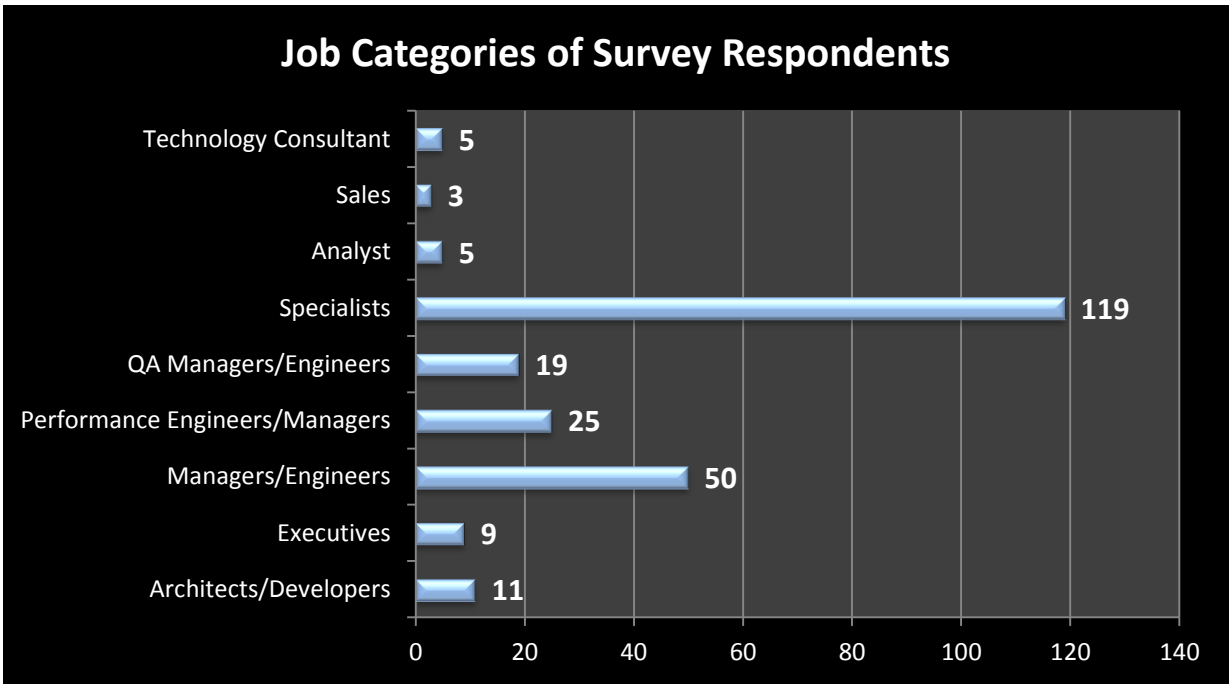
Survey Results – August 2012

Application Performance Counts

What are the top skills every performance engineer must have to be effective? How do you develop a performance-minded culture at your organization? What are recommended best practices for performance effectiveness? In a recent Shunra survey, 246 respondents answered these questions and more.

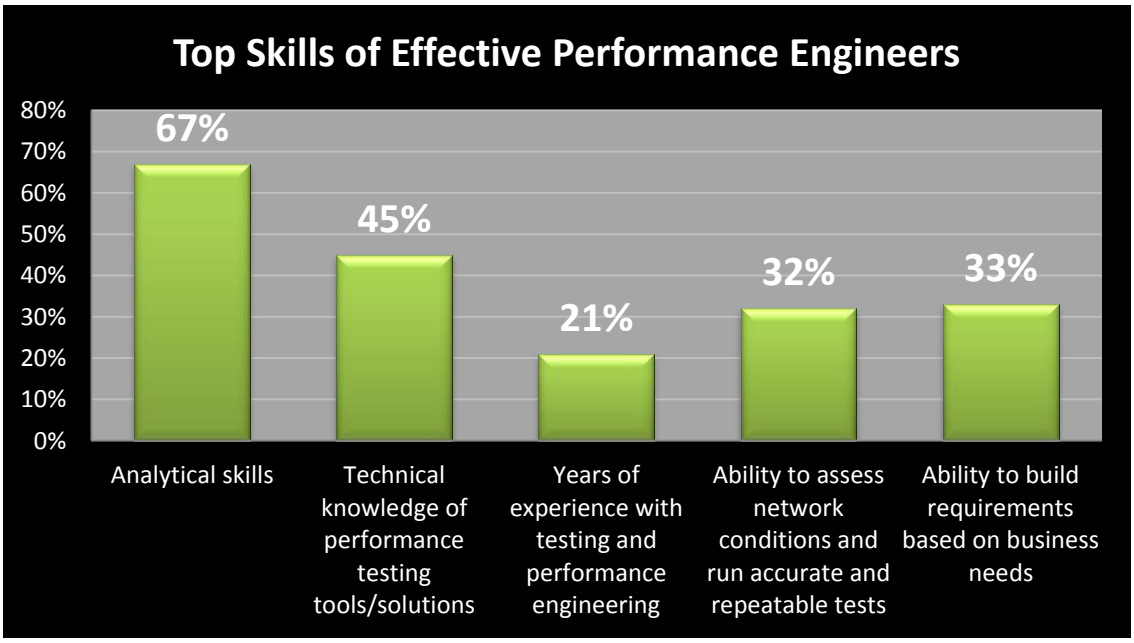
The results from the survey were announced on a live webinar on August 23, 2012. The recorded webinar can be viewed at: http://www.shunra.com/resources/on-demand-webinars. The webinar addressed key traits of application performance engineers, how to optimize applications for performance, and offered recommendations for best practices in performance engineering.

The majority of the respondents were IT specialists, managers, architects, developers, and engineers. Respondents from 26 countries participated in the survey, with 49% from North America, 18% from APAC, 7% from EMEA, and the balance from other areas of the world. Confirming a growing trend regarding an increased business focus on application performance engineering, 11.7% of the job titles included the word "performance."



Consider the following skills as they relate to the effectiveness of performance engineers. Choose the two you feel are the most important.

67% of respondents named "analytical skills" as the most important skill a performance engineer should possess. In Shunra's experience, we have found that the most effective performance engineers facilitate communication, collaboration, and integration throughout the software development lifecycle (SDLC). They test applications early and often, using their analytical skills to make informed, data-based decisions.



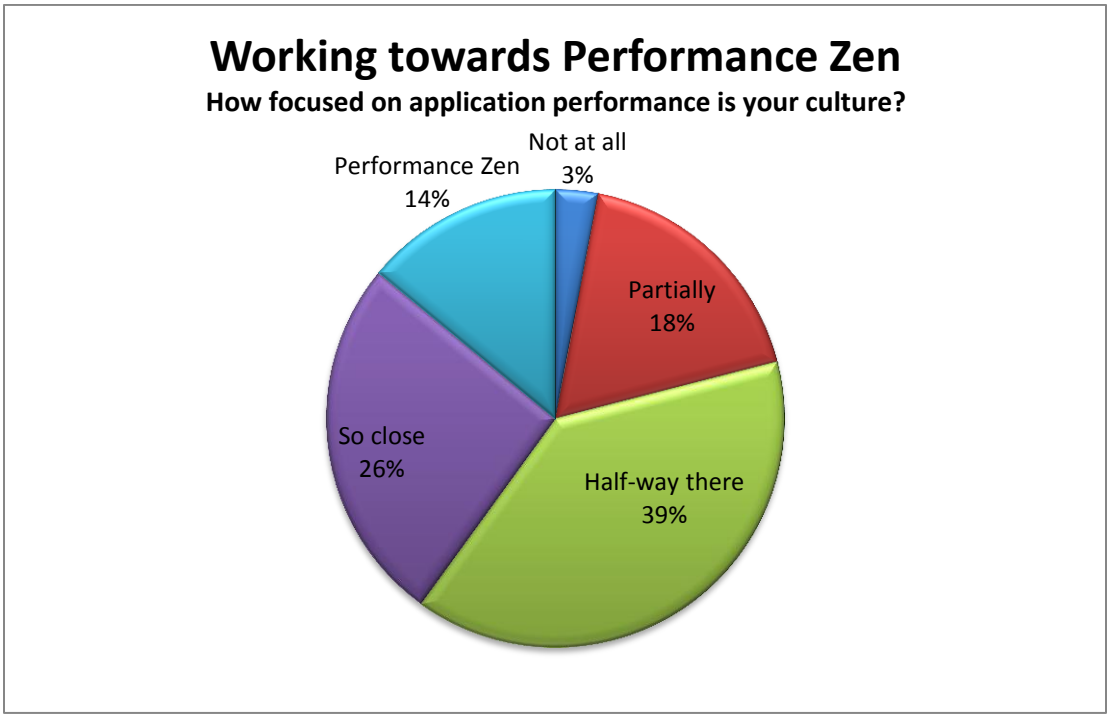
Why is detailed analysis so important? Performance testing and performance results must take into account complex application environments, including elements of the infrastructure that may not be controllable such as mobile network conditions and third party resources or services. Performance analysis must therefore consider multiple points of potential bottlenecks and how varying user locations may impact performance for a single user group or, perhaps, the entire population. This complexity can make it difficult to pinpoint, diagnose and resolve potential performance degradation. Detailed analysis skills are critical to understanding test results and are essential to developing and implementing a remediation and optimization strategy.

Analysis needs to lead to action.

Regarding application performance, how performance-minded is the culture at your company?

Even with the greatest analytical skills in the world, performance engineers can only be effective if they operate in a performance-minded culture. An effective performance engineer cannot act in isolation. Cooperation and collaboration from all areas of the SDLC and throughout the business are required.

When asked about the culture of performance in their organization, only 14% of respondents felt their organization had reached a state of performance optimization or "performance Zen," and 60% of respondents believed their organization could be more performance-minded regarding application performance.



What does it mean for a business to have a performance-minded culture? The entire business must commit to validating and optimizing performance in order to create the best user experience possible, and the impact of application performance on all areas of the business should be at the forefront.

What are the top efforts used to develop a performance-minded culture?

- Facilitating open channels of communication between operations, support, and development
- Measuring the financial impact of post-production failures
- Providing incentives to motivate employees to consistently meet or achieve service-level objectives
- Adding performance testing very early in the software development lifecycle (SDLC)
- Proactively plan for continual performance monitoring, testing and validation

A performance engineer should not act in isolation. Performance engineers can and should help foster a performance-minded culture. They should be a catalyst of change. When asked about the best practices for fostering a culture of performance, 64% of survey respondents ranked "**performance testing early in the SDLC**" as the most important strategy.

Interestingly, survey respondents (who are part of IT business units) recognize the need for early and continuous testing. However, over 50% are less than halfway to performance Zen or optimization. The survey respondents know what needs to be done, but aren't necessarily working in environments where this approach has been implemented.

Performance engineers can help organizations achieve a performance-minded approach by facilitating open channels of communication, providing incentives, shifting left and testing earlier in the lifecycle, and planning for continual testing. But this is a bottom-up approach. To reach performance Zen, a top-down approach to performance is needed. But, it can be challenging to engage the CFO, COO, and/or CEO in activities that foster the right culture. The key to C-suite engagement is measuring and understanding the business (often financial) impact of post-production performance failures – this option did not rate highly with the IT-focused audience for this survey. However, in Shunra's experience working with large enterprises around the globe, there is a universal groundswell among C-suite executives who are increasingly focusing on mobile and Cloud technologies as a way to reduce costs, develop a competitive differentiator and create new and more productive channels of communication with end users.

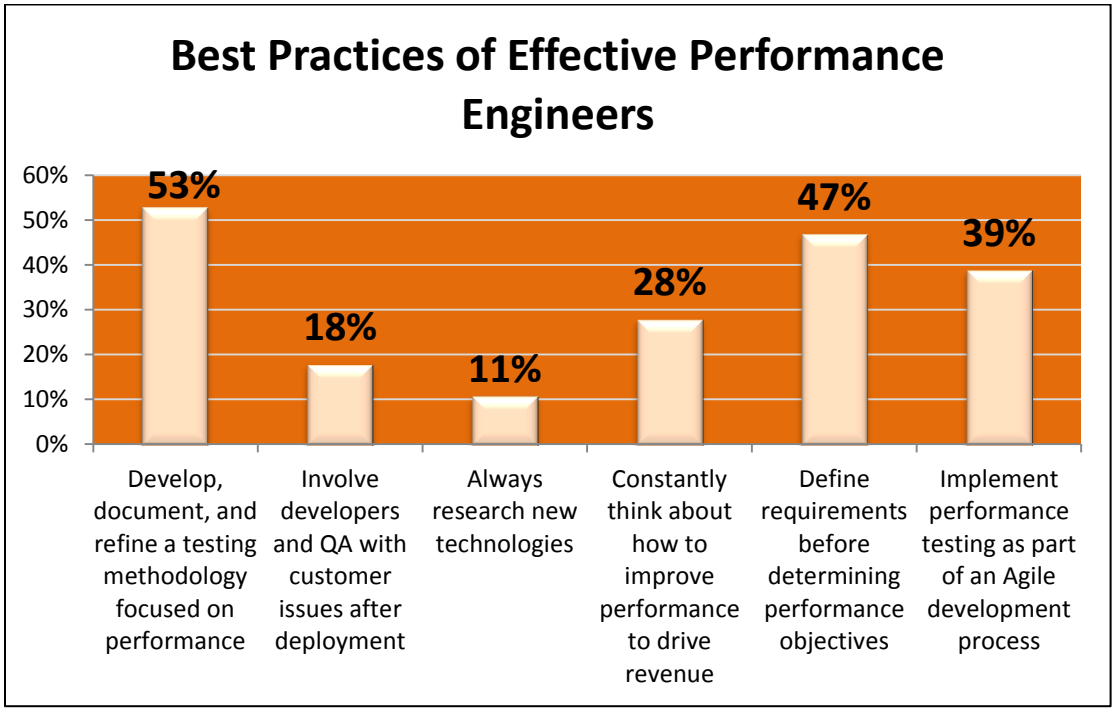
For a performance engineer to help facilitate a shift to a performance-minded culture, that individual must not only shift testing left in the SDLC but also ask key business-focused questions. When an application does not perform as expected, what is the effect on revenue, productivity, and company brand and customer loyalty? What is the back-office

cost of those performance issues – how do IT remediation costs increase the total cost of ownership for applications?

Those organizations which understand the financial impact of performance issues are most likely to close the gap that exists between knowing best practices for performance optimization versus implementation best practices for performance optimization.

Which do you think are the most important best practices for effective performance engineers? Please choose two.

As performance engineers are critical to establishing a culture of performance, their day-to-day activities must reinforce (or encourage) a company policy of performance. When asked what best practices should be followed, 53% of survey respondents believe that "developing, documenting, and refining a testing methodology focused on performance" is the best practice for effective performance engineers. While several responses rated highly, adopting an effective test methodology is the essential step to shifting performance testing left. Recognizing that methodology may need to change as business, infrastructure, and end user requirements change, is critical to ensuring application performance levels are continually and accurately validated and optimized.

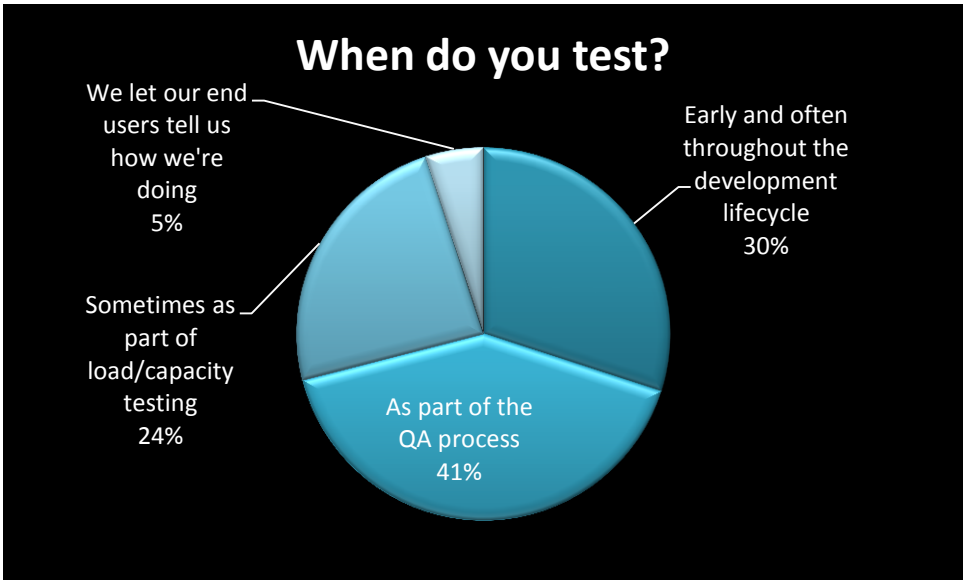


Have you allocated a budget for designing applications for performance optimization prior to deployment?

As previously discussed, performance engineers are aware of what is required to reach a state of performance Zen within their organization. From a budgeting perspective, businesses also seem to be mostly aware, with 57% of respondents indicating that budget has been allocated for designing applications for performance optimization prior to deployment. Considering that more than half of the respondents are investing in performance, especially with the mobile and Cloud wave creating more complexity in application infrastructure, this is a positive market indicator.

When do you primarily performance test?

In this survey, 57% of respondents allocated budget for performance testing early in the SDLC. Over half have stated that "developing, documenting and refining a testing methodology focused on performance" is a best practice. Nearly two-thirds believe that "adding performance testing very early in the software development lifecycle" is the best way to foster a performance-minded culture. However, less than one-third of respondents actually test early and often throughout the development lifecycle. A considerable and concerning gap exists.



Summary:

Application performance is a competitive differentiator and a clear indicator of business success. However, 80% of the costs associated with application development occur in remediating failed or underperforming applications after deployment, when the ineffective application has already had a negative impact on the end user or customer experience. One-third of those costs could be recovered with better testing practices.

Shifting left in the software development lifecycle is the key – testing early and often will help organizations avoid the negative impact of performance failure while affording the opportunity to capitalize on end user demands for immediate and ubiquitous access to data, creating a significant competitive advantage for those organizations that are most successful in application performance engineering.

The gap which exists between knowing what must be done to ensure end user experience and actually employing best practices can, and must, be closed. This can only be accomplished by both a top-down and bottom-up approach, with all areas of the business recognizing the financial implication of poor performance and an enterprise-wide commitment to end user experience.

Shunra has the benefit of working with more than 2,500 organizations globally and with some of the most complicated application infrastructures in the world. For over a decade, Shunra has witnessed a dramatic shift in awareness and focus on application performance and seen this gap continue to shrink. Great progress is being made, and Shunra has been fortunate to help our customers establish and implement new application performance engineering policies that encompass best practices and proven strategies for improving application performance. New methodologies and approaches like Agile and DevOps continue to move companies towards performance optimization, but greater awareness and performance policy across the enterprise are still needed in order to truly achieve performance Zen.