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G34

## RESEARCH NOTE SALESFORCE.COM'S SANDBOX: A NEW REASON TO GO ON DEMAND

### THE BOTTOM LINE

**Sandbox is an on-demand environment in which Salesforce.com developers can develop, test, and deploy Salesforce.com-related applications. By using Sandbox, developers can eliminate the cost of building parallel development environments, protect their live operating environment during testing, shorten project cycle times, and expand their usage of the Salesforce.com offering.**

### WHY IT IS WORTH LOOKING AT ON-DEMAND DEVELOPMENT

Currently developers can create and test new applications in either one of two ways: they can either test applications in their live operating environment or create a separate one in which to test applications. Both have substantial drawbacks.

Typically, companies test an application under development by introducing it to the live operating environment, so that developers can identify bugs and further refine the solution. However, unfinished solutions typically have bugs and often disrupt the performance of unrelated applications or destroy data when they are tested in the operating environment. Some testing requires costly and disruptive shut downs of the operating environment, or portions of it. Because of these risks to the operating environment, developers minimize the number of development and testing cycles and this limits the quality of their solutions.

In order to prevent development activities from disrupting the live environment, some companies build separate physical environments in which to test and refine their applications. This is problematic for a number of reasons:

- **Cost.** In replicating an operating environment costs have to be incurred in all the same areas as the live environment; software, hardware, maintenance, labor for deployment, customization, and ongoing support.
- **Time.** Creating and customizing parallel environments is labor intensive and lengthens project cycle times.
- **Accuracy.** Constraints of cost and time force organizations to create parallel environments that are actually subsets of the live environment. They often differ from the live environment enough that solutions created within them have bugs when deployed to the live environment.

As company's enterprises become increasingly integrated both internally and with partners, it becomes more important to protect them from disruptions caused by either development and testing activities or deployments of defective solutions.

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**BENEFITS FOR SALESFORCE.COM DEVELOPERS**

Sandbox's on-demand development environment improves upon these traditional development models, enabling developers to avoid both the substantial cost of operating a parallel environment and the operational risk of introducing unfinished applications into their live environments.

**Improved operating environment stability**

There are a number of benefits to developing and testing Salesforce.com applications outside of the live operating environment. Development and testing do not consume server space or bandwidth that would slow the operating environment down. Additionally, the live Salesforce.com environment — including the data, users, and applications — are protected from defects in an application that is being developed or tested in Sandbox.

**Shortened project cycle times**

Sandbox removes bottlenecks in the development process by not only replicating the operating environment but also by doing so rapidly. By working in Sandbox, developers can spend less time protecting the operating environment from development and testing activities. Some development and testing require shut down of all or part of the operating environment, which is difficult to schedule and lengthens project cycle times.

Developers can also be more productive in Sandbox because the operating environment can be updated to Sandbox in a matter of hours compared to a matter of days for most other on-demand development environments. One Sandbox user said, *"I can develop application ideas and do it all in Sandbox. I now spend more time thinking about solutions and their benefits than the tactical issues of testing and deploying."*

When DoubleClick deployed a project management solution from AppExchange, their use of Sandbox for development and testing shortened the project cycle time from three months to two months.

**Improved application quality**

Working in an on-demand environment enables developers to test more frequently, which increases both application quality and user acceptance. One Sandbox user said, *"I can take a copy of my production data and move it to Sandbox. That is pretty key because it enables more rounds of testing, changes, edits, and fixes."* Additionally, key users can beta test new applications in Sandbox, which helps increase user benefits and user acceptance. The ability to update operating environments more rapidly and frequently than other on-demand development tools enables a tighter fit between development activities and the live Salesforce.com environment. This is especially important if the operating environment is rapidly changing.

**Greater breadth of Salesforce.com usage**

Better operating environment stability, improved productivity and better application quality all add up to a more flexible use of the entire Salesforce.com platform.

Salesforce.com developers can seek features and functionalities needed by their staff by using Sandbox to experiment — without risk to the live environment — with solutions from AppExchange, AppExchange Mobile or even solutions that are already in their operating environment. A sales operations manager at DoubleClick said, *"I am more able to experiment and explore features and functions I don't know about or never tried. I am sure I don't use everything in our Salesforce.com environment. Sandbox is where I can experiment with applications and see if their features and functionalities are beneficial to my staff."*

### **CONCLUSION**

By using Sandbox, developers can avoid the substantial cost of building and deploying parallel environments for development and testing. The list price of Sandbox is \$25 per Salesforce.com license per month, so a strong ROI should be attainable if it will eliminate the need to build a parallel environment. For companies who develop and test in their live operating environment, switching to Sandbox will accelerate project cycle times and minimize the cost of fixes to their operating environment caused by development disruptions.

Sandbox should cause companies not already using Salesforce.com — or other on-demand applications for that matter — to consider on-demand. Development and testing has long been a matter of the lesser of two evils: build a costly parallel environment or risk disruptions to the live environment by testing in it. With Sandbox, Salesforce.com offers a third way that is relatively low cost, shortens product cycle times, makes developers more productive, and allows them to spend more time thinking about solutions rather than disruptions.