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LINKEDIN

Ensures Positive User Experience with Spring

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SPRINGSOURCE RESULTS

Spring delivers the following business results to LinkedIn:

- Increased Productivity
- Superior User Experience
- Improved Application Quality
- Easier Migration to OSGi

TESTIMONIAL

"For LinkedIn, Spring life cycle management translates directly to a smooth user experience."

"All the employees at SpringSource are really smart and know what they are talking about. They have dug really deep into the issues, they understand our problems, and they solve them."

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LinkedIn

LinkedIn is an online network based on the idea that relationships matter, with more than 34 million users around the world. LinkedIn takes the user's personal business network online, giving them access to people, jobs and opportunities like never before. Built upon trusted connections and relationships, LinkedIn has established the world's largest and most powerful business network.

Challenge

LinkedIn's application development process involved wiring components manually, in the time preceding the company's use of Spring, the de facto standard platform to build, run and manage enterprise Java applications. This manual approach soon became a challenge for the company.

"It was a lot of code to write by hand and it was hard to reuse," recalls Yan Pujante, Distinguished Software Engineer and Member of the Founding Team at LinkedIn Corporation. "As the system grows bigger, if you have a lot of manual configuration and hard-coded wiring, then it becomes harder to do everything, such as configuring and maintaining the application."

Pujante provides an example of a simple task that became very difficult when wired manually – shutting down an application with processes left in the queue. According to Pujante, clean shutdown was hard to handle via manual coding, when the application involved complicated wiring and many components, because it was difficult to keep track of everything that had to be done. Coding the process properly was very time consuming, and Pujante notes that it was often impossible in the end. LinkedIn needed a platform to automate the handling of these types of issues, and the next option was to consider building a platform in Enterprise Java Beans (EJBs).

"Very rapidly we realized we were not going to do EJBs," Pujante recollects. "The spec was very complicated, and it would have required a big shift in how we were building software. But, we were feeling the limitations of our system. We still needed a new platform."

Solution and Service

"Spring was developed in response to the complexity of EJBs, to make development simpler," Pujante says. Today, all of LinkedIn's applications use Spring as the foundation, and Spring is fully integrated into the company's development life cycle. Spring components used by LinkedIn include Spring Core, Spring IoC and Spring MVC. LinkedIn is also planning to use Spring DM to support the company's migration to OSGi (Open Services Gateway Initiative).

LinkedIn engages SpringSource, the company behind Spring, for technical support. This is an advantage for LinkedIn because the leading contributors to Spring are now on staff at SpringSource. In fact, 97% of Spring code has been written by employees of SpringSource. "If we have a problem, we can just open a ticket and get a response quickly," Pujante relates. "All the employees at SpringSource are really smart and know what they are talking about. They have dug really deep into the issues, they understand our problems, and they solve them."

Benefits

SPRING DELIVERS THE FOLLOWING BUSINESS RESULTS TO LINKEDIN:

Increased Productivity

With Spring, LinkedIn developers no longer have to write the wiring code, saving development time on every application and increasing the team's productivity. "Spring does the wiring and boot strapping for us, and another enormous benefit from Spring is the life cycle management," says Pujante, citing the challenge of application clean shutdown discussed earlier. "If we try to code the shutdown process by hand, it takes much longer. And it can be a nightmare. But Spring does all that for us, which is a huge advantage."

Superior User Experience

Spring's life cycle management not only improves LinkedIn's productivity but also helps create a better user experience. Using the application shutdown example, Pujante says that without Spring's life cycle management it is very difficult to ensure that nothing is changed in memory during shutdown when the cache is being written to the file system, which can take a significant amount of time. He explains it is essential that the shutdown procedure happens in the proper order: stopping incoming requests from users first, then stopping to process asynchronous updates, and finally writing the cache. "If the application does not shutdown correctly, you could have a user that makes an update to a profile or clicks on a link, and gets an inconsistent page or error message," Pujante says. "It has a direct impact on the user experience. For LinkedIn, Spring life cycle management translates directly to a smoother user experience."

"If we don't have the website, we don't have a business," he adds. "For us, keeping the website up and running and responsive, and keeping the customers happy when using the site – that's our business. Without that, LinkedIn doesn't exist. Spring life cycle management is critical to these objectives."

Improved Application Quality

By providing a tested and proven foundation for all the basic tasks of the application, Spring improves application quality for LinkedIn. Pujante notes that testing is made easier with Spring, which also supports application quality.

Focus on Business Logic

Pujante says Spring is nonintrusive, allowing LinkedIn developers to concentrate on business logic and code, without having to worry as much about the infrastructure.

Easier Migration to OSGi

LinkedIn plans to migrate its infrastructure to OSGi via Spring DM, which makes it easy to build Spring applications that run in an OSGi framework. For LinkedIn, the advantages of OSGi include better separation of modules, the ability to dynamically add, remove, and update modules in a running system, and the ability to deploy multiple versions of a module simultaneously. "OSGi is a complicated technology," Pujante explains. "I like Spring DM because it simplifies OSGi so it can be used by anyone. There is no way we would be able to develop our application using OSGi or migrate to OSGi without a technology like Spring. Since our environment is built on top of Spring, using Spring DM is the natural transition path to OSGi."

"Spring DM allows us to use OSGi without actually depending on OSGi," adds Pujante. "That helps tremendously. If we write an OSGi application, we have to depend on OSGi classes, and it becomes very hard to test because we need an OSGi container, which is very heavy. If we use Spring DM, however, we can write a POJO which is not dependent on OSGi. So now it's easy to test."

About SpringSource

SpringSource, a division of VMware, Inc., (NYSE: VMW) and the leader in Java application infrastructure and management, provides a complete suite of software products that accelerate the entire build, run, manage enterprise Java application lifecycle. SpringSource employs the open source leaders who created and drive innovation for Spring, the de facto standard programming model for enterprise Java applications. SpringSource also employs the Java and Web thought leaders within the Apache Tomcat, Apache HTTP Server, Hyperic, Groovy and Grails open source communities. Nearly half of the Global 2000, including many world's leading retail, financial services, manufacturing, healthcare, technology and public sector clients are SpringSource customers. For more information visit: www.springsource.com.

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