

Paremus and the Infiniflow Service Fabric

“We discovered OSGi technology back in 2005 when we were looking for a standards-based component model, and found it provided everything we needed to help us realize our vision for the next-generation distributed data center runtime.”

Richard Nicholson, CEO and founder, Paremus

Background

The Infiniflow™ Service Fabric developed by Paremus is a next-generation, distributed application server for running OSGi technology-based applications across anything from a few computing resources to a large-scale Cloud. Component re-use is a key to the provision of dynamic application assembly and agile IT, and Paremus found the decision to embrace OSGi™ technology for Infiniflow was obvious. Infiniflow extends OSGi technology’s dynamic module capabilities across multiple, network-connected Java Virtual Machines (JVMs) to create an incredibly robust and efficient distributed platform for enterprise applications.

Paremus has also introduced Sigil, an open source development tool available as a unified IDE and server-side build tool, which provides sophisticated bundle dependency management, access to multiple public and private OSGi bundle repositories, and allows the developer to test the resultant composite applications within a local Infiniflow OSGi run time.

Challenges

With many organizations struggling to reduce operational cost and complexity, improve business responsiveness, and overcome the challenges of data center power, cooling and space constraints, there is growing demand for a truly agile runtime that allows distributed systems to rapidly expand and contract in response to customer demands and market opportunities. This runtime must encourage code re-use to improve developer efficiency, and allow the rapid deployment and modification of sophisticated applications.

Paremus’ solution

The Infiniflow Service Fabric is such a runtime and heralds the end of the era of costly monolithic stove-piped application servers and middleware. With support for

popular Java frameworks, including Spring, Infiniflow provides a highly resilient, scalable, agile enterprise SOA runtime out of the box.

Delivering dynamic agility and robustness

The nature of agile systems means they're also robust systems, able to respond quickly to changes in application and processing demand, and to changes in the availability of computing resources. The secret to achieving IT system agility is dynamic assembly — the automatic assembly of the required applications and systems from a set of re-usable components – and for the components to be re-usable they must comply with a widely-supported industry standard. With this set of requirements in mind, Paremus found the decision to embrace the OSGi Service Platform for Infiniflow was obvious.

OSGi technology: At the heart of Infiniflow

Infiniflow uses OSGi technology at the heart of the product. In addition to providing a distributed OSGi runtime, Infiniflow itself consists of over 100 OSGi bundles.

“When we made the call to adopt OSGi technology deep in our product and as the runtime model of choice, it was in the early days of enterprise OSGi technology. So we are really excited that our choice was well-placed and that OSGi technology has achieved the industry-wide backing evident today.”

Richard Nicholson, CEO and founder, Paremus

Extending OSGi technology's dynamic capabilities

Infiniflow takes full advantage of OSGi technology's dynamic module capabilities that make it easy to install, start, stop, remove and replace components, and extends this capability across multiple, network-connected Java Virtual Machines (JVMs) to create an incredibly robust and efficient distributed production environment.

“Compelling cost-saving benefits”

An organization choosing to combine OSGi technology's simple, yet elegant, component model with an Infiniflow runtime can combine publicly available OSGi repositories in an enterprise-wide repository of re-usable components, and quickly enjoy the compelling cost-saving benefits of increased developer efficiency, shorter development time scales and improved operational efficiency.

Runtime Management

Infiniflow offers a feature rich, intuitive Management GUI for the deployment and management of OSGi-based applications across the distributed Service Fabric. With comprehensive role and authentication capabilities, the GUI automates the importing of OSGi bundles and simplifies the management of the Service Fabric's resilient OSGi runtime repository. The GUI also offers views for monitoring the Service Fabric and the underlying computing resource.

OSGi technology: “A tremendous leap forward for the software industry”

With its growing use in off-the-shelf products, bespoke application development and associated standards and frameworks, you can be confident in the future of the OSGi Service Platform and take advantage of the technology with Infiniflow today, safe in the knowledge that you are not locking yourself into a proprietary solution.

“The adoption of OSGi technology by the traditional application server vendors, many open source projects and an increasing number of independent software vendors, is a tremendous leap forward for the software industry.”

Mike Francis, Sales and Marketing Director, Paremus

OSGi technology and Paremus’ Sigil open source project

The benefits of componentization and re-use are obvious, but managing complex bundle interdependencies can be a challenge. To address this, Paremus has invested heavily in providing tooling to simplify the development, dependency management, testing, release and operational processes associated with successfully realizing the full potential of OSGi technology in the enterprise.

The result of Paremus’ efforts is the Sigil open source project, currently available as a unified Eclipse IDE plug-in and Ant/Ivy build tool that uses the same properties file to define bundles in the IDE and stand-alone. This ensures that bundles created by either the IDE or headless builds are identical. Sigil provides sophisticated bundle dependency management, access to multiple public and private OSGi bundle repositories, and allows the developer to test the resultant composite applications from Eclipse within a local Infiniflow OSGi runtime.

Sigil uses OSGi metadata to calculate project dependencies dynamically, at build time, using the same Import-Package metadata that is used by OSGi technology at runtime. The OSGi technology-aware bundle repository can access existing bundles in the file system or from an OSGi Bundle Repository (OBR). For example, Sigil provides an OBR index to the SpringSource Enterprise Repository, enabling use of the contents for automatic resolution of Import-Package dependencies.

The impetus for Sigil came from Paremus and its customers’ experiences of developing OSGi technology-based applications. Paremus is using Sigil to develop and build Infiniflow, and wanted to encourage the uptake of OSGi technology by making it available to the wider community as an open source project and it welcomes customer and community feedback and support to enhance the capabilities further.

Summary

Infiniflow meets the need for a lower cost, standards-based, resilient and highly scalable runtime to support OSGi-based applications across a Cloud of distributed,

anonymous computing resources. Infiniflow leads the market in extending the use of OSGi technology from a single JVM to multiple JVMs across a distributed environment, and goes one step further by providing a model-driven approach for building, deploying and managing OSGi-based applications and systems.

Infiniflow's unique model-driven architecture and sophisticated, yet simple-to-use, distributed component management capabilities, allow architects, developers and operations to realize the potential of OSGi technology throughout the enterprise and migrate to the next generation of dynamic, self-managing distributed software platform.

Try Infiniflow for free

Register for a free, time limited, evaluation of Infiniflow on Paremus' website (www.paremus.com). The foundations of the product are also available as the Newton open source project and can be found, together with Sigil, on www.codecauldron.org.