Modernize and Migrate: How ISVs Can Containerize Products and Move to Cloud

It was once common for independent software vendors (ISVs) and software-centric firms to sell their solutions as one-time purchases with regular add-on fees for upgrades. Today, many more customers are purchasing and consuming application software through cloud-hosted software-as-a-service (SaaS) subscription models.

According to research firm IDC, SaaS has become the dominant force in the cloud and will account for more than half of all public cloud spending through 2023. Customers are accustomed to paying monthly for software access versus incurring one-time fees as they shift from CapEx to OpEx models. They expect regular incremental updates that offer fast access to innovations.

Moving software products to the cloud to take full advantage of its technology and benefits requires modernization. And modernizing is a complex process that requires expertise in software architecture, cloud technologies, containers, continuous improvement/ deployment (CI/CD) methodologies, and other tools.

Too often, ISVs do not know where to start. They struggle to determine how to proceed—what to keep versus what to rewrite—as they balance sometimes conflicting goals in deciding between changes that can be made quickly and more-fundamental architectural changes that will lead to more agility and greater long-term operational efficiency.

The benefits of modernization and the cloud

ISVs are moving software products to the cloud and adopting a SaaS model for many reasons, including that it enables organizations to develop, deploy, and modify software fundamentally faster than with traditional license applications. No longer do customers have to wait for the next product upgrade and deal with the challenge of implementing it in their environment. Instead, ISVs can push incremental innovation as it becomes available.

"Software-driven businesses must be able to develop the newer features that their customers demand," says Jaidev Karanth, CTO, Alliance Unit, at Persistent Systems.

"Business agility is a key driver for moving to the cloud and for application modernization. Without this agility, businesses risk losing relevance and customers."

Moving to the cloud also accelerates developer productivity, as teams now have to manage only a single codebase instead of many disparate versions (also known as technical debt) that need to be continually upgraded. This frees product development staff to focus on more higher-value innovation projects.

Beyond faster access to innovation, the cloud also delivers bottom-line improvements for end customers seeking greater operational efficiency. No longer do teams need to manage underlying infrastructure associated with application deployment. Instead, this burden is minimized and the application can be scaled quickly.

Overall Value for ISV Cloud Migration

Revenue Upside
Over **25%** avg. annual revenue growth for cloud business, much faster than just 8% growth for on-prem license software firms.

High End Valuations
2x – 4x more valuation of cloud businesses than on-prem license software firms due to more financial flexibility.

Quick Deployment
Up to 75% reduction in delays resulting from traditional software deployment, cutting down the time to just 2 – 3 weeks from 3 – 6 months.

Agility
33% increase in the speed of product development due to shorter and efficient product development and sales cycles.

Cost Optimization
50% – 60%
reduction in cost through indirect savings through increased accountability, improved management of instances, and effective governance

Flexibility & Scalability
40% – 50%
potential **increase in productivity** and **flexibility** as cloud removes unwanted processes and can scale as per demand

Customer Retention
Over
~60%
uptick in the **customer revenue retention** rate by offering possibility to change functionalities or giving access to APIs

Security
More Safety
Cloud provides **authentication** and **identity access control**, encryption, secure deletion along with masking data & keeping check on integrity

The role of containerization

Containerization is an important consideration for any ISV on a product modernization journey. It is an accelerator—helping speed the path to the cloud—while also enabling ISVs to both protect existing investments made in their legacy applications and build modern architectures. Perhaps most important, it gives ISVs deployment flexibility by enabling them to move applications between public and private cloud environments. This means they can be more responsive to changing economic realities and customer demands.

Containers provide a lightweight, agile way of handling virtualization. Container packages offer everything needed to run an application: all the code, its dependencies, and even the operating system itself. This enables applications to run almost anywhere: a desktop computer, a traditional IT infrastructure, or the cloud.

With containers, developers can improve CPU and memory utilization of physical machines to save resources. Containers also enable modern microservice architectures, where application components can be deployed and scaled relatively granularly. This is an attractive alternative to having to scale up an entire monolithic application because a single component is struggling with load.

Enterprise-grade containerization platforms such as Red Hat OpenShift have matured rapidly and are among the leading solutions in the technology space. Building on the benefits of the cloud, containerization platforms enable developers to deploy new features even faster, be more productive, reduce manual administrative processes, and improve security.

ISVs can use containerization platforms to protect investments in existing legacy codebases with underlying core features while adding new features. This provides a specific benefit: more easily moving their business forward without having to completely rearchitect applications.

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The challenges of modernization

Modernization is not without its challenges and stumbling blocks. Modernizing an application to take advantage of the appropriate cloud-native architectures and services is complex. It is critical for ISVs to understand their legacy applications and develop unique approaches for modernizing each element in a way that balances speed of effort, disruption, and long-term operating costs.

"Applications become more complex over a period of time, depending on new features that have been added," says Karanth. "Modernizing a large monolithic application is really a challenge, and a thorough understanding of how to extract value is needed as part of the overall process."

In fact, common modernization challenges extend across the build, security, deployment, and operational framework.
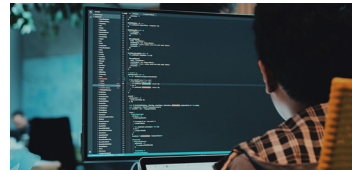
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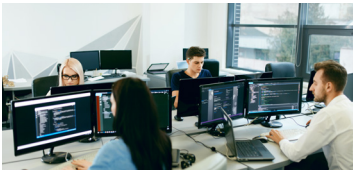
Build

\ Decoupling application into modular, interconnected services

\ Decoupling application dependencies for storage, networking

\ Reducing image size

\ Using alternative middleware components

Secure

\ Different container security guidelines for different platforms

\ Application constraints

Deploy

\ Decoupling application and service configuration

\ Integration with platform-provided storage, networking

\ Vanilla Kubernetes release cycle

Operate

\ Seamless product delivery on multiple platforms

\ Integration with platform logging, metering, monitoring services

Making the most of modernization investments

Many ISVs have experimented with some elements of modernization but struggle to broaden deployments across key applications. Many recognize that their teams must work differently to modernize these applications and operate them in the future. Often this means taking part in an agile and DevOps approach.

A lack of software development experience and operational capabilities to handle the complexity of full-scale deployment can hinder ISVs; they often lack expertise in the latest cloud-native development methods, including an API-first strategy and the containerization and automation aspects of this process.

Making the most out of any investment effort requires knowing where to focus first and how to logically progress through the modernization journey. This entails conducting detailed assessments and understanding common pitfalls and

strategies to deal with difficult portions of legacy code. Some organizations may confront a steep learning curve, and it can be easy to make mistakes when undergoing this process.

Many projects fail because internal teams do not appreciate the challenges. That's why it is critical to choose a partner that can advise on options and strategies, including when it is appropriate to "lift and shift" and migrate from one IT environment to another, "replatform" by adding layers to existing architecture to utilize existing functionality, or "rearchitect" to create new functionality and replace existing applications.

The right partner is essential to success

As with any other major initiative, finding the right partner is critical. Any partner under consideration must have a fundamental understanding of modern agile delivery concepts, with decentralized and independent teams that can be brought in to assist, speed modernization projects, and add incremental value as these projects evolve and scale.

Your partner should have experience with modern cloud-native application development approaches such as microservices and containerization platforms and with major cloud players. They should also know how to build apps using containers and how to deploy those new apps seamlessly to realize the true value of modernization.

It is well established that legacy code can be complex and difficult to untangle. A modernization partner must have the skills to examine this code and understand how it can be repackaged, ported, or rewritten most efficiently—not a trivial task.

Finally, teams must be able to operate with an agile delivery approach to focus skills where it makes sense and work incrementally to execute these projects. An agile approach brings together the right skills and ensures that teams can execute at speed.

The bottom line

As ISVs modernize software products, they increasingly acknowledge that containerization is a critical tool for bringing agility, flexibility, operational cost savings, and security. Yet the journey to modernizing applications with containerization is hardly turnkey and can be complex. Ensuring success involves finding a partner with deep expertise in application development, legacy code, and agile delivery.

Persistent offers the right combination of software development, legacy knowledge, and agile practices for modernizing products and applications. Together with Red Hat, we can help organization speed software development and reduce operating costs. **Learn more about how Persistent business partner, Red Hat, is a leader in containerization for application modernization according to Forrester Research.**

About Persistent

As a partner, Persistent brings its 30 years of history in comprehending and untangling legacy code to every situation. Persistent has helped many of the largest ISVs in the industry build products in the areas of security, analytics, and the cloud. With this "product engineering DNA," Persistent can tailor road maps that help ISVs tackle their largest legacy challenges. Based on this experience, we strongly believe that rearchitecting an application is not the only option for starting the modernization journey. We play a major role in identifying pain points—whether in architecture, technology, or functionality of an application—enabling ISVs to decide on and implement a modernization path and experience its business impact.

Persistent, the partner of choice to help ISVs and software-centric enterprises modernize applications with the Red Hat OpenShift container platform, can help organizations expand workloads, speed deployments, and protect valuable investments in legacy code. Application development is in our DNA. We bring the latest skills and development techniques, along with knowledge of legacy code and an agile approach to ensure that modernization projects are executed efficiently to maximize value.

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