

Distributed Agile Development in the Cloud

A new development process using the Power of Cloud and combining the merits of Agile, Feature Branching, Continuous Integration, Continuous Delivery and Immutable Deployments



TABLE OF CONTENTS

→		Cloud-based Development Process – How does it help to accelerate Continuous Delivery? OFFERS ZERO LEAD TIME FOR STARTING DEVELOPMENT WORK AND QUICKENS RAMP-UP OF TEAMS	3
→		Readily Available Development Infrastructure OFFERS ZERO LEAD TIME FOR STARTING DEVELOPMENT WORK AND QUICKENS RAMP-UP OF TEAMS	3
→		Ticket-Based Code and Release Management ENABLES CUSTOMER SPECIFIC RELEASES	4
→		Customized Environments for Developer, Tester and Customer GET EARLY FEEDBACKS AND ACCELERATE ROLL-OUT OF MINIMUM VIABLE PRODUCT	4
→		Developer Mart (D-Mart) ENHANCES DEVELOPER'S PRODUCTIVITY	5
→		Near Real-time Production Support BOOSTS CUSTOMER DELIGHT	5
→		Scalable Development Environment ADDRESSES THE GROWING NEEDS OF THE BUSINESS	6
→		Optimized Development and Operational Costs LOWERS TCO	6



In today's connected world, Independent Software Vendors (ISVs) are going through cloud transformation due to business agility. The software itself is transforming to support the new digital business model.

In today's connected world, Independent Software Vendors (ISVs) are going through cloud transformation due to business agility. The software itself is transforming to support the new digital business model.

Although, the concept of "Continuous Delivery" to keep the software deployable throughout the lifecycle helps ISVs to quickly deliver developed features, it does not address the following gaps.

- Lack of readily available environments
- Absence of anytime, anywhere availability of developer workspace
- Poor visibility on quality, feedbacks, project progress and product backlogs
- Poor collaboration among development, project management and operations team
- Less turnaround time for customer support request

It is a must to transform the software development process using the power of cloud infrastructure



Now the question is do we need to transform the software development process as well, to meet the above needs in order to support the new digital business model? Yes, in fact it is a must to transform the software development process using the power of cloud infrastructure, providing a social like collaborative environment to the software team, automating and simplifying release process so that features can be released anytime, anywhere with zero down time and providing developer knowledge mart for increasing the developer productivity.

Cloud-based Development Process - How does it help to accelerate Continuous Delivery?

Cloud-based development process focuses more on software development rather than infrastructure development. The main objective of this process is to speed up the delivery pipeline by automating as much as possible through continuous delivery with a focus on minimizing the productivity issues. Following are the key elements of cloud-based development process:

- Readily Available Development Infrastructure
- Ticket-based Code and Release Management
- Customized Environments for Developer, Tester and Customer
- Developer Mart (D-Mart)
- Near Real-time Production Support
- Scalable Development Environment
- Optimized Development and Operational Costs

The following pages explain in detail each of the above elements.

Focus on minimizing the productivity issues

Readily Available Development Infrastructure

OFFERS ZERO LEAD TIME FOR STARTING DEVELOPMENT WORK AND QUICKENS RAMP-UP OF TEAMS

By using cloud-based development tools, the lead time required for setting up the development infrastructure can be completely eliminated and work can get started immediately which helps to finish the development work faster. This quickens the time to market advantage for the product.

When many developers work on a product, there is a significant amount of lead time required to provision infrastructure for the development environment. This includes installing the right version of software and maintaining them, which has to be done for each developer. With the advent of cloud-based infrastructure, development environments (e.g. having a common OpenShift development environment as a private cloud, or using OpenShift online) are readily available for the development and can be configured for each developer in no time. Thus, there is zero lead time spent in such activities and the teams are productive instantly.

Agile development is more effective with the cloud development environment. Principles like releasing working software, collaboration with business stakeholders, adapting to changes and software engineering excellence can be implemented in effective manner with cloud resources.

Source code repository, build and release management are fully integrated in the cloud infrastructure thereby improving productivity for the development team. Cloud infrastructure can also be provisioned to perform targeted environment testing by dynamically creating customer specific configurations to be able to pre-empt problems related to customer specific deployments. This process brings in more transparency on the project execution to all stakeholders.

developer workspace is maintained in the cloud



Since the developer workspace is maintained in the cloud, it can be made available anytime, anywhere to other developers to use the same workspace and complete the development. This reduces the knowledge transition time for new developers to step-in and be productive and reduce the dependency of specific development resource.

Cloud infrastructure also allows having easier and faster ramp up of teams as all of the environment setup are done at the cloud and can be quickly replicated for new resources added to the team.

Ticket-Based Code and Release Management

ENABLES CUSTOMER SPECIFIC RELEASES

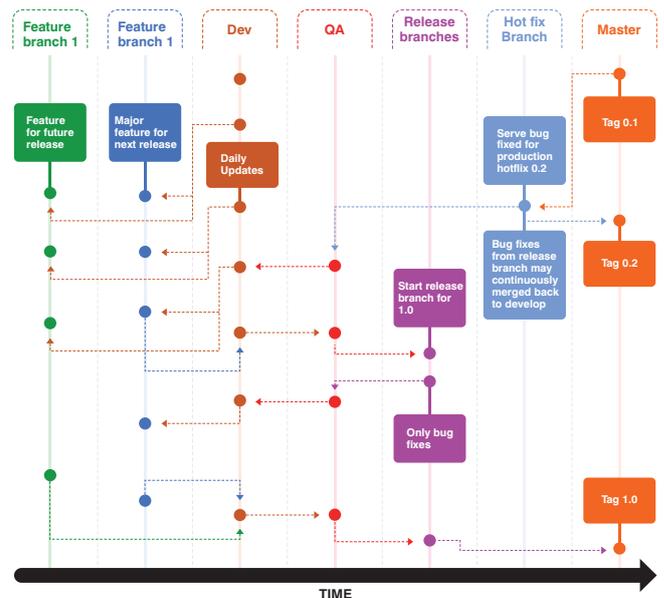
In today's world, changes are inevitable and any business to be competitive has to be adaptive and embrace the changes and respond to the changes quickly.

Businesses recognized these expectations quickly and started moving away from traditional development methodologies towards the agile development techniques. However, the development tools are still a bottleneck in terms of responding quickly to the changing expectations. Release cycle takes more time as it involves getting the code built, tested and verified for target deployment. Thus, the need for a modern way to respond to changes is emerging as the key differentiator for businesses.

Integrated cloud infrastructure with automated continuous delivery mechanism is the difference as it brings dynamic provisioning support and allows lean release management, thus making it easier for business to respond to changes quickly.

Agile development is more effective with the cloud development environment. Principles like releasing working software, collaboration with business stakeholders, adapting to changes and software engineering excellence can be implemented in effective manner with cloud resources.

Beta Customer feedbacks can be incorporated and released faster for all customers. Thus, customer specific releases can be managed easily with ticket based code and release management.



Customized Environments for Developer, Tester and Customer

GET EARLY FEEDBACKS AND ACCELERATE ROLL-OUT OF MINIMUM VIABLE PRODUCT

Early feedback is the key for understanding the market acceptance.

Feedback is the key for businesses to adapt to changing expectations. Early feedback is the key for understanding the market acceptance. Market teasers are commonly used as early feedback system by businesses to take decision on creating the right product roadmap to succeed in the market.



Developer Mart is the boost for the developer to be able to validate the implementation and historical facts about a specific capability or defect.

Market teasers are generally MVP (Minimum viable Product) and the sooner we get the MVP to the market, it is better to understand the signs from the user community. These signs are taken as feedback by the development team for perfecting the software.

But, in order to bring out the MVP sooner than the competition, infrastructure and methodologies beyond the traditional software development lifecycle is needed. This is of utmost importance for businesses to gain first-mover advantage.

MVP is of utmost importance for the business to gain first-mover advantage

Cloud-based development infrastructure with fully automated continuous software delivery makes it possible to rollout MVP sooner than the competition by reducing the lead time for testing and release management overheads.

Development team gets customized environment immediately without any waiting time for server provisioning. Testing team gets customer specific target environment without waiting for hardware and software provisioning. Customer can do pre-production testing on the exact production configuration without any large investments or lead-time.

Automated Continuous delivery ensures the code is getting tested early in the development cycle with the automated unit tests. Also, additional testing of features can be added as regression suite along with the unit tests. This eliminates expensive defects at a later stage there by improving developer's productivity.

Developer Mart (D-Mart)

ENHANCES DEVELOPER'S PRODUCTIVITY

Cloud-based infrastructure helps to scale the system resources dynamically without large investments in the least possible time. In addition to this, the development process should use a knowledge repository called Developer Mart (D-Mart) that carries historical facts about the product and its features. This enhances the developer's productivity as information about past issues and corresponding fixes done can be easily back-tracked to nail down any specific issues.

Developer Mart is the boost for the developer to be able to validate the implementation and historical facts about a specific capability or defect. This in turn helps the developer to implement feedbacks quickly.

Also, automated continuous delivery integrated with the code quality assessment tool like Sonar Cube enhances the code quality as the code gets automatically audited before release thereby limiting the defect leakage and improving overall productivity of the developer.

Near Real-time Production Support

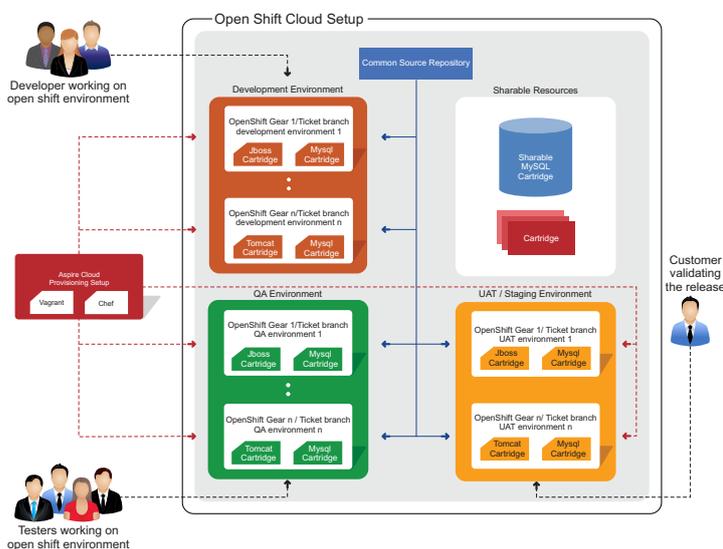
BOOSTS CUSTOMER DELIGHT

Customer delights are usually related to support; particularly the support for the live or production environments. Every product goes through a stability phase that requires constant support on the live environment to iron out the teething issues.

The key challenge in stabilizing the production environment depends on how quickly the development responds to the issues that are identified. Due to the infrastructure and software dependencies, it is always considered a bottleneck (and also expensive) to create a production / live environment quickly.

Cloud infrastructure makes it easier to create production / live environment in near real-time for critical production issues. There is no lengthy waiting time to get the hardware, software and data specific to customer environment. It can be instantly created with cloud resources and quickly tested and issues can be isolated.

Development team would be able to provision additional customer specific environments dynamically using cloud infrastructure to offer near real time production support to customer's delight.



Cloud Infrastructure can always be started with limited system resources and can be dynamically scaled to bring in vertical scaling and horizontal scaling as required to support HA and scalability.

Scalable Development Environment

ADDRESSES THE GROWING NEEDS OF THE BUSINESS

Generally, new products are built as teasers for the markets and sometimes a watered down version of the original roadmap is taken to the market quickly.

And if there is an acceptance by the market, there is a sudden surge in product usage and either the planned capacity might not be sufficient immediately or there is a gradual increase in infrastructure being planned which deters additional users / customer start using the product immediately.

Also, team would need to be scaled up to roll out additional features before the competition. Hence, a suitable development infrastructure would be needed to allow scaling of the development setup to ramp up the team without much lead time.

Cloud infrastructure comes with an option to have the entire source to release supported through cloud infrastructure making it lean for the ramp up of additional team members without much lead time. Similarly, on the high availability (HA) and scalability for the product, it can always be started with limited system resources and can be dynamically scaled to bring in vertical scaling and horizontal scaling as required to support HA and scalability.

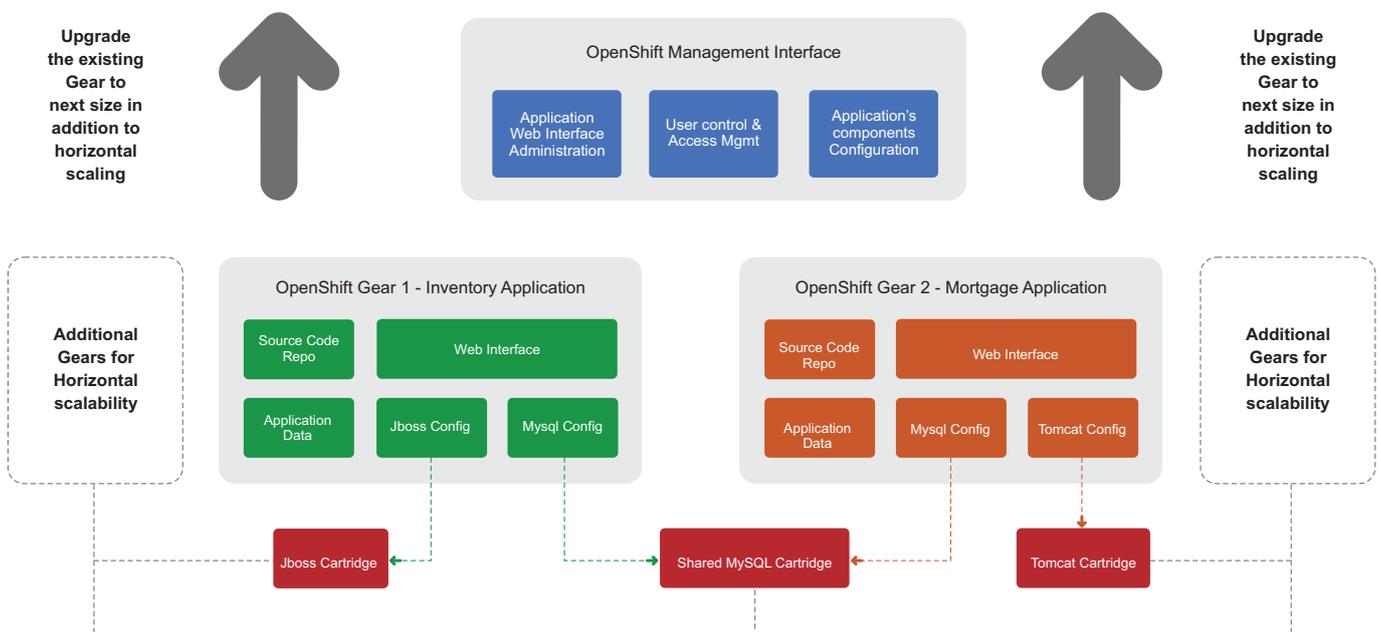


Optimized Development and Operational Costs

LOWERS TCO

Using traditional infrastructure involves huge initial investments on hardware and software licenses and generally it would be carefully planned to ensure that there is constant investment being made to ensure that the infrastructure expectations are met.

Unfortunately, the current day business is highly competitive and having a suitable infrastructure is the key to success. It is always a challenge in identifying the infrastructure needs as it is very dynamic in nature depending on the business context and other operational parameters.



Most of the services like security testing tools like Veracode or RDBMS servers like SQL Server, MySQL are all made available on the cloud

Cloud infrastructure comes in handy with lower investment as it costs less to get started in the cloud to get started on the cloud



So, the businesses are looking for a suitable option to ensure they are adequately prepared but there is always a surge in the demands if the products are accepted by the market. So, environment should be pocket friendly at the same time easily scalable to address the dynamic requirements. The traditional data centre

cannot be the right solution as it involves huge investments and are generally planned with limited budget. Cloud infrastructure comes in handy with lower investment as it is low cost to get started on the cloud for any type of infrastructure and if the business grows then an additional investment can be made for infrastructure to be quickly provisioned on the cloud.

License costs are generally included as part of cloud offering and it is easy for the business to accommodate additional requirements like security testing infrastructure or performance testing infrastructure using cloud infrastructure. Since these are required only for a shorter period of time, investment on these additional requirements are considered as a huge investment if traditional infrastructure is used. But with cloud, it is a low cost option as charges are applicable only for the utilized time.

Most of the services like security testing tools like Veracode or RDBMS servers like SQL Server, MySQL are all made available on the cloud with licenses and hence it is easier for the business to lean towards cloud infrastructure. In the long run, cloud infrastructure might look expensive but operational costs can be minimized by choosing the right combination of various cloud services.

Cloud-based Development Process through Producteering™

At Aspire Systems, cloud-based development process is an essential element of “Producteering™” which is an approach to build great software consistently. Producteering™ was developed by Aspire through years of experience in building products. It comprises a set of principles and practices, driven by the right people and supported by the right platforms.

The component “Practices” of Producteering™ focuses on all the elements of cloud-based development process thereby optimizing the complete development lifecycle in order to minimize the product roll out cycle as much as possible.



**ABOUT
ASPIRE**

Aspire Systems is a global technology services firm serving as a trusted technology partner for its customers. The company works with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in Aspire's specific areas of expertise. Aspire System's services include Product Engineering, Enterprise Solutions, Independent Testing Services, Oracle Application Services and IT Infrastructure & Application Support Services. The company currently has over 1,400 employees and over 100 customers globally. The company has a growing presence in the US, UK, India, Middle East and Europe. For the fourth time in a row, Aspire has been selected as one of India's 'Best Companies to Work For' by the Great Place to Work® Institute, in partnership with The Economic Times.

NORTH AMERICA | UK | BENELUX | NORDIC | MIDDLE EAST | INDIA
+91 - 044 - 67404000, +1- 630- 368 - 0970, +44 - 203 170 6115

For more info contact
info@aspire.com or visit www.aspiresys.com

