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A Survey on Application Deployment Tools

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Abstract

In today's world due to increase in population, today's technology has become the integral part of the communication. Based on user requirements many companies or organisation are developing new applications. Companies need to develop and test the new application regularly to overcome this problem Companies make use of deployment tool. Deployment tools helps the companies to achieve fully automated steps for deploying the application and hence helps in achieving the Zero touch deployment "To make sure that application are deployed, an automatic and transparent process is required". In this paper we presenting a survey by exploring the various deployment tools available in the market, which helps the companies achieving automation in deployment thus helps in reducing the time and manpower.

Keywords*: Deployment tools, Zero-touch deployment.*

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1. Introduction

Deployment tools put best-in-class practices in organization to deploy applications ten times faster and decrease failures by 50%. Deployment tools and its solutions offer end-to-end planning, coordination, and execution of releases, and help you build collaborative workflows between development and operations to accelerate release cycles and boost ROI [1]. The major advantages of deployment tools for organisation are as follows:

- Application Life cycle management
- Application Release process management
- Automating Data Centre applications
- Automating IT operations
- Less Manual Interaction
- Time Consuming
- More build can be deployed and tested at a time [2].

The benefits of the deployment tools are:

Application deployment becomes easy, visibility and repeatable: Manual deployment are too error prone, because manual deployment includes human interaction. According to Murphy's Law "if anything can go wrong, it will go wrong". Sometime the developer/tester will forget

some important steps while deployment, faults are not observed/spotted while releasing the new builds of the application sometimes goes live and results in loss. Most of the times it takes much time to recover if it gets fail. Due to usage of automated deployment tools helps the organisation to achieve the automation in deployment procedures and helps in handling repeated steps while deploying.

Anyone can easily do deployment: Earlier during manual deployment in order to deploy any new build only the testing teams (deployment team) were doing. So due to automating the deployment, the deployment can be done by any one because all the steps of the deployment are stored in the system.

Developers can concentrate on developing new software: Validating each step of manual deployment process is time consuming task and most of the time validating is done by developing and testing team which results is delay in producing the new build with next features because most of the time is spent in validating.

Deploying in some other environment is not a problem: Most of the times application deployment are not always repeatable, but also the application can be configurable. Underlying environment for the application deployment also changes at that time deployment can be easily automated by using deployment tools, which means that if the build need to deploy to new environment can be done easily with minimal overhead.

Application release can be achieved more frequently: Due to automating the deployment process the deployment mechanism becomes less overhead and release process are achieved frequently. Teams which release build frequently can deliver build with valuable features to their users more often and in incremental steps.

2. Scope of Study

In most of the industries the main problem always faced by development team, is to deploy new releases as soon as the application/product id developed and testing is completed. In order to make sure that application is deployed successfully requires transparent and automated process. Commonly this process in industries is called as Zero Touch Deployment. The main outgrowth in industries/organization is ROI due to inability of the industries to catch the current requirement in the market, inability to act quickly on the new demands and sometimes the application developed may not be user friendly and to overcome the all these difficulties is to make use of deployment tool.

The difficulties can be easily overcome by using/implementing a complete application deployment framework and its supporting process such as:

- Application Deployment services in organisation
- Automated release tools
- Standardizing deployment process across industries

Benefits to the industries are:

- Helps to reduce deployment processes risk

- Improves the quality of the application due to usage of deployment methods and standardized deployment tools
- Reduce the time in deployment thus increases the productivity
- Decreases the dependency on the resources, gives more though put
- Gives automated deployment action, helps in deployment of application in any environment with minimal risk

Some of the deployment tools which are available in open-source and most of the organisation used is:

- Build Master
- Jenkins
- Rapid Deploy
- Release Life Cycle Management

3. Deployment Tools

Build Master

Build Master is an application deployment tool (Application release tool), designed by the software development team, Inedo which supports management of builds and application release automation, it helps in automating and managing steps (processes) related to continuous integration. It can be used along with development team, so it is marketed as "more than a release automation tool. It brings together the people, processes, and practices that allow teams to deliver software rapidly, reliably, and responsibly" [4].

Build Master can be configures through its User Interface i.e. through the XML-based configuration files. Build Master able to orchestrate both windows based and Linux based servers to perform various deploy action on builds [5].
Build Master can be used as software assets: Due to its support for continuous application deployment it plays very important role in the development team help in delivering software more often and in less time.
More developers: Among other things, it is a collaborative tool and also helps the other teams to communicate and to work together to develop new builds of the application and helps in releasing better software.
Process appreciation: It helps the all the organisation irrespective of their development model, let it be waterfall, agile etc. [6].

Jenkins

Jenkins is also deployment tool available open source, which is return in java. The Jenkins project is forked from Hudson after having the dispute with Oracle. Jenkins provides both deployment and continuous integration services application development. Jenkins is server based system runs in a servlet container for e.g. Apache Tomcat. It supports SCM tools and it can execute Apache Ant and Apache Maven based projects and also windows commands and shell scripts. The main developer of Jenkins is Kohsuke Kawaguchi. Released under the MIT Licence, Jenkins is free software. Builds can be started by various means, including being triggered by commit in a version control system [7].

Main Advantages of Jenkins are:

- Jenkins is cloud-enabled
- Jenkins is the primary platform for plug-Ins
- Governance and community stability.

Rapid Deploy

Rapid Deploy is an application release and deployment tool. Built for DevOps teams and enterprise continuous delivery, delivers consistent high volume deployments so development teams can focus on developing.

Support DevOps: Whenever the user requirement changes complexity and risk of the application also increases, and application release becomes complexity. The complexity can be reduced by automating the application release processes across development and deployment cycle.
Helps to take control of our application environment: Helps to keep in track of the application development, quality analysis of the application and application production from a single point and it helps us to give information about the configuration, monitoring of application and its environment in a single view i.e. in a single monitor user can access all the information. It helps in planning the deployment operation for the application.
Helps in continuous delivery: Rapid Deploy ensure organisation bout continuous integration of the application and delivery and helps to deploy complex, multi-tier application with the help of web-based interface. It helps to create a single parameterized application package. Help to coordinate with other team for the deployment [8].

Release Life Cycle Management

The application release/deployment won't be difficult to the organisation when the organization select right release tool. As the requirement of the application changes, technologies develops the complexity of the application also increases and the release complexity also increases. With the use of BMC Release management tool the organization can overcome the problems. BMC tool helps the organization to mitigate risk by helping the development and testing team by automating the application release process and helps to coordinate application release processes across deployment lifecycle.

Benefits to the Organization are:

- BMC help to bring greater visibility in the deployment process.
- Helps in reducing the downtime and improves the productivity.
- Helps in reducing the errors, improves automated deployment and collaboration.

BMC helps to take the control of the application. Helps to avoid conflicts, solves the problem faster and also avoid the bottleneck at deployment of the application and mainly helps in reducing the market time to release the application nearly by 90%. Application Deployment visibility is achieved easily. Single point of management and troubleshooting of the application helps to deploy the application anywhere [9].

4. Conclusion

Now a day's industry are totally dependent on deployment tools in order to achieve zero touch deployment. Most of the customers expect the deployment to happen on daily basis, smartphone user will expect that update to happen on daily basis etc. by using deployment tools, which can

be easily achieved by industries. Due to usage of deployment tools helps the industries to get the money back for what they invested and helps to release more number of the application, which helps in increasing the market of the product, where increase in production by 50% faster, deployment tools makes the people spend half of the time while deployment.

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