Ptak Associates

Informed opinion for savvy IT

ORCHESTRATION SPEEDS THE DELIVERY OF AGILE IT

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INTRODUCTION

Today's enterprises are competing in rapidly changing and highly competitive business environments, forcing them to innovate and create new business models swiftly and more frequently. As these companies scramble to become more agile and responsive to changing business conditions, IT is searching for new operating models that enable it to deliver services with the speed, quality, reliability and cost effectiveness required to support the demands of the business.

Even though IT organizations are using automation and efficiency techniques (such as server virtualization) to reduce the time to fulfill user requests, they still cannot deliver services fast enough to satisfy increasingly demanding business timeframes. Although these automation efforts have improved IT's efficiency, the limits of these approaches have been reached because they typically target specific components or pieces of the deployment processes.

Orchestration is a new approach that raises IT automation to the next level by enabling IT to automate the deployment of complete IT services, instead of only automating the deployment of individual components. Taking a more comprehensive approach, orchestration helps IT balance speed, quality, responsiveness, higher demand, complexity, innovation, all at a lower cost.

Several technology trends (for example, cloud computing, mobile and DevOps) are major drivers that are placing additional pressure on IT to become more agile and drastically reduce turnaround times to deliver services. Orchestration is essential for enabling dynamic scaling of cloud computing environments. The new objective for IT is delivering fast and agile IT services.

> ### Enfo: An IBM Customer
>
> *Enfo is a managed service provider that services the Nordic countries and is using IBM Cloud Orchestrator.*
>
> *"When our customer is using Enfo and IBM Cloud Orchestrator, … we've estimated the customer will get new environments up and running in more than 95% faster time."*
>
> *Juha Kukka, Manager Service Design Unit, Enfo*

ORCHESTRATION: TRANSFORMING TO AGILE IT SERVICES

The key concept that distinguishes orchestration from other automation approaches is its focus on "services", instead of automating the deployment of individual components or pieces of the service (for example: deploying individual servers, network components or storage).

The component-focused automation approach currently being used by many IT organizations, relies on manual tasks and processes to compose and coordinate the individual components to "tie everything together" into a delivered and usable service. These manual tasks and processes are time consuming for IT staff, can be routine/repetitive, and more importantly, inflate the time to deliver a service.

By contrast, orchestration codifies and automates the tasks and processes required to assemble a delivered service, while leveraging existing automated component deployment. The holistic services approach used by orchestration automates and replaces repetitive manual tasks and processes, enabling IT to cut the time it takes to deliver cloud and IT services – moving IT closer to the goal of agile IT services.

What is Orchestration?

Orchestration describes the ability to compose, coordinate and automate the deployment and management of complete IT services. For example, orchestration can automate the setup of a complete web site environment, or automatically scale up cloud infrastructure to handle increase demand.

Orchestration is essential for today's modern private or hybrid cloud computing because it is a fundamental mechanism for cloud computing's dynamic and automated resource scaling. By automating cloud service deployment and resource management, orchestration enables IT staffs to simplify the deployment and management of complex cloud environments.

By codifying resource and service configurations, IT deploys services more quickly, efficiently and confidently using repeatable configurations and workflows. This also helps IT staffs reduce the burden of time-consuming deployment activities, while shifting their attention to other important tasks that they never have the time to get to. They can spend more time helping their enterprises transform to new business models, using disruptive technologies and innovations using mobile, big data, analytics and social media.

IBM Cloud Orchestrator: Scaling your staffs' time and increasing agility

Cloud computing's appeal is its dynamic scaling of IT resources to meet unpredictable demand. IBM Cloud Orchestrator provides this capability by capturing deployment options and processes, as well as automating the delivery of services when and where they're needed.

IBM Cloud Orchestrator offers much needed relief for time-pressed IT staffs by automating the deployment of standard IT services (services that have multiple instances deployed regularly per day or week.) Consider this: Suppose a standard IT service is deployed twice a week, and it takes

administrators a total of 25 man hours to deploy. Your IT staff saves a total of 50 man hours per week that they can use to do work that "they never have the time to get to." So in effect, you are scaling your staffs' time (more work gets done in the same amount of time), while increasing IT's agility and value to the business.

The building blocks for orchestration begin with IT staffs codifying deployment options using patterns and policies.

Patterns

"Patterns" are actionable IT resource and environment topology definitions used by IBM Cloud Orchestrator to deploy IT services. IT staffs can use patterns from a variety of sources -- IBM provides out-of-the box patterns, users can create their own patterns and third-party patterns are also available.

As an example of how a company could use a combination of patterns to set up new websites: the IT staff selects IBM-provided patterns for specific server configuration options (web server and application server), they combine that with third-party database and network patterns, and orchestrate the automated setup of their website using their own customized multi-tier topology pattern. IBM Cloud Orchestrator uses the selected patterns, workflows and policies to compose, coordinate and automate the website deployment, which is ready in minutes.

Policies

Policies ensure that deployments adhere to enterprise policies. For example, suppose that a policy requires dedicated high-availability servers for a critical customer ordering application. If the Customer Order application needs more cloud compute resources due to higher customer demand, IBM Cloud Orchestrator dynamically deploys additional dedicated, high-availability clustered servers for this cloud service.

> **IBM Software Group Case Study:**
>
> *"With IBM Cloud Orchestrator, script packages and virtual system patterns, we automate deployment of complex environments and tooling. All of those baseline tools are installed, configured and ready to use with the click of a computer key."*
>
> *Chris Rosen, Architect for IBM Software Group*

IBM Cloud Orchestrator patterns and policies are reusable and modifiable, while enabling faster, repeatable, and automated IT service deployment. Over 250 out-of-the-box patterns from IBM and third-parties are available on IBM's Marketplace to give customers a jump-start with usable, proven and ready-to-use patterns.

IBM Cloud Orchestrator also integrates with IBM and non-IBM tools used by development and operations teams, bridging processes across DevOps and hybrid cloud environments with shared

patterns, while leveraging IT's existing investments.[1] IBM Cloud Orchestrator's integration with service management tooling ensures full lifecycle management and governance of the service while in production.

On-demand IT Services: Empowering Users with Self-Service

Achieving the goal of on-demand IT services is possible with IBM Cloud Orchestrator. Once IT builds the patterns and automates selected IT services, targeted users can be empowered to deploy those IT services on-demand, using IBM Cloud Orchestrator's self-service capabilities.

Although it is self-service, IT still maintains control (by controlling the self-service functions enabled, deployment options, and management), while the user is empowered and satisfied because the IT service is available on-demand. (Similar to banking customers using self-service ATMs to withdraw cash.) One example where self-service can be used effectively is enabling development teams to deploy standard testing environments within minutes, using self-service options.[2]

Flexible Delivery, based on Industry Standards

IBM offers its customers flexible delivery options for IBM Cloud Orchestrator, as an on-premise software offering or an IBM Software-as-a-Service (SaaS) cloud solution. Customers select the option that best fits their needs, with the same functionality for both options.

In addition, IBM Cloud Orchestrator is based on cloud industry standards, as well as support for the OpenStack open source cloud platform, that ensures cloud flexibility and extensibility. But IBM Cloud Orchestrator begins with OpenStack and takes it further by adding more advanced pattern engines, resource scheduling and workflow management. These enhancements enable advanced resource-aware and process-aware automation, and the ability to handle the automated deployment and management of more complex operating environments.

IBM CLOUD ORCHESTRATOR CASE STUDIES[3]

The evidence of what IBM Cloud Orchestrator can do is best told by customers and those who have used it. Below are brief summaries of two such case studies, one is an IBM customer and the other is an IBM development group. Their stories are interesting because of the effects that IBM Cloud Orchestrator have on what they do and how they do it.

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[1] For example, development tools like Chef, Puppet, IBM UrbanCode, and IBM Rational. And operations tools like IBM Endpoint Manager, OpenStack (Glance image library), Brocade, Juniper, and ServiceNow. Also Amazon EC2.

[2] For an example of this, see the IBM Software Group case described study below.

[3] The original customer case studies can be found at the following links: Enfo (https://www.youtube.com/watch?v=zmh8e8lBMIg&feature=youtu.be); IBM Software Group (http://www-03.ibm.com/software/businesscasestudies/us/en/corp?synkey=M140594U90553X97) ; Wimbledon (http://www-03.ibm.com/software/businesscasestudies/us/en?synkey=H725106N38112Q51)

Customer Case Study: Wimbledon Championships Website

The All England Lawn Tennis and Croquet Club (AELTC) is typically out of the limelight for 50 weeks out of the year. But for the remaining 2 weeks, when the AELTC hosts the Wimbledon Tennis Championships, hordes of tennis fans from across the world bombard Wimbledon's website for the latest information, statistics and results about the tournament and their favorite players.

During the course of the Wimbledon event, the number of page views on Wimbledon's website explodes exponentially by a factor of over 100, from hundreds of thousands to hundreds of millions page views. This means that during the event, the Wimbledon website changes overnight from a small business website to handling the volumes of an extremely large enterprise website.

In order to meet their business objective of engaging fans worldwide with social media and online instant player and match analyses, and handling explosive and unpredictable website demands, the Wimbledon website is hosted on IBM's managed cloud environment. IBM uses the IBM Cloud Orchestrator to enable a highly scalable and agile cloud environment for the Wimbledon website.

> *Wimbledon Championships Website : AELTC Case Study*
>
> Results from deploying IBM Cloud Orchestrator for the Wimbledon website in the IBM Cloud:
>
> 50% faster service deployment, enabling the Wimbledon team to scale up its website to keep up with user demand, while achieving its business goals of engaging fans worldwide with social media and an interactive online experience.

For the Wimbledon website, IBM uses proven mobile and web application IBM Patterns to automatically add and remove IT infrastructure resources to meet current website demands. "IBM accelerated service deployment by 50 percent, providing the Wimbledon digital team with the agility necessary to respond to massive changes in demand."[4]

Case Study: IBM Software Group's DevOps

Software development is at the core of IBM Software Group's business. The development organization of its Cloud and Smarter Infrastructure business unit was faced with virtual machine sprawl because developers were reticent to tear down testing environments when testing was completed because of the labor-intensive effort to set them up. Their development group consisted of 500 developers, managing 1,500 virtual machines (with VMware, KVM, System z and IBM Power) across four locations in the U.S.

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[4] Quote from IBM Case Study, "Wimbledon Championships enriches fans' online and social media interaction".

The development team used IBM Cloud Orchestrator to set up a self-service Platform-as-a-Service environment for their developers, so they could automate and orchestrate deployment of preconfigured testing environments. According to Chris Rosen, Architect for IBM's Cloud and Smarter Infrastructure business unit, 'With IBM Cloud Orchestrator, script packages and virtual system patterns, we automate deployment of complex environments and tooling. All of these baseline tools are installed, configured and ready to use with the click of a computer key."

The results from this initiative are impressive, with a 93% increase in infrastructure efficiency, 88% decrease in virtual images, 95% faster deployment of service availability and performance management environments. In the first year, they also realized $622,000 average savings per month due to increased efficiency and server use.

> **IBM Software Group Case Study Results**
>
> *Results from using IBM Cloud Orchestrator for self-service set up of development testing environments:*
>
> - *93% percent Increase in infrastructure efficiency*
>
> - *88% decrease in virtual images*
>
> - *95% faster deployment of service availability and performance management environments*
>
> - *$622,000 (USD) average savings per month In the first year, from efficiency and server use*

CONCLUSION

As enterprises move farther along in their cloud computing initiatives, orchestration is an essential capability for delivering cloud services. In order to reap the benefits of cloud computing, especially the dynamic flexing and contracting of cloud infrastructure to meet business demand, IT must have the ability to automate and orchestrate service deployment so it can be delivered quickly and efficiently.

Orchestration helps IT increase its efficiency, but from a broader perspective, it gives IT the time to deliver value by engaging in innovative activities that help the business achieve its goals.

IBM Cloud Orchestrator is an open, standards-based automation and orchestration solution that can help clients speed the delivery of cloud services. And its pre-built out-of-the-box patterns give customers a fast way to get started. By connecting to other management tooling, IBM Cloud Orchestrator also enables the service to be managed while in production, ensuring high availability and governance over its lifecycle.

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Authors: **Audrey Rasmussen**
                  Partner and Principal Analyst, Ptak Associates LLC

                  Rich Ptak
                  Partner and Principal Analyst, Ptak Associates LLC

About Ptak Associates LLC
Our analysts cover a breadth of areas that are ideal to bring you the "Big picture" on new technology trends across the industry. Whether it's Cloud computing, Mobile (BYOD), the Internet of Things, DevOps, Big Data, IT Operational Analytics, Workload Optimized systems or other new trends, Ptak Associates analysts cover these trends with a unique perspective that is both deep and broad.

Our clients include both industry leaders and dynamic newcomers. We help IT organizations understand and prioritize their needs within the context of present and near-future IT trends, enabling them to use IT technology effectively in solving business problems. We help technology vendors refine their strategies, and provide them with both market insight and deliverables that communicate the business values of their products and services. We provide all clients with an understanding of how their competitors are playing in their market space, and deliver actionable recommendations.

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