



IDC ExpertROI® SPOTLIGHT

Pulsant Delivers Agile and Cost-Effective Hybrid Cloud Services with Cisco ACI

Sponsored by: Cisco

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Overview

Pulsant is a United Kingdom-based IT infrastructure services provider focused on the small and medium-sized enterprise market. It offers public, private, and hybrid cloud services and a variety of managed, collocation, and professional services.

Pulsant was one of the first cloud service providers to embrace software-defined networking (SDN) as a way to simplify its IT infrastructure, unify control of physical and virtual environments, and reduce capital expenses (capex) and operating expenses (opex). After evaluating a number of vendors, Pulsant chose Cisco's Application Centric Infrastructure (ACI) as the best SDN solution for delivering its hybrid cloud services.

Martin Lipka, Head of Connectivity Architecture for Pulsant, explained that his company has deployed Cisco ACI as the basis for the Pulsant Cloud Fabric that connects two datacenters used to deliver bespoke hybrid cloud services managed end to end by Pulsant to its customers. Lipka noted that Pulsant has simplified provisioning in its hybrid datacenter environment and sped up delivery of its cloud services through policy, orchestration, and automation enabled by Cisco ACI – what Lipka referred to as "simplified automation." As a result, Pulsant can now deliver its services to its customers with greater agility and at lower cost, and the company is expanding its business by selling more services and onboarding customers faster.

Lipka attributed substantial efficiencies for Pulsant's networking engineers and provisioning team to Cisco ACI. With the Pulsant Cloud Fabric in place, Pulsant is growing its customer base without needing to add a commensurate number of network engineers. Further, the simplified and automated nature of Cisco ACI allows non-technical and non-network staff to operate network resources, freeing the company's more experienced and higher-paid senior networking staff to handle more productive tasks. In addition, Lipka noted that Pulsant is reducing costs associated with network ports and switches – as well as firewalls – that support its service delivery by leveraging the Cisco ACI cloud fabric. These infrastructure-related cost efficiencies enable it to price its services more attractively and win more business. Meanwhile, Pulsant has greater confidence in the configuration of its hybrid cloud services with Cisco ACI, reducing the frequency of misconfigurations and improving the security of its services.

Business Value Highlights

Organization: Pulsant

Location: Reading, the United Kingdom

Challenge: Deliver agile and cost-effective hybrid cloud services to expanding customer base

Solution: Cisco Application Centric Infrastructure as basis for Pulsant Cloud Fabric

Five-Year Cumulative Benefits:

- £5.24 million in discounted business benefits
- ROI of 513%
- Payback in 6.4 months

Other Benefits:

- 85% less staff time per provisioning of fabric pod
- 75% less staff time per hybrid deployment
- Zero unplanned downtime since deployment

Based on interviews with Lipka, IDC projects that Pulsant will realize staff time savings, productivity gains, and infrastructure-related cost savings worth £1.50 million per year over five years. For Pulsant, this would result in a five-year return on investment (ROI) of 513% and a breakeven time of 6.4 months.

Implementation

Pulsant began its next-generation cloud networking project in 2013, with an objective of finding the optimal SDN solution for its hybrid environment, which supports its delivery of cloud services. "We interviewed both small and large vendors around the world, pretty much everyone," Lipka said. "We continued discussions with two of them but broke off the talks when Cisco announced ACI because it was a better fit for us."

Lipka noted that Cisco ACI's support of both physical and virtual environments was especially important for his company. He explained, "At the time we chose Cisco ACI, SDN solutions involved building two separate networks, physical and virtual, but I didn't think that splitting the problem into two resolved our issues. With ACI, Cisco was the first to offer a single solution that covered everything – physical, virtual, and all our products – with a single controller. No other solution could do that."

Before deploying Cisco ACI, Lipka spent several months creating standards and orchestrating how to stage the implementation. Deployment began in the company's datacenter in Reading, the United Kingdom, in January 2015 and in the company's datacenter in Milton Keynes a month later. A third deployment of Cisco ACI is planned in the company's Edinburgh datacenter in 2016.

The Pulsant Cloud Fabric service went live in March and April 2015 in the Reading and Milton Keynes datacenters. Lipka described the actual deployment of the Cisco ACI fabric as requiring very little time but said that his team needed about three months in total to install and configure the underlying infrastructure and facilities. According to Lipka, Pulsant is now providing hybrid cloud services to 100 customers through the two datacenters where Cisco ACI is currently deployed, and it plans to migrate another 200-300 customers. Lipka said that Pulsant is adding three to four customers per week at this time.

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Benefits

Pulsant has leveraged its Cloud Fabric supported by Cisco ACI to speed up its delivery of its hybrid cloud services and make them more cost effective. Lipka explained that automation and repeatable processes enabled by Cisco ACI have benefited his company by reducing the time needed to provision network resources and speeding up deployment cycles, minimizing staff time needed for provisioning and supporting Pulsant's network environment, and reducing the costs to Pulsant of providing its bespoke hybrid cloud services. As a result, Lipka said that Pulsant has improved its business agility and is generating more revenue without having to invest in additional resources.

Pulsant's deployment of Cisco ACI has substantially reduced the time and effort required to provision and operate the company's hybrid cloud environment. Pulsant needed an average of 7-14 days before moving to Cisco ACI to deliver a bespoke cloud service to a customer, whereas it now needs only 2-3 days. According to Lipka, "Cisco ACI has allowed us to simplify and open the network environment that

was always the most complicated part of configuring and managing our hybrid cloud environment, greatly improving our business agility."

Efficiencies attributable to Cisco ACI are apparent to Pulsant throughout the process of deploying its hybrid cloud services. For example, Lipka explained that merging virtual and physical environments has been greatly simplified by the Cisco ACI fabric because everything connected to the fabric is an endpoint, enabling the easy mixing of the two environments. This means that it now takes his team seconds to stretch a network of physical ports to a fully virtualized environment, whereas it used to take two or three hours as each device in the path had to be configured, along with the physical cabling. Likewise, the process of racking and stacking hardware for a customer's pod and connecting it to the network requires substantially less staff time with Cisco ACI, and Lipka believes that enhanced levels of automation with Cisco ACI will reduce the times even more. As Lipka explained, at the other end of the service cycle, when a service needs to be decommissioned, "the network process of decommissioning a customer and cleansing the configuration has gone from taking hours to seconds thanks to Cisco ACI's built-in automation."

These efficiencies not only speed the time to market for Pulsant's services and make Pulsant's business more agile but also make the company's IT staff more productive. As a result, even as Pulsant grows its customer base, it has not needed to hire additional network engineers to keep up with its growth, and Lipka believes Cisco ACI will help Pulsant address customer growth without requiring the company to add to its networking or provisioning staff. According to Lipka, "Cisco ACI has allowed us to simplify the network core, which has always been the most difficult to configure and manage, allowing us to deliver and operate the Cisco ACI switching fabric without having to hire additional engineers."

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In addition, with Cisco ACI, network configuration no longer requires network engineers with years of experience but can be safely delegated to trained non-technical staff. This frees up the network, provisioning, cloud, storage, and hosting teams for more productive work. Troubleshooting has also been simplified to the point where a network professional is no longer required in most situations. Time to resolution of hybrid tickets has been reduced by 20% and is expected to decline even more with further network automation.

In addition to these efficiencies, Cisco ACI is helping Pulsant grow its business by enabling it to price its cloud services more attractively. Because everything is connected to the cloud fabric with Cisco ACI, a customer can gain access to its Pulsant cloud and network services on a single port for a set amount per 10Gbps port. Customers can increase and reduce the number of ports with a standard contract of only 30 days. "The savings that we can pass through to our customers are considerable," Lipka said. In addition, Pulsant is avoiding the need to provision a network switch for each new customer it hosts in its hybrid environment, providing it with thousands of pounds of savings per customer.

In addition, customers benefit from improved performance by avoiding application bottlenecks by using Pulsant cloud services via the Cisco ACI fabric. All physical port customers receive free 10Gbps filter capabilities between parts of their hybrid solution, or between parts of applications. This saves Pulsant customers the cost of firewalling through a dedicated appliance and frees them from choking their firewalls with backup traffic.

Also, Cisco ACI delivers uplink ports by default, which allows Pulsant to distribute customers around its datacenters without fear of network or rack congestion. Customer services are connected by Cisco ACI's virtual policy and, in effect, act as a single, closely connected solution. Scaling up a service costs less, and there is no cost for new network extensions because the cloud ports are always available.

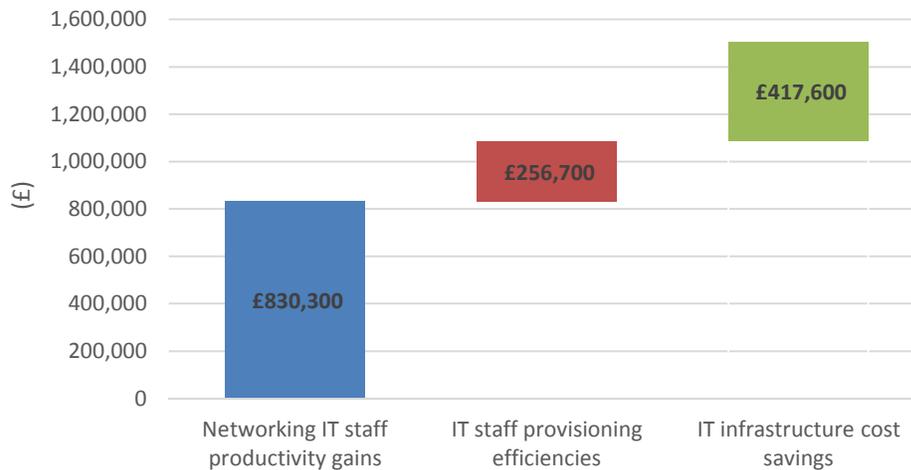
Cisco ACI also provides Pulsant with the robust and resilient datacenter infrastructure it needs to support its business. In addition, it is helping improve security. The built-in functionality of Cisco ACI enables configuration automation with greater accountability, providing read-only access to its core configurations for most users, and reducing the likelihood of problems arising as the result of improper configurations. Also, configuration is applied by tenant on Cisco ACI, so a misconfiguration for one customer cannot affect others. The Cisco ACI fabric is able to reject invalid configurations applied to the fabric, speeding up troubleshooting. A health score attached to each policy is able to rate the status of the configuration. In addition, Lipka explained that network security is enhanced by the simplicity of the graphical user interface. With granular monitoring of network resources, any variation in the chosen, custom-built Cisco ACI policy triggers an alert.

Quantifying the Benefits

From interviews with Lipka, IDC quantified the staff time savings, productivity gains, and infrastructure-related cost savings that Pulsant is achieving through its deployment of Cisco ACI. IDC puts the value of these benefits at an average of £1.50 million per year over five years (see Figure 1).

FIGURE 1

Average Annual Benefits



Total average annual benefits: £1.50 million

Source: IDC, 2015

IT Staff Productivity Benefits

Pulsant has increased the productivity levels of its IT staff – particularly network engineers and the provisioning team – by enabling time savings and avoiding the need to hire new staff members as Pulsant's business grows.

Efficiencies attributable to Cisco ACI have made Pulsant's network engineering team much more productive, which IDC projects will have an annual value of £830,300. Specifically:

- **Senior network engineering productivity gains.** Pulsant's six-member senior engineering team that is responsible for the most complex network-related work is 50% more productive with Cisco ACI as the result of needing to spend less time on provisioning-related activities and being able to use non-network engineers for tasks previously handled by network engineers.
- **Network engineer hires avoided.** Pulsant is avoiding having to hire two network engineers per year on average to keep up with the responsibilities related to providing hybrid cloud services for its growing customer base.

Pulsant has reduced substantially the amount of time its staff spends on network-related elements of provisioning resources in its hybrid datacenter environment to deploy its cloud services with Cisco ACI, which IDC projects will have an annual value of £256,700:

- **Network configuration.** The process of configuring the network and deploying the datacenter resources to support the services used to require nine hours of staff time per new customer. With Cisco ACI, the process requires just over one hour – an 85% reduction.
- **Network uplinks.** Automating the process of adding a new network uplink with Cisco ACI has reduced the need for out-of-hours maintenance requiring a qualified network engineer and reduced the staff time needed per network uplink provisioned from 1 hour to 10 minutes, or 83% less time.
- **Network extensions.** Engineering and delivering a new network extension used to require about 20 hours of staff time for Pulsant, whereas with Cisco ACI, the Cloud Fabric ports are always available, so there is no staff time cost for an extension.
- **Network decommissioning.** Compared with an average of three to four hours of staff time to decommission network resources when no longer needed, it now takes only seconds to remove these resources through policy with Cisco ACI.
- **Merging of physical and virtual networks.** With Cisco ACI, there is no longer any need for staff to spend time merging physical and virtual networks, whereas it used to take 2.5 hours per network merger.
- **Time to resolution of hybrid cloud tickets.** Time to resolution of hybrid tickets has improved by 20% so far and is expected to improve further with experience and additional network automation. The improvement is a direct effect of simplification, along with Cisco ACI built-in automation and the provision of network visibility to all Pulsant operation teams.

Cost Savings and Business Benefits

Pulsant has also reduced the costs of providing its hybrid cloud services to its customers with Cisco ACI. IDC calculates that Pulsant will save an average of £417,600 per year over five years.

Deployment of Cisco ACI has reduced the provisioning and datacenter-related costs of scaling up for Pulsant. Before Cisco ACI, Pulsant could incur capex costs for new ports and switches of up to £15,000 per hybrid cloud service deployment and more than £20,000 if space for new racks, cages, or data rooms was also required.

In addition, Cisco ACI has reduced security costs by eliminating the need for additional high-capacity filtering in the tiered hybrid design of Pulsant's hybrid cloud services. The company is now able to connect the Pulsant Cloud Fabric to its Backup Cloud, which means that the customer's security policy can route traffic directly to the Backup Cloud, avoiding the firewalls and load balancers. Because there is no cost for the Cisco ACI filtering policy and maintenance, Pulsant is able to save the price of two firewalls for each customer serviced, avoiding £3,000 per deployment.

Return on Investment

IDC projects that Pulsant will achieve discounted benefits worth almost £5.24 million over five years as a result of deploying Cisco ACI, while making a discounted investment of £854,000. This will result in a five-year ROI of 513%, with the cloud services provider breaking even on its investment in 6.4 months (see Table 1).

TABLE 1

Five-Year ROI Analysis

Benefit (discounted)	£5.24 million
Investment (discounted)	£0.85 million
Net present value (NPV)	£4.38 million
Return on investment (ROI)	513%
Payback period	6.4 months
Discount rate	12%

Source: IDC, 2015

IDC conducted several interviews with Lipka to understand the impact on Pulsant's operations and business of deploying Cisco ACI. IDC used these interviews to gather the information needed to quantify the benefits and investment associated with Pulsant's use of Cisco ACI and created an ROI analysis from the results. IDC calculates the ROI and payback period in a three-step process:

1. Measure the financial benefits directly resulting from the solution, including decreased IT infrastructure costs, increased IT staff productivity, revenue enhancements, and operations cost reductions since deployment.
2. Ascertain the total investment.
3. Project the investment and benefit over five years and calculate the ROI and payback period. The ROI is the five-year net present value (NPV) divided by the investment. Payback period (expressed in months) is the time required to pay back the initial investment and establish a positive cash flow. To account for the time value of money, IDC bases the ROI and payback period calculations on a 12% discounted cash flow.

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