Finding the right home for your applications

Infrastructure-agnostic modeling tools improve application placement, management, and portability.

It wasn't long ago that software and hardware were indelibly tied. Applications were forced to conform to the specific nuances of the various infrastructure environments on which they would operate. Servers and networks were manually configured to host each application. And the pairings were built to last.

But they haven't.

"The explosion of applications and the diversification of infrastructure have changed everything," says David Cope, senior director of cloud market development at Cisco. "Large enterprises now support more than 5000 applications on average, which are dispersed among physical and virtual data center systems as well as private and public clouds."

- With a staggering array of software and a growing number of infrastructure options, how do companies know which environment is best suited for each application?

- And as those applications evolve—from development to staging to production and beyond—how can IT organizations effectively port them to the environment best suited for each stage of the lifecycle?

INFRASTRUCTURE-AGNOSTIC APPLICATION MODELING

"Companies should be taking a fresh look at their application portfolio and doing some rightsizing analysis on a quarterly basis," recommends Dave Bartoletti, principal analyst at Forrester. "You're looking for the best fit for each application, whether that is keeping it in the data center, pushing it to the cloud, or replacing it with a SaaS-based solution."

- Application modeling is the first step, describing the application's characteristics and policy requirements in a way that is abstracted from underlying systems.

- Cisco® CloudCenter, for example, creates an infrastructure-agnostic profile or blueprint of each application, including its topology and dependencies.

- Formerly known as CliQr CloudCenter, the solution uses the profile to benchmark the application on available environments.

"You need to put the right workload in the right environment, and that comes down to utility economics," says Cope. "Price versus performance is key, and the relationship between them isn't always linear. You can see a 50x difference in application performance depending on the environment. Infrastructure matters."

Data sovereignty, compliance requirements, service-level agreements, and the fluctuating priority of the application also matter. Cisco CloudCenter evaluates a number of variables to help find the best home for each application. And as those variables change, so too might the optimum venue.

APPLICATION PORTABILITY AND OPTIMIZATION

Cisco CloudCenter helps model, deploy, and manage applications in the environment best suited to their unique policy requirements. But just because an application is placed in—or moved to—an ideal environment doesn't mean it should stay there forever. Priorities and requirements change over time, and

modeling and management provide the flexibility to continually evaluate and optimize an application portfolio.

"The more you tie applications to the underlying infrastructure—even with public cloud APIs—the harder it will be to migrate them in the future," Bartoletti warns. "You need to consider optimization and portability up front—before you need them."

It all boils down to the needs of each application.

"In the past, applications had to conform to the infrastructure. Today, it's the opposite," says Cope. "But there are so many infrastructure choices, and all of them are becoming more specialized. You need to make decisions on a case-by-case basis, and you need to revisit those decisions as priorities evolve."