Juniper and appOrbit Accelerate Bringing Legacy Applications to the Cloud

On-demand application environments with policy-based networking in the cloud

Challenge

Achieving cost and time-to-market reductions with a full DevOps and cloud-enabled solution normally requires recoding applications, which is a time-consuming and expensive process.

Solution

The appOrbit solution converts legacy and stateful applications into containerized components. When used in conjunction with Juniper Networks Contrail Networking, the appOrbit platform provides the multitenancy, scale, and portability that applications need to quickly move to any cloud infrastructure.

Benefits

- Easily and quickly migrate applications from development to deployment to run in any cloud
- Realize the faster time-to-market and improved economics of the cloud without spending unnecessary time and effort to refactor applications
- Correctly implement policy-based network security in all clouds

Juniper Networks and appOrbit have partnered to deliver an end-to-end solution that forklifts legacy applications onto a containerized DevOps platform that can run in any cloud with security, usability, and portability built in. This solution helps organizations achieve the time-to-market and cost benefits of modern application designs without having to re-architect and re-implement existing applications.

Juniper contributes robust software-defined networking and multi/hybrid cloud network policy and security to the joint solution, while appOrbit provides application-defined infrastructure and application containerization. Working together, the Juniper and appOrbit solutions deliver time to value in less than a month.

The Challenge

Organizations are under increasing pressure to deliver features faster, move to the cloud, and lower costs—all while ensuring comprehensive security and a superior customer experience.

Most organizations spend the bulk of their IT resources on keeping legacy applications running, leaving little time or budget to spend on re-architecting and re-implementing those applications as cloud-ready microservices. Such projects tend to be very risky, take years to complete, and almost always have cost overruns.

The Juniper Networks Contrail Networking and appOrbit Solution

The Juniper/appOrbit solution forklifts legacy applications into containers, significantly increasing agility and flexibility for both developers and testers.

A key benefit of the joint Juniper/appOrbit solution is the ability to separate the application configuration from policies, data, and, finally, the underlying infrastructure. By separating the application into its component pieces and adding a data and network automation layer, containers can be used successfully for stateful (legacy) applications.

The Juniper/appOrbit solution converts legacy physical and virtualized applications to containers and templates that can then be deployed in the cloud. The templates separate the business logic, application infrastructure, storage, and network architecture into separate pieces.

Integrating appOrbit with Juniper Networks® Contrail provides the solution with intent-based networking. The networking template defines the connectivity and security requirements; the Contrail SDN solution then consistently implements these policies on any infrastructure where the applications are deployed.

The solution provides separate UIs for the user and the administrator. Users are allowed to deploy applications, while administrators are able to create and modify the application templates.

With the joint Juniper/appOrbit solution, there is no need to re-architect or re-implement applications. Instead, the solution provides a simple way to onboard legacy applications into a DevOps pipeline and multi-cloud self-service portal:

1. Download and deploy appOrbit with Contrail (appOrbit also offers the solution as a managed service).

2. Assign user roles and configure access policies (application, data, and infrastructure); this enables the separation of roles required by security and compliance teams.

3. Point the product at the applications to be converted.

4. The solution blueprints and converts the applications.

5. Set versioning policies for the converted applications.

6. Plug the policies into existing build and test tools.

7. Train the users.

8. Migrate or burst applications into public clouds such as Amazon Web Services (AWS), Azure, or Google Cloud Platform, or within your own data center.

Solution Components

Juniper Networks Contrail Networking: Contrail Networking, based on the open-source OpenContrail project, is a software-defined networking (SDN) cloud automation solution comprised of a highly available controller and a kernel-embedded virtual router. As leading cloud networking and service orchestration powered by open technology, Juniper's open solution for cloud and NFV improves business agility with security, availability, performance, automation, and elasticity.

appOrbit: appOrbit is a platform that converts legacy and modern applications into containers, enabling composability across life-cycle stages—dev, test, and production—and making them easily deployable on any infrastructure.

Some of the attributes that uniquely distinguish the AppOrbit Platform from others in the DevOps marketplace are detailed below.

Distributed Data Fabric

appOrbit's built-in data fabric is an enterprise-grade, scalable, distributed, intelligent storage platform. Customers no longer have to buy expensive storage arrays. The platform provides the following key features:

- Version data: Any changes to data structures can now be version controlled, the same way as application code.

- Persistence: Persistent data survives for stateful applications.

- Enriched data: Data pipeline processes can be built to look up and transform data into meaningful formats, consumed by subsequent processes.
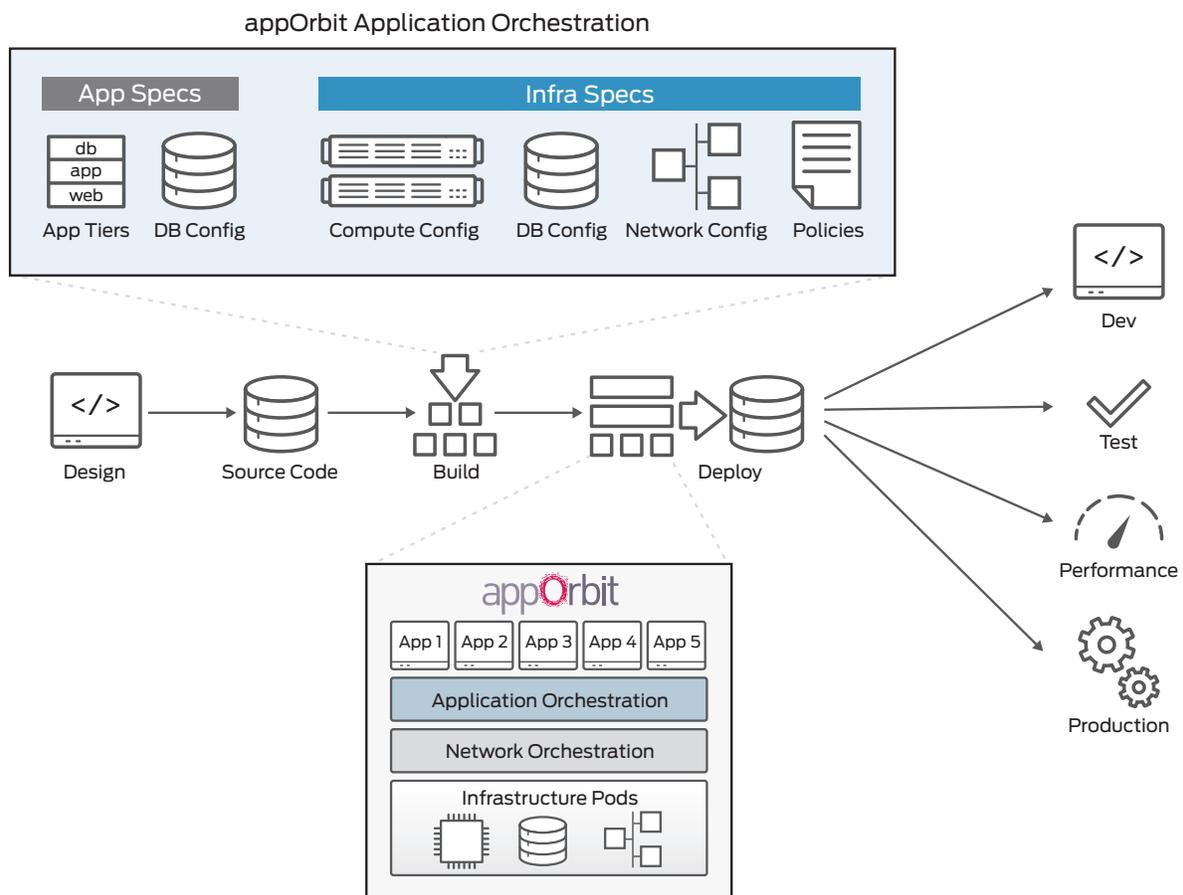

Figure 1: appOrbit solution

- Test Data Management (TDM): Implementing TDM enables additional functions such as masking.

- Snapshot and clone: Fully deduplicated copy-on-write snapshots/clones are supported.

- "Sharing" data: Data can be shared across development and testing teams, just like any code.

- Data migration: Data can be moved seamlessly from one cloud to another, or from on-premises to the cloud.

Advanced Enterprise-Grade Networking

appOrbit uses Juniper Networks Contrail on Kubernetes to provide advanced networking capabilities and take network orchestration and workload placement to a whole new level. With Contrail, appOrbit can now:

- Create portable blueprints across clouds and on premises

- Implement cloud-agnostic Layer 3+ networking

- Perform advanced networking functions such as service chaining and microsegmentation

- Integrate seamlessly between greenfield microservices applications and DevOps platforms, as well as legacy brownfield applications running on IBM AIX, HP-UX, and others

Enterprise Operations

appOrbit is built for enterprise developers. In addition to basic operations needs such as RESTful API support, CLI, roles-based access control, and Active Directory/LDAP integration, the appOrbit platform also supports advanced enterprise operations such as:

- One-view dashboards that effectively describe not only the portfolio of projects, applications, and infrastructure, but also health status

- Drag-and-drop design for creating application blueprints

- Dynamic migration of applications/services between clouds and on premises

- Forklift applications/services between clouds and on premises

- Rollback applications to a select point in time

- Support for in-place application/service upgrades

- Support for in-place kernel upgrades

- Autoscale application tiers on demand

Advanced Integration with Enterprise Products

appOrbit realizes that enterprise needs cannot be solved by point products. To that end, it has exposed its platform through a rich API infrastructure and has integrated with leading software products to expand enterprise use cases to efficiently support:

- Advanced data masking and test data management

- Systems and application vulnerability detection and prevention

- Database monitoring

- Asset entitlement management

- Proactive license compliance

Features and Benefits

With the joint Juniper/appOrbit solution, organizations can deliver applications faster, move significant workloads to the cloud, and lower costs—all while ensuring comprehensive security. Organizations can accelerate application delivery while reducing development costs this quarter by:

1. Achieving time to value in under a month (i.e., deploy it and start using it almost immediately)

2. Building a test, dev, or stage environment of legacy applications in minutes rather than weeks

3. Reproducing any version of the application on demand; therefore, reproducing and resolving any bug on demand

4. Optimizing development and test pipelines with one tool—no more silos

5. Reducing wait time for new environments to virtually zero

6. Leveraging any cloud or hybrid infrastructure such as AWS, VMWare, Azure, GCP, and OpenStack

7. Applying and enforcing network and security policies consistently on any infrastructure

8. Seamlessly plugging into enterprise data masking and data enrichment software

9. Empowering developers and testers to focus on application development and not worry about network, system, and database administration

Summary—Juniper and appOrbit Bring Legacy Applications into the DevOps World

As enterprises leverage the cloud to realize cost savings and faster time-to-market, agility and security can be their greatest asset. No matter where teams are in their digital transformation, they need security, usability, and portability for their existing business-critical applications—not just for their new projects.

The Juniper/appOrbit solution takes a multitenant approach, resolving challenges around application and data management, DevOps and Continuous Integration/Continuous Deployment (CI/CD) integrations, application portability, and application security by targeting the network, data, and application layers of the stack.

Next Steps

If you would like to learn more about this joint solution, please contact your Juniper Networks or appOrbit representative for more information.

About appOrbit

Founded in 2014, appOrbit leverages containers to solve legacy IT challenges. Our solution enables the next generation of Application Lifecycle Management for all applications. Using innovative container-based technology, appOrbit allows you to deploy full instances of your application, including the data, and seamlessly spin up the application on any infrastructure or cloud. Why does this matter? You can "instantly" leverage the cloud for all your application life-cycle use cases, such as development, testing, release, and on-going operations, and reduce infrastructure and staffing costs by up to 50%. And you can deploy code as fast as your developers can write it.

About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on Twitter and Facebook.

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