Build faster, securely, and anywhere with IBM Cloud Satellite

Reduce complexity and move faster

IBM **Cloud**

IBM

Overview

In terms of meeting business objectives, cloud is a tool for entering new markets, analyzing siloed data for insights and winning customers through innovative user experiences. Organizationally, cloud enables agile teams to quickly deliver updates to applications based on an evolving understanding of customer needs. For IT efficiency, cloud runs workloads in parallel, flexibly scaling shared resources up and down as needed.

Yet—with most large organizations already using multiple clouds—building, deploying and running applications across various public and private environments can impact both performance and user experience.

Here are a few examples:

- Latency issues can degrade the response time of mobile applications, violating strict Service Level Agreements (SLAs) for acknowledging receipt of payments, for example.
- Systems of record held on premises make it difficult and costly to abide by laws that require data to remain within a locality.
- Development and operations teams, having to upgrade different software on varied schedules and maintain applications in different environments with inconsistent platform user experiences, lose focus on customer needs and deliver more slowly.
- Due to blind spots in visibility, teams operating multiple environments may be slow to remediate issues that impact end user experience.

The promise of distributed cloud

Resolving the shortcomings of using multiple and hybrid clouds is what a distributed cloud architecture is designed to do.

According to Daryl Plummer, vice president, distinguished analyst, chief of research and chief Gartner Fellow at Gartner, “Distributed cloud itself is defined as the distribution of public cloud services, often including necessary hardware and software, to different physical locations, such as the edge, while ownership, operation, governance, updated and evolution of the services remain the responsibility of the originating public cloud provider.”[1]

That last responsibility is the distinction between a distributed cloud and private cloud approach. A public cloud vendor manages distributed cloud completely. The public cloud vendor has oversight responsibilities—not the client.

As Plummer notes for a distributed cloud environment, “That provider must take responsibility for its operation and existence and evolution no matter where it sits. That critical piece is what distinguishes the ability for us to do things like manage private cloud.”[2]

In short, Gartner claims that distributed cloud delivers on the hybrid cloud promise.[3]

The difference is that the distributed model provides more consistency, visibility and consolidated management across different environments.

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[1] https://www.gartner.com/doc/reprints?id=1-1Y6SQBYL&ct=200123&st=sb

[2] https://www.gartner.com/doc/reprints?id=1-1Y6SQBYL&ct=200123&st=sb

[3] https://www.gartner.com/doc/reprints?id=1-1Y6SQBYL&ct=200123&st=sb

Introducing IBM Cloud Satellite

IBM Cloud Satellite is a managed distributed cloud offering based on the same open source technologies as the IBM public cloud. Satellite distributes cloud services anywhere they're needed — on premises, in other vendor clouds, or at edge locations.

IBM Cloud serves as the base for Satellite distributions; it abstracts complexities away from the individual locations while it provides a single, secured view on the public cloud where distributed services are observed and managed.

Satellite enables users to manage cloud services and applications across public and private environments, including other vendor clouds. Satellite's flexibility in integrating resources across environments extends to different infrastructure, as-a-service operations, secure connectivity and application lifecycle management.

Working with Satellite locations

A Satellite location is made up of hosts — essentially, worker nodes such as Red Hat Enterprise Linux machines used to run VMs or used as bare-metal hosts.
Unlike other distributed cloud vendors, Satellite lets users pick the infrastructure they want to leverage, including:

- Already existing infrastructure in an on-premises data center or vendor colocation
- Already existing infrastructure in a private or public cloud environment — in IBM Cloud or other cloud vendors
- Infrastructure as a service set up and fully managed by IBM
- An appliance that builds and runs IBM Cloud Satellite automatically

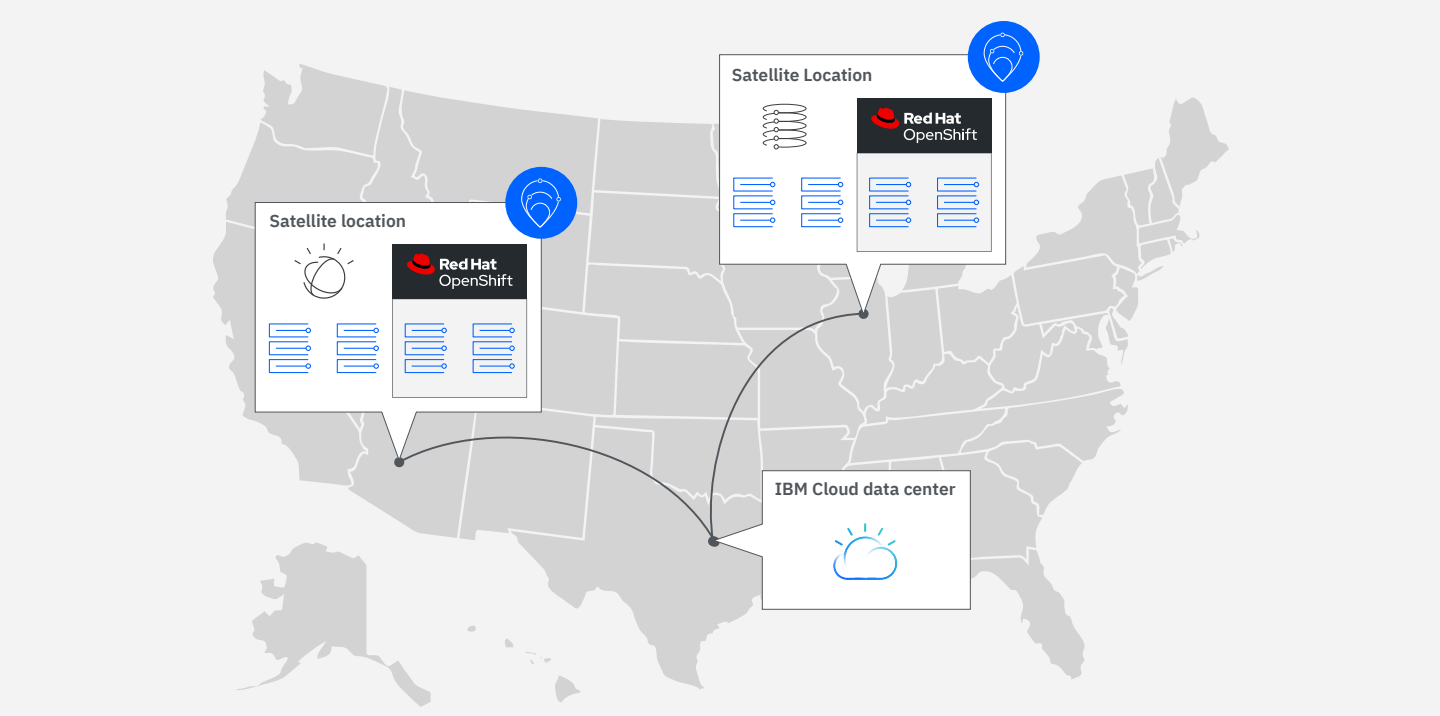
For example, let's say your team as a Satellite location in an on-premises data center in Phoenix where applications are running in containers on a Red Hat OpenShift cluster. These application workloads are completely self-contained and are able to serve requests. In environments like these, Red Hat OpenShift enables a consistent developer experience in building and running apps, with the business result of faster time to market, elastic scalability and reliability.

The ops team operates these clusters uses a monitoring and control dashboard hosted on the nearest IBM Cloud data center – in this case, Dallas. From the dashboard, an ops engineer can spin up new OpenShift clusters in the Phoenix location, deploy apps into the existing clusters, integrate services like logging and monitoring, and run the playbook of day 2 operations tasks. In short, your team is extending the services available on IBM Cloud to your company's private data center. The apps in the Phoenix data center are self-contained, so they run without needing to communicate back to the IBM Cloud data center in Dallas. At the same time, your ops team consistently views and manages core cloud application services in IBM Cloud.

What if you need to establish another location? Like many IT teams in large organizations, let's assume your team uses multiple cloud providers. With infrastructure already setup in a public cloud provider's data center in Chicago, you would like to add it as a Satellite location. Doing that involves using the same IBM Cloud control dashboard to create additional clusters on the infrastructure and deploying your applications. Simply put, a Satellite location is like a self-contained IBM Cloud region where you can choose to run IBM Cloud services.

Now, with both the locations setup and operating in Phoenix and Chicago, your development teams can innovate application user experiences using IBM Watson and other advanced cloud services, and use open DevOps toolchains to deliver updates to any locations.

As a result, by consistently delivering the same user experience everywhere, Satellite reduces the complexity of running workloads on multiple clouds and integrated across them. Since IBM Site Reliability Engineering (SRE) takes care of the lifecycle for services, including updates and patches, developers get relief from tedious and repetitive tasks and remain focused on more quickly achieving primary business objectives.



Continuous security and observability

Operation and development teams in different Satellite locations use the same IBM Cloud access and identity management (IAM) security. Satellite Link provides secure tunnels and allows fine-grain control of application and service endpoint traffic to and from each location, working within a client's existing network configuration and security postures. Unique, automatic DNS naming for endpoints yields predicable operations with easier compliance audits. A resilient and scalable transport architecture sustains highly available communications for managing workloads. Secure encryption enables workloads to span locations transparently, with support for client's own-key and certificates. IBM never sees your data or applications.

The single, consolidated view from Satellite shows pipelines, deployments and services running in every location. Users can manage the network traffic and the configuration of applications within those locations, provision services onto those locations and consume those services just like they're in the public cloud. They can even deploy pre-containerized applications from IBM Cloud catalog on any location.

Change how your business works.

Business leaders understand the need to harness digital transformation to jump-start growth, speed time to market and foster innovation. 69% of corporate directors want to accelerate their digital business initiatives.[1] However, 73% of companies fail at digital transformation.[2] Why?

Inhibitors include changing customer expectations, siloed business operations, technology skills shortage, risk and security fears, and lack of clear digital vision for the future. By adopting the right software approach, you can differentiate and change how your business works. Deliver personalized customer experiences, use data from across the business to predict and shape future outcomes and automate workflows, and protect and secure your enterprise.

IBM Cloud Paks are AI-powered software for hybrid cloud that provide data, automation and security capabilities, enabling you to drive digital transformation in your business. Since they're built on an open, hybrid platform and include a common foundation of enterprise components, you can accelerate development, deliver seamless integration across tools with a unified experience and minimize talent silos to enhance collaboration and efficiency.

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[1] Gartner: Survey Analysis: Board Directors Say Pandemic Drives Increased Investments in IT, 2020

[2] Everest: Group Study 2019

Use case stories

IBM Cloud Satellite, by providing consistent and flexible cloud services, enables executives of enterprise companies to think big in meeting strategic business objectives. The following use cases suggest the range of possibilities IBM Cloud Satellite opens up for business growth.

New market entry

Opportunity

Based in North America, Anderdon Financial Services wants to expand into growing South East Asia region. They offer a payment processing solution. Due to performance requirements and local data privacy laws, Anderson will need to run their application within countries in the region. In meeting those requirements, they want to avoid having to invest in expensive data centers and hire in a local market that lacks advanced IT skills.

Solution

With IBM Cloud Satellite, Anderdon can deploy and run the payment application on any host of their customer's choice – either on-premises environment or cloud they use, allowing Anderson to manage it centrally, as-a-service and use a consistent set of security and compliance controls.

Outcome

The company saves millions in capex and enters the new market in hours not months.

Tellerless banking

Opportunity

Competition in consumer banking is intense, with little differentiation in the customer experience, and a high rate of churn enticed by short-lived promotional discounts. The CTO at Capital Zone believes they have a concept that will create a sustainable niche: the RoboBranch. A RoboBranch is a brick and mortar location without any tellers onsite, but the capability to scan check deposits, authenticate PINs with a driver's license and replace lost ATM cards. In order to operate these RoboBranches, staff mut operate the applications at bank data centers, while the main next generation back office system is run and deployed in a public cloud built for consumer banking.

Solution

With IBM Cloud Satellite, the bank can use an application architecture that supports microservices on a serverless framework, allowing them to instantaneously scale, simplify maintenance and roll out new capabilities much quicker, all with banking-level security and compliance.

Outcome

By flexibly being able to make its retail banking services anywhere, the company sustains a relationship with customers in their daily lives.

Low-latency distributed data analytics

Opportunity

Acme Depot is a home improvement company that is the seventh-largest retail chain in the world and the third-largest retail chain in the U.S. in terms of annual revenue. It has an extensive, multi-tiered supply chain that supports hundreds of thousands of SKUS, and its sales cycle peaks during summer and holidays. Since Acme has made many acquisitions, and has regional outlets and distribution centers across the world, the inventory management and forecasting systems vary. To have better inventory management at the store level, Acme wants to consolidate into one system connected to entire supply chain network.

Solution

Using IBM Cloud Satellite, Acme can build a new app on premises, and consistently deploy the app along with IBM Watson data analytics services to all Acme locations. Staff at each store can do the same analytics work while keeping data local, avoiding egress changes and making ordering more efficient.

Outcome

While avoiding or reducing data egress charges and meeting data locality requirements, the company gains insight into purchasing patterns at each location. Use of the company's supply chain becomes highly optimized.

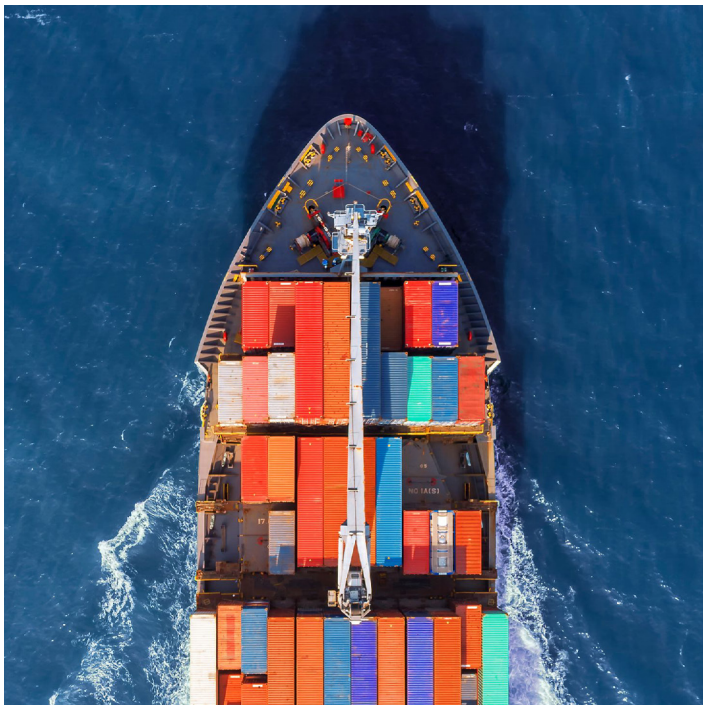
Geographic consistency

Opportunity

World Shipping has IT operations in dozens of international ports, a development center in Portland, Oregon, and headquarters in London. These span the full range of public, on premises and edge environments. Although IT already uses Kubernetes to streamline development and operations, their local teams are spending a lot of time managing software. Leadership also has a frustration with lack of observability across these sites; they want visibility.

Solution

World Shipping can use IBM Cloud Satellite to deploy an on-demand Kubernetes management service. Using a common set of container images and application configurations, they can easily bring up sites in new ports and ensure consistency across all sites through a single operations dashboard that gives them global observability.



Outcome

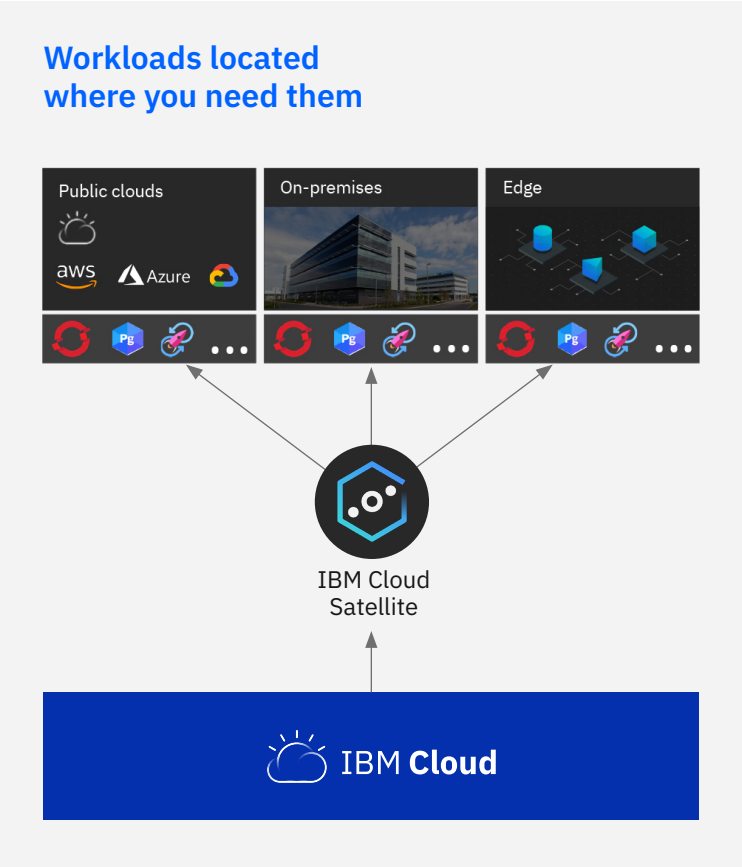
The company can flexibly bring up sites in new ports as it remains consistent across all sites. With a single consolidated view, managing multiple sites as easy as managing one.

IBM Cloud Satellite

Core application services for data, AI, security and Kubernetes management.

Talk with an expert →

Tell me more →



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