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from Salesforce

Tableau Cloud Scalability: Overview and Proofpoints

Table of Contents

Introduction

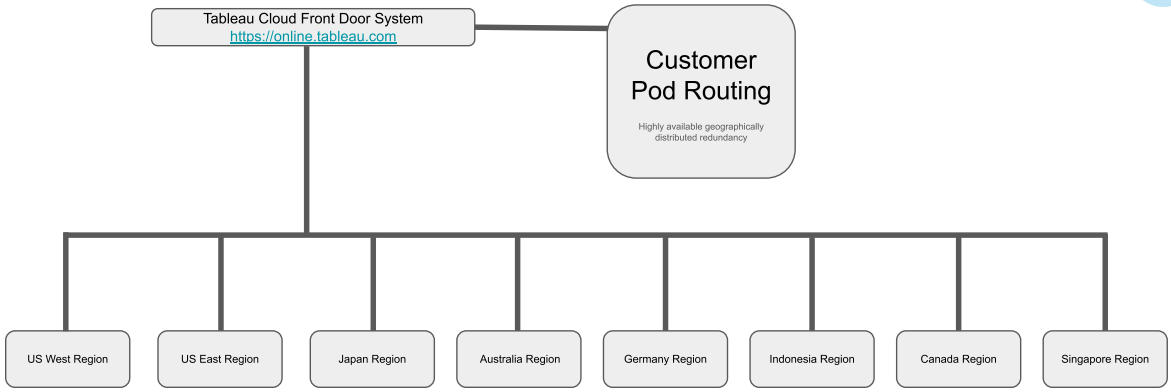
At Tableau, our mission is to help people see, understand, and act on data. This means ensuring our customers have confidence in the scalability and availability of our SaaS analytics platform, Tableau Cloud, to meet your current and evolving needs. A reliable platform is crucial when an entire organization depends on data and analytics. We believe it's essential for you to understand how Tableau Cloud leverages enterprise-grade technology to grow seamlessly alongside your business. This document describes Tableau Cloud's high-level architecture, detailing how we maintain high availability and scale to support global enterprises with thousands of geographically distributed users. You will also learn how Salesforce's largest internal Tableau Cloud site is configured and performs at scale.

Tableau Cloud Global Architecture

Multi-pod, multi-geography architecture

Tableau Cloud has a pod-based architecture hosted on Salesforce Hyperforce Public Cloud Infrastructure that supports geographically distant pods; all currently run on Amazon Web Services (AWS). To simplify sign-in, Tableau Cloud pods are unified by a common front door system at online.tableau.com. All pod infrastructure is geographically redundant leveraging three availability zones in each geo-location. To enable customers to manage data residency requirements and serve their users closer to their physical location, Tableau Cloud has multiple pods located across the globe, including in the United States, Canada, Europe, Japan, Australia, Singapore, Indonesia, India, and South Korea.

In Tableau Cloud, customers can have one or many sites. Each customer site is hosted on a specific geo-located pod–a unit of shared resources that host Tableau services. Sites can be on the same or different pods, within the same or different geo-locations. Customer traffic is routed to the pod where their particular site is hosted.
Tableau's customer and user management system maps sites and users to pods. The login service uses the mapping information to route authentication traffic to the appropriate identity provider. Customers can use the default TableauID provider, Auth0, or their single sign-on (SSO) authentication provider, such as

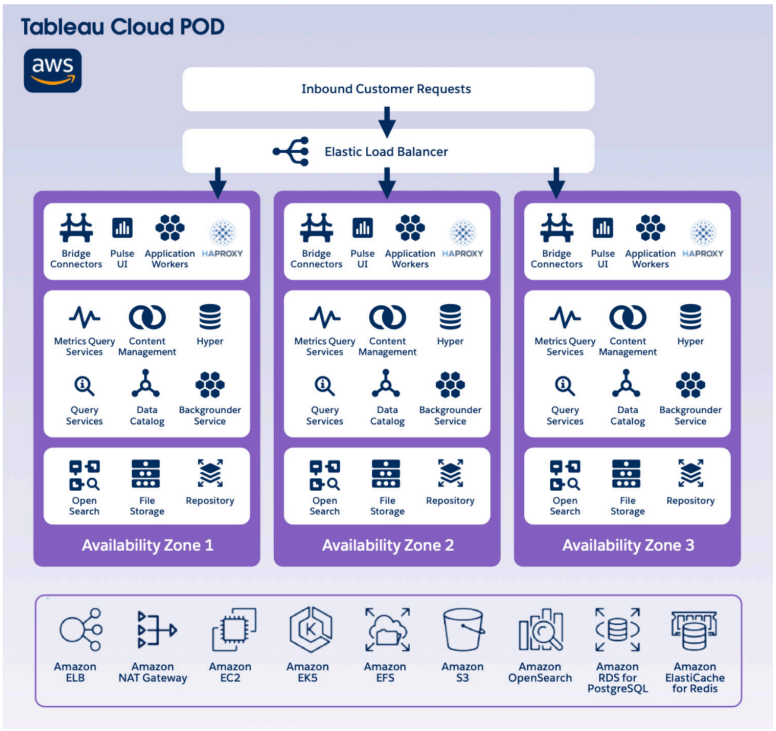


Salesforce, Okta, Microsoft Azure Active Directory, Ping Identity, or OneLogin. Tableau Cloud supports any SAML or OIDC compliant IdP and sites can be configured with multiple IdPs.

Customers choose their geographic region when creating a site and their new site is automatically assigned to a pod in that region. Tableau can scale the infrastructure within each pod to support increased usage as well as add new pods within each region.

Architecture inside a pod

Each pod is designed to host thousands of customer sites and their users' interactive sessions within a multi-tenant (shared compute) environment.



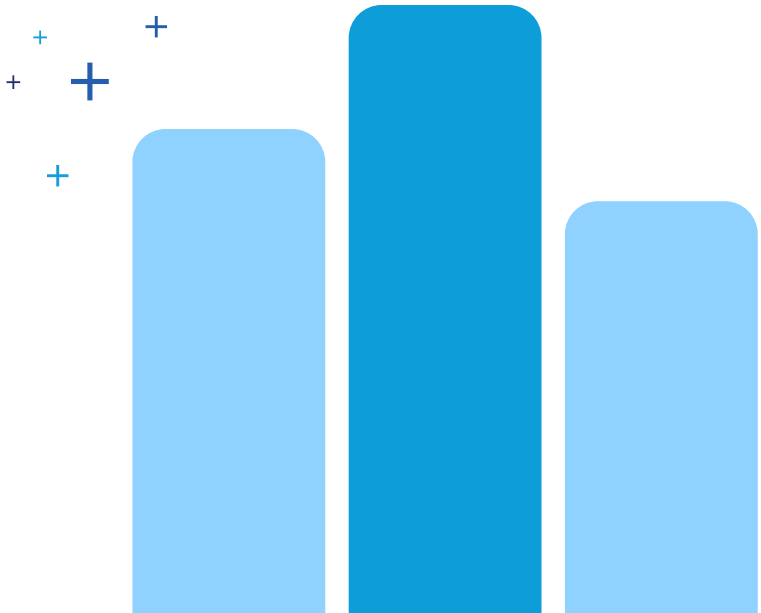
Each pod is fronted by an Elastic load balancer which distributes traffic to available workers. Tableau Cloud leverages the Hyperforce platform to protect from security threats, such as DDoS attacks. Where feasible, traffic is stateless, and individual requests are routed to any available machine. Some traffic (e.g. interactive visualization sessions) is inherently stateful which optimizes the experience by taking advantage of in-memory caching. This approach allows subsequent visualization loads by different users to be served quickly by the same worker.

Three availability zones are supported within each pod to ensure redundant availability.
Durable customer state (e.g. workbooks, data sources, user information, data extracts, bridge configuration) is managed by a storage system that consists of the site and content repository in a Relational Database Service as well as Elastic File Store. These systems are replicated across availability zones for high availability and durability.

At a high level, the pod architecture consists of three main service types:

- **Application services** handle requests initiated by end users via browsers, administrative APIs, desktop clients and mobile clients.
- **Backgrounder services** handle asynchronous tasks on a schedule. The pool of backgrounder worker machines manages scheduled work using the Site/Content Repository (RDS). Backgrounder work includes extract refreshes, alerting and email subscriptions.
- **Bridge Connectors** manage connections initiated by Tableau Bridge clients and route live-query requests to the customer-hosted Bridge clients.

These application nodes are kept up to date with the most recently released versions of Tableau's software. Tableau Cloud hosts many 24/7 mission-critical sites where availability is of utmost importance. Therefore, most system upgrades and required patches are performed with no downtime, ensuring no disruptions to the customer's business. For any maintenance that requires downtime, Tableau will schedule it in accordance with our Tableau Cloud System Maintenance policy.



Dynamic Scaling

The system is designed for horizontal autoscaling; for example, for both our application layer and the cluster size. Each pod's services run in containers with Kubernetes orchestration. This provides immutable deployments and protects against configuration drifts. Running on a public cloud with Kubernetes also provides us with elasticity to meet customer needs and scale our services dynamically to traffic demands. Kubernetes manages node/application failure modes within the cluster seamlessly to move compute workloads around so as to always maintain high availability.

We are always looking to improve our ability to grow, scale, and manage Tableau Cloud predictably and efficiently. Tableau Cloud is a shared environment and given that there may be thousands of customers on a pod, we strive to limit the impact of "noisy neighbors." To provide customers with a stable and reliable experience, Tableau Cloud has built-in resource governance that limits outlier usage patterns in one customer's site from negatively impacting other customers. We have resource management for storage, extract refreshes, metrics, subscriptions, flows, visualizations, and view acceleration. Learn more about Tableau Cloud site capacity.

Tableau Cloud Manager

Tableau Cloud Manager (TCM) provides administrators with a centralized management interface for overseeing all of their organization's Tableau Cloud sites within their tenant. With TCM, cloud administrators can create and edit sites, manage users, and monitor license consumption across multiple sites, all from a single location. Any changes made within TCM are applied at the tenant level and then applied across all associated sites, streamlining administration and governance.
To accommodate this new functionality Tableau has introduced the Cloud Administrator role, the only users with access to Tableau Cloud Manager. While most Cloud Administrators typically access a single TCM tenant, your organization's structure may permit access to multiple tenants

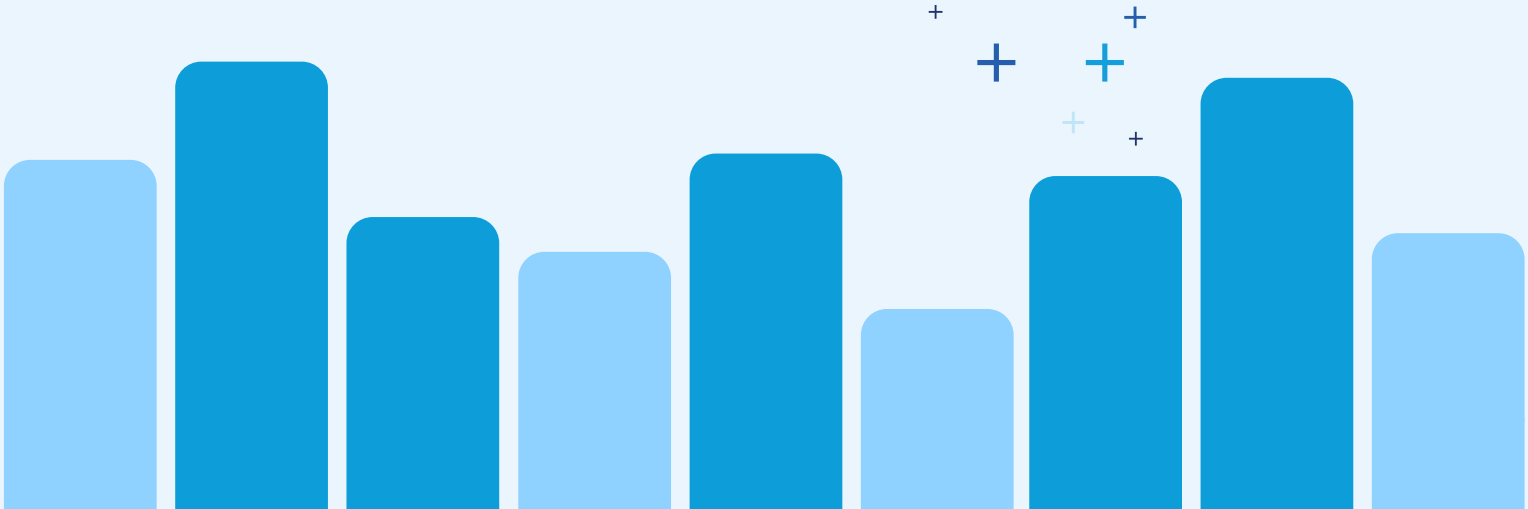


Tableau Cloud Trust

Security
Tableau Cloud is built on top of Hyperforce, Salesforce's public cloud platform. With Hyperforce, Tableau Cloud utilizes a defense in depth approach which employs a multi-layered approach to security helping protect our infrastructure, platform, services and data. For more information on security in Tableau Cloud, please see the help doc.

Zero Trust Architecture
In Tableau Cloud's zero trust architecture, every access request is verified, and no user or device is inherently trusted. This helps prevent unauthorized access to Tableau Cloud resources.

End-to-End Encryption
All data in transit between users and Tableau Cloud is encrypted using HTTPS/TLS and all data at rest is encrypted using AES-256. This helps ensure that data is protected from unauthorized access.

Infrastructure as Code (IaC)
Tableau Cloud's infrastructure is defined and managed as code, which helps ensure that it is consistent and secure.

Immutable Deployments
Tableau Cloud uses immutable deployments, which means that once a deployment is made, it cannot be changed. This helps prevent unauthorized modifications to the Tableau Cloud environment.

Just-in-Time Access
Tableau Cloud uses just-in-time access, which means that users are only granted access to resources when they need them. This helps prevent unauthorized access to Tableau Cloud resources.

Tableau Cloud is a trusted and secure platform offering federated governance, visibility, and control. All data in Tableau Cloud is encrypted at rest using Advanced Encryption Standard (AES) with 256-bit keys. Any data in transit between users and Tableau Cloud is encrypted using HTTPS/TLS.

Holding best-in-class, security certification, Tableau Cloud is fully SOC II and ISO compliant, with the environment regularly put through rigorous testing–both internally and externally. For more information, please see our security overview. Automated and manual vulnerability testing is done as a part of the development process and third-party security firms are leveraged to conduct penetration testing of applications before major releases. Quarterly audits are performed for critical elements of the Tableau environment. Learn more about Tableau Cloud Security.

Backups
Pods are backed up for disaster recovery purposes. Tableau Cloud backs up its stateful data for each pod daily. For redundancy, the backups are replicated across multiple Availability Zones in their geographical Region. Backup retention is 30 days. Tableau Cloud periodically tests system recovery from backups.

Admin Insights
Customers get visibility into their Tableau Cloud sites usage with Admin Insights.

Admin Insights is a Tableau Cloud-only project that is pre-populated with carefully curated data sources and a pre-built workbook of your site's data. Using the resources available to you through the Admin Insights project, you can create custom views to help answer a range of common questions you might have about your sites.

For example:
- What's my Tableau Cloud adoption rate in my organization?
- What are common trends around the site's deployment?
- What content is popular?
- What are my users doing?
- How should licenses be allocated?

Supporting 24/7 mission-critical sites
Tableau Cloud is built for high availability. Tableau takes advantage of both the high availability features available in the product as well as cloud architecture best practices to deliver a reliable experience. Tableau uses a variety of automated monitoring and remediation processes. In the event a condition is detected that requires human intervention, engineers are on call 24/7.

Tableau actively monitors system capacity (e.g. machine processor utilization, background utilization, queue time for background tasks, file input/output, network bandwidth utilization) and ensures additional capacities needed for customer demand are provisioned. Tableau can also isolate demanding workloads and route them to specialist worker machines within a pod. Because all Tableau Cloud infrastructure is on virtualized cloud infrastructure, we have high resource elasticity that can be used to grow the pods and route traffic to meet demand.

Tableau actively keeps track of the load inside each of our pods and has a healthy engineering factor-of-safety that plans for additional pods before approaching the capacity limits of existing pods.

The Tableau+ Bundle

The Tableau+ Bundle is a premium Tableau offering that simplifies the analytics journey with a comprehensive package tailored for wall-to-wall adoption of self-service, AI-powered analytics. The Tableau+ Bundle includes AI features to increase the efficiency and productivity of analysts and business users alike; admin capabilities to help you effectively manage larger and more complex deployments; and a success plan to ensure your team has the support needed to grow your data culture and drive ROI.

The Tableau+ Bundle helps with scaling your workloads and includes:

Tableau Agent

Accelerate data-driven decision making across the entire analytics journey with a trusted AI assistant.

Tableau Pulse

Scale personalized, contextual AI-powered metrics across your entire org–including insights summaries, metrics goals, and natural language Q&A.

Advanced management capabilities

Manage, secure, and scale mission-critical Tableau deployments.

Data management capabilities

Enhance data governance and security while simplifying data discovery and connectivity.

Tableau Next

Deliver personalized, contextual, and actionable insights to every user, in every workflow with agentic analytics.

Proof points

Worldwide Customer Usage

Since launching in 2013, Tableau Cloud now serves over 45,000 customer sites with 1.6M+ seats.
From data gathered in May 2025, Tableau Cloud's worldwide pods serve the following customer needs.

45,000+
customer sites

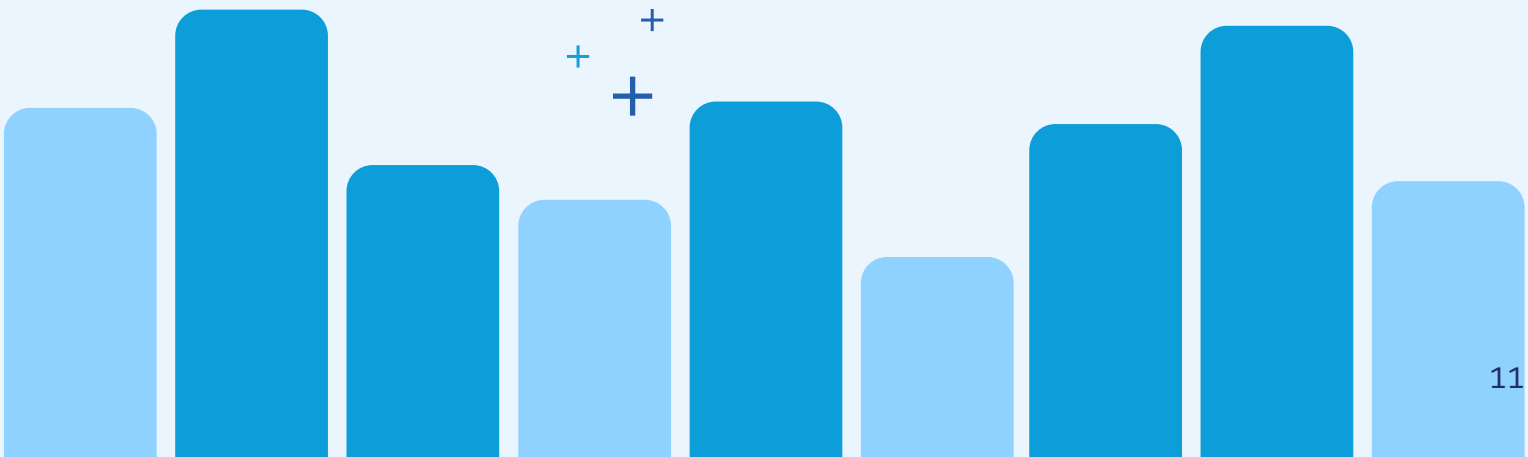
27M+
views/month

4M+
workbooks

220,000+
flows

2.3M+
data sources

4M+
extract refreshes daily



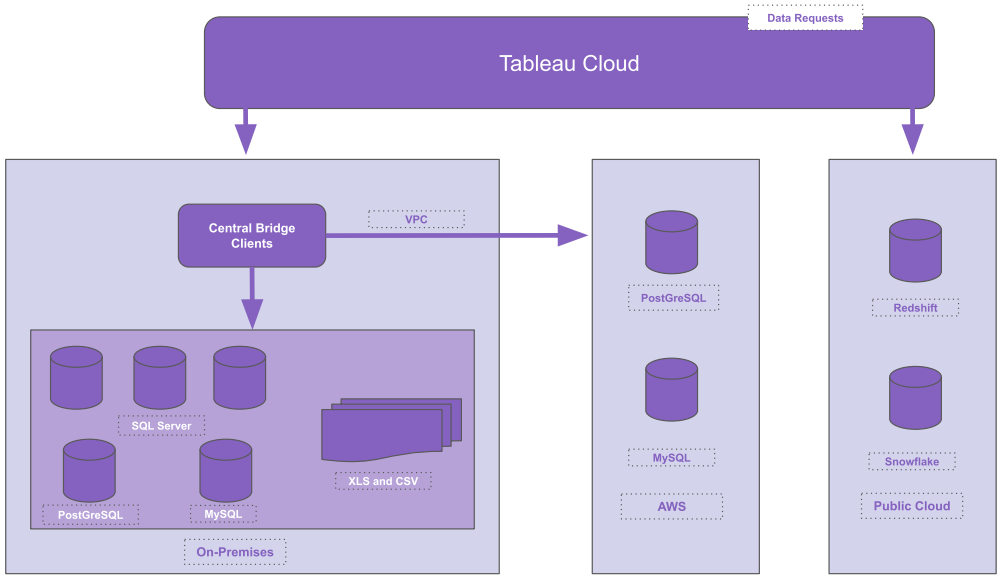
Case Study: Tableau's Customer Zero Pod on Tableau Cloud

Tableau has a major deployment internally to service the business and operational analytics needs of Salesforce, which we refer to as the "Customer Zero" pod. All the new product releases flow through this pod before they are deployed on the customer pods. This pod runs on Tableau Cloud and is supported by the same team and engineering operations processes as customer pods.

We use out-of-the-box features with no customizations to ensure we experience the product exactly as our customers do. The workbooks on this site are business-critical to Salesforce teams. The visualizations on monitoring, automated test results, status of the continuous development pipeline, defects, and Tableau Cloud usage are required to carry out engineering activities on a day-to-day basis. The pod also hosts critical data for sales, marketing, and SOX processing.

The "Customer Zero" pod is used by many teams in Salesforce who publish content daily, ranging from critical product metrics to marketing and sales data. These visualizations are powered by a variety of data sources, including on-premises, Tableau-managed sources on AWS, and public cloud services. As such, Tableau's own use of Tableau Cloud serves as an excellent case study for rich enterprise cloud customer usage.

The "Customer Zero" pod has a very engaged user base. On a single day basis, we have seen between 8,000 and 9,000 active users and over 20,000+ report views. The pod serves over 40,000 unique users in total. Like most sites, Customer Zero experiences peaks and valleys in traffic but most workdays see over 8,000 views per day.



How does the “Customer Zero” pod resemble typical customer enterprise sites?

Enterprise identity

Identity management and authentication are managed with an enterprise identity provider (IdP).

On-premises and cloud data

There is a hybrid data architecture with a mix of servers including on-premises, Tableau-managed in AWS, and public cloud. There are many different data sources, including SQL Server, PostgreSQL, MySQL, Redshift, Snowflake, Google Big Query, and flat files. A pool of Tableau Bridge services facilitates the live on-premises or VPC database query capabilities, as well as scheduled extract refreshes.

Worldwide usage

Users are located around the world, and view Tableau Cloud through the web, desktop, and mobile clients inside the corporate network, through the VPN, and over the public internet.

How is the "Customer Zero" pod different from typical customer Cloud usage?

Advanced deployment
Tableau runs pre-release software on the Customer Zero pod. This allows us to ensure changes to Tableau Cloud's software and infrastructure perform at scale before we deploy them to customers.

Heavy usage patterns
Our users are extremely active, embodying our company value of "We use our products." As a result, Tableau's internal usage patterns are above-average. Over the last three months, this pod has seen over 39,000 MAU, more than 2 million views, and 300,000 data jobs.

All users are Tableau Creators
With nearly 35,000 users holding creator licenses, the Customer Zero pod has a heavier workload than a typical enterprise site with a similar number of provisioned users.

Heavier workload
Because of our very active user base of creators, this results in a high volume of workbooks and extracts, both centrally managed and personal.

The "Customer Zero" pod sites are configured to use Okta as their SAML provider for authentication, allowing users to log in with their regular corporate credentials. This IdP is configured to require two-factor authentication (2FA) to connect to Tableau Cloud outside of Tableau's network and VPN.

Configuring and provisioning Tableau Bridge

Tableau Cloud relies on many on-premises data sources and data sources within VPCs, including UIP, SQL Server, PostgreSQL, and AWS Redshift data sources. For this reason, Tableau Bridge is an important part of the Customer Zero deployment. It allows published data sources to connect live to on-premises data and extracts taken by Tableau Bridge.

To ensure reliability and load balancing, the "Customer Zero" administrators manage a central pool of Tableau Bridge clients for live connections and extract jobs. The configuration details include:

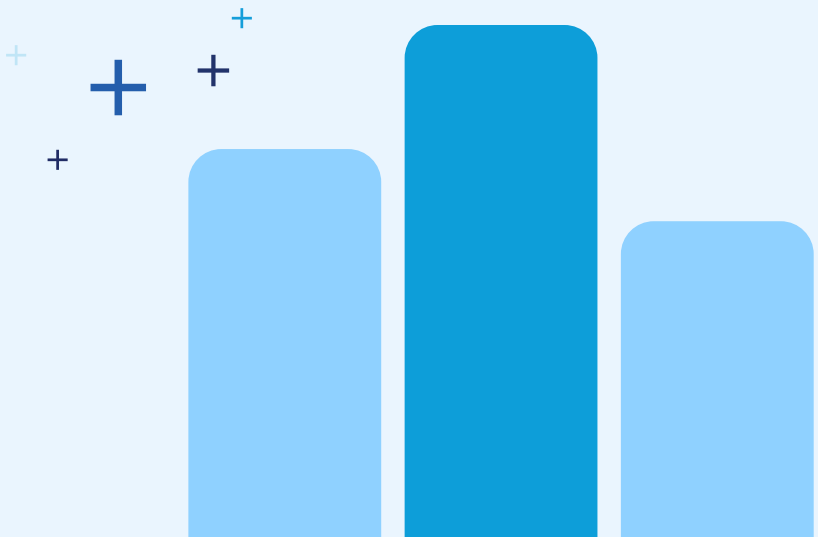
- After monitoring extract times and failure rates using the provided administrative views, administrators chose to run eight bridge clients.
- All bridge clients run in a single pool, and there is no differentiation between clients for live and extract jobs.
- For streamlined IT administration and reliability, Tableau Bridge runs in service mode, meaning the client runs in the background and automatically restarts upon reboot. A shared AD account owns all the clients.
- No special firewall configuration is required. Tableau Bridge clients sign in to Tableau Cloud and authenticate with the supplied credentials in the same way as any other web application.

End users can also use their own Tableau Bridge clients in the "Customer Zero" environment to manage extracts. Users contact the site administrator if they would like for their extract to be managed centrally. For more details on managing and running Tableau Bridge, see our help documentation.

Monitoring and troubleshooting the Customer Zero pod

The "Customer Zero" pod has a designated site administrator. Administering the Customer Zero pod is a part-time set of duties because the overall system monitoring is handled by Tableau Cloud.

Mentoring for the "Customer Zero" pod is conducted with the same rigor as any other customer pod. This includes tracking key metrics, such as availability and latency. Any identified issues are addressed through a standard incident management process to ensure consistent and timely resolution. This practice not only validates the software's performance but also provides valuable insights for refining operational procedures, contributing to a more robust and efficient system overall.



Conclusion

Tableau Cloud's architecture is engineered to provide the highest levels of scalability, reliability, and security for global enterprises. The multi-pod, multi-geography design, combined with robust features like dynamic scaling and resource governance, ensures that the platform can fluidly meet the evolving demands of organizations of any size.

The "Customer Zero" case study demonstrates that Tableau Cloud is not only capable of handling mission-critical, high-volume workloads but also exceeds the typical usage patterns of a standard enterprise. This internal deployment validates the platform's architecture and operational resilience, proving its readiness to serve as a trusted foundation for an organization's most important analytics initiatives. By building on a foundation of continuous innovation, scalability, and trust, Tableau empowers customers to see, understand, and act on their data.

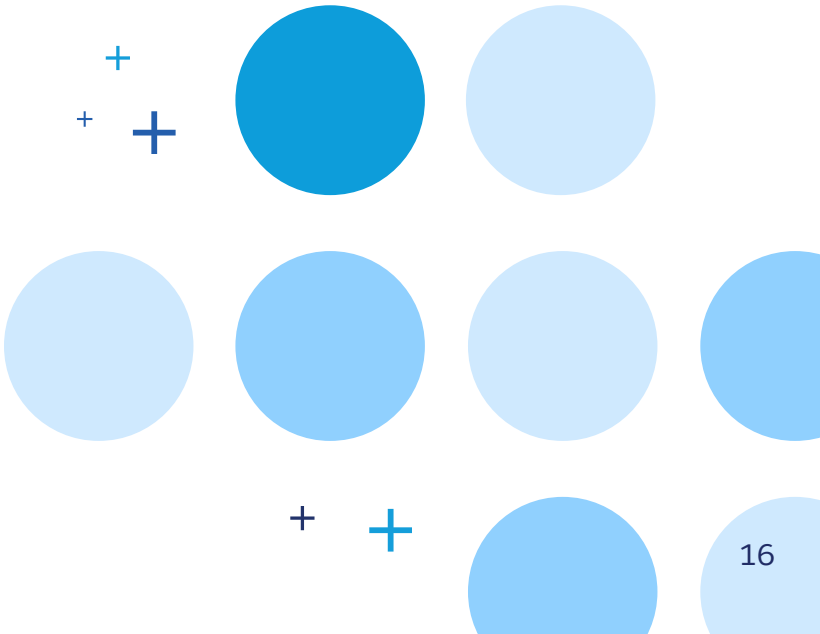


Tableau offers a suite of agentic analytics and AI-powered business intelligence tools, empowering every user, in every industry, to transform trusted data into actionable insights. Backed by predictive, generative, and agentic AI capabilities, Tableau delivers proactive insights and effortless analysis.

This is powered by Tableau's connected and adaptable analytics platform, providing the most choice and flexibility for your architecture as your technology and AI strategy evolve. With security, data governance, and compliance built in, your organization can maintain agility as new demands on data arise on a trusted, always-available platform.

Tableau supports the unique needs of organizations worldwide, backed by the industry's largest partner and success ecosystem. This includes the passionate Tableau Community that can teach, support, challenge, and celebrate you at every stage of your AI journey. The future is limitless when you start with data and move forward with Tableau. For more information, visit www.tableau.com.