Tableau Server on Linux in the Google Cloud Platform

Administrator Guide

Last Updated 4/24/2024

© 2024 Salesforce, Inc.

Contents

Install Tableau Server on the Google Cloud Platform 1

This is archived content 1

Introduction 1

Tableau Server on the Google Cloud Platform deployment options 2

This is archived content 2

Introduction 3

What You Need Before You Begin 4

This is archived content 4

Introduction 4

Best Practices for Installing Tableau Server on the Google Cloud Platform 5

This is archived content 5

Introduction 5

Keeping Costs Down 6

Tableau Server on the Google Cloud Platform Topology 6

This is archived content 6

Introduction 7

Selecting a Google Compute Engine Virtual Machine Type and Size 8

This is archived content 8

Introduction 9

Typical VM types and sizes for development, test, and production environments 9

Recommended specifications for a single production instance 9

Self-Deploy a Single Tableau Server on the Google Cloud Platform 13

This is archived content 13

Introduction 13

Step 1: Set up a Google Compute Engine VM 14

Step 2: Connect to your Google Compute Engine VM 15

Step 3: Install Tableau Server on your Google Compute Engine VM 15

Step 4: Access Tableau Server from a remote browser 16

Step 5: Publish data to Tableau Server on your Google Compute Engine VM 17

Step 6: Manage Tableau Server licenses 17

Self-Deploy Tableau Server on the Google Cloud Platform in a Distributed Environment 18

This is archived content 18

Introduction 18

Step 1: Create a Google Cloud Platform Virtual Private Cloud (VPC) 19

Step 1: Create a Google Cloud Platform HIPAA-aligned project 19

Step 2: Deploy Three Google Compute Engine VMs 20

Step 3: Create a Google Cloud Platform Load Balancer for the Tableau Server Cluster 21

Troubleshooting Tableau Server on the Google Cloud Platform 22

This is archived content 22

Introduction 23

Install Tableau Server on the Google Cloud Platform

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

When you install Tableau on a Google Compute Engine (GCE) virtual machine (VM), you still have the advanced capabilities of Tableau in a local environment. Running Tableau on a GCE VM is an excellent choice if you want the flexibility of scaling up and scaling out without having to purchase and maintain an expensive fleet of servers. For instance, you can configure Tableau to be highly available, and integrate with all of the common enterprise applications (for example, Active Directory) that many organizations rely on.

> Looking for Tableau on Windows? See Install Tableau Server on the Google Cloud Platform.

Tableau can take advantage of many native Google Cloud Services:

- Google Persistent Disk: Cloud-based block storage for virtual machines (VMs).
- Google Cloud Storage: Cloud-based unified object storage for data archiving.
- Google Cloud Dataflow: Cloud-based service for stream and batch data processing.
- Google Cloud Dataproc: Cloud-based service for running Spark and Hadoop clusters.

In addition, you can store the data you use with Tableau Server using any of the following Google Cloud Services. Tableau provides native data connectors that enable you to connect to data in the following Google data sources:

- Google Analytics: Web analytics tool for tracking and reporting website traffic.
- Google BigQuery: Managed enterprise data warehouse for analytics.
- Google Cloud SQL: Managed SQL database service.
- Google Sheets: Spreadsheet included in Google Docs.

Tableau Server on the Google Cloud Platform deployment options

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

You can deploy Tableau Server on a Google Compute Engine (GCE) virtual machine (VM). A Tableau deployment on GCE supports the following:

Tableau Server	Google Compute Engine VM Self-Deployment
Production ready	✓
Upgrade Tableau without replacing the VM	✓
Install on Linux	✓
Install on Windows	✓
Scale-up	✓
Scale-out (add nodes)	✓
Active Directory support	✓
BYOL license	✓

The self-deployment option is described in more detail below:

- **Self-Deploy to Google Compute Engine VM** - Provides the most flexibility and options to customize Tableau Server to your environment.

  Self-deployment of Tableau Server on a Google Compute Engine VM is recommended for development, test, and production environments that start simple but may need to scale later.

  For more information about self-deployment, see Self-Deploy a Single Tableau Server on the Google Cloud Platform. For more information about deploying in a distributed

environment, see Self-Deploy Tableau Server on the Google Cloud Platform in a Distributed Environment.

For more information about Tableau licensing options, search for "Licensing Overview" in the Tableau Help.

What You Need Before You Begin

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

To work with Tableau Server on the Google Cloud Platform, you will need:

- A Google Cloud Platform account. If you don't already have one, sign up for a new account.
- A Tableau license.
    - For a standalone Tableau Server deployment, you must contact sales for a product key.

- For a cluster-based deployment, you need a user-based license (which covers all authorized users of Tableau), a core-based license (with a minimum of 16 cores), or a Tableau subscription license. To obtain a product key, contact sales.

For more information about Tableau licensing options, search for "Licensing Overview" in the Tableau Help.

Best Practices for Installing Tableau Server on the Google Cloud Platform

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

The following best practices make installing Tableau Server in the cloud a better experience.

- Search for "Plan Your Deployment" in the Tableau Server Help.
- Read the Tableau Server on Google Cloud Platform Prerequisites.
- Search for "Security Hardening Checklist" in the Tableau Server Help

- If you're new to the cloud, use the Google Cloud Platform free tier to get familiar with working in the cloud before you deploy Tableau Server on the Google Cloud Platform.
- Read Google Cloud Platform best practices for enterprise organizations.
- Read about and understand network topology on the Google Cloud Platform and how to architect it.

Keeping Costs Down

The Google Cloud Platform offers cloud-based services on a pay-as-you-go basis. Costs are determined by the services you run and amount of time you use them. Different combinations of instance types and sizes have different costs. For more information about services pricing, see Google Cloud Platform pricing. You can estimate your total monthly costs using the Google Cloud Platform pricing calculator. You can also compare on-premises vs the cloud using the Google Cloud Platform TCO calculator.

To help monitor and control usage costs on an ongoing basis, you can set up billing alerts for the Google Cloud Platform to alert you when your monthly Google Cloud Platform costs reach your predefined spending threshold. For more information, see Set budgets and alerts at the Google website.

Tableau Server on the Google Cloud Platform Topology

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

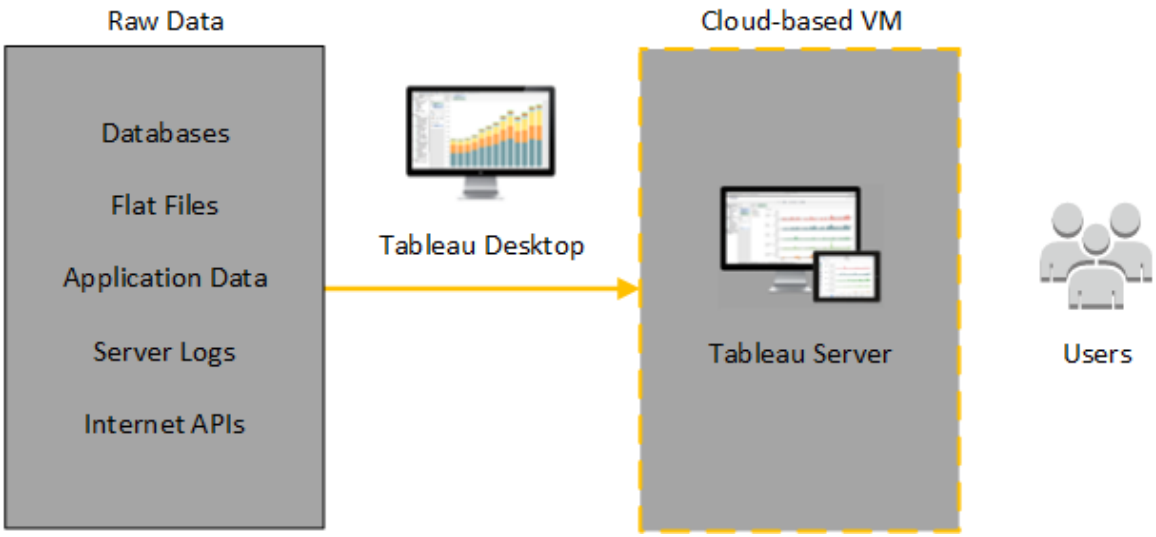
For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

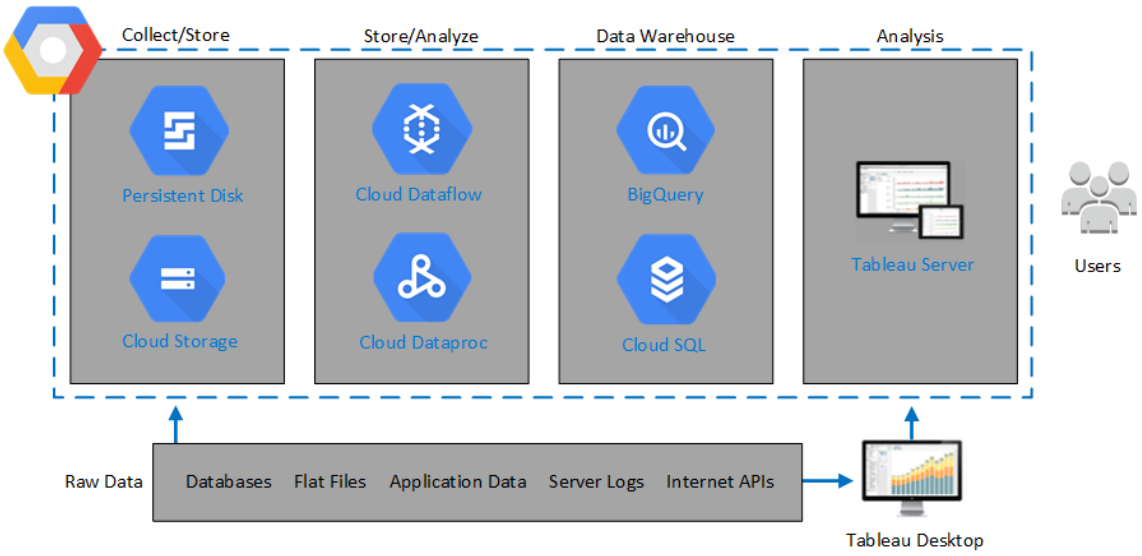
Introduction

When deploying Tableau Server on the Google Cloud Platform, you may choose the level and depth of integration between Tableau Desktop and Tableau Server on your Google Compute Engine (GCE) virtual machines (VMs). You can use Tableau Desktop and its ability to extract data from your data sources to act as a bridge between your data and Tableau. Based on your needs, or if you already have a lot of data in the Google Cloud Platform, you might instead choose to leverage the full range of Google Cloud Platform services in conjunction with Tableau Server. The following diagram shows data source integration with Tableau Desktop and Tableau.



In the following diagram, all of your data is hosted on the Google Cloud Platform. You can analyze both structured and unstructured data managed in a secure, scalable manner. You may leverage data that resides on the Google Cloud Platform only, unmanaged data that lives outside of the Google Cloud Platform, or a combination of both. This flexibility greatly increases

the ability of your organization to support moves to the cloud from on-premise data, since both types of data is supported equally.



Selecting a Google Compute Engine Virtual Machine Type and Size

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

The Google Cloud Platform offers many types of Google Compute Engine (GCE) virtual machines (VMs) in various sizes. Choosing the right VM for your workload is an important factor for a successful Tableau Server deployment. You can choose from a wide range of VMs. For a complete list of all available VM types and sizes, see the Machine Types page at the Google website.

It is important to select a VM that can run Tableau Server. The VM must meet the Tableau Server hardware guidelines (a minimum of 8 cores and 128 GB of RAM).

At minimum, a 64-bit Tableau Server requires a 4-core CPU (the equivalent of 8 Google Compute Engine vCPUs) and 64 GB RAM. However, a total of 8 CPU cores (16 Google Compute Engine vCPUs) and 128 GB RAM are strongly recommended for a single production Google Compute Engine VM.

Typical VM types and sizes for development, test, and production environments

- n2-standard-16

Recommended specifications for a single production instance

Component/Resource	**Google Cloud Platform**
CPU	16+ vCPU

Operating System

	2021-.4.x	2022.-1.0 - 2022.-1.11	2022.-1.12+	2022-.3.0 - 2022-.3.3	2022.-3.4+	2023-.1.0 - 2023-.1.7	2023.-1.8+	2023-.3.0	2023.-3.1+
AlmaLinux 8.x									✓
AlmaLinux 9.x									✓
Amazon Linux 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
Amazon Linux 2023									✓
CentOS 7.9+ (not 8.x)	✓	✓	✓	✓	✓	✓	✓	✓	✓
CentOS Stream 8.x									✓
CentOS Strea-									✓

	2021-.4.x	2022.-1.0 - 2022.-1.11	2022.-1.12+	2022-.3.0 - 2022-.3.3	2022.-3.4+	2023-.1.0 - 2023-.1.7	2023.-1.8+	2023-.3.0	2023.-3.1+
m 9.x									
Debian 9	**Note:** As of July 2022, Debian distributions are no longer supported. For more information, see this Tableau Community post.								
RHEL 7.3+	✓	✓	✓	✓	✓	✓	✓	✓	✓
RHEL 8.3+	✓	✓	✓	✓	✓	✓	✓	✓	✓
RHEL 9.x								✓	✓
Oracle Linux 7.3+ (not 8.x)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oracle Linux 8.x									✓
Oracle Linux 9.x									✓

		2021-.4.x	**2022.-1.0 - 2022.-1.11**	**2022.-1.12+**	**2022-.3.0 - 2022-.3.3**	**2022.-3.4+**	**2023-.1.0 - 2023-.1.7**	**2023.-1.8+**	**2023-.3.0**	**2023.-3.1+**
	Rocky Linux 8.x									✓
	Rocky Linux 9.x									✓
	Ubuntu 16.04 LTS	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ubuntu 18.03 LTS	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ubuntu 20.04 LTS			✓		✓	✓	✓	✓	✓
	Ubuntu 22.04 LTS							✓		✓
Memory	128+ GB RAM (4GB RAM per vCPU)									
Storage	Two volumes:									

	30-50 GiB volume for the operating system 100 GiB or larger volume for Tableau Server
Storage type	SSD persistent disk, 200GB++ For more information about SSD persistent disks, see Storage Options at the Google Cloud Platform website.
Disk latency	Less than or equal to 20ms as measured by the **iostat** command in Linux.

Self-Deploy a Single Tableau Server on the Google Cloud Platform

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

You can install and run Tableau Server on a Google Compute Engine (GCE) virtual machine (VM). Perform the following tasks to install and configure Tableau Server on a Google Compute Engine VM.

Step 1: Set up a Google Compute Engine VM

Create a Google Compute Engine virtual machine (VM) where you'll install Tableau.

1. Sign in to the Google Cloud Platform Console (https://console.cloud.google.com/).
2. If you haven't already, create a new project and set up billing. For more information, see Creating and Managing Projects at the Google website.
3. On the Google Cloud Platform dashboard, in the navigation pane, under **Compute**, click **Compute Engine**.
4. In the **Compute Engine VM instances** dialog box, click **Create**.
5. On the **Create an instance** page, specify the following instance properties:
    a. **Name:** Enter a name for your virtual machine (VM).
    b. **Zone:** To help reduce latency, choose the zone closest to your data source and users.
    c. **Machine type:** Select a VM that meets the system requirements for Tableau Server. For example, select the **n1-standard-16** machine type, click **Customize**, and then increase the memory to **64 GB**.
    d. **Container:** If selected, clear the **Deploy a container image to this VM instance** check box (the default).
    e. **Boot disk:** Click **Change**, and then select one of the supported Linux distributions, for example, **Ubuntu 16.04 LTS**, with a 128 GB SSD persistent disk, and then click **Select**.
    f. **Identity and API access:** Use the default setting.
    g. **Firewall:** Select **Allow HTTP traffic** and **Allow HTTPS traffic**.
6. When you've finished the settings, review your selections, and then click **Create**.

Step 2: Connect to your Google Compute Engine VM

After you create your Google Compute Engine (GCE) virtual machine (VM), you must connect to it and prepare it to install Tableau.

1. In the **Compute Engine** console, click **VM instances**.
2. In the list of VM instances, select your instance.
3. In the **Connect** column, click the **SSH** pop-up menu, and then click **Open in browser window**.

For more information about how to connect to Google Compute Engine VMs, see Connecting to Instances at the Google website.

Step 3: Install Tableau Server on your Google Compute Engine VM

Installing Tableau on a Google Compute Engine (GCE) virtual machine (VM) is similar to installing it on any other server.

1. Copy the Tableau Server installation program to your VM by doing one of the following:
   - **Download the installer directly**. While logged into the VM, open a browser, browse to the Tableau Server download page, and download the 64-bit version of Tableau.
   - **Copy the installer to the VM**. If you already have a copy of the Tableau installer on your computer, copy it to the VM. Create a folder on the VM where you want to put the installer. From your computer, upload the Tableau installer file (for example, tableau-server-2020-2-3.x86_64.rpm) to the VM. For more information about how to copy files to a Google Compute Engine VM, see Transferring Files to Instances at the Google website.

2. Run the Tableau installer on the VM to start the server installation process. The installation process works the same as it does on any other server. For more information, search for "Install and Configure Tableau Server" in the Tableau Help.

Step 4: Access Tableau Server from a remote browser

Make sure that only authorized users can access the Google Compute Platform virtual machine (VM) where you've installed Tableau.

1. In the Google Compute Platform console, under **Compute**, click **Compute Engine**, and then click **VM instances**. Find the external IP address associated with the VM.
2. On another computer (not on the VM), open a browser.
3. In the browser, type the external IP address of the Tableau you installed on the VM. For example, `http://13.64.47.61`.

   > **Note:** The external IP is an ephemeral address. It is released when you stop the instance and a new external IP is assigned on restart. If you stop your instance, you may need to retrieve the new external IP address to access the server using your browser. GCP provides persistent static IP addresses. This time the URL resolves correctly and you reach the sign-in page for your instance of Tableau Server.

4. Sign in using the credentials for the administrator user that you created at the end of the installation process. When you've signed in, you see the Tableau Server Content page.

For more information on controlling access to your Tableau Server, see "Identity Store" in the Tableau Server Help.

Step 5: Publish data to Tableau Server on your Google Compute Engine VM

After you set up Tableau Server on a Google Compute Engine (GCE) virtual machine (VM), authorized users in your organization can publish workbooks and data sources to the server. The process works the same way that it does if Tableau is installed on premises, except that users must sign in to the server that is running on the VM.

Before you allow users to publish, make sure that each user has been created with the Publisher site role in Tableau Server and that the users have Publisher permissions. For more information, search for "Add Users to the Server" in the Tableau Help.

To publish workbooks and data sources to Tableau, users must sign in to the server by using the cloud server IP address using credentials they've been assigned. For more information, see How to Publish Workbooks to a Tableau Server.

Step 6: Manage Tableau Server licenses

You don't need to manage your Tableau Server license if you shut down your Google Compute Engine (GCE) virtual machine (VM) using the Google Cloud Platform console or from inside the VM itself. When you stop a Google Compute Engine VM with persistent SSD disk using the GCP Compute Engine console, the VM does not incur charges, but resources attached to the VM will still incur charges.

Deleting a VM deallocates all of its resources, including external storage. You might delete your VM when you no longer need it. Always deactivate your Tableau license before you shut down and delete your VM.

Before you delete your VM, do the following:

1. Sign in to your VM.
2. Create a backup of Tableau, and then copy the `.tsbak` file to another location, such as Google Cloud Storage, that will be accessible after the VM is no longer available. For

more information, search for "Perform a Full Backup and Restore of Tableau" in the Tableau Help.

3. Use the tsm licenses deactivate command to deactivate your Tableau product key. You can now shut down and delete your VM.

Self-Deploy Tableau Server on the Google Cloud Platform in a Distributed Environment

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

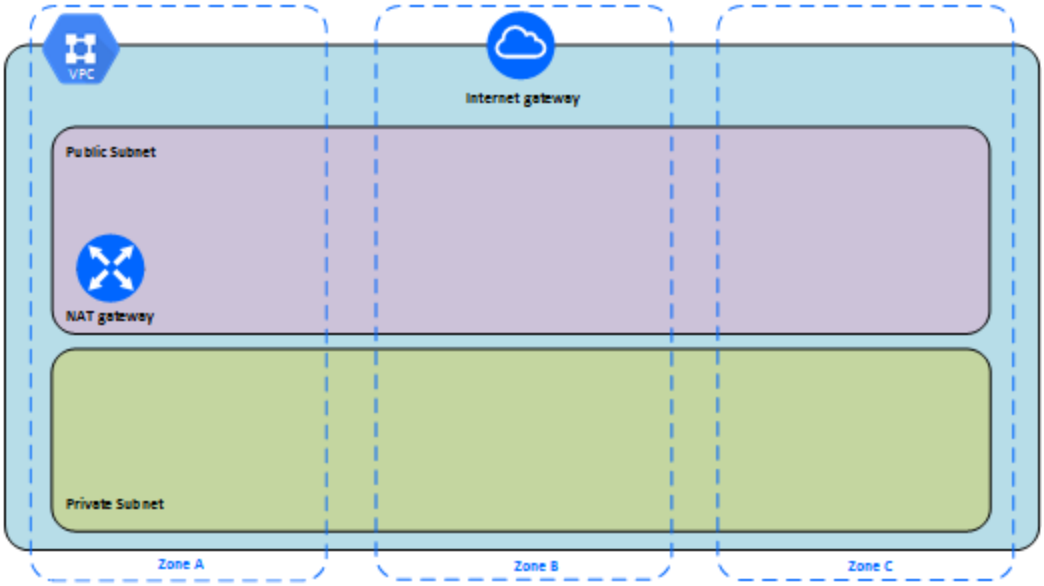
Introduction

You can run Tableau Server on two virtual machines (VMs) in a distributed environment, also known as a cluster. However, if you want to run Tableau Server in a highly available (HA) distributed environment, you need to launch three or more Google Compute Engine (GCE) virtual machines (VMs) of the same type and capacity and configure them as additional nodes. This scenario assumes that you have three Google Compute Engine VMs with Tableau Server installed on each instance. One instance is configured as the initial node, and the other two instances are configured as additional nodes.

Use the following steps to install and deploy Tableau Server on a cluster of three Google Compute Engine VMs in a highly available and scalable configuration.

Step 1: Create a Google Cloud Platform Virtual Private Cloud (VPC)

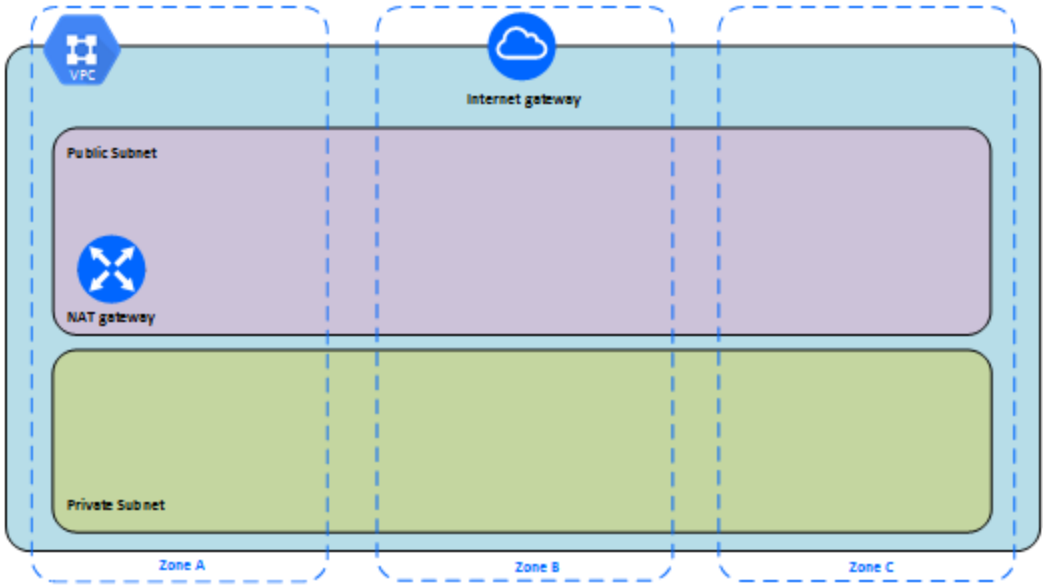
You must have an existing Google Cloud Platform custom mode Virtual Private Cloud (VPC) with a private and a public subnet across three different zones. For information about how to plan and create a custom mode VPC network with custom subnets, see Using VPC Networks at the Google website.



Step 1: Create a Google Cloud Platform HIPAA-aligned project

Referring to the Setting up a HIPAA-aligned Google Cloud project tutorial, and relying on the Cloud Healthcare Data Protection Toolkit, this architecture helps you build a Google Cloud-based infrastructure with few steps by treating the configuration as code. The following diagram illustrates how the architecture helps you meet security and compliance best practices by using reusable building blocks: a Google Cloud Cloud Deployment Manager configuration

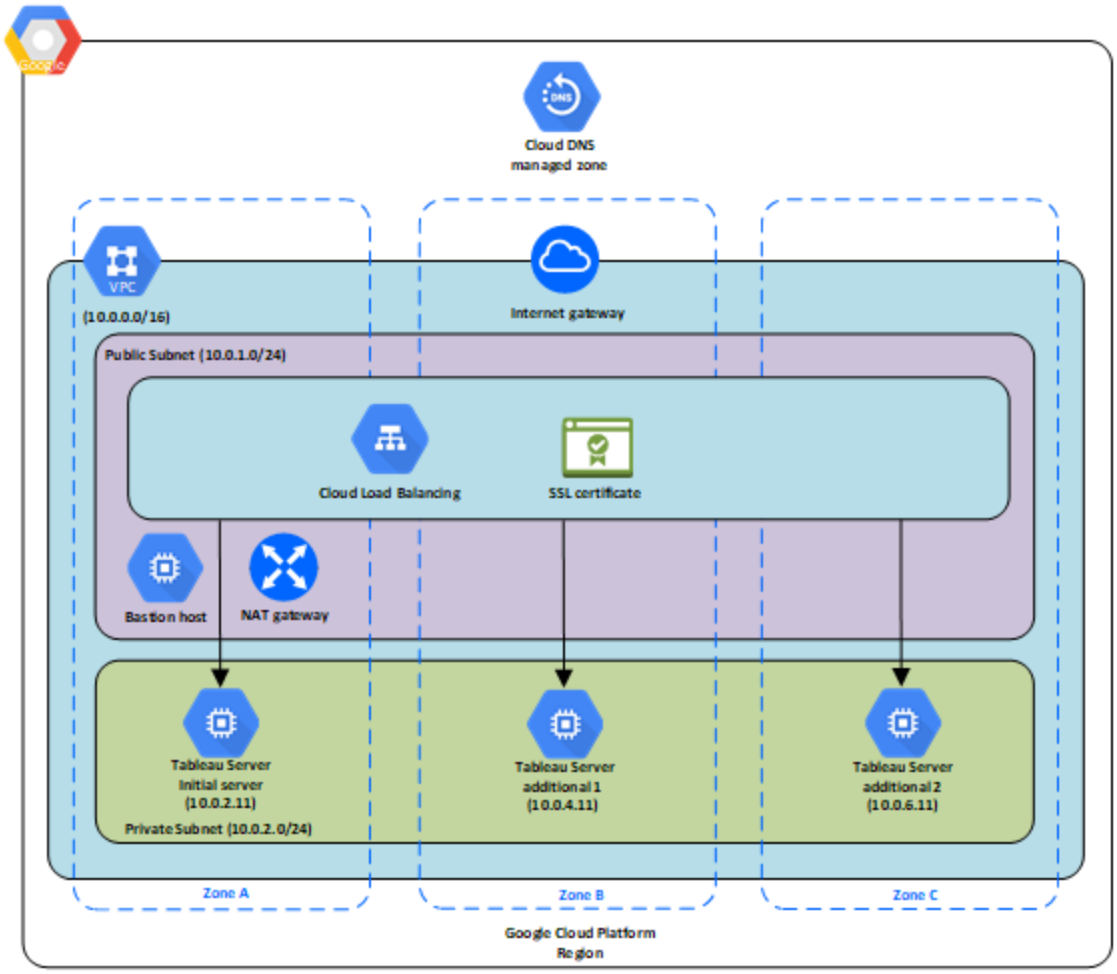
script and parameterized configuration templates.



Step 2: Deploy Three Google Compute Engine VMs

Deploy three Google Compute Engine virtual machines (VMs) of the same type and capacity, in the private subnet, with each VM in its own zone. Select VMs that meet the system requirements for Tableau Server. You'll install Tableau Server on each of the Google Compute Engine VMs, and use one node as the initial server and the two other nodes as additional servers.

For more information about installing Tableau in a distributed Linux environment, search for "Distributed and Highly Available Installations" and "Install and Configure Additional Nodes" in the Tableau Server Help.



Step 3: Create a Google Cloud Platform Load Balancer for the Tableau Server Cluster

Read Setting up a load balancer at the Google website, and follow the steps to launch a load balancer within your Google Cloud Platform Virtual Private Cloud (VPC).

1. Create and launch either an Internet-facing load balancer or an internally accessible load balancer:

    - To launch a public, Internet-facing load balancer, follow the steps in Setting Up HTTP(S) Load Balancing at the Google website, and select the two public

subnets. Make sure that you configure the load balancer with SSL, as explained in SSL Certificates at the Google website.

- To launch an internally accessible load balancer, follow the steps in Setting Up Internal Load Balancing at the Google website, and select the two private subnets.

2. Ensure that your VPC network firewall rules are configured to allow access on port 80 or 443 only, with the source limited to hosts or ranges of hosts that will access Tableau. For more information about firewall rules, see Firewall Rules Overview at the Google website.
3. Specify the ping path as /.
4. Select the Tableau instances and follow the instructions in Creating Cross-Region Load Balancing at the Google website, so that the load balancer can balance the traffic across the instances in multiple zones.
5. Update Tableau to use the load balancer. For more information, search for "Add a Load Balancer" in the Tableau Server Help.

Troubleshooting Tableau Server on the Google Cloud Platform

This is archived content

Deployments on public clouds continue to be supported but the content for third-party public cloud deployments is no longer updated.

For the latest Tableau Server deployment content, see the Enterprise Deployment Guide and the Deploy section of Tableau Server help.

For those customers who have access, we recommend Tableau Cloud. For more details, see:

- Tableau Cloud Manual Migration Guide
- Tableau Cloud Trial for Admin
- Tableau Cloud: Get Started for Admin

Introduction

If you're having trouble with Tableau on your Google Compute Engine (GCE) virtual machine (VM), or with getting access to Tableau after installation, review these troubleshooting tips.

- **Cannot access the server from a remote browser**

  One or more of the following issues might prevent you from accessing the server from a remote browser:

  - Sign in to the instance and make sure that the server is running.
  - In the GCP Compute Engine console, make sure that you've configured an end-point to allow HTTP traffic to the instance.

- **You receive the following error message: Tableau Server is unlicensed**

  This error can occur if you've shut down instances without first deactivating the license. Contact Tableau Support.

- **Tableau Server does not use all CPU cores**

  One or more of the following symptoms might occur when working with Tableau Server core-based licensing:

  - When installing Tableau Server, the installer might show fewer cores than you would expect to see for the computer running Tableau Server.
  - On the Licenses page on Tableau Server, the number of cores listed under Licenses in Use is less than you would expect to see.
  - When you run `tsm licenses list`, Tableau Server might report fewer cores in use that you would expect to see.

  For more information, see Not All Cores Recognized by Tableau Server.