



Denodo 8.0 Enterprise for GCP BYOL - Quick Start Guide

Revision 20220919

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CONTENTS

1 IMPORTANT NOTICE.....	4
2 OVERVIEW.....	5
3 MARKETPLACE OFFERING OVERVIEW.....	5
4 REQUIREMENTS: OBTAIN A DENODO ENTERPRISE LICENSE...5	
5 DENODO BYOL DEPLOYMENT OVERVIEW.....	6
6 DENODO SM 8.0 DEPLOYMENT STEPS.....	6
6.1 OVERVIEW.....	6
6.2 SM1 - DENODO SM VIRTUAL MACHINE DEPLOYMENT.....	6
6.3 SM2 - INSTALL DENODO SM LICENSE.....	8
6.4 SM3 - START DENODO SM SERVICES.....	8
6.5 SM4 - LOG INTO THE DENODO SM ADMINISTRATION TOOL.....	9
6.6 SM5 - CREATE ONE OR MORE STANDARD MODE ENVIRONMENTS.....	9
6.7 SM6 - REGISTER ONE OR MORE DENODO SERVERS.....	10
6.8 SM7 - LOG INTO THE DESIGN STUDIO.....	10
7 DEPLOY THE DENODO VDP VM.....	11
7.1 OVERVIEW.....	11
7.2 VDP1 - LAUNCH THE DENODO VDP VM.....	11
7.3 VDP2 - CONFIGURE A SOLUTION MANAGER.....	13
7.4 VDP3 - START DENODO SERVICES.....	14
7.5 VDP4 - LOGIN TO THE DESIGN STUDIO WEB TOOL.....	14
8 SECURITY CONFIGURATION.....	15
8.1 CHANGING THE DEFAULT VDP ADMINISTRATION PASSWORD.....	15
8.2 VDP CLIENT ACCESS FROM OUTSIDE OF VM.....	15
8.3 ENABLING SSL.....	16
8.4 ENABLING DENODO SECURITY TOKEN.....	16
9 FURTHER RECOMMENDED STEPS.....	17

1 IMPORTANT NOTICE

Starting in September 2022, the Denodo Enterprise BYOL for GCP Marketplace has been replaced by [Denodo Platform BYOL for GCP Marketplace](#).

2 OVERVIEW

[Denodo Technologies](#), the data virtualization leader for unifying enterprise data and delivering data services for the business, is providing [Denodo Platform](#) available on GCP as bring your own license (BYOL) virtual machine (VM). The VMs contain the latest versions of Denodo Solution Manager and Denodo VDP, optimized for use with the GCP Virtual Machines service.

Thank you for your confidence in choosing [Denodo as your data virtualization technology!](#)

This quick start guide will give you an overview of the Denodo Enterprise and how to quickly start building data virtualization solutions on GCP.

3 MARKETPLACE OFFERING OVERVIEW

This Denodo for GCP offering is based on a Bring Your Own License (BYOL) model under your GCP project.

It is expected that you already have a GCP project that you can use to logon to the GCP Marketplace in order to create and launch the Denodo VM BYOL through the GCP Console. And you are responsible for operating your own GCP project.

The Denodo VM BYOL consists of the same engine as the Denodo Enterprise. Some of the key features include:

- The Denodo Solution Manager (SM), to manage your Denodo deployment.
- The Denodo Virtual DataPort (VDP), the core Denodo Data Virtualization engine, to integrate data from any data source and deliver it to any consumer in any format.
- The Denodo Scheduler, for scheduling data pipelines and cache loads among other tasks.

The VMs available are based on CentOS Linux:

- A Linux Server Virtual Machine with Denodo Solution Manager.
- A Linux Server Virtual Machine with Denodo VDP and Denodo Scheduler.

In the sections below you can find more information on how to deploy.

4 REQUIREMENTS: OBTAIN A DENODO ENTERPRISE LICENSE

This is a BYOL offering and requires you to work with Denodo directly to obtain licenses. If you currently do not hold a license agreement for Denodo, please [contact Denodo directly](#) to get a license to use the software.

5 DENODO BYOL DEPLOYMENT OVERVIEW

Once you have obtained a Denodo license:

- Deploy one Denodo SM 8.0 on Linux Server BYOL virtual machine.
- Deploy one or more Denodo VDP 8.0 on Linux Server BYOL virtual machine, connected to the Denodo SM previously deployed.

6 DENODO SM 8.0 DEPLOYMENT STEPS

6.1 OVERVIEW

The high level list of steps needed to provision and configuring your Denodo SM BYOL on GCP is the following:

1. Deploy the Denodo SM virtual machine through your GCP console.
2. Install Denodo SM License in the Denodo SM VM.
3. Start Denodo Services in the Denodo SM VM.
4. Log in the Solution Manager Administration Web Tool.
5. Create one or more environments.
6. Register one or more Denodo servers.
7. Connect to a VDP Server with Design Studio

All the process can take an approximate time of 30 to 50 minutes.

6.2 SM1 - DENODO SM VIRTUAL MACHINE DEPLOYMENT

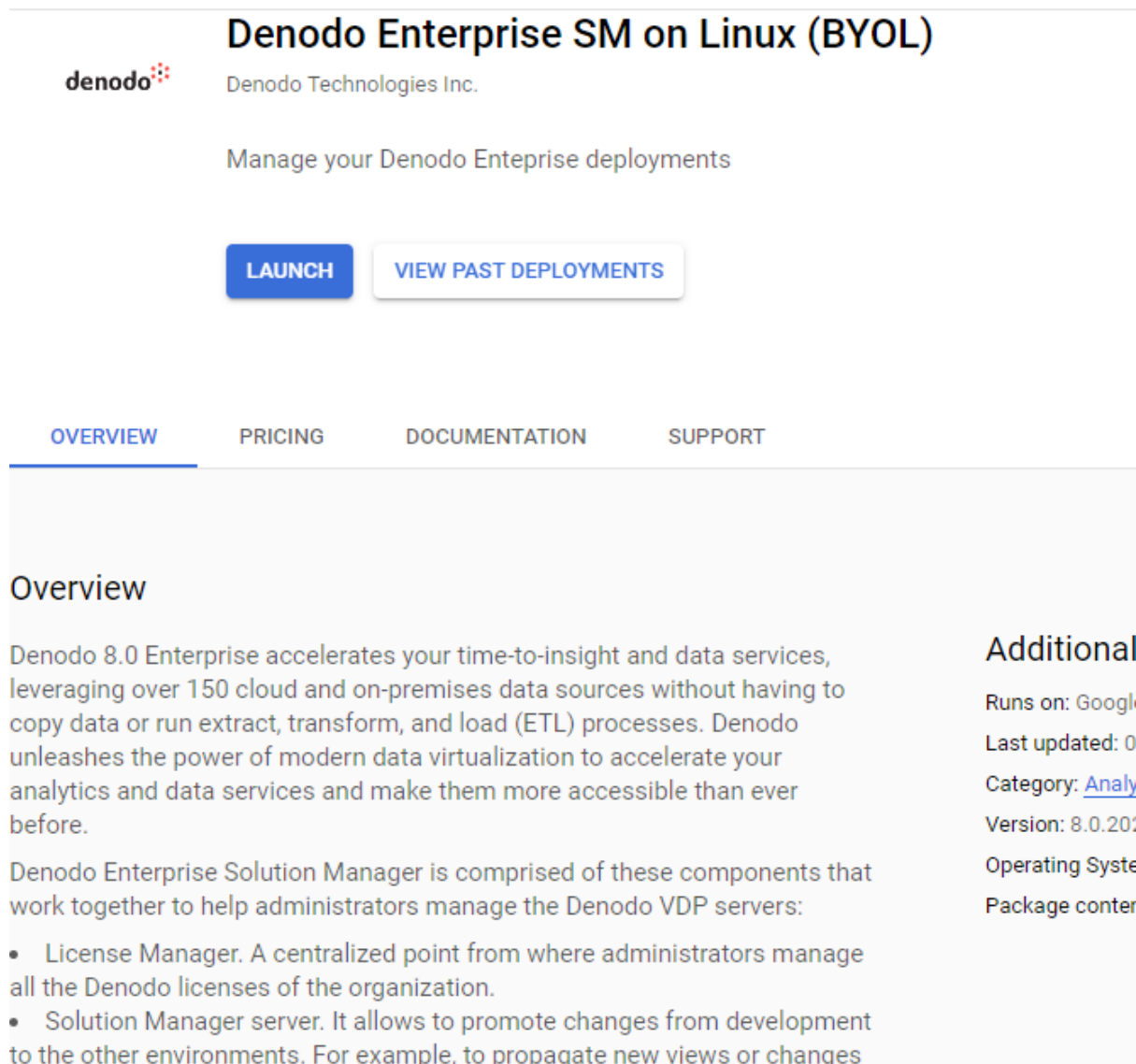
You are responsible for operating your own GCP project.

You can create and launch your Denodo SM for GCP BYOL VM using your GCP user.

The GCP offering includes a Linux Server Virtual Machine with Denodo SM 8.0 installed.

Log on to the GCP Marketplace and search for the [Denodo Enterprise SM for GCP BYOL listing](#).

Note: The GCP interface is subject to change and the exact options you see depend on whether or not you have existing projects.



Denodo Enterprise SM on Linux (BYOL)

denodo Denodo Technologies Inc.

Manage your Denodo Enterprise deployments

[LAUNCH](#) [VIEW PAST DEPLOYMENTS](#)

[OVERVIEW](#) [PRICING](#) [DOCUMENTATION](#) [SUPPORT](#)

Overview

Denodo 8.0 Enterprise accelerates your time-to-insight and data services, leveraging over 150 cloud and on-premises data sources without having to copy data or run extract, transform, and load (ETL) processes. Denodo unleashes the power of modern data virtualization to accelerate your analytics and data services and make them more accessible than ever before.

Denodo Enterprise Solution Manager is comprised of these components that work together to help administrators manage the Denodo VDP servers:

- License Manager. A centralized point from where administrators manage all the Denodo licenses of the organization.
- Solution Manager server. It allows to promote changes from development to the other environments. For example, to propagate new views or changes

Additional

Runs on: Google Cloud
Last updated: 0
Category: [Analytics](#)
Version: 8.0.20220919
Operating System: Linux
Package container: Docker

And then click the *LAUNCH* button.

Then, *Select a project* or *Create a project* page could be the next. Enter a project name and select a value from the Organization drop-down, then click the Create button.

After selecting the Denodo Solution Manager 8.0 BYOL on Linux Server available through the GCP Marketplace you have to complete some few configuration steps in order to launch the Denodo virtual machine through the GCP console.

NOTE: see [Denodo SM Hardware Requirements](#) before choosing the VM Size.

New Denodo Enterprise SM on Linux (BYOL) deployment

i Google Cloud Marketplace does not permit the reselling of any Marketplace solutions, as stated in the [Marketplace Customer Terms of Service](#). If you are transacting under a reseller billing account, you cannot purchase Marketplace solutions. Contact your Google Cloud Partner Sales Manager for more information.

i Product preview. Go through the deployment flow available to Cloud Marketplace customers. Pricing info may not be reflected in the preview

Deployment name *

Zone

Machine type

Machine family


GENERAL-PURPOSE COMPUTE-OPTIMISED

Machine types for common workloads, optimised for cost and flexibility

Series

CPU platform selection based on availability

Machine type

 **Denodo Enterprise SM on Linux (BYOL)**
 Product provided by Denodo Technologies Inc.

Launching a BYOL product

Denodo Enterprise SM on Linux (BYOL) is a BYOL (Bring Your Own) product. Marketplace will deploy this product, but you are responsible for purchasing and managing the licence directly from the provider

Software

Operating system	CentOS Stream(8)
Software	Denodo Platform SM(8.0.20220126)

Terms of Service

By deploying the software or accessing the service you are agreeing to [Denodo Technologies Inc. terms of service](#), [GCP Marketplace Terms of Service](#), and applicable open source software licences bundled with the service. Please review these terms and licences carefully for details about obligations that you may have related to the software or service. To the extent that an open source software licence related to the software or service supersedes the GCP Marketplace Terms of Service, that open source software licence governs your use of that software or service.

By using this product, you understand that certain account and usage information is collected and used for product improvement purposes.

Then Click the *Deploy* button.

6.3 SM2 - INSTALL DENODO SM LICENSE

The Denodo services require a Denodo license to start.

Once the Denodo SM BYOL VM is running you have to log in Linux with your user through a SSH Connection. Detailed instructions are available on [Connect to a Linux Virtual Machine](#).

Then copy your previously obtained Denodo Solution Manager license file to the GCP VM, rename the file as *denodo.lic*, and save it in the following directory:

```
/opt/denodo/denodo-solution-manager-8.0/conf
```

6.4 SM3 - START DENODO SM SERVICES

Logged in with your user through SSH and once a Denodo license is installed you can start enjoying Denodo software.

Use the terminal to run these commands in your instance to start Denodo services in the following order:

```
sudo systemctl start licensemanagerserver
sudo systemctl start solutionmanagerserver
```

After executing those commands the following services will be started:

1. Denodo License Manager Server.

2. Denodo Solution Manager Server.
3. Denodo Solution Manager Web Tools.

You can check the status of the Denodo Services with the following commands:

```
systemctl status licensemanagerserver
systemctl status solutionmanagerserver
```

And you can stop the Denodo Services with the following commands:

```
sudo systemctl stop licensemanagerserver
sudo systemctl stop solutionmanagerserver
```

NOTE: The Denodo services are not configured to start at instance boot time. You can configure those services to start at instance boot time with the commands:

```
sudo systemctl enable licensemanagerserver
sudo systemctl enable solutionmanagerserver
```

6.5 **SM4 - LOG INTO THE DENODO SM ADMINISTRATION TOOL**

The Solution Manager is a component to help you manage Denodo deployments.

Once you logged in, the [Denodo Solution Manager Administration Tool](#) provides a single point of entry to all the web applications of the Denodo deployment.

Check first the list of [Supported Browsers for Solution Manager admin tool](#).

Then use a supported browser to point to the URL to access Denodo Solution Manager Administration Tool with the following pattern:

```
http://<sm_ip>:19090/solution-manager-web-tool/Login
```

Where *<sm_ip>* is the IP address or DNS name for the Solution Manager virtual machine in the stack deployed.

NOTE: the application may take some time to start so you may need to wait for a couple of minutes before the link works correctly. You may get a connection error or a '404 Not Found' error if you try to access it before the service has completely started.

The user is *admin* and the password by default is *admin* so the recommendation is to [change the default password first thing](#):

- Go to the Configuration menu.
- Click on *User management*.
- Click the *Edit* icon on the right side for the *admin* user.
- Set the new password.

Then logout and sign in again with *admin* as username and the new password.

6.6 **SM5 - CREATE ONE OR MORE STANDARD MODE ENVIRONMENTS**

A [Denodo Environment](#) is defined as a set of servers, of the same or different type, working together for a common purpose. For example, Production, Development or Staging environments.

For [creating a new Platform Mode Environment](#) from the Denodo Solution Manager Administration Web Tool:

- Click on Environments > New Environment.
 - Choose Platform Mode.
 - Click on Create Environment.
 - Set a Name for this environment.
 - Select the License scenario for this environment.
 - Save this new environment.
- Click over the new environment on the left side > New Cluster.
 - Set a Name for this cluster.
 - Save this new cluster.
 - Click on the left side of the Environment and the new cluster will be displayed underneath

Repeat above steps for all environments and clusters you want to set up.

With the environment and cluster created everything is ready to add Denodo servers like VDP or Scheduler.

6.7 **SM6 - REGISTER ONE OR MORE DENODO SERVERS**

Last step is registering deployed Denodo servers (like VDP or Schedulers) in created clusters.

Instructions on how to deploy a Denodo VDP Virtual Machine are available in a chapter below in this guide.

For [adding a new Denodo server to a cluster](#) from the Denodo Solution Manager Administration Web Tool:

- Click over the environment
- Click over the cluster > New Server.
 - Set a Name for this server.
 - Select the Type of server. There are different types available: Virtual DataPort, Scheduler, ITPilot Browser Pool, ITPilot Verification or Data Catalog. In this case, add a Virtual DataPort Server.
 - Set the Host, Port, Type, User, Password and Default database.
 - Save this new server.

Repeat above steps for all deployed Denodo servers.

6.8 **SM7 - LOG INTO THE DESIGN STUDIO**

The Design Studio provides a web interface to the developers to create data sources, base views, derived views, publish web services, etc.

Check first the list of [Supported Browsers for the Design Studio tool](#).

Then use a supported browser to point to the following URL of the Design Studio Web Tool following the pattern:

`http://<sm_ip>:19443/denodo-design-studio/`

Where `<sm_ip>` is the IP address or DNS name for the Solution Manager virtual machine in the stack deployed.

In the Solution Manager Web Tool homepage you have links to the Design Studio and Scheduler Web Tools: select the Environment and then click on the Open link for going to the homepage of the Design Studio preloaded with the connection data to the cluster in that environment.

Refer to [Main Areas of the Design Studio](#) for more information.

Note that certain administrative tasks like cache configuration, setting-up the authentication, user management, etc can be done by graphical way only by using the Virtual Dataport Administration tool (desktop based).

7 DEPLOY THE DENODO VDP VM

7.1 OVERVIEW

The high level list of steps needed to provision and configuring your Denodo VDP BYOL is the following:

1. Launch the Denodo Enterprise VDP VM
2. Configure a Solution Manager
3. Start Denodo Services
4. Login to the Design Studio

Note: The GCP interface is subject to change and the exact options you see depend on whether or not you have existing projects.

7.2 VDP1 - LAUNCH THE DENODO VDP VM

Log on to the GCP Marketplace and access the [Denodo Enterprise VDP \(BYOL\)](#).

And then click the *LAUNCH* button.



Denodo Enterprise VDP BYOL

Denodo Technologies Inc.

Integrate and Deliver Your Data in Real Time Without Replication

LAUNCH

VIEW PAST DEPLOYMENTS

OVERVIEW

PRICING

DOCUMENTATION

SUPPORT

Overview

Denodo Enterprise helps you to accelerate your time-to-insight and data services delivery, leveraging over 150+ cloud, SaaS and on-premises data sources and applications to deliver trusted data. Denodo Enterprise provides real-time integrated business views that can combine GCP native databases, data science and machine learning (ML) services.

With Denodo Web-based no-code/low-code development environment you can quickly create SQL, REST, OData based data services and data fabric architecture based logical data warehouse solutions. Denodo leverages metadata and integrates with Single Sign-On to make sure your data is

Additional details

Runs on: Google Compute Engine

Last updated: 09/02/2022

Category: [Analytics](#), [Big data](#), [Datab](#)

Version: 8.0.202201261

Operating System: CentOS Stream 8

Package contents: Denodo Enterpri:

Then, *Select a project* or *Create a project* page could be the next. Enter a project name and select a value from the Organization drop-down, then click the Create button.

After that the deployment configuration appears where you can select appropriate values for zone, machine type, and so on.

New Denodo Enterprise VDP BYOL deployment

i Google Cloud Marketplace does not permit the reselling of any Marketplace solutions, as stated in the [Marketplace Customer Terms of Service](#). If you are transacting under a reseller billing account, you cannot purchase Marketplace solutions. Contact your Google Cloud Partner Sales Manager for more information.

i Product preview. Go through the deployment flow available to Cloud Marketplace customers. Pricing info may not be reflected in the preview

Deployment name *
 denodo-80-enterprise-vdp-byol-lnx-dra-1

Zone
 europe-west4-a

Machine type

Machine family

GENERAL-PURPOSE COMPUTE-OPTIMISED MEMORY-OPTIMISED

Machine types for common workloads, optimised for cost and flexibility

Series
 N2

Powered by Intel Cascade Lake and Ice Lake CPU platforms

Machine type
 n2-standard-4 (4 vCPU, 16 GB memory)

denodo **Denodo Enterprise VDP BYOL**
 Product provided by Denodo Technologies Inc.

Launching a BYOL product

Denodo Enterprise VDP BYOL is a BYOL (Bring You Marketplace will deploy this product, but you are re and managing the licence directly from the provide

Infrastructure fee
 VM instance: 4 vCPUs + 16 GB memory (n2-standard-4)
 Solid State Disk: 20GB
 Sustained-use discount **?**

Estimated monthly total

Software

Operating system	CentOS Stream(8)
Software	Denodo Enterprise(8.0.20220

For choosing the machine type please see [Denodo Hardware Requirements](#).

Then Click the *Deploy* button.

As soon as the project deploys, and the new virtual machine (VM) instance starts running, the following services are automatically started:

- Denodo VDP Server.
- Denodo Web Container for accessing Denodo Design Studio web tool.
- HTTP web server to allow access to Usage Instructions described in the following sections.

7.3 VDP2 - CONFIGURE A SOLUTION MANAGER

The Denodo services require a Denodo license to start.

Log in the Denodo VDP for GCP BYOL on Linux with your user through a SSH Connection. Detailed instructions are available on [Connect to a Linux Virtual Machine](#).

You need a Denodo Solution Manager installed and running, and accessible in the same network from the Denodo VDP for GCP virtual machine through internal IPs registered in the internal DNS.

The Denodo servers need to be previously registered in the Denodo Solution Manager in one of the clusters for an environment. You can find more detailed information on the Denodo official documentation on [how to create a server in the Solution Manager](#). Be sure of declaring the correct hostname of the Denodo server.

You can register the following Denodo servers in the Denodo Solution Manager: VDP Server; Scheduler Server; Data Catalog Server.

Then, in the Denodo VDP for GCP BYOL VM logged as your GCP user edit the `/opt/denodo/denodo-platform-8.0-linux64/conf/SolutionManager.properties` file and set the value of these properties:

1. `com.denodo.license.host`: the License Manager's host, this should be the IP or hostname for your previously deployed Denodo Solution Manager where the Denodo VDP server is declared.
2. `com.denodo.license.port`: the License Manager's port, by default is 10091.

7.4 VDP3 - START DENODO SERVICES

Logged in with your GCP user through SSH and once a Denodo license is installed you can start enjoying Denodo software.

Use the terminal to run this command to start the Denodo VDP Service:

```
sudo systemctl start vqlserver
```

Additionally you can start other Denodo Services (if they are allowed by your acquired Denodo License):

```
sudo systemctl start schedulerserver  
sudo systemctl start schedulerwebadmintool  
sudo systemctl start designstudio  
sudo systemctl start datacatalog  
sudo systemctl start diagnosticmonitoringtool
```

You can check the status of the Denodo Services with the following commands:

```
sudo systemctl status vqlserver  
sudo systemctl status schedulerserver  
sudo systemctl status schedulerwebadmintool  
sudo systemctl status designstudio  
sudo systemctl status datacatalog  
sudo systemctl status diagnosticmonitoringtool
```

NOTE: The Denodo services are not configured to start at instance boot time. You can configure those services to start at instance boot time with the commands:

```
sudo systemctl enable vqlserver  
sudo systemctl enable schedulerserver  
sudo systemctl enable schedulerwebadmintool  
sudo systemctl enable designstudio  
sudo systemctl enable datacatalog  
sudo systemctl enable diagnosticmonitoringtool
```

7.5 VDP4 - LOGIN TO THE DESIGN STUDIO WEB TOOL

The Design Studio provides a web interface to the developers to create data sources, base views, derived views, publish web services, etc.

The URL of the Design Studio Web Tool follows the pattern:

`http://<vm_ip>:9090/denodo-design-studio/`

Where `<vm_ip>` is the IP address or DNS name for the Denodo VDP virtual machine in the deployment.

The username is *admin* and the password is the one you can see in the GCP Console for the deployment.

Refer to [Main Areas of the Design Studio](#) for more information.

8 SECURITY CONFIGURATION

There are a couple of optional steps that we recommend you to take in order to improve the security of your GCP deployment.

8.1 **CHANGING THE DEFAULT VDP ADMINISTRATION PASSWORD**

As the first step of the configuration of your new Denodo virtual machine [you should change the default administrator password](#). It is extremely important that you change this default password to ensure that you are operating under a secure environment.

8.2 **VDP CLIENT ACCESS FROM OUTSIDE OF VM**

You have to configure the Virtual DataPort server in order to receive connections from external clients to the VM.

The default ports for the Denodo based on the connection protocol are:

- JDBC: TCP 9999 (additionally the TCP 9997 port has to be available).
- ODBC and ADO.NET: TCP 9996.
- Web Container: TCP 9090.

VM must be configured to allow the connections to ports enumerated above according to the connection protocol needed:

1. Update the GCP network Security associated to the VM network interface using the GCP Portal.
2. Update the Windows firewall in The Denodo VDP for GCP BYOL VM. You have to set up the appropriate Windows firewall rules. Log in the VM, start Control Panel > System and Security > Windows Firewall (or open PowerShell or Command Prompt and enter 'firewall.cpl'), clicking the advanced settings button, and create the Inbound Rules needed.

As a side note, take into account that by default an ephemeral external IP address is assigned to the VM instance. If you require a static external IP address, you may promote the address to static. Be sure that the VDP server is set correctly for accepting connections through that IP by [changing the Host Name in the VDP server](#).

8.3 ENABLING SSL

You can find details about how to secure with SSL the connections between the Solution Manager servers, the administration tools and their clients in [Enable SSL in the Solution Manager](#).

Additionally you can find details about how to secure the connections for Denodo VDP servers in [Enable SSL in Denodo](#).

8.4 ENABLING DENODO SECURITY TOKEN

Solution Manager requires privileged connections to manage the Denodo VDP servers. It uses a temporary system token with the necessary permissions to perform administrative tasks and therefore, the Denodo VDP server must be configured with Denodo Security Token authentication in order to validate these tokens.

See [Enable Denodo Security Token](#) for details.

9 FURTHER RECOMMENDED STEPS

Once you are all set to start building your data virtualization solutions on GCP, we recommend that you check out all the available information:

- [Denodo tutorials](#)
- [How-to videos](#)
- [Denodo Test Drives](#)
- [Knowledge base](#)
- [Product documentation](#)
- [Denodo on Cloud Marketplace FAQ](#)