

Oracle® Cloud

Administering Oracle Visual Builder in Oracle Integration Generation 2



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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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Preface

This guide describes tasks for administrators of Visual Builder.

Audience

This guide is intended for administrators who will set up and configure the service.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <https://www.oracle.com/corporate/accessibility/>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <https://support.oracle.com/portal/> or visit [Oracle Accessibility Learning and Support](#) if you are hearing impaired.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

For more information, see these Oracle resources:

- Oracle Public Cloud
<http://cloud.oracle.com>
- About Visual Builder in *Developing Applications with Oracle Visual Builder in Oracle Integration Generation 2*
- Welcome to Oracle Integration Generation 2 in *Getting Started with Oracle Integration Generation 2*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Administer Visual Builder Instances

You use the Oracle Cloud Infrastructure Console to manage Visual Builder instances provisioned in Oracle Integration, for example, to add instances. Each of your Visual Builder instances also has an Administrative Settings page where you can specify global settings that are applied to that instance.



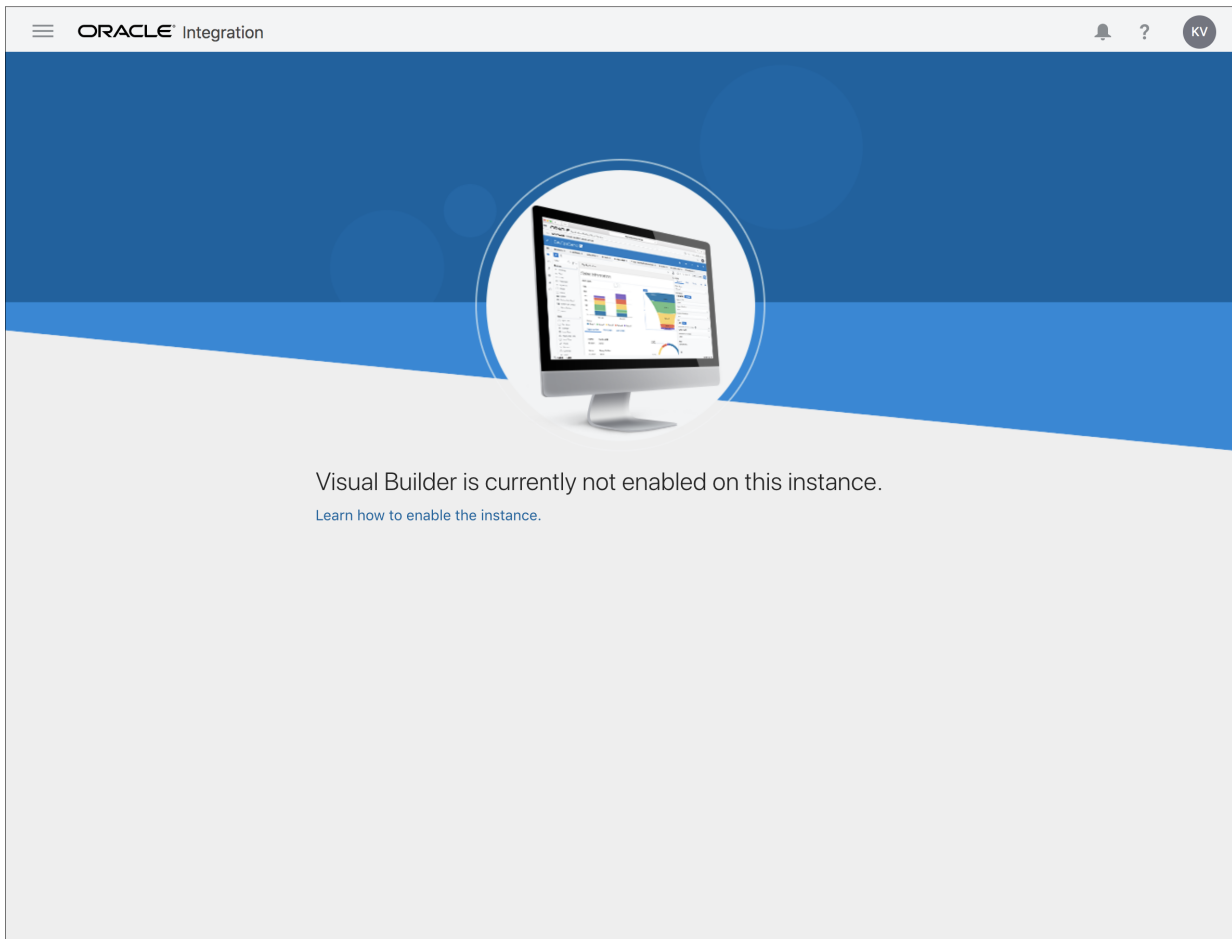
Note:

If your Visual Builder instance was not provisioned in Oracle Integration, you should refer to Get Started with Oracle Visual Builder Generation 2 in *Administering Oracle Visual Builder Generation 2* to create and configure Visual Builder instances instead of this guide.

Enable Visual Builder in Oracle Integration

To begin using Visual Builder in Oracle Integration, it must first be enabled for the Oracle Integration instance in the Oracle Cloud Infrastructure Console. Enabling Visual Builder is a one time action and cannot be undone.

If you select Visual Builder from the navigation pane and it's not yet enabled for Oracle Integration, the following message appears:



Important points about enabling Visual Builder:

- Enablement applies to Oracle Integration Generation 2. A Visual Builder link is available in the side navigation pane. When you select the link, instructions for enabling Visual Builder are displayed if it is not yet enabled.
- To enable Visual Builder for an Oracle Integration instance, you must have Oracle Cloud Infrastructure manage access to the instance. See Set Up Users, Groups, and Policies in *Provisioning and Administering Oracle Integration Generation 2*.
- You must enable Visual Builder on each Oracle Integration instance on which you want to use it. Current Oracle Integration Generation 2 users who have used Visual Builder in the past will be automatically enabled.

To enable Visual Builder:

1. Select your instance in the Oracle Cloud Infrastructure Console.
The Integration Instance Details page is displayed.
2. Click the **Enable** link for Visual Builder on the Integration Instance Information tab.
3. When prompted to confirm enabling Visual Builder, click **Enable**.

If you haven't yet set the required policies for the VB instance, you can use the **OCI Policy** link in the dialog box to open the Policies tab in Oracle Cloud Infrastructure Identity and Access Management (IAM).

After you click Enable, the Oracle Integration icon turns orange and its status changes to Updating. Enablement can take 15-30 minutes.

Once complete, the Oracle Integration icon changes back to green with an Active status, and Visual Builder shows as Enabled.

4. Configure Visual Builder settings.
 - a. Click **Service Console** from the buttons along the top of the Integration Instance Details page.
Oracle Integration is displayed.
 - b. From the left navigation pane, select **Visual Builder**.

Administer Your Instances

Your Visual Builder instance is provisioned as one of the features in your Oracle Integration subscription. An administrator performs most of the lifecycle management tasks for Visual Builder instances in the Oracle Cloud Infrastructure Console. Depending on your subscription and environment, some options for administering instances might not be available.

Additional management settings for applications created in an instance are set in the Administrator Settings page that administrators can open from the Home page of each Visual Builder instance. See [Configure Tenant Settings](#).

Task	Description
Create an instance	You can provision new Oracle Integration instances. See Create an Oracle Integration Instance in Provisioning and Administering Oracle Integration Generation 2 .
View instance info	The Oracle Cloud Infrastructure Console provides details on all of your instances. See View Instance Details in Provisioning and Administering Oracle Integration Generation 2 .
Add users and assign roles	Visual Builder users need to be added to the identity domain of your Oracle Integration instance and assigned at least one of the pre-defined roles that are permitted to access the Visual Builder instance. See Set Up Users, Groups, and Policies in Provisioning and Administering Oracle Integration Generation 2 .
Start and stop instances	You can stop instances to free up compute resources used by the instance's virtual machines. See Stop and Start an Oracle Integration Instance in Provisioning and Administering Oracle Integration Generation 2 .

2

Configure Tenant Settings

After a Visual Builder instance is created, users with the role of Visual Builder Administrator can manage and set global options for applications in the tenant and create associations between Visual Builder and other services.

Manage Applications in the Service Instance

The Visual Builder Home page helps you manage visual applications created on the current Visual Builder service instance, as well as apps deployed to the instance from a different VB instance or Visual Builder Studio (VB Studio).

Each row on the Home page represents an application created either on a Visual Builder instance, or on a VB Studio instance that is associated with this Visual Builder instance. The Origin column on the Home page contains "Visual Builder Studio" if the app was shared or published in Visual Builder Studio:

<input type="checkbox"/>	Name	Status	Origin	Version	Recent activity	
<input type="checkbox"/>	kenter-1	{ } Development	Visual Builder	1.0	Yesterday at 6:07:55 PM	☰
<input type="checkbox"/>	vbstudio-vboci_kenter2_30270_181	{ } Development	Visual Builder	1.0	Yesterday at 5:33:45 PM	🗑️
<input type="checkbox"/>	vbstudio-vboci_kenter2_30270_221	{ } Development	Visual Builder	1.0	Yesterday at 3:57:27 PM	🗑️
<input type="checkbox"/>	▶ kenter-visapp3	👤 Stage	Visual Builder Studio	vbshare_221 +1	4/18/2023 from kenter2	🗑️

The first row in the image above represents an application created on this VB instance, which can be managed using the ☰ in the right column. The rows below represent applications created on a VB Studio instance, and the only option on the Home page for these is to click 🗑️ in the right column to remove them from the VB instance. To manage an app created in VB Studio, you should open the app's VB Studio project. The VB Studio project provides tools for managing an application's lifecycle that are equivalent to those in the Options menu for applications created on the VB instance. For example, in the project's Builds tab you can configure a build job to set the app's version and then stage it. For more about managing an application's lifecycle in VB Studio, see [Preview, Share, and Deploy Visual Applications in Building Responsive Applications with Visual Builder Studio](#).

If you're an administrator, you can manage (which includes deleting) any of the apps shown on the Home page. To see the full list of applications, select the **Administered by me** checkbox next to the Status dropdown list.



If you're a developer, you can manage the apps that you've created in this instance of Visual Builder, or if you're a team member of the app. You can also manage VB Studio apps from the Home page, as long as you've created, shared or published it. You will not see the **Administered by me** checkbox unless you have the role of administrator.

IDCS Client Applications

Each time a visual application is created on a Visual Builder instance provisioned with OIC, a companion *client application* is automatically created in IDCS. When you stage or publish the app to a different server governed by the same IDCS instance, another client application is created. This means there may be several client applications for the same visual application running on IDCS for the lifespan of the app.

If you have IDCS administrator privileges, you can see these client apps on the IDCS console, but you should not need to *manage* them in any way. When a visual application is removed from the server, the associated client apps are removed from IDCS. You may need to *interact* with the client apps if you want to set login-related policies for an instance—for example, to enable the **Keep me signed in** policy, or to assign the users and groups who can access the application.

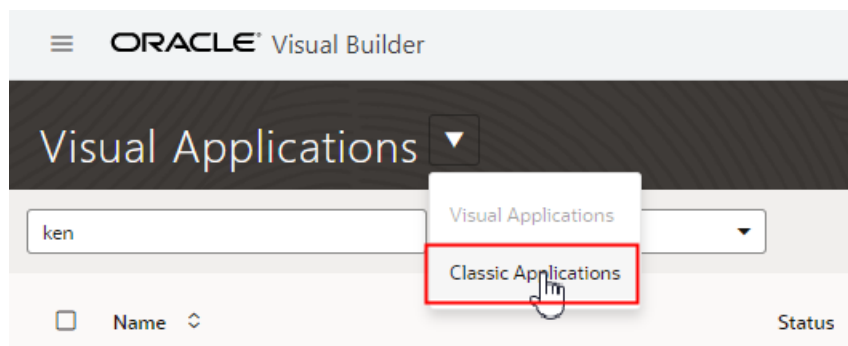
When you want to view client applications in the IDCS console, make sure that you are looking at the correct IDCS app for the instance. For example, when a VB instance is provisioned with OIC, VB shares the IDCS app of the OIC instance, and the client apps will be listed in that IDCS app. You can look at the URL of the service host name to help determine the correct IDCS app for the instance:

- When the URL contains `<SUB-DOMAIN>.builder.ocp.oraclecloud.com`, the VB instance will have its own IDCS app.
- When the URL contains `<SUB-DOMAIN>.integration.ocp.oraclecloud.com`, it is an OIC instance, and the VB instance will share the OIC instance's IDCS app.

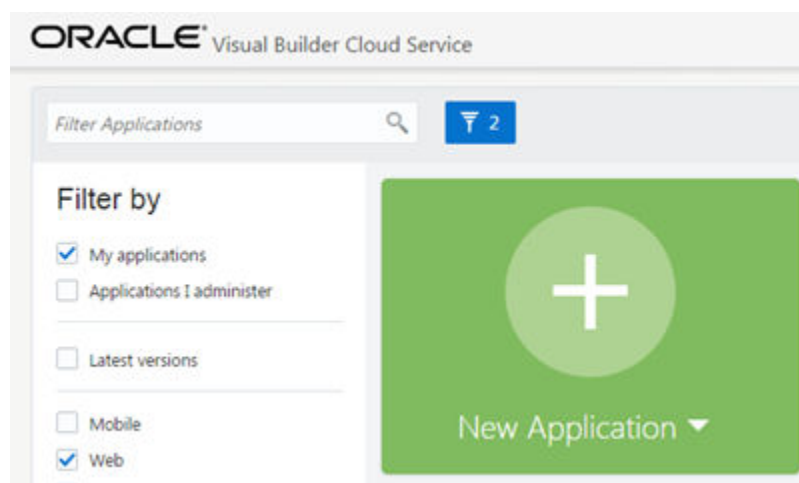
For more, see Typical Workflow for Managing Oracle Identity Cloud Service Applications in *Administering Oracle Identity Cloud Service*.

Visual Builder Classic Applications

If you have any classic applications (apps that have the older Visual Builder project structure), open the Visual Applications dropdown list in the header and select **Classic Applications**.






On the Home page for classic applications, administrators can select the **Applications I administer** checkbox in the Filter by pane to display the applications where they are not a team member.




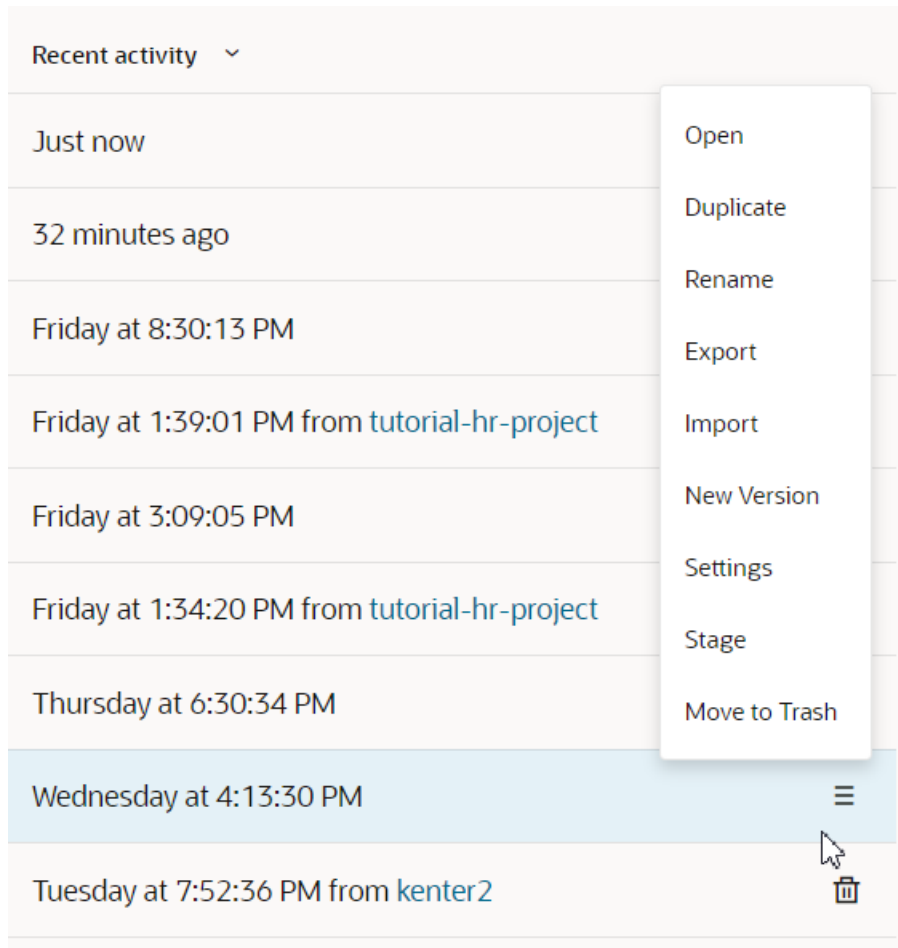
Manage Applications Created on the Instance

The table of applications on the Home page includes visual applications created on the Visual Builder instance. Each of these applications has an Options menu in the right column that developers and administrators can use to manage it, for example, to add and remove team members, and to open, stage and publish the application.

You can tell which applications were created on the instance by looking for  in the right column. If you see a  button instead of , the application was created on a different instance of Visual Builder. If an application was created on a different instance, you'll need to open the application on the instance where it was created and manage it there.

To manage an application created on the current Visual Builder instance:

- Click  in the right column of the application, and then select a task in the Options menu:



The Options menu displays commands for managing the application (based on the application's status, some commands might be hidden):

Menu Item	Description
Open	Opens the development version of the application
Duplicate	Creates a clone of this version of the application, including the content of the database.
Rename	Opens a dialog box where you can change the name of the application.
Export	Creates a ZIP archive of the application that can be imported as a new application. When exporting the application, you can choose if you want the exported archive to include the data stored in your business objects.
Import	Opens a dialog that you can use to create an application by uploading an application archive (ZIP or OVB) from your local system.
New Version	Creates a new version of the same application. By default the new version is a development version. Version numbers are automatically increased incrementally.


Menu Item	Description
Settings	Opens an editor for configuring the application's settings and viewing the application API URLs. Each application version has a dedicated Settings editor.
Stage	Opens a dialog box where you can specify the database option for the staged application. When an application is staged, a link to the staged version is displayed in the tile.
Publish	Opens a dialog box where you can specify the database option and publish the staged version of your application.
Lock / Unlock	Enables you to lock a live application to prevent any users from using the application. You would usually use this command when you are going to update the live application with a newer version. The Unlock option is displayed only when the live application is locked.
Rollback	Rolls back the live version to the previous live version. This is only available for the current live version, and there must be an older live version of the app.
Move to trash	Deletes the application from the Identity Domain. You have 30 days to recover the application after deleting it. For more, see <i>Delete a Visual Application in Developing Applications with Oracle Visual Builder in Oracle Integration Generation 2</i> .

Manage Applications Created on a VB Studio Instance


When a VB instance is associated with a VB Studio project, visual applications created, shared and published in the VB Studio project are included on the Home page. These applications are visible to administrators, and to the developers who created the applications.

When you create a visual application in VB Studio, you do so in the context of a *workspace*, a completely private area where your app and its assets are stored. While creating your workspace, you are asked to designate an instance of Visual Builder to serve as the target for deployment; you don't deploy visual apps to a VB Studio instance. In addition to serving as a deployment target, the Visual Builder instance you name is also used to support the creation of business objects, as well as the VB Studio Share and Publish actions. That is, if you create a business object in the context of your app, a new app representing the schema for that object is created in the VB instance associated with your workspace. In the image below, the third row shows such a schema-based app; the first row represents an app that was published in VB Studio, and the second row represents the app after the Share action is used in VB Studio.

Name	Status	Origin	Version	Recent activity
PrepareUpgradeServicesSpec1681987865835	Live	Visual Builder Studio	1681987865835-1	3 minutes ago from dms-upgradetesting
PrepareUpgradeServicesSpec1681987865835	Stage	Visual Builder Studio	vbshare_5	7 minutes ago from dms-upgradetesting
vbstudio-vboci_kenter2_30270_221	Development	Visual Builder	1.0	Yesterday at 4:17:45 PM
kenter-1	Development	Visual Builder	1.0	Yesterday at 4:13:30 PM
vbstudio-vboci_myvisapp_157049_61	Development	Visual Builder	1.0	Yesterday at 2:05:02 AM
kenter-visapp3	Stage	Visual Builder Studio	vbshare_221-1	Tuesday at 7:52:36 PM from kenter2
kenter-visapp5	Stage	Visual Builder Studio	vbshare_181	Tuesday at 7:20:30 PM from kenter2
vbstudio-vboci_myvisapp_157049_121	Development	Visual Builder	1.0	Friday at 4:55:31 PM
fragmentsrepo	Stage	Visual Builder Studio	vbshare_61	4/13/2023 from myvisapp
Workflow_Diagram_Demo_sheryl	Development	Visual Builder	1.0	4/13/2023

You can tell if an application was created on a different VB instance or a VB Studio instance because there will be a  button in the right column, and the only option on the Home page is to remove the application. To perform other tasks, for example, to add members to the team, you need to open the application in the instance where it was created. For apps created in VB Studio, you can use the link in the Recent activity column to open the app's VB Studio project.

To remove an application from the current Visual Builder instance:

1. Locate the row in the table containing the application.
2. Do one of the following:
 - a. Click the  button in the right column.
 - b. Select one or more applications, then click **Move to trash** in the header.
3. Confirm the applications you want to delete by clicking **Move to Trash** in the Move Application to Trash dialog box.

Move Application to Trash ✕

Applications in Trash can be restored for up to 30 days after being moved there.

Application ID	Status	Team
vbstudio-vboci_kenter2_30270_221-1.0	{ }	0

Cancel
Move to Trash

For details on deleting multiple versions of applications, and live or live locked versions, see [Delete a Visual Application](#).

This table describes the types of applications that will appear on the Home page when developing a visual application in VB Studio.

When you ...	Description
--------------	-------------

Create a workspace for an application

A "container" application for the application's business objects is automatically created on the VB instance. This represents the schema for the business objects used in a visual app's workspace.

On the Home page:

- The name in the table will often contain the name of the VB Studio instance, the project name and a workspace id.
- The application's Status column contains "{ } Development".
- The application's Origin column contains "Visual Builder" or "Visual Builder Studio".

This image shows two apps, each representing a workspace in a Visual Builder Studio project:

vbstudio-vboci_kenter2_30270_181	{ } Development	Visual Builder	1.0	Monday at 5:33:45 PM
vbstudio-vboci_kenter2_30270_221	{ } Development	Visual Builder	1.0	Monday at 5:57:27 PM



If the application for a workspace is removed on the Home page, it's automatically generated again the next time the workspace is opened.



Note:

No client application is created in IDCS for these container applications created for workspaces.

When you ...	Description
Share a visual application	<p>The application is staged on the VB instance, and a client application is created for the app's 'development' app profile and added to the list of applications in the IDCS environment.</p> <p>An application representing the client application is also added to the VB instance Home page table. Though sharing the application might create multiple client apps, the table will only list one application for the shared app. The application name on the Home page is usually the name of the visual application.</p> <p>On the Home page:</p> <ul style="list-style-type: none"> • The application's Status column contains "Stage". • The application's Origin column contains "Visual Builder Studio". • The application's Version column contains "vbshare_". • The application's Recent column contains a link to the application's Project Home page where you can manage the application. <p>This image shows what two visual application shared from two VB Studio workspaces in a project might look like when viewed on the Home page:</p>

▼ kenter-visapp3	 Stage ▼	Visual Builder Studio	vbshare_221 +1	4/18/2023 from kenter2
kenter-visapp3	 Stage ▼	Visual Builder Studio	vbshare_181	4/18/2023 from kenter2

 **Note:**

If the client application is removed on the Home page or in IDCS, the shared application will not work correctly. If the shared application is no longer needed, you can remove the application.

When you ...	Description
Publish an application	<p>The application is deployed to the VB instance, and a client application for the app's 'stage' (or 'publish') app profile is created and added to the list of applications in the IDCS environment.</p> <p>An application representing the client app is also added to the VB instance Home page table. In the table, the application name will usually be the name of the visual application. This name can be changed in the application's <code>visual-application.json</code> file.</p> <p>On the Home page:</p> <ul style="list-style-type: none"> The application's Status column contains "Stage" or "Live". Older versions will be marked as "Obsolete". The application's Origin column contains "Visual Builder Studio". The application's Recent column contains a link to the application's Project Home page where you can manage the application. <p>This image shows what an application published from Visual Builder Studio might look like when viewed on the Home page:</p>

<input type="checkbox"/>	NvauseTest0317	{ } Development	Visual Builder Studio	0.4 +3	4/7/2023 from myproject1
<input type="checkbox"/>	NvauseTest0317	🟢 Live	Visual Builder Studio	0.3	4/6/2023 from myproject1
<input type="checkbox"/>	NvauseTest0317	🟡 Obsolete	Visual Builder Studio	0.2	4/6/2023 from myproject1
<input type="checkbox"/>	NvauseTest0317	🟡 Obsolete	Visual Builder Studio	0.1	4/6/2023 from myproject1



Note:

If the client application of a live or staged app is removed, on the Home page or in IDCS, the application will not work correctly. If the application is no longer needed, you can remove the application.

Access Tenant Settings

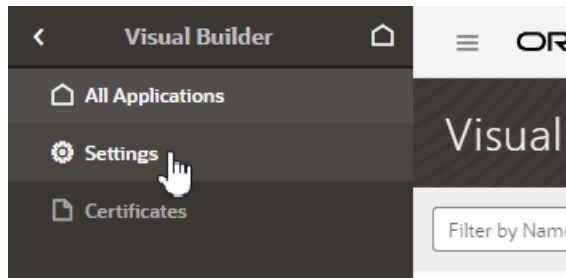
An instance administrator can access the Tenant Settings page for managing the instance's global settings from any Visual Builder page.

The Tenant Settings page contains three tabs: General, Tenant Database and Services. The General tab has panels for configuring security settings, specifying Access Denied messages, and configuring the Component Exchange details. You use the Tenant Database tab to switch to an Oracle database and to see how much database space your applications are using. You use the Services tab to add and edit the backend services that are accessible to apps in the tenant.

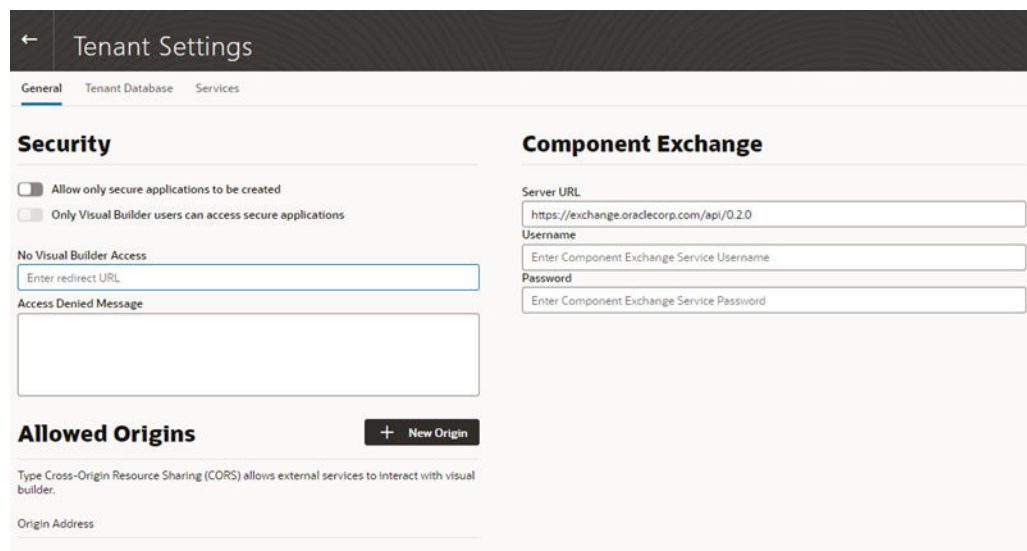
To open an instance's Tenant Settings page:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** ☰.
2. Click **Settings** in the main menu.

If you are developing visual applications, open the main navigation pane on the Home page and select **Settings**.



The settings available for the instance are grouped in the General, Tenant Database and Services tabs on the page.



Configure Security Options for Applications

Administrators can use the Security panel in the Tenant Settings page to require authentication for all applications in the instance.

When an administrator enables the **Allow only secure applications to be created** option, all published and staged applications in the instance will require user authentication. When the option is enabled, users must log in to access the applications in the instance, even if anonymous access is allowed in the application's settings. When the option is not enabled, applications can be created that allow access to anonymous users.

When an application has the default security settings, any user with a valid login can access the pages in an application. A developer can modify the default security settings to define the roles that can access applications, pages and components.

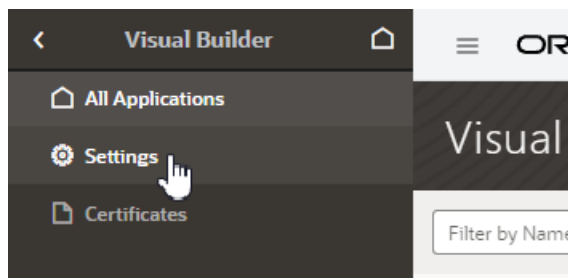
When the secure application option is enabled, an administrator can enable the **Only Visual Builder Users can access secure applications** option so that only Visual Builder users (those assigned the default Service User role) can access the staged and published applications in the instance. For example, this allows you to configure

security so that users assigned the Visual Builder Developer role can access the designer, but can't access the published application and data because they are not assigned the Visual Builder Service User role.

An administrator can also use IDCS roles when configuring the instance's security so that a user's access is limited to just the secure applications. Users assigned the selected IDCS role would be able to access the applications, but would be prevented from accessing Visual Builder or Oracle Integration resources external to the application, such as other Oracle Integration integrations.

To configure the security options for all applications in the instance:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** ☰.
2. Click **Settings** in the navigation menu to open Tenant Settings.



3. In the **Security** panel, enable **Allow only secure applications to be created**.
Anonymous users can't access the applications when this secure applications option is enabled.
4. Select the **Only Visual Builder Users can access secure applications** option if you want to allow only Visual Builder users (users assigned the Service User role) access to the applications.

To change the users allowed to access the application to those assigned a specific IDCS role *instead of* those assigned the default Service User role, select the IDCS role in the dropdown list under **Allow access to application to users in role**. This option is only available when both of the other security options are enabled.

General Services

Security

Allow only secure applications to be created

Only Visual Builder users can access secure applications

Allow access to application to users in role:

Default Service User

No Visual Builder Access

Enter redirect URL

Access Denied Message

5. Specify what users denied access to the secure application will see:
 - a. Enter the URL you want the users redirected to when they can't access the app.
 - b. Enter an Access Denied message that they will see when denied access to a page in the app.

Assign Roles for Users to Access an Application

Administrators must assign roles to users, so they have the permissions required to access Visual Builder applications.

Privileges associated with a user role determine what tasks users assigned those roles can perform. See *What Users Can Do in Visual Builder by Role* and *Manage Access and Assign Roles* in *Provisioning and Administering Oracle Integration Generation 2*.

Set Page Messages for Access Denied Errors

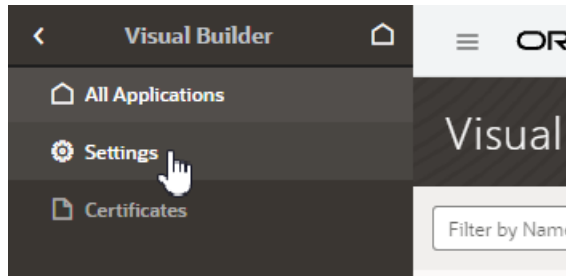
Administrators can use the instance's settings page to specify a URL that users are navigated to when they are denied access to an application or page.

Authenticated users might see an Access Denied page or message when they attempt to access an application or page in an application that their user role is not permitted to access. Administrators can set the default page or message that users see when they are denied access to an application or page. Access Denied messages that are set at the application level in the General Settings of an application will override

messages set in the instance's settings page. The default Access Denied page and message is used if the message options in this panel are not set.

To specify an Access Denied page or message for applications in the instance:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** ☰.
2. Click **Settings** in the navigation menu to open Tenant Settings.



3. In the **Security** panel, type a URL that users are directed to when denied access to an application.

The URL that you specify is used as the Access Denied page for all applications in the instance and should be accessible to users who are not logged in.

No Visual Builder Access

Enter redirect URL

"Access Denied" Message

Note:

If you are configuring settings for classic applications, the Access Denied settings are set in the **Messages** panel.

4. Type the message that you want users to see when they are denied access to a page.

The message that you enter will be displayed in the Access Denied page for all applications in the instance except for those where a message was set at the application level in the application's General Settings page.

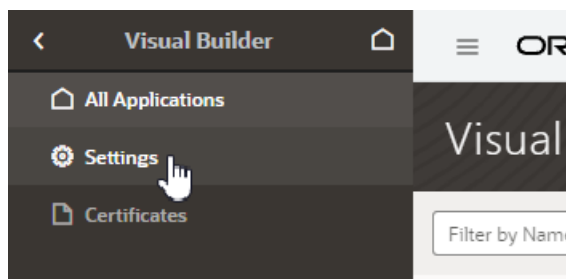
Allow Other Domains Access to Services

Use the Global Settings page to specify the domains that are permitted to interact with services in your instance.

Cross-Origin Resource Sharing (CORS) is a mechanism that enables you to specify the domains that are allowed to exchange data with applications in your instance. By default, incoming requests from domains not on your instance's list of allowed origins are blocked from accessing application resources.

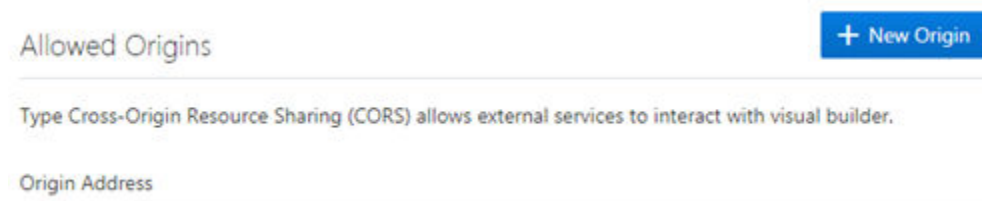
To add a domain to the list of allowed origins:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** ☰.
2. Click **Settings** in the navigation menu to open Tenant Settings.



3. In the **Allowed Origins** panel, click **New Origin** and type the URL of the domain that you want to allow. Click **Submit**.

The URL must be a fully-qualified domain, meaning it must contain `http://` or `https://`, for example, `https://myoracle.cloud.service`. You must explicitly enter each fully-qualified domain that you want to allow. To allow both `http://` and `https://` connections from a domain, you would need to add both domains (`https://myoracle.cloud.service` and `http://myoracle.cloud.service`).



The Allowed Origins panel lists all origins that are permitted to retrieve information from the instance.

Allow Your Instance to Access Services

If your Visual Builder instance needs to access an external service, your instance needs to be included in the service's allowlist (formerly a whitelist).

A service typically uses an Access Control List (ACL), called an allowlist, to restrict the networks and services that are allowed to access it. Only users from an IP address or Virtual Cloud Network (VCN) on the allowlist are allowed access to the service. The allowlist restrictions are in addition to the standard authorization mechanisms, such as user credentials, which are always in place.

Any Visual Builder instance that requires access to an external service, such as a REST web service, must be on the external service's allowlist. To get on a web service's allowlist, you'll need to work with the web service's administrator to add an ACL access rule for your VB instance. This may require filing a Service Request with the web service's administrator. You'll typically only need to do this when creating a new VB instance that will require access to a service, or when you plan to start using a new service in a VB instance. A VB instance can be added to an allowlist at any time, even before the instance has been created.

Depending on the location and type of the service your VB instance needs to access, you'll need to provide the service's administrator with:

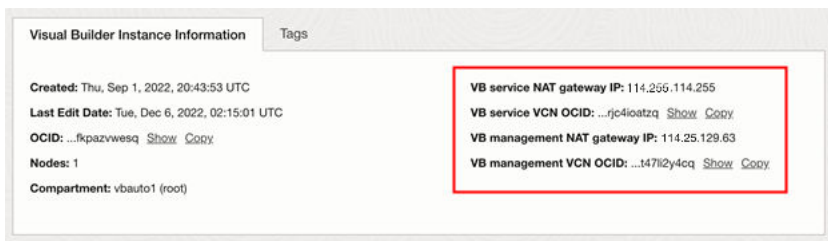
- the Visual Builder *service* VCN,
- the Oracle Cloud ID (OCID) of the Visual Builder service VCN, or
- the NAT gateway IP address of the Visual Builder service VCN.

A VB instance's service VCN, OCID and NAT gateway IP address are determined by the instance's *region*. For example, `iad-vb-isovcn` is the VB service VCN for instances in the Ashburn region. For details on what these are, see [Overview of VCNs and Subnets](#) and [NAT Gateway](#) in the *OCI Documentation*.

 **Note:**

Visual Builder instances that use an Oracle DB service (ATP, DBaaS) will **also** have a VB *management* VCN. The VB management VCN OCID or NAT IP **must also** be added to the service's allowlist. Access from the VB management VCN is required so that schemas related to the VB service can be updated, for example, when patches or updates are applied to the instance.

You can view an instance's VB service NAT gateway IP and VCN OCID in the instance's Visual Builder Instance Information tab in the OCI console. If the instance also has a VB management NAT gateway IP and VCN OCID, they will also be displayed in the tab:



The instance details you need to provide in the Service Request will depend upon the location and type of the service your instance needs to access. In the following table you can see the VB instance details you'll need to provide to allow VB to access the different types of external services.


To access...	You'll need...
A REST web service located in Oracle Service Network (OSN) (such as ORDS)	<p>You'll need to provide:</p> <ul style="list-style-type: none"> the VB <i>service</i> VCN OCID. <p>The service administrator needs to configure one access rule, to allow access from the VB runtime service VCN.</p>
An autonomous database located in OSN, like ATP	<p>You'll need to provide:</p> <ul style="list-style-type: none"> the VB <i>service</i> VCN OCID, and the VB <i>management</i> VCN OCID <p>The service administrator needs to configure two access rules, to allow access from the VB runtime service VCN and the VB management VCN.</p>
an external REST web service	<p>You'll need to provide:</p> <ul style="list-style-type: none"> the NAT gateway IP address for the VB <i>service</i> VCN <p>The service administrator needs to configure one access rule, to allow access from the IP address of the NAT gateway of the VB runtime service.</p> <p>An access rule configured for the NAT gateway is used when the service is not in the same region and OSN as your instance.</p>
an external DBaaS database	<p>You'll need to provide:</p> <ul style="list-style-type: none"> the NAT gateway IP address for the VB <i>service</i> VCN the NAT gateway IP address for the VB <i>management</i> VCN <p>The service administrator needs to configure two access rules, to allow access from the VB runtime service VCN NAT gateway and the VB management VCN NAT gateway.</p> <p>Access rules configured for the NAT gateways are used when the service is not in the same region and OSN as your instance.</p>

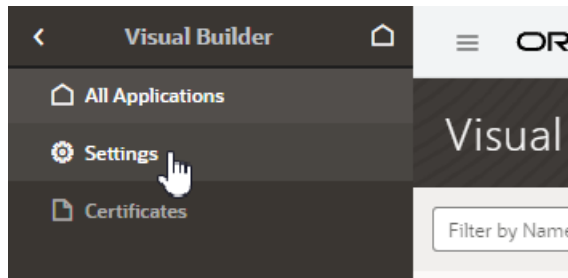
Inspect Database Usage

An administrator can view how much space in the tenant's database is being consumed by each of the tenant's applications.

The capacity of the tenant's database is 5GB, so by viewing the database usage you can see how much of the database's capacity remains. If you require more than 5GB of storage, you can [Switch to Your Own Oracle DB Instance](#).

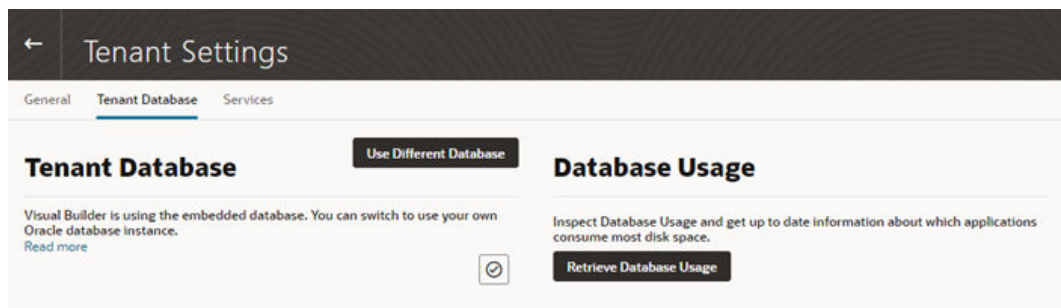
To inspect your instance's database usage:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** .
2. Click **Settings** in the navigation menu to open Tenant Settings.

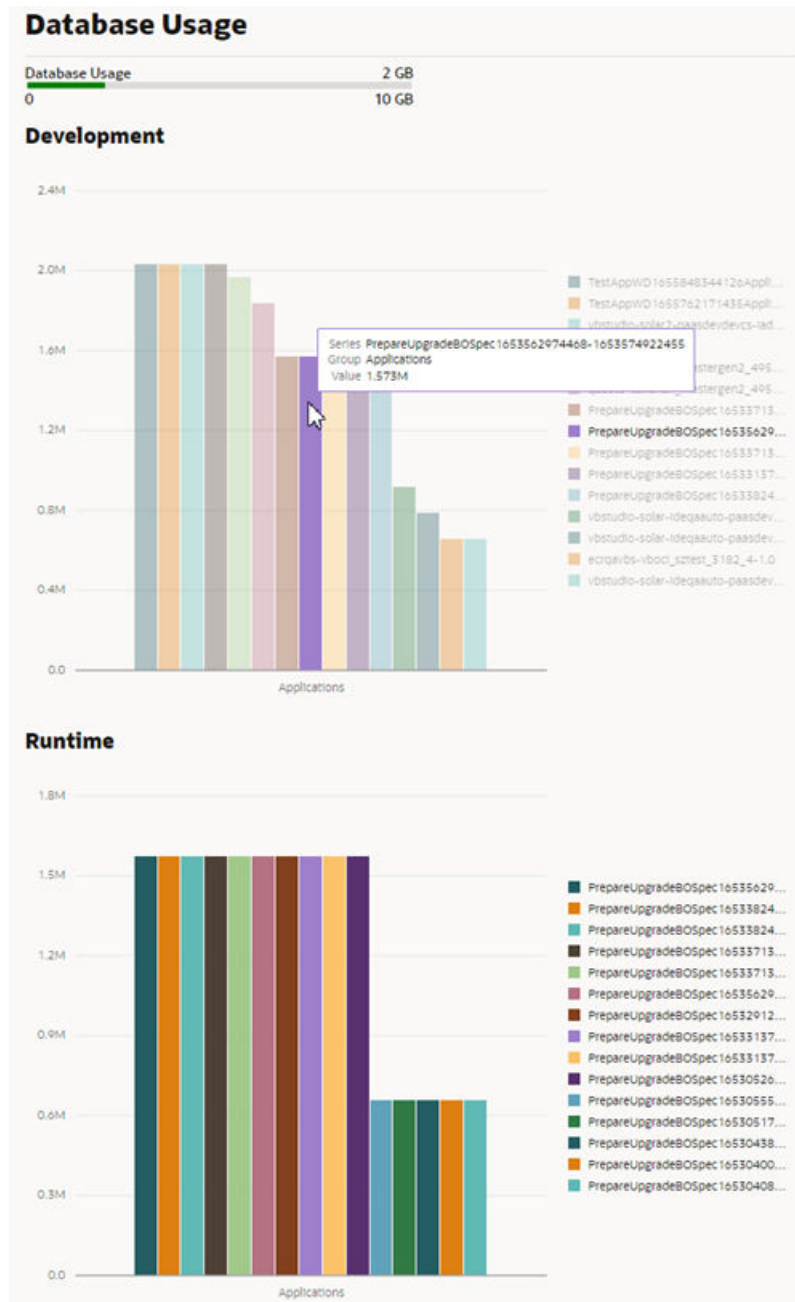


3. Open the Tenant Database tab.

The Tenant Database has two panels: Tenant Database and Database Usage.



4. Click **Retrieve Database Usage** in the Database Usage pane.



The Database Usage meter in the panel shows how much of the database's capacity is currently used. The data usage is rendered in two charts:

- The Development chart shows the space used for storing the business objects in each application in the design-time.
- The Runtime chart shows the space used for each of the staged and published apps.

Switch to Your Own Oracle DB Instance

The database provisioned with your Visual Builder instance is used to store data for your business objects and your app's metadata, but this database has a 5GB limit and you can't access the data in the objects using regular SQL.

If the 5GB limit is insufficient for your tenant schema, you can configure your instance to use an Oracle DB instance that has more space instead of the default database. If you choose to switch to an Oracle DB instance, the database must be publicly accessible. You can connect to an Oracle DBaaS or Autonomous Transaction Processing (ATP) database instance. Using an ATP database will give you more space and direct SQL access to the objects VB creates. You can also use a [Free Forever](#) Oracle ATP, which provides 20GB of storage for free.

To use a different Oracle DB instance, you use a wizard in the Tenant Settings to create a connection to the database instance and export the applications stored in the tenant's current database.

If you decide to use JDBC to connect to your DBaaS instance, you must include the privileges required to enable the ADMIN user to create a tenant schema. The following SQL shows the grants that are needed:

```
CREATE USER [adminuser] IDENTIFIED BY [password];
GRANT CONNECT, RESOURCE, DBA TO [adminuser];

GRANT SELECT ON SYS.DBA_PROFILES TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_USERS TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_DATA_FILES TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_SEGMENTS TO [adminuser] WITH GRANT OPTION;
```

If you decide to use ATP, you'll need to include the `wallet.zip` file in the wizard in addition to the connection info. You might want to create a new ATP ADMIN user with the correct admin privileges. The following SQL statement shows how to create a second ATP ADMIN user in SQL*Plus or SQL Developer.

```
DROP USER [adminuser] CASCADE;
CREATE USER [adminuser] IDENTIFIED BY [password];
GRANT CREATE USER, ALTER USER, DROP USER, CREATE PROFILE TO [adminuser] WITH
ADMIN OPTION;
GRANT CONNECT TO [adminuser] WITH ADMIN OPTION;
GRANT RESOURCE TO [adminuser] WITH ADMIN OPTION;
GRANT CREATE SEQUENCE, CREATE OPERATOR, CREATE SESSION, ALTER SESSION, CREATE
PROCEDURE, CREATE VIEW, CREATE JOB, CREATE DIMENSION, CREATE INDEXTYPE, CREATE
TYPE, CREATE TRIGGER, CREATE TABLE, CREATE PROFILE TO [adminuser] WITH ADMIN
OPTION;
GRANT UNLIMITED TABLESPACE TO [adminuser] WITH ADMIN OPTION;
GRANT SELECT ON SYS.DBA_PROFILES TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_USERS TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_DATA_FILES TO [adminuser] WITH GRANT OPTION;
GRANT SELECT ON SYS.DBA_SEGMENTS TO [adminuser] WITH GRANT OPTION;
```

 **Note:**

If you get an error `Failed to verify the target database` in the Change Tenant Database dialog when switching the database, it might be because the database is not reachable (Visual Builder cannot reach databases in private subnets), or because you don't have the required privileges.

If you see the error, confirm that the ADMIN user (`adminuser`) has the required privileges. You might also need to assign the SYSOPER and SYSDBA roles to the ADMIN user:

```
GRANT SYSOPER, SYSDBA TO [adminuser];
```

You can run the following query to confirm the ADMIN user has the necessary privileges:

```
select * from v$pwfile_users;
```


In the wizard you need to select and export all the applications in your instance that you want to keep. After confirming that your instance is using the new database instance, you must import the exported applications into Visual Builder to save them in the new database instance.

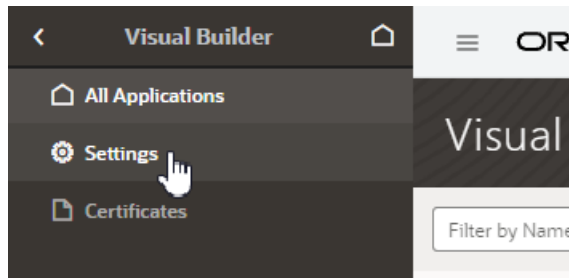
 **Note:**

If you have live applications already on the instance:

- Before switching to a new database, make sure to backup the data in their business objects using the export options in the Visual Builder data manager. You'll then be able to import that data back into the new apps you'll create from the application archives you export in the wizard.
- Lock the live applications before changing the settings of your instance's database to prevent users from using them during the migration process. You can unlock the applications when the migration process is finished. You lock and unlock live applications in the Application Options menu on the Visual Builder Home page. See *Manage an Application in Developing Applications with Oracle Visual Builder in Oracle Integration 3*.

To switch to a different Oracle DB instance:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** .
2. Click **Settings** in the navigation menu to open Tenant Settings.



3. Open the Tenant Database tab.
4. Click **Use Different Database** in the Tenant Database panel to open the Change Tenant Database wizard.

In the Change Tenant Database wizard you supply the details for the connection to your Oracle DB instance.


Change Tenant Database ✕

1 ————— **2**

Define Database Export Applications

Connection Type
Oracle Autonomous Transaction Processing Cloud Wallet ▼

Upload Wallet


Upload a zip file or drag one here

Wallet Password

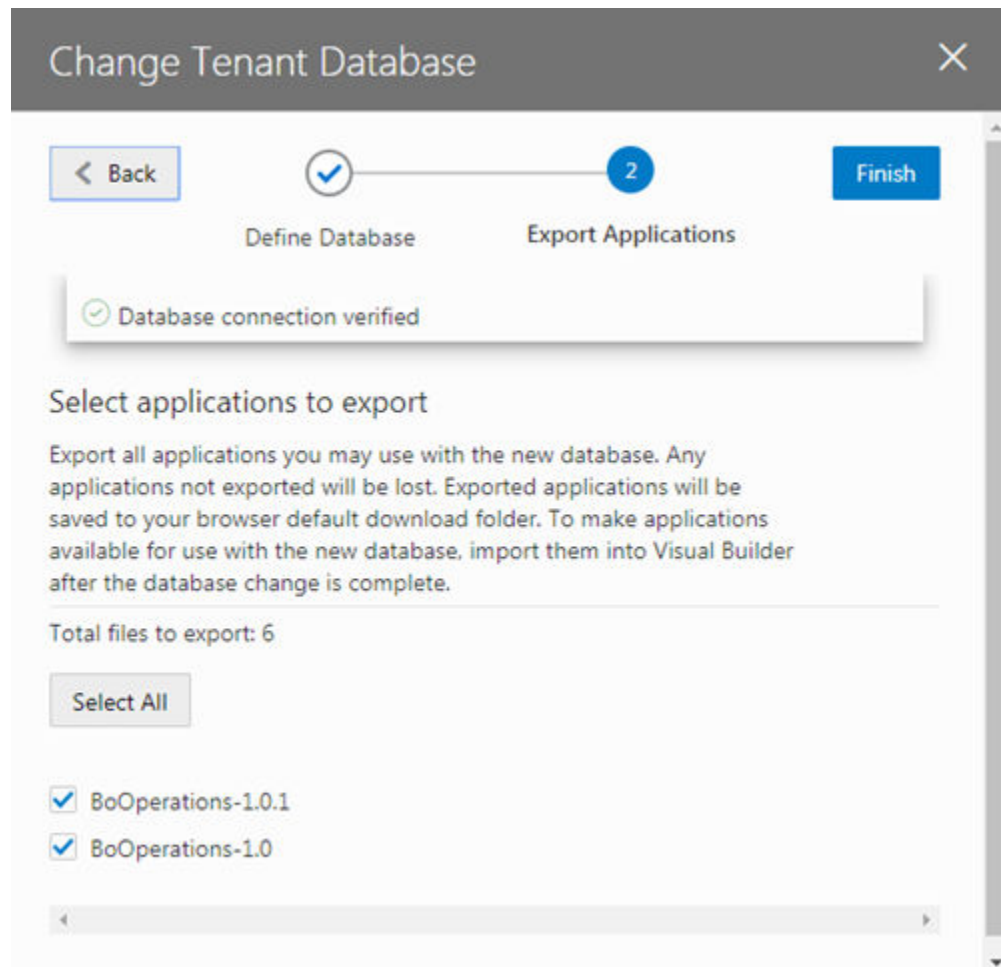
TNS Name

DBA User Name Please make sure the user has DBA privilege

Password The user credential will be used to create schema only, and will not be saved

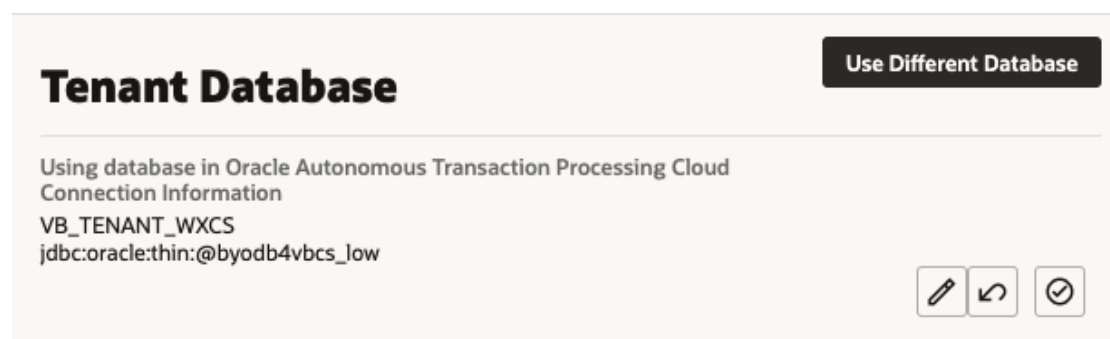
5. Select a Connection Type in the drop-down list.
You can connect to your Oracle DB instance using either JDBC or an ATP Cloud Wallet.
6. Provide the details for connecting to your database. Click **Next**.
The details you need to provide will depend upon the type of connection you selected.
7. Select all the applications that you want to export. Click **Finish**.

You must select and export all the applications that you want to keep. Any applications that are not exported will be lost.



When you click Finish, the applications that you selected are downloaded to your local file system. Exported application archives include the details about the application's user roles, and they will be available when you re-import your app into the new database.

After switching the database, the Tenant Database pane displays the connection information for your tenant's database. In the following image you can see that the instance is now using an Autonomous Transaction Processing (ATP) database instance.



 **Note:**

If you decide to revert back to using the embedded database, you can click



in the Tenant Database pane. You'll be prompted to confirm that you want to switch to using the instance's embedded database instead of the current one.

When you revert to using the embedded database, the visual applications in your current database are not transferred automatically. You need to export the apps you want to keep before switching the database, and then import them into the embedded database.

Visual Builder automatically manages the schemas and tables it uses for apps and business objects in your new DB, so you don't need to do anything further.


If you would like to access the business objects using SQL, you'll find that VB creates users/schemas with names that start with `VB_` followed by randomly generated strings. By examining the data dictionary you'll be able to find the users that represent specific apps. Note that you'll see separate schemas for dev, stage, and published instances of an app. The schemas for the dev and test instances will be re-created with different names with every new version of the app that you create. If you want to prevent the schema name for a published app from changing, when you publish new versions of the app you should choose the option to not replace the data.

 **Note:**

Instead of having Visual Builder create and manage schemas, you can make a schema that already exists in your database available to applications, so developers can create business objects based on existing DB tables and views. In this case, only one schema is used for the app's dev, staged, and published instances. See [Make Schemas in an Oracle DB Instance Available to Applications](#).

Switch From One ATP Database to Another

It's not possible to switch from one ATP database to another directly, so you'll first need to switch from your ATP database back to the embedded database. You can then use the Change Tenant Database wizard to switch from the embedded database to the new ATP database.

1. In Visual Builder, export each of your visual applications and save them to your local system.
For details, see [Export a Visual Application](#).
2. Revert to the embedded database.
 - a. Open the instance's Tenant Settings page, and then open the Tenant Database tab.
 - b. Click  in the Tenant Database pane to revert to the embedded database.

Tenant Database

Use Different Database

Using database in Oracle Autonomous Transaction Processing Cloud

Connection Information

VB_TENANT_WXCS
jdbc:oracle:thin:@byodb4vbcs_low

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↶
✔

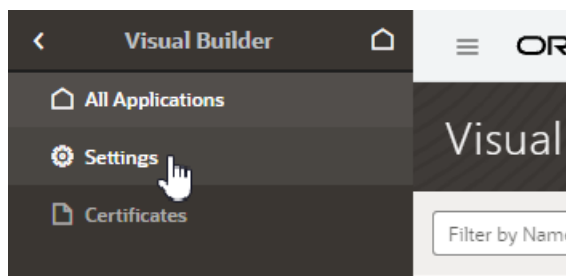
- c. When prompted, confirm that you want to switch to the embedded database.
3. Switch to the new ATP database.
Follow the steps in [Switch to Your Own Oracle DB Instance](#) above to switch from the embedded database to your new ATP database.
4. Import the applications you saved to your local system into the new ATP database.

Make Schemas in an Oracle DB Instance Available to Applications

When you connect an Oracle database instance with your Visual Builder instance, application developers can use schemas predefined in the tenant database to create business objects based on existing tables and views for an application. But for developers to access these schemas, you'll first need to make them available to applications.

To make a tenant database's existing schema available to applications:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** ☰.
2. Click **Settings** in the navigation menu to open Tenant Settings.



3. Click **+ New Schema** in the Available Schemas panel.

Available Schemas

+ New Schema

To be able to build Business Objects based on Tables and Views in an existing schema from this Tenant Database, add an entry for the schema here.

Schema
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4. Enter a name for the schema and click the check mark icon.



After the schema is added, you can edit its name or delete it entirely, but remember any changes you make might break applications that use the schema.

Schema that exists in the tenant database and has been added to the list of available schemas will become available for selection in an application's Settings editor (under Schema Selection in the Business Objects tab).

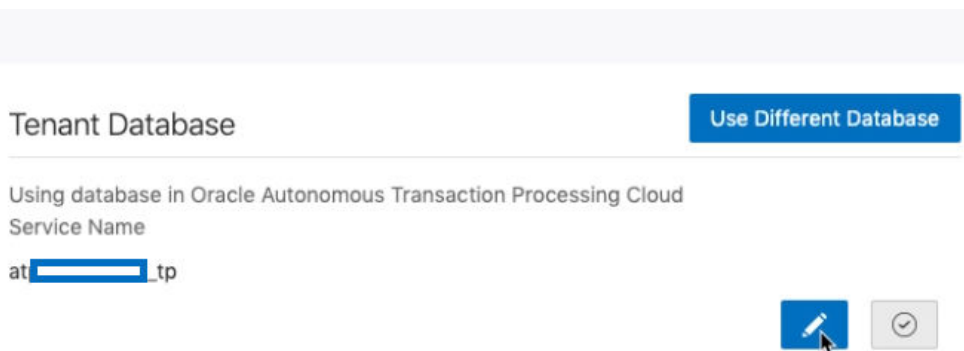
Reset an Expired Password or ATP Wallet for Your Oracle DB Instance

If you switch to use your own Oracle DB instance and the credentials you use to access the instance expire, you can renew the expired credentials using the Update Tenant Database Connection dialog.

To regenerate the expired values, you need to provide the ADMIN user credentials that you provided when you first switched to your own Oracle DB instance. Visual Builder uses the ADMIN user credentials to generate new Visual Builder tenant credentials to replace the expired credentials. Visual Builder does not store the ADMIN user credentials that you supply.

To reset expired credentials:

1. Open the General tab of the instance's Tenant Settings page.
2. In the Tenant Database field, click the Edit icon to open the Update Tenant Database Connection wizard.



3. In the Update Tenant Database Connection wizard, supply the ADMIN user credentials and ATP wallet that Visual Builder will use to reset the expired credentials, or update the expired wallet for your Oracle DB instance.

Update Tenant Database Connection

Provide admin user credentials below to reset expired tenant schema password or ATP DB wallet.

Upload Wallet

Upload a zip file or drag one here

Wallet Password

DBA User Name Please make sure the user has DBA privileges.

Password The admin credential will be used to create or update schema only, and will not be saved.

Cancel Finish

4. Click **Finish**.

Add a Connection to Oracle Cloud Applications

The list of REST services in the service catalog of a visual application is retrieved from an Oracle Cloud Applications backend service. Specify the instance URL of the Oracle Cloud Applications backend service in the Tenant Settings page.

All visual applications in the tenant will use the Oracle Cloud Applications instance URL specified in Tenant Settings, but a visual application can be configured to use a different Oracle Cloud Applications backend service by specifying a different instance URL in the Backends tab (which you access from the Navigator's Services tab). The tenant-level backend configuration is ignored if you or a visual application developer configures a different Oracle Cloud Applications backend service in a visual application's Backends tab.

The authentication choices available to configure a tenant-level Oracle Cloud Applications backend are:

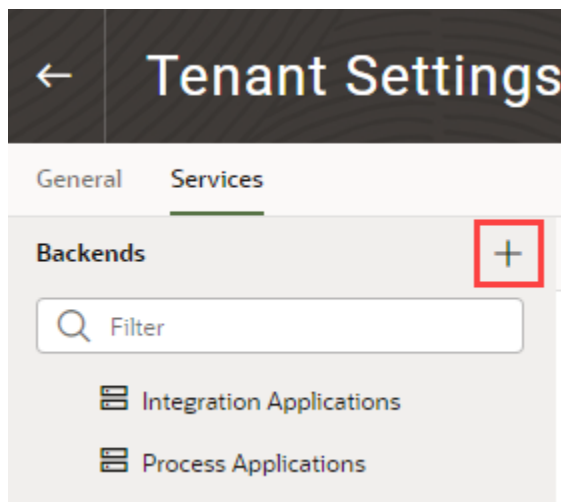
- Basic Auth: Uses a fixed username and password for authentication.
- Oracle Cloud Account: Needs federation between Oracle Cloud Applications and Visual Builder.
- Delegate Authentication (previously called Propagate Current User Identity): Same as Oracle Cloud Applications. That is, it needs federation between Oracle Cloud Applications and Visual Builder.
- None: This assumes your Oracle Cloud Applications REST API can be called without any authentication, which is not usually the case.

See About Authentication and Connection Type in *Developing Applications with Oracle Visual Builder in Oracle Integration Generation 2*.

If the necessary prerequisites for setting a tenant-level Oracle Cloud Applications backend service are not available, then a visual application developer can set up a backend service at the visual application level where more options are available. Another option is for you (the service administrator) to configure the Oracle Cloud Applications backend with `None` and let the visual application developer override the authentication setting at the visual application level.

To specify an Oracle Cloud Applications service for the tenant:

1. Open the instance's Tenant Settings page.
2. In the Services tab, click **Create Backend**, then choose **Oracle Cloud Applications** in the Create Backend dialog.



When specifying the URL in the Tenant Settings, you (the service administrator) only need to provide the instance URL of the Oracle Cloud Applications backend service to retrieve the list of services.

3. In the dialog, type the Server URL of the backend service, and configure other settings, such as security, as needed.
4. (Optional) After you configure settings for the backend, add headers to the backend.

Backend headers that you add will be applicable for any service connection to this backend, irrespective of the server or application profile that is used.

5. Click **Create**.

Visual Builder automatically discovers the `interfaceCatalogs` endpoint of the Oracle Cloud Applications backend, which retrieves the list of services and their metadata. This endpoint is typically in the form:

```
https://<My Oracle Cloud Applications Instance URL >/helpPortalApi/  
otherResources/latest/interfaceCatalogs
```

This endpoint is publicly accessible without any authentication.

If there is a problem creating the connection, verify the instance URL of the Oracle Cloud Applications instance.

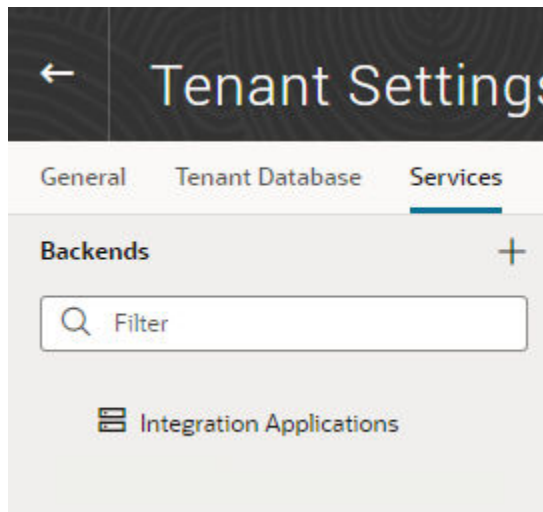
Add a Connection to Process Automation

Administrators can use the instance's Tenant Settings page to add a connection to an instance of as a backend service.

If you are using multiple Visual Builder instances, for example, development and production instances, you might need to add connections to in more than one instance.

To add a connection to an instance:

1. Open the instance's Tenant Settings page.
2. In the Services tab, click **Create Backend** and choose **Process Automation** in the Create Backend dialog.



3. Enter the URL of the instance, configure other settings, such as security, as needed, and click **Create**.

Add a Connection to Process Cloud Service

Administrators can use the instance's Tenant Settings page to add a connection to an instance of Oracle Process Cloud Service as a backend service.



Note:

Oracle Process Cloud Service, which is included in the Enterprise edition of Oracle Integration Gen 2, is now deprecated; for details, see Process Features.

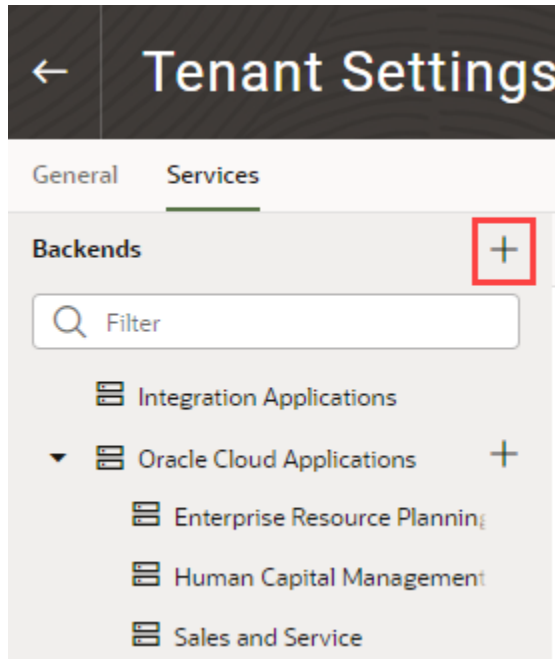
To add a connection to an instance of Oracle Process Cloud Service as a backend service, the instance of Oracle Process Cloud Service should be co-hosted with Visual Builder because the authentication types that Visual Builder supports for this configuration is Oracle

Cloud Account or Propagate Current User Identity. In most cases, this backend service (Oracle Process Cloud Service) will be preconfigured for your Visual Builder instance.

If you are using multiple Visual Builder instances, for example, development and production instances, you might need to add connections to Oracle Process Cloud Service in more than one instance.

To add a connection to an Oracle Process Cloud Service instance:

1. Open the instance's Tenant Settings page.
2. In the Services tab, click **Create Backend** and choose **Process** in the Create Backend dialog.



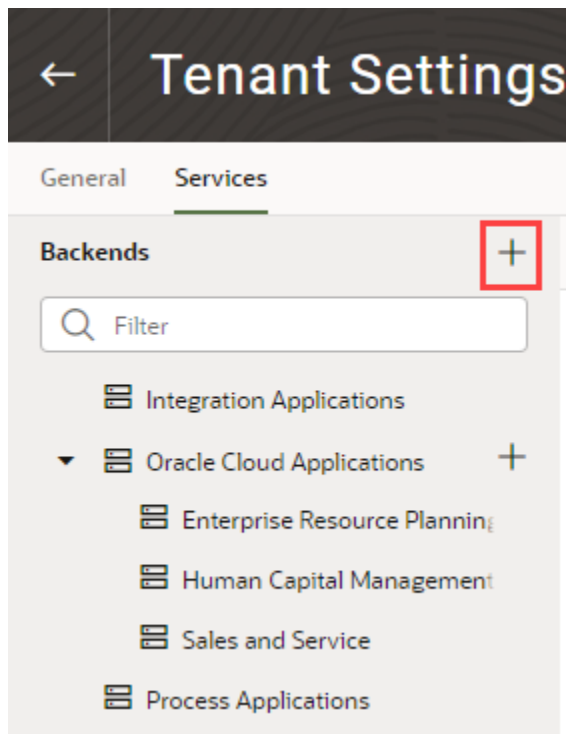
3. In the dialog, type the Server URL of the backend service, configure other settings, such as security, as needed, and click **Create**.

Add a Connection to a Custom Backend

You can create your own backend to map to a custom server other than the Oracle Integration, Process, and Oracle Cloud Applications backend services. You can create a custom backend with a free-form URL, or create a custom ADF backend when you know the Describe URL that points to an ADF Describe service.

To add a connection to a custom backend:

1. Open the instance's Tenant Settings page.
2. In the Services tab, click **Create Backend**.



3. In the Create Backend wizard, select the type of backend you want to create:
 - To create a backend with a free-form URL, click **Custom**.
 - To create a backend with the Describe URL of an ADF service, click **Custom ADF Describe**. Use this option only when your custom ADF Describe endpoint does not have any child backends.
4. In the Name field, enter a name and description for the custom backend.
5. Add headers to the backend. Backend headers that you add will be applicable for any service connection to this backend, irrespective of the server or application profile that is used.
6. Click **Next**.
7. Enter the instance URL for the custom backend, configure other settings, such as security, and click **Create**.

Create a Child Backend

You can create child backends to extend the functionality provided by the top-level Oracle Cloud Applications or custom backend registered to your Visual Builder instance.

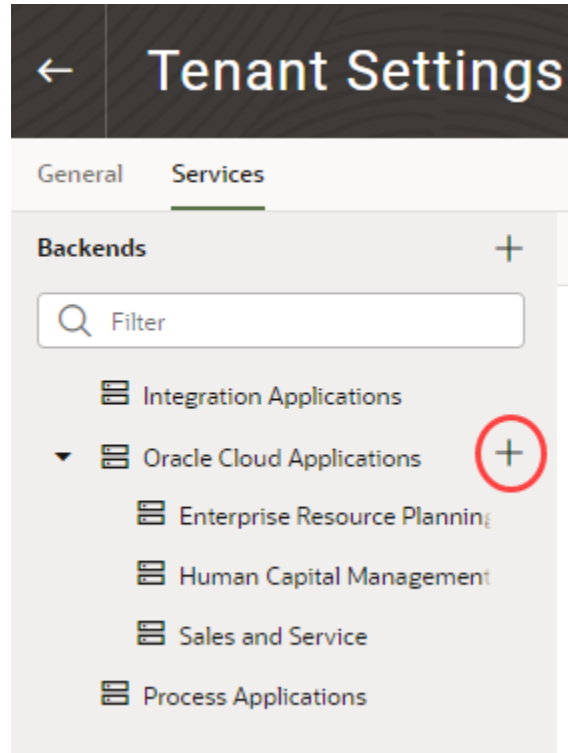
Let's say your instance's Oracle Cloud Applications backend connects to an Oracle Cloud Applications instance that provides access to these service catalogs: Enterprise Resource Planning Supply Chain, Sales and Service, and Human Capital Management. Now if you want to access another catalog (say, Search), you can create a child backend to access the search service.

A child backend inherits the parent backend's definition, which you can override as required. Its server URL is derived from the top-level backend, with `vb-catalog://backends/` as the base URL. Continuing the Oracle Cloud Applications example, the Sales and Service

child backend adds to the top-level Oracle Cloud Applications backend and has `vb-catalog://backends/fa/crmRestApi/resources` as its server URL.


Child backends can be created only for the Oracle Cloud Applications backend and custom backends that use a OpenAPI/Swagger service specification.

- To create a child backend for the Oracle Cloud Applications backend:
 1. Open the instance's Tenant Settings page.
 2. In the Services tab, click the + sign for the top-level Oracle Cloud Applications backend:

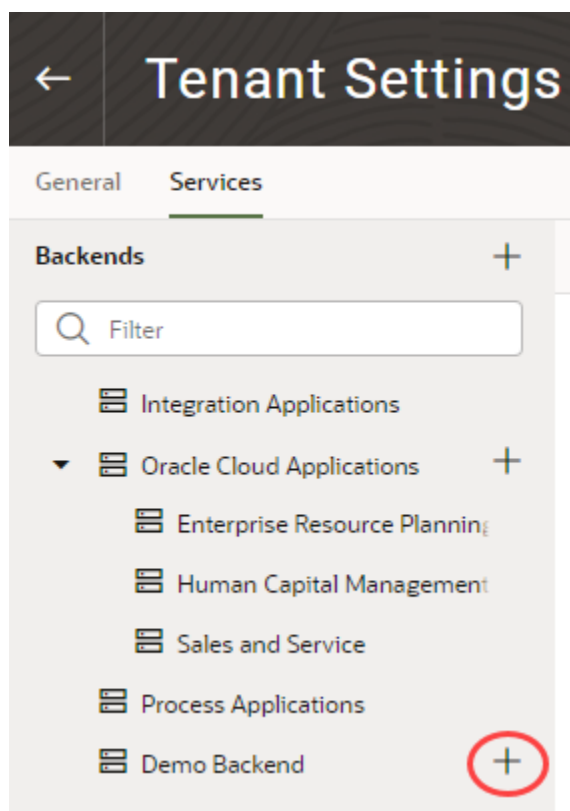


3. Select **Custom ADF Describe** to create a backend with an ADF Describe URL. For backends not having a Describe URL, select **Custom**.
4. Enter a name and description for the child backend. Optionally, add static headers.
5. Click **Next**.
6. Enter the instance URL for the child backend (for example, `vb-catalog://backends/fa/applcoreApi/search/`). The child backend's URL will usually start with `vb-catalog://backends/oracle-cloud-app-BackendId`.

 **Tip:**

To see the complete URL that the backend resolves to, click the **Detach** icon (.

7. Enter other settings, such as security and headers.
 8. Click **Create**.
- To create a child backend for a top-level custom backend:
 1. Open the instance's Tenant Settings page.
 2. In the Services tab, click the + sign for a top-level custom backend:



3. Enter a name and description for the child backend. Optionally, add static headers.
4. Click **Next**.
5. Enter the instance URL for the child backend (for example, `vb-catalog://backends/demo/newdemo`). You can click the **Detach** icon to see the complete URL that the backend resolves to.
6. Enter other settings, such as security and headers.
7. Click **Create**.

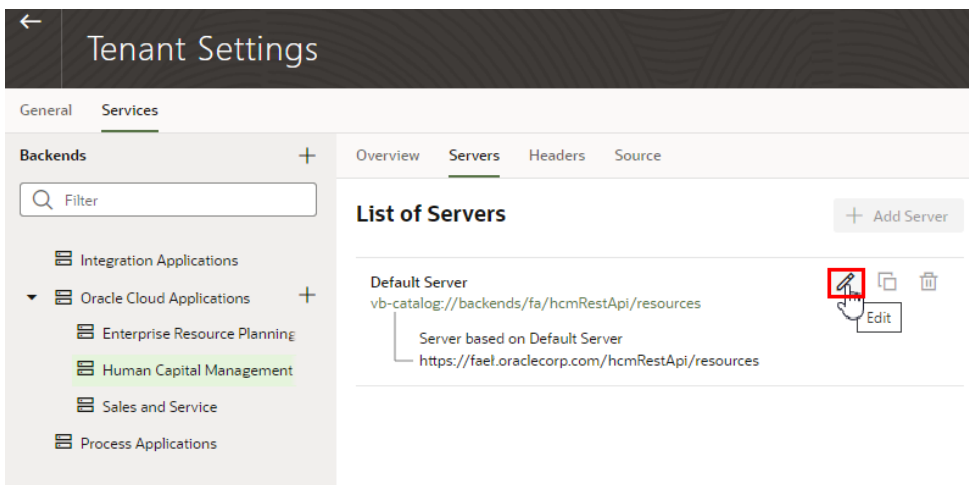
Edit Authentication for a Backend Service

Administrators can use the Services tab in the Tenant Settings page to edit the authentication and connection settings for the backend services available in the tenancy. Once a backend service is added, you can edit its details. In the case of child backends, you can also override the settings inherited from the backend service, for example, to allow connections to the child HCM backend to use basic authentication instead of using the Oracle Cloud Account authentication for logged-in users set at its parent backend.

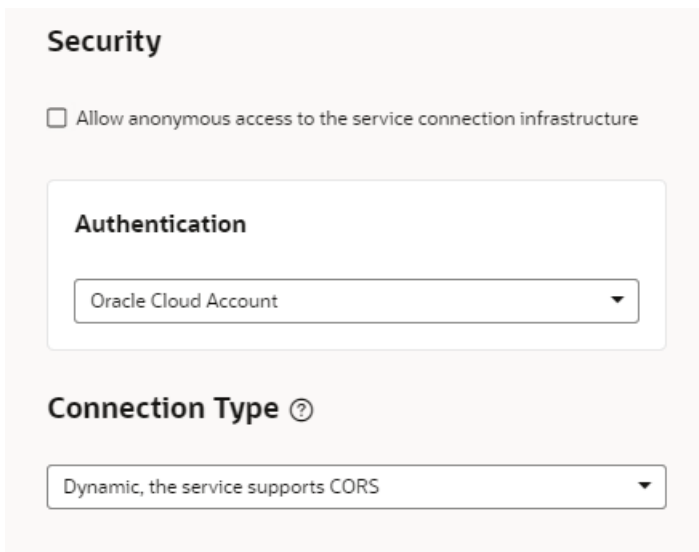
For a description of the authentication options, see About Authentication and Connection Type in *Developing Applications with Oracle Visual Builder in Oracle Integration Generation 2*.

To edit the connection details for a backend service:

1. Open the instance's Tenant Settings page.
2. In the Services tab, select the backend you want to edit.
3. Open the Servers tab of your backend, and then click **Edit**.



4. In the Edit Server dialog box, edit the settings in the Security and Connection Type panes.



In the case of a child backend, the authentication and connection type details for your backend service are inherited from the parent service, so you'll need to override the settings. If you want to revert your changes for a child backend, you can click **Return to inherited** to restore the default inherited setting.

Edit Server [Close]

Server Identification

Instance URL ⓘ
vb-catalog://backends/ta/hcmRestApi/resources

Description Keep it short so you can identify the server easily
Default Server

Server Variables

URI Template expressions entered in the URL field will be listed here.

Headers

Custom Headers
+ Add Header

Secure Headers
+ Add Header

Security Inherited from Backend

Allow anonymous access to the service connection infrastructure

Authentication for Logged-In Users
Authentication: Oracle Cloud Account
Override security

Connection Type ⓘ Inherited from Backend

Always use proxy, irrespective of CORS support
Override Connection Type

Cancel Save

5. In the Security pane, select an authentication type in the dropdown list.

If you are editing a child backend, you'll click **Override security** in the Security pane, and then select an authentication type in the dropdown list.

The screenshot shows a 'Security' configuration page. At the top, there is a checked checkbox labeled 'Allow anonymous access to the service connection infrastructure'. Below this is a section titled 'Authentication for Logged-In Users' which contains a dropdown menu. The dropdown is currently set to 'Oracle Cloud Account'. The menu is open, showing several options with their descriptions:

- None**: No authorization headers. Use when the service requires no authentication or when you want to pass a custom authorization header
- Oracle Cloud Account**: Logged in user identity represented by OAuth token with URL as scope
- Delegate Authentication**: Authentication determined by the calling web or mobile app's security settings. (For requests initiated from Service Tester, the logged-in developer's identity is used.)
- OAuth 2.0 Client Credentials**: OAuth token obtained with fixed client id and secret
- OAuth 2.0 Resource Owner Password Credentials**: OAuth token obtained with fixed client id, secret, username and password
- OAuth 2.0 User Assertion**: Logged in user identity represented by OAuth token for custom scope
- Basic**: Fixed username and password
- Oracle Cloud Infrastructure API Signature 1.0**

At the bottom right of the configuration area, there are two buttons: 'Cancel' and 'Save'.

6. In the Connection Type pane, select a connection type in the dropdown list.
In the case of a child backend, click **Override Connection Type** and then select the connection type.
7. Click **Save**.

Manage Self-signed Certificates

Administrators can use the Certificates page to upload and manage the self-signed certificates used by the instance to enable inbound and outbound SSL communications to a service's REST APIs

When creating connections to REST services that use self-signed certificates, you might need to add an API's certificate to your Visual Builder instance to validate SSL


connections to that service. You can use the Certificates page to upload and remove certificate files (.pem) for services. Uploading a service's certificate file to the keystore will allow all applications in the instance to communicate with that service. The Certificates page displays a list of certificates that have been added. You can click the Delete button in a row to remove the certificate.

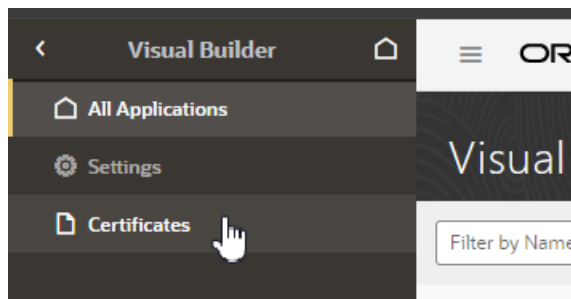
 **Note:**

Your staged or published apps might stop working if they use service connections with self-signed certificates and the certificates have expired. Any certificates issued after 2020-09-01T00:00:00.00Z will automatically expire 398 days after they have been issued. If your apps use certificates issued before 2020-09-01T00:00:00.00Z, the certificates will not expire, but you should update them with a newer certificate.

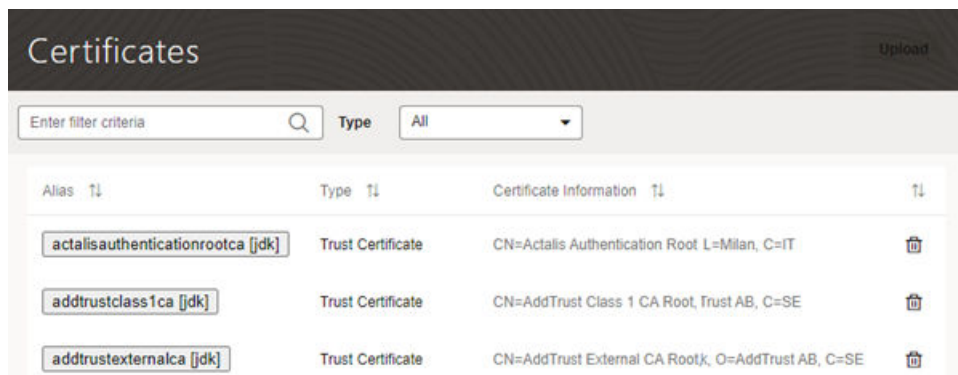
To avoid disruptions, you should plan regular updates to refresh the self-signed certificates before they expire (for example, every 6 months). It's not recommended to use self-signed certificates in production apps.

To upload a self-signed certificate:

1. In the upper-left corner of the Visual Builder title bar, click **Navigation Menu** .
2. Click **Certificates** in the navigation menu to open the Certificates page.

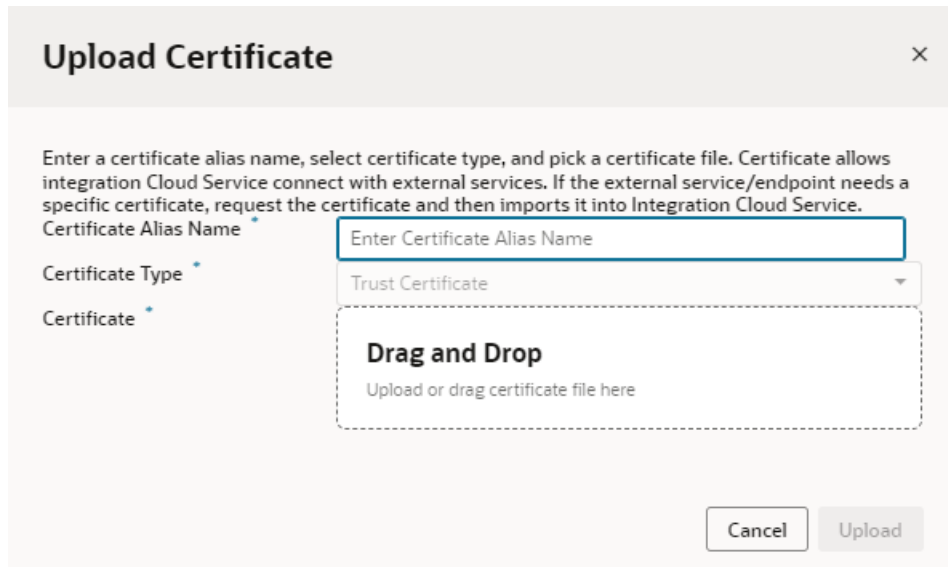


The Certificates page displays a list of the certificates already uploaded to the instance.



3. Click **Upload** to open the Upload Certificate dialog box.

You use the Upload Certificate dialog box to create an alias for the certificate and upload the service's certificate file from your local system.



4. Type the alias in the Certificate Alias Name field.
The alias is used to identify the certificate in the table in the Certificates page. The Certificate Type dropdown list is read-only because only Trust Certificates are supported.
5. Drag the certificate file from your local system into the upload target area, or click the upload target area to browse your local system.
6. Click **Upload** to add the certificate to the service keystore.

Manage Your Component Exchange

If your team develops custom components for visual applications and want the components to be available to all users in the Visual Builder Components tab, you'll need to first set up a component exchange. This chapter tells you how to set up the Component Exchange in Visual Builder.

What is a Component Exchange?

A component exchange is a repository of custom components available in VB Studio. You can use these components in your visual applications, such as web components and application templates. Many of the components provided by Oracle can be installed from a component exchange.

To integrate a component exchange with a Visual Builder instance, you provide the exchange's URL and credentials in the Tenant Settings. The exchange can be a private exchange in a VB Studio project or one of the exchanges maintained by Oracle.

If your organization develops or uses proprietary components, these components can be published to a private exchange hosted by a VB Studio project. For example, if you have a web component designed to be used in applications in your tenant, you can set

up your own exchange and use it to distribute the component to developers in the tenant. Additionally, components provided by Oracle are automatically available from all private component exchanges.

Oracle maintains two component exchanges containing components validated by Oracle that are publicly available to all developers. If you don't have a private exchange but you want to give developers access to these Oracle components, you can add one of the following exchanges maintained by Oracle. If your instance is in the US, use the following details.

Field	Value
URL	https://devinstance4wd8us2-wd4devcs8us2.uscom-central-1.oraclecloud.com/profile/devinstance4wd8us2-wd4devcs8us2/s/devinstance4wd8us2-wd4devcs8us2_compcatalog_3461/compcatalog/0.2.0
Username	comp.catalog
Password	bXwphh6RMFjn#g

If your instance is in Europe, use the following details.

Field	Value
URL	https://devinstance4wd8em2-wd4devcs8em2.eucom-north-1.oraclecloud.com/profile/devinstance4wd8em2-wd4devcs8em2/s/devinstance4wd8em2-wd4devcs8em2_compcatalog_1681/compcatalog/0.2.0
Username	comp.catalog
Password	!!MWtu4jsQ56wM

About Component Exchanges Hosted in VB Studio Projects

A VB Studio project can host a secure component exchange to store and distribute components only available to developers in the instance.

Each VB Studio project includes the component exchange 'compcatalog', which is the service used to access components stored in the project. The compcatalog service is provisioned by default with each project. Any project can be used to host an exchange if storage is enabled for the VB Studio instance. Component developers can use the service's APIs to publish components to the exchange.

To integrate a private exchange in a VB Studio project with a Visual Builder instance, an administrator specifies the URL for the project's compcatalog service and the credentials for a user that can access the project. The credentials used to connect to the exchange must be an owner or member of the VB Studio project hosting the exchange. All developers in the tenant use these credentials to connect to the exchange to get the components and application templates they want to use in their projects.

The URL for the project's compcatalog service has the following form: `https://<hostname>/<org_id>/s/<project_id>/compcatalog/0.2.0/`

In the URL, "compcatalog" is the exchange service and "0.2.0" is the API version of the service.

To determine the URL for the compcatalog service, you need to know the following details about the VB Studio project:

- `<hostname>`. This is the VB Studio server where the project is hosted.

- `<org_id>`. This is the organization (tenant) name.
- `<project_id>`. This is a project identifier unique to the tenant. This is not the same as the project display name entered by the project owner and is not displayed in the VB Studio UI.

If you do not know the `<project_id>` for the project hosting the exchange, you can get it from the Git or Maven configuration, or by using the VB Studio Projects API. The following table describes how to get the `<project_id>`.

Method	Steps
From a Git or Maven configuration	<ol style="list-style-type: none">1. In VB Studio, open the project and locate the Repositories tab on the project's Home Page.2. Expand the the Git or Maven section and copy the repository URL. <p>The Git repository URL will be similar to the following: <code>https://{user_id}@{hostname}/{org_id}/s/my-org_testproject_5/scm/my-repo.git</code></p> <p>The Maven repository URL will be similar to the following: <code>http://{hostname}/{org_id}/s/my-org_testproject_5/maven/</code></p> <p>In these examples, "my-org_testproject_5" is the project identifier. In this case, the URL for the 'compcatalog' service will be similar to <code>https://{hostname}/my-org/s/my-org_testproject_5/compcatalog/0.2.0/</code></p>

Method	Steps
Using VB Studio Projects API	<p>If you know the name of the project sharing your exchange instance, you can get the project metadata using a REST call to the VB Studio API.</p> <p>For example, you can use cURL to send a REST call similar to the following:</p> <pre>curl -X GET -u '{username}:{password}'https://{hostname}/{org_id}/api/v2/projects/info/name:TestProject</pre> <p>The return should be similar to the following:</p> <pre>[{ "organization": "my-org", "identifier": "my-org_testproject_5", "name": "TestProject", "urlId": "testproject", "description": null, "accessibility": "PRIVATE", "template": false, "state": "READY", "locked": false, "relation": { "membership": "OWNER", "favorite": false } }]</pre> <p>In this example, the identifier property in the return is the project identifier that is needed for the "compcatalog" service URL.</p>

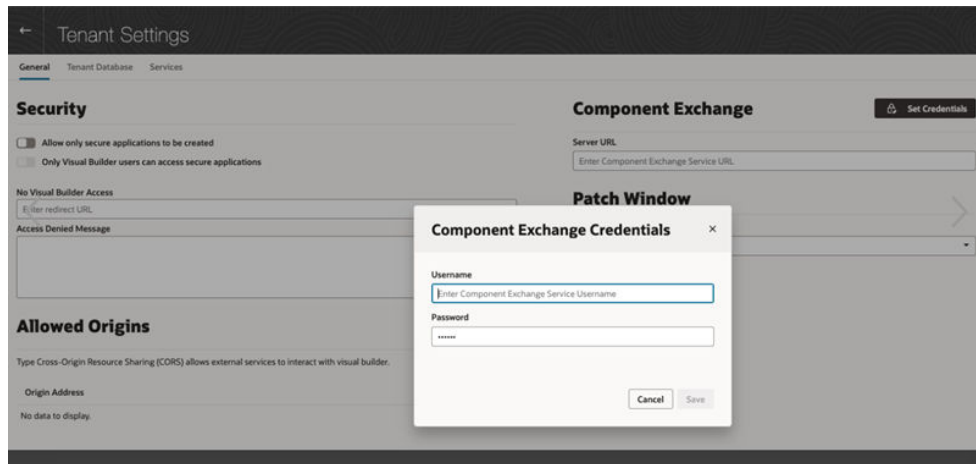
Add a Connection to a Component Exchange

When an instance is integrated with a component exchange, all developers using the instance can access and install components stored there.

After an exchange is added to the instance, all developers can use the Components tab in the Navigator to install and manage the components from the exchange that they want to use in their applications. When creating an application in the Create Application wizard, developers can also select any of the application templates that have been published to the exchange.

To add a connection to the Component Exchange:

1. Open the instance's Tenant Settings page.
2. In the Component Exchange panel, enter the URL for the component exchange, then click **Set Credentials**.
3. In the Component Exchange Credentials dialog box, enter the username and password for the user whose credentials will be used to authenticate access to the Component Exchange. Click **Save**.



If you are adding a connection to a private component exchange, it is recommended that the credentials you provide are for an administrator who is a member of the VB Studio project hosting the exchange or the project owner.

Configure Support for a Custom Domain

If you want your customers to see a different URL than the one generated by Visual Builder, you can map a custom domain to your instance. A custom domain is a customer-provided hostname and domain (FQDN) created by adding a subdomain to your domain. After configuring your instance to use a custom domain, app users accessing the app using the custom domain will not see the typical Oracle domain (for example, `myvbinstance-accountname.builder.ocp.oraclecloud.com`) in the URL, but instead would see something like `mycustom.example.org`.

To use a custom domain for a visual application:

- Configure the custom URL for your Oracle Integration Generation 2 instance, using the instructions in *Configure a Custom Endpoint for an Instance in Provisioning and Administering Oracle Integration Generation 2*.

Note:

Custom URLs are supported on Oracle Integration instances (but only if you're on Oracle Integration Generation 2), as well as on Visual Builder instances.

Depending on whether you're on Oracle Integration Generation 2, Visual Builder, or a Visual Builder instance that was provisioned as part of a SaaS order, the process for enabling custom URLs varies. If you are using an Visual Builder instance, use the instructions in *Configure Support for a Custom Domain in Administering Oracle Visual Builder Generation 2*.

- Set the custom domain in the visual application's Settings editor and publish the app. See *Specify a Custom App URL in Developing Applications with Oracle Visual Builder in Oracle Integration Generation 2*.

**Note:**

You can configure only one custom domain for each Oracle Integration Generation 2 instance.

After configuring a custom domain:

- Users can access a single web app by typing just the custom domain URL in the browser, for example, `mycustom.example.org`. The app is loaded from the custom domain root ("/"), and no additional path information or query parameters are required in the URL.
- `http` can be redirected to `https`, so if a user types "mycustom.example.com", this will resolve to `https://mycustom.example.com`, and load the default web app.
- For applications that contain business objects, the Business Object REST API can also use the custom domain configuration.
- Developers can access the Designer in Visual Builder using a custom domain.
- If you create and stage an application from a custom domain (`https://mycustom.example.com/ic/builder/designer`), you'll be automatically redirected to the custom domain (`https://mycustom.example.com/ic/builder/rt/appid/version/...`) when you open the app using a URL that isn't the application's custom domain (for example, your instance's URL `https://servicename.oraclecloud.com/ic/builder/rt/appid/version/...`).

Custom domains are also subject to other limitations:

- A custom domain can only access a published app. It will not work for apps that are only staged.
- If you publish a different web app in your visual application, it immediately becomes the default app for the custom domain, and the previous web app will no longer be available at the custom domain.
- A custom domain can only be used to access one live app (in the visual application configured for the root URL). You can access other live apps in the same instance only by using the full Oracle Cloud URL or by creating and configuring a different custom domain and visual application.
- If a visual application contains more than one web app, only one of them can be accessed using the custom domain. It's not possible to specify which app in a visual application will be available at the custom domain because the domain is configured in the Settings for the visual application, not for individual web apps. If you are going to use a custom domain, it is recommended that the visual application only contain one web app to ensure that the correct app is loaded.
- Mobile and PWA apps are not supported at this time. Custom domains can only be used for web apps.