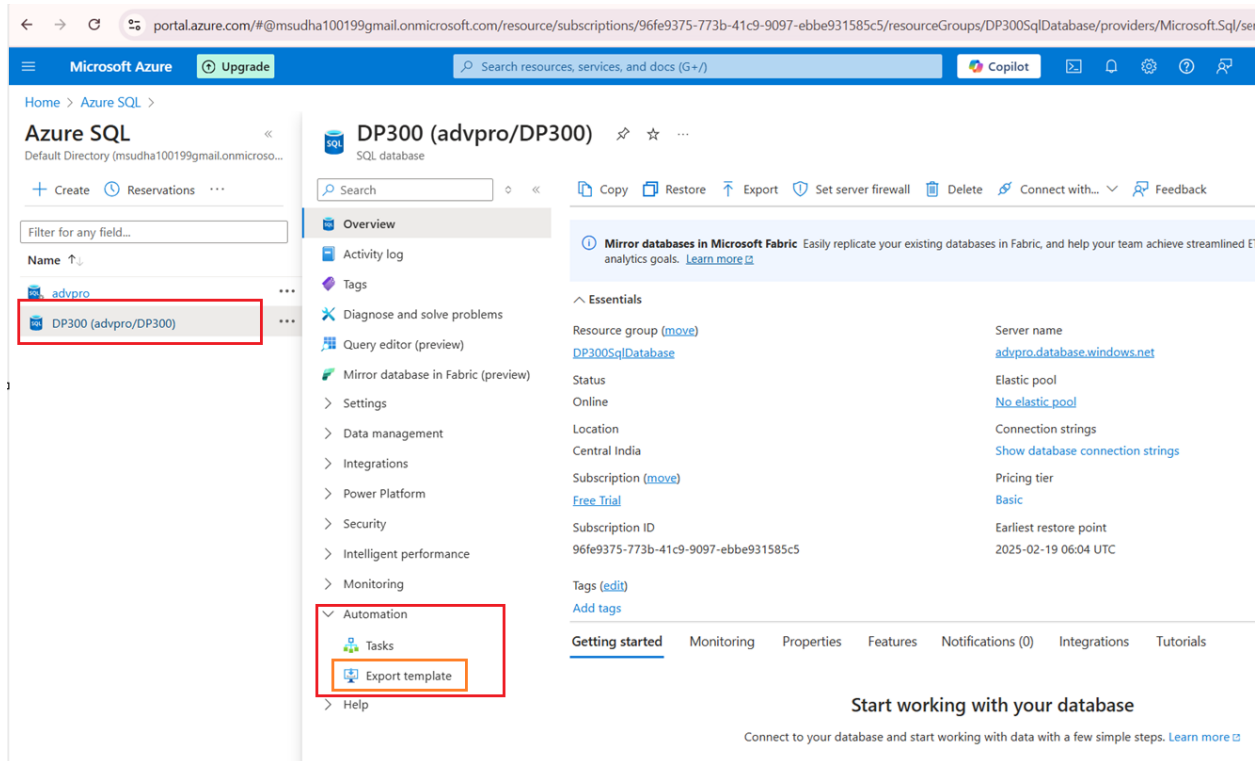


Configure customized deployment templates

We're going to look at some alternative ways of deploying resources. So, let's go back to our SQL database. So, here it is. Now, on the left-hand side, we've got lots of different options that we've got, and going nearly to the bottom, we've got an export template.



Now, this is what's called an ARM template, Azure Resource Manager, ARM. And you can see it switching in code. This code is called JSON, J-S-O-N. And it's readable.

If you're used to something like XML, well, it's a relative, let's say, you know, maybe a cousin.

But you can see it uses these pair values. So, we've got the name, then we've got the value over here. It uses parameters as well.

And if I go to the top, you can see that we've got a parameter called the server and the initial value of the parameter is null, and here we can see I've given it the name.

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DP300 (advpro/DP300) | Export template ☆ ...

SQL database | PREVIEW

Search Download Deploy Feedback

Overview Activity log Tags Diagnose and solve problems Query editor (preview) Mirror database in Fabric (preview) Settings Data management Integrations Power Platform Security Intelligent performance Monitoring Automation Tasks **Export template** Help

Include parameters ⓘ

Template Parameters

To export all resources in this resource group, navigate to the "Export template" experience under "Automation" on the left menu of the resource group.

```

1 {
2   "$schema": "https://schema.management.azure.com/schemas/2019-04-01/
3   deploymentTemplate.json#",
4   "contentVersion": "1.0.0.0",
5   "parameters": {
6     "servers_advpro_name": {
7       "defaultValue": "advpro",
8       "type": "String"
9     },
10  "variables": {},
11  "resources": [
12    {
13      "type": "Microsoft.Sql/servers/databases",
14      "apiVersion": "2024-05-01-preview",
15      "name": "[concat(parameters('servers_advpro_name'), '/DP300')]",
16      "location": "centralindia",
17      "sku": {
18        "name": "Basic",
19        "tier": "Basic"
20      }
21    }
22  ]
23 }

```

Copy template

Now, how was this generated? What is generated when you create an Azure database, well, in fact, any resource?

So, if I go and create a resource, here we have my SQL database section, and I will click "create" and here's my database.

So, I'm just putting in default values

go to "review and create."

You can see that we've got at the bottom a section

"Download a template for automation."

So, when I do that, you can see again this ARM template, and I've got the same things that I can do.

I can download,

I can also deploy.

What does deploy mean?

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Azure SQL > Select SQL deployment option >

Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags **Review + create**

Product details

SQL database by Microsoft
[Terms of use](#) | [Privacy policy](#)

Estimated cost
Storage cost 453.72 INR / month + Compute cost 0.013263 INR / vCore second

Terms

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. For additional details see [Azure Marketplace Terms](#).

Basics

Subscription	Free Trial
Resource group	DP300SqlDatabase
Region	centralindia
Database name	db1
Server	advpro
Compute + storage	General Purpose - Serverless: Standard-series (Gen5), 1 vCore, 32 GB storage
Backup storage redundancy	Geo-redundant backup storage

Create < Previous [Download a template for automation](#)

Well, if I make any changes here and click deploy, then hopefully, by the end, my SQL database in this instance will reflect the changes that I've made here.

So, all I'm doing when I'm creating all these SQL databases here is I'm basically building up an ARM template. It all gets encoded and then when I click "create,"

Then it will have a look at the template, make sure it works and then create it based on that. So, if you have an existing database or anything, I could download it.

Template ...



Template Parameters

i Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Define resources and configurable input parameters at

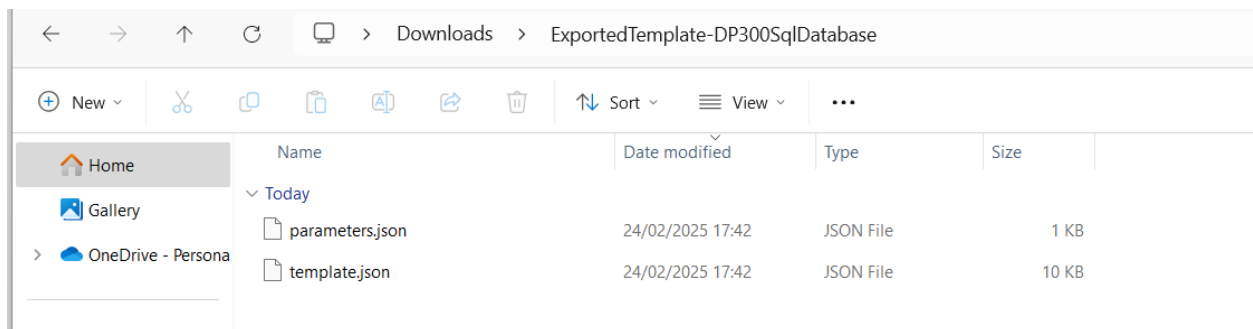
```
1 {
2   "$schema": "http://schema.management.azure.com/schemas/2014-04-01-preview/deploymentTemplate.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "collation": {
6       "type": "string"
7     },
8     "databaseName": {
9       "type": "string"
10    },
11    "tier": {
12      "type": "string"
13    },
14    "skuName": {
15      "type": "string"
16    },
17    "maxSizeBytes": {
18      "type": "int"
19    },
20    "serverName": {
21      "type": "string"
22    },
23    "serverLocation": {
```

Copy template

Now, I can download this one database. I can make any adjustments, and then I can deploy it separately to this,

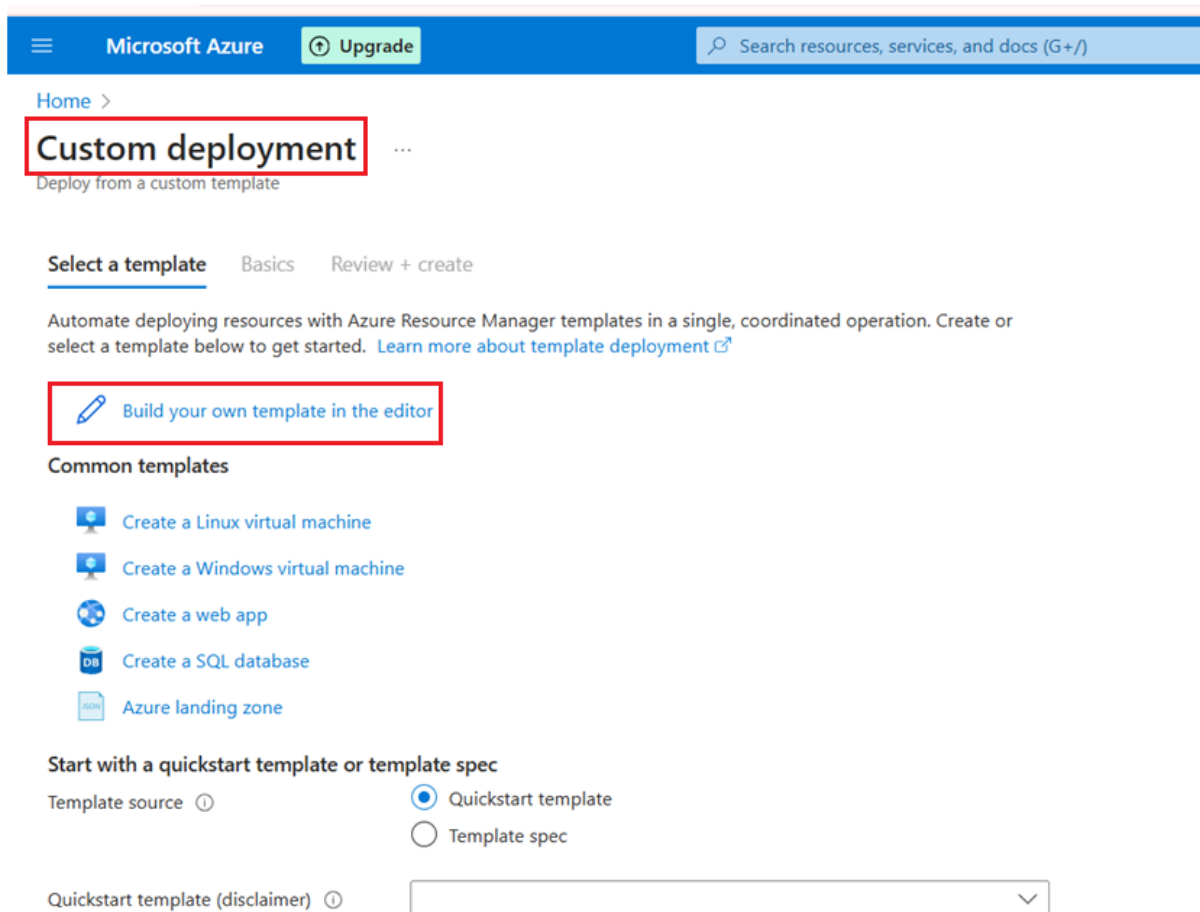
So, click "download," you can see it here.

going to my download, here it is. So, I'll unzip it, there you go.



And then I can edit these. So, I can edit these in Notepad, and then I can change anything I want, any of the parameters for instance, and I've got this other file here.

So, I have downloaded it, I've made the changes, and what I can do now is deploy it. So, deploy a custom template. So, I will build my own template in the editor. I will upload files.




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Home > **Custom deployment** ...
Deploy from a custom template

Select a template Basics Review + create

Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Create or select a template below to get started. [Learn more about template deployment](#)

 Build your own template in the editor

Common templates

-  Create a Linux virtual machine
-  Create a Windows virtual machine
-  Create a web app
-  Create a SQL database
-  Azure landing zone

Start with a quickstart template or template spec

Template source ⓘ ☒ Quickstart template ☐ Template spec

Quickstart template (disclaimer) ⓘ

So, I'll go to where those files are located. So, there we go, I'll click "save," and that's created parameters as well. And then if everything was working correctly, then I would say, "Okay, give me a resource group," and "review and create."

[Home](#) >

Custom deployment

Deploy from a custom template

New! Deployment Stacks let you manage the lifecycle of your deployments. Try it now →

Select a template **Basics** Review + create

Template

Customized template 17 resources

Edit template Edit parameters Visualize

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Free Trial

Resource group * ⓘ DP300SqlDatabase
[Create new](#)

Instance details

Region * ⓘ (Asia Pacific) Central India ✓

Servers_advpro_name advpro ✓

But this wouldn't work because as you saw, not everything is downloadable now for the SQL database. It would work with other resources.

portal.azure.com/#home

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Azure services

Create a resource Azure SQL Deploy a custom... Marketplace Billing subscriptions Subscriptions All resources Quickstart Center Azure AI services More services

Resources

Recent Favorite

Name	Type	Last Viewed
DP300 (advpro/DP300)	SQL database	16 minutes ago
advpro	SQL server	31 minutes ago
Free Trial	Subscription	5 hours ago
DP300SqlDatabase	Resource group	5 days ago

[See all](#)

Welcome to Azure Cloud Shell

Select Bash or PowerShell. You can change shells any time via the environment selector in the Cloud Shell toolbar. The most recently used environment will be the default for your next session.

Bash PowerShell

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Now, I could also use Azure PowerShell. So, Azure PowerShell is this thing here.

So, if I click on it, you'll see we get a new window, and I can choose with this Cloud Shell to use PowerShell or Bash also known as the CLI, Command Line Interface.

So, if I was to click on one and I'm going to create a little bit of storage that's needed to which will incur a small monthly cost, then I could type commands in this new window.

The screenshot shows the Azure portal interface. At the top, there's a navigation bar with the Microsoft Azure logo, an 'Upgrade' button, a search bar, and a 'Copilot' button. Below this, the 'Azure services' section displays various icons for services like 'Create a resource', 'Azure SQL', 'Deploy a custom...', 'Marketplace', 'Billing subscriptions', 'Subscriptions', 'All resources', 'Quickstart Center', 'Azure AI services', and 'More services'. The 'Resources' section is active, showing a table of recent resources. Below the table, there's a 'See all' link. At the bottom, the Cloud Shell interface is visible, showing a terminal window with PowerShell commands and output.

Name	Type	Last Viewed
DP300 (advpro/DP300)	SQL database	16 minutes ago
advpro	SQL server	31 minutes ago
Free Trial	Subscription	5 hours ago
DP300SqlDatabase	Resource group	5 days ago

```
MOTD: SqlServer has been updated to Version 22!

VERBOSE: Authenticating to Azure ...
WARNING: You're using Az version 13.1.0. The latest version of Az is 13.2.0. Upgrade your Az modules using the following commands:
  Update-PSResource Az -WhatIf -- Simulate updating your Az modules.
  Update-PSResource Az -- Update your Az modules.
VERBOSE: Building your Azure drive ...
PS /home/ragasudha>
PS /home/ragasudha>
PS /home/ragasudha>
PS /home/ragasudha> ls
Microsoft
PS /home/ragasudha>
```

Now, to show you the sort of commands

<https://learn.microsoft.com/en-us/azure/azure-resource-manager/management/manage-resource-groups-cli>

<https://learn.microsoft.com/en-us/cli/azure/get-started-with-azure-cli>

<https://learn.microsoft.com/en-us/powershell/module/microsoft.powershell.utility/write-host?view=powershell-7.5>

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Now, if I was using something called an Azure pipeline, then I could also use something called DACPAC, D-A-C-P-A-C. That's a data tear application, portable artefact.

So, this would be added to something called the Azure-pipelines.yaml. YAML stands for Yet Another Markup Language, so, for instance, if I was deploying a custom template, if I was using PowerShell or CLI, Command Line Interface, Then this would allow me to automate this and reduce the number of errors that I would be creating.

You can always start with quick start templates and then modify them. So, here are various automated deployment methods for resources. You can use PowerShell, you can use CLI, you can use DACPAC if you are using an Azure pipeline, which one I'm going to be using this. Or if you have an existing template, so, let's go to our resource group, we can always export the template, make whatever adjustments we want to do, and then deploy it later to create a new database.