



Máster en Ingeniería MultiCloud, DevOps y Seguridad.

AZURE LAB #10

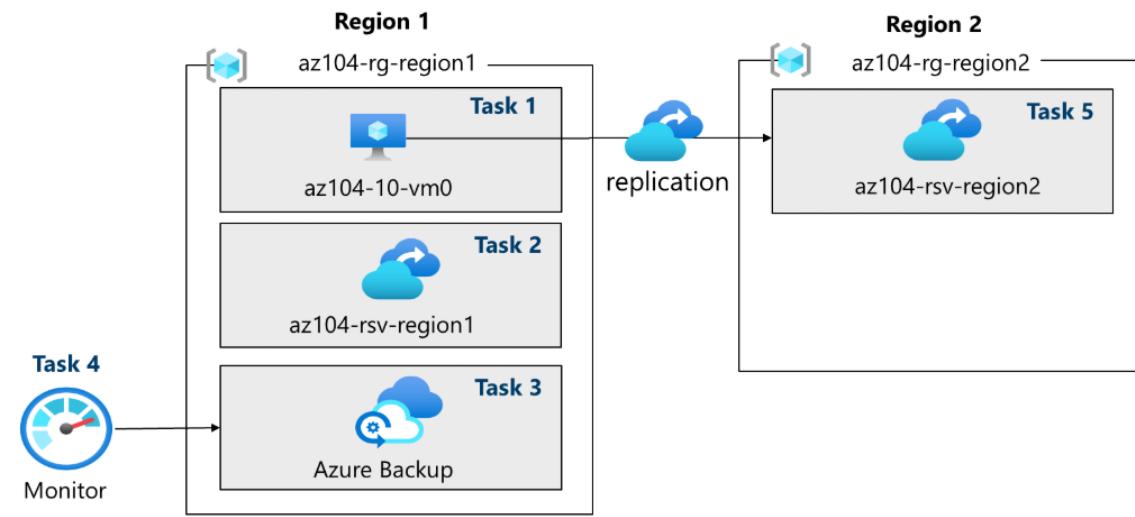
# Implementación de protección de datos



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## Esquema del laboratorio





## Usando una plantilla para desplegar la infraestructura.

The screenshot shows the Azure Custom Deployment interface. At the top, there's a banner with the text "Custom deployment" and "Deploy from a custom template". Below the banner, a message says "New! Deployment Stacks let you manage the lifecycle of your deployments. Try it now →". There are three buttons: "I want to deploy resources using Bicep", "Generate a Powershell script to deploy a resource", and a three-dot menu icon.

The main area is titled "template" and shows a "Customized template" with "5 resources". Below this are three buttons: "Edit template", "Edit parameters", and "Visualize".

Under "Project details", it says "Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources." The "Subscription" dropdown is set to "Azure for Students" and the "Resource group" dropdown is set to "az104-rg-region1".

The "Instance details" section contains the following configuration:

Region *	(Europe) Spain Central
Admin Username *	localadmin
Admin Password *	*****
Vm Name Prefix	az104-10-vm
Pip Name Prefix	az104-10-pip
Nic Name Prefix	az104-10-nic
Image Publisher	MicrosoftWindowsServer
Image Offer	WindowsServer
Image SKU	2019-Datacenter
Vm Size	Standard_D2s_v3
Virtual Network Name	az104-10-vnet
Add more... *	10.0.0.0/24

Utilizo la plantilla proporcionada en el laboratorio, la cual me crea una máquina virtual, una red virtual, una ip pública y un nsg.

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✓ Your deployment is complete

Deployment name : Microsoft.Template-20251214115310  
 Subscription : Azure for Students  
 Resource group : az104-rg-region1

Start time : 14/12/2025, 11:53:13  
 Correlation ID : f712f38b-e68a-4b47-8eac-ef0e885aed76

Deployment details

Resource	Type	Status	Operation details
az104-10-vm0	Virtual machine	OK	<a href="#">Operation details</a>
az104-10-nic0	Microsoft.Network/networkInterfaces	OK	<a href="#">Operation details</a>
az104-10-pip0	Public IP address	OK	<a href="#">Operation details</a>
az104-10-vnet	Virtual network	OK	<a href="#">Operation details</a>
az104-10-nsgr01	Network security group	OK	<a href="#">Operation details</a>

## Recursos desplegados

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## Crear y configurar Recovery Services vault

**Create Recovery Services vault** ...

 Help me create a vault    [Help me copy an existing vault settings](#)

\* [Basics](#)   [Redundancy](#)   [Encryption](#)   [Vault properties](#)   [Networking](#)   [Tags](#)   [Review + create](#)

**Project Details**

Select the subscription and the resource group in which you want to create the vault.

Subscription \* ⓘ

Resource group \* ⓘ  [Create new](#)

**Instance Details**

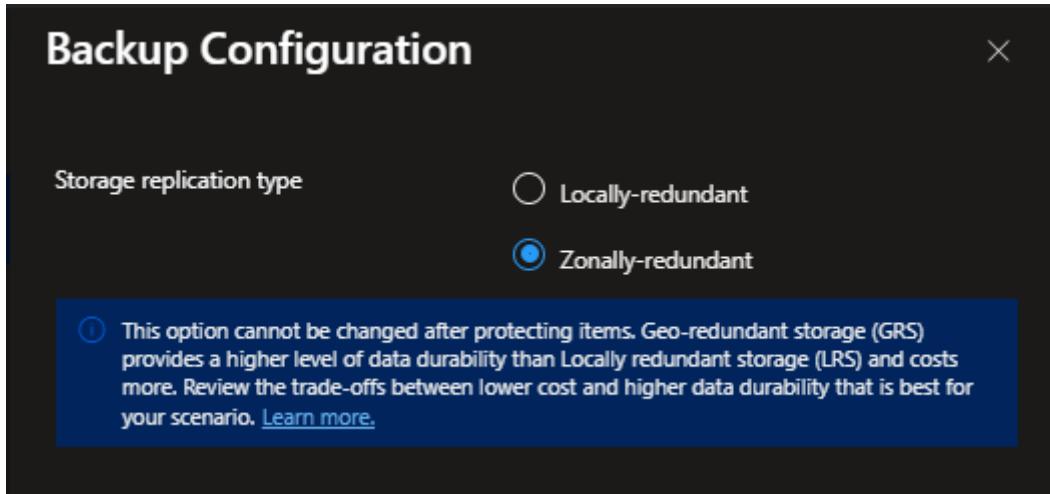
Vault name \* ⓘ  ✓

Region \* ⓘ

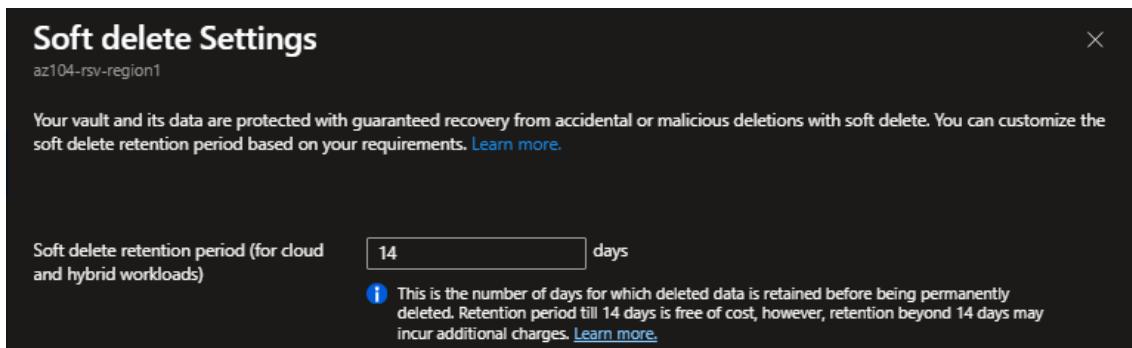
 Cross Subscription Restore is enabled by default for all vaults. Visit vault 'Properties' to disable the same. [Learn more.](#)

Creo el rsv.

El resto de las opciones las he dejado por defecto.



En el laboratorio pide utilizar GRS pero como he seleccionado de región España no permite GRS.



Este es el tiempo predeterminado por el cual los datos borrados permanecen en Azure aun así de haberlos borrados antes de borrarse permanentemente.



## Configurar un BackUp

The screenshot shows the 'Backup Goal' configuration interface. At the top, there is a warning message: '⚠ The storage replication is set to Zone Redundant. This option cannot be changed later. Before proceeding further, click here'. Below this, there are two dropdown menus: 'Where is your workload running?' set to 'Azure' and 'What do you want to backup?' set to 'Virtual machine'. A blue button labeled 'Backup' is visible. At the bottom, there are links for 'Give feedback' and 'Help improve this page'.

Dentro del recursos accedo a la pestaña de backup, donde voy a crear un backup para máquina virtual.



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**Configure backup** ...

az104-rsv-region1

Policy sub type \*

Enhanced

- ✓ Multiple backups per day
- ✓ Up to 30 days operational tier retention
- ✓ Support for Trusted Launch Azure VM
- ✓ Support for VMs with Ultra Disks and Premium SSD v2

Standard

- ✓ Once-a-day backup
- ✓ Up to 5 days operational tier retention

Backup policy \* ⓘ

DefaultPolicy

Create a new policy

The list contains the policies pertaining to the selected policy sub type. [Learn more](#).

Policy details

Full backup

Backup frequency

Daily at 9:00 PM UTC

Instant restore

Retain instant recovery snapshot(s) for 2 day(s)

Retention of daily backup point

Retain backup taken every day at 9:00 PM for 30 Day(s)

Consistency type ⓘ

Application or file-system consistent

Virtual machines

Name	Resource group
No virtual machines selected.	

Add

ⓘ Selective disk backup option allows you to include or exclude specific data disks based on their LUN numbers. OS Disk exclusion is not supported. Know more about Selective Disk Backup feature, its limitation and pricing. [Learn more](#)

⚠ Selective disk backup with Standard policy incurs Snapshot cost which is always calculated for all the disks in the VM (both the included and excluded disks). This snapshot cost of excluded disks is **not incurred if Enhanced policy** is chosen.

Enable backup

Download a template for automation

Selecciono Standard para los backups.



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**Create policy**

Azure Virtual Machine

Recovery points can be automatically moved to the vault-archive tier using backup policy. [Learn more.](#)

Policy name: az104-backup

**Backup schedule**

Frequency: Daily, Time: 0:00, Timezone: (UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna

**Instant restore**

Retain instant recovery snapshot(s) for: 2 Day(s)

**Retention range**

Retention of daily backup point  
At: 0:00, For: 30 Day(s)

Retention of weekly backup point  
Not Configured

Retention of monthly backup point  
Not Configured

Retention of yearly backup point  
Not Configured

**Information**

Azure Backup service creates a separate resource group to store the instant recovery points of managed virtual machines. The default naming format of resource group created by Azure Backup service is AzureBackupRG\_{Geo}\_{n}. It is optional to customize the name as per your requirement. [Learn More](#)

Azure Backup Resource Group (Optional)

Enter The Name: n Suffix (Optional):

Creo la política de los backups, diarios y a las 12 de la noche.

Virtual machines

Name	Resource group	Disk	Include future disks
az104-10-vm0	az104-rg-region1	az104-10-vm0-disk1	<input checked="" type="checkbox"/>

Add

Añado la máquina virtual que he creado anteriormente para que se generen los backups de ella.



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The screenshot shows the 'Backup Items (Azure Virtual Machine)' blade in the Azure portal. It lists a single item: 'az104-10-vm0' from 'az104-rg-region1'. The 'Backup Pre-Check' status is 'Passed', 'Last Backup Status' is 'Warning (Initial backup pending)', and the 'Policy name' is 'az104-backup'. A context menu is open on the right, with the 'Backup now' option highlighted in red.

Voy a hacer el backup de la máquina ahora mismo.



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## Monitorear Azure Backup

Creo una cuenta de almacenamiento para que el rsv mande los logs aquí para luego ver los logs con Log Analytics.

Diagnostic setting ...

Save Discard Delete Feedback

A diagnostic setting specifies a list of categories of platform logs and/or metrics that you want to collect from a resource, and one or more destinations that you would stream them to. Normal usage charges for the destination will occur. [Learn more about the different log categories and contents of those logs](#)

Diagnostic setting name \* Logs and Metrics to storage

Logs

Category groups ⓘ

allLogs

Categories

Azure Backup Reporting Data

Core Azure Backup Data

Addon Azure Backup Job Data

Addon Azure Backup Alert Data

Addon Azure Backup Policy Data

Addon Azure Backup Storage Data

Addon Azure Backup Protected Instance Data

Azure Site Recovery Jobs

Azure Site Recovery Events

Azure Site Recovery Replicated Items

Azure Site Recovery Replication Stats

Azure Site Recovery Recovery Points

Destination details

Send to Log Analytics workspace

Archive to a storage account

⚠ You'll be charged normal data rates for storage and transactions when you send diagnostics to a storage account.

⚠ Showing all storage accounts including classic storage accounts

Location: Spain Central

Subscription: Azure for Students

Storage account: sabackup1234567

Stream to an event hub

Send to partner solution

Dentro del rsv accedo a la pestaña monitoring – diagnostics settings, selecciono los logs que quiero generar y que cuenta de almacenamiento quiero mandarlo.



## Habilitar replicación de máquina virtual.

Home > Recovery services vaults >

### Create Recovery Services vault

Help me create a vault    Help me copy an existing vault settings

\* Basics   Redundancy   Encryption   Vault properties   Networking   Tags   Review + create

**Project Details**

Select the subscription and the resource group in which you want to create the vault.

Subscription \* ⓘ    ▼

Resource group \* ⓘ    ▼  
[Create new](#)

**Instance Details**

Vault name \* ⓘ    ✓

Region \* ⓘ    ▼

ⓘ Cross Subscription Restore is enabled by default for all vaults. Visit vault 'Properties' to disable the same. [Learn more](#).

Creo otro rsv pero esta vez en otra región.

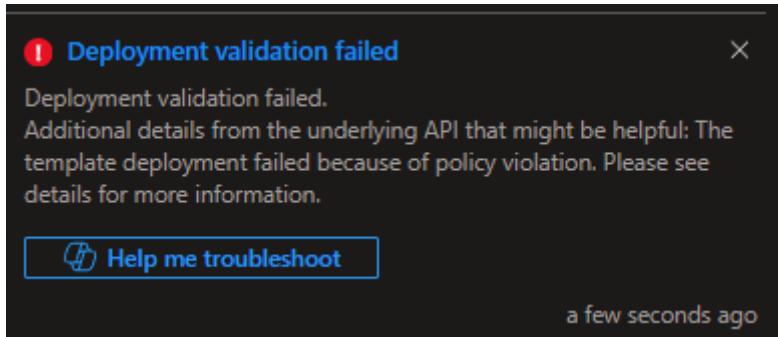


## AZURE LAB #10

The screenshot shows the Azure portal interface for configuring disaster recovery for a virtual machine named 'az104-10-vm0'. The left sidebar navigation bar is visible, showing various options like 'Search', 'tags', 'Diagnose and solve problems', 'Resource visualizer', 'Connect', 'Networking', 'Settings' (with 'Disks', 'Extensions + applications', 'Operating system', 'Configuration', 'Advisor recommendations', 'Properties', 'Locks'), 'Availability + scale' (with 'Size' and 'Availability + scaling'), 'Security', 'Backup + disaster recovery' (selected), 'Backup', 'Disaster recovery' (selected), 'Restore point', 'Operations', 'Monitoring', 'Automation', and 'Help'. The main content area is titled 'az104-10-vm0 | Disaster recovery'. It displays 'Target settings' for the target subscription ('Azure for Students') and resource group ('az104-rg-region1'). Under 'Availability', 'Single instance' is selected. In the 'Capacity Reservation Settings' section, it says 'Reserve a capacity at the destination location - for this Virtual machine size - Standard\_D2s\_v3'. Below that, 'Capacity Reservation Groups' has a dropdown set to 'Select'. The 'Storage settings' section indicates 'A new cache storage account and 1 replica managed disk(s) will be created.' The 'Replication settings' section notes 'An existing recovery services vault will be used and a new replication policy will be created.' The 'Extension settings' section shows 'Update settings' set to 'Allow ASR to manage' and an 'Automation account' dropdown with '(new) az104-rsv-uw8-asr-automationaccount' and a 'Create' button. At the bottom, there are 'Review + Start replication', 'Previous', and 'Next : Review + Start replication' buttons.

The screenshot shows the 'Replication settings' configuration page. It includes fields for 'Vault subscription' ('Azure for Students'), 'Recovery services vault' ('az104-rsv-region2'), 'Vault resource group' ('az104-rg-region2'), and 'Replication policy' ('(new) 24-hour-retention-policy'). Below these, the 'Extension settings' section is expanded, showing 'Update settings' set to 'Allow ASR to manage' and an 'Automation account' dropdown with '(new) az104-rsv-uw8-asr-automationaccount' and a 'Create' button. At the bottom, there are 'Review + Start replication', 'Previous', and 'Next : Review + Start replication' buttons.

El objetivo principal de esta configuración es establecer la Recuperación ante Desastres (Disaster Recovery) para la máquina virtual az104-10-vm0



Por alguna política de la suscripción de estudiantes me da error al desplegar la automation account por lo que no puedo replicar la maquina en otra región.