

Chaos Engineering Scenario: Leverage Chaos Studio to test the impact of a DNS outage on an application dependency

Introduction

You can use a chaos experiment to verify that your application is resilient to Domain Name System (DNS) outages by causing those outages in a controlled environment. By following this guide, you will simulate a DNS outage on an application dependency for an application running on Windows virtual machine(s) using a chaos experiment and Azure Chaos Studio. Ultimately, this helps you defend against service interruption.

Prerequisites

Before proceeding, you should understand:

- Your service's or application's dependency on Domain Name Systems (DNS) (<https://support.microsoft.com/topic/description-of-domain-name-system-dns-d7476f12-818e-1db7-aa7b-7066fb5e382a>)
- Service level indicators (SLIs) and service level objectives (SLOs) (<https://eng.ms/docs/quality/slos-slis>)
- The Azure Quality Program (<https://eng.ms/docs/quality/program-overview>)

Tools

- An Azure subscription (<https://docs.microsoft.com/azure/guides/developer/azure-developer-guide#understanding-accounts-subscriptions-and-billing>). Create a subscription in AIRS (<https://azuremsregistration.microsoft.com/Default.aspx>) before you begin.
- An application that runs on Windows virtual machines in Azure Canary regions and follows mandatory safe deployment practices (<https://eng.ms/docs/quality/zero-self-inflicted-sev1s/safedeploy>). DNS testing with Chaos Studio is currently only available using Windows virtual machines.
- A user-assigned managed identity. (<https://docs.microsoft.com/azure/active-directory/managed-identities-azure-resources/how-manage-user-assigned-managed-identities>)

Scenario background

The DNS translates human-readable domain names like www.example.com (<https://www.example.com/>) into computer-readable IP addresses like 192.0.2.255. This is a key step in allowing users to easily access websites. During a DNS outage, the DNS server doesn't connect a domain name to its corresponding IP address, leaving users without access.

Service level indicators (SLIs) are metrics such as availability, latency, throughput, and error rate. These metrics are used to analyze service quality and reliability. SLIs are the target values for your service level objectives (SLOs), or what the customer expects from a service's performance. You can use SLIs and SLOs to evaluate an application's resilience to a DNS outage by analyzing any variance in the SLIs, which potentially violates the SLOs, when a DNS outage occurs.

Scenario goal

In this scenario, you will:

- Understand DNS, DNS outages, and DNS's relationship with application dependency, and understand how these elements can be accessed using Chaos Studio.
 - Identify and use key metrics to formulate an experiment hypothesis.
 - Create an experiment that tests the performance of a deployed application in the event of a DNS outage.
 - Interpret experiment results to assess and potentially reformulate your created hypothesis.
-

Establish a hypothesis

Establishing a hypothesis is critical before beginning an experiment. Without a hypothesis, it is difficult to understand what to test or how to interpret any results.

For this scenario, create a hypothesis that addresses both DNS and observability expectations. If there is a DNS outage and it causes a failure to resolve one or more of your application's dependencies, what do you expect to happen, and how do you expect to receive the results?

To create a hypothesis, ask questions relevant to the scenario. For example, what resilience measures are already in place to mitigate the impact of a DNS outage? Do these resilience measures work as expected? By running this experiment, what do you expect to happen given your specific application setup, SLI, and SLO? What does a healthy result look like? What is your failure tolerance? What metrics are you assessing?

A hypothesis for this scenario might look like: "In the event of a DNS outage, **ICM incidents were created, and the appropriate resiliency measures were activated. I expect to find the experiment results by analyzing .**" The hypothesis may differ based on your environment.

Using this example, a potential hypothesis may be: "In the event of a DNS outage, no ICM incidents were created, and the appropriate resiliency measures were activated. I expect to find the experiment results by analyzing my application's availability metrics against my defined SLIs and SLOs."

Onboard the resources

1. Open **Azure Portal**.
2. Search for **Chaos Studio** in the search bar.
3. In Chaos Studio, select **Targets**.

Microsoft Azure (Preview) [Report a bug](#) Search resources, services, and docs (G+)

Home > **Chaos Studio** PREVIEW

Search (Ctrl+/) <<

Overview


Experiment management

Targets

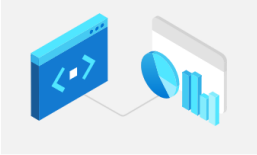
Experiments

Welcome to Azure Chaos Studio

Azure Chaos Studio helps you measure, understand, improve, and maintain product resilience using chaos engineering and fault injection. [Learn more](#)




Learn about chaos engineering
Chaos engineering is the practice of subjecting applications and services to real world stresses and disruptions in order to validate and understand resilience to unreliable conditions and missing dependencies.
[Read documentation](#)



Enable resources
Onboard the Azure resources that you would like to target for fault injection. Install agents and enable or disable specific capabilities. [Learn more](#)

[Onboard resources](#)



Set up an experiment
Define and organize the faults and other actions you will run in your experiment. Choose target resources, set parameters, and run your experiment. [Learn more](#)

[Create an experiment](#)

4. Select the virtual machine(s) or virtual machine scale set you wish to use when running the experiment.

Note: You will only see resources in regions where Chaos Studio is available (<https://azure.microsoft.com/global-infrastructure/services/?products=chaos-studio>).

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Home > Chaos Studio PREVIEW

Chaos Studio | Targets

Search (Ctrl+/) << Enable targets Disable targets Refresh Feedback

Overview

Experiment management

Targets

Experiments

Search for any field... Subscriptions - Don't see a subscription? [Open Directory](#) • [Subscription settings](#) 2 of 88 subscriptions selected All resource groups

	Name	Subscription	Resource group	Service-direct	Agent-based	
<input type="checkbox"/>	chaosazdemo2	Azure Chaos Studio Demo	availabilityzonedemo	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	UIDemoMachine-nsg	Azure Chaos Studio Demo	fl-ui-interviews	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	VM1	Azure Chaos Studio Demo	flapinski-acsdemos	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	flapinski-acbdb1	Azure Chaos Studio Demo	flapinski-acsdemos	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	VM1-nsg	Azure Chaos Studio Demo	flapinski-acsdemos	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	aks-agentpool-38064971-nsg	Azure Chaos Studio Demo	mc_chaostargets_chaoscluster_eastus	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	aks-agentpool-22537542-vmss	Azure Chaos Studio Demo	rg-a2wzqzmaoty2-nodepools	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	aks-agentpool-22537542-nsg	Azure Chaos Studio Demo	rg-a2wzqzmaoty2-nodepools	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	flapinskiAKSDemoCluster	Azure Chaos Studio Demo	t-flapinski-cloudbootcamp	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	johnkemlinuxtest	Chaos Studio Personal - johnkem	generaltest	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	aks-nodepool1-15310434-vmss	Chaos Studio Personal - johnkem	mc_testaks_testakscluster_eastus	Enabled	Not Enabled	Manage actions
<input checked="" type="checkbox"/>	chaosNSGFail	Chaos Studio Personal - johnkem	publicpreviewvalidation	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	chaosNSGFail-nsg	Chaos Studio Personal - johnkem	publicpreviewvalidation	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	chaosNSGFailnsg555	Chaos Studio Personal - johnkem	publicpreviewvalidation	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	sm-sqlaccount	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	shmalavaTest-nsg	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Applicable	Manage actions
<input checked="" type="checkbox"/>	latestAgentTest	Chaos Studio Personal - johnkem	generaltest	Not Enabled	Enabled	Manage actions
<input type="checkbox"/>	johnkemlinuxtest-nsg	Chaos Studio Personal - johnkem	generaltest	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	latestAgentTest-nsg	Chaos Studio Personal - johnkem	generaltest	Enabled	Not Applicable	Manage actions
<input type="checkbox"/>	aks-agentpool-24971907-nsg	Chaos Studio Personal - johnkem	mc_testaks_testakscluster_eastus	Not Enabled	Not Applicable	Manage actions
<input checked="" type="checkbox"/>	shmalavaTest	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Enabled	Manage actions
<input type="checkbox"/>	testAKSCLuster	Chaos Studio Personal - johnkem	testaks	Enabled	Not Applicable	Manage actions

5. Select **Enable targets**, then select **Enable agent-based targets (VM, VMSS)** from the dropdown menu.

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Home > Chaos Studio

Chaos Studio | Targets

PREVIEW

Search (Ctrl+/) < Enable targets Disable targets Refresh Feedback

Overview

Experiment management

Targets

Experiments

Enable service-direct targets (All resources)

Enable agent-based targets (VM, VMSS)

Subscriptions - Don't see a subscription? Open Directory + Subscription settings

2 of 88 subscriptions selected

All resource groups

Name	Subscription	Resource group	Service-direct	Agent-based	
<input type="checkbox"/> chaosazdemo2	Azure Chaos Studio Demo	availabilityzonedemo	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> UIDemoMachine-nsg	Azure Chaos Studio Demo	fl-uj-interviews	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/> VM1	Azure Chaos Studio Demo	flapinski-acsdemos	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> flapinski-acddb1	Azure Chaos Studio Demo	flapinski-acsdemos	Enabled	Not Applicable	Manage actions
<input type="checkbox"/> VM1-nsg	Azure Chaos Studio Demo	flapinski-acsdemos	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/> aks-agentpool-38064971-nsg	Azure Chaos Studio Demo	mc_chaostargets_chaoscluster_eastus	Enabled	Not Applicable	Manage actions
<input type="checkbox"/> aks-agentpool-22537542-vmss	Azure Chaos Studio Demo	rg-a2wzqkmaoty2-nodepools	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> aks-agentpool-22537542-nsg	Azure Chaos Studio Demo	rg-a2wzqkmaoty2-nodepools	Enabled	Not Applicable	Manage actions
<input type="checkbox"/> flapinskiAKSDemoCluster	Azure Chaos Studio Demo	t-flapinski-cloudbootcamp	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/> johnkemlinustest	Chaos Studio Personal - johnkem	generaltest	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> aks-nodepool1-15310434-vmss	Chaos Studio Personal - johnkem	mc_testaks_testakscluster_eastus	Enabled	Not Enabled	Manage actions
<input checked="" type="checkbox"/> chaosNSGfail	Chaos Studio Personal - johnkem	publicpreviewvalidation	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> chaosNSGfail-nsg	Chaos Studio Personal - johnkem	publicpreviewvalidation	Enabled	Not Applicable	Manage actions
<input type="checkbox"/> chaosNSGfailnsg555	Chaos Studio Personal - johnkem	publicpreviewvalidation	Not Enabled	Not Applicable	Manage actions
<input type="checkbox"/> sm-sqlaccount	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Applicable	Manage actions
<input type="checkbox"/> shmalavaTest-nsg	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Applicable	Manage actions
<input checked="" type="checkbox"/> latestAgentTest	Chaos Studio Personal - johnkem	generaltest	Not Enabled	Enabled	Manage actions
<input type="checkbox"/> johnkemlinustest-nsg	Chaos Studio Personal - johnkem	generaltest	Enabled	Not Applicable	Manage actions
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<input checked="" type="checkbox"/> shmalavaTest	Chaos Studio Personal - johnkem	shrunge_learning	Enabled	Not Enabled	Manage actions
<input type="checkbox"/> testAKSCluster	Chaos Studio Personal - johnkem	testaks	Enabled	Not Applicable	Manage actions

6. You will see the **Enable agent targets** screen. Select your subscription's managed identity from the **Managed identity** dropdown. Optionally, select **Enabled** to send diagnostic data to Application Insights. Select **Review + Enable** when you are ready to proceed.

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Home > Chaos Studio

Enable agent targets

PREVIEW

Managed Identities

The Chaos Studio agent uses a user-assigned managed identity on a virtual machine or virtual machine scale set to authenticate to the Chaos Studio service. You can use a single user-assigned managed identity for multiple virtual machines or virtual machine scale sets. When the agent is enabled, the selected managed identity will be applied to the selected VMs and the Chaos Studio VM Extension will be provisioned to use that identity.

Subscription *

Managed identity *

If you do not have a managed identity, first create one in the Managed Identities service in the portal.

Application Insights

The Chaos Studio agent can optionally send diagnostic information about fault execution and agent health to an existing Application Insights account.

Send diagnostic data to Application Insights

☒ Enabled

☐ Disabled

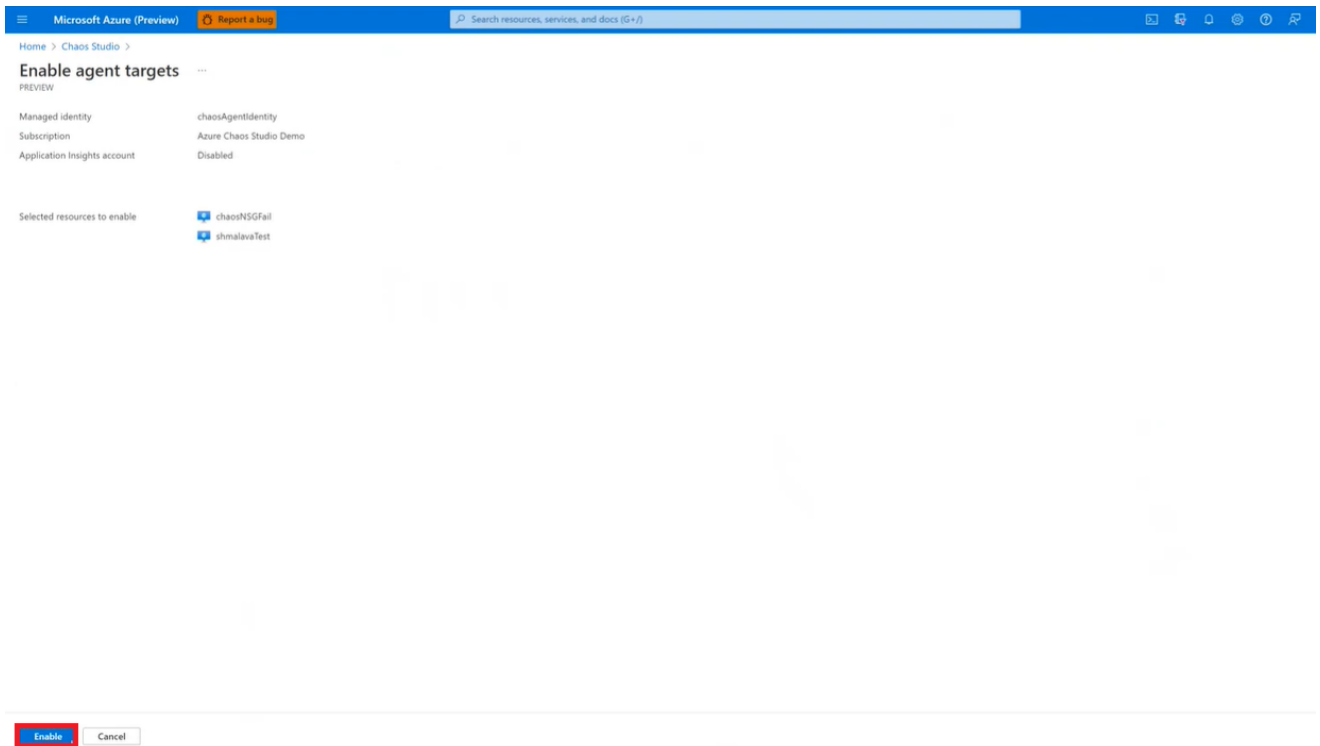
To get started, choose an Application Insights account, or if you already know the instrumentation key for your account you can directly specify it below.

Application Insights account

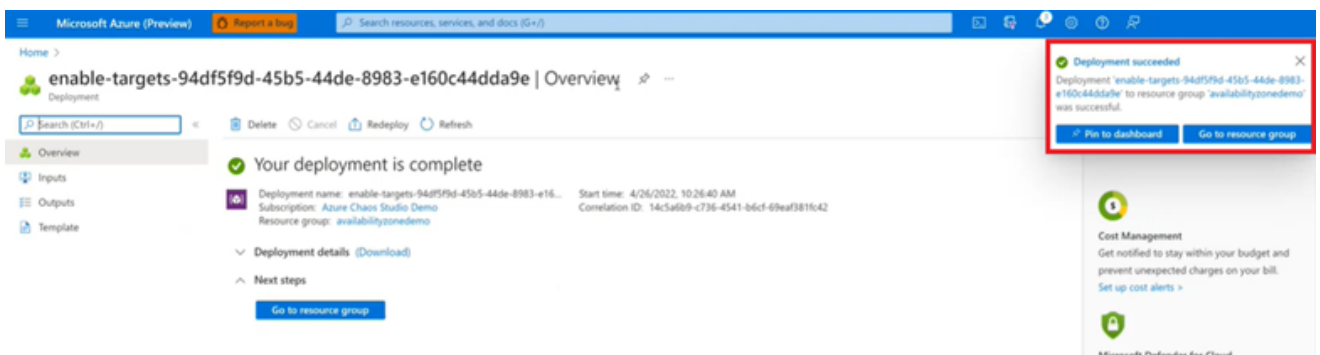
Instrumentation key *

[Review + Enable](#) [Cancel](#)

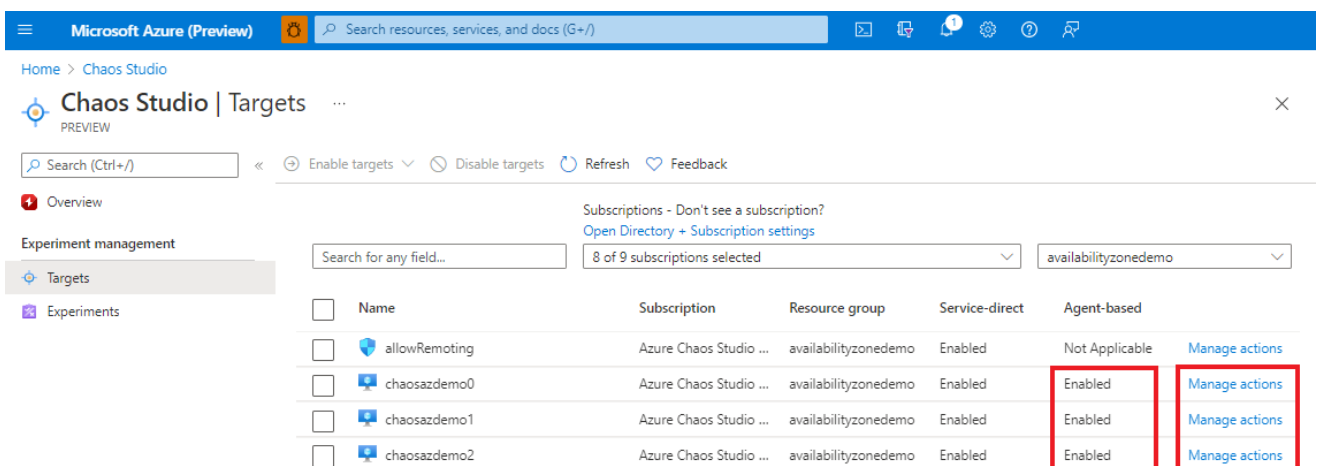
7. Select **Enable**.



8. After a few minutes, you will see a **Deployment succeeded** notification indicating the targets were enabled successfully.

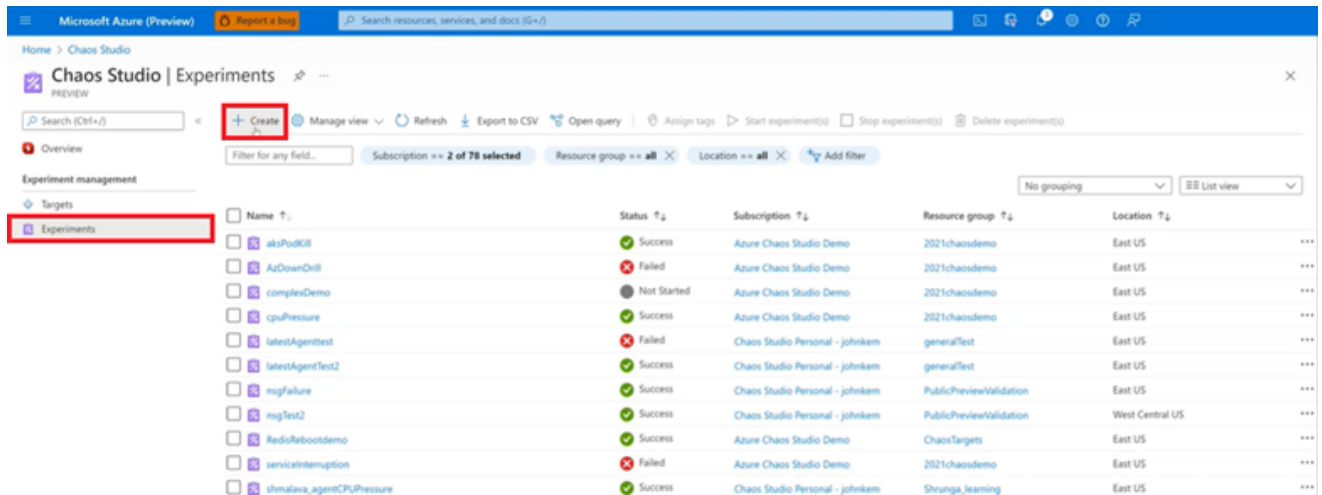


In the **Targets** window, the virtual machine(s) now display **Enabled** under the **Agent-based** heading and display active **Manage actions** links on the right.

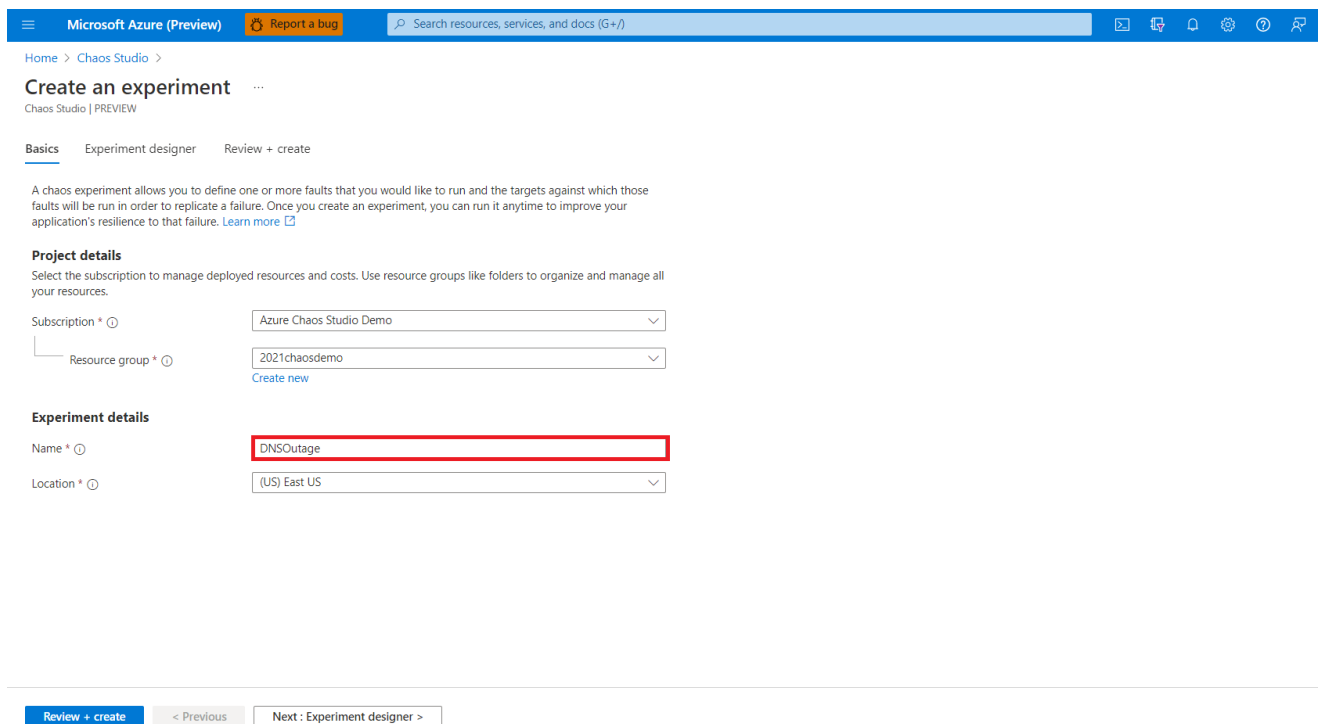


Create the experiment

1. Return to Chaos Studio. Select **Experiments**, then select **Create**.



2. You will see the **Create an experiment** screen. In the **Name** field, enter a descriptive name for your experiment.



3. Select a region from the **Location** dropdown.

Note: Chaos Studio must be available in the region you select. Refer to the Products available by region documentation (<https://azure.microsoft.com/global-infrastructure/services/?products=chaos-studio>) for a list of applicable regions.

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Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

BasicsExperiment designerReview + create

A chaos experiment allows you to define one or more faults that you would like to run and the targets against which those faults will be run in order to replicate a failure. Once you create an experiment, you can run it anytime to improve your application's resilience to that failure. [Learn more](#)

Project details

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

Subscription *

Azure Chaos Studio Demo

Resource group *

2021chaosdemo

Create new

Experiment details

Name *

DNSOutage

Location *

(US) East US

Review + create

< Previous

Next : Experiment designer >

4. Select **Next: Experiment designer**.

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Create an experiment

Chaos Studio | PREVIEW

BasicsExperiment designerReview + create

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Azure Chaos Studio Demo

Resource group *

2021chaosdemo

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Experiment details

Name *

DNSOutage

Location *

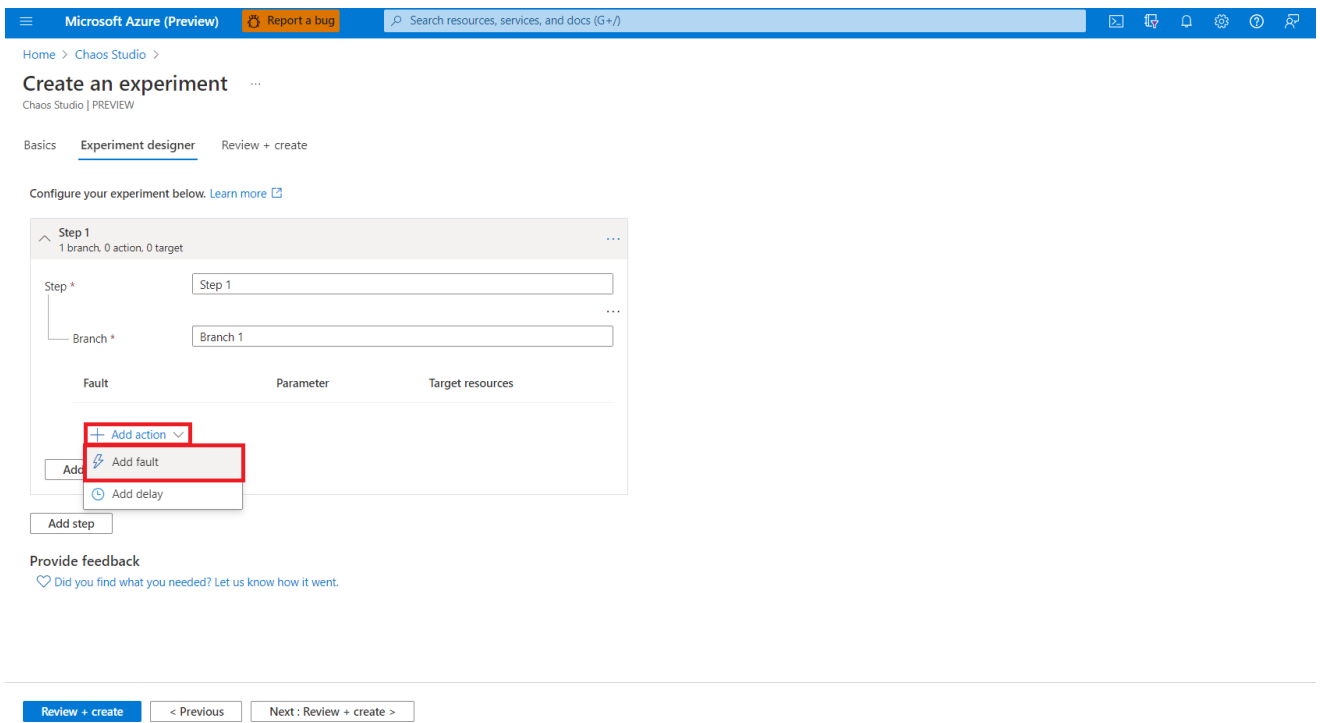
(US) East US

Review + create

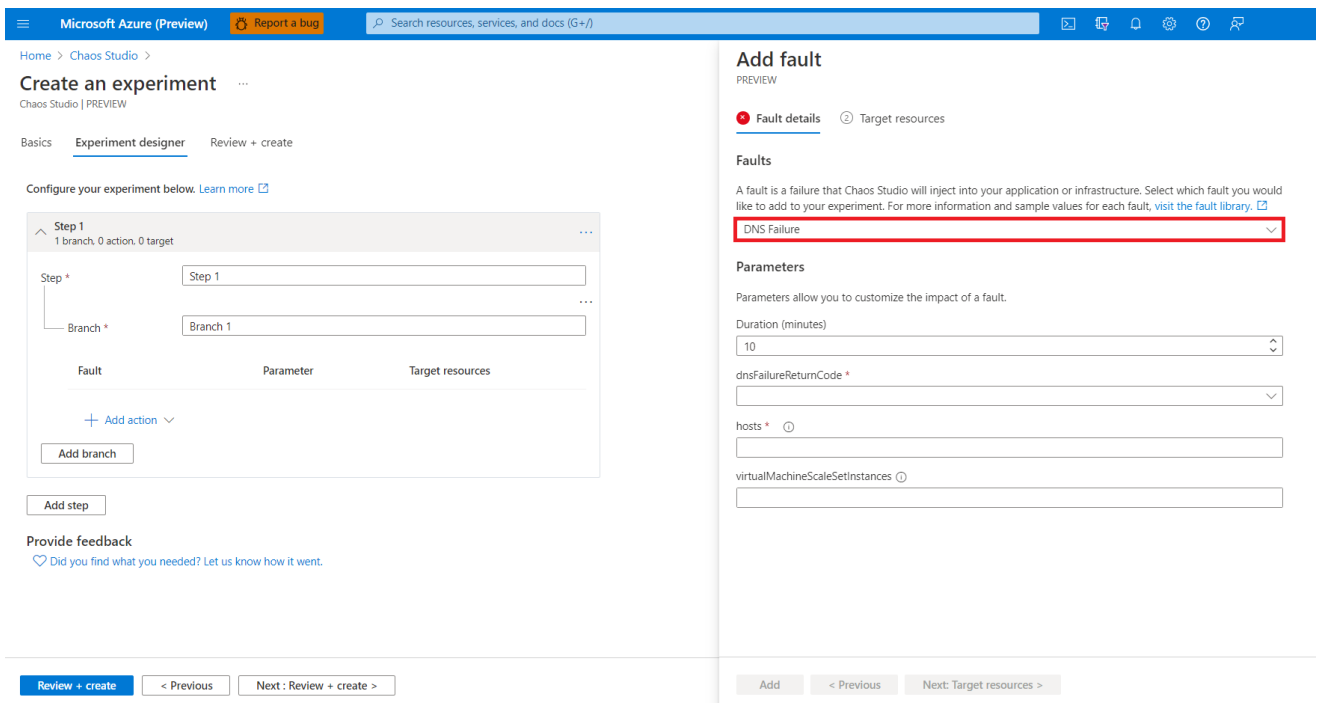
< Previous

Next : Experiment designer >

5. Select **Add action**, then select **Add fault** to add a fault to the step.



6. The **Add fault** window appears. Select the **Select a fault** dropdown, then select **DNS Failure** from the fault library.



7. You will see a list of parameters specific to the DNS Failure fault. Enter a value for the **Duration (minutes)** parameter to set your desired experiment runtime.

Note: The duration is set to 10 minutes by default. Although not required, you can change this value to increase or decrease the experiment's runtime. A runtime of 30 to 60 minutes is recommended to allow you to best observe the experiment's impact.

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Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

Add branch

Add step

Provide feedback
Did you find what you needed? Let us know how it went.

Review + create < Previous Next: Review + create >

Add fault

PREVIEW

Fault details Target resources

Faults

A fault is a failure that Chaos Studio will inject into your application or infrastructure. Select which fault you would like to add to your experiment. For more information and sample values for each fault, [visit the fault library](#).

DNS Failure

Parameters

Parameters allow you to customize the impact of a fault.

Duration (minutes)
30

dnsFailureReturnCode *

hosts * ⓘ

virtualMachineScaleSetInstances ⓘ

Add < Previous Next: Target resources >

8. Select **ServFail** for the **dnsFailureReturnCode** parameter.

Note: ServFail indicates the DNS server has an outage, but you may want to use a different parameter depending on the goal of your experiment (<https://www.iana.org/assignments/dns-parameters/dns-parameters.xml#dns-parameters-6>).

Microsoft Azure (Preview) Report a bug Search resources, services, and docs (G+/J)

Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

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Add step

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Review + create < Previous Next: Review + create >

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DNS Failure

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Duration (minutes)
30

dnsFailureReturnCode *
ServFail

hosts * ⓘ

virtualMachineScaleSetInstances ⓘ

Add < Previous Next: Target resources >

9. For the **hosts** parameter, enter the URL(s) of the resource you are targeting with the DNS outage simulation. If you are targeting multiple URLs, separate them with commas.

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Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

Add branch

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Review + create < Previous Next: Review + create >

Add fault

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DNS Failure

Parameters

Parameters allow you to customize the impact of a fault.

Duration (minutes)
30

dnsFailureReturnCode *
ServFail

hosts *
mystorageaccount.windowsazure.net

virtualMachineScaleSetInstances

Add < Previous Next: Target resources >

10. If you are using a virtual machine scale set, enter your desired scale set instance numbers, separated by commas, in the **virtualMachineScaleSetInstances** parameter. If you are not using a scale set, leave the parameter blank and continue to the next step.

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Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

Add branch

Add step

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Review + create < Previous Next: Review + create >

Add fault

PREVIEW

Fault details Target resources

Faults

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DNS Failure

Parameters

Parameters allow you to customize the impact of a fault.

Duration (minutes)
30

dnsFailureReturnCode *
ServFail

hosts *
mystorageaccount.windowsazure.net

virtualMachineScaleSetInstances

Add < Previous Next: Target resources >

11. Select **Next: Target resources**.

Microsoft Azure (Preview) Report a bug Search resources, services, and docs (G+)

Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

Add branch

Add step

Provide feedback

Did you find what you needed? Let us know how it went.

Review + create < Previous Next: Review + create >

Add fault

PREVIEW

Fault details Target resources

Faults

A fault is a failure that Chaos Studio will inject into your application or infrastructure. Select which fault you would like to add to your experiment. For more information and sample values for each fault, [visit the fault library](#).

DNS Failure

Parameters

Parameters allow you to customize the impact of a fault.

Duration (minutes) 30

dnsFailureReturnCode * ServFail

hosts * mystorageaccount.windowsazure.net

virtualMachineScaleSetInstances

Add < Previous **Next: Target resources >**

12. Select the virtual machine(s) to apply the experiment to, then select **Add**.

Microsoft Azure (Preview) Report a bug Search resources, services, and docs (G+)

Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 0 action, 0 target

Step * Step 1

Branch * Branch 1

Fault Parameter Target resources

+ Add action

Add branch

Add step

Provide feedback

Did you find what you needed? Let us know how it went.

Review + create < Previous Next: Review + create >

Add fault

PREVIEW

Fault details Target resources

A chaos target resource is an Azure resource against which you will run a fault. A resource must first be set up as a chaos target before it can be selected here. [Learn more](#)

Subscriptions - Don't see a subscription? [Open Directory](#) + [Subscription settings](#)

2 of 88 subscriptions selected

<input type="checkbox"/>	Resource name	Subscription	Resource group
<input checked="" type="checkbox"/>	shrinilataTest	af743041-9b79-46ad-92cb-c298c57b632c	shrunga_learning
<input type="checkbox"/>	chaosNSGFail	af743041-9b79-46ad-92cb-c298c57b632c	publicpreviewvalidation

Add < Previous Next >

13. Enter descriptive names in the Step field and the Branch field.

Microsoft Azure (Preview) [Report a bug](#) Search resources, services, and docs (G+/I)

Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 1 action, 1 target

Step * Step 1

Branch * Branch 1

Fault	Parameter	Target resources
DNS Failure	duration: 30 minutes dnsFailureReturnCode: S... hosts: ["mystorageaccou...]	1 resources

+ Add action

Add branch

Add step

Provide feedback

Did you find what you needed? Let us know how it went.

Review + create < Previous Next: Review + create >

14. Select **Review + create**.

Microsoft Azure (Preview) [Report a bug](#) Search resources, services, and docs (G+/I)

Home > Chaos Studio >

Create an experiment

Chaos Studio | PREVIEW

Basics Experiment designer Review + create

Configure your experiment below. [Learn more](#)

Step 1
1 branch, 1 action, 1 target

Step * Step 1

Branch * Branch 1

Fault	Parameter	Target resources
DNS Failure	duration: 30 minutes dnsFailureReturnCode: S... hosts: ["mystorageaccou...]	1 resources

+ Add action

Add branch

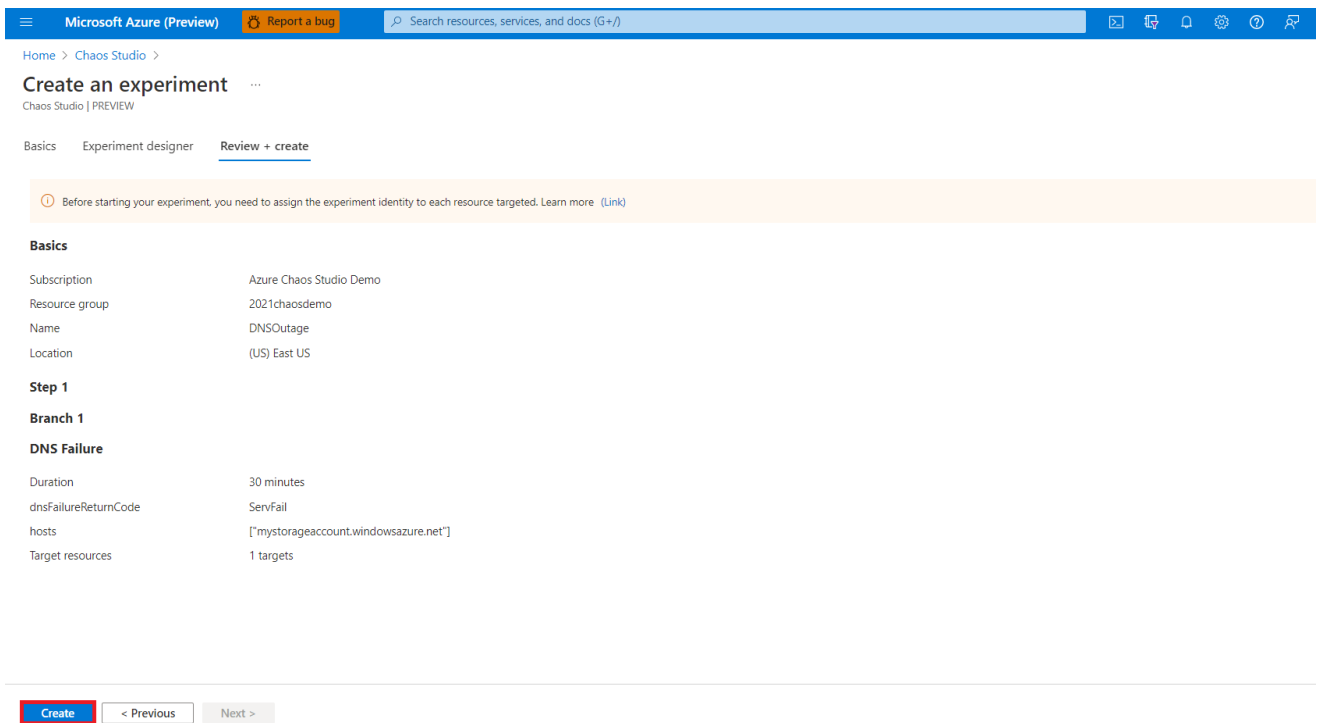
Add step

Provide feedback

Did you find what you needed? Let us know how it went.

Review + create < Previous Next: Review + create >

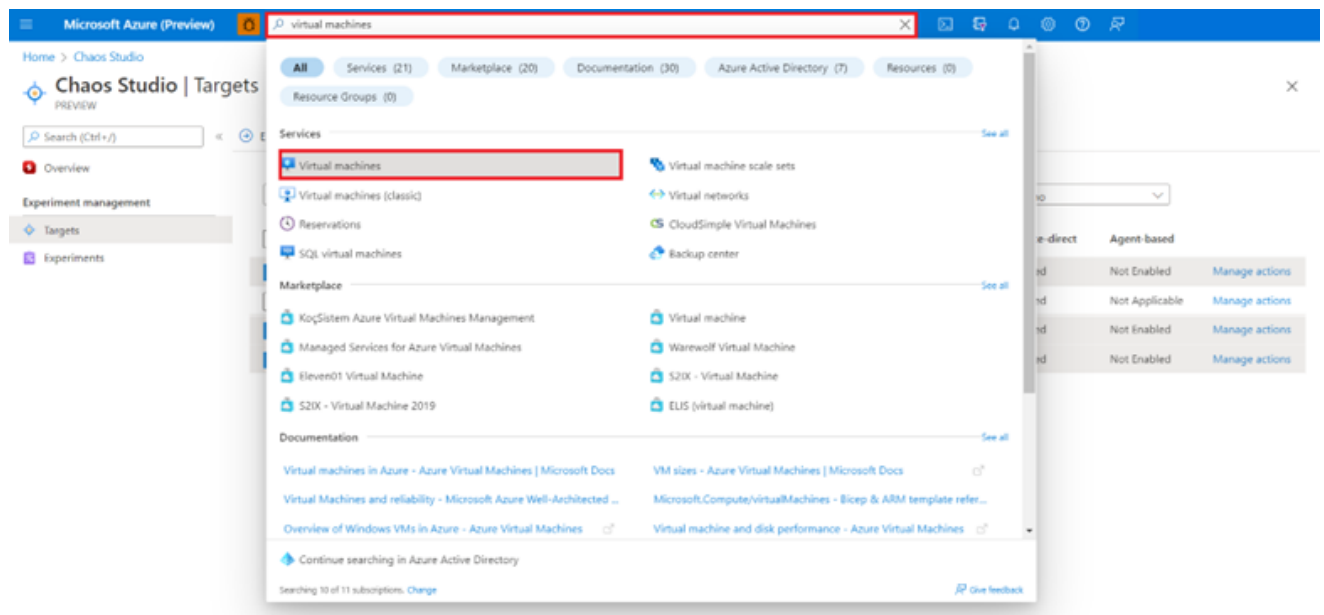
15. The **Review + create** screen appears. Review the experiment details. Then, when you are ready to proceed, select **Create**.



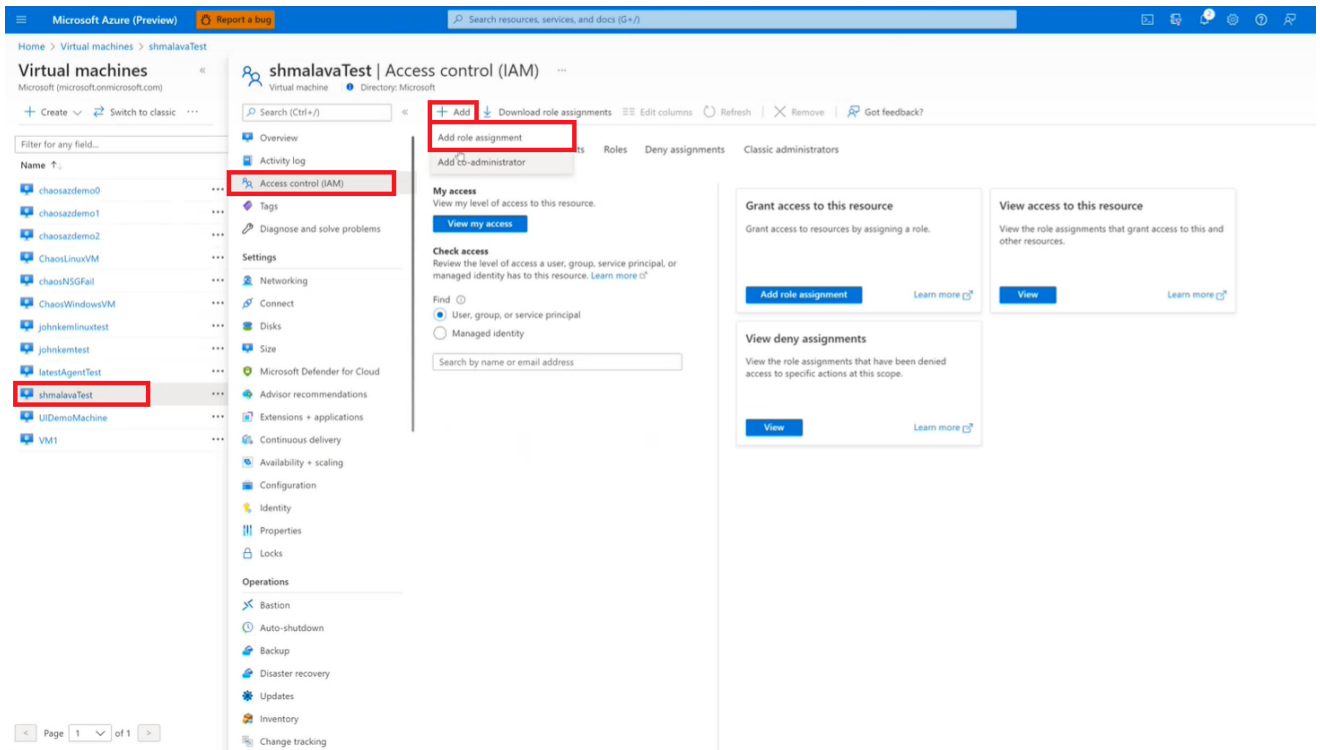
Assign an experiment identity to each targeted resource

Before starting the experiment, you need to assign an experiment identity to each targeted resource. The experiment will fail if an identity is not assigned.

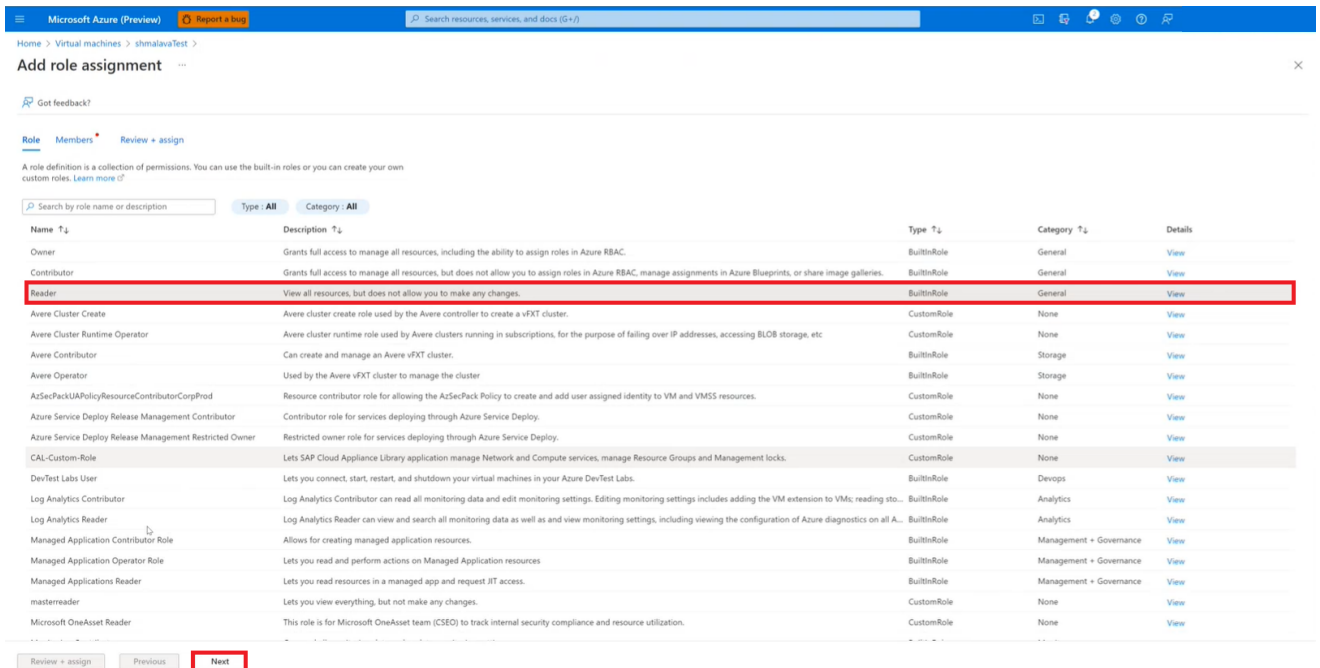
1. Search for **virtual machines** in the search bar and select **Virtual machines** from the menu.



2. Select one of the virtual machines targeted by the created experiment to open its details panel. In this panel, select **Access control (IAM)**, select **Add**, then select **Add role assignment**.



3. Select **Reader** from the list, highlighting it. Select **Next**.



4. Select the **Select members** link. In the **Select** search field in the right sidebar, enter the name of the experiment you created. Select the experiment from the list. Once selected, the experiment will move to the **Selected members:** section. Select the **Select** button.

Microsoft Azure (Preview) [Report a bug](#) Search resources, services, and docs (G+7)

Home > Virtual machines > shmalavaTest >

Add role assignment

Got feedback?

Role **Members** Review + assign

Selected role Reader

Assign access to ☒ User, group, or service principal ☐ Managed identity

Members **+ Select members**

Name	Object ID	Type
No members selected		

Description Optional

[Review + assign](#) [Previous](#) [Next](#)

Select members

Select

DNSOutage

No users, groups, or service principals found.

Selected members:

DNSOutage [Remove](#)

[Select](#) [Close](#)

5. Select **Review + assign**, then select **Review + assign** again to assign the identity to the resource.

Microsoft Azure (Preview) [Report a bug](#) Search resources, services, and docs (G+7)

Home > Virtual machines > shmalavaTest >

Add role assignment

Got feedback?

Role **Members** Review + assign

Selected role Reader

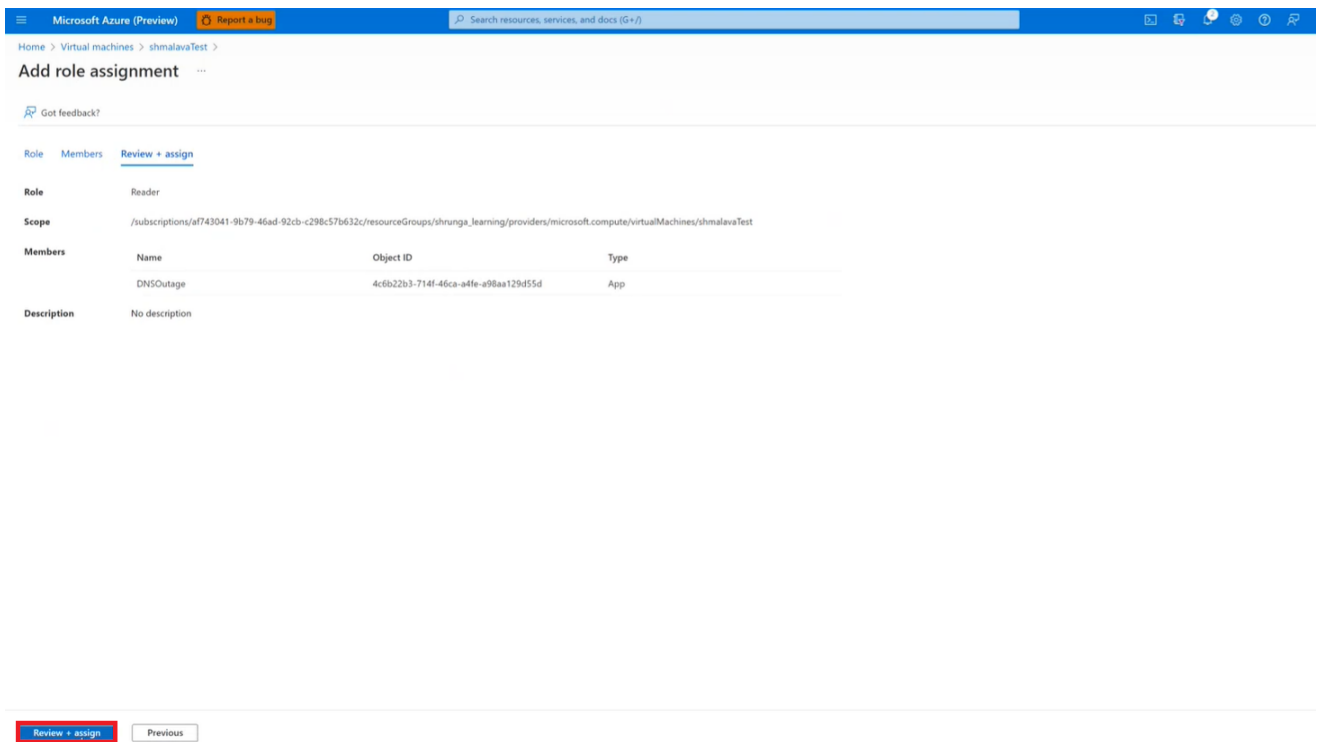
Assign access to ☒ User, group, or service principal ☐ Managed identity

Members [+ Select members](#)

Name	Object ID	Type
DNSOutage	4c6b2b3-714f-46ca-a4fe-a98aa129d55d	App

Description Optional

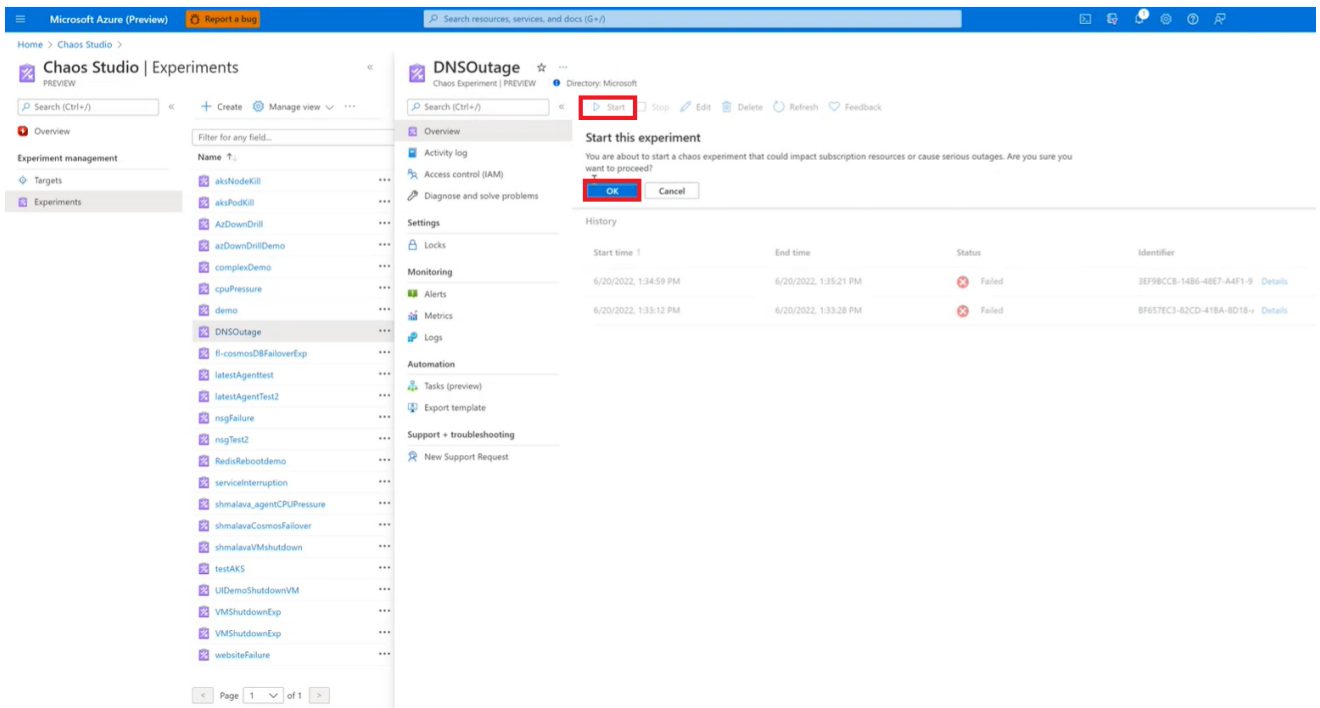
[Review + assign](#) [Previous](#) [Next](#)



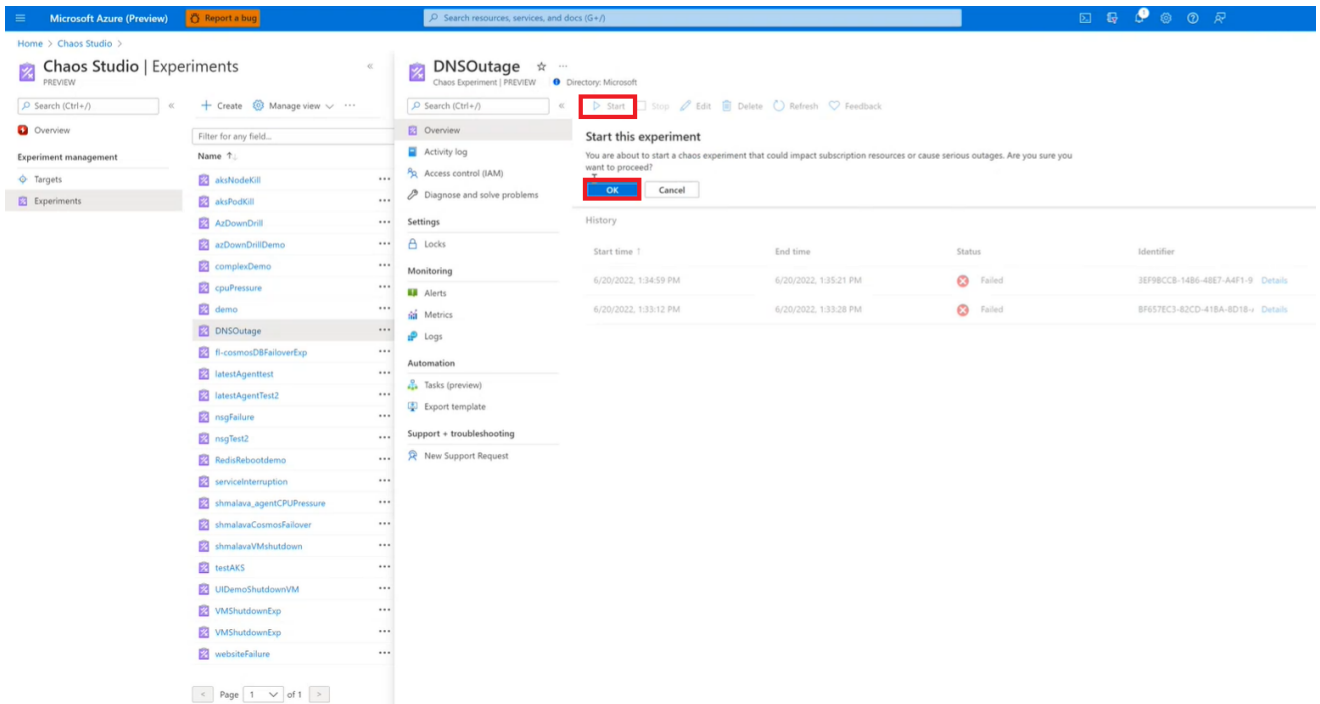
- Repeat steps 1-6 of this section for each virtual machine or virtual machine scale set targeted in the experiment. If the experiment only targeted one virtual machine, continue to the next section.

Run the experiment

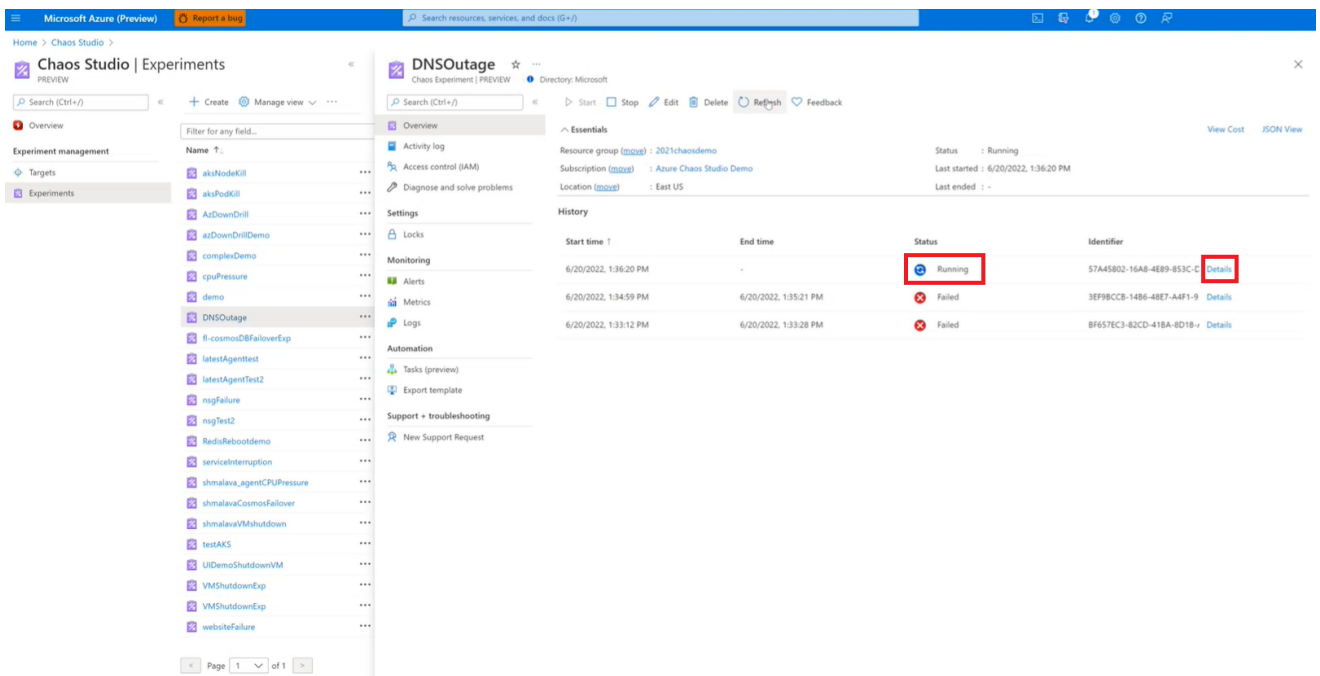
- From the main Chaos Studio page, select **Experiments**, then select the name of your experiment. You will see the experiment details panel.



- Select **Start**, then select **OK**.



3. The experiment is successfully running once its status changes to **Running**. Select **Details** for real-time information on each branch and fault in the experiment.



Assess the hypothesis

Compare the results of the experiment against your hypothesis. Analyze any relevant metrics. Do the results align with your expectations?

For example, if your hypothesis addresses availability metrics, analyze your health model in Geneva for the duration of the Chaos experiment to see if there was any impact on the failure rate. If there was an impact, analyze the returned logs and metrics from the experiment to understand why there was a failure rate impact. Similarly, if you are testing to validate SLI alerts or to validate feedback on failures, analyze any feedback against the hypothesis to ensure the alerts are properly responding to failures.

If your results were unexpected, consider any reasons why, create a new hypothesis, implement any necessary changes, and repeat the experiment: "In the event of a DNS outage, **ICM incidents were created, and the appropriate resiliency measures were activated because** resilience improvement has been made. I expect to find the experiment results by analyzing __."

Overview

You have now learned about DNS and observability metrics, how to formulate and evaluate an experiment hypothesis, and how to create an experiment in Azure Chaos Studio that tests the impact of a DNS outage on an application dependency.

Next steps

- Manage your experiment (<https://docs.microsoft.com/azure/chaos-studio/chaos-studio-tutorial-service-direct-portal#:~:text=Manage%20your%20experiment>)

Additional resources

- Troubleshoot issues with Azure Chaos Studio (<https://docs.microsoft.com/azure/chaos-studio/troubleshooting>)
- Chaos Studio fault and action library (<https://docs.microsoft.com/azure/chaos-studio/chaos-studio-fault-library>)