Traffic Manager

This guide demonstrates how Azure Traffic Manager to globally scale a web app. In this demonstration you will show how to

* Create a Traffic Manager profile using the Weighted (round-robin) routing method
* Configure Endpoints for the profile
* Observe how Traffic Manager resolves DNS names when you stop and start web apps
* Configure Traffic Manager profile settings.

Contents

[Pre-Requisites 1](#_Toc439773634)

[Setup 1](#_Toc439773635)

[Demo Steps 2](#_Toc439773636)

[Clean Up 6](#_Toc439773637)

## Pre-Requisites

This section lists the pre-requisites required for this demonstration.

* Azure subscription
* Visual Studio 2015 w/Azure Tools 2.8.1

## Setup

Estimated time: 15 mins

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| --- | --- |
| 1. Open Windows Explorer. 2. Copy the folder **.\Demos\0\_Traffic\_Manager** to **c:\azurecoe\demos\networking**. 3. Open Visual Studio. 4. Using Visual Studio, open the solution at **C:\azurecoe\demos\networking\0\_Traffic\_Manager\TM-Demo-Solution\TN-Demo-Solution.sln**. 5. In Solution Explorer, right-click on the **TM-Demo** project and select **Deploy > New Deployment**. 6. Select **<Create New>** for the **Resource Group**. 7. In the Create Resource Group window    1. Set the **Resource Group location** to **West US**.    2. Click **Create**. 8. Set **Artifact storage account** to an existing Azure Storage Account. This is only used to store the web app that will be published to Azure. |  |
| 1. Click **Edit Parameters**.    1. Keep the default values with should look as shown here.    2. Click **Save**. 2. Click **Deploy**.   This will deploy a web app to West US and East US. Should only take about a minute or two. |  |
| 1. Open a browser tab for each web app so they are ready to go for the demo. |  |
| 1. RDP into the virtual machine named **vm-1** using the following credentials:    1. Username = **.\adminuser**    2. Password = **P@ssword1** 2. In **Server Manager > Local Server** turn off **IE Enhanced Security Configuration**. 3. Close Server Manager. 4. Open an instance of **Internet Explorer** so it is ready to go. 5. Repeat for the virtual machine named **vm-2**. |  |

## Demo Steps

Estimated time: 15 mins

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| --- | --- |
| 1. Sign-in to the Azure portal. 2. Open the **TM-Demo-Solution** resource group blade. 3. In the **Resource** tile, click on **WebApp-West-xyz**.Open the browser tab for **WebApp-West-xyz** to show what the app does, which is nothing more than outputting the region it is running in. This app is in **West US.**   Note: Web Apps have environment variables that you can access from within the application. One environment variable is called **REGION\_NAME**. All this app does is retrieve the **REGION\_NAME** environment variable from the web app environment and display it on the page.   1. Repeat for **WebApp-East-xyz** to show it is running in **East US**. |  |
| 1. Go back to the Azure portal. 2. **+NEW > Networking > Traffic Manager profile (preview)**.    1. Enter a unique DNS Name for the traffic manager profile. Try to keep it short so you can invite the audience to access it later.    2. Set the **Routing Method** to **Weighted**.    3. Set the **Resource Group** to **TM-Demo-Solution**.    4. Set the **Location** to **West US**.    5. Click **Create**. 3. While the profile is created, which should only take a few seconds, explain the different Routing Method options (performance, weighted, priority). |  |
| 1. Open the **Traffic Manager profile** blade and click on the DNS name for the profile. You’re basically just showing that the profile doesn’t resolve to any application yet. 2. In the Traffic Manager profile blade, click on the **Endpoints** web part. |  |
| 1. In the **Endpoints** blade, click the **Add** button in the toolbar. 2. Set the **Name** to **East EP**. 3. Set the **Weight** to **1**. 4. Set the **Resource Group** to **TM-Demo-Solution**. 5. Set the **Target Resource Type** to **App Service**. 6. Set the **Target Resource** to **WebApp-East-xyz**. 7. Click **OK**. |  |
| 1. Repeat the previous steps to add a 2nd endpoint named **West EP** with the **Target Resource** set to **WebApp-West-xyz**. 2. The **Endpoints blade** will show the two web apps and the status will be **Checking Endpoint**. Explain that what is happening right now is that Traffic Manager is verifying that the web apps are available and setting up the rules for the profile, which is, to load balance in round-robin style between these two endpoints.   This will take 1-2 minutes so continue on to the next step. |  |
| 1. On the Traffic Manager profile blade click **Settings**. 2. On the Settings blade click **Configuration**. 3. Explain the configuration options available in the blade.    1. **Routing Method**. Explain the differences between Weighted (and weighted with different weights), Performance, and Priority.    2. **DNS TTL**. Set this to 30 seconds to speed things up for the demo. Click Save to **Save** the change.    3. **Endpoint Monitor Settings**. Explain that by default, Traffic Manager will be making an HTTP GET request to the root of the web app. If it gets HTTP 200 back, then it assumes it’s good. A best practice is instead to have a “healthcheck” page in the app that Traffic Manager can call. The healthcheck page should perform deeper validation (check DB connections, web service dependencies, etc.) and return an HTTP 500 if it is not able to verify all the resources the app needs are available. |  |
| 1. Go back to the **Traffic Manager profile** blade. 2. Show the **Endpoints** web part where the status of the endpoints should now be **Online**. |  |
| 1. Open the RDP session on **vm-1**. Paste in the URL for the Traffic Manager profile in the browser. 2. Repeat in the RDP session on **vm-2**. 3. Show that the requests are being distributed in round-robin. One VM should resolve to West US and the other to East US. |  |
| 1. Show the **DNS name** for the Traffic Manager profile. 2. Invite the audience to open a browser on their phone or computer and browse to the **xyz.trafficmanager.net** URL. 3. Poll the audience. You should have about ½ resolve to West US and the other ½ resolve to East US. |  |
| 1. Go back to the web app blade for **WebApp-West-xyz**. 2. Click the **Stop** button at the top of the blade. 3. Go back to the RDP session for the virtual machine that resolved to West US and refresh the page to show you get HTTP 403.   Explain that it will take about 90-100 seconds before Traffic Manager determines the site is unavailable. This is because it will try to get a HTTP 200 every 10 seconds. If it does not get the HTTP 200, then it will try again 3 more times, pausing 30 seconds in between. After 3 tries if it still fails, then only then will it flag the site as degraded and take it out of the rotation. Traffic Manager will continue to keep checking the site every 10 seconds to see if it is available again and when it is will put it back in rotation.   1. Go back to the Endpoints blade in the portal and show the Monitoring status of the endpoints. |  |
| 1. Go back to the RDP session of the VM that was resolving to **WebApp-West-xyz** and open a new browser tab. 2. Navigate to the Traffic Manager URL. You should see it resolve to East US this time. 3. Go back to the web app blade for **WebApp-West-xyz** and **Start** the site. |  |
| 1. Go back to the **Endpoints** blade. Within a few seconds you will see the status returned back to **Online**. Explain that the reason this status updated so quickly is because Traffic Manager kept polling the web app every 10 seconds. When it gets an HTTP 200 then it puts the web app back in the rotation. |  |

## Clean Up

To clean up this environment perform the following steps:

1. Go to the Azure portal and delete the **TM-Demo-Solution** Resource Group.