Overview

Scan Result

Application Name	Project Name	Application Type	Application Components
DemoCpApp	demoProject	Web Application	4

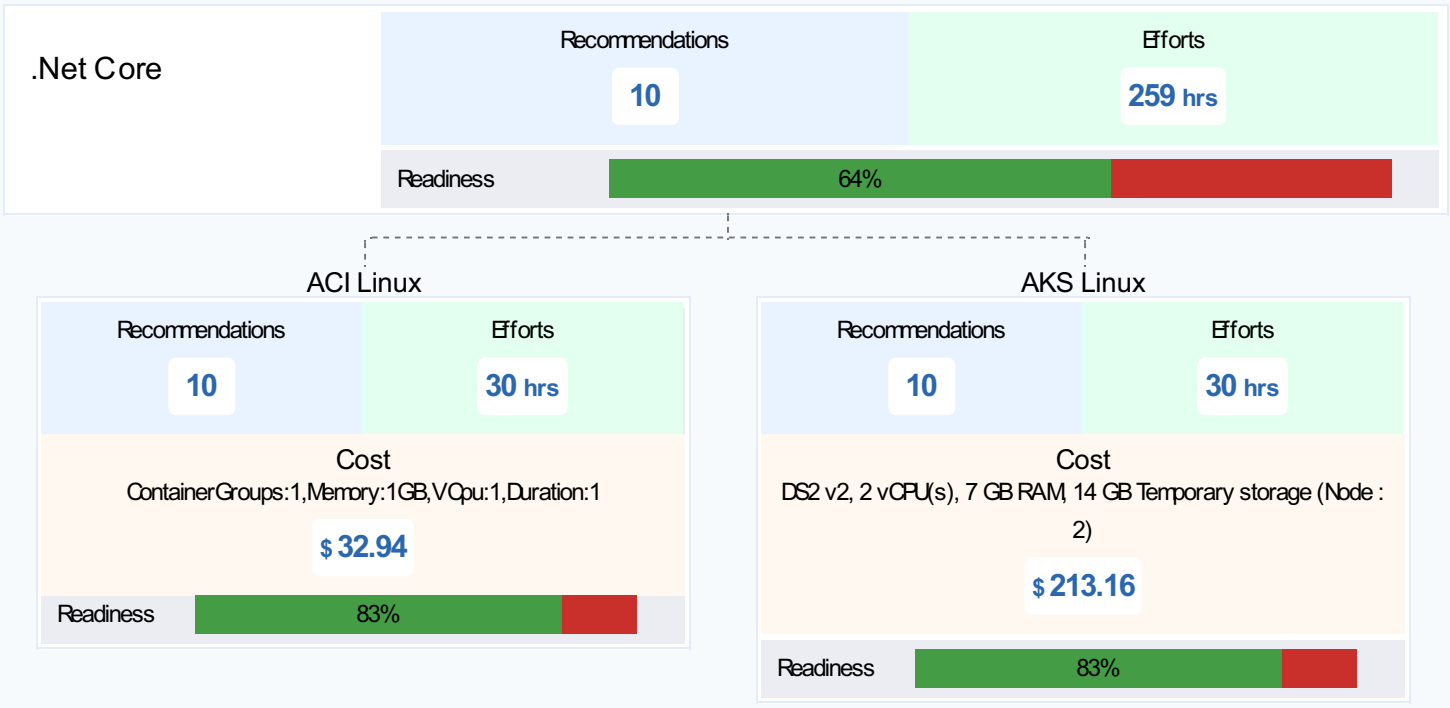
Code Lines	Application Platform	Scanned Date
56363	.Net	1/26/2018 2:22:31 PM

With **.Net Core Conversion**

Option 1

Refactor

Containers are becoming the preferred way to package, deploy, and manage cloud applications.Azure Container Instances and Azure Kubernetes Serviceoffers the fastest and simplest way to run a container in Azure, without having to manage any virtual machines and without having to adopt a higher-level service..

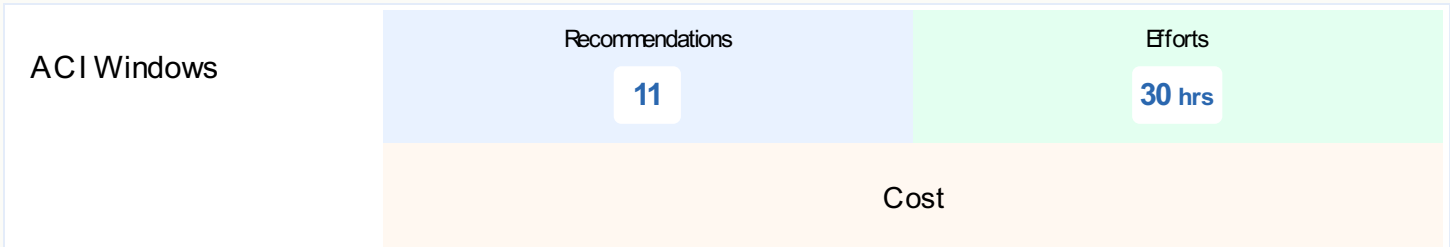


.Net Core Conversion Not Required

Option 2

Rehost

If user don't want to convert source code to .Net Core due to Cost or some others factors, there are two options available -
(i) ACI Windows - Enables you to take advantage of the benefits of Kubernetes: agility, speed of deployment and simplified management.
(ii) AKS Windows -Offers scale, performance, and value that lets you easily launch large compute clusters.



ContainerGroups:1,Memory:1GB,VCpu:1,Duration:1

$ 64.56

Readiness 82%

AKS Windows

Recommendations 11

Efforts 30 hrs

Cost

DS2 v2: 2 vCPUs, 7 GB RAM, 14 GB Temporary storage, $0.252/hour (Node : 2)

$ 367.92

Readiness 82%

Linux Container

Application Migration Recommendation

It enables you to build and manage scalable and reliable applications composed of microservices that run at high density on a shared pool of machines, which is referred to as a cluster. It provides a sophisticated, lightweight runtime to build distributed, scalable, stateless, and stateful microservices running in containers. It also provides comprehensive application management capabilities to provision, deploy, monitor, upgrade/patch, and delete deployed applications including containerized services.
Why : This application can also move to Azure Container Service with minimal code or configuration change. Azure Container Service is costly but gives higher capability compare to Azure app service.
Cost : - S2 (USD $ 146.40)
Other Option : Azure Container Service and Virtual Machine.

Recommendations Result

1 Day = 8 Hours

	Count	
Configuration :	5	16 Hours
Security :	3	9 Hours
Network & Availability :	0	0
Storage :	3	5 Hours

Recommendation by Size Estimate

1 Day = 8 Hours

	Count	
Small :	10	2 Days 6 Hours
Medium :	1	1 Days 0 Hours
Large :	0	0 Days

Recommendations

S1M.EventManagement

Category : Application & Platform Design **DataPoint :** Email

Reason for change

Mailing services is being used by your application.

Code block	Line no.	File path
SmtpClient smtp = new SmtpClient();	194	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\Areas\S1M\Controllers\ManageSponsorController.cs
SmtpClient smtp = new SmtpClient();	108	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\Controllers\HomeController.cs

Recommendation

SendGrid is a cloud-based email service that provides reliable transnational email delivery, scalability, and real-time analytics along with flexible APIs that make custom integration easy.

Create a SendGrid Account

To sign up for a SendGrid account:

1. Log in to the Azure portal.
2. In the menu on the left, click Create a resource.
3. Click Add-ons and then SendGrid Email Delivery.
4. Complete the signup form and select Create.
5. Enter a Name to identify your SendGrid service in your Azure settings. Names must be between 1 and 100 characters in length and contain only alphanumeric characters, dashes, dots, and underscores. The name must be unique in your list of subscribed Azure Store Items.
6. Enter and confirm your Password.
7. Choose your Subscription.
8. Create a new Resource group or use an existing one.
9. In the Pricing tier section select the SendGrid plan you want to sign up for.
10. Enter a Promotion Code if you have one.
11. Enter your Contact Information.
12. Review and accept the Legal terms.
13. After confirming your purchase you will see a Deployment Succeeded pop-up and you will see your account listed in the All resources section.

After you have completed your purchase and clicked the Manage button to initiate the email verification process, you will receive an email from SendGrid asking you to verify your account.

To send an email using SendGrid, you must supply your API Key.

To find your SendGrid API Key:

1. Click Manage.
2. In your SendGrid dashboard, select Settings and then API Keys in the menu on the left.
3. Click the Create API Key.
4. At a minimum, provide the name of this key and provide full access to Mail Send and select Save.
5. Your API will be displayed at this point at one time. Please be sure to store it safely.

How to: Send an Email

After creating an email message, you can send it using SendGrid's API. Alternatively, you may use. NET's built-in library.

Sending email requires that you supply your SendGrid API Key.

var apiKey = System.Environment.GetEnvironmentVariable("SENDGRID_APIKEY");
var client = new SendGridClient(apiKey);

The sample code shows how to send an email message using the SendGrid Web API with a console application.

Sample Code

```
using System;
```

```
using System.Threading.Tasks;
using SendGrid;
using SendGrid.Helpers.Mail;

namespace Example
{
    internal class Example
    {
        private static void Main()
        {
            Execute().Wait();
        }

        static async Task Execute()
        {
            var apiKey = System.Environment.GetEnvironmentVariable("SENDGRID_APIKEY");
            var client = new SendGridClient(apiKey);
            var msg = new SendGridMessage()
            {
                From = new EmailAddress("test@example.com", "DX Team"),
                Subject = "Hello World from the SendGrid CSharp SDK!",
                PlainTextContent = "Hello, Email!",
                HtmlContent = "Hello, Email!"
            };
            msg.AddTo(new EmailAddress("test@example.com", "Test User"));
            var response = await client.SendEmailAsync(msg);
        }
    }
}
```

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

http://azure.microsoft.com/en-in/documentation/articles/sendgrid-dotnet-how-to-send-email/

Category : Application & Platform Design **DataPoint :** Hard Coded URL

Reason for change

The Application uses Hard Coded Urls. These URLs may not be accessible after deployment in Azure Container.

Code block	Line no.	File path
<script src="https://maps.googleapis.com/maps/api/js?AIzaSyCl2RZXFqqoJl-kUwwzY6GwWm6GEzdWx8=&libraries=places&callback=initAutocomplete" async defer></script>	10	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\Sponsors\Views\Sponsor\OfferEntry.cshtml

@*<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.4.0/css/font-awesome.min.css">	7	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\Sponsors\Views\SponsorsGift\Index.cshtml
<script src="http://ajax.aspnetcdn.com/ajax/jQuery/jquery-2.0.3.min.js"></script>*@	8	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\CampaignList.cshtml
<a href="#x" class="thumbnail"><img src="http://placehold.it/250x250" alt="Image" class="img-responsive"></a>	51, 52, 53, 54, 57, 58, 59, 60	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\CampaignList.cshtml
@* <img src="https://s1m.blob.core.windows.net/s1m/f4d16505-9339-4df5-b3ac-0b5f89fb0364" />	389	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\SponsorEntry.cshtml

Recommendation

External or In-House application URL or API is being called in your code. Make sure wherein connectivity with requested URL.

If these URLs are part of the application (Web Service/WCF Services/Web API) then also host these services on different Containers based on Binding and Application Requirement and update the URL on the application.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Conditionally_Mandatory

Help URL

https://docs.microsoft.com/en-us/azure/app-service/environment/app-service-web-how-to-create-a-web-app-in-an-ase

Category : Storage **DataPoint :** DB Connections

Reason for change

Database Connections might not work properly in Azure.

Code block	Line no.	File path
<add name="defaultcon**********	11	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\TransformWebConfig\transformed\Web.config

<add name="s1mmarketi**********	17	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\TransformWebConfig\transformed\Web.config
<add name="defaultcon**********	11	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\CSAutoParameterize\original\Web.config
<add name="s1mmarketi**********	17	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\CSAutoParameterize\original\Web.config
<add name="defaultcon**********	11	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\TransformWebConfig\original\Web.config

Recommendation

Your current on-premises solutions for Database Connectivity are unlikely to work in Azure.
Make sure Database Connectivity is available for application.

Or

Azure has the following options for migrating databases.
1-SQL Server on Azure VMs
2-Azure SQL Database
3-Azure SQL Managed Instance
After migration, change your Database Connectivity to the Target platform.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container

Category : Security **DataPoint :** Encryption

Reason for change

The Application uses Encryption. These Encryption Algorithm may or may not be work in Container.

Code block	Line no.	File path
using (Aes encryptor = Aes.Create())	25	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M

		.EventManagement\helperClass\Cryptography.cs
using (Aes encryptor = Aes.Create())	59	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\helperClass\Cryptography.cs

Recommendation

Applications use encryption(cryptographic) keys and secrets to help keep information secure. Azure Key Vault safeguards these keys and secrets. When you use Key Vault, you can encrypt authentication keys, storage account keys, data encryption keys, .pfx files, and passwords by using keys that are protected by hardware security modules (HSMs).

Azure web application to read information from Azure Key Vault by using managed identities for Azure resources.
Below are steps How to use Azure Key Vault.

- Create a key vault.
- Store a secret in the key vault.
- Retrieve a secret from the key vault.
- Enable a managed service identity for the web app.
- Grant the required permissions for the web application to read data from the key vault.
  For further assistance refer to the Help Url.

Estimated Efforts

4.00 Hours **Size :** Small

Impact

Conditionally_Mandatory

Help URL

https://docs.microsoft.com/en-us/azure/key-vault/key-vault-whatis

S1M.BAL

S1M.DAL

Category : Storage **DataPoint :** DB Connections

Reason for change

Database Connections might not work properly in Azure.

Code block	Line no.	File path
<add name="s1mmarketi********** ********** ******	7	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.DAL\App.Config

Recommendation

Your current on-premises solutions for Database Connectivity are unlikely to work in Azure.
Make sure Database Connectivity is available for application.

Or

Azure has the following options for migrating databases.
1-SQL Server on Azure VMs
2-Azure SQL Database
3-Azure SQL Managed Instance
After migration, change your Database Connectivity to the Target platform.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container

S1M.DTO

Questionnaire Result

Category : Application & Platform Design **DataPoint :** Background Processing

Reason for change

Background Processing might not work properly in Azure Container Service.

Recommendation

Containers can be useful for running background jobs. Some of the benefits include:

- Containers support high-density hosting. You can isolate a background task in a container while placing multiple containers in each VM.
- The container orchestrator handles internal load balancing, configuring the internal network, and other configuration tasks. Containers can be started and stopped as needed.
- Azure Container Registry allows you to register your containers inside Azure boundaries. This comes with security, privacy, and proximity benefits.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/dotnet/standard/microservices-architecture/multi-container-microservice-net-applications/background-tasks-with-ihostedservice

Category : Storage **DataPoint :** Automatic Backup

Reason for change

Automatic Backup is used to minimize the risk of data loss and get backup automatic as per interval.

Recommendation

AKS does not offer a financially backed service level agreement. We will strive to attain at least 99.5% availability for the Kubernetes API server. The availability of the agent nodes in your cluster is covered by the Virtual Machines SLA.

Using the Azure Backup service we can schedule the backup of the VM as per requirement.

Steps to configure a backup of Azure VM

1. Configure the backup job from the VM operations menu.
2. Configure the backup job from the Recovery Services vault
3. Create a recovery services vault for a VM
4. Select a backup goal, set policy, and define items to protect
5. Initial backup
6. Defining a backup policy
7. Install the VM Agent on the virtual machine

For further details refer to the below Help Url.

Estimated Efforts

1.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look-arm

Category : Security **DataPoint :** Firewall

Reason for change

Firewall configured in On-premise environment might not be accessible in Azure environment

Recommendation

There are two options to configure the firewall in azure-
1. Move existing firewall service to azure.
2. Configure Network Security Group(NSG) and Azure Firewall in Azure for the application.

Step to configure NSG in Azure

1. Create a network security group.
2. Create an inbound security rule. Add rules for the application.
3. Associate your network security group with a subnet.

Estimated Efforts

4.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/firewall/tutorial-firewall-deploy-portal https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-filter-network-traffic#create-a-network-security-group

Category : Application & Platform Design **DataPoint :** Com Import

Reason for change

Application using some COM+ Component that may or may not work properly

Recommendation

Application using some COM+ Component.

Follow the below steps to configure.

1. If You are using COM+ Component as an assembly, then Right click on assembly.
2. Select Property from Menu.
3. Select Copy to Output directory-> Copy Always.
4. If You are using COM Component as an exe, then You need to create a startup script.
5. Create PowerShell script for COM+ Component.
6. Add Folder Startup in your Role.
7. Add All related files in the Startup folder.
8. Configure the startup task in your Service Definition file.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://stackoverflow.com/questions/14981830/asppdf-and-aspjpeg-on-windows-azure

Category : Security **DataPoint :** PII Information

Reason for change

Your application is storing or sharing PII Informations.

Recommendation

1. Use industry-standard AES encryption. 2. Use dual control and separation of duties to protect your encryption keys. 3. Encrypt sensitive data prior to moving and/or use encrypted connections (HTTPS, SSL, TLS, FTPS, etc) to protect the contents of data in transit. 4. Encrypt sensitive files prior to storing them and/or choose to encrypt the storage drive itself. 5. Use Azure Key Vault to Keep your encryption keys are separate from the data that is being protected.
Azure Key Vault helps safeguard cryptographic keys and secrets that cloud applications and services use. Key Vault streamlines the key management process and enables you to maintain control of keys that access and encrypt your data. Developers can create keys for development and testing in minutes, and then migrate them to production keys. Security administrators can grant (and revoke) permission to keys.

Estimated Efforts

1.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/key-vault/key-vault-whatis

Container Basic Settings

Category : Application & Platform Design **DataPoint :** AppContainerization

Reason for change

Container need images for deploying the application

Recommendation

.NET Framework applications can host on Azure Kubernetes Service by creating windows containers without porting to .NET Core.

Steps for build image of application.

- Create a docker file. Docker file do not have any extension.
- Open docker file in any editor. Clear everything, if any, inside docker file.
- Write the following contents in docker file.

  FROM Microsoft/aspnet

  COPY yourPublishFolder/ /inetpub/wwwroot

- Save the file.
- Open Windows PowerShell (not Windows PowerShell ISE) and change the path to location of your publish folder. Then run the following commands :

  docker build –t randomname

  docker run –d –name webappname randomname

- The image will be created after the above process completes.
- Create an Azure Container Registry in https://portal.azure.com/.
- Push the created image to Azure Container Registry. Login to Azure portal in Windows PowerShell by running following command.

  az login –u username –p password

- Tag your image.

  docker tag randomname myregistry.azurecr.io/sample

- Push image to your registry.

  docker push myregistry.azurecr.io/sample

- Use the loginserver, username and password from Azure portal to pull the image.

Estimated Efforts

8.00 Hours **Size :** Medium

Impact

Mandatory

Help URL

https://docs.microsoft.com/en-us/aspnet/mvc/overview/deployment/docker-aspnetmvc

Window Container

Application Migration Recommendation

It enables you to build and manage scalable and reliable applications composed of microservices that run at high density on a shared pool of machines, which is referred to as a cluster. It provides a sophisticated, lightweight runtime to build distributed, scalable, stateless, and stateful microservices running in containers. It also provides comprehensive application management capabilities to provision, deploy, monitor, upgrade/patch, and delete deployed applications including containerized services.
Why : This application can also move to Azure Container Service with minimal code or configuration change. Azure Container Service is costly but gives higher capability compare to Azure app service.
Cost : - DS2 v2: 2 vCPUs (2 Nodes) (USD $ 367.92)
Other Option : Azure Container Service and Virtual Machine.

Recommendations Result

1 Day = 8 Hours

	Count	
Configuration :	5	16 Hours
Security :	3	9 Hours
Network & Availability :	0	0
Storage :	3	5 Hours

Recommendation by Size Estimate

1 Day = 8 Hours

	Count	
Small :	10	2 Days 6 Hours
Medium :	1	1 Days 0 Hours
Large :	0	0 Days

Recommendations

S1M.EventManagement

Category : Application & Platform Design **DataPoint :** Email

Reason for change

Mailing services is being used by your application.

Code block	Line no.	File path
SmtpClient smtp = new SmtpClient();	194	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M

		.EventManagement\Areas\S1M\Controllers\ManageSponsorController.cs
SmtpClient smtp = new SmtpClient();	108	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\Controllers\HomeController.cs

Recommendation

SendGrid is a cloud-based email service that provides reliable transnational email delivery, scalability, and real-time analytics along with flexible APIs that make custom integration easy.

Create a SendGrid Account

To sign up for a SendGrid account:

1. Log in to the Azure portal.
2. In the menu on the left, click Create a resource.
3. Click Add-ons and then SendGrid Email Delivery.
4. Complete the signup form and select Create.
5. Enter a Name to identify your SendGrid service in your Azure settings. Names must be between 1 and 100 characters in length and contain only alphanumeric characters, dashes, dots, and underscores. The name must be unique in your list of subscribed Azure Store Items.
6. Enter and confirm your Password.
7. Choose your Subscription.
8. Create a new Resource group or use an existing one.
9. In the Pricing tier section select the SendGrid plan you want to sign up for.
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12. Review and accept the Legal terms.
13. After confirming your purchase you will see a Deployment Succeeded pop-up and you will see your account listed in the All resources section.

After you have completed your purchase and clicked the Manage button to initiate the email verification process, you will receive an email from SendGrid asking you to verify your account.

To send an email using SendGrid, you must supply your API Key.

To find your SendGrid API Key:

1. Click Manage.
2. In your SendGrid dashboard, select Settings and then API Keys in the menu on the left.
3. Click the Create API Key.
4. At a minimum, provide the name of this key and provide full access to Mail Send and select Save.
5. Your API will be displayed at this point at one time. Please be sure to store it safely.

How to: Send an Email

After creating an email message, you can send it using SendGrid's API. Alternatively, you may use. NET's built-in library.

Sending email requires that you supply your SendGrid API Key.

var apiKey = System.Environment.GetEnvironmentVariable("SENDGRID_APIKEY");
var client = new SendGridClient(apiKey);

The sample code shows how to send an email message using the SendGrid Web API with a console application.

Sample Code

```
using System;
using System.Threading.Tasks;
using SendGrid;
using SendGrid.Helpers.Mail;

namespace Example
{
    internal class Example
```

```
    {
        private static void Main()
        {
            Execute().Wait();
        }

        static async Task Execute()
        {
            var apiKey = System.Environment.GetEnvironmentVariable("SENDGRID_APIKEY");
            var client = new SendGridClient(apiKey);
            var msg = new SendGridMessage()
            {
                From = new EmailAddress("test@example.com", "DX Team"),
                Subject = "Hello World from the SendGrid CSharp SDK!",
                PlainTextContent = "Hello, Email!",
                HtmlContent = "Hello, Email!"
            };
            msg.AddTo(new EmailAddress("test@example.com", "Test User"));
            var response = await client.SendEmailAsync(msg);
        }
    }
}
```

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

http://azure.microsoft.com/en-in/documentation/articles/sendgrid-dotnet-how-to-send-email/

Category : Application & Platform Design **DataPoint :** Hard Coded URL

Reason for change

The Application uses Hard Coded Urls. These URLs may not be accessible after deployment in Azure Container.

Code block	Line no.	File path
<script src="https://maps.googleapis.com/maps/api/js?AIzaSyCl2RZXFqqoJl-kUwwzY6GwWrn6GEzdWx8=&libraries=places&callback=initAutocomplete" async defer></script>	10	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\Sponsors\Views\Sponsor\OfferEntry.cshtml
@*<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.4.0/css/font-awesome.min.css">	7	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\Sponsors\Views\SponsorsGift\Index.cshtml
<script src="http://ajax.aspnetcdn.com/ajax/jQuery/jquery-	8	D:\Project\S1mAdminPanel\S1mA

2.0.3.min.js"></script>*@		dminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\CampaignList.cshtml
<a href="#x" class="thumbnail"><img src="http://placehold.it/250x250" alt="Image" class="img-responsive"></a>	51, 52, 53, 54, 57, 58, 59, 60	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\CampaignList.cshtml
@* <img src="https://s1m.blob.core.windows.net/s1m/f4d16505-9339-4df5-b3ac-0b5f89fb0364" />	389	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\Package\PackageTmp\Areas\S1M\Views\Campaign\SponsorEntry.cshtml

Recommendation

External or In-House application URL or API is being called in your code. Make sure wherein connectivity with requested URL.

If these URLs are part of the application (Web Service/WCF Services/Web API) then also host these services on different Containers based on Binding and Application Requirement and update the URL on the application.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Conditionally_Mandatory

Help URL

https://docs.microsoft.com/en-us/azure/app-service/environment/app-service-web-how-to-create-a-web-app-in-an-ase

Category : Storage **DataPoint :** DB Connections

Reason for change

Database Connections might not work properly in Azure.

Code block	Line no.	File path
<add name="defaultcon********** **	11	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\TransformWebConfig\transformed\Web.config
<add name="s1mmarketi********** ****	17	D:\Project\S1mAdminPanel\S1mAdminPanel-kendo_15-09-2016\S1M.EventManagement\obj\Release\TransformWebConfig\transformed\Web.config
<add	11	D:\Project\S1mAdminPanel\S1mA

name="defaultcon********** **	11	dminPanel-kendo_15-09-2016\S1M .EventManagement\obj\Release\C SAutoParameterize\original\Web.c onfig
<add name="s1mmarketi********** ****	17	D:\Project\S1mAdminPanel\S1mA dminPanel-kendo_15-09-2016\S1M .EventManagement\obj\Release\C SAutoParameterize\original\Web.c onfig
<add name="defaultcon********** **	11	D:\Project\S1mAdminPanel\S1mA dminPanel-kendo_15-09-2016\S1M .EventManagement\obj\Release\Tr ansformWebConfig\original\Web.co nfig

Recommendation

Your current on-premises solutions for Database Connectivity are unlikely to work in Azure.
Make sure Database Connectivity is available for application.

Or

Azure has the following options for migrating databases.
1-SQL Server on Azure VMs
2-Azure SQL Database
3-Azure SQL Managed Instance
After migration, change your Database Connectivity to the Target platform.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container

Category : Security **DataPoint :** Encryption

Reason for change

The Application uses Encryption. These Encryption Algorithm may or may not be work in Container.

Code block	Line no.	File path
using (Aes encryptor = Aes.Create())	25	D:\Project\S1mAdminPanel\S1mA dminPanel-kendo_15-09-2016\S1M .EventManagement\helperClass\Cr yptography.cs
using (Aes encryptor = Aes.Create())	59	D:\Project\S1mAdminPanel\S1mA dminPanel-kendo_15-09-2016\S1M .EventManagement\helperClass\Cr yptography.cs

Recommendation

Applications use encryption(cryptographic) keys and secrets to help keep information secure. Azure Key Vault safeguards these keys and secrets. When you use Key Vault, you can encrypt authentication keys, storage account keys, data encryption keys, .pfx files, and passwords by using keys that are protected by hardware security modules (HSMs).

Azure web application to read information from Azure Key Vault by using managed identities for Azure resources.
Below are steps How to use Azure Key Vault.

- Create a key vault.
- Store a secret in the key vault.
- Retrieve a secret from the key vault.
- Enable a managed service identity for the web app.
- Grant the required permissions for the web application to read data from the key vault.
  For further assistance refer to the Help Url.

Estimated Efforts

4.00 Hours **Size :** Small

Impact

Conditionally_Mandatory

Help URL

https://docs.microsoft.com/en-us/azure/key-vault/key-vault-whatis

S1M.BAL

S1M.DAL

Category : Storage **DataPoint :** DB Connections

Reason for change

Database Connections might not work properly in Azure.

Code block	Line no.	File path
<add name="s1mmarketi********** ********** **********

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container

S1M.DTO

Questionnaire Result

Category : Application & Platform Design **DataPoint :** Background Processing

Reason for change

Background Processing might not work properly in Azure Container Service.

Recommendation

Containers can be useful for running background jobs. Some of the benefits include:

- Containers support high-density hosting. You can isolate a background task in a container while placing multiple containers in each VM.
- The container orchestrator handles internal load balancing, configuring the internal network, and other configuration tasks. Containers can be started and stopped as needed.
- Azure Container Registry allows you to register your containers inside Azure boundaries. This comes with security, privacy, and proximity benefits.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/dotnet/standard/microservices-architecture/multi-container-microservice-net-applications/background-tasks-with-ihostedservice

Category : Storage **DataPoint :** Automatic Backup

Reason for change

Automatic Backup is used to minimize the risk of data loss and get backup automatic as per interval.

Recommendation

AKS does not offer a financially backed service level agreement. We will strive to attain at least 99.5% availability for the

Kubernetes API server. The availability of the agent nodes in your cluster is covered by the Virtual Machines SLA.

Using the Azure Backup service we can schedule the backup of the VM as per requirement.

Steps to configure a backup of Azure VM

1. Configure the backup job from the VM operations menu.
2. Configure the backup job from the Recovery Services vault
3. Create a recovery services vault for a VM
4. Select a backup goal, set policy, and define items to protect
5. Initial backup
6. Defining a backup policy
7. Install the VM Agent on the virtual machine

For further details refer to the below Help Url.

Estimated Efforts

1.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look-arm

Category : Security DataPoint : Firewall

Reason for change

Firewall configured in On-premise environment might not be accessible in Azure environment

Recommendation

There are two options to configure the firewall in azure-
1. Move existing firewall service to azure.
2. Configure Network Security Group(NSG) and Azure Firewall in Azure for the application.

Step to configure NSG in Azure

1. Create a network security group.
2. Create an inbound security rule. Add rules for the application.
3. Associate your network security group with a subnet.

Estimated Efforts

4.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/firewall/tutorial-firewall-deploy-portal https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-filter-network-traffic#create-a-network-security-group

Category : Application & Platform Design **DataPoint :** Com Import

Reason for change

Application using some COM+ Component that may or may not work properly

Recommendation

Application using some COM+ Component.

Follow the below steps to configure.

1. If You are using COM+ Component as an assembly, then Right click on assembly.
2. Select Property from Menu.
3. Select Copy to Output directory-> Copy Always.
4. If You are using COM Component as an exe, then You need to create a startup script.
5. Create PowerShell script for COM+ Component.
6. Add Folder Startup in your Role.
7. Add All related files in the Startup folder.
8. Configure the startup task in your Service Definition file.

Estimated Efforts

2.00 Hours **Size :** Small

Impact

Optional

Help URL

https://stackoverflow.com/questions/14981830/asppdf-and-aspjpeg-on-windows-azure

Category : Security **DataPoint :** PII Information

Reason for change

Your application is storing or sharing PII Informations.

Recommendation

1. Use industry-standard AES encryption. 2. Use dual control and separation of duties to protect your encryption keys. 3. Encrypt sensitive data prior to moving and/or use encrypted connections (HTTPS, SSL, TLS, FTPS, etc) to protect the contents of data in transit. 4. Encrypt sensitive files prior to storing them and/or choose to encrypt the storage drive itself. 5. Use Azure Key Vault to Keep your encryption keys are separate from the data that is being protected.
Azure Key Vault helps safeguard cryptographic keys and secrets that cloud applications and services use. Key Vault streamlines the key management process and enables you to maintain control of keys that access and encrypt your data. Developers can create keys for development and testing in minutes, and then migrate them to production keys. Security administrators can grant (and revoke) permission to keys.

Estimated Efforts

1.00 Hours **Size :** Small

Impact

Optional

Help URL

https://docs.microsoft.com/en-us/azure/key-vault/key-vault-whatis

Container Basic Settings

Category : Application & Platform Design **DataPoint :** AppContainerization

Reason for change

Container need images for deploying the application

Recommendation

.NET Framework applications can host on Azure Kubernetes Service by creating windows containers without porting to .NET Core.

Steps for build image of application.

- Create a docker file. Docker file do not have any extension.
- Open docker file in any editor. Clear everything, if any, inside docker file.
- Write the following contents in docker file.

  FROM Microsoft/aspnet

  COPY yourPublishFolder/ /inetpub/wwwroot

- Save the file.
- Open Windows PowerShell (not Windows PowerShell ISE) and change the path to location of your publish folder. Then run the following commands :

  docker build –t randomname

  docker run –d –name webappname randomname

- The image will be created after the above process completes.
- Create an Azure Container Registry in https://portal.azure.com/.
- Push the created image to Azure Container Registry. Login to Azure portal in Windows PowerShell by running following command.

  az login –u username –p password

- Tag your image.

  docker tag randomname myregistry.azurecr.io/sample

- Push image to your registry.

  docker push myregistry.azurecr.io/sample

- Use the loginserver, username and password from Azure portal to pull the image.

Estimated Efforts

8.00 Hours **Size :** Medium

Impact

Mandatory

Help URL

https://docs.microsoft.com/en-us/aspnet/mvc/overview/deployment/docker-aspnetmvc