

70-487

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Flight Information Consolidation Service

Testlet 1

Background

You are developing a flight information consolidation service. The service retrieves flight information from a number of sources and combines them into a single data set. The consolidated flight information is stored in a SQL Server database. Customers can query and retrieve the data by using a REST API provided by the service.

The service also offers access to historical flight information. The historical flight information can be filtered and queried in an ad hoc manner.

The service runs on a Windows Azure Web Role. SSL is not used.

Business Requirements

- A new data source for historical flight information is being developed by a contractor located on another continent.
 - If a time zone is not specified, then it should be interpreted as Coordinated Universal Time (UTC).
 - When you upgrade a service from a staging deployment to a production deployment, the time that the service is unavailable must be minimized. ▪
- The default port must be used for HTTP.

Technical Requirements

The existing sources of flight information and the mechanism of exchange are listed below.

- Blue Yonder Airlines provides flight information in an XML file.
- Consolidated Messenger provides flight information in a Microsoft Access database that is uploaded every 12 hours to the service using SFTP. The company uses port 22 for SFTP.
- Margie's Travel provides and consumes flight information using serialized ADO.NET DataSets. Data is periodically synced between the service and Margie's Travel.
- Trey Research provides data from multiple sources serialized in proprietary binary formats. The data must be read by using .NET assemblies provided by Trey Research. The assemblies use a common set of dependencies. The current version of the Trey Research assemblies is 1.2.0.0. All assemblies provided by Trey Research are signed with a key pair contained in a file named Trey.snk, which Trey Research also supplies. ▪ The application specification requires that any third-party assemblies must have strong names.

Application Structure

FlightInfo.cs

```
public class FlightInfo
{
    string DataSource { get; set; }
    public string Airline { get; set; }
    public string Flight { get; set; }
    public DateTimeOffset Arrival { get; set; }
    public int Seats { get; set; }
    public bool WasLate { get; set; }
}
```

BlueYonderLoader.cs

```
public class BlueYonderLoader
{
    public IEnumerable<RawFlightData> LoadFlights(XDocument feed)
    {
        ...
    }

    private RawFlightData Parse(XElement flightElement)
    {
        ...
    }
}
```

HistoricalDataLoader.cs

```
public class HistoricalDataLoader
{
    public static IEnumerable<HistoricalFlightInfo> LoadHistoricalFlights()
    {
        ...
    }

    public void StreamHistoricalFlights(XmlWriter responseWriter, string airline)
    {
        ...
    }

    private XElement ConvertToHistoricalFlight(XElement flight)
    {
        return new XElement("Flight", flight);
    }

    private string GetAirline(XElement flightName)
    {
        return flightName.Value.Substring(0, 2);
    }

    IEnumerable<XElement> RemoteDataStream()
    {
        return XDocument.Load("").Elements();
    }
}
```



MargiesTravelSync.cs

```
public class MargiesTravelSync
{
    public void Sync()
    {
        ...
    }

    private DataSet LoadLocal()
    {
        var dataSet = new DataSet();
        dataSet.ReadXml("local");
        return dataSet;
    }

    private StreamWriter SendStream()
    {
        return new StreamWriter("SendStream");
    }

    private StreamReader ReceiveStream()
    {
        return new StreamReader("ReceiveStream");
    }
}
```



FlightInfoContext.cs

```
public class FlightInfoContext : DbContext
{
    public DbSet<FlightInfo> FlightInfo { get; set; }

    public override int SaveChanges()
    {
        return base.SaveChanges();
    }

    private bool IsTransient(int ex)
    {
        var errors = new[] { 10053, 10054, 64 };
        return errors.Contains(ex);
    }
}
```

FlightDataController.cs

```
public class FlightDataController : ApiController
{
    FlightInfoContext _Context;

    public FlightDataController()
    {
        _Context = new FlightInfoContext();
    }

    [HttpGet]
    public IEnumerable<FlightInfo> GetFlightInfo()
    {
        return _Context.FlightInfo.Select(x => x).AsEnumerable();
    }

    private IEnumerable<HistoricalFlightInfo> LoadHistorical()
    {
        return HistoricalDataLoader.LoadHistoricalFlights();
    }
}
```

QUESTION 1

You need to recommend a data access technology to the contractor to retrieve data from the new data source.

Which data access technology should you recommend?



<https://vceplus.com/>

- A. LINQ to XML
- B. Entity Framework
- C. ADO.NET DataSetsD. WCF Data Services

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

**QUESTION 2**

Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

Which code segment should you use as the body of the SaveChanges() method in the FlightInfoContext.es file?

C A.

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```

C B.

```
var exception = new EntitySqlException();
while (exception.Data != 0 && exception.Data.Count < 5)
{
    try
    {
        return base.SaveChanges();
    }
    catch (EntitySqlException ex)
    {
        if (IsTransient(ex.HResult))
        {
            exception = ex;
        }
    }
}
return base.SaveChanges();
```


C C.

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            break;
        }
    }
}
return base.SaveChanges();
```

C D.

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (!IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```



- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: A Section: (none)

Explanation

Explanation/Reference:

QUESTION 3

You are adding a new REST service endpoint to the FlightDataController controller. It returns flights from the consolidated data sources only for flights that are late.

You need to write a LINQ to Entities query to extract the required data.

Which code segment should you use?

- ☐ A.

```
var historical = LoadHistorical();  
var query = _Context.FlightInfo.AsQueryable()  
    .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,  
    Historical = y })  
    .Where(x => x.Historical.WasLate)  
    .Select(x => x.Current);
```
- ☐ B.

```
var historical = LoadHistorical();  
var query = _Context.FlightInfo.AsEnumerable()  
    .Where(x => historical.All(y => y.WasLate && x.Flight == y.Flight))  
    .Select(x => x);
```
- ☐ C.

```
var historical = LoadHistorical();  
var query = _Context.FlightInfo.AsQueryable()  
    .Where(x => historical.Select(y => y.Flight).Contains(x.Flight))  
    .Where(x => historical.Any(y => y.WasLate))  
    .Select(x => x);
```
- ☐ D.

```
var historical = LoadHistorical();  
var query = _Context.FlightInfo.AsEnumerable()  
    .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,  
    Historical = y })  
    .Where(x => x.Historical.WasLate)  
    .Select(x => x.Current);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 4

Data provided by Consolidated Messenger is cached in the HttpContext.Cache object. You need to ensure that the cache is correctly updated when new data arrives.

What should you do?

- A. Ensure that the EffectivePrivateBytesLimit value is greater than the size of the database file.
- B. Change the sliding expiration of the cache item to 12 hours.
- C. Use the SqlCacheDependency type configured with a connection string to the database file.
- D. Use the CacheDependency type configured to monitor the SFTP target folder.

Correct Answer: D

Section: (none)

Explanation



Explanation/Reference:

QUESTION 5

You need to load flight information provided by Consolidated Messenger.

Which should you use?

- A. SQL Server Data Transformation Services (DTS)
- B. EntityTransaction and EntityCommand
- C. Office Open XML
- D. OleDbConnection and OleDbDataReader

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 6

You are adding a new REST service endpoint to the FlightDataController controller that returns the total number of seats for each airline.

You need to write a LINQ to Entities query to extract the required data.

Which code segment should you use?



- ☐ A.

```
var query = from flight in _Context.FlightInfo
group flight by flight.Seats into agg
let airline = agg.First()
select new
{
    TotalSeats = agg.Key,
    Airline = airline,
};
```
- ☐ B.

```
var query = from flight1 in _Context.FlightInfo
from flight2 in _Context.FlightInfo
where flight1.Airline == flight2.Airline
select new
{
    Airline = flight1.Airline,
    TotalSeats = Math.BigMul(flight1.Seats, flight2.Seats),
};
```
- ☐ C.

```
var query = from flight in _Context.FlightInfo
from airline in flight.Airline
group airline by airline into agg
select new
{
    Airline = agg.Key,
    TotalSeats = agg.Sum(x => Convert.ToInt32(x)),
};
```
- ☐ D.

```
var query = from flight in _Context.FlightInfo
group flight by flight.Airline into agg
select new
{
    Airline = agg.Key,
    TotalSeats = agg.Sum(x => x.Seats),
};
```

A. Option A

B. Option B C. Option C

D. Option D

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 7

You need to load flight information provided by Consolidated Messenger.

What should you use?

- A. Office Open XML
- B. COM interop
- C. OleDbConnection and OleDbDataReader
- D. EntityConnection and EntityDataReader

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:



QUESTION 8

Historical flight information data will be stored in Windows Azure Table Storage using the FlightInfo class as the table entity.

There are millions of entries in the table. Queries for historical flight information specify a set of airlines to search and whether the query should return only late flights. Results should be ordered by flight name.

You need to specify which properties of the FlightInfo class should be used at the partition and row keys to ensure that query results are returned as quickly as possible.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Use the WasLate property as the row key.
- B. Use the Airline property as the row key.

- C. Use the WasLate property as the partition key
- D. Use the Arrival property as the row key.
- E. Use the Airline property as the partition key.
- F. Use the Flight property as the row key.

Correct Answer: EF

Section: (none)

Explanation

Explanation/Reference:

QUESTION 9

Transformed historical flight information provided by the RemoteDataStream() method must be written to the response stream as a series of XML elements named Flight within a root element named Flights. Each Flight element has a child element named FlightName that contains the flight name that starts with the two-letter airline prefix.

You need to implement the StreamHistoricalFlights() method so that it minimizes the amount of memory allocated.

Which code segment should you use as the body of the StreamHistoricalFlights() method in the HistoricalDataLoader.es file?

- ☐ A.

```
responseWriter.WriteStartElement("Flights");
var flights = RemoteDataStream()
    .OrderBy(x => GetAirline(x.Element("FlightName")));
var filteredFlights = flights
    .SkipWhile(x => GetAirline(x.Element("FlightName")) != airline);
foreach (var f in filteredFlights)
{
    var flight = ConvertToHistoricalFlight(f);
    flight.WriteTo(responseWriter);
}
responseWriter.WriteEndElement();
```
- ☐ B.

```
responseWriter.WriteStartElement("Flights");
var flights = RemoteDataStream().Select(x =>
{
    if (GetAirline(x) == airline)
    {
        return ConvertToHistoricalFlight(x);
    }
    return null;
});
flights.TakeWhile(x =>
{
    x.WriteTo(responseWriter);
    return x != null;
});
responseWriter.WriteEndElement();
```
- ☐ C.

```
var data = RemoteDataStream().ToDictionary(x =>
    GetAirline(x.Element("FlightName")),
    x => new XElement("Flights", ConvertToHistoricalFlight(x).Descendants()));
data[airline].WriteTo(responseWriter);
```
- ☐ D.

```
var flights = new XElement("Flights",
    from flight in RemoteDataStream()
    where GetAirline(flight.Element("FlightName")) == airline
    select ConvertToHistoricalFlight(flight));
flights.WriteTo(responseWriter);
```

- A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

<http://msdn.microsoft.com/en-us/library/system.xml.linq.xstreamingelement.aspx> and <http://msdn.microsoft.com/en-us/library/bb551307.aspx>

QUESTION 10

Errors occasionally occur when saving data using the **FlightInfoContext** Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

With which code segment should you replace the body of the **SaveChanges()** method in the **FlightInfoContext.cs** file?



☐ A.

```
var result = FlightInfo.SqlQuery("UPDATE WITH RETRY", FlightInfo, "IsTransient", 5);
if (result.Count() > 5)
{
    result.AsNoTracking();
    return -1;
}
return 0;
```

☐ B.

```
try
{
    return base.SaveChanges();
}
catch (EntityCommandExecutionException ex)
{
    if (ex.Data.Keys.Cast<int>().Any(x => IsTransient(x)))
    {
        return 5 & SaveChanges();
    }
    return -1;
}
```

☐ C.

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```

☐ D.

```
var exception = new EntitySqlException();
while (exception.HResult != 0 && exception.Data.Count < 5)
{
    try
    {
        return base.SaveChanges();
    }
    catch (EntitySqlException ex)
    {
        if (IsTransient(ex.HResult))
        {
            exception = ex;
        }
    }
}
return base.SaveChanges();
```

A. Option A

B. Option B

- C. Option C
- D. Option D

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 11

DRAG DROP

You need to configure the Windows Azure service definition to enable Consolidated Messenger to upload files.

What should you do? (To answer, drag the appropriate configuration items to the correct location or locations. Each configuration item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:



http

tcp

https

InternalEndpoint

InputEndpoint

80

22

3389

Answer area

```
<Binding name="Website" endpointName="Website" />
<Binding name="Transfer" endpointName="Transfer" />
<Bindings>
</Site>
</Sites>
<Endpoints>

< [ ] name="Website"
      protocol="[ ] "
      port="[ ]" />

< [ ] name="Transfer"
      protocol="[ ] "
      port="[ ]" />

</Endpoints>
</WebRole>
```

Correct Answer:

http
tcp
https
InternalEndpoint
InputEndpoint
80
22
3389

Answer area

```
<Binding name="Website" endpointName="Website" />
<Binding name="Transfer" endpointName="Transfer" />
</Bindings>
</Site>
</Sites>
<Endpoints>

  < InputEndpoint  name="Website"
                    protocol=" http "
                    port=" 80 " />

  < InputEndpoint  name="Transfer"
                    protocol=" tcp "
                    port=" 22 " />

</Endpoints>
</WebRole>
```

Section: (none)

Explanation

Explanation/Reference:

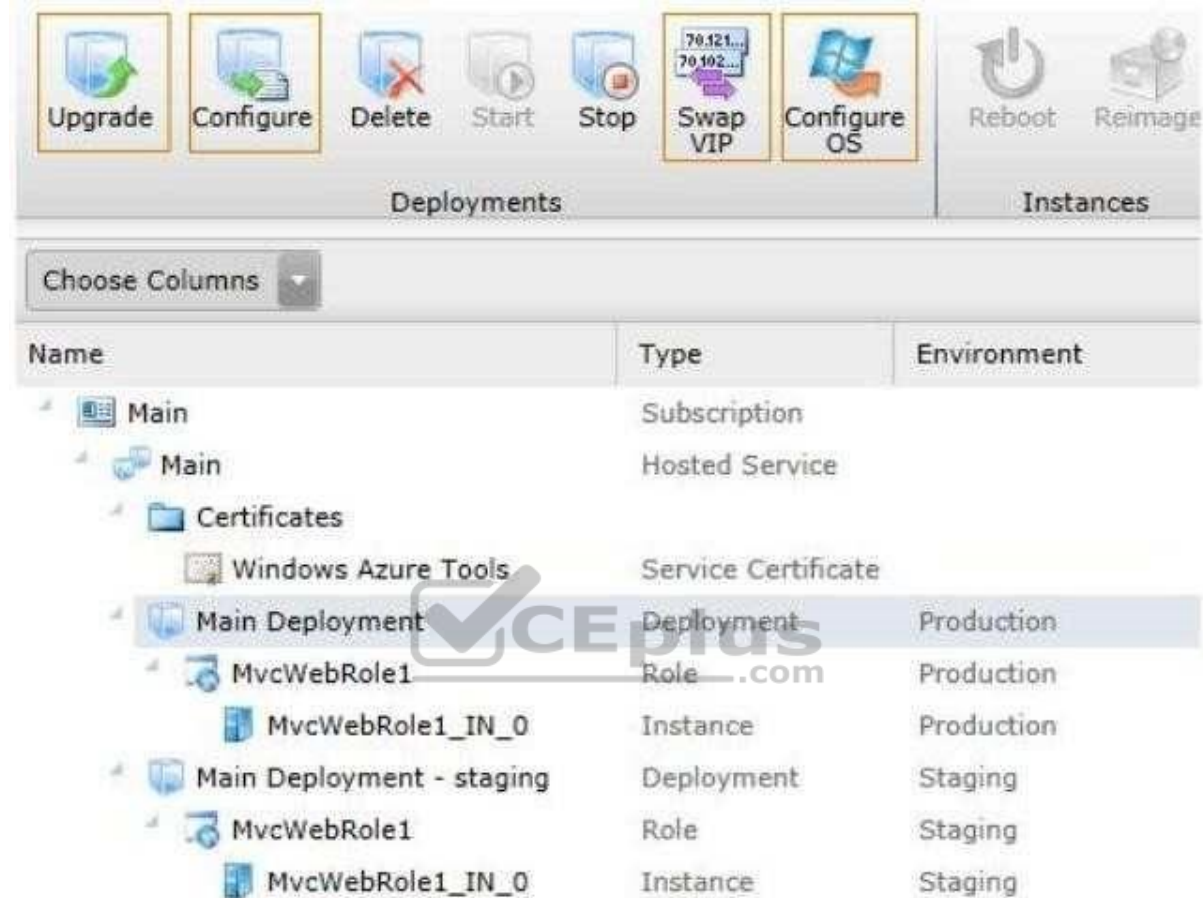
QUESTION 12

HOTSPOT

You need to deploy the application to the Windows Azure production environment to meet the business requirements.

What should you do? (To answer, select the appropriate button in the answer area.)

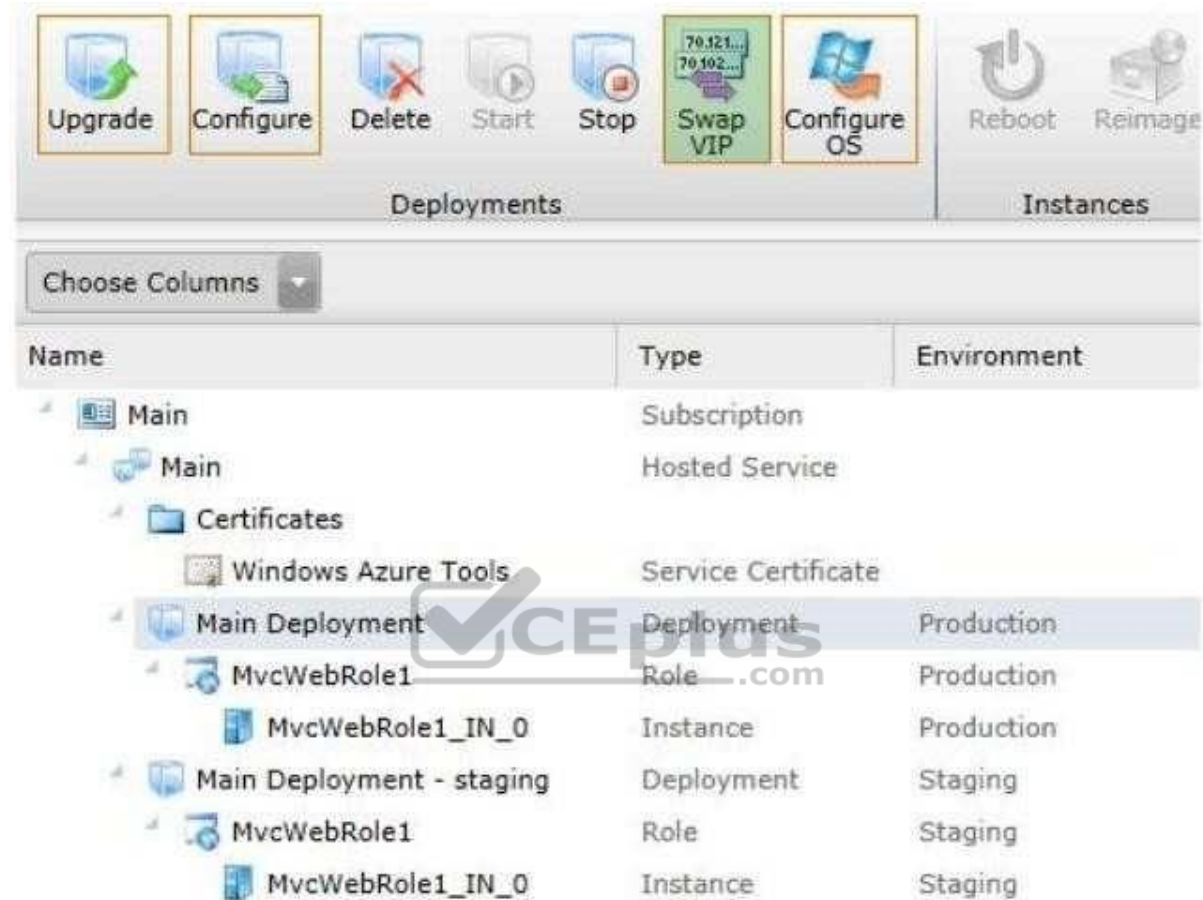
Hot Area:



The screenshot shows the Azure Management Console interface. At the top, there are two groups of icons: 'Deployments' (Upgrade, Configure, Delete, Start, Stop, Swap VIP, Configure OS) and 'Instances' (Reboot, Reimage). Below these is a 'Choose Columns' dropdown menu. The main table displays the following data:

Name	Type	Environment
Main	Subscription	
Main	Hosted Service	
Certificates		
Windows Azure Tools	Service Certificate	
Main Deployment	Deployment	Production
MvcWebRole1	Role	Production
MvcWebRole1_IN_0	Instance	Production
Main Deployment - staging	Deployment	Staging
MvcWebRole1	Role	Staging
MvcWebRole1_IN_0	Instance	Staging

Correct Answer:



Name	Type	Environment
Main	Subscription	
Main	Hosted Service	
Certificates		
Windows Azure Tools	Service Certificate	
Main Deployment	Deployment	Production
MvcWebRole1	Role	Production
MvcWebRole1_IN_0	Instance	Production
Main Deployment - staging	Deployment	Staging
MvcWebRole1	Role	Staging
MvcWebRole1_IN_0	Instance	Staging

Section: (none)

Explanation

Explanation/Reference:

QUESTION 13

DRAG DROP

Flight information data provided by Margie's Travel is updated both locally and remotely. When the data is synced, all changes need to be merged together without causing any data loss or corruption.

You need to implement the Sync() method in the MargiesTravelSync.cs file.

You have the following code:

```
public void Sync ()
{
    var sendStream = SendStream ();
    var receiveStream = ReceiveStream ();
    var local = LoadLocal ();
    local.WriteXml (sendStream, Target 1);
    local.ReadXml (receiveStream, Target 2);
}
```

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Code Segments

XmlReadMode.DiffGram

XmlReadMode.InferTypedSchema

XmlReadMode.ReadSchema

XmlWriteMode.DiffGram

XmlWriteMode.WriteSchema

Answer Area

Target 1:

Code Segment

Target 2:

Code Segment

Correct Answer:

Code Segments		Answer Area
		Target 1:
<code>XmlReadMode.InferTypedSchema</code>	•	<code>XmlWriteMode.DiffGram</code>
<code>XmlReadMode.ReadSchema</code>	•	Target 2:
	•	<code>XmlReadMode.DiffGram</code>
<code>XmlWriteMode.WriteSchema</code>		

Section: (none)
Explanation

Explanation/Reference:

QUESTION 14

DRAG DROP

The service has been deployed to Windows Azure.

Trey Research has provided version 1.3.0.0 of the assembly to support a change in the serialization format. The service must remain available during the transition to the new serialization format.

You need to ensure that the service is using the new assembly.

Which configuration setting should you add to the web.config? (To answer, drag the appropriate configuration elements to the correct location or locations in the answer area. Each configuration element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

```
codeBase version="1.3.0.0" href="Trey.Serialization.dll"
```

```
bindingRedirect oldVersion="1.2.5.0" newVersion="1.3.0.0"
```

```
bindingRedirect oldVersion="1.2.0.0" newVersion="1.3.0.0"
```

```
runtime
```

```
location
```

...

 Answer area

```
< [ ] >
<assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
  <dependentAssembly>
    <assemblyIdentity name="Trey.Serialization" />
    < [ ] >
  </dependentAssembly>
</assemblyBinding>
</ [ ] >
```

Correct Answer:

```
codeBase version="1.3.0.0" href="Trey.Serialization.dll"
```

```
bindingRedirect oldVersion="1.2.5.0" newVersion="1.3.0.0"
```

```
bindingRedirect oldVersion="1.2.0.0" newVersion="1.3.0.0"
```

```
runtime
```

```
location
```

...



```
< runtime
  <assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
    <dependentAssembly>
      <assemblyIdentity name="Trey.Serialization" />
      < bindingRedirect oldVersion="1.2.0.0" newVersion="1.3.0.0" />
    </dependentAssembly>
  </assemblyBinding>
</ runtime >
```

Section: (none)
Explanation

Explanation/Reference:

Reference: <http://msdn.microsoft.com/en-us/library/7wd6ex19.aspx>



ASP.NET MVC Application

Testlet 1

Background

You are developing an ASP.NET MVC application in Visual Studio that will be used to process orders.

Business Requirements

The application contains the following three pages.

- A page that queries an external database for orders that are ready to be processed. The user can then process the order. ▪
- A page to view processed orders.
- A page to view vendor information.

The application consumes three WCF services to retrieve external data.

Technical Requirements

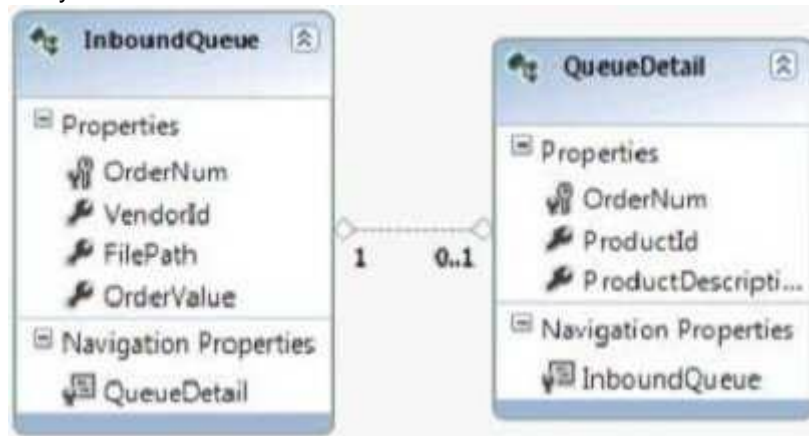
Visual Studio Solution:

The solution contains the following four projects.

- ExternalQueue: A WCF service project used to communicate with the external order database.
- OrderProcessor: An ASP.NET MVC project used for order processing and logging order metadata.
- OrderUpload: A WCF service project used to submit order data to an external data source.
- Shipping: A WCF service project used to acquire shipping information.

ExternalQueue Project:

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



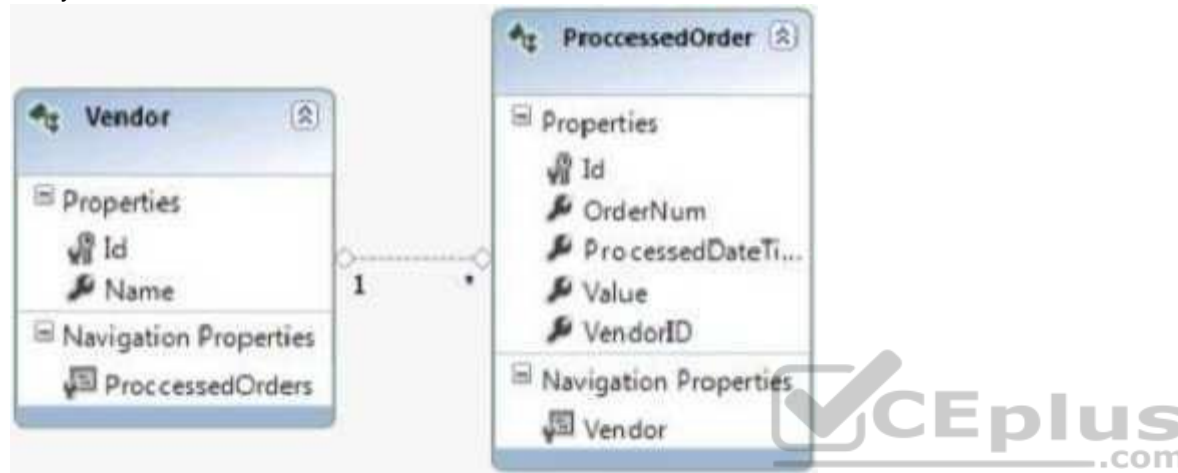
The project contains two services defined in the following files.

- IExternalQueueService.es
- ExternalQueueService.svc.

The ExternalQueue.Helpers namespace contains a definition for a class named OrderNotFound Exception.

OrderProcessor Project:

Entity Framework is used for data access. The entities are defined in the ProcessedOrders.edmx file as shown in the following diagram.



The classes are contained in the OrderProcessor.Entities namespace. The project contains the following two controllers. ▪

- InboundQueueController.es
- ProcessedOrderController.es

WCF service proxies to the ExternalQueue, Shipping and OrderUpload services have been generated by using the command prompt. The ExecuteCommandProcedure() method in the ExternalQueueService.svc file must run asynchronously.

The ProcessedOrderController controller has the following requirements.

- The GetVendorPolicy() method must enforce a 10 minute absolute cache expiration policy.
- The GetProcessedOrders() method must return a view of the 10 most recently processed orders.

OrderUpload Project:

The project contains two services defined in the following files.

- IUploadCallbackService.es
- UploadCallbackService.svc

Data Access is maintained in a file named UploadOrder.es.

Shipping Project:

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



The Custom Tool property for ExternalOrders.edmx has been removed.

POCO classes for the Entity Model are located in the ShippingAddress.es file. The POCO entity must be loaded by using lazy loading.

The project contains two services defined in the following files. ▪ IShippingService.es ▪ ShippingService.svc.

The IShippingService contract must contain an operation that receives an order number as a parameter. The operation must return a class named ShippingInfo that inherits from a class named State.

Application Structure

ExternalQueue\IExternalQueueService.cs

```
IQ01 using System.Collections.Generic;
IQ02 using System.ServiceModel;
IQ03 using ExternalQueue.Helpers;
IQ04
IQ05 namespace ExternalQueue
IQ06 {
IQ07     [ServiceContract]
IQ08     public interface IExternalQueueService
IQ09     {
IQ10         [OperationContract]
IQ11         List<Entities.InboundQueue> GetExternalOrders();
IQ12
IQ13         [FaultContract(typeof(OrderNotFoundException))]
IQ14         [OperationContract]
IQ15         void DeleteExternalOrder(int orderNum);
IQ16
IQ17         [OperationContract]
IQ18         Entities.InboundQueue GetExternalOrder(int orderNum);
IQ19     }
IQ20 }
```


OrderProcessor\IExternalQueueService.svc

```
EQ01 using System;
EQ02 using System.Collections.Generic;
EQ03 using System.Linq;
EQ04 using System.Data.EntityClient;
EQ05 using System.Data;
EQ06 using ExternalQueue.Entities;
EQ07 using System.Data.Objects;
EQ08 using ExternalQueue.Helpers;
EQ09 using System.ServiceModel;
EQ10 using System.Threading.Tasks;
EQ11
EQ12 namespace ExternalQueue
EQ13 {
EQ14     public class ExternalQueueService : IExternalQueueService
EQ15     {
EQ16         public List<Entities.InboundQueue> GetExternalOrders()
EQ17         {
EQ18             List<InboundQueue> queueItems = new List<InboundQueue>();
EQ19             return queueItems;
EQ20         }
EQ21
EQ22         public void DeleteExternalOrder(int orderNum)
EQ23         {
EQ24             using (var context = new ExternalOrdersEntities())
EQ25             {
EQ26                 var orders = context.InboundQueues.Where(i => i.OrderNum ==
orderNum).ToList();
EQ27                 if (orders.Count() > 0)
EQ28                 {
EQ29                     using (EntityCommand cmd = new EntityCommand())
EQ30                     {
EQ31                         cmd.CommandText = "ExternalOrdersEntities.uspInboundQueueDelete";
EQ32                         cmd.CommandType = CommandType.StoredProcedure;
EQ33                         EntityParameter param = new EntityParameter();
EQ34                         param.Value = orderNum;
EQ35                         param.ParameterName = "orderNum";
EQ36                         cmd.Parameters.Add(param);
EQ37                         ExecuteCommandProcedure(cmd);
EQ38                     }
EQ39                 }
EQ40                 else
EQ41                 {
EQ42                     OrderNotFoundException ex = new OrderNotFoundException();
EQ43                     ex.OrderNum = orderNum;
EQ44                     ex.ExceptionMessage = "Order not found...Cannot delete";
EQ45                 }
EQ46             }
EQ47         }
EQ48     }
EQ49
EQ50     private void ExecuteCommandProcedure(EntityCommand command)
EQ51     {
EQ52         using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
EQ53         {
EQ54             command.Connection = connection;
EQ55             connection.Open();
EQ56             command.ExecuteNonQuery();
EQ57         }
EQ58     }
EQ59
EQ60     public InboundQueue GetExternalOrder(int orderNum)
EQ61     {
EQ62         using (var context = new ExternalOrdersEntities())
EQ63         {
EQ64             string queryString = string.Empty;
EQ65             ObjectQuery<InboundQueue> query = context.CreateQuery<InboundQueue>
(queryString, new ObjectParameter("orderNum", orderNum));
EQ66             return query.First();
EQ67         }
EQ68     }
EQ69 }
EQ70 }
EQ71 }
```



ExternalQueue\ProcessedOrderController.cs

```
PC01 using System;
PC02 using System.Collections.Generic;
PC03 using System.Linq;
PC04 using System.Runtime.Caching;
PC05 using System.Web.Mvc;
PC06 using OrderProcessor.Entities;
PC07 using OrderProcessor.Helpers;
PC08 using System.Configuration;
PC09
PC10 namespace OrderProcessor.Controllers
PC11 {
PC12     public class ProcessedOrderController : Controller
PC13     {
PC14         public ActionResult GetProcessedOrders()
PC15         {
PC16             using (var context = new ProcessedOrders())
PC17             {
PC18                 List<Entities.ProcessedOrder> orders = new List<ProcessedOrder>();
PC19                 return View(orders);
PC20             }
PC21         }
PC22
PC23         private ObjectCache cache {get { return MemoryCache.Default; }}
PC24
PC25         public ActionResult GetVendors()
PC26         {
PC27             List<Entities.Vendor> vendors = cache.Get
PC28             ("vendorKey") as List<Entities.Vendor>;
PC29             if (vendors == null)
PC30             {
PC31                 using (var context = new ProcessedOrders())
PC32                 {
PC33                     vendors = context.Vendors.ToList();
PC34                 }
PC35             }
PC36             return View(vendors);
PC37         }
PC38
PC39         private CacheItemPolicy GetVendorPolicy()
PC40         {
PC41             CacheItemPolicy vendorPolicy = new CacheItemPolicy();
PC42
PC43             return vendorPolicy;
PC44         }
PC45
PC46         private List<string> GetTriggerPaths()
PC47         {
PC48             List<string> triggerPath = new List<string>();
PC49             triggerPath.Add(@"c:\triggers\vendorttrigger.txt");
PC50             return triggerPath;
PC51         }
PC52     }
PC53 }
```



OrderProcessor\InboundQueueController.cs

```
IC01 using System;
IC02 using System.Collections.Generic;
IC03 using System.Web.Mvc;
IC04 using OrderProcessor.Entities;
IC05 using ExternalQueue.Entities;
IC06 using System.ServiceModel;
IC07 using System.Collections;
IC08 using ExternalQueue.Helpers;
IC09 using OrderProcessor.Helpers;
IC10 using System.Linq;
IC11
IC12 namespace OrderProcessor.Controllers
IC13 {
IC14     public class InboundQueueController : Controller
IC15     {
IC16         public ActionResult GetQueueItems()
IC17         {
IC18             IEnumerable<InboundQueue> inboundOrders = Enumerable.Empty<InboundQueue>();
IC19             return View(inboundOrders);
IC20         }
IC21
IC22         public ActionResult ProcessOrder(int orderNum)
IC23         {
IC24             ExternalQueueServiceClient qService = new ExternalQueueServiceClient();
IC25             InboundQueue externalOrder = qService.GetExternalOrder(orderNum);
IC26             if (externalOrder != null)
IC27             {
IC28                 using (var context = new ProcessedOrders())
IC29                 {
IC30                     ProcessedOrder order = new ProcessedOrder();
IC31                     order.OrderNum = externalOrder.OrderNum;
IC32                     order.Value = Convert.ToDouble(externalOrder.OrderValue);
IC33                     order.VendorID = Convert.ToInt32(externalOrder.VendorId);
IC34                     order.ProcessedDateTime = DateTime.Now;
IC35                     context.ProcessedOrders.Add(order);
IC36                     context.SaveChanges();
IC37                 }
IC38                 qService.DeleteExternalOrder(orderNum);
IC39             }
IC40             return RedirectToAction("GetQueueItems");
IC41         }
IC42
IC43         public ActionResult ViewShippingInfo(int orderNum)
IC44         {
IC45             ShippingServiceClient shipService = new ShippingServiceClient();
IC46             var info = shipService.GetShippingInfo(orderNum);
IC47             return View(info);
IC48         }
IC49     }
IC50 }
```

OrderUpload\IUploadCallbackService.cs

```
IU01 using System.ServiceModel;
IU02
IU03 namespace OrderUpload
IU04 {
IU05     [ServiceContract(CallbackContract = typeof(IUploadCallback))]
IU06     public interface IUploadCallbackService
IU07     {
IU08         [OperationContract]
IU09         void UploadOrder(int orderNum);
IU10     }
IU11
IU12     public interface IUploadCallback
IU13     {
IU14         [OperationContract]
IU15         decimal GetOrderValue(int orderNum);
IU16     }
IU17 }
```



OrderUpload\UploadCallbackService.svc

```
US01 using System.ServiceModel;
US02
US03 namespace OrderUpload
US04 {
US05     public class UploadCallbackService : IUploadCallbackService
US06     {
US07         public void UploadOrder(int orderNum)
US08         {
US09         }
US10     }
US11 }
```

Shipping\IShippingService.cs

```
IS01 using System.Runtime.Serialization;
IS02 using System.ServiceModel;
IS03
IS04 namespace Shipping
IS05 {
IS06     public interface IShippingService
IS07     {
IS08     }
IS09 }
IS10 }
```



Shipping\ShippingAddress.cs

```
SA01 using System.Collections.Generic;
SA02 using System.Data.Objects;
SA03
SA04 namespace Shipping.POCO
SA05 {
SA06     public class ShippingAddress
SA07     {
SA08         public int VendorId { get; set; }
SA09         public string Address { get; set; }
SA10         public string City { get; set; }
SA11         public int StateId { get; set; }
SA12         public string Zip { get; set; }
SA13         public State State { get; set; }
SA14     }
SA15
SA16     public class State
SA17     {
SA18         public int StateId { get; set; }
SA19         public string StateName { get; set; }
SA20         public List<ShippingAddress> ShippingAddresses { get; set; }
SA21     }
SA22 }
```

QUESTION 1

You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.

Which code segment should you use?

☐ A.

```
private async Task ExecuteCommandProcedure(EntityCommand command)
{
    using (EntityConnection connection = new EntityConnection
        ("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        await connection.OpenAsync();
        await command.ExecuteNonQueryAsync();
    }
}
```

☐ B.

```
private void ExecuteCommandProcedure(EntityCommand command)
{
    using (EntityConnection connection = new EntityConnection
        ("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        command.ExecuteNonQueryAsync();
    }
}
```

☐ C.

```
private void ExecuteCommandProcedure(EntityCommand command)
{
    using (EntityConnection connection = new EntityConnection
        ("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        connection.OpenAsync();
        command.ExecuteNonQueryAsync();
    }
}
```

☐ D.

```
private async Task ExecuteCommandProcedure(EntityCommand command)
{
    using (EntityConnection connection = new EntityConnection
        ("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        connection.OpenAsync();
        command.ExecuteNonQueryAsync();
    }
}
```

A. Option A

B. Option B

- C. Option C
- D. Option D

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Synchronous to Asynchronous Connection Open

You can upgrade an existing application to use the new asynchronous feature. For example, assume an application has a synchronous connection algorithm and blocks the UI thread every time it connects to the database and, once connected, the application calls a stored procedure that signals other users of the one who just signed in.

When converted to use the new asynchronous functionality, the program would look like: `await conn.OpenAsync();` `await cmd.ExecuteNonQueryAsync();`

References: <https://docs.microsoft.com/en-us/dotnet/framework/data/adonet/asynchronous-programming>



QUESTION 2

The `DeleteExternalOrder()` method in the `ExternalQueueService` service is not throwing a `FaultException` exception as defined by the `FaultContractAttribute` attribute in the `IExternalQueueService.cs` file.

You need to throw the `FaultException` exception.

Which code segments can you insert at line EQ45 to achieve this goal? (Each correct answer presents a complete solution. Chose all that apply)

- ☐ A. `throw new FaultException<OrderNotFoundException>(ex.ExceptionMessage);`
- ☐ B. `throw new FaultException<OrderNotFoundException>(ex, new FaultReason("Order not found."));`
- ☐ C. `throw new FaultException<OrderNotFoundException>(ex);`
- ☐ D. `throw new FaultException
(new OrderNotFoundException(new Exception(ex.ExceptionMessage)), "Order not found.");`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: BC

Section: (none)

Explanation

Explanation/Reference:

QUESTION 3

The **GetExternalOrder()** method in the **ExternalQueueService** service is throwing a runtime error. The method must query the database for a record that matches the **orderNum** parameter passed to the method.

You need to modify the **queryString** string to retrieve the record.

With which code segment should you replace line EQ64?



```
A. string queryString = @"SELECT q.OrderNum, q.VendorId,
    q.FilePath, q.OrderValue
    FROM ExternalOrdersEntities AS q
    WHERE q.OrderNum = @orderNum";
```

```
B. string queryString = @"SELECT q
    FROM ExternalOrdersEntities.InboundQueues
    WHERE q.OrderNum = @orderNum";
```

```
C. string queryString = @"SELECT VALUE q
    FROM ExternalOrdersEntities.InboundQueues AS q
    WHERE q.OrderNum = @orderNum";
```

```
D. string queryString = @"SELECT VALUE *
    FROM ExternalOrdersEntities.InboundQueues
    WHERE OrderNum = @orderNum";
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 4

You need to regenerate the service proxies to include task-based asynchronous method signatures.

Which command should you use?

- A. `aspnet_regiis.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- B. `svcutil.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- C. `aspnet_compiler.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- D. `aspnet_regiis.exe /t:code http://localhost:62965/UploadService.svc`
- E. `svcutil.exe /t:code http://localhost:62965/UploadService.svc`

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

<http://msdn.microsoft.com/en-us/library/aa347733.aspx>

QUESTION 5

The `GetVendors()` action in the `ProcessedOrderController` controller is querying the database each time it is run. The `GetVendors()` action must query the database only if the cache is null.

You need to add code to the action at line PC33 to cache the data.

Which code segment can you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. `cache.Set(new CacheItem("vendorKey", vendors), GetVendorPolicy());`
- B. `cache.Add("vendors", vendors, new CacheItemPolicy());`
- C. `cache.Add(new CacheItem("vendorKey", vendors) , GetVendorPolicy());`
- D. `cache.AddOrUpdateExisting("vendorKey", context, new CacheItemPolicy());`

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

QUESTION 6

The `QueueDetail` entity type must inherit from the `InboundQueue` entity type in the `ExternalQueue` service project using table-per-type inheritance.

You need to modify the entities in the designer.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Remove the OrderNum property in InboundQueue.
- B. Remove the OrderNum property in QueueDetail.
- C. Set the QueueDetail BaseType to InboundQueue.
- D. Remove the association between the entities.
- E. Set the InboundQueue BaseType to QueueDetail

Correct Answer: BCD

Section: (none)

Explanation

Explanation/Reference:

Explanation:

References: <http://www.robbagby.com/entity-framework/entity-framework-modeling-table-per-type-inheritance/>



Online Bookstore Web Application

Testlet 1

Background

You are developing an online bookstore web application that will be used by your company's customers.

Technical Requirements

General requirements:

- The web store application must be an ASP.NET MVC application written in Visual Studio.
- The application must connect to a Microsoft SQL database.
- TheGetTop100Books()method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, read-only methods of reading data.
- TheImportBooks()method must keep a copy of the data that can be accessed while new books are being imported without blocking reads.
- TheCreateMonthlyTotalsReport()method must lock the data and prevent others from updating or inserting new rows until complete.
- The college textbook area of the web application must get data from a daily updated CSV file.
- The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.
- The cookbook functionality is contained within a client-side application that must connect to the server using HTTP and requires access to the data using JavaScript.
- TheBookApiControllerclass must have a method that is able to perform ad-hoc queries using OData.

The RESTful API of the bookstore must expose the following endpoint.

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

Action: Get a book by id

HTTP method: GET

Relative URI: /books/id

Action: Create a new book

HTTP method: POST

Relative URI: /books

Action: Update a book
HTTP method: PUT
Relative URI: /books/id

Action: Delete a book
HTTP method: DELETE
Relative URI: /books/id

Application Structure

Main

```
public class Book
{
    public int Id { get; set; }
    public string Name { get; set; }
    public string Title { get; set; }
    public decimal Price { get; set; }
    public DateTime PublishDate { get; set; }
    public int Sales { get; set; }
    public static void SaveFeaturedBooks(IEnumerable<Book> books, string file)
    {
        ...
    }
}
```

```
public class BookApiController : ApiController
{
    private readonly IBookRepository bookRepository;
    public BookApiController(IBookRepository bookRepository)
    {
        this.bookRepository = bookRepository;
    }
    public List<Book> Get(int id)
    {
        var book = bookRepository.Find(id);
        if (book == null)
        {
            throw new HttpResponseMessage(HttpStatusCode.NotFound);
        }
        return new List<Book> { book };
    }
    public HttpResponseMessage Post(Book value)
    {
        if (ModelState.IsValid)
        {
            bookRepository.InsertOrUpdate(value);
            bookRepository.Save();
            var response = new HttpResponseMessage(HttpStatusCode.Created);
            string uri = Url.Route(null, new { id = value.Id });
            response.Headers.Location = new Uri(Request.RequestUri, uri);
            return response;
        }
        throw new HttpResponseMessage(HttpStatusCode.BadRequest);
    }
    public HttpResponseMessage Put(int id, Book value)
    {
        if (ModelState.IsValid)
        {
            bookRepository.InsertOrUpdate(value);
            bookRepository.Save();
            return new HttpResponseMessage(HttpStatusCode.NoContent);
        }
        throw new HttpResponseMessage(HttpStatusCode.BadRequest);
    }
    public void Delete(int id)
    {
        var book = bookRepository.Find(id);
        if (book == null)
        {
            throw new HttpResponseMessage(HttpStatusCode.NotFound);
        }
        bookRepository.Delete(id);
    }
}
```

```
private static void ImportBooks()
{
    using (SqlConnection connection = new SqlConnection(_connectionString))
    {
        connection.Open();
        SqlCommand command = connection.CreateCommand();
        SqlTransaction transaction = connection.BeginTransaction();
        command.Connection = connection;
        command.Transaction = transaction;
        try
        {
            command.CommandText = _commandText;
            command.ExecuteNonQuery();
            transaction.Commit();
        }
        catch (Exception ex)
        {
            transaction.Rollback();
        }
    }
}
```

```
private static void CreateMonthlyTotalsReports()
{
    using (SqlConnection connection = new SqlConnection(_connectionString))
    {
        connection.Open();
        SqlCommand command = connection.CreateCommand();
        SqlTransaction transaction = connection.BeginTransaction();
        command.Connection = connection;
        command.Transaction = transaction;
        try
        {
            command.CommandText = _reportCommandText;
            command.ExecuteNonQuery();
            transaction.Commit();
        }
        catch (Exception ex)
        {
            transaction.Rollback();
        }
    }
}
```



PurchaseOrders.xml

PurchaseOrders.xml

```
<?xml version="1.0"?>
<aw:PurchaseOrder>
  aw:PurchaseOrderNumber="99503"
  aw:OrderDate="1999-10-20"
  xmlns:aw="http://www.adventure-works.com">
  <aw:Address aw:Type="Shipping">
    <aw:Name>Ellen Adams</aw:Name>
    <aw:Street>123 Maple Street</aw:Street>
    <aw:City>Mill Valley</aw:City>
    <aw:State>CA</aw:State>
    <aw:Zip>10999</aw:Zip>
    <aw:Country>USA</aw:Country>
  </aw:Address>
  <aw:Address aw:Type="Billing">
    <aw:Name>Tai Yee</aw:Name>
    <aw:Street>8 Oak Avenue</aw:Street>
    <aw:City>Old Town</aw:City>
    <aw:State>PA</aw:State>
    <aw:Zip>95819</aw:Zip>
    <aw:Country>USA</aw:Country>
  </aw:Address>
  <aw:DeliveryNotes> Please leave packages in shed by driveway.</aw:DeliveryNotes>
  <aw:Items>
    <aw:Item aw:PartNumber="872-AA">
      <aw:ProductName>Lawnmower</aw:ProductName>
      <aw:Quantity>1</aw:Quantity>
      <aw:USPrice>148.95</aw:USPrice>
      <aw:Comment>Confirm this is electric</aw:Comment>
    </aw:Item>
    <aw:Item aw:PartNumber="926-AA">
      <aw:ProductName>Baby Monitor</aw:ProductName>
      <aw:Quantity>2</aw:Quantity>
      <aw:USPrice>39.98</aw:USPrice>
      <aw:ShipDate>1999-05-21</aw:ShipDate>
    </aw:Item>
  </aw:Items>
</aw:PurchaseOrder>
```

FeaturedBooks.xml

FeaturedBooks.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<featured>
  <book>
    <id>1</id>
    <title>Science</title>
  </book>
  <book>
    <id>1</id>
    <title>Math</title>
  </book>
  <book>
    <id>1</id>
    <title>History</title>
  </book>
</featured>
```

QUESTION 1

The PurchaseOrders.xml file contains all of the purchase orders for the day.

You need to query the XML file for all of the billing addresses.

Which code segment should you use?

A)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
    from el in root.Elements(aw + "Items")
    where (string)el.Attribute(aw + "Type") == "Billing"
    select el;
foreach (XElement element in address)
{
    Console.WriteLine(element);
}
```

B)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
    from el in root.Elements(aw + "Address")
    where (string)el.Attribute(aw + "Type") == "Shipping"
    select el;
foreach (XElement element in address)
{
    Console.WriteLine(element);
}
```



<https://vceplus.com/>

C)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
    from el in root.Elements(aw + "Address")
    where (string)el.Attribute(aw + "Type") == "Billing"
    select el;
foreach (XElement element in address)
{
    Console.WriteLine(element);
}
```

D)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
    from el in root.Elements(aw + "Items")
    where (string)el.Attribute(aw + "Type") == "Shipping"
    select el;
foreach (XElement element in address)
{
    Console.WriteLine(element);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The root element attribute should be Address as per the following line:

From el in root.Elements(aw +"Address")

The Type should be Billing (not Shipping) as per the following line:

Where (string)e1.Attribute(aw + "Type") == "Billing"

QUESTION 2

You need to return the list of the top 100 books for the GetTopBooks() method.

Which type should you use to retrieve the data?

- A. DataTable
- B. SqlDataReader
- C. DataView

D. DataSet

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

From scenario: TheGetTop100Books() method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, readonly methods of reading data.

A SqlDataReader is a type that is good for reading data in the most efficient manner possible.

References: <http://csharp-station.com/Tutorial/AdoDotNet/Lesson04>

QUESTION 3

You are preparing to write the data access code for the children's book area of the web site.

You need to review the requirements and identify the appropriate data access technology.

What should you do?

- A. Use LINQ to SQL
- B. Use the WCF Data Services.
- C. Use a Web Service.
- D. Use ADO.NET Entity Framework.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Using the Entity Framework, developers issue queries using LINQ, then retrieve and manipulate data as strongly typed objects.

From scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables. References: <http://www.entityframeworktutorial.net/what-is-entityframework.aspx>

QUESTION 4

You need to create an OData query expression to return the ten books with the largest number of sales.

Which query expression should you use?

- A. /books?orderby=sales desc&\$count=10
- B. /search?orderby=sales asc&\$count=10
- C. /search?orderby=sales asc&\$top=10
- D. /books?orderby=sales desc&\$top=10

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

\$top determines the maximum number of records to return.

From scenario:

Action: Get a list of all books

HTTP method: GET

Relative URI: /books



References: [https://msdn.microsoft.com/en-us/library/gg309461\(v=crm.7\).aspx](https://msdn.microsoft.com/en-us/library/gg309461(v=crm.7).aspx)

QUESTION 5

You need to implement the Get() method in the bookstore Web API application to be able to find books by using an ad hoc query.

Which method should you use? A.

```
public IQueryable<Book> Get()  
{  
    return bookRepository.All;  
}
```

```
public Book Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseMessage(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}
```

```
public IEnumerable<Book> Get()
{
    return bookRepository.All;
}
```

```
public List<Book> Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseMessage(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}
```

B.

C.

D.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Compare to the Delete method from the scenario:

```
public void Delete(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseMessage(HttpStatusCode.NotFound);
    }
    bookRepository.Delete(id);
}
```

QUESTION 6

You need to update the **CreateMonthlyTotalsReports()** method to use database transactions.

Which code segment should you use?

- A. `SqlConnection.BeginTransaction(IsolationLevel.Snapshot);`
- B. `SqlConnection.BeginTransaction(IsolationLevel.Serializable);`
- C. `SqlConnection.BeginTransaction(IsolationLevel.RepeatableRead);`

D. SqlConnection.BeginTransaction(IsolationLevel.Unspecified);

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: The CreateMonthlyTotalsReport() method must lock the data and prevent others from updating or inserting new rows until complete.

The highest isolation level, Serializable, provides a high degree of protection against interruptive transactions, but requires that each transaction complete before any other transactions are allowed to operate on the data.

With Serializable volatile data can be read but not modified, and no new data can be added during the transaction.

QUESTION 7

You need to create an OData query expression to return the ten books with the smallest number of sales.

Which query expression should you use?

A. /books?orderby=sales desc&\$count=10

B. /search?orderby=sales asc&\$count=10

C. /search?orderby=sales desc&\$top=10

D. /books?orderby=sales asc&\$top=10



Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The get the smallest number of sales we should use ascending (asc) ordering.

From scenario: RESTful API endpoints include:

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

QUESTION 8

You need to choose the appropriate data access technology for the children's book area of the web application.

Which data access technology should you choose?

- A. ADO.NET Entity Framework
- B. WCF Data Services
- C. LINQ to SQLD. Web Service

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.

QUESTION 9

You need to create an OData filter expression that returns books that match the following characteristics: ▪

Published after 1/1/2000

- Have "Science" as the first word

Which filter statement should you use?

- A. /books?\$filter=PublishDate gt datetime'2000-1-1' and startswith(Title, 'Science')
- B. /books?\$filter=PublishDate greaterthan datetime'2000-1-1' and startswith(Title, 'Science')
- C. /search?\$filter=PublishDate greaterthan datetime'2000-1-1' and beginswith (Title, 'Science')
- D. /search?\$filter=PublishDate gt datetime'2000-1-1' and beginswith(Title, 'Science')

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The gt keyword is used for the greater than comparison.

The startswith keyword is used to compare the beginning of a string.

Example: Returns entry numbers 611 and higher.

filter= Entry_No gt 610

Example: Returns all customers names beginning with "S".

filter=startswith(Name, 'S')

References: [https://msdn.microsoft.com/en-us/library/hh169248\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/hh169248(v=nav.90).aspx) **Adventure Works Cycles**

Testlet 1

General Overview

Adventure Works Cycles is a travel agency for cycling enthusiast. In recent years, Adventure Works Cycles has begun renting exotic cars to its clients. You are developing a new web application that will provide Adventure Works Cycle customers with the ability to locate and rent exotic throughout the world.

Application Overview

The web application will be hosted in Azure. The application will provide users with the ability to search for a car by using advanced filtering options, such as the car brand, model, year, and price. All of this information will be stored as strings and will be displayed as drop-down lists.

The brand and model lists that will be displayed on the home page of the web application will be retrieved from Windows Communication Foundation (WCF) services hosted in the on-premises environment.

The home page will be named home.aspx and will be developed by using Microsoft ASP.NET MVC. The business logic will be developed by using ASP.NET Web API.

The MVC front-end layer and the Web API will communicate by using JSON. The business logic will have a call to an assembly named CarBusinessLogic.dll. For responding, you are creating a worker role named ReportApp in Azure that will collect data from all of the searches made by using the web application. The application will communicate with ReportApp by using messages.

Requirements

Security Requirements

Adventure Works Cycles identifies the following security requirements for the web application:

- The Web API must only accept one data format.
- The CarBusinessLogic.dll assembly must be strongly-named.
- Communication between the on-premises WCF service and Azure must be encrypted. **Logging**

Requirements

In the Web API, you plan to create a controller named CarController. Before any action in CarController is executed, the following line of code must execute first.

```
Debug.WriteLine("pre-processing logging");
```

Performance Requirements

Adventure Works Cycles identifies the following performance requirements for the web application:

- After the initial deployment, any changes to the business logic of the Web API must cause minimal downtime to the web application in the production environment.

- The action in the Web API that returns the car brand must be asynchronous, while all other actions must be synchronous. ▪
- When home.aspx is displayed, the rendered page must be cached for 10 minutes.
- The web application will be deployed to multiple instances.

Financial Requirements

ReportApp will shut down every night. However, data from the searches performed during the night must still be collected.

QUESTION 1

You need to implement a solution that meets the logging requirements.

Which class should you use?

- A. RouteAttribute
- B. RoutePrefixAttribute
- C. AcceptVerbsAttribute
- D. ActionFilterAttribute

Correct Answer: D

Section: (none)

Explanation



Explanation/Reference:

QUESTION 2

You need to compile CarBusinesLogic.dll by using Microsoft Visual Studio.

Which attribute should you add before you compile the dynamic-link library (DLL)?

- A. System.Reflection.AssemblyConfigurationAttribute
- B. System.Reflection.AssemblyKeyFileAttribute
- C. AssemblyFlagsAttribute
- D. System.Reflection.AssemblyAlgorithmIdAttribute

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: The CarBusinessLogic.dll assembly must be strongly-named.

One way to sign an assembly with a strong name is by using assembly attributes to insert the strong name information into your code. You can use either the AssemblyKeyFileAttribute or the AssemblyKeyNameAttribute attribute, depending on where the key file to be used is located.

Note: To sign an assembly with a strong name by using attributes

- Add the System.Reflection.AssemblyKeyFileAttribute or AssemblyKeyNameAttribute attribute to your source code file, and specify the name of the file or container that contains the key pair to use when signing the assembly with a strong name.
- Compile the source code file normally.

References: [https://msdn.microsoft.com/en-us/library/xc31ft41\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/xc31ft41(v=vs.110).aspx)

QUESTION 3

You need to identify a solution to display the car brands.

What should you include in the solution?

- A. Azure Automation
- B. Azure RemoteApp
- C. the Service Bus queue
- D. a virtual private network (VPN)
- E. the Service Bus topics
- F. the Service Bus relay
- G. ExpressRoute



Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Service Bus Messaging can safely use the QueueClient object for sending messages from concurrent asynchronous operations and multiple threads.

Scenario: The action in the Web API that returns the car brand must be asynchronous, while all other actions must be synchronous.

References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-performance-improvements>

QUESTION 4

You need to perform the initial deployment of the web application. You must ensure that the application meets the performance requirements.

Which file should you modify before you deploy the application?

- A. the service definition file (.csdef)
- B. the application configuration file (app.config)
- C. the packages configuration file (packages.config)
- D. the Global.asax file (.asax)

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You use cscfg file to define various settings related to your cloud application (in ConfigurationSettings section). Like app.config file, you get to define other things (e.g.number of instances of your cloud application) in the cscfg file. You could change the settings in a cscfg file on the fly using either the portal or Service Management API without having to repackage and redeploy the application.

Scenario: After the initial deployment, any changes to the business logic of the Web API must cause minimal downtime to the web application in the production environment.

QUESTION 5

You need to recommend a solution to meet the performance requirements for home.aspx.

What should you recommend?

- A. ViewState
- B. MemoryCache
- C. OutputCache
- D. ApplicationCache

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: When home.aspx is displayed, the rendered page must be cached for 10 minutes.

Page output caching

The output of an action method on a controller can be cached using the [OutputCache]attribute on the method. Actions methods that return views will have the rendered page cached, while methods returning JSON data will have that data saved. A number of properties on the OutputCacheAttribute class control how data is cached.

CacheProfile- If a number of methods will have the same cache settings, it makes sense to use the web.config file to create a cache profile that can be used across all these methods.

The Duration attribute of the CacheProfile determines how long, in seconds, the output should be cached. To save an item for 10 minutes, duration would be set to 600.

[OutputCache(Duration=600)]

References: <http://failedturing.blogspot.se/2014/10/microsoft-70-486-design-caching-strategy.html>



Trey Research Inc.

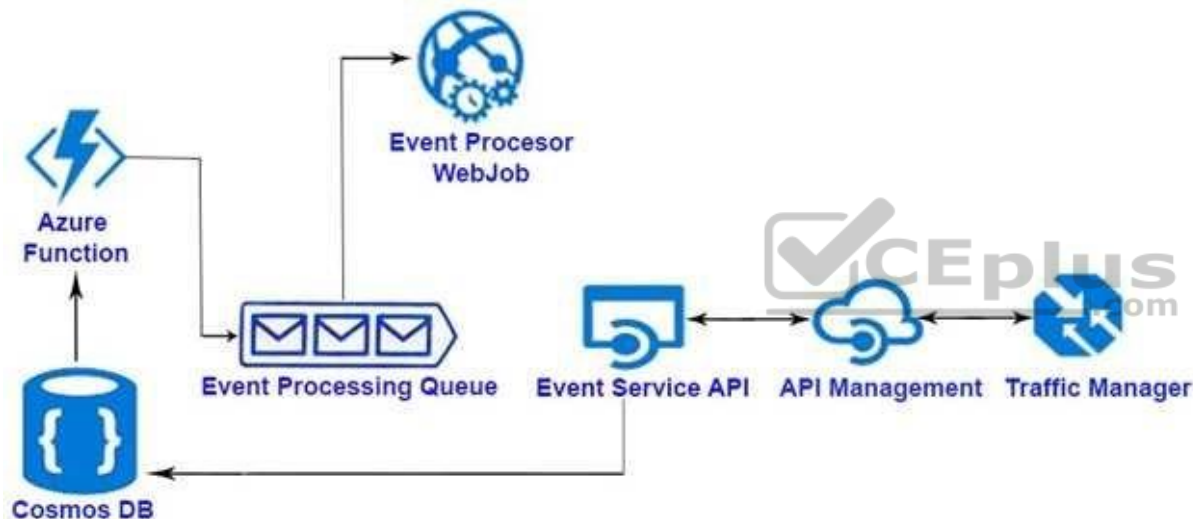
Testlet 1

Overview

Trey Research Inc. is a Software-as-a-Service (SaaS) company that provides hosted solutions for business partners around the world. The company is developing a solution that will allow business partners to manage events, including shareholder meetings and trade shows.

You hold meetings with key partners to identify requirements and constraints for the solution. You must minimize costs where possible.

You work with an Azure solutions architect to design the logical structure for the solution. The solution will use the following architecture:



Solution components

The solution will use Azure Traffic Manager to distribute traffic. The solution will use API Management to provide caching for the Event Service. Partner companies will interact with the solution by using the Event Service API. This API will be implemented as an ASP.NET Core Web API that runs as an Azure Web App. Event data will be stored in Cosmos DB using the Document API.

The solution will be highly available. You define regional Azure outages as periods of 60 seconds or more where the Event Service is not available.

An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.

- Must be active whenever the Event Service is running. ▪
- Is updated once a quarter.

Trey Research Inc. has developer teams that work with a variety of operating systems including Windows, Linux, and MacOS.

Requirements

Event Service

Individual events must be immutable. Event data can be up to 800 kilobytes (KB) in size. The Event Service must meet the following requirements:

- Use REST-based design
- Cache data whenever possible.
- Support both JSON and XML-based data.
- Log customer information whenever data is modified.
- Include the X-Customer header in all calls to identify the partner.

Regional access to the Event Service API

Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

Testing

All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

Event data

You identify the following requirements for the event data store:

- Each partner's event data must be stored in a Collection that is specific to the partner.
- Event data must be available if a regional Azure outage occurs.
- Event read and write operations for a single partner must always store events in the correct order.

Application structure

Event API

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

Event.cs

```
EE01 public class Event
EE02 {
EE03     public string Name { get; set; }
EE04 }
```

IEventDB

```
IE01 public interface IEventDB
IE02 {
IE03     IEnumerable<Event> LoadEvents();
IE04     void SaveEvent (Event @event);
IE05     string CurrentCustomer { get; set; }
IE06 }
```



EventDB.cs

```
ED01 public class EventDB : IEventDB
ED02 {
ED03     private DocumentClient client;
ED04     public IEnumerable<Event> LoadEvents ()
ED05     {
ED06         . . .
ED07     }
ED08     public void SaveEvent(Event @event)
ED09     {
ED10         . . .
ED11     }
ED12     public string CurrentCustomer { get; set; }
ED13 }
```

EventController.cs

```
EC01 [Route("api/events")]
EC02 public class EventsController : Controller
EC03 {
EC04     public IFileProvider FileProvider { get; }
EC05     public IEventDB EventDB { get; }
EC06     public EventsController(IFileProvider fileProvider, IEventDB eventDB)
EC07     {
EC08         FileProvider = fileProvider;
EC09         EventDB = eventDB;
EC10     }
EC11
EC12 [HttpGet]
EC13 public IEnumerable<Event> GetEvents()
EC14 {
EC15     return EventDB.LoadEvents();
EC16 }
EC17
EC18
EC19 }
```

Event processing

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

Program.cs

```
PR01 using System;
PR02 using System.Collections.Generic;
PR03 using System.Linq;
PR04 using System.Text;
PR05 using System.Threading.Tasks;
PR06 using Microsoft.Azure.WebJobs;
PR07 namespace EventJob
PR08 {
PR09     class Program
PR10     {
PR11         static void Main()
PR12         {
PR13             var config = new JobHostConfiguration();
PR14             var host = new JobHost(config);
PR15             host.RunAndBlock();
PR16         }
PR17     }
PR18 }
```



ComputedEventProcessor.cs

```
CE01 public class ComputedEventProcessorBebJob
CE02 {
CE03     public static void ProcessQueueMessage ([QueueTrigger ("eventprocess")] string message, TextWriter log)
CE04     {
CE05         . . .
CE06     }
CE07 }
```

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

Startup.cs

```
SU01 public class Startup
SU02 {
SU03     public Startup(IConfiguration configuration)
SU04     {
SU05         Configuration = configuration;
SU06     }
SU07     public IConfiguration Configuration { get; }
SU08     public void ConfigureServices(IServiceCollection services)
SU09     {
SU10
SU11
SU12
SU13
SU14     }
SU15     public void Configure(IApplicationBuilder app, IHostingEnvironment env)
SU16     {
SU17         app.UseMvc();
SU18         app.UseMiddleware<CustomerMiddleware>();
SU19     }
SU20 }
```

CustomerMiddleware.cs

```
CM01 public class CustomerMiddleware
CM02 {
CM03     private readonly RequestDelegate _next;
CM04     public CustomerMiddleware (RequestDelegate next)
CM05     {
CM06         _next = next;
CM07     }
CM08     public async Task Invoke(HttpContext httpContext, IEventDB store)
CM09     {
CM10         var user = httpContext.Request.Headers["X-Customer"];
CM11         store.CurrentCustomer = user;
CM12         await _next(httpContext);
CM12     }
CM14 }
```

QUESTION 1

You need to configure DNS for the Event service.

How many DNS entries should you create?

- A. 1
- B. 2
- C. 3
- D. 4

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: Regional access to the Event Service API

Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

QUESTION 2

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Add Web App backend endpoints to Azure Traffic Manager and use weighted routing.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

QUESTION 3

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Secure the Web App backend by using certificates.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-mutual-certificates>

QUESTION 4

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Move the Web App backend to a private VNet.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

**Explanation/Reference:**

Explanation:

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

QUESTION 5

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Secure the Web App backend by using Azure Active Directory (Azure AD).

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead, move the Web App backend to a private VNet.

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

QUESTION 6

You need to configure the WebJob.

What should you do?

- A. Set the type to **Triggered**. Set the Scale to **Single Instance**.
- B. Set the type to **Continuous**. Set the Scale to **Multiple Instance**.
- C. Set the type to **Triggered**. Set the Scale to **Multiple Instance**.
- D. Set the type to **Continuous**. Set the Scale to **Single Instance**.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.
- Must be active whenever the Event Service is running.

Triggered WebJobs Starts only when triggered manually or on a schedule. Runs on a single instance that Azure selects for load balancing.

References: <https://docs.microsoft.com/en-us/azure/app-service/webjobs-create>

QUESTION 7

You need to ensure that computed events are processed correctly.

What should you do?

- A. Move the WebJob to a different App Service plan.
- B. Select a deployment slot for the WebJob.



<https://vceplus.com/>

- C. Disable WebJobs during deployments.
- D. Create an additional upgrade domain.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.
- Must be active whenever the Event Service is running. ▪

Is updated once a quarter.

References: <https://stackify.com/azure-deployment-slots/>

Mix Questions

Question Set 1

QUESTION 1

You are developing a library to support multiple ASP.NET MVC web applications on a shared server. The library provides implementations of security algorithms.

If a problem with any of the security algorithms is discovered, a new version of the library must be created and deployed. Application downtime during the update must be minimized.

You need to ensure that the new version of the library will be used by all applications as soon as possible.



What should you do?

- A. Build the web applications and include the security assembly as an embedded resource.
When an update is needed, copy the new assembly to the bin directory for the application.
- B. Sign all assemblies in each application with the same key used to sign the security assembly. When an update is needed, create a new key pair and re-sign all assemblies.
- C. Build the security assembly as a netmodule in a shared location.
Use the assembly linker to merge the netmodule into the assemblies for the application.
When an update is needed, update the netmodule in the shared location.
- D. Install the security assembly in the Global Assembly Cache (GAC). When an update is needed, update the assembly in the GAC.

Correct Answer: D

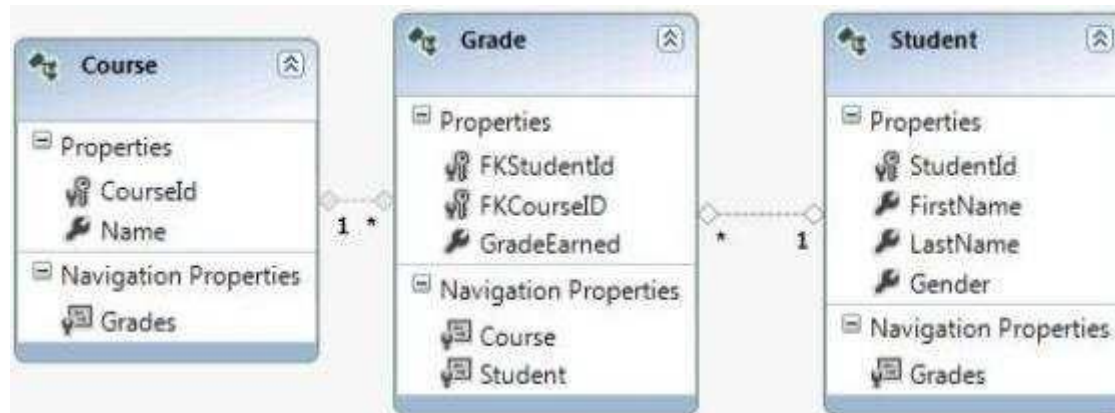
Section: (none)

Explanation

Explanation/Reference:

QUESTION 2

You are developing an application in Visual Studio to display student information. The application contains the following Entity Framework model.



The application contains a WCF data service named DirectoryService.svc.

You need to create a query expression to display all of the grades for students whose first name is "John"

How should you build the expression?

- A. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John' &$expand=Grades`
- B. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John'/Grades`
- C. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName = 'John' &$expand=Grades`
- D. `http://localhost:54946/DirectoryService.svc/Grades/Students?$filter=FirstName eq 'John'`

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 3

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to prevent the application from reading data that is locked by other transactions. You also need to prevent exclusive range locks.

Which isolation level should you use?

- A. ReadCommitted
- B. Serializable
- C. Repeatable
- D. ReadUncommitted

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 4

You are developing a WCF service that compares several data sources. The service takes a long time to complete.

The service must meet the following requirements:

- The client must be able to continue processing while the service is running.

- The service must initiate communication with the client application when processing is complete.

You need to choose a message pattern to meet the requirements.

Which message pattern should you choose?

- A. One Way
- B. Streaming
- C. Duplex
- D. Request/Reply

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 5

You are developing a WCF service.

A new service instance must be created for each client session.

You need to choose an instancing mode.

Which instance mode should you use?

- A. PerCall
- B. Single
- C. Multiple
- D. PerSession
- E. PerRequest

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:



PerSession: A new InstanceContext (and therefore service object) is created for each new client session and maintained for the lifetime of that session (this requires a binding that supports sessions).

Incorrect: Answers

A: PerCall: A new InstanceContext (and therefore service object) is created for each client request.

B: Single: A single InstanceContext (and therefore service object) handles all client requests for the lifetime of the application.

References: [https://msdn.microsoft.com/en-us/library/ms731193\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/ms731193(v=vs.110))

QUESTION 6

You are developing a WCF service.

A new service instance must be created for each client request.

You need to choose an instancing mode.

Which instancing mode should you use?

- A. Single
- B. PerRequest
- C. PerCall
- D. Multiple
- E. PerSession



Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

PerCall: A new InstanceContext (and therefore service object) is created for each client request.

QUESTION 7

You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to remove a comment.

Which HTTP verb should you use?

- A. PUT
- B. DELETE
- C. POST
- D. GET

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 8

You are developing an ASP.NET MVC application. The application is an order processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays all orders along with customer information. Lazy loading has been disabled.

The Order class is shown below.

```
public partial class Order
{
    ...
    public string CustomerID { get; set; }
    ...
    public virtual Customer Customer { get; set; }
}
```



You need to return the orders and customer information in a single round trip to the database.

Which code segment should you use?

- ☐ A.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    orders = orders.Include("Customer");
    return View(orders.ToList());
}
```
- ☐ B.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders.Include("Order.Customer");
    return View(orders.ToList());
}
```
- ☐ C.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    orders.Select(o => o.Customer).Load();
    return View(orders.ToList());
}
```
- ☐ D.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    return View(orders.ToList());
}
```

- A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 9

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to maintain data integrity in all situations that use transactions.

- A. ReadUncommitted
- B. Repeatable
- C. Serializable
- D. ReadCommitted

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The highest isolation level, serializable, guarantees that a transaction will retrieve exactly the same data every time it repeats a read operation.

References: [https://technet.microsoft.com/en-us/library/ms189122\(v=sql.105\)](https://technet.microsoft.com/en-us/library/ms189122(v=sql.105))

QUESTION 10

You are developing an ASP.NET MVC application.

Deployment administrators do not have access to Visual Studio 2102, but will have the elevated permissions required to deploy the application to the servers.

You need to select a deployment tool for use by the deployment administrators.

Which tool should you use?

- A. Publish Web Site Tool
- B. Web Deployment Package
- C. One-Click Publish
- D. Deployment Package Editor

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 11

You are developing an ASP.NET MVC application. The application has a page that searches for and displays an image stored in a database. Members of the EntityClient namespace are used to access an ADO.NET Entity Framework data model. Images and associated metadata are stored in a database table.

You need to run a query that returns only the image while minimizing the amount of data that is transmitted.

Which method of the EntityCommand type should you use?

- A. ExecuteScalar
- B. ExecuteDbDataReader
- C. ExecuteReader
- D. ExecuteNonQuery

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The SqlCommand.ExecuteScalar method executes the query, and returns the first column of the first row in the result set returned by the query. Additional columns or rows are ignored.

References: [https://msdn.microsoft.com/en-us/library/system.data.entityclient.entitycommand\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.data.entityclient.entitycommand(v=vs.110).aspx)

QUESTION 12

You are developing an ASP.NET MVC application that displays a report. The report includes large images that are stored in a database. Members of the EntityClient namespace are used to access the database through the Entity Framework data model.

You need to prevent memory exceptions while generating a report using the EntityDataReader type.

Which CommandBehavior type should you use?

- A. SequentialAccess
- B. SingleRow
- C. SingleResult
- D. FastForwardReadOnly

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

SequentialAccess provides a way for the DataReader to handle rows that contain columns with large binary values. Rather than loading the entire row, SequentialAccess enables the DataReader to load data as a stream. You can then use the GetBytes or GetChars method to specify a byte location to start the read operation, and a limited buffer size for the data being returned.

QUESTION 13

You are developing a library management application that uses the ADO.NET Entity Framework against a SQL Server database.

The application has a method that returns check outs filtered by date.

The Book class is shown below.

```
public partial class Book
{
    ...
    public Nullable<System.DateTime> CheckoutDate { get; set; }
    ...
}
```

You must filter the data on the SQL server before it is returned to the application server.

You need to return books checked out more recently than the entered date.

Which code segment should you use?

A)

```
IEnumerable<Book> books = db.Books;
books = books.Where(b => b.CheckoutDate >= date);
```

B)

```
IEnumerable<Book> books = db.Books.ToList().AsQueryable();
books = books.Where(b => b.CheckoutDate >= date);
```

C)

```
IQueryable<Book> books = db.Books.ToList().AsQueryable();
books = books.Where(b => b.CheckoutDate >= date);
```

D)

```
IQueryable<Book> books = db.Books;  
books = books.Where(b => b.CheckoutDate >= date);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

IQueryable should be used when we want to filter the data.

QUESTION 14

You are developing multiple web applications that will retrieve information for a Windows Communication Foundation (WCF) service

You need to intercept and inspect messages received by and sent from the WCF service.

Which three actions should you perform? Each correct answer presents part of the solution.

- A. Create a class that inherits from the IDispatchMessageInspector interface.
- B. Implement the BeforeSendReply method.
- C. Implement the BeforeSendRequest method.
- D. Create a class that inherits from the IClientMessageInspector interface.
- E. Implement the AfterReceiveReply method.
- F. Implement the AfterReceiveRequest method.

Correct Answer: ABF

Section: (none)

Explanation

Explanation/Reference:

Explanation:

A: Service message inspectors implement the `IDispatchMessageInspector` interface.

BF: Any service (dispatcher) message inspector must implement the two `IDispatchMessageInspector` methods `AfterReceiveRequest` and `BeforeSendReply` (Message, Object).

QUESTION 15

You are developing an Azure web app by using Microsoft ASP.NET MVC.

From Microsoft Visual Studio, you use the Web Deploy Package publish method to create a deployment package for the web app.

You need to deploy the package.

What should you run?

- A. the `msbuild.exe` command
- B. the `Set-AzureWebSite` cmdlet
- C. the `Save-AzureServiceProjectPackage` cmdlet
- D. the `msdeploy.exe` command

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Deploying an ASP.NET web application.

The first step is to create a simple web application.

The second step is to create the package to deploy the web app to Azure. Msbuild can be used at this step.

The third stage is to deploy the package, created in step 2, with the help of Msdeploy.

QUESTION 16

You are developing a Microsoft Azure web application. The application will be deployed to 20 web role instances. A minimum of 18 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling requirements.

How many upgrade domains should you use?

- A. 1
- B. 2

- C. 5
- D. 10

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

The .csdef is only used for Cloud Services, not for VMs. So regardless of what you set or even how you try to do it, Azure VM UD's come in groups of 5. With 18 VMs, that means you'll have 5 UD's. UD0 – to – UD4 like the following:

VMUpdate Domain

VM00

VM11

VM22

VM33

VM44

VM50

VM61

VM72

VM83

VM94

VM100

VM111

VM122

VM133

VM144

VM150

VM161

VM172



QUESTION 17

You are developing an application that reads and writes data from a SQL Server database.

You need to ensure transactional data integrity.

Which isolation level should you use?

- A. Serializable
- B. ReadCommitted
- C. ReadUncommitted
- D. Normal

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Serializable provides the highest level of data integrity.

References: [https://msdn.microsoft.com/en-us/library/system.data.isolationlevel\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/system.data.isolationlevel(v=vs.110))

QUESTION 18

You have a web application that was developed by using Microsoft ASP.NET MVC. The application is deployed to an Azure web app and uses an Azure SQL Database.

From a development environment, you use Microsoft Visual Studio to change the application code, and you modify the schema of the database.

You need to deploy the changes to Azure.

Which publishing method should you use?

- A. BACPAC
- B. FTP
- C. Msdeploy
- D. Robocopy
- E. Transact-SQL scripts

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You can deploy a .bacpac file to an Azure SQL Database using an Azure Resource Manager Template. .bacpac contains the schema and data necessary to deploy your database.

Note: A BACPAC file is a ZIP file with an extension of BACPAC containing the metadata and data from a SQL Server database. A BACPAC file can be stored in Azure blob storage or in local storage in an on-premises location and later imported back into Azure SQL Database or into a SQL Server on-premises installation.

Reference:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-export>

QUESTION 19

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Download the Publish profile for the application service and share it with the developers. Use Microsoft Visual Studio Publishing.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

To configure deployment for a web project in Visual Studio, you create one or more publish profiles using the Publish Web wizard. A publish profile specifies the server you are deploying to, the credentials needed to log on to the server, the databases to deploy, and other deployment options. When you are ready to publish, you choose the profile you want to use and click the Publish button in the wizard or in the Web One Click Publish toolbar.

References:

[https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)

QUESTION 20

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Share the Publish profile for the application service with the developers. Use Web Matrix 2 for publishing.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation



Explanation/Reference:

Explanation:

You should use a Publishing Profile with Microsoft Visual Studio Publishing as WebMatrix enables developers to build websites, while Visual Studio Publishing is used to develop computer programs for Microsoft Windows, as well as web sites, web applications and web services.

References: [https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)

QUESTION 21

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Add the developers to the same Azure Active Directory (Azure AD) as the Azure subscription in which the App Service is provisioned. Use XCopy to deploy to the App Service.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You should use a Publishing Profile with Microsoft Visual Studio Publishing.

References: [https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)



QUESTION 22

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myapp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

First tag the image, and then push it into your private registry.

References: <https://medium.com/@pjbfg/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

QUESTION 23

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker pull myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You need to push the image into your private registry, not pull it.

References: <https://medium.com/@pjbfg/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

QUESTION 24

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker run -d -p 5000:80 myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

First tag the image, and then push it into your private registry.

References: <https://medium.com/@pjbgr/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

QUESTION 25

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the dotnet pack command

Does the solution meet the goal?

A. Yes

B. No



Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:

<https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack> <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

QUESTION 26

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the publish target specified.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:

<https://docs.microsoft.com/en-us/nuget/reference/msbuild-targets> <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

QUESTION 27

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the NuGet pack command

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Package the component with the NuGet pack command, for example:

```
nuget pack AppLogger.nuspec
```

This generates AppLogger.YOUR_NAME.1.0.0.nupkg.

References: <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

QUESTION 28

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your Azure Cosmos DB master key and resource token.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Get FTP publishing profile and query for publish URL and credentials

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

QUESTION 29

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Download the. PublishSettings file and enter the username and password located in the file.

Does the solution meet the goal?

- A. Yes
- B. No



Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Example:

```
# Get FTP publishing profile and query for publish URL and credentials creds=$(az webapp deployment list-publishing-profiles --name $webappname --resource-group myResourceGroup \
--query "[?contains(publishMethod, 'FTP')].[publishUrl,userName,userPWD]" --output tsv)) --query "[?contains(publishMethod, 'FTP')].
[publishUrl,userName,userPWD]" --output tsv))
```

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

QUESTION 30

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your assigned Azure Active Directory (Azure AD) credentials.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Get FTP publishing profile and query for publish URL and credentials.

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

QUESTION 31

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Blob storage.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Event Hubs Capture enables you to automatically deliver the streaming data in Event Hubs to an Azure Blob storage or Azure Data Lake Store account of your choice, with the added flexibility of specifying a time or size interval.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

QUESTION 32

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure SQL Database.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use Azure Blob storage or Azure Data Lake to store the telemetry data.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

QUESTION 33

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure File Service.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Use Azure Blob storage or Azure Data Lake to store the telemetry data.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

QUESTION 34

You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses a SQLite database.

You make changes to the classes in the model. You must apply the changes to the database.

You need to suggest an approach to reliably handle the Entity Framework migrations.

Which three actions should you perform? Each correct answer presents a part of the solution.

NOTE: Each correct selection is worth one point.

- A. Modify the scaffolded migration script to drop the modified tables.
- B. Run the following command: **dotnet ef database update**
- C. Modify the scaffolded migration script to create new tables with the migration changes.

- D. Modify the scaffolded migration script to drop the existing database and create the new database.
- E. Run the following command: **dotnet ef migrations add**

Correct Answer: CDE

Section: (none)

Explanation

Explanation/Reference:

Explanation:

E: Run dotnet ef migrations add InitialCreate to scaffold a migration and create the initial set of tables for the model.

C: You can workaround some of the SQLite limitations by manually writing code in your migrations to perform a table rebuild. A table rebuild involves renaming the existing table, creating a new table, copying data to the new table, and dropping the old table.

D: SQLite does not support all migrations (schema changes) due to limitations in SQLite. For new development, consider dropping the database and creating a new one rather than using migrations when your model changes.

References:

<https://docs.microsoft.com/en-us/ef/core/get-started/netcore/new-db-sqlite> <https://docs.microsoft.com/en-us/ef/core/providers/sqlite/limitations>

QUESTION 35

You are developing an order processing application that uses the Entity Framework against a SQL Server database. Lazy loading has been disabled. The application displays orders and their associated order details. Order details are filtered based on the category of the product in each order.

The Order class is shown below.

```
public partial class Order
{
    ...
    public int OrderID { get; set; }
    ...
    public virtual ICollection<OrderDetail> OrderDetails { get; set; }
    ...
}
```

The OrderDetail class is shown below.

```
public partial class OrderDetail
{
    [Key, Column(Order = 1)]
    public int OrderID { get; set; }
    [Key, Column(Order = 2)]
    public int ProductID { get; set; }
    ...
    public virtual Order Order { get; set; }
    public virtual Product Product { get; set; }
}
```

The Product class is shown below.

```
public partial class Product
{
    ...
    public int ProductID { get; set; }
    public string ProductName { get; set; }
    ...
    public Nullable<int> CategoryID { get; set; }
    ...
    public virtual Category Category { get; set; }
    ...
}
```

The Category class is shown below.

```
public partial class Category
{
    ...
    public int CategoryID { get; set; }
    public string CategoryName { get; set; }
    ...
    public virtual ICollection<Product> Products { get; set; }
}
```

You need to return orders with their filtered list of order details included in a single round trip to the database.

Which code segment should you use?

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)).  
    Select(od => new {order = od.Order, detail = od }). ToList ().  
    Select (r => r.order);
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)).  
    Select(od => new {order = od.Order, detail = od }).  
    Select (r => r.order);
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)). ToList ();  
List<int> orderIDs = orderDetails.Select (od => od.OrderID). ToList();  
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName));  
List<int> orderIDs = orderDetails.Select (od => od.OrderID). ToList();  
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));
```

A.

B.

C.

D.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Eager loading is the process whereby a query for one type of entity also loads related entities as part of the query. Eager loading is achieved by use of the Include method. For example, the queries below will load blogs and all the posts related to each blog.

```
using (var context = new BloggingContext())
{
    // Load all blogs and related posts
    var blogs1 = context.Blogs
    .Include(b => b.Posts)
    .ToList();
```



It is also possible to eagerly load multiple levels of related entities.

References: [https://msdn.microsoft.com/en-us/library/jj574232\(v=vs.113\).aspx](https://msdn.microsoft.com/en-us/library/jj574232(v=vs.113).aspx)

QUESTION 36

You deploy a RESTful ASP.NET Web API to manage order processing.

You are developing an Azure App Services Web App to consume the API and allow customers to order products. You use the HttpClient object to process order entries. The API throws SocketException errors when the Web App experiences a high volume of concurrent users.

You need to resolve the errors.

What should you do?

- A. Implement a Using statement block when declaring the HttpClient object.
- B. Increase the value of the Timeout property when declaring the HttpClient object.
- C. Use the static modifier to declare the HttpClient object.

D. Create a new HttpClient instance for each API request and use asynchronous method calls.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

If the class that wraps the external resource is shareable and thread-safe, create a shared singleton instance or a pool of reusable instances of the class.

The following example uses a static HttpClient instance, thus sharing the connection across all requests.

```
public class SingleHttpClientInstanceController : ApiController
{
    private static readonly HttpClient httpClient;

    static SingleHttpClientInstanceController()
    {
        httpClient = new HttpClient();
    }

    // This method uses the shared instance of HttpClient for every call to GetProductAsync.
    public async Task<Product> GetProductAsync(string id)
    {
        var hostName = HttpContext.Current.Request.Url.Host;
        var result = await httpClient.GetStringAsync(string.Format("http://{0}:8080/api/...", hostName));
        return new Product { Name = result };
    }
}
```

References: <https://docs.microsoft.com/en-us/azure/architecture/antipatterns/improper-instantiation/>

QUESTION 37

You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses an Azure SQL Database. The codefirst migration is configured to run as part of a continuous integration build.

You must add an Azure MySQL Database. This database must use the same schema as the existing Azure SQL Database instance.

You need to configure the migration to ensure that the existing TFS build definition remains unchanged.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Use the ActiveProvider property to specify the provider to which the migration is applied.
- B. Create a new type that derives from DbContext and override the ActiveProvider object. Then, add or apply migrations using this type.
- C. Use the Entity Framework Core Fluent API to identify database providers.
- D. Create a separate Migration Assembly than the one containing the DbContext and switch the active provider during build.

Correct Answer: BC

Section: (none)

Explanation

Explanation/Reference: References: https://medium.com/@rc_dos_santos/how-configure-asp-net-core-web-api-project-with-mysql-database-b7a64a247a99

QUESTION 38

You have a web server that hosts several web applications.

From Microsoft Visual Studio, you create an assembly that is signed.

You need to make the assembly available to all of the web applications on the web server. The solution must minimize the number of copies of the assembly.

Which tool should you run?

- A. **gacutil.exe**
- B. **sn.exe**
- C. **tlbimp.exe**
- D. **regasm.exe**

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Strong Name Scenario

The following scenario outlines the process of signing an assembly with a strong name and later referencing it by that name.

Assembly A is created with a strong name using one of the following methods:

- Using a development environment that supports creating strong names, such as Visual Studio 2005.

- Creating a cryptographic key pair using the Strong Name tool (Sn.exe) and assigning that key pair to the assembly using either a command-line compiler or the Assembly Linker (Al.exe). The Windows Software Development Kit (SDK) provides both Sn.exe and Al.exe.

References: <https://docs.microsoft.com/en-us/dotnet/framework/app-domains/create-and-use-strong-named-assemblies>

QUESTION 39

You are developing a Microsoft Azure web application. The application will be deployed to 10 web role instances. A minimum of 8 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling requirements.

How many upgrade domains should you use?

- A. 1
- B. 2
- C. 5
- D. 10

Correct Answer: B

Section: (none)

Explanation



Explanation/Reference:

Explanation:

The .csdef is only used for Cloud Services, not for VMs. So regardless of what you set or even how you try to do it, Azure VM UD's come in groups of 5. With 8 VMs, that means you'll have 2 UD's.

QUESTION 40

You are developing a web application by using Microsoft .NET Framework 4.5.

You are creating a web client for the application. The web client will make REST calls to several web services.

You need to ensure that the web client meets the following requirements:

- Uses the Task class to perform asynchronous operations
- Reuses recently resolved DNS lookups

Which object should you include in the solution?

- A. ServiceClient
- B. WebClient

- C. HttpClient
- D. WebRequest

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

References: <https://www.c-sharpcorner.com/article/calling-web-api-using-httpclient/>

QUESTION 41

You have a Web.config file that contains the following markup.

```
<?xml version="1.0"?>
<configuration>
  <appSettings>
    <add key="Key1" value="Value1" />
    <add key="Key2" value="Value2" />
    <add key="Key3" value="Value3" />
  </appSettings>
</configuration>
```

You need to use an XSLT transformation to remove the add tag for Key3.

Which markup should you use?

- A. `<add key="Key3" xdt:Transform="Remove" />`
- B. `<add key="Key3" xdt:Transform="Remove" xdt:Locator="Match(/configuration/appSettings/add[@key='Key3'])" />`
- C. `<add xdt:Transform="Remove" />`
- D. `<add key="Key3" xdt:Transform="Remove" xdt:Locator="Match(key)" />`

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References: [https://msdn.microsoft.com/en-us/library/dd465326\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465326(v=vs.110).aspx)

QUESTION 42

You have a Microsoft Visual Studio project named Project1 that is deployed as an Azure web app. The Azure web app uses an Azure SQL Database.

You plan to deploy updates to the Azure web app by using a Web Deploy Package.

The password for the Azure SQL Database was changed since you first published the Azure web app.

You need to deploy the package by using Windows PowerShell.

Which file should you modify before running the PowerShell deployment script?

- A. WebApiConfig.cs from the App_Start folder
- B. IdentityConfig.cs from the App_Start folder
- C. App.config from the Web Application folder
- D. Project1-waws-dev.json from the Configurations folder



Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 43

You need to choose the appropriate data access technology for the cookbook area of the web application.

Which data access technology should you choose?

- A. WCF Data Services
- B. LINQ to SQL
- C. ADO.NET
- D. Entity Framework

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/dotnet/framework/data/wcf/wcf-data-services-overview>

QUESTION 44

You create a web application.

You deploy the application by using a Web Deploy Package.

You need to identify which setting will be created automatically in the SetParameters.xml file during the package generation.

Which three settings should you identify? Each correct answer presents part of the solution.

- A. the connection strings in the Web.config file
- B. the destination IIS web application path and name
- C. the service endpoints of the Web.config file
- D. the connection strings of any databases you add to the Package/Publish SQL tab on the Properties page of the project
- E. the application settings of the Web.config file

Correct Answer: ABD

Section: (none)

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/aspnet/web-forms/overview/deployment/web-deployment-in-the-enterprise/configuring-parameters-for-web-packagedeployment>

QUESTION 45

You are building an ADO.NET Entity Framework application.

You need to validate the conceptual schema definition language (CSDL), store schema definition language (SSDL), and mapping specification language (MSL) files.

Which Entity Data Model tool can you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. EDM Generator (EdmGen.exe)

- B. ADO.NET Entity Data Model Designer
- C. Entity Data Model Wizard
- D. Update Model Wizard

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

<http://msdn.microsoft.com/en-us/library/bb387165.aspx>

QUESTION 46

You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to moderate a comment.

Which HTTP verb should you use?

- A. GET
- B. POST
- C. DELETE
- D. PUT



Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

To edit/update/moderate an entry you use PUT.

UsePUT when you can update a resource completely through a specific resource.

References: <http://restcookbook.com/HTTP%20Methods/put-vs-post/>

QUESTION 47

You are developing an ASP.NET MVC web application that contains the following HTML.

```
<table id= "customer" ></table>
```

You also have an ASP.NET Web API application that contains a call for retrieving customers.

You must send and retrieve the data in the most compact format possible.

You need to update the HTML for the customers table to contain data from the Web API application.

Which script segment should you use?



C A.

```
<script>
$(function () {
  var $customers = $("#customers");
  $.ajax({
    url: "api/customers",
    dataType: "json",
    success: function (data) {
      ...
    }
  });
});
</script>
```

C B.

```
<script>
$(function () {
  var $customers = $("#customers");
  $.xml({
    url: "api/customers",
    dataType: "ajax",
    success: function (data) {
      ...
    }
  });
});
</script>
```

C C.

```
<script>
$(function () {
  var $customers = $("#customers");
  $.json({
    url: "api/customers",
    dataType: "ajax",
    success: function (data) {
      ...
    }
  });
});
</script>
```

C D.

```
<script>
$(function () {
  var $customers = $("#customers");
  ...
});
</script>
```


- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 48

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Enter the user-level credentials that you configured when you created the Web App.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Get FTP publishing profile and query for publish URL and credentials.

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

QUESTION 49

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Data Lake Store.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Event Hubs Capture enables you to automatically deliver the streaming data in Event Hubs to an Azure Blob storage or Azure Data Lake Store account of your choice, with the added flexibility of specifying a time or size interval.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

QUESTION 50

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the pack target specified.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References: <https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack>

<https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

QUESTION 51

You add a .NET application to a Docker container and deploy the container to Azure Service Fabric. You use a corporate base image that includes Microsoft SQL Server for storing data.

You deploy the application to development and staging environments. No issues are reported. You deploy the application to your production environment. Data is not persisted in the production environment.

You need to resolve the issue.

What should you do?

- A. Install Docker tools in the container.
- B. In the docker-compose.override.yml file, configure the db service to start before the web application.
- C. Update the connection string in the web.config file to point to the SQL Server database in the container.
- D. Remove SQL Server from the base image and convert the database to Azure SQL Database.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference: References: <https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container>

QUESTION 52

You are developing a Windows Communication Foundation (WCF) service for a company. The service will be used for bidirectional communications between the company's physical offices.

You plan to implement Azure Service Bus.

You need to configure the WCF service.

Which type of binding should you use?

- A. BasicHttpBinding
- B. NetTcpRelayBinding
- C. NetTcpBinding
- D. NetEventRelayBinding

Correct Answer: B

Section: (none)

Explanation



Explanation/Reference:

References: <https://docs.microsoft.com/en-us/azure/service-bus-relay/service-bus-relay-tutorial>

QUESTION 53

You are developing an order processing application that uses the Entity Framework against a SQL Server database. The application has a method that returns orders filtered by date.

The Order class is shown below.

```
public partial class Order
{
    ...
    public Nullable<System.DateTime> OrderDate { get; set; }
    ...
}
```

You must filter the data on the SQL server before it is returned to the application server.

You need to return orders more recent than the entered date.

Which code segment should you use?

```
IQueryable<Order> orders = db.Orders.ToList().AsQueryable();  
orders = orders.Where(o => o.OrderDate >= date);  
IQueryable<Order> orders = db.Orders;  
orders = orders.Where(o => o.OrderDate >= date);  
IEnumerable<Order> orders = db.Orders;  
orders = orders.Where(o => o.OrderDate >= date);  
IEnumerable<Order> orders = db.Orders.ToList().AsQueryable();  
orders = orders.Where(o => o.OrderDate >= date);
```

A.

B.

C.

D.



Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/dotnet/api/system.collections.generic.ienumerable-1?view=netframework-4.7.2>

QUESTION 54

You are developing a ASP.NET Core MVC web application that processes sensitive data.

Users in an Azure Active Directory (Azure AD) group named DataAdmins must be able to see all data in human readable form. Sensitive data must be masked from all other users that handle the data store.

You need to implement storage for the application.

What should you implement?

- A. Azure SQL Database
- B. Azure Cosmos DB
- C. Azure Database for MySQL
- D. Azure Database for PostgreSQL
- E. Azure Storage Tables

Correct Answer: E

Section: (none)

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/aspnet/core/security/authentication/identity-custom-storage-providers?view=aspnetcore-2.2>

QUESTION 55

You are planning to migrate websites from IIS 6 to IIS 7.5.

You do not have access to SSH or a VPN.

You need to select a deployment tool to securely migrate the websites.

Which tool should you use?

- A. RoboCopy
- B. Web Deploy
- C. Microsoft command-line FTP
- D. xCopy

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

References: <https://www.iis.net/downloads/microsoft/web-deploy>



QUESTION 56

You are developing an ASP.NET MVC application.

Applications can be deployed to remote servers only by administrators who have elevated privileges. The administrators do not have access to Visual Studio.

You need to select a deployment tool to deploy the application to remote servers for testing.

Which tool should you use?

- A. Copy Web Site Tool
- B. One-Click Publish
- C. Publish Web Site Tool
- D. Web Deployment Package

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

**QUESTION 57**

You develop a Universal Windows Platform (UWP) application for Windows 10 Internet of Things (IoT) Core. The application uses Entity Framework Core and a SQLite database to store data.

You use the SQLite EF Core database provider to migrate data from an on-premises database to SQLite. The migration process throws an exception.

You need to resolve the exception.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Clone the on-premises database to a schema-less database
- B. Convert the application to use .NET Standard
- C. Limit all of SQLite processes to one server
- D. Limit the number of concurrent processes that write to the SQLite database

Correct Answer: AD

Section: (none)

Explanation

Explanation/Reference:

Explanation:

A: The common relational library (shared by Entity Framework relational database providers) defines APIs for modelling concepts that are common to most relational database engines. A couple of these concepts are not supported by the SQLite provider: Schemas, Sequences, Computed columns.

The SQLite database engine does not support a number of schema operations that are supported by the majority of other relational databases. If you attempt to apply one of the unsupported operations to a SQLite database then a NotSupportedException will be thrown.

D: SQLite allows multiple processes to have the database file open at once, and for multiple processes to read the database at once. When any process wants to write, it must lock the entire database file for the duration of its update.

References: <https://docs.microsoft.com/en-us/ef/core/providers/sqlite/limitations>

QUESTION 58

You have a web application that was developed by using Microsoft ASP.NET MVC. The application is deployed to an Azure web app and uses an Azure SQL Database.

From a development environment, you use Microsoft Visual Studio to change the application code, and you modify the schema of the database.

You need to deploy the changes to Azure.

Which publishing method should you use?

- A. BACPAC
- B. FTP
- C. Web Deploy
- D. DACPAC

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Web Deploy is an extensible client-server tool for syncing content and configuration to IIS. Web Deploy is used primarily in two scenarios:

- Developers use it to sync (aka 'publish') a compiled web applications (ASP .Net, PHP etc) from developer tools (Visual Studio, WebMatrix, etc) to IIS
- IT professionals use it to migrate websites & applications

Web Deploy is often compared to technologies like FTP, XCOPY or RoboCopy. While these technologies are useful, Web Deploy offers several benefits:

- Web Deploy can publish databases. Web Deploy has out-of-box support for scripting out SQL Server, MySQL Server, Sqlite and SQL Server Compact databases and applying the resulting script during the sync. This can be very handy if your app needs a database to function.

Incorrect Answers:

A: When you need to export a database for archiving or for moving to another platform, you can export the database schema and data to a BACPAC file.

D: DACPAC is a single file which contains database model i.e. all files represent database objects. It's a binary representation of database project compatible with SSDT.

References: <https://docs.microsoft.com/en-us/iis/publish/using-web-deploy/introduction-to-web-deploy>

QUESTION 59

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker run -d -p 5000:80 myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead, first tag the image, and the push it into your private registry.

References: <https://medium.com/@pjbgr/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

QUESTION 60

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Add the developers to the same Azure Active Directory (Azure AD) as the Azure subscription in which the App Service is provisioned. Add the developers to the Contributors group for the Azure Storage account in the same Resource Group as the App Service. Use Web Deploy to deploy to the App Service.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead, download the Publish profile for the application service and share it with the developers. Use Microsoft Visual Studio Publishing.

References: [https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)

QUESTION 61

You are preparing to develop a set of libraries for a company.

The libraries must be shared across the company.
You need to create a remote NuGet feed that exposes the libraries.

What should you do? (Each answer presents part of the solution. Choose all that apply.)

- A. Install the NuGet.Feed Package.
- B. Install the NuGet.Server Package.
- C. Create a new Empty Web Site in Visual Studio.
- D. Configure the Packages folder located in the appSettings section of the web application's Web.config.
- E. Add packages to the Packages folder.
- F. Create a new Empty Web Application in Visual Studio.

Correct Answer: BDEF

Section: (none)

Explanation

Explanation/Reference:

Explanation:

B: NuGet.Server is a package provided by the .NET Foundation that creates an ASP.NET application that can host a package feed on any server that runs IIS.

The process is as follows:

- (F) Create an empty ASP.NET Web application in Visual Studio and add the NuGet.Server package to it.
 - (E) Configure the Packages folder in the application and add packages. ▪
- Deploy the application to a suitable server.

D: Configuring the Packages folder

With NuGet.Server 1.5 and later, you can more specifically configure the package folder using the appSetting/packagesPath value in web.config:

```
<appSettings>
<!-- Set the value here to specify your custom packages folder. -->
<add key="packagesPath" value="C:\MyPackages" />
</appSettings>
```

References: <https://docs.microsoft.com/en-us/nuget/hosting-packages/nuget-server>

QUESTION 62

You develop an ASP.NET MVC application that is secured by using SSL. You are ready to deploy the application to production.

The deployment package must include the installation of the SSL certificate.

You need to configure the deployment package to meet the requirement.

What should you do?

- A. Create a web publish pipeline target file with a custom web deploy target.
- B. In the Package/Publish settings of the project, select the All Files in this project option.
- C. Extend the CopyAllFilesToSingleFolder target in the project file.
- D. In the Build Events settings of the project, configure a pre-build event to include the SSL certificate.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Extending the Web Publishing Pipeline

The Web Publishing Pipeline (WPP) is the process that Visual Studio uses when you create a deployment package or use one-click publish.

Some aspects of the WPP can be extended by modifying the XML files that control MSBuild behavior. For example, tasks that you can handle by modifying XML files include the following:

- * Installing SSL certificates on the destination server.
- * Excluding specific Web application files or folders from the package.
- * Precompiling the Web application before the package is created.
- * Installing application assemblies in the GAC on the destination server. * Updating registry keys on the destination server.

References: [https://msdn.microsoft.com/en-us/library/dd394698\(v=vs.100\)](https://msdn.microsoft.com/en-us/library/dd394698(v=vs.100))

QUESTION 63

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure Data Lake Store.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Azure Event Hubs Capture enables you to automatically deliver the streaming data in Event Hubs to an Azure Blob storage or Azure Data Lake Store account of your choice, with the added flexibility of specifying a time or size interval.

Reference:

<https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

QUESTION 64

You are deploying an ASP.NET Core API application to an Azure App Services Docker container instance.

When customers access the application, secret keys are generated so that users can access to the data that they need. Security keys must expire after one hour. All key usage must be logged.

You need to store the customer secret keys.

Which storage option should you use?

NOTE: Each correct selection is worth one point.

- A. Encrypted in Azure SQL with a manual audit trail and a key rotation algorithm
- B. Environment variables with an audit trail stored in Azure Blob Storage
- C. Inside the Docker container using system logs for auditing
- D. Azure Key Vault with key rotation and auditing

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference: References: <https://docs.microsoft.com/en-us/azure/key-vault/key-vault-key-rotation-log-monitoring>

QUESTION 65

DRAG DROP

You are developing a Windows Azure based web application that provides users the ability to rent training videos. The application is deployed to hosted services in Asia and Europe.

The web application must meet the following requirements:

Video files are large and must be able to be streamed.

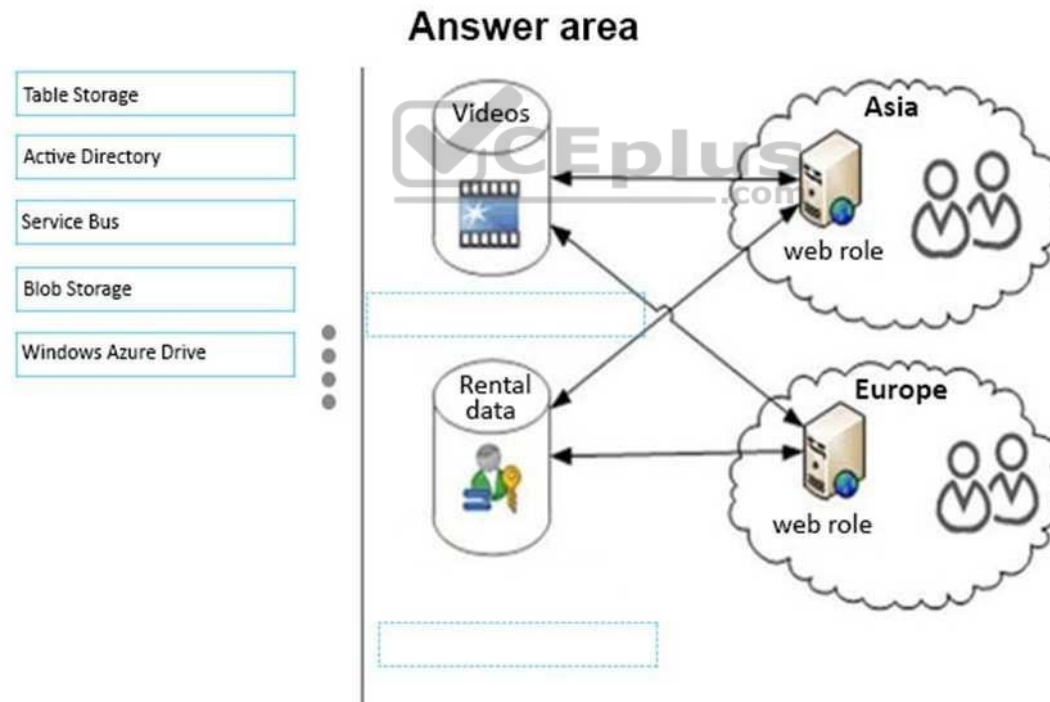
Streaming videos requires low latency network connections.

Rental data contains structured information about the user and the video.

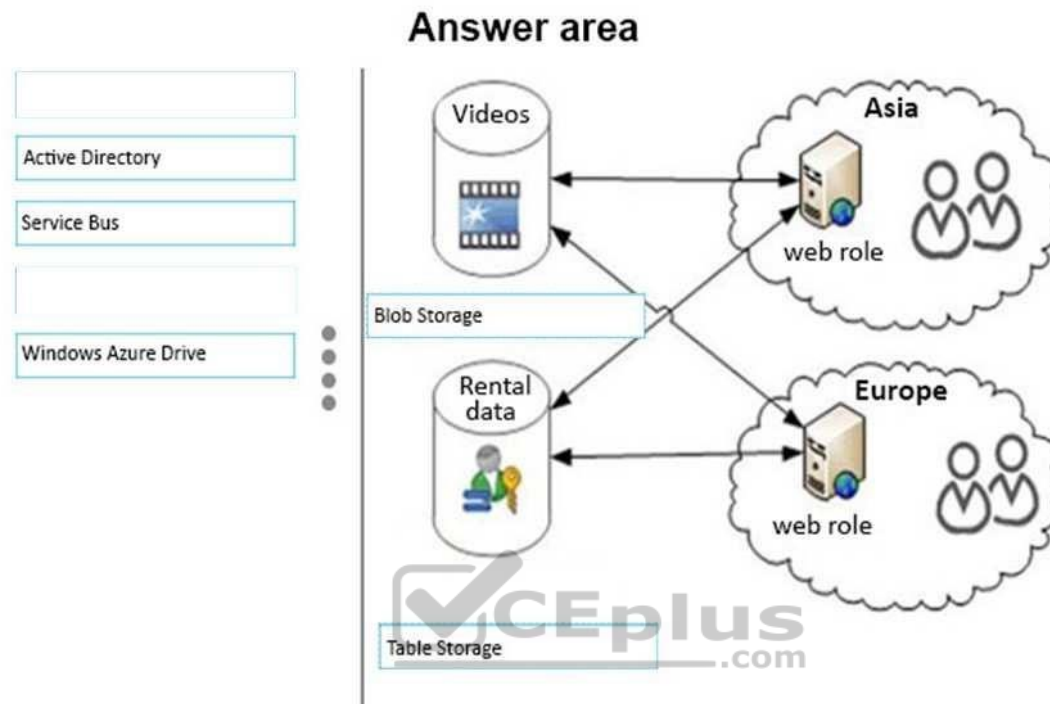
Rental permissions are checked every five seconds during video playback.

You need to recommend a storage architecture for the application.

What should you do? (To answer, drag the appropriate technologies to the correct location or locations in the answer area. Each technology may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**



Correct Answer:



Section: (none)

Explanation

Explanation/Reference:

QUESTION 66

DRAG DROP

You are developing a self-hosted WCF service that returns stock market information.

The service must be discoverable by any client application. You need to build the service host.

How should you build the host? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area

UdpDiscoveryEndpoint
DiscoveryEndpoint
ServiceBehaviorAttribute
ServiceDiscoveryBehavior
ServiceHost



```
static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using ( [ ] host
        = new [ ](mytype, StockURI)
        {
            host.AddServiceEndpoint(typeof(ISTockTickerService),
                new WSHttpBinding(), "");

            host.Description.Behaviors.Add(new [ ]());

            host.AddServiceEndpoint(new [ ]());

            host.Open();
            Console.ReadLine();
            host.Close();
        }
    )
    {
    }
```



Correct Answer:

Answer area

UdpDiscoveryEndpoint
DiscoveryEndpoint
ServiceBehaviorAttribute
ServiceDiscoveryBehavior
ServiceHost

```
static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using (ServiceHost host
        = new ServiceHost(mytype, StockURI))
    {
        host.AddServiceEndpoint(typeof(IStockTickerService),
            new WSHttpBinding(), "");

        host.Description.Behaviors.Add(new ServiceDiscoveryBehavior());

        host.AddServiceEndpoint(new UdpDiscoveryEndpoint());

        host.Open();
        Console.ReadLine();
        host.Close();
    }
}
```



Section: (none)

Explanation

Explanation/Reference:

QUESTION 67

DRAG DROP

You are developing a WCF service.

You need to implement transport security by using NTLM authentication and NetTcpBindings.

You have the following markup:

```
<system.serviceModel>
  <protocolMapping>
    <add scheme="https" Target 1/>
  </protocolMapping>
  <bindings>
    <netTcpBinding>
      <binding>
        <security Target 2>
          <transport Target 3/>
        </security>
      </binding>
    </netTcpBinding>
  </bindings>
</system.serviceModel>
```

Which configuration values should you include in Target 1, Target 2, and Target 3 to complete the markup? (To answer, drag the appropriate configuration values to the correct location or locations in the answer area. Each configuration value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Configuration Values

- binding="netTcpBinding"
- binding="Transport"
- binding="Ntlm"
- mode="netTcpBinding"
- mode="Transport"
- mode="Ntlm"
- clientCredentialType="netTcpBinding"
- clientCredentialType="Transport"
- clientCredentialType="Ntlm"

Answer Area

Target 1:

Code Segment

Target 2:

Code Segment

Target 3:

Code Segment

Correct Answer:

Configuration Values

<code>binding="Transport"</code>
<code>mode="netTcpBinding"</code>
<code>mode="Ntlm"</code>
<code>clientCredentialType="netTcpBinding"</code>
<code>clientCredentialType="Transport"</code>
<code>clientCredentialType="Ntlm"</code>

Answer Area

Target 1:

<code>binding="netTcpBinding"</code>

Target 2:

<code>mode="Transport"</code>

Target 3:

<code>binding="Ntlm"</code>

Section: (none)

Explanation

Explanation/Reference:

QUESTION 68

DRAG DROP

You are developing a WCF service. The service will stream messages to clients on the internal network.

You must use Windows Authentication, and all messages must be binary encoded.

You need to configure the service.

You have the following markup:

```
<system.serviceModel>
  <bindings>
    <Target 1>
      <binding>
        <security Target 2 />
      </binding>
    </Target 3>
  </bindings>
</system.serviceModel>
```

Which elements should you include in Target 1, Target 2 and Target 3 to complete the markup? (To answer, drag the appropriate elements to the correct location or locations in the answer area. Each element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Elements	Answer Area
namedNetBinding	Target 1: <input type="text" value="Element"/>
netTcpBinding	Target 2: <input type="text" value="Element"/>
binHttpsBinding	Target 3: <input type="text" value="Element"/>
httpBasicBinding	
mode="Ignore"	
mode="Transport"	
mode="Direct"	

Correct Answer:

Elements

namedNetBinding
 netTcpBinding
 binHttpsBinding
 httpBasicBinding
 mode="Ignore"
 mode="Transport"
 mode="Direct"



Answer Area

Target 1: netTcpBinding
 Target 2: mode="Transport"
 Target 3: netTcpBinding



Section: (none)

Explanation

Explanation/Reference:

Explanation:

Target1, Target 3: NetTcpBinding

NetTcpBinding is the right choice for binary TCP communications that cross machine boundaries.

NetTcpBinding is optimized for cross-machine communication. By default, it implements binary message encoding.

NetTcpBinding specifies a secure, reliable, optimized binding suitable for cross-machine communication. By default, it generates a run-time communication stack with transport security and Windows authentication as default security settings. It uses the Transmission Control Protocol (TCP) for message delivery, and binary message encoding.

QUESTION 69

HOTSPOT

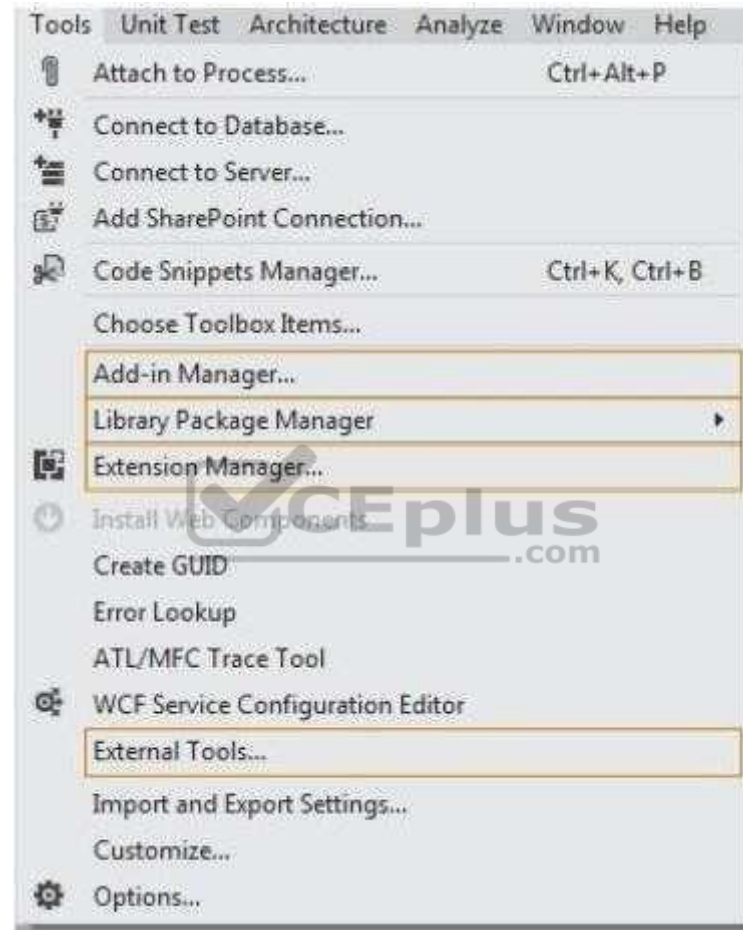
You are supporting an application that uses the ADO.NET Entity Framework to query and access data.

The latest version of Entity Framework contains bug fixes that will improve performance.

You need to update Entity Framework.

Which Visual Studio menu item should you choose? (To answer, select the appropriate menu item in the answer area.)

Hot Area:



Correct Answer:



Section: (none)

Explanation

Explanation/Reference:

QUESTION 70

DRAG DROP

You are developing a self-hosted WCF service to display data about books. The solution contains a service named BookService that implements the IBookService interface.

You need to expose the metadata in the service host programmatically.

You have the following code:

```
static void Main(string[] args)
{
    Target 1 host = new Target 2 {
        typeof(BookService), new Uri(ServiceUrl));
    host.AddServiceEndpoint(
        typeof(IBookService), new WSHttpBinding(), "");
    Target 3 behavior =
        new Target 4 ();
    behavior.HttpGetEnabled = Target 5 ;
    host.Description.Behaviors.Add(behavior);
    host.Open();
    ...
    host.Close();
}
```

Which code segments should you include in Target 1, Target 2, Target 3, Target 4 and Target 5 to complete the markup? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Code Segments

true
false
ServiceMetadataBehavior
ClientViaBehavior
ServiceHost



Answer Area

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment
Target 4:	Code Segment
Target 5:	Code Segment

Correct Answer:

Code Segments

true
false
ServiceMetadataBehavior
ClientViaBehavior
ServiceHost



Answer Area

Target 1:	ServiceHost
Target 2:	ServiceHost
Target 3:	ServiceMetadataBehavior
Target 4:	ServiceMetadataBehavior
Target 5:	true

Section: (none)

Explanation

Explanation/Reference:

How to: Publish Metadata for a Service Using Code

Target 1: ServiceHost

Target 2: ServiceHost

Within the mainmethod of a console application, instantiate a ServiceHost object by passing in the service type and the base address.

Example:

```
ServiceHost svcHost = new ServiceHost( typeof(SimpleService), new  
Uri("http://localhost:8001/MetadataSample"));
```

Target 3: ServiceMetadataBehavior

Target 4: ServiceMetadataBehavior

Create a new ServiceMetadataBehavior instance.

Target 5: true

Set the HttpGetEnabled property to true.

References: [https://msdn.microsoft.com/en-us/library/aa738489\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/aa738489(v=vs.110).aspx)

QUESTION 71

HOTSPOT

You are developing a WCF service.

The service must be interoperable with ASP.NET web service clients. In addition, it must be a time-out of three hours.

You need to configure the service to meet the requirements.

You have the following markup:

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <system.serviceModel>
    <services>
      <service name="MyNamespace.OrderService">
        <endpoint address=""
          contract="MyNamespace.IOrderservice"
          binding="Target 1"
          bindingConfiguration="Target 2">
        </endpoint>
      </service>
    </services>
    <bindings>
      <Target 3>
        <binding name="Target 4">
          Target 5="Target 6"/>
        </Target 7>
      </bindings>
    </system.serviceModel>
  </configuration>
```

Which markup segments should you include in Target 1, Target 2, Target 3, Target 4, Target 5, Target 6 and Target 7 to complete the markup? (To answer, select the appropriate markup segment from each drop-down list in the answer area.)

Hot Area:

Answer Area

Target 1:	<div><div></div><div>▼</div><div>basicHttpBinding</div><div>closeTimeout</div><div>timeout</div><div>wsHttpBinding</div></div>
Target 2:	<div><div></div><div>▼</div><div>basicHttpBinding</div><div>closeTimeout</div><div>timeout</div><div>wsHttpBinding</div></div>
Target 3:	<div><div></div><div>▼</div><div>basicHttpBinding</div><div>closeTimeout</div><div>timeout</div><div>wsHttpBinding</div></div>
Target 4:	<div><div></div><div>▼</div><div>basicHttpBinding</div><div>closeTimeout</div><div>timeout</div><div>wsHttpBinding</div></div>
Target 5:	<div><div></div><div>▼</div><div>basicHttpBinding</div><div>closeTimeout</div><div>timeout</div><div>wsHttpBinding</div></div>
Target 6:	<div><div></div><div>▼</div><div>03:00:00</div><div>00:03:00</div><div>00:00:03</div></div>

Correct Answer:



Answer Area

Target 1:	<div>▼</div> <div>basicHttpBinding</div> <div>closeTimeout</div> <div>timeout</div> <div>wsHttpBinding</div>
Target 2:	<div>▼</div> <div>basicHttpBinding</div> <div>closeTimeout</div> <div>timeout</div> <div>wsHttpBinding</div>
Target 3:	<div>▼</div> <div>basicHttpBinding</div> <div>closeTimeout</div> <div>timeout</div> <div>wsHttpBinding</div>
Target 4:	<div>▼</div> <div>basicHttpBinding</div> <div>closeTimeout</div> <div>timeout</div> <div>wsHttpBinding</div>
Target 5:	<div>▼</div> <div>basicHttpBinding</div> <div>closeTimeout</div> <div>timeout</div> <div>wsHttpBinding</div>
Target 6:	<div>▼</div> <div>03:00:00</div> <div>00:03:00</div> <div>00:00:03</div>

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Target 1: wsHTTPBinding wsHttpBinding is the full-blown binding, which supports a ton of WS-* features and standards. It has lots more security features: you can use sessionful connections, you can use reliable messaging, you can use transactional control.

Incorrect: Not basicHttpBinding: basicHttpBinding is the very basic binding (SOAP 1.1). It is not much in terms of security, not much else in terms of features, but compatible to just about any SOAP client out there. It is great for interoperability, but weak on features and security.

Target 2: timeout

Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 3: WSHttpBinding

Target 4: timeout

Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 5: CloseTimeout

The following timeouts are available on WCF bindings: OpenTimeout, CloseTimeout, SendTimeout, and ReceiveTimeout.

Target 6: 03:00:00

3 hours, 0 minutes, and 0 seconds.

Target 7: WSHttpBinding

Reference: [https://msdn.microsoft.com/en-us/library/hh924831\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/hh924831(v=vs.110).aspx)



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