

EPI INFO™ WEB SURVEY SYSTEM INTEGRATED PACKAGE DEPLOYMENT

Version 1.13

6/30/2019

VERSION HISTORY

Version #	Implemented By	Revision Date	Comments
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TABLE OF CONTENTS

1.1	Purpose	5
1.2	Audience	5
SYSTEM DESCRIPTION		5
1.3	Key Features	5
1.4	Inventory	5
1.5	Environment	6
1.6	System Operations	7
1.7	System Architecture	7
APPLICATION INSTALLATION.....		8
1.8	First-Time Users	8
1.9	Access Controls	9
1.9.1	Database	9
1.9.2	Application and Services	9
1.10	Installation.....	9
1.11	Configuration	9
1.11.1	Database Configuration	9
1.11.2	Application and Services Configuration	14
1.12	Starting the System	33
APPLICATION UPGRADE.....		36
1.13	Access Controls	36
1.13.1	Database	36
1.13.2	Application and services	36
1.14	Installing The Upgraded Version	36
1.15	Configuration	37
1.15.1	Prerequisite	37
1.15.2	Database Configuration	37
1.15.3	Application and Services Configuration	40
SYSTEM USAGE		44
1.16	Instructions	44
1.17	Conventions and Error Messages.....	45
1.17.1	Epi Info Web Survey Manager Service Test	45
1.17.2	Organization Account Creation Test	46
1.17.3	Database Connection String Test.....	47
1.17.4	Application's Database Connection String Test	48

1.17.5 Epi Info Web Survey Test.....	49
APPENDIX A: REFERENCES.....	53
APPENDIX B: APPLICATION SETTINGS.....	54

INTRODUCTION

1.1 PURPOSE

The vision of the Epi Info™ Web Survey system is to use the Epi Info 7 application to create online surveys to help the public health community conduct surveys, gather useful information for analysis, and to further support the mission of public health by facilitating public health data collection in geographically distributed locations, as well as enabling a targeted participant pool.

1.2 AUDIENCE

The audience for this document includes system administrators, database administrators, and information technology personnel who will be configuring the system on web and database servers.

SYSTEM DESCRIPTION

1.3 KEY FEATURES

The Epi Info Web Survey system enables the following functionalities on the web:

- **Capability to deploy on the web:** Provides a service to allow publishing a survey created using Epi Info 7 on the web.
- **Enable survey on the web:** Provides a means to dynamically present the survey participant with the survey on the web that has been created and published from Epi Info 7.
- **Support data collection:** Supports data collection by supporting surveys created using the following controls: Label, single line text box, multi-line text box, numeric text box, date/time picker, check box, drop-down list and group box.
- **Support logic control in surveys:** Enables data entry for surveys on the web by supporting skip logic and navigation logic. It also has the ability to hide, unhide, highlight, un-highlight, enable and disable survey questions when certain conditions/criteria are met.
- **Support flexible participation:** Allows survey participants access to the survey, complete the survey in one session, or save the responses to complete and submit the survey at a later time.
- **Capability to download data:** Provides a service to download the survey responses into Epi Info 7 for analysis.

1.4 INVENTORY

The integrated deployment package consists of a compressed folder structure having two main parts: 1) database and 2) application and services. The database scripts are present in the Database folder. All files for the Application and Services part are provided in ApplicationAndServices folder. The other supporting

content provided in the package comprise of documents in Documents folder, a security utility in EpiInfoWebSecurity folder and an Admin utility in SurveyManagerAdminClient folder.

1.5 ENVIRONMENT

Below is a list of hardware and software requirements, and operational activities needed for the deployment of the Epi Info Web Survey system:

Hardware:

- Web server: Windows server 2008 or Windows Server 2008 R2. Also tested on window server 2016
- Database server: Windows Server 2008 or Windows Server 2008 R2. Also tested on Windows SQL server 2016
-

Software:

- Web server:
 - Internet Information Services (IIS) 7.0 / 7.5/ 10
 - .NET 4.6.1
 - ASP.NET MVC 4
- Database server
 - SQL Server 2008/2012/2016
- SMTP Server
 - The application would need to know the name of an SMTP server within the network that it can use.
- Survey Manager Admin Client
 - Survey Manager Admin client is included in the installation package. While the Survey Manager Admin client can be installed on a different machine than the web server, the installation of the Epi Info Web Survey system is a lot easier with Survey Manager Admin Client installed on the server as well.

Operational activities:

- A system engineer, IT engineer with administrative access on the web server configures the application.
- A database administrator with administrative access on the database server configures the database.

Note: ASP.NET MVC 4 is the recommended version of ASP.NET MVC framework but is not a prerequisite for installation. All the assemblies that are needed by the application or that are specific to ASP.NET MVC 4 are packaged with the application.

1.6 SYSTEM OPERATIONS

The system will be used for:

- publishing surveys;
- conducting online surveys; and
- downloading the survey responses.

Depending on the nature of the survey and how it is conducted, the system could have a surge in web server traffic.

1.7 SYSTEM ARCHITECTURE

The Epi Info Web Survey system has the following components:

- **Epi Info Web Survey Manager Service:** This web service:
 - securely publishes a survey to the web from the Epi Info 7 Form Designer;
 - stores the meta-data for creation of the survey to the database; and
 - securely downloads the survey responses to the Epi Info 7 Enter module.
- **Epi Info Web Survey Web Application:** The web application dynamically renders the web survey for the survey participant to access and complete. Surveys may be completed in one session or saved and completed another time.
- **Epi Info Web Survey Data Service:** This data service provides the web application with the meta-data to render the survey to the web. It also manages the data collected from survey participants.
- **Epi Info Web Survey Database:** The system uses a relational database to manage:
 - organizations that conduct surveys;
 - surveys published by the organizations; and
 - responses provided by the survey participants.

The diagram below summarizes these components and their interactions.

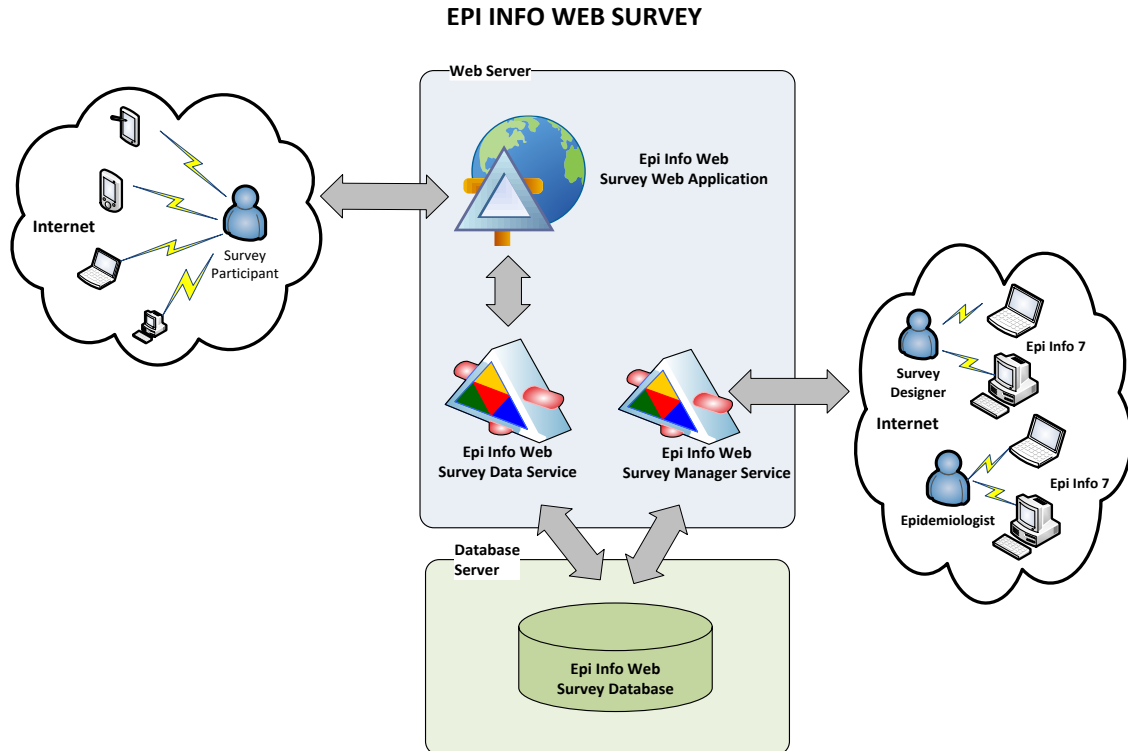


Figure 1: Overview of Epi Info Web Survey System

APPLICATION INSTALLATION

1.8 FIRST-TIME USERS

In order to use the Epi Info Web Survey system, an Administration Key must be created and encrypted as described later in this document. The Administration key is needed by the Epi Info Survey Manager Admin Client to:

- configure the application;
- create and manage organization accounts; and
- update survey information.

To perform any above mentioned operation, Survey Manage Admin client has to be installed either on System Administrator's machine or on the web server. More information on Survey Manager Admin Client can be found in EIWS Admin Client Help document.

1.9 ACCESS CONTROLS

1.9.1 Database

The person creating and configuring the database should have full administrative access on the database server and rights and privileges to create a database, create database users, and grant access to the database.

1.9.2 Application and Services

The person installing and configuring the application and services should have administrative access on the web server and should have full access and privileges to create a web application in Internet Information Services (IIS).

1.10 INSTALLATION

The installation can be done using the **EIWSIntegrated** package. The package for installation of the system consists of two items: 1) the database in the **Database** folder; and 2) the application and services in the **ApplicationAndServices** folder. The Configuration section describes how these items are used.

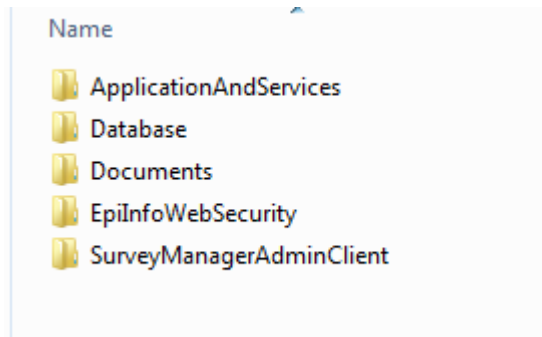


Figure 2: File systems showing components in the EIWSIntegrated package

1.11 CONFIGURATION

1.11.1 Database Configuration

The database for this application requires SQL Server 2008 and should be created on a SQL Server 2008 database server. Creation of the database may require assistance from a SQL Server DBA if access to the database server is managed by the DBA. The scripts should be changed as needed for local circumstances or as per best practices followed by the organization deploying this system.

1. Choose the database server where the database will be hosted. Log into the database server using an account which has admin privileges to create the database, the database user, and assign privileges to the user.
2. Open the provided script named eiws_complete.

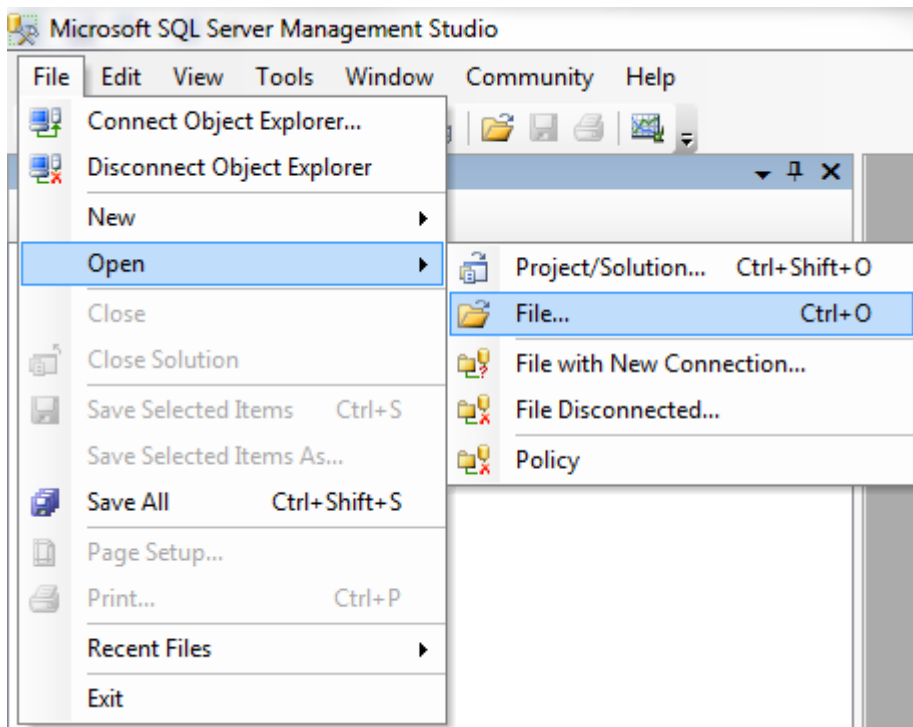


Figure 3: File menu to open the database script file

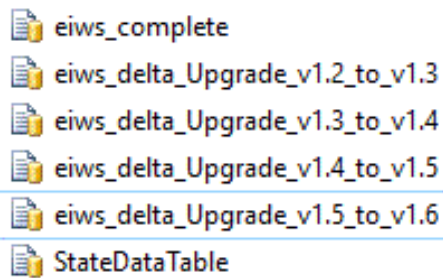


Figure 4: Open File dialog showing the eiws_complete script.

3. In the script, change the password to a strong password, per your local policy, before executing the script.

```

eivs_complete.sql...sql.EIWS (SA (59))
GO
IF EXISTS (SELECT * FROM sys.foreign_keys WHERE object_id = OBJECT_ID(N'[dbo].[FK_SurveyResponse_SurveyMetaData]'))
ALTER TABLE [dbo].[SurveyResponse] CHECK CONSTRAINT [FK_SurveyResponse_SurveyMetaData]
GO

/***** Insert Metadata *****/
GO
/***** Object: Table [dbo].[lk_SurveyType] Script Date: 08/23/2012 14:07:56 *****/
INSERT [dbo].[lk_SurveyType] ([SurveyTypeId], [SurveyType]) VALUES (1, N'Single Response')
INSERT [dbo].[lk_SurveyType] ([SurveyTypeId], [SurveyType]) VALUES (2, N'Multiple Response')
/***** Object: Table [dbo].[lk_Status] Script Date: 08/23/2012 14:07:56 *****/
INSERT [dbo].[lk_Status] ([StatusId], [Status]) VALUES (1, N'In Progress')
INSERT [dbo].[lk_Status] ([StatusId], [Status]) VALUES (2, N'In Progress (URL)')
INSERT [dbo].[lk_Status] ([StatusId], [Status]) VALUES (3, N'Complete')

/* For security reasons the login is created disabled and with a random password. */
/***** Object: Login [eivs_appuser] Script Date: 09/21/2012 09:02:17 *****/
CREATE LOGIN [eivs_appuser] WITH PASSWORD=N'è" 0cW+j8ig-ıfkuŞçöİñ-(ÇÈS.&g', DEFAULT_DATABASE=[EIWS], DEFAULT_LANG
GO

/***** Object: User [eivs_appuser] Script Date: 09/21/2012 09:02:17 *****/
GO

CREATE USER [eivs_appuser] FOR LOGIN [eivs_appuser] WITH DEFAULT_SCHEMA=[dbo]
GO

EXEC sp_addrolemember db_datareader, eivs_appuser
GO

EXEC sp_addrolemember db_datawriter, eivs_appuser
GO

```

Figure 5: Change the password in the database script

- Execute the script to create the database, metadata, application user account and appropriate privileges.

Note: If you receive an error at this point, check to see if your hard-coded paths (tied directly to your machine) have the appropriate path and version of SQL. For example: C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL

```

eiws_complete.sql ...sql.EIWS (SA (59))
USE [master]
GO

/***** Object: Database [EIWS]    Script Date: 09/21/2012 11:58:53 *****/
CREATE DATABASE [EIWS] ON PRIMARY
( NAME = N'EIWS', FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL10_50.MSSQLSERVER\MSSQL\DATA\EIWS.mdf' , SI
LOG ON
( NAME = N'EIWS_log', FILENAME = N'C:\Program Files\Microsoft SQL Server\MSSQL10_50.MSSQLSERVER\MSSQL\DATA\EIWS_log.1
GO

ALTER DATABASE [EIWS] SET COMPATIBILITY_LEVEL = 100
GO

IF (1 = FULLTEXTSERVICEPROPERTY('IsFullTextInstalled'))
begin
EXEC [EIWS].[dbo].[sp_fulltext_database] @action = 'enable'
end
GO

ALTER DATABASE [EIWS] SET ANSI_NULL_DEFAULT OFF

```

Messages

```

(1 row(s) affected)
(1 row(s) affected)
(1 row(s) affected)
(1 row(s) affected)
(1 row(s) affected)

```

Figure 6: Result windows showing the result of executing the eiws_complete script

- The *eiws_complete* script will create a database called **EIWS** and will create the schema and the metadata needed for the system. The script also creates a user account called **eiws_appuser** that can be used by the application for accessing the database. The output is shown in the figures below:

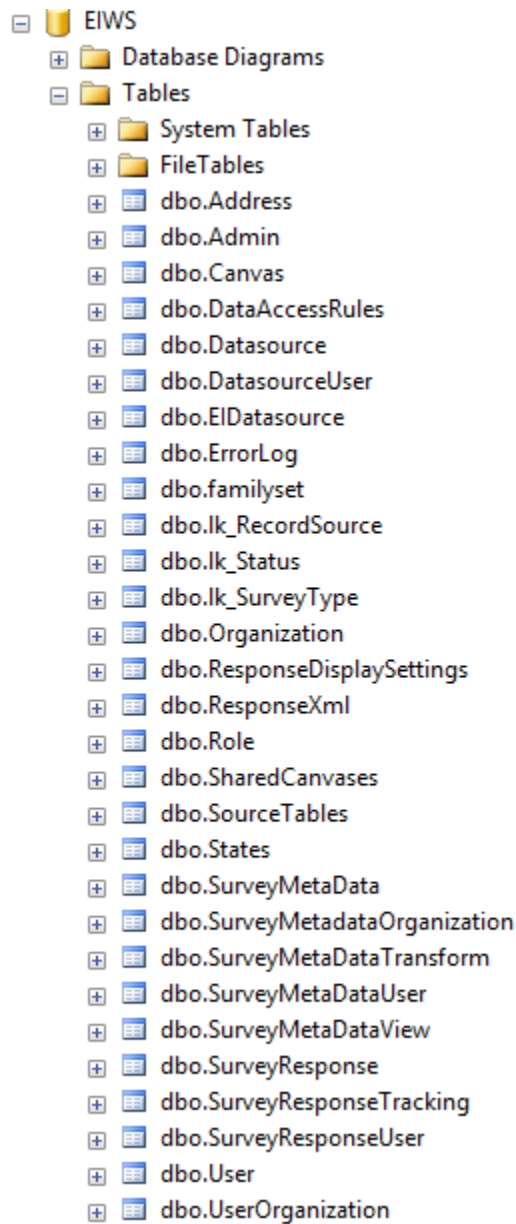


Figure 7: Confirmation of the creation of the EIWS database

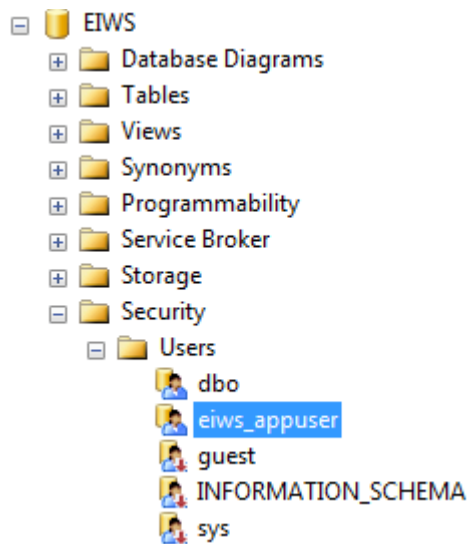


Figure 8: Confirmation of the creation of the eiws_appuser account

6. Provide the database name, application user name and password to the person that will provide ongoing management of the Epi Info Web Survey system. This information will be used to create the connection string.
7. You can also execute the StateDataTable.sql in case you are enabling account creation functionality and are in United States. The script populates list of states in United States in the States table to be used by Epi Info Web Survey system as part of User centric account creation option.

1.11.2 Application and Services Configuration

The application and services configuration results the Epi Info Web Survey Web application, the Epi Info Web Survey Manager Service, and the Epi Info Web Survey Data Service being configured as a single integrated application on the Internet Information Services (IIS).

The steps below assume that the EpiInfoWebSurvey web site is being configured as an application under the default web site. This may not always be the case depending on your local policies. If needed, the site can be configured as its own web site.

1. Create a folder called “EpiInfoWebSurvey” under “inetpub\wwwroot”. Copy the contents of the folder “EIWSIntegrated\ApplicationAndServices” (and not the folder itself) to the “inetpub\wwwroot\EpiInfoWebSurvey” folder.
2. Create an application named “**EpiInfoWebSurvey**” in IIS.
3. Make sure that the site is configured to run on an Application pool that is configured to use .NET 4.0. You can use one of the default application pools

called **Default Web Site** or Default AppPool. This application pool uses a Managed Pipeline Mode of “Integrated”.

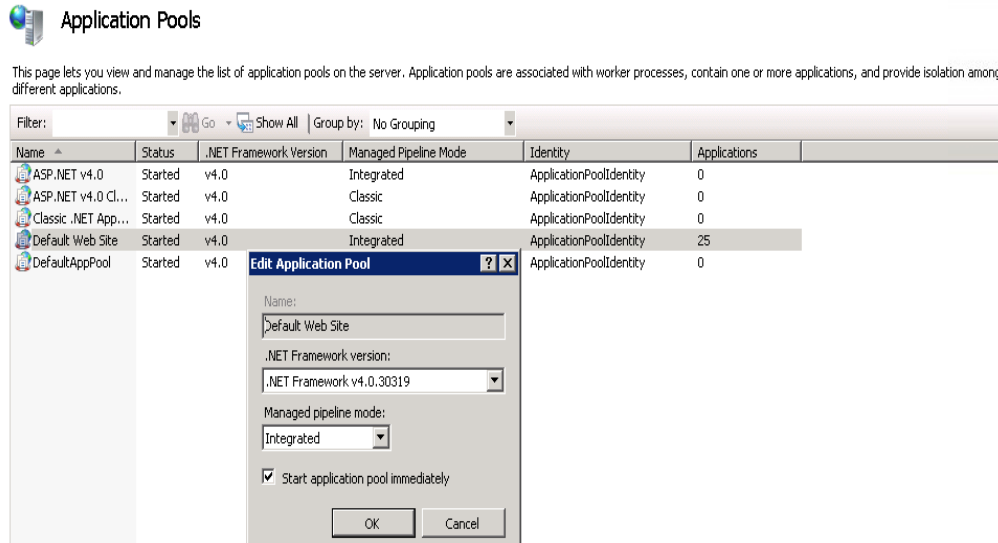


Figure 9: Application pool configured using .NET 4.0

4. Make sure the site uses Anonymous authentication. This is the default setting when the site is configured in IIS.

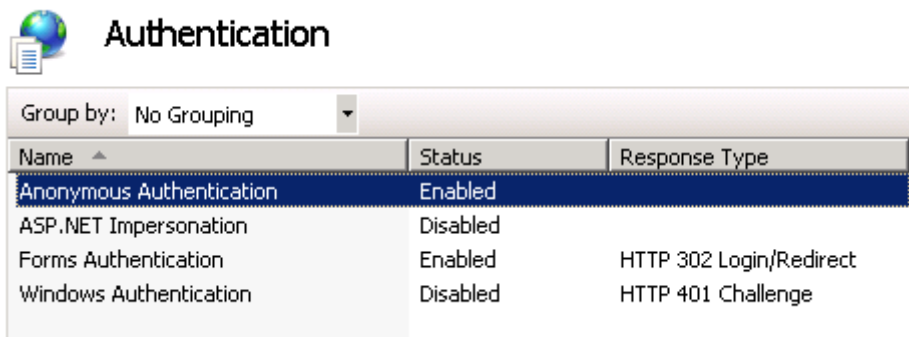


Figure 10: Application configured with Anonymous Authentication Enabled

5. Open the web.config file in EpiInfoWebSurvey folder for editing in your preferred editor.

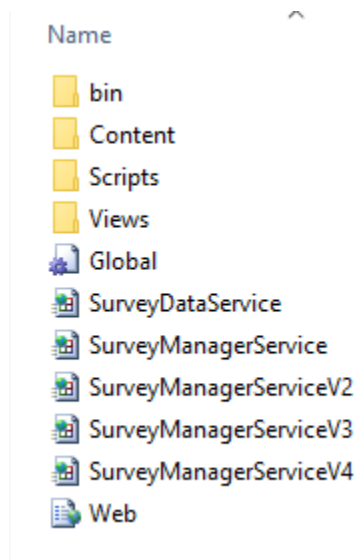


Figure 11: Web.config file for an integrated application

6. Update Email notification section in the web.config file.

```
<!--Email notification-->
<add key="EMAIL_USE_AUTHENTICATION" value="FALSE"/>
<add key="EMAIL_USE_SSL" value="FALSE"/>
<add key="EMAIL_FROM" value="XXXXXXXXXXXXXXXXXXXX"/>
<add key="EMAIL_PASSWORD" value="XXXXXXXXXXXXXXXX"/>
<add key="SMTP_PORT" value="XXXXXXXXXX"/>
<add key="SMTP_HOST" value="XXXXXXXXXXXXXXXX"/>
```

- a) EMAIL_USE_AUTHENTICATION: The default value is FALSE. Change this to TRUE if authentication is used.
- b) EMAIL_USE_SSL: The default value is FALSE. Change this to TRUE if SSL is used.
- c) EMAIL_FROM: Provide an email address that can be used for the FROM part of the email.
- d) EMAIL_PASSWORD: A value needs to be provided here only if the EMAIL_USE_AUTHENTICATION is TRUE in step 6a above.
- e) SMTP_PORT: The system uses the default value of 25. Only provide a port number if the port number is other than 25.
- f) SMTP_HOST: This value has to be provided. This should be the name of the SMTP server used by the organization.

The system has built in capability to send email. The survey participant has an option to receive an email with a link and a passcode to access their survey response in case they are not able to complete the survey in one session. The settings above, in conjunction with settings specified in Step 9, can be used by the system to send exception email messages to a specified email account.

7. If you want to receive system exception email messages, update the Log Setting section in the web.config file.

```
<!-- Log Setting -->
<add key="LOGGING_SEND_EMAIL_NOTIFICATION" value="FALSE"/>
<add key="LOGGING_ADMIN_EMAIL_ADDRESS" value="XXXXX"/>
<add key="LOGGING_EMAIL_SUBJECT" value="Epi Info Web Survey - Exception"/>
```

- a) LOGGING_SEND_EMAIL_NOTIFICATION: The default value is set to FALSE. Change this to TRUE in order to receive exception emails in case of system failure.
 - b) LOGGING_ADMIN_EMAIL_ADDRESS: Provide an email address that can receive exception emails in case of system failure.
 - c) LOGGING_EMAIL_SUBJECT: Update the value with the subject you would like to see for exception emails.
8. The application is designed to leverage caching to store survey meta information in memory on the web server in order to optimize performance, if needed. A very small amount of memory is used and is directly proportional to the size of survey meta information. Enabling caching comes at a cost. If the survey designer makes changes to survey meta data, and then wants to check that his/her changes were made, the revisions are not instantly visible. In the default configuration, caching has been disabled for the application. Caching setting can be customized as per local policies or per your needs. Below are the settings for caching:

```
<!--Caching-->
<add key="CACHE_IS_ON" value="FALSE"/>
<add key="CACHE_DURATION" value="20"/>
<add key="CACHE_SLIDING_EXPIRATION" value="TRUE"/>
```

- a) CACHE_IS_ON: Default value of "FALSE" indicates the application is not caching any information on the server. Changing the value to "TRUE" will turn on caching for the application allowing the application to store survey meta data on the server for a given survey.

- b) CACHE_DURATION: Duration for the cache is set to 20 minutes. The value can be changed to increase or decrease the duration the cache is maintained.
- c) CACHE_SLIDING_EXPIRATION: The default value of “TRUE” indicates that the cache is set to expire at the defined duration on a sliding scale. If the site is accessed by any user during the defined duration, the sliding scale is again reset. To change the cache to expire at an absolute duration defined by the CACHE_DURATION value, the value for CACHE_SLIDING_EXPIRATION can be changed to “FALSE”.

With CACHE_IS_ON set to “FALSE” the value for CACHE_DURATION and CACHE_SLIDING_EXPIRATION are not applicable. The application will work without caching and still perform well.

9. The package comes with default security keys used by system to encrypt needed information. The system can be used as is if needed. We highly recommended that you create and update the security keys for your system using Epi Info Web Security Utility which is a separate install, and is included in the package (instructions on how to install can be found in the Epi Info Web Security Utility Help Guide). Section 3 of the document provides instructions for creating the security keys. Once the new security keys are generated using the security utility and the web.config file is updated, the default Encryption keys provided below will be replaced with your keys.

```
<add key="KeyForConnectionStringPassphrase"
value="atKjwl1YhPv94716lQ8aEophUSm2mz+9VkmzDgzRgscopsRYJ2/vRs7eJTf43X6r/PiBQ
S2Pb99lzoA0DAVxfmwToq1QXDgovFCZP+axtINlw9vbidyz9cG0Ty3LNjxCYuMoIw==" />
<add key="KeyForConnectionStringSalt"
value="LwKTr/KY9ILBwtIDVIvr09zwXx1f101FiUMgwTti82LCY0Erdrdu45vaVQntXe6kD0Jj
K1RXkLL8HdmuzPSEYsvtIKDJQ8SGdAtzHWpYrpkdXmcd5bi/pL04UdL1H3f2ZfpZg==" />
<add key="KeyForConnectionStringVector" value="Z5AIQts7a6hFewK/" />
```

NOTE: The key generation is one time operation. Once the system is operational these keys cannot be changed. The keys are the most critical piece of the system. Please make an archive of keys used by your system and save it at a safe location in case they are lost/changed/updated in web.config file by mistake

10. Create connection string that points to the application database by replacing the text marked in yellow with the appropriate value in the plain text connection string provided below.

```
metadata=res:/*/Epi.Web.Model.csdl|res:/*/Epi.Web.Model.ssdl|res:/*/Epi.Web.Model.msl;provider=System.Data.SqlClient;provider
connection string= 'Data Source=DATABASE_SERVER_NAME;Initial
Catalog=DATABASE_NAME;Persist Security Info=True;User
ID=APPLICATION_ACCOUNT;Password=PASSWORD_FOR_ACCOUNT
;MultipleActiveResultSets=True'
```

Below is an example of a connection after replacing the yellow text.

```
metadata=res:/*/Epi.Web.Model.csdl|res:/*/Epi.Web.Model.ssdl|res:/*/Epi.Web.Model.msl;provider=System.Data.SqlClient;provider
connection string= 'Data Source= etiei-sql;Initial Catalog=EIWS;Persist
Security Info=True;User ID=eiws_appuser;Password=
h74$H4d@m23&Bw=GXH8%-MuH5h;MultipleActiveResultSets=True'
```

Note:

- i. The entire block, starting from “metadata” and ending with “=True” comprises the connection string. Use the complete string provided above and not just the subpart that says “connection string”.
- ii. The connection string subpart is wrapped in single quotes. In other words, the phrase connection string= is followed by an opening single quote (apostrophe) and at the end of the connection string subpart following =True there is the closing single quote.
- iii. Check the Data Source name with your DBA team in case the application is deployed in a DMZ. In such cases, the Data Source may also include a port number.
- iv. When copying this connection string from the PDF document to your chosen editor, additional spaces may get created at line breaks resulting in the application unable to communicate with the database. In particular, please note that there are no spaces in the three metadata element strings which are separated by a vertical bar or pipe symbol (|). For example:
res:/*/Epi.Web.Model.msl
- v. In the connection string, the phrases “Data Source”, “Initial Catalog”, “Persist Security Info” and “User ID” all have a single space between the words.

- After creating the plain text connection string, encrypt the connection string using the Epi Info Web Security Utility. Section 5 of “Epi Info Web Security Utility Help guide” describes how the connection string can be encrypted. Make a note of the encrypted connection string in a file in order to use it in the next step.

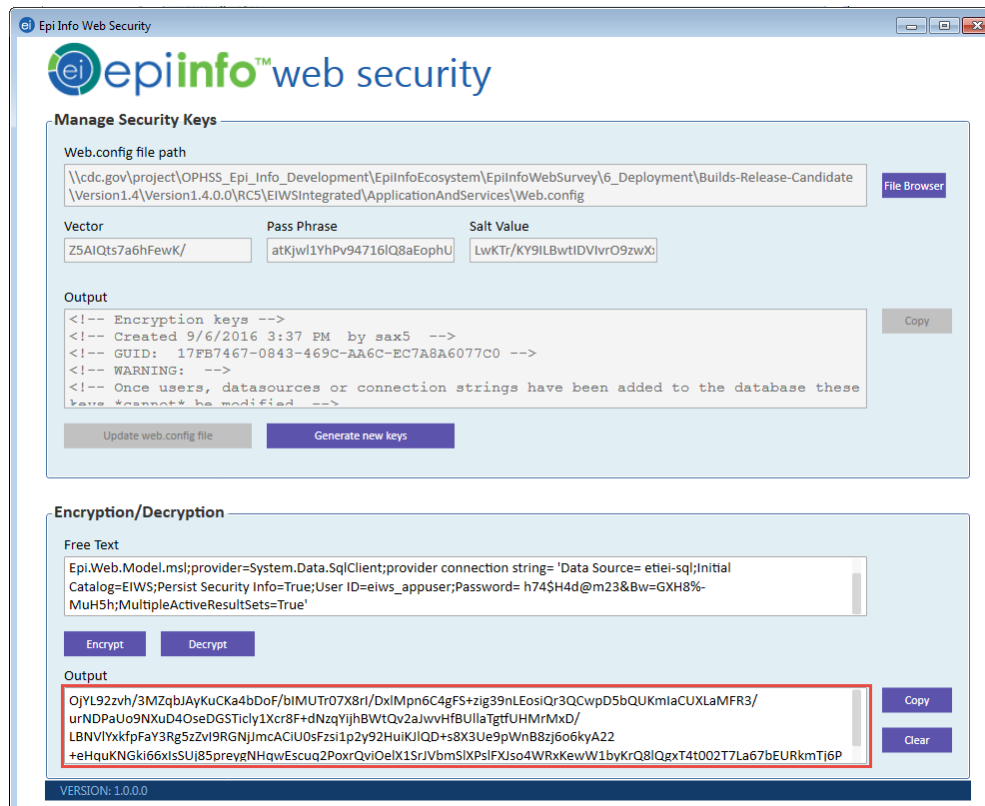


Figure 12: Epi Info Web Security Utility encrypting the connection string.

- Update the connection string for “EIWSEntities” marked in yellow below in the web.config file with the encrypted string.

```
<add name="EIWSEntities" connectionString="OjYL92zvh/3MZqbJAyKuCKa4bDoF/bIMUTr07X8rI/DxIMpn6C4gFS+zig39nLEosiQr3QCwpD5bQUKmlaCUXLaMFR3/urNDPaUo9NXuD40seDGSTicly1Xcr8F+dNzqYijhBwtQv2aJwvHfBU1laTgtfUHMrMxD/LBNV1YxkfpFaY3Rg5zZvI9RGNjJmcACiU0sFzsi1p2y92HuiKJlQD+s8X3Ue9pWnB8zj6o6kyA22+eHquKNGki66xIsSUj85preygnHqwEscuq2PoxrQvi0e1X1SrJVbmSlXPs1FXJso4WRxKewW1byKrQ8lQgxT4t002T7La67bEURkmTj6P8fTxMac2JkLraRxm1DXP1EEwgJxzvUL596Jwz928ULdiCHHhVBH+4QPpj30MfWUy1QL6xd5W7vNE2ovThr1I=" />
```

- Create another connection string by replacing the value of the text marked in yellow with the appropriate value in the plain text connection string provided below.

```
Data Source=DATABASE_SERVER_NAME;Initial
Catalog=DATABASE_NAME;User
ID=APPLICATION_ACCOUNT;Password=PASSWORD_FOR_ACCOUNT
```

Below is an example of a connection string after replacing the yellow text

```
Data Source=etiei-sql;Initial Catalog=EIWS;User
ID=eivs_appuser;Password=h74$H4d@m23&Bw=GXH8%-MuH5h
```

Encrypt the connection string above as done previously for the EIWSEntities connection string and update the connection string for “EIWSADO” marked in yellow below in the web.config file with the encrypted string.

```
<add name="EIWSADO" connectionString="TXXToS5W9+YIuXtIix/w+VEhNtJfnp+eY/le+
iEA3Ptjhy9NnnaOHVIqIcy8EiP8W5scBPUM9jtmob/u6pAiCgn+DhSn1MYKszq84Lvzs2PQVBav
hLvXX1TVEWINTjuhN4FvsfyjPngk9uV7Hx1hUA==" />
```

14. A user participating in a survey has an option to Exit the survey at any time in case they are not interested in the survey or for any reason by clicking on “Exit Survey” button in the survey. The default behavior of the application is to redirect the user to the home page of the survey where they have the option to start the survey again. This may not be a desired behavior. To avoid this behavior the system provides an option to redirect the user to a web page or web site you may like them to visit even if they exit the survey. This can be your organizations web site. If you like the user to visit a specific page after they exit the survey then update the value in the configuration file for the following node with the URL you want the user to visit. If no URL is provided the default behavior of application will work as designed.

```
<add key="ExitURL" value="" />
```

15. Update the Integrated Epi Info Web Survey Manager Service settings.

```
<!--Integrated SurveyManagerService Settings-->
<add key="URL" value="http://SERVER_NAME/<APPLICATION_NAME/Home/" />
<add key="AdminKey" value="8hYbD0qvA0vvjoVbEjktplq68/Gke0eC/2hq9Jjh6W5Yfh//
+GVnycZyISwMuNS1" />
```

- a) URL: Update the SERVER_NAME and APPLICATION_NAME marked in yellow in the value for the URL

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
 - ii. APPLICATION_NAME is the application name created in IIS.
- b) AdminKey: Provide the encrypted value of the GUID that will be used as the AdminKey.
 - i. Create a GUID using one of the online sites that creates GUID strings such as [Microsoft's GuidGen Tool \(http://www.guidgen.com\)](http://www.guidgen.com).
 - ii. Encrypt the GUID using Epi Info Web Security Utility.
 - iii. Replace the value for AdminKey with the encrypted value.
 - iv. IMPORTANT: Do not lose the Admin Key GUID. This is required for communication between Epi Info Web Survey Manager Admin Client and the Epi Info Web Survey Manager Service.

16. Provide the following information about the Epi Info Web Survey Manager Service to the Administrator managing the system.

- a) URL for the Survey Manager Service
`http://SERVER_NAME/APPLICATION_NAME/SurveyManagerServiceV3.svc`

Update the SERVER_NAME and APPLICATION_NAME, marked in yellow, in the value for the URL.

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
 - ii. APPLICATION_NAME is the application name created in IIS.
- b) Windows Authentication value is **No**
- c) Binding Protocol used is **Basic**

The information provided above is to be used by the Administrator to access the Epi Info Web Survey Manager Service from the Survey Manager Admin Client. The information is provided in the Local Settings section of the Survey Manager Admin Client as shown in the figure below. Detailed instructions are provided in the EIWS Admin Client Help document. After providing the above value, click on the Ping button to provide an indicator in the Ping Result text box to show if communication with the service is successful. The settings can be saved by clicking on the Update Local Settings button.

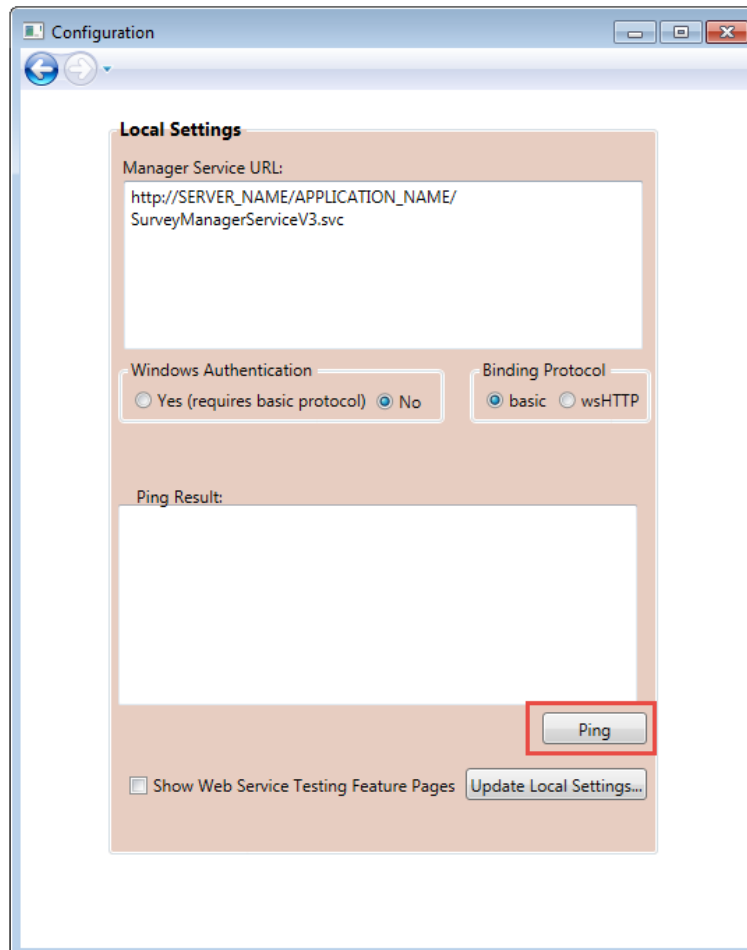


Figure 13: Local settings section in Survey Manager Admin Client for testing service communication and to update local settings.

This information is also to be provided to the epidemiologist or survey designer for them to be able to publish the form to web. On the Epi Info™ 7 desktop, select Tools > Options. Select the Web Survey tab. The information goes in the Endpoint Address field on the Web Survey tab.

- There are a few additional settings in the web.config file which do not need any updating. These are listed below:

```
<!--Messages-->
<add key="SURVEY_NOT_EXISTS" value="The Survey does not exist. Please check the s
urvey link and try again."/>
<add key="SURVEY_SUBMITTED_MESSAGE" value="This survey has been submitted."/>
```

```

    <add key="SURVEY_CLOSED_MESSAGE" value="This survey is currently closed. Please c
ontact the author of this survey for further assistance."/>
    <add key="SURVEY_SUBMISSION_MESSAGE" value="Thank you! Your survey has been submi
tted."/>
  <!--Messages-->

  <!-- Package Type -->
  <add key="INTEGRATED_SERVICE_MODE" value="TRUE"/>
  <!-- Package Type -->

  <!--Omniture settings-->
  <add key="OMNITURE_IS_ENABLED" value="FALSE"/>
  <!--Omniture settings-->

```

18. Epi Info Web Survey comes with a footer which has the Epi Info, CDC and HHS logos as shown below.

The CDC and HHS images can be replaced with single custom image that represents your organization's image or logo. In addition, support information containing email and telephone number can be provided in the footer if needed.

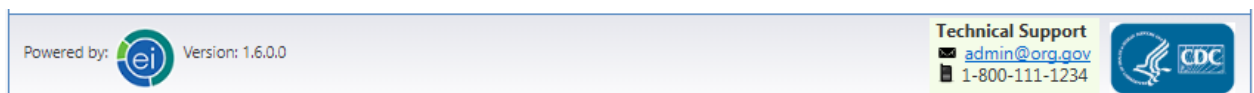


Figure 14: Footer of Epi Info Web Survey

Steps to add a custom image in the footer are provided below:

- a) Add the image or logo for your organization in following folder on the web server
 “/<APPLICATION_NAME>/Content/images/”

APPLICATION_NAME is the application name created in IIS.

- b) Provide the value for “FOOTER_LOGO_PATH” in web.config

```
<add key="FOOTER_LOGO_PATH" value=" " />
```

The value for FOOTER_LOGO_PATH can be provided by replacing the IMAGE_NAME in the string below with the name of the image or logo of your organization.

```
~/Content/images/<IMAGE_NAME>
```


Note: The package come with value of “FOOTER_LOGO_PATH” as empty which results in displaying default CDC logos or images. The recommended size for image or logo of your organization is 42 x 42 in case you want to replace the default image or logos.

Steps to include support information in the footer are provided below:

- a) Set the value for “TECHNICAL_SUPPORT_IS_ENABLED” in web.config to “TRUE”. The package is provided with technical support information disabled.

```
<add key="TECHNICAL_SUPPORT_IS_ENABLED" value="FALSE"/>
```

Provide the information needed in step (b) and (c) if the value is set to “true”.

- b) Update the value for “TECHNICAL_SUPPORT_EMAIL” with the appropriate email address

```
<add key="TECHNICAL_SUPPORT_EMAIL" value=" "/>
```

- c) Update the value for “TECHNICAL_SUPPORT_PHONE” with the appropriate phone number.

```
<add key="TECHNICAL_SUPPORT_PHONE" value=" "/>
```

19. Epi Info Web Survey Home page or the first launch page of the survey can be configured to show a larger image or logo of your organization in the body of the page.

Steps to enable a larger custom image or logo are provided below:

- a) Add the image or logo for your organization in following folder on the web server

```
“/APPLICATION_NAME/Content/images/”
```

APPLICATION_NAME is the application name created in IIS.

- b) Set the value for “SHOW_HOME_LOGO” to “TRUE”. The package is provided with this value being empty.

```
<add key="SHOW_HOME_LOGO" value=""/>
```

c) Update the value for “HOME_LOGO_PATH” in web.config file

```
<add key="HOME_LOGO_PATH" value="" />
```

The value for HOME_LOGO_PATH can be provided by replacing the IMAGE_NAME in the string below with the name of the image or logo of your organization.

```
~/Content/images/<IMAGE_NAME>
```

Note: The package comes with value of “HOME_LOGO_PATH” as empty resulting in no image shown in the body of the home or launch page. The recommended size for larger image or logo of your organization is a width of 300 pixels.

20. Epi Info Web Survey can be deployed using one of the two color themes “Classic” or “Blue” provided in the package and as shown below.

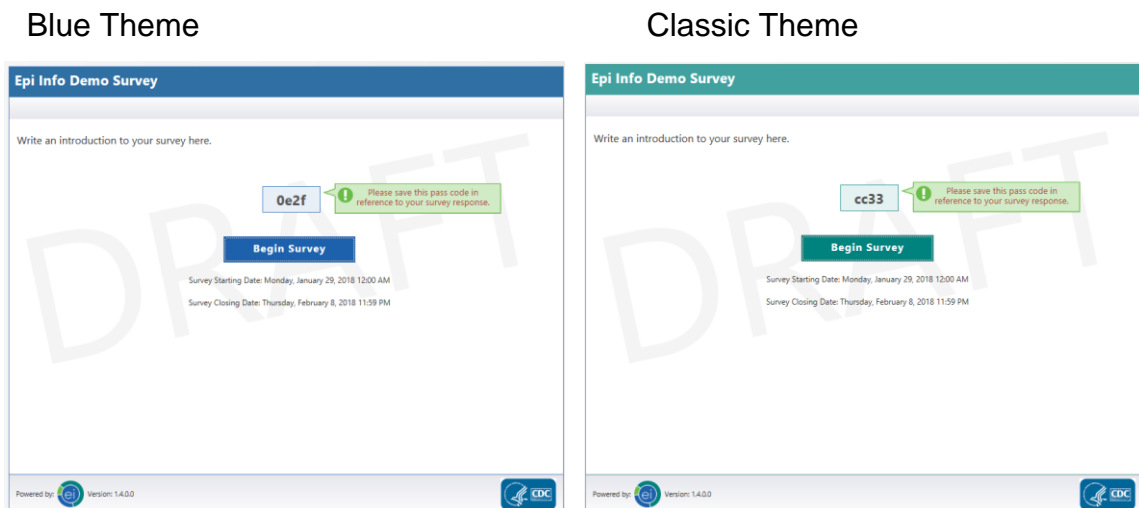


Figure 15: Snapshot of two color themes available for Epi Info Web Survey

Steps to enable the color theme are provided below:

a) Update the value for “CUSTOM_THEME” in web.config file

```
<add key="CUSTOM_THEME" value="CLASSIC"/>
```

b) The value can be one of “BLUE” or “CLASSIC”. The package is provided with “CLASSIC” theme enabled.

21. Epi Info Web Survey has provided the option to request account from the system without an Administrator having to be involved in the process and creating Organization accounts using Survey Manager Admin Client tool. It would require update of the following settings in the web.config file. By default this option is turned off in the provided package and should be configured only if you plan to make use of this option.

```
<add key="ACCOUNT_TYPE" value="" /> <!--
Can have two values (USER OR ORGANIZATION) -->
<add key="ENDPOINT_ADDRESS" value="http://SERVER_NAME/APPLICATION_NAME/SurveyManagerService.svc" />
<add key="NOTIFY_ADMIN_IS_ENABLED" value="False" />
<add key="SYSTEM_ADMIN_EMAIL" value="me@here.now" /> <!--
Email address included in the body of the email for account creation -->
<add key="NOTIFY_ADMIN_EMAIL" value="me@here.now" /> <!--
Email address to which notifications go out-->
```

If you plan to use this feature update the settings as per direction provided below

- a) ACCOUNT_TYPE: Possible values are “USER” or “ORGANIZATION”. Depending on the option chosen the account creation form will change. Below are the screenshots for the states of Account creation page namely no account type, User centric account type and Organization centric account.
- b) ENDPOINT_ADDRESS: This should match the URL of Survey Manage Service created in Step 16 above.
- c) NOTIFY_ADMIN_IS_ENABLED: Set the value to true if an admin should be notified every time an account is created in the system else leave it False.
- d) SYSTEM_ADMIN_EMAIL: This is the email address of the admin that can be contacted in case there is a problem with the system. This email address is included in the body of the email sent out at time of account creation
- e) NOTIFY_ADMIN_EMAIL: This is the email address of the Admin that needs to be informed whenever an account is created in case NOTIFY_ADMIN_IS_ENABLED is true.

The Account creation page can be accessed by following URL: http://SERVER_NAME/APPLICATION_NAME/Account.

Update the SERVER_NAME and APPLICATION_NAME marked in yellow in the value for the URL

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
- ii. APPLICATION_NAME is the application name created in IIS.

Shown below are screenshots for the three possible state of Account creation page depending on the configuration namely no account type specified, User centric account type and Organization centric account type.

Screen shot of Access Denied error that occurs without the account creation option enabled.

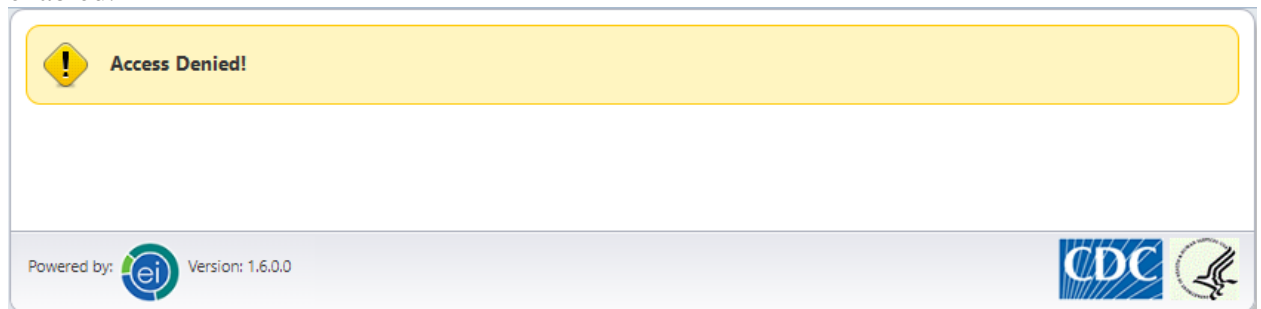


Figure 16: The state of Account creation page when account creation option is not enabled.

Create Account

Epi Info™ Web Survey

The Epi Info™ Web Survey system allows the survey designer to collect information from participants over the internet. The ability to distribute and collect surveys remotely is unique to Epi Info™ 7 and provides survey designers access to a wide variety and number of participants. Participants access the web survey and submit their responses through a web browser or mobile device.

How it works

Complete the application form to create an account for your organization. You will receive an email with configuration settings to publish surveys to the web using Epi Info™ 7. Download and install the latest version of Epi Info™ 7 by [clicking here](#).

* indicates required fields

*** Organization Name:**

*** Last Name:**

*** First Name:**

*** Phone Number:**

*** Address Line 1:**

Address Line 2:

*** City:**

*** State:**

*** Zip Code:**

*** Email Address:**

*** Confirm Email Address:**

I agree to the [Terms of service and conditions of use](#)

Figure 17: The state of Account creation page when account creation option is set to USER.

Epi Info™ Web Survey

Create Account

Epi Info™ Web Survey

The Epi Info™ Web Survey system allows the survey designer to collect information from participants over the internet. The ability to distribute and collect surveys remotely is unique to Epi Info™ 7 and provides survey designers access to a wide variety and number of participants. Participants access the web survey and submit their responses through a web browser or mobile device.

How it works

Complete the application form to create an account for your organization. You will receive an email with configuration settings to publish surveys to the web using Epi Info™ 7. Download and install the latest version of Epi Info™ 7 by [clicking here](#).

* indicates required fields

*** Organization Name:**

*** Email Address:**

*** Confirm Email Address:**

I agree to the [Terms of service and conditions of use](#)

Figure 18: The state of Account creation page when account creation option is set to ORGANIZATION.

Note: Account creation option should be enabled only after due consideration as the URL for the account creation page once made public can be accessed by anyone and may result in ambiguous user accessing this page and creating account.

22. The *Terms of service and conditions of use* can be provided on Account creation page for anyone requesting an account to agree to before proceeding receiving an account. This would need to be done only if you are enabling account creation option. The terms of use can be provided by updating “TermsOfUse.txt” document. This document can be found in “EIWSIntegrated\ApplicationAndServices\Content\Text” folder of the application package. Once the document has been updated with correct text it needs to be updated on the web server in “EIWS\Content\Text” folder.

Terms of service and conditions of use

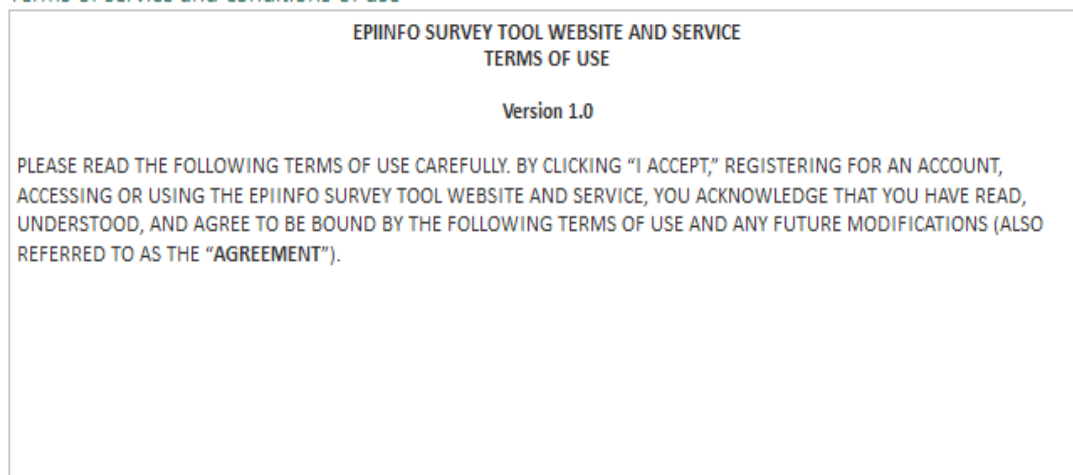


Figure 19: The Terms of service and conditions of use section on Account creation page

Note: If you want your text to be formatted then HTML equivalent of your text along with its styles need to be provided in this document.

23. Epi Info Web Survey provides capability to pre generate a response URL and passcode that can be used by an organization to meet their specific data collection need. Enabling this feature requires integration with Survey Manager Service API and updating the following setting in web.config file:

```
<add key="ResponseURL" value="http://SERVER_NAME/APPLICATION_NAME/Survey/" />
```

Update the SERVER_NAME and APPLICATION_NAME marked in yellow in the value for the URL:

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.

- ii. APPLICATION_NAME is the application name created in IIS.

This capability would require custom code to be written by your development team to integrate with Survey Manager Service API. Provide the following information about the Epi Info Web Survey Manager Service to the development team writing the customization:

- a. URL for the Survey Manager Service

`http://SERVER_NAME/APPLICATION_NAME/SurveyManagerServiceV2.svc`

Update the SERVER_NAME and APPLICATION_NAME, marked in yellow, in the value for the URL.

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
- ii. APPLICATION_NAME is the application name created in IIS.
- b) Windows Authentication value is **No**
- c) Binding Protocol used is **Basic**

24. Epi Info Web Survey provides globalization support for most common date and number formats such that data can be entered in the local culture if the deployment of this product is happening outside the United States. This feature is controlled by updating the globalization setting in the web.config file. For a site being configured for use exclusively by a United States user base, no change is required in the settings specified below.

```
<globalization enableClientBasedCulture="true" requestEncoding="utf-8"
responseEncoding="utf-8" culture="auto:en-US" uiCulture="auto:en-US" />
```

If the site is being configured for use outside the United States, then update the globalization setting for the Culture and UiCulture attributes with the Language Culture Name for your culture. You can find your language culture name by browsing the list at the Microsoft page [Table of Language Culture Names, Codes, and ISO Values Method](https://docs.microsoft.com/en-us/previous-versions/commerce-server/ee825488(v=cs.20)) ([https://docs.microsoft.com/en-us/previous-versions/commerce-server/ee825488\(v=cs.20\)](https://docs.microsoft.com/en-us/previous-versions/commerce-server/ee825488(v=cs.20)))

Please note: We have enabled the globalization feature to support common date and number formats for local survey participants. However, not all possible variations for date and number formats are supported. We recommend that you test the system with your specific culture to confirm the system's compatibility.

1.12 STARTING THE SYSTEM

To start the system, perform following steps:

1. Referring to the document titled, “EIWS Admin Client Help,” create an organization using the Survey Manager Admin Client. The organization key created with the new organization will be used at the time of publishing a form using the Epi Info 7 Form Designer.
2. Design your survey to be published to web using the Epi Info 7 Form Designer.
3. When the survey has been designed and is ready to publish, you will be required to provide the endpoint address of the Epi Info Survey Manager Service, authentication and protocol information described in section 3.4.2 step 16 in Epi Info 7 Form Designer. The information goes in the “**Tools / Options**” menu item in the Epi Info 7 Form Designer, on the “**Web Survey**” tab as shown below. After adding the information click on “Ping Service” button to confirm communication between Epi Info and Epi Info Web Survey system. Click on OK to save the Epi Info Web Survey communication information.

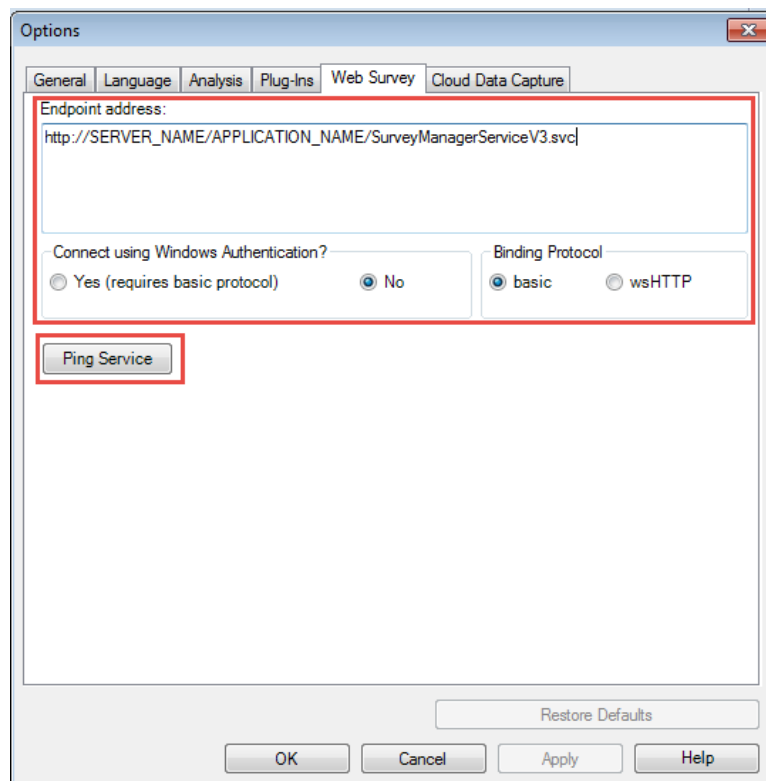


Figure 20: Option to provide the Survey Manager Service endpoint information in Epi Info 7 Form Designer

4. Start the process of publishing the designed survey to web by selecting the File > Publish Form to Web menu item on the Epi Info 7 Form Designer.

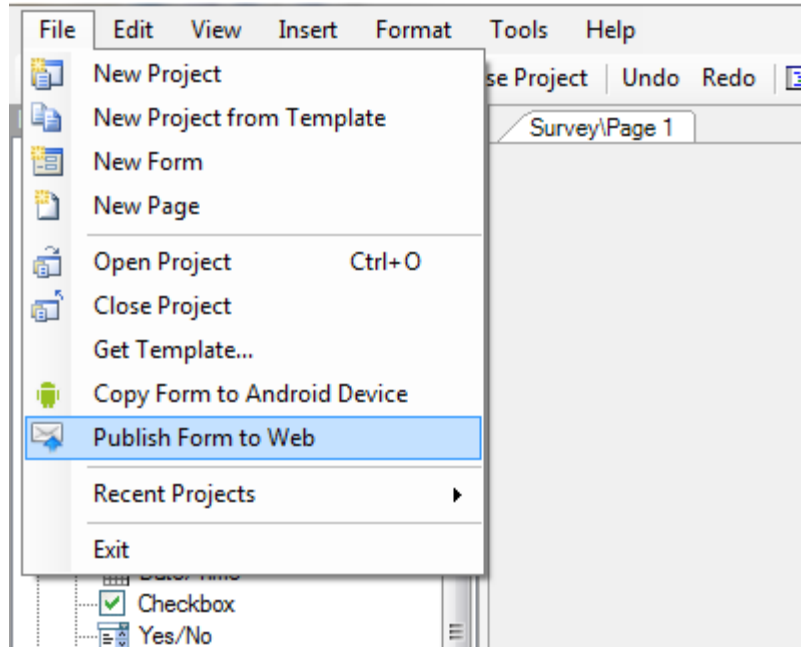


Figure 21: Publish Form to Web menu item under the File menu in Epi Info 7 Form Designer

5. Provide the information in Introduction Page and Exit Page tabs of the Publish Form to Web dialog.
6. Provide the Organization key in Organization Key (required) text box in Publish Options tab and click the Publish Form button.
7. Upon successfully publishing the form using Epi Info 7, you will receive a URL for the survey as shown in the figure below.

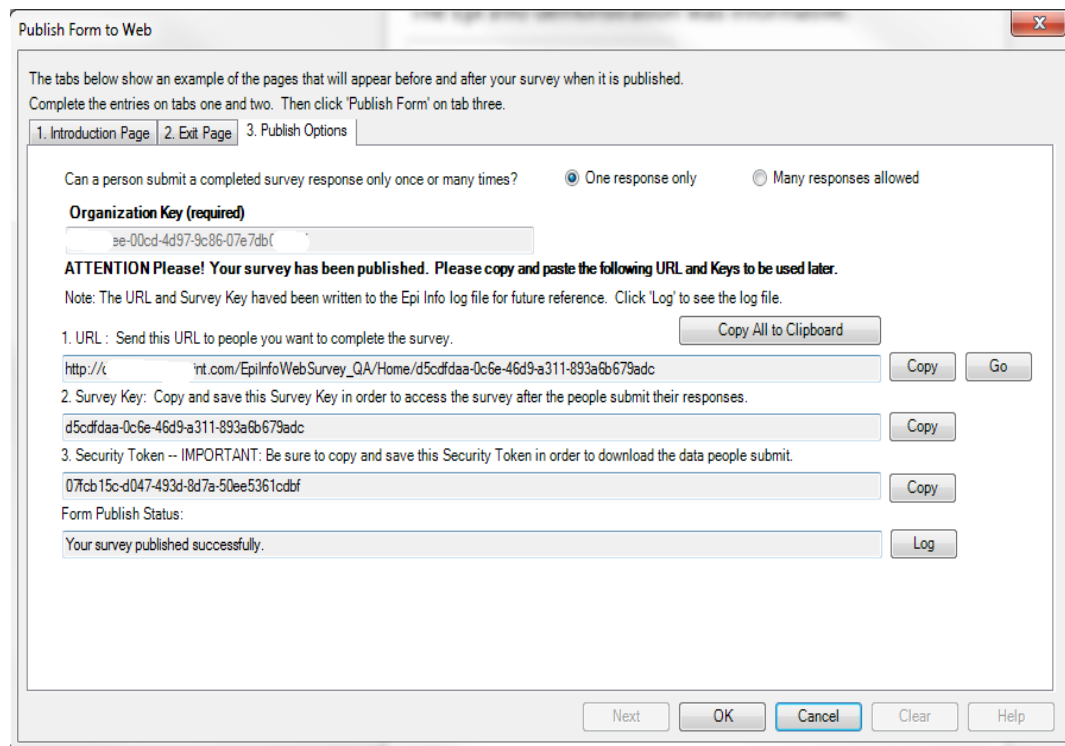


Figure 22: Publish Form to Web Dialog in Epi Info 7 Form Designer showing the result of successfully publishing the web survey

8. Access the survey in web browser using the generated URL to see if the survey is shown as expected.
9. Make sure that you have saved the URL, Survey Key and Security Token if the survey is to be used for collecting data in the production environment. It can be saved using the Copy All to Clipboard button, then pasting the information in a document. The information will be needed for downloading survey responses.

Note: The creation of an organization in Survey Manager Admin Client is the first test of proper connectivity to the database created in section 3.4.1. If the database wasn't configured correctly, or the connection block in section 3.4.2 steps 11 and 12 wasn't encrypted correctly, then this step will fail. If the step succeeds, the database and the application have been configured as expected.

APPLICATION UPGRADE

If you are installing the Epi Info Web Survey system for the first time, please skip this section. This section describes the steps needed to upgrade an existing instance of the Epi Info Web Survey system to the latest version.

1.13 ACCESS CONTROLS

1.13.1 Database

The person updating the existing instance of the Epi Info Web Survey database should have full administrative access on the database server and the rights and privileges to update the database.

1.13.2 Application and services

The person updating and configuring the existing version of the system and services should have administrative access on the web server and should have full access and privileges to update a web application in Internet Information Services (IIS).

1.14 INSTALLING THE UPGRADED VERSION

The installation can be done using the **EIWSIntegrated** package. The package for installation of the system consists of two items: 1) the database in the **Database** folder; and 2) the application and services in the **ApplicationAndServices** folder. The Configuration section describes how these items are used.

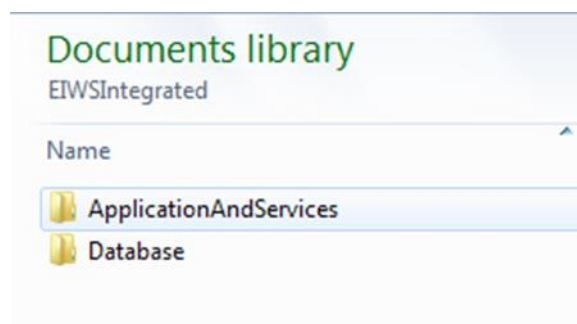


Figure 23: File systems showing components in the EIWSIntegrated package

1.15 CONFIGURATION

1.15.1 Prerequisite

Prior to upgrade it is required to confirm the current version of Epi Info Web Survey deployed in your environment. This is critical for applying the appropriate delta scripts for upgrading the database.

The version of Epi Info Web Survey can be determined by one of the following methods:

- a) The value of “EIWS_Version” key in web.config file of your existing website. The value shown below is not reflective of what may be present in your web.config file

```
<add key="EIWS_Version" value="1.6.0.0"/>
```

- b) Open the URL for test page by replacing the “SERVER_NAME” and “APPLICATION_NAME”
http://SERVER_NAME/APPLICATION_NAME/EIWS/DataService

The footer of the page shows the version number of the application

1.15.2 Database Configuration

The database configuration would involve applying the update to the existing instance of Epi Info Web Survey database on SQL Server 2008 database server. The update of the database may require assistance from a SQL Server DBA if access to the database server is managed by the DBA. The update script should be changed as needed for local circumstances or as per best practices followed by the organization deploying this system.

NOTE: The update to Epi Info Web Survey V1.5 is a major update of the database schema and objects. Make sure the application database is backed up before performing upgrade. The upgrade will result in adding several tables, stored procedures, triggers etc. to Epi Info Web Survey database. This upgrade enables running all Epi Info Web & Cloud products from single database schema and enables integration amongst the products. It also allows use of Epi Info SQL Server database for large scale data collection and automation.

1. Choose the database server where the Epi Info Web Survey database is hosted. Log into the database server using an account which has admin privileges to update the database, manage database users and assign privileges to the users.
2. Make a backup of the Epi Info Web Survey database before attempting to apply the needed updates.
3. Determine the scripts to run for upgrade.
 - (a) If upgrading from version 1.2 to version 1.6, you will have to run “eiws_delta_Upgrade_v1.2_to_v1.3.sql” “eiws_delta_Upgrade_v1.3_to_v1.4.sql” and “eiws_delta_Upgrade_v1.4_to_v1.5.sql” and “eiws_delta_Upgrade_v1.5_to_v1.6.sql” delta scripts
 - (b) If upgrading from version 1.3 to version 1.6, you will have to run “eiws_delta_Upgrade_v1.3_to_v1.4.sql” and “eiws_delta_Upgrade_v1.4_to_v1.5.sql” and “eiws_delta_Upgrade_v1.5_to_v1.6.sql” delta script
 - (c) If upgrading from version 1.4 to version 1.6, you will have to run only
 - (d) “eiws_delta_Upgrade_v1.4_to_v1.5.sql” and “eiws_delta_Upgrade_v1.5_to_v1.6.sql” delta script
 - (e) If upgrading from version 1.5 to version 1.6, you will have to run only “eiws_delta_Upgrade_v1.5_to_v1.6.sql” delta script
4. Open the appropriate delta script after selecting the Epi Info Web Survey database in SQL Server.

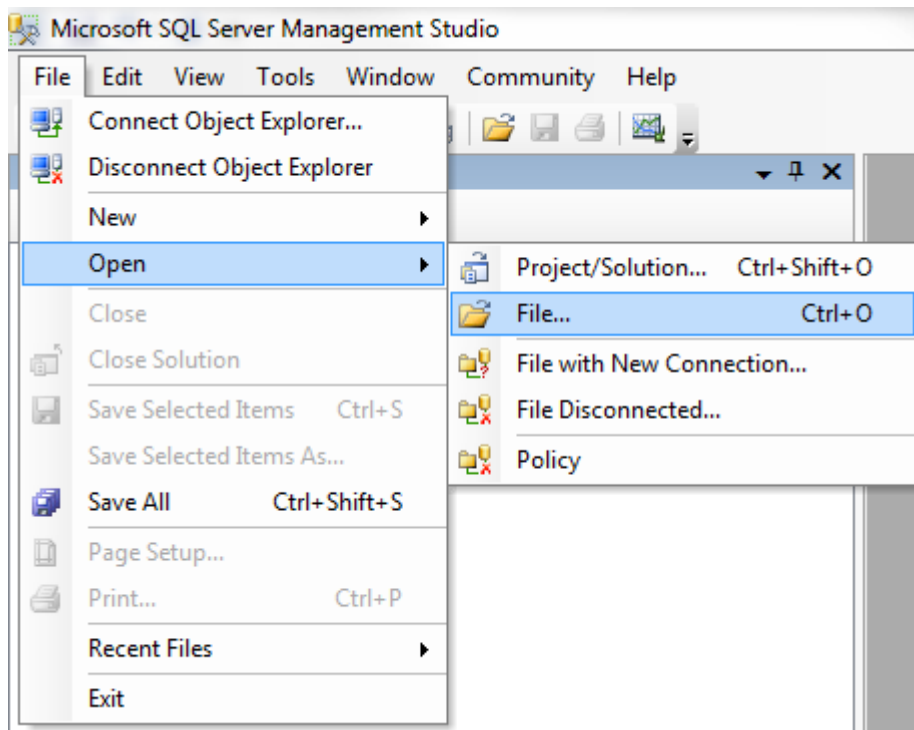


Figure 24: File menu to open the database script file

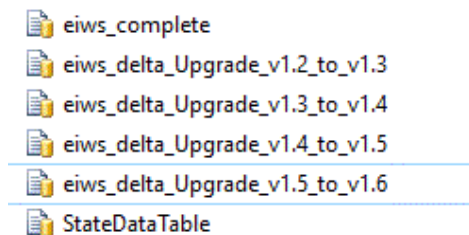


Figure 25: Open File dialog showing the delta script.

5. Make sure that Epi Info Web Survey database name (if it is EIWS or the name you had provided) displays in the Available Databases drop down list in Microsoft SQL Server Management Studio.
6. Execute the script to update the database.
7. Once the scripts have executed successfully the updates are applied. Refresh the Epi Info Web Survey database instance. In the object explorer navigate to the Epi Info Web Survey to validate the update. The first visual indicator of a successful database update is the presence of Canvas table under the Tables node in the object explorer.

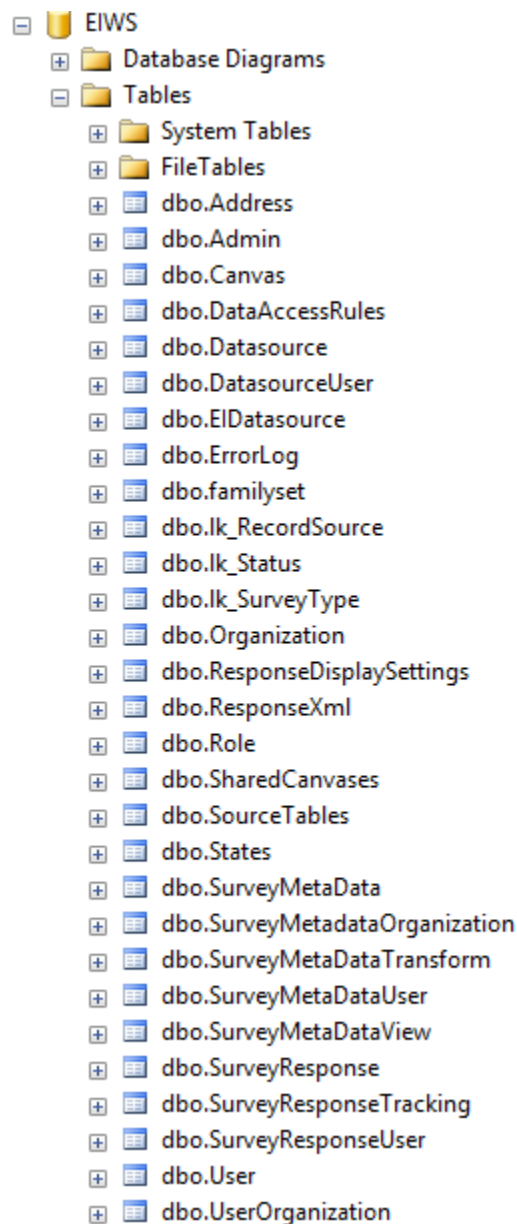


Figure 26: Confirmation that the new schema updates have been applied.

8. You can also execute the StateDataTable.sql in case you are enabling account creation functionality and are in United States. The script populates list of states in United States in the States table to be used by Epi Info Web Survey system as part of User centric account creation option.

1.15.3 Application and Services Configuration

The steps below assume that the EpiInfoWebSurvey web site was previously configured as an application under the default web site.

1. Navigate to the folder called “EpiInfoWebSurvey” under “inetpub\wwwroot”

2. Make a backup of all contents in the EpiInfoWebSurvey folder before making any changes.
3. Make sure the web.config file of the backed up EpiInfoWebSurvey folder is immediately available for reference as it will be needed for updating the content of the new web.config file.
4. Delete the content of the EpiInfoWebSurvey folder under “inetpub\wwwroot” after making the backup.
5. From the EIWSIntegrated package, copy the content of the folder “EIWSIntegrated\ApplicationAndServices” to “inetpub\wwwroot\EpiInfoWebSurvey” folder.
6. Using your preferred editor, open the web.config file in EpiInfoWebSurvey site and the web.config file of the backed up site for editing.

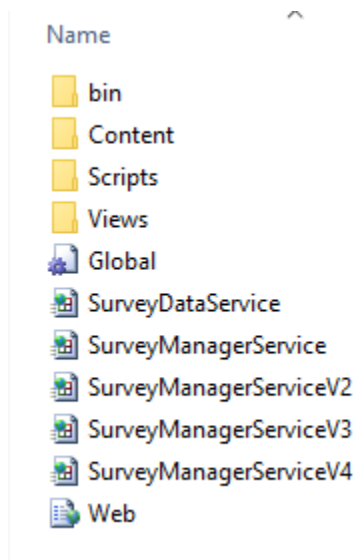


Figure 27: Web.config file for an integrated application

7. From the original web.config file that you backed up, copy and update the Email notification section, shown below, to the new web.config file.

```
<!--Email notification-->
<add key="EMAIL_USE_AUTHENTICATION" value="FALSE"/>
<add key="EMAIL_USE_SSL" value="FALSE"/>
<add key="EMAIL_FROM" value="XXXXXXXXXXXXXXXXXXXX"/>
<add key="EMAIL_PASSWORD" value="XXXXXXXXXXXXXXXX"/>
<add key="SMTP_PORT" value="XXXXXXXXXX"/>
<add key="SMTP_HOST" value="XXXXXXXXXXXXXXXX"/>
```

8. From the original web.config file that you backed up, copy and update the Log Setting section, shown below, to the new web.config file.

```
<!-- Log Setting -->
<add key="LOGGING_SEND_EMAIL_NOTIFICATION" value="FALSE"/>
<add key="LOGGING_ADMIN_EMAIL_ADDRESS" value="XXXXX"/>
<add key="LOGGING_EMAIL_SUBJECT" value="Epi Info Web Survey - Exception"/>
```

8. From the original web.config file that you backed up, copy and update the URL and AdminKey in the Integrated SurveyManagerService Settings section, shown below, to the new web.config file.

```
<!--Integrated SurveyManagerService Settings-->
<add key="URL" value="http://SERVER_NAME/<APPLICATION_NAME/Home/" />
<add key="AdminKey" value="A/kTiX1HhAef9pdWIbGCKs1NOcEvboxqUrSwahJoB7uGN3
+/YROi4alwj9UWZLmXy" />
```

9. From the original web.config file that you backed up, copy and update the settings in User Interface section in case they are different.

```
<!--User Interface Start-->
<add key="CUSTOM_THEME" value="CLASSIC"/> <!--BLUE or CLASSIC-->
<add key="TECHNICAL_SUPPORT_IS_ENABLED" value="FALSE"/>
<add key="TECHNICAL_SUPPORT_EMAIL" value=""/>
<add key="TECHNICAL_SUPPORT_PHONE" value=""/>
<add key="FOOTER_LOGO_PATH" value=""/>
<add key="SHOW_HOME_LOGO" value="FALSE"/>
<add key="HOME_LOGO_PATH" value=""/>
<add key="ExitURL" value="" />
```

10. User Interface settings section has a setting for ExitURL that may not be present in your backed up web.config file. If you want to use this feature Step 15 of Section 3.4.2. This setting without any value preserves application's default behavior.

```
<add key="ExitURL" value="" />
```

11. From the original web.config file that you backed up, copy and update the Account creation settings if you are using this feature.

```
<!--Account Creation Start-->
<add key="ACCOUNT_TYPE" value=""/>
<add key="BINDING_PROTOCOL" value="Basic"/>
<add key="WINDOW_AUTHENTICATION" value="No"/>
<add key="ENDPOINT_ADDRESS"
value="http://SERVER_NAME/APPLICATION_NAME/SurveyManagerServiceV3.svc"/>
```

```
<add key="NOTIFY_ADMIN_IS_ENABLED" value="False"/>
<add key="APPLICANT_VALIDATION_IS_ENABLED" value="False"/>
<add key="SYSTEM_ADMIN_EMAIL" value="me@here.now"/>
<add key="NOTIFY_ADMIN_EMAIL" value="me@here.now" />
<add key="EPI_INFO_DOWNLOAD_URL" value="https://www.cdc.gov/epiinfo"/>
```

12. From the original web.config file that you backed up, copy and update ResponseURL value in case this feature is being used for custom implementation

```
<!--Pre-Filled Responses Start: For custom implementation only-->
<add key="ResponseURL" value="http://SERVER_NAME/APPLICATION_NAME/Survey"/>
```

13. **Important!** Version 1.4.0.0 of Epi Info Web Survey has introduced the concept of customized encryption keys used by the system. Please remove these keys in the web.config file if upgrading from version prior to Version 1.4.0.0 to avoid any incompatibilities.

```
<!-- Encryption Keys -->
<add key="KeyForConnectionStringPassphrase"
value="atKjwl1YhPv94716lQ8aEophUSm2mz+9VkmZDgzRgscopSRyJ2/vRs7eJTF43X6r/PiBQ
S2Pb99lzoA0DAVxfmwToq1QXDgovFCZP+axtINlw9vbidyz9cG0Ty3LNjxCYuMoIw==" />
<add key="KeyForConnectionStringSalt"
value="LwKTr/KY9ILBwtIDVivr09zwXx1f101FiUMgwTti82LCY0Erdrrdu45vaVQntXe6kD0Jj
K1RXkLL8HdmuzPSEYsvtIKDJQ8SGdAtzHWpYrpkdXmcd5bi/pL04UdL1H3f2ZfpZg==" />
<add key="KeyForConnectionStringVector" value="Z5AIQts7a6hFewK/" />
```

14. From the original web.config file that you backed up, copy and update the EIWSEntities, shown below, to the new web.config file.

```
<add name="EIWSEntities" connectionString="0jYL92zvh/3MZqbJAyKuCKa4bDoF/bIMU
Tr07X8rI/Dx1Mpn6C4gFS+zig39nLEosiQr3QCwpD5bQUKmaIaCUXLaMFR3/urNDPaUo9NXuD40se
DGSTicly1Xcr8F+dNzqYijhBwtQv2aJwvHfBU1laTgtfUHMmMrxD/LBNV1YxkfpFaY3Rg5zZvI9RG
NjJmcACiU0sFzsi1p2y92HuiKJlQD+s8X3Ue9pWnB8zj6o6kyA22+eHquKNGki66xIsSUj85prey
gNHqwEscuq2PoxrQvi0e1X1SrJVbmSlXPslFXJso4WRxKewW1byKrQ8lQgxT4t002T7La67bEURk
mTj6P8ftXMaC2JkLraRxXm1DXP1EEwgJxzvUL596Jwz928ULdiCHHhVBH+4QPpj30MfWUY1QL6xd
5W7vNE2ovTHr1I=" />
```

15. From the original web.config file that you backed up, copy and update the EIWSADO, shown below, to the new web.config file.

```
<add name="EIWSADO" connectionString="TXTToS5W9+YIuXtIix/w+VEhNtJfnp+eY/le+
iEA3Ptjhy9NnnaOHVIqIcy8EiP8WSscBPUM9jtmob/u6pAiCgn+DhSnlMYKszq84LvzS2PQVBav
hLvXX1TVEWINTjuhN4FvsfyjPngk9uV7Hx1hUA==" />
```

16. Epi Info Web Survey provides globalization support for most common date and number formats such that data can be entered in the local culture if the deployment of this product is happening outside the United States. This feature is controlled by updating the globalization setting in the web.config file. For a site being configured for use exclusively by a United States user base, no change is required in the settings specified below.

```
<globalization enableClientBasedCulture="true" requestEncoding="utf-8"
responseEncoding="utf-8" culture="auto:en-US" uiCulture="auto:en-US" />
```

If the site is being configured for use outside the United States, then update the globalization setting for the Culture and UiCulture attributes with the Language Culture Name for your culture. You can find your language culture name by browsing the Microsoft page for [Table of Language Culture Names, Codes, and ISO Values Method \(https://docs.microsoft.com/en-us/previous-versions/commerce-server/ee825488\(v=cs.20\)\)](https://docs.microsoft.com/en-us/previous-versions/commerce-server/ee825488(v=cs.20))

Please note: We have enabled the globalization feature to support common date and number formats for local survey participants. However, not all possible variations for date and number formats are supported. We recommend that you test the system with your specific culture to confirm the system's compatibility.

17. This should complete the Epi Info Web Survey site upgrade.
18. You may see some new settings as compared to those present in the web.config file of the backed up version. Refer to Section 3.4.2 on Application and Services configuration to customize the new settings. All the settings applicable to the latest version are listed in Appendix B at the end of this document.

SYSTEM USAGE

1.16 INSTRUCTIONS

The Epi Info Web Survey system is used with Epi Info 7 to publish surveys created in the Epi Info 7 Form Designer. The process of publishing an Epi Info 7 survey creates a URL to access the survey on the web. This URL can be distributed to respondents by email, posted on a website, posted to a blog or social media sites, or by any other means. A survey participant completes the survey by opening the provided URL in their browser. The responses can be downloaded to Epi Info 7 any time after the first participant completes and submits a response.

1.17 CONVENTIONS AND ERROR MESSAGES

1.17.1 Epi Info Web Survey Manager Service Test

The first step before using the system involves the process of pinging Epi Info Web Survey Manager Service by typing its URL into the Survey Manager Admin Client. If you are not able to ping the service, the error message shown below is displayed.

The screenshot shows a dialog box titled "Local Settings" with a light brown background. At the top, it has a label "Manager Service URL:" followed by a text box containing the URL "http://www.test.org/epiInfoWebSurvey/SurveyManagerService.svc". Below this are two groups of radio buttons. The first group is labeled "Windows Authentication" and has two options: "Yes (requires basic protocol)" and "No", with "No" selected. The second group is labeled "Binding Protocol" and has two options: "basic" and "wsHTTP", with "basic" selected. Below these is a label "Ping Result:" followed by a text box containing the error message: "Failed to create Service Client: There was no endpoint listening at http://www.test.org/epiInfoWebSurvey/SurveyManagerService.svc that could accept the". At the bottom right of the dialog is a "Ping" button. At the bottom left is a checkbox labeled "Show Web Service Testing Feature Pages" which is unchecked. At the bottom right is an "Update Local Settings..." button.

Figure 28: Error message when the Survey Manager Service is not accessible

The possible causes could be:

1. The Epi Info Web Survey Manager Service URL or Windows Authentication and/or Binding Protocol information is not correct. Please confirm the Windows Authentication and Binding Protocol information is correct. Also validate that the URL is correct by browsing to the URL in the browser. If the URL is correct you should get a page as shown below.

ManagerService Service

You have created a service.

To test this service, you will need to create a client and use it to call the service. You can do this using the svcutil.exe tool from the command line with the following syntax:

```
svcutil.exe http://[url] /EpiInfoWebSurvey/SurveyManagerService.svc?wsdl
```

This will generate a configuration file and a code file that contains the client class. Add the two files to your client application and use the generated client class to call the Service. For example:

C#

```
class Test
{
    static void Main()
    {
        ManagerServiceClient client = new ManagerServiceClient();

        // Use the 'client' variable to call operations on the service.

        // Always close the client.
        client.Close();
    }
}
```

Visual Basic

```
Class Test
    Shared Sub Main()
        Dim client As ManagerServiceClient = New ManagerServiceClient()
        ' Use the 'client' variable to call operations on the service.

        ' Always close the client.
        client.Close()
    End Sub
End Class
```

Figure 29: Survey Manager Service accessible in browser.

2. If you do not get the page shown above then the system has not been configured properly and would require reconfiguration

1.17.2 Organization Account Creation Test

If you are able to successfully ping the Epi Info Web Survey Manager Service, the next step involves creation of an organization account using the Survey Manager Admin Client in order to publish a survey using Epi Info 7. If you are unable to create an organization account, you will get an error message similar to the one shown below.

Admin Key

Admin Key:

Add Organization

Organization Name:

Organization Key:

Message: Error occurred while trying to add new organization key. Please try again.

Figure 30: Error message upon request to create an account.

The error indicates a problem with the request being processed by the Epi Info Web Survey Manager Service. The most common cause of this problem is the connection string pointing to the database.

1.17.3 Database Connection String Test

A problem with application connection string can be validated by navigating to the following URL in the browser:

http://SERVER_NAME/APPLICATION_NAME/EIWST/DataService

Update the SERVER_NAME and APPLICATION_NAME marked in yellow in the value for the URL.

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
- ii. APPLICATION_NAME is the application name created in IIS.

If there is a problem with the application connection string, you would get an error message for the Database Test section of the results as shown in the figure below.

Data Service and Database Test Results

Database Test: ✖ **Error**


Entity connection string Test: ⚠ **Incomplete**

Data Service Test: ⚠ **Incomplete**

Invalid length for a Base-64 char array.

mscorlib

at System.Convert.FromBase64String(String s) at Epi.Web.Common.Security.Cryptography.Decrypt(String cipherText) in C:\Projects\EpiInfoWebSurvey\Epi Info Web Survey\Epi.Web.Common\Security\Cryptography.cs:line 59 at Epi.Web.MVC.Controllers.EIWSTController.Index(String surveyid) in C:\Projects\EpiInfoWebSurvey\Epi Info Web Survey\Epi.Web\Controllers\EIWSTController.cs:line 60

Powered by:  Version: 1.2.0.0






Figure 31: Epi Info Web Survey diagnostics view showing status when the application is not able to communicate with the database server.

After the indicator for various tests, there is some technical information on the cause of error. This is a validation that there is certainly something wrong with the

connection string. This requires inspection of every part of the plain text connection string EIWSADO and making sure that it has the same format as provided in this documentation.

After updating the EIWSADO connection string, open the test URL again. The result screen will get updated as shown below if the connection string is correct.

The screenshot displays a diagnostics view titled "Data Service and Database Test Results". It contains the following information:

- Database Test: **Success**
- Entity connection string Test: **Error**
- Data Service Test: **Incomplete**

The error message states: "The type initializer for 'Epi.Web.EF.DataObjectFactory' threw an exception." Below this, the stack trace is shown:

```
Epi.Web.EF
at Epi.Web.EF.EntityOrganizationDao.GetOrganizationNames() in C:\Projects\EpiInfoWebSurvey\Epi Info Web Survey\Epi.Web.EF\EntityOrganizationDao.cs:line 136 at Epi.Web.MVC.Controllers.EIWSSTController.Index(String surveyid) in C:\Projects\EpiInfoWebSurvey\Epi Info Web Survey\Epi.Web\Controllers\EIWSSTController.cs:line 103
```

At the bottom of the diagnostics view, it says "Powered by: Version: 1.2.0.0" and includes the CDC logo.

Figure 32: Epi Info Web Survey diagnostics view showing status when the application can communicate with the database server, but an error exists with the connection string.

1.17.4 Application's Database Connection String Test

Once the EIWSADO connection string is correct then use the relevant pieces of the plain text connection string to update the relevant section of the EIWSEntities connection string according to the documentation. If the EIWSEntities connection string is correct, repeat the step as above by navigating to the URL again:

http://SERVER_NAME/APPLICATION_NAME/EIWSST/DataService

If the EIWS Entities connection string is set up correctly, you should get the result as shown below.

Data Service and Database Test Results

Database Test: **Success**

Entity connection string Test: **Success**

Data Service Test: **Error**

Object reference not set to an instance of an object.

Epi.Web.Mvc

at Epi.Web.Mvc.Repositories.IntegratedSurveyInfoRepository.GetSurveyInfo(SurveyInfoRequest pRequest) at Epi.Web.Mvc.Facade.SurveyFacade.GetSurveyInfoModel(String surveyId) at Epi.Web.Mvc.Controllers.EIWSTController.Index(String surveyid)

Powered by: Version: 1.2.0.0

Figure 33: Epi Info Web Survey diagnostics view showing status when the applications connection strings are set up correctly.

1.17.5 Epi Info Web Survey Test

With the application connection string correctly set up, you should be able to successfully create an organization account using the Survey Manager Admin Client. Upon publishing the survey, browse to the following URL in your browser:

http://SERVER_NAME/APPLICATION_NAME/EIWST/DataService/SurveyKey

Update the SERVER_NAME and APPLICATION_NAME marked in yellow in the value for the URL:

- i. SERVER_NAME is the Domain Name Server (DNS) name of the web server where the application is hosted.
- ii. APPLICATION_NAME is the application name created in IIS.
- iii. SurveyKey represents the survey key received upon publishing a web survey from the Publish Form to Web dialog.

If the Epi Info Web Survey is not configured properly, you should get a result similar to one shown below upon browsing to the URL.

Data Service and Database Test Results

Database Test: **Success**

Entity connection string Test: **Success**

Data Service Test: **Error**

Object reference not set to an instance of an object.

Epi.Web.Mvc

at Epi.Web.Mvc.Repositories.IntegratedSurveyInfoRepository.GetSurveyInfo(SurveyInfoRequest pRequest) at Epi.Web.Mvc.Facade.SurveyFacade.GetSurveyInfoModel(String surveyId) at Epi.Web.Mvc.Controllers.EIWSController.Index(String surveyId)

Powered by: Version: 1.2.0.0

Figure 34: Epi Info Web Survey diagnostics view showing status when there is problem with Data Service component of the application.

If the system is set up correctly, then you should get a result similar to the one shown below upon browsing to the URL.

Data Service and Database Test Results

Database Test: **Success**

Entity connection string Test: **Success**

Data Service Test: **Success**

Powered by: Version: 1.2.0.0

Figure 35: Epi Info Web Survey diagnostics view showing status for properly configured site.

At this point if you open the URL received in Epi Info 7 you should be able to see the Survey with a “Draft” watermark as shown below for a Sample Survey.

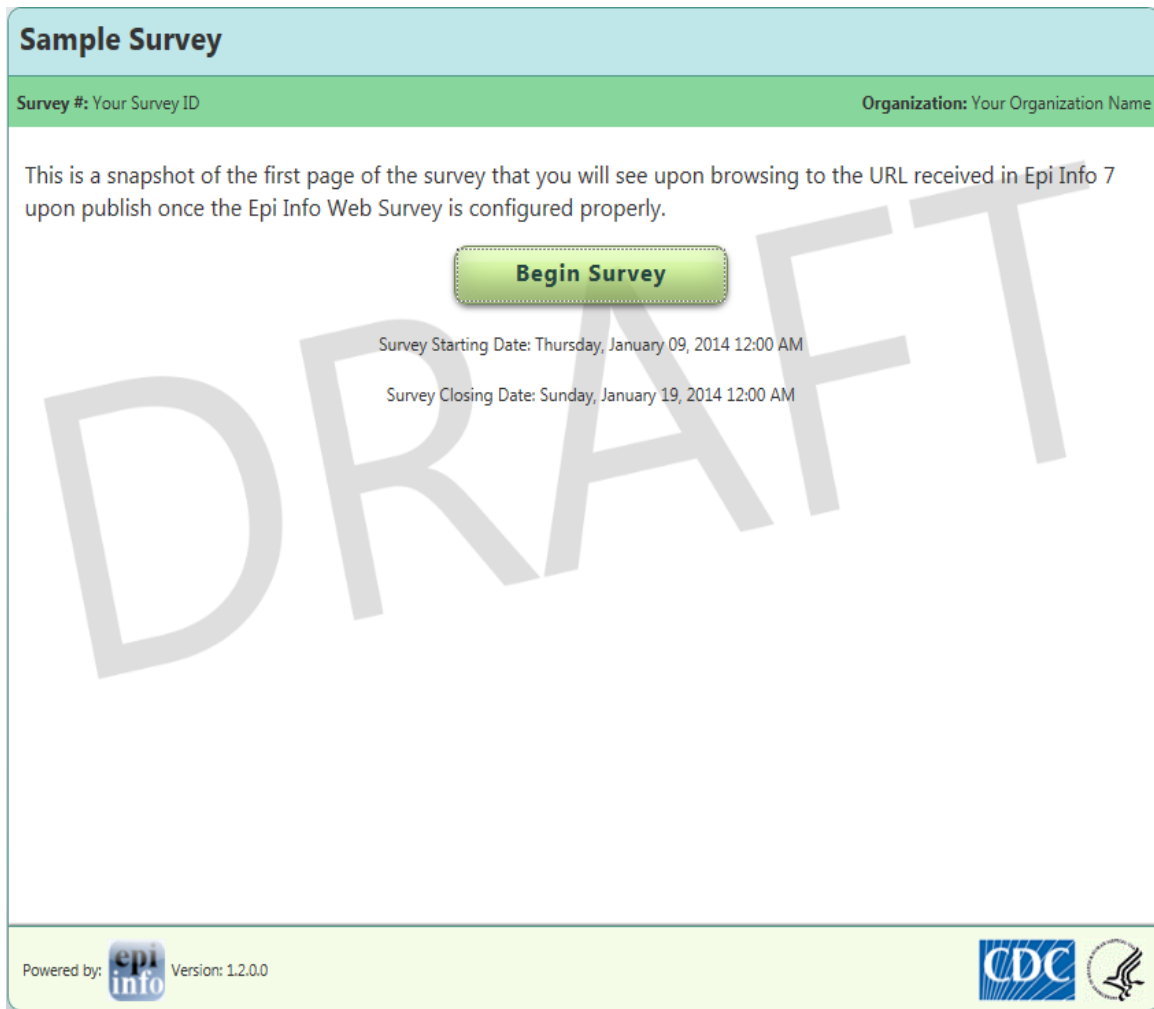


Figure 36: First page of Epi Info Web Survey when the system is configured properly.

Congratulations! You have successfully created and deployed a sample survey using Web Survey.

If there is a problem with the survey, with unsupported controls on the form, or with check code that is not supported, then you will receive an error message similar to one shown below. You should revisit your Epi Info Form, address the problem, and try again.

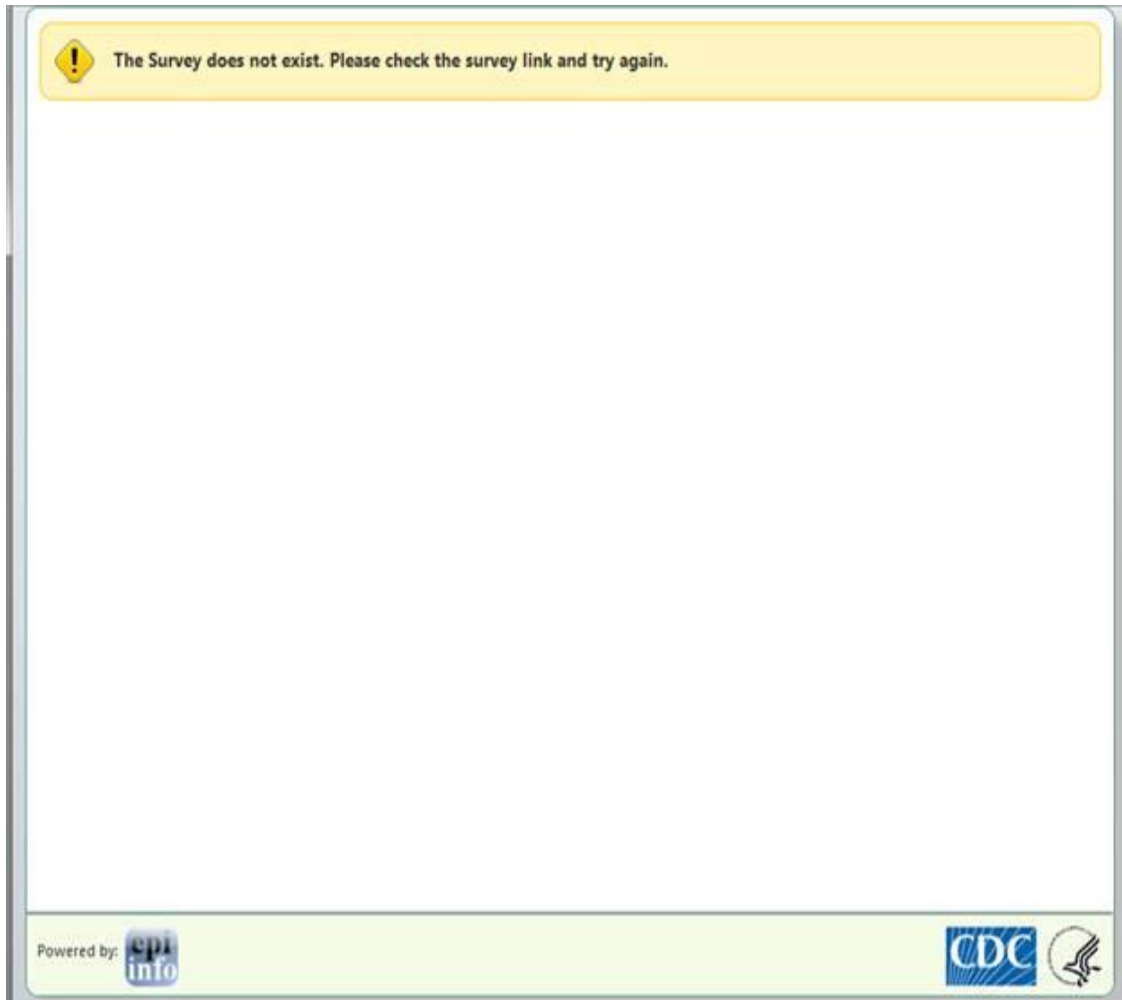


Figure 37: System error when the system is not configured properly.

APPENDIX A: REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
EIWS Admin Client Help	This document describes the Epi Info Web Survey Manager Admin Client and how to use it.	/EIWSIntegrated/Documents

APPENDIX B: APPLICATION SETTINGS

The following table summarizes all the settings applicable to the latest version of Epi Info Web Survey application and services.

Category	Settings
MVC Setting	<add key="aspnet:UseTaskFriendlySynchronizationContext" value="true" />
	<add key="webpages:Version" value="2.0.0.0" />
	<add key="webpages:Enabled" value="false" />
	<add key="PreserveLoginUrl" value="true" />
	<add key="ClientValidationEnabled" value="true" />
	<add key="UnobtrusiveJavaScriptEnabled" value="true" />
Epi Info Web Survey Version	<add key="EIWS_Version" value="Version Number"/>
Email Notification	<add key="EMAIL_USE_AUTHENTICATION" value="FALSE"/>
	<add key="EMAIL_USE_SSL" value="FALSE"/>
	<add key="EMAIL_FROM" value="XXXXXXXXXXXXXXXXXXXX"/>
	<add key="EMAIL_PASSWORD" value="XXXXXXXXXXXXXXXX"/>
	<add key="SMTP_PORT" value="XXXXXXXXXX"/>

	<code><add key="SMTP_HOST" value="XXXXXXXXXXXXX"/></code>
Log Setting	<code><add key="LOGGING_SEND_EMAIL_NOTIFICATION" value="FALSE"/></code>
	<code><add key="LOGGING_ADMIN_EMAIL_ADDRESSES" value="XXXXX"/></code>
	<code><add key="LOGGING_EMAIL_SUBJECT" value="Epi Info Web Survey - Exception"/></code>
Caching	<code><add key="CACHE_IS_ON" value="FALSE"/></code>
	<code><add key="CACHE_DURATION" value="20"/></code>
	<code><add key="CACHE_SLIDING_EXPIRATION" value="TRUE"/></code>
Messages	<code><add key="SURVEY_NOT_EXISTS" value="The Survey does not exist. Please check the survey link and try again."/></code>
	<code><add key="SURVEY_SUBMITTED_MESSAGE" value="This survey has been submitted."/></code>
	<code><add key="SURVEY_CLOSED_MESSAGE" value="This survey is currently closed. Please contact the author of this survey for further assistance."/></code>
	<code><add key="SURVEY_SUBMISSION_MESSAGE" value="Thank you! Your survey has been submitted."/></code>

Integrated Survey Manager Service Setting		<add key="URL" value="http://SERVER_NAME/APPLICATION_NAME/Home/" />
		<add key="AdminKey" value="8hYbD0qvA0vvjoVbEjktplq68/Gke0eC/2hq9Jjh6W5Yfh//+GVnycZyISwMuNSI" />
		add key="maxBytesPerRead" value="2048000" />
		<add key="BandwidthUsageFactor" value="50" />
Package Type		<add key="INTEGRATED_SERVICE_MODE" value="TRUE" />
Omniture		<add key="OMNITURE_IS_ENABLED" value="False" />
Connection strings		<add name="EIWSEntities" connectionString="encrypted connection string" />
		<add name="EIWSADO" connectionString="Encrypted connection string" />
Account Creation		<add key="APPLICANT_VALIDATION_IS_ENABLED" value="False" />
		<add key="NOTIFY_ADMIN_IS_ENABLED" value="TRUE" />
		<add key="ENDPOINT_ADDRESS" value="http://SERVER_NAME/APPLICATION_NAME/SurveyManagerService.svc" />

	<add key="BINDING_PROTOCOL" value="Basic"/>
	<add key="WINDOW_AUTHENTICATION" value="No"/>
	<add key="ACCOUNT_TYPE" value="ORGANIZATION"/>
	<add key="SYSTEM_ADMIN_EMAIL" value="me@here.now"/>
	<add key="NOTIFY_ADMIN_EMAIL" value="me@here.now" />
	<add key="EPI_INFO_DOWNLOAD_URL" value="http://wwwn.cdc.gov/epiinfo/7/" />
User Interface	<add key="CUSTOM_THEME" value="CLASSIC"/>
	<add key="TECHNICAL_SUPPORT_IS_ENABLED" value="True"/>
	<add key="TECHNICAL_SUPPORT_EMAIL" value="abcd@CSTE.com"/>
	<add key="TECHNICAL_SUPPORT_PHONE" value="111-111-1111"/>
	<add key="FOOTER_LOGO_PATH" value="~/Content/images/cstelogo.jpg"/>
	<add key="SHOW_HOME_LOGO" value="true"/>
	<add key="HOME_LOGO_PATH" value="~/Content/images/cstelogo.jpg"/>
	<add key="ExitURL" value="http://www.youorg.gov" />

Pre-generated URL	<add key="ResponseURL" value=""/>
Encryption Keys	<pre><add key="KeyForConnectionStringPassphrase" value="atKjwl1YhPv94716lQ8aEophUSm2 mz+9VkMzDgzRgscoPsRYJ2/vRs7eJTf43X 6r/PiBQS2Pb99lzoA0DAVxfmwToq1QXDgo vFCZP+axtINlw9vbidyz9cG0Ty3LNjxCYuM olw==" /></pre> <pre><add key="KeyForConnectionStringSalt" value="LwKTr/KY9ILBwtIDVlvrO9zwXx1f10 1FiUMgwTti82LCY0Erdrdu45vaVQntXe6k D0Jk1RXkLL8HdmuzPSEYsvtIKDJQ8SGd AtzHWpYrpkdXmcd5bi/pLO4UdL1H3f2ZfpZ g==" /></pre> <pre><add key="KeyForConnectionStringVector" value="Z5AIQts7a6hFewK" /></pre>
Globalization	<pre><globalization enableClientBasedCulture="true" requestEncoding="utf-8" responseEncoding="utf-8" culture="auto:en- US" uiCulture="auto:en-US" /></pre>