BOCADA

Version 26.1.x

Installation Guide

Table of Contents

Introduction

This document describes the requirements and instructions for installing Bocada. You will need at minimum one Windows Server which will host:

- Microsoft SQL Server
- Bocada Data Collection Services
- Bocada Web Application running on Microsoft IIS Web Server

General Information

Release Notes

Please read the current version *Release Notes* to learn about new features, enhancements, and any known issues.

Supported Web Browsers

The following browsers are supported for use with this version of the Bocada application.

- Chrome (most recent version at time of release)
- Firefox (recent version at time of release)
- Edge (recent version at time of release)

The most current version of Firefox, Chrome, and Edge at the time of release are supported; older versions of these browsers may work as well but are not officially supported.

Bocada Software Downloads

Bocada can be downloaded from the Download Center on the Bocada customer support portal.

Downloaded File Block

When your Bocada release package file was downloaded your browser may have added a ":Zone.Indentifier:$DATA" stream to the zip file. This places a security block on the zip file, and when the contents of the zip file are unzipped, they will also have this stream applied to them. To unblock the file, perform the following**:**

1. -When the zip file is downloaded, right click on the file, select Properties, then Unblock the zip file.

Unzip the contents of the zip file to another folder and the contents will not be blocked.

Bocada System Architecture

Central Data Collection System (CDC)

This document focus is a new Bocada Enterprise installation, including the Central Data Collection (CDC) service, Web Application (IIS), creation of the Bocada database on a Microsoft SQL Server. Installation covered in this document also covers additional Data Collection Servers (DCS) that connect directly with the Bocada database.

Additional component installations and upgrades are covered in separate documentation:

- Remote Data Collector (RDC) Installation
- Bocada Enterprise Upgrade

Bocada Remote Data Collection (RDC) offers flexibility to address security constraints and collect data from additional remote networks. RDC systems are deployed in remote networks to collect data locally and send back to the Bocada CDC for processing and do not interface directly with the Bocada database. Please consult your Bocada Sales or Support Engineer for additional Bocada configuration options and system design.

Minimum System Requirements

For an initial deployment of a Bocada CDC, the following are considered a minimum:

- 8 CPU Cores
- 16 GB RAM
- Three dedicated disks
    - Operating System: 100 GB
    - Data Collection/Application: 250 GB

Note: It is recommended to run a dedicated SQL instance separate from the Bocada environment. If you choose to run the SQL instance on the *same* machine as Bocada services, then additional resources required for the SQL addition:

- Additional 6 CPU Cores for total of 14
- Additional 8 GB RAM for a total of 24
- Additional dedicated disks
    - SQL Data disk: 250 GB
    - SQL Log disk: 150 GB

Microsoft Windows Server

The following sections describe the configuration requirements on the Bocada CDC.

Supported versions

- Microsoft Windows Server 2025
- Microsoft Windows Server 2022
- Microsoft Windows Server 2019
- Microsoft Windows Server 2016

Active Directory Domain

The Bocada Central Data Collection (CDC) system must be added to a Windows Active Directory domain for access to and management of the system.

Helpful Tools

It is recommended to install the following software prior to assist with deployment:

- Web Browser**:** Chrome, Firefox, or Edge to initially configure user access
- SQL Server Management Studio**:** Database connection troubleshooting
- Postman or similar API platform: API connection troubleshooting

Service Account User/Logins

Bocada services can run as Local System or with a Windows Domain User/Service Account. If not choosing Local System, the Windows Domain account running services does not need to be in the local Administrator group on the server; however, must have the following assignments set in *Local Security Policy*.

Log on as a service

The Domain user must be assigned to the *Log on as a service* policy for any Bocada installation.

Log on as a batch job

The Domain user must be assigned to the *Log on as a batch job* policy for any Bocada CDC installation that will manage Remote Data Collector (RDC) Systems.

Roles & Features

SEE: Appendix D: Windows Server Roles & Features for detailed requirements.

Additional Windows Components

The latest versions of Microsoft native components may be installed to support Bocada Enterprise, including:

- Microsoft .NET Windows Server Hosting (version 8.x)
- Microsoft ASP.NET Core version Shared Framework (version 8.x)
- ODBC Driver 17 for SQL Server
- Microsoft Command Line utilities 15 for SQL server

SMTP Connectivity

The Bocada application must be able to connect to the mail server to distribute report data via email.

TLS 1.2 Support

Bocada recommends disabling TLS 1.0 in favor of TLS 1.2 protocol versions on the SQL Server and DCS or Application Server(s).

Disable FIPS

- FIPS is a security measure that prevents proper operation of the Bocada application. Please ensure that FIPS is disabled on the Data Collection and Application servers and Windows group policy is configured accordingly.
- If FIPS is enabled, it will cause various problems such as failure of the Application Server installation when using SQL Authentication, and an error popup when attempting to add a server: "*Exception has been thrown by the target of an invocation.*"
- Please see Appendix E for step by step instructions

Regional Settings

It is not required but is recommended that the regional setting for the CDC be set to English (United States) and the date format set to MM/DD/YYYY. This setting can impact collection and processing data containing dates and datetimes. If you experience issues with data collection after bypassing this recommendation in the installer, please contact Bocada Support.

Microsoft SQL Server

Supported Editions/Platforms

- SQL Server Standard Edition
- SQL Server Enterprise Edition
- AWS RDS for SQL Server
- Azure SQL Managed Instance

Supported versions

- Microsoft SQL Server 2022
- Microsoft SQL Server 2019
- Microsoft SQL Server 2017
- Microsoft SQL Server 2016

User Roles and Permissions

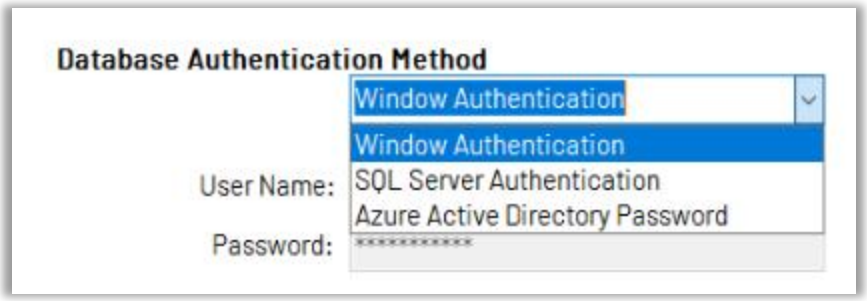
In a new deployment, the Installer *must* create the Bocada database during installation of the Central Data Collection system. Do not create the Bocada database prior to installation.

New Installation

During initial installation, the user chosen for the *Database Authentication Methods* below must be assigned the *dbcreator* role.

Running Bocada

Once the installation is complete and the database has been created, the user can be downgraded to the *public* role and be mapped directly to the Bocada database with *db_owner* permission.



SQL Managed Instance

When using SQL Managed Instance, the *dbcreator* role does not exist, and the user should be assigned the *dbmanager* server-level role.

Additional Data Collection Servers

Most environments will have additional servers to perform data collection. These servers have fewer requirements than the CDC because it does not host an IIS Webserver. Please discuss with Bocada Support to identify the best architecture and DCS requirements.

License Key

The license key is provided by your Bocada Support or Sales representative, and the following information is required:

- SQL Server Name ..... Preferred = SQL Server FQDN
- SQL Instance name ..... default = NULL
- SQL Port ..... default = 1433
- Database Name ..... default = Bocada

Important Notes

The Bocada installer offers two fields for the three SQL Server variables:

SQL Server Name

This should contain ONLY the SQL Server Name. In the past we have supported specifying the port after the SQL Server name as an option, however that is no longer the case.

Instance Name

This should contain ONLY the Instance Name OR Port number. Examples:

- Instance Name
- ,PORT

The above information used to create the license key must match the environment exactly for data collection to function – this is the case for the CDC and each additional DCS used for data collection. If you have application or data collection issues related to the license, please contact Bocada Support.

Firewall Configuration

- Firewalls open between Bocada components as described in the next section
- Firewalls open between Bocada Data Collection Service(s) and backup servers. See Plugin Configuration Guides for details.

Firewall Port Requirements

SQL Server Database from DCS and Bocada Application IIS Server

Each Bocada DCS, and the Bocada Application Server, communicates with the SQL Server database using TCP/IP. The default port used by SQL instances is 1433, but this port is configurable and may have been changed. In addition, UDP port 1434 might be required for the SQL Server Browser Service if named instances are used.

Service	Protocol	SQL Port	Direction
SQL Server	TCP	1433 (or static defined)	Inbound
SQL Server browser	UDP	1434	Inbound

DCS and Application IIS Server to SQL Server Database

Each Bocada DCS initiates communication with the SQL Server database using TCP/IP.

Service	Protocol	SQL Port	Direction
DCS or Application Server to SQL Server	TCP	1433 (or static defined)	Outbound
DCS or Application Server to SQL Server browser	UDP	1434	Outbound

Additional ports that are necessary to communicate to each Backup Server for data collection are listed in the respective Plug-in Configuration Guides for those backup products.

Bocada Application IIS Web Server

The default web port in IIS is port 80. However, when installing the Bocada Application Server, it is the default to configure a different HTTP port for accessing the application; See IIS Configuration, below. Bocada also allows for HTTPS installations, please read about requirements for a certificate and talk to a Bocada support engineer if you need to deploy with HTTPS.

Service	Protocol	Default Port
IIS HTTP	TCP	80 or 8086
IIS HTTPS	TCP	443

Bocada REST API

The Bocada Enterprise REST API is part of Bocada Enterprise and was included in the 23.3.10 release. The default port below Bocada is using. Since the API is HTTPS, it is required to install a certificate in the IIS. You can temporarily use a self-signed certificate that you can create in IIS.

Service	Protocol	Default Port
IIS HTTPS	TCP	3127

Install Bocada

Proceed with installation once the prerequisites have been met. The Bocada installation consists of two separate components:

1. Data Collection Service
2. Application Server

Every installation requires at least one installed Data Collection Service. This will be the Central Data Collection (CDC) Service, will create the Bocada database must include the IIS Web Application Server. Additional Data Collection Servers (DCS) can be installed as need to scale for large environments.

Installation should be performed by a user assigned to the Local Administrator group on the Bocada server.

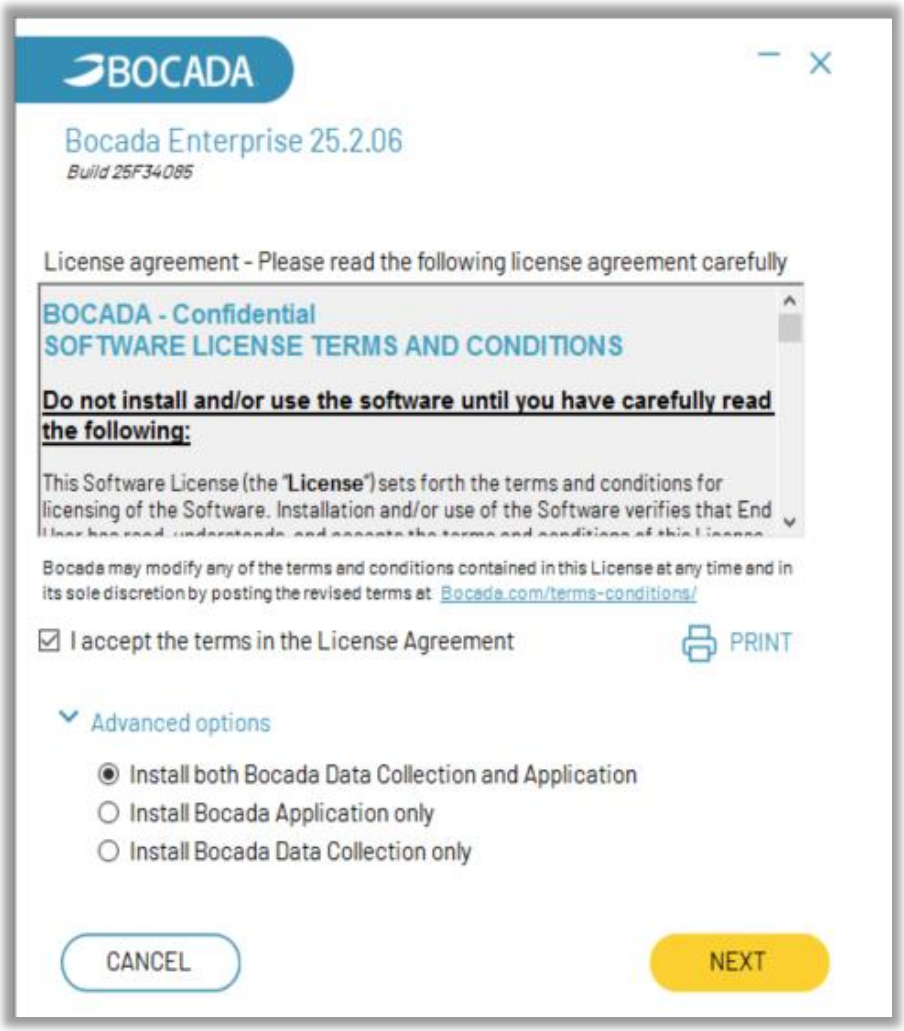
The initial Bocada installation will create the Bocada Database, so a user must be specified that has the *dbcreator* role. This user can be downgraded to the *Public* role with *db_owner* privileges once installation is complete.

Important Note: *Prior to upgrading the Data Collection Service, please ensure you have taken a backup of the database. If there are multiple Data Collection Servers, the first upgrade should be the Central Data Collection Server.*

Note: *The Central (Primary) Data Collection Server is defined in the Bocada database. If the Central DCS is to be renamed or moved, contact* Bocada Support.

License Agreement

Carefully review and accept the terms of the license agreement then click *Next*. If you have questions or concerns regarding the license agreement, please cancel the installation and contact Bocada Support.

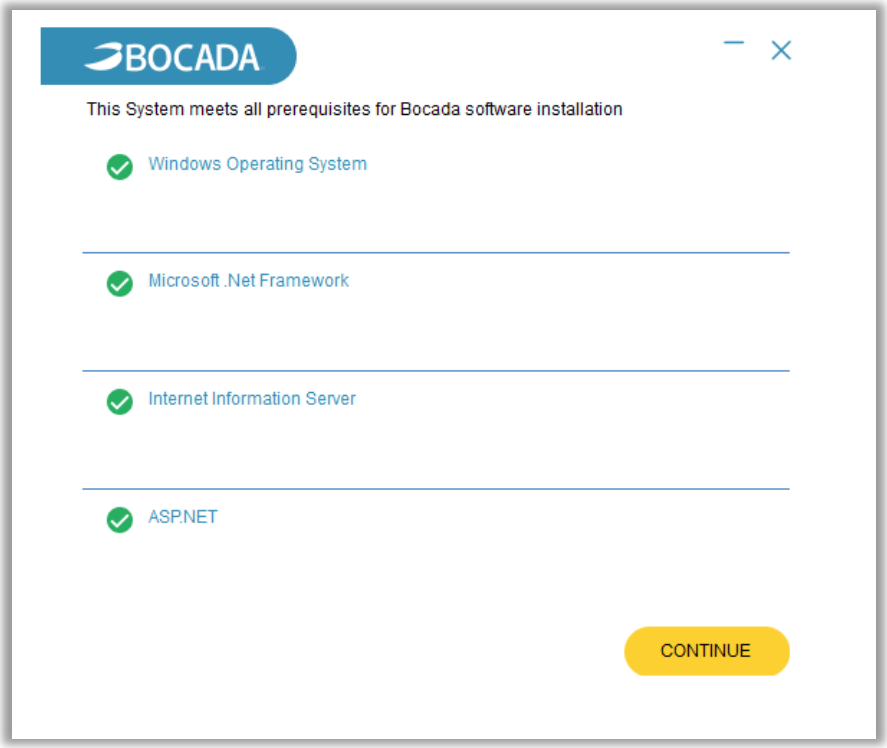


By Default, both Data Collection and Application Server will be installed on same machine. User can choose to install either one by selecting the corresponding choice.

If needed, Bocada will automatically install the latest Microsoft .NET Framework and software pre-requisites as needed

Hardware and Software Requirements

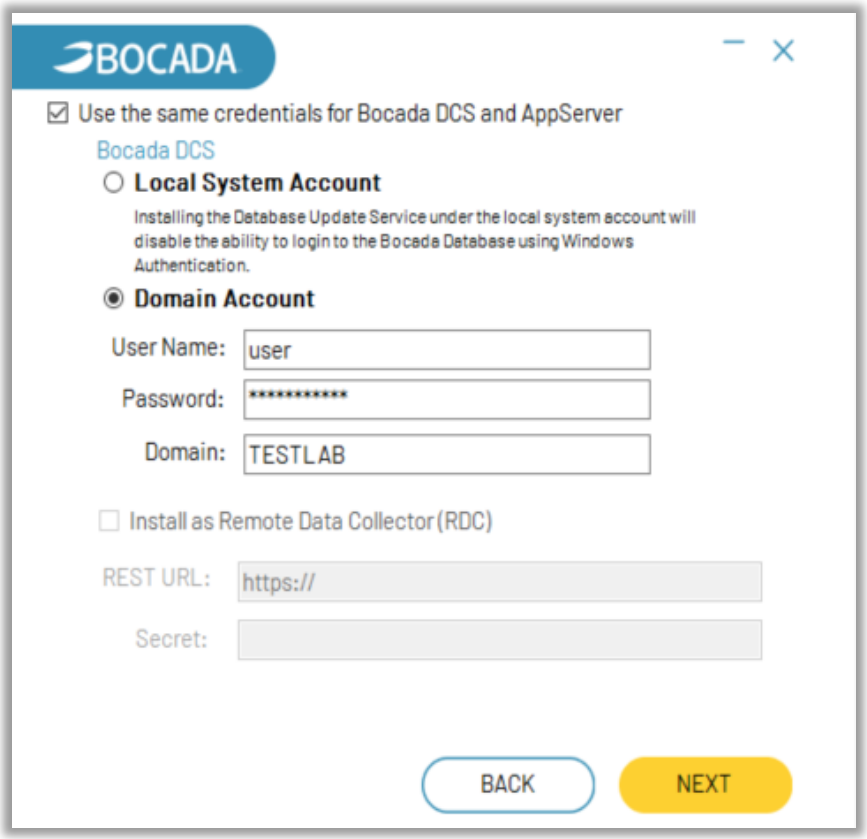
Bocada Installer will verify your system meets the minimum requirements. Any prerequisites not met will be indicated with a red "X" and must be addressed prior to installation. Requirements are detailed above in the **Minimum System Requirements** section.



If error message with the text "Unable to install Data Collection prerequisite" pops up, the installer may need to be rerun to detect the prerequisite and continue the installation.

Service Logins

When installing both Data Collection and Application Server, the service login applies to both services by default. If a separate login is required, un-check the *same credentials* check box and enter credentials independently.



Local System Account

- Database connection will require SQL Authentication

Domain Account

- Service account must have the following assignments set in *Local Security Policy*.
  - Log on as a service: Required for all Bocada installations
  - Log on as a batch job: Required when Bocada CDC installation that will manage Remote Data Collector (RDC) Systems.
- RECOMMENDED: Non-expiring password is to prevent future Data Collection failure
- RECOMMENDED: This user should be used for the SQL Server connection
- Service account does not need to be in the local Administrator group

Note: Installation of RDC is covered in a separate document. Contact Bocada Support if you would like to learn more.

Database Server

Enter the details to connect to the SQL Server instance to create the Bocada database:

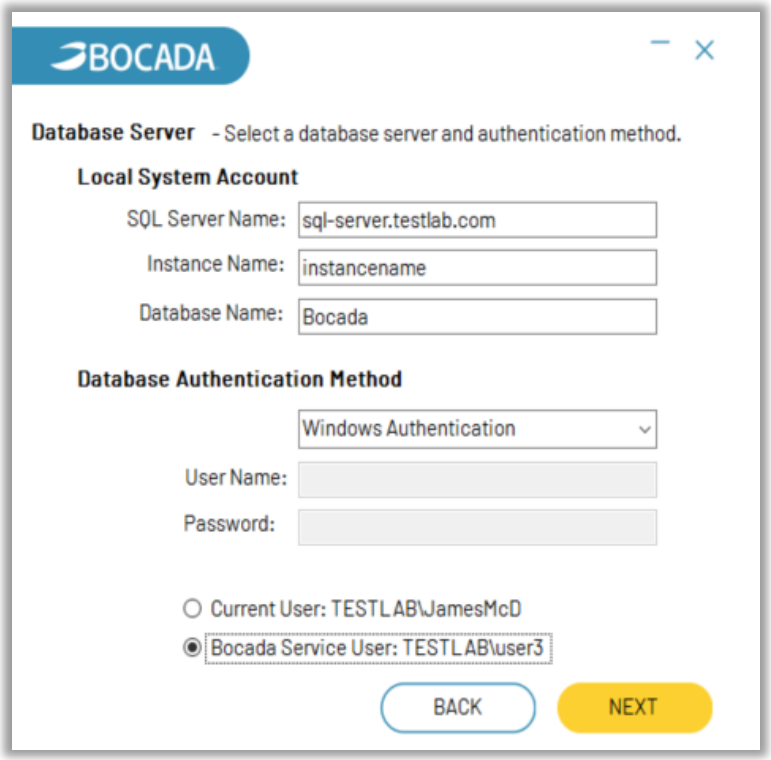
- SQL Server Name:
  - Use fully qualified domain name (FQDN)
  - If a static port is configured include it after the name, e.g.: *server.domain.com,12345*
- Instance Name:
  - Leave blank if using default SQL instance (MSSQLSERVER).
- Database Name:
  - Leave as "Bocada" or change if desired.

Database Server Notes:

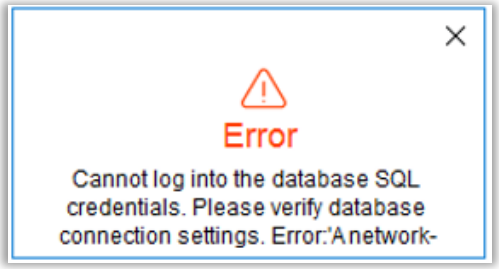
- The Database Settings must match the Bocada license key and Database exactly. It is recommended to provide a screen shot of the above to ensure the key is generated properly.
- The database settings for each additional DCS must match the CDC identically to conform to the license key.

For Database Authentication method, choose Windows or SQL Server Authentication.

- Windows Authentication:
  - Only available when server user is a Windows Domain Account.
  - Recommended to use the Service Account with proper permissions.
  - Current User is the user running the installer and is dedicated to special use cases.
- SQL Server Authentication:
  - Required when Local System Account is running Bocada services
  - Confirm use has the proper permissions.



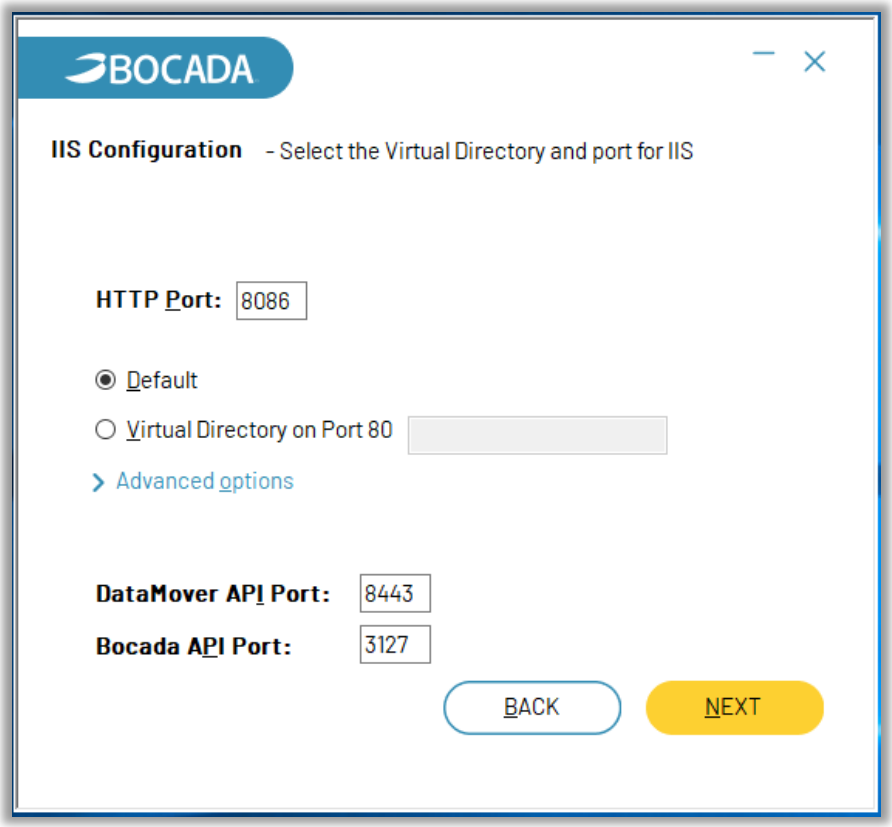
The installation will attempt to connect to the Database. If authentication fails, the following error will be displayed and scrolling down to view the entire message



At this point the Database or Login settings must be verified. Please refer to Appendix A for troubleshooting information.

IIS Configuration

A web application will be installed as part of the Bocada Application. Configure IIS and click *Next* to start installation.



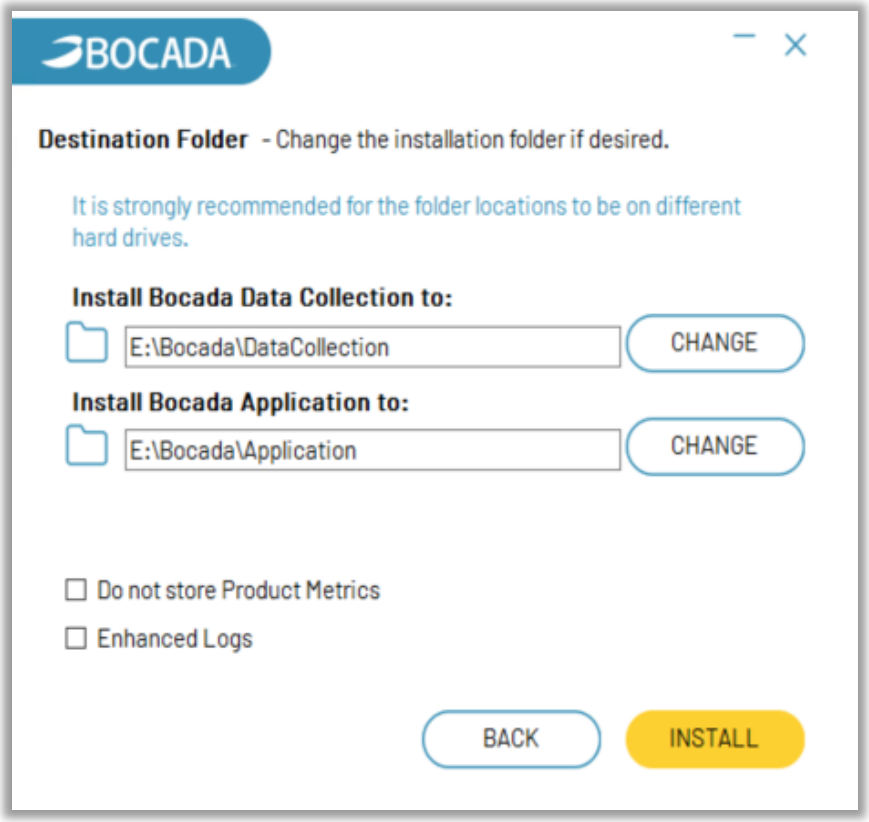
IIS Configuration Notes:

- **Default**: the Application will be installed using the specified HTTP Port (e.g. port 8086) from the HTTP Port setting.
- **Advanced options**: Select HTTPS and update the HTTP Port to 443. the Application will be installed using HTTPS using the specified HTTP Port.

- If Virtual Directory on Port 80 is selected, the Application will be installed to HTTP Port 80 using the HTTP Virtual Directory specified. An HTTP Virtual directory can only be created if there is already a website on the HTTP Port 80.
- DataMover API Port refers to the RDC API. Please consult Bocada Support for additional detail.
- Bocada API port refers to the Bocada Reporting REST API.

Destination Folder

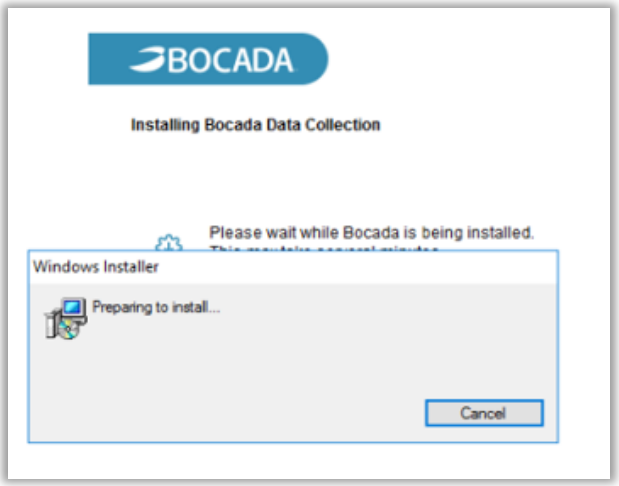
Do not install Bocada components to the C:/ drive. Update the file paths to the drive created for Bocada or applications or select CHANGE or edit the paths directly for Data Collection and the Application which must be installed into different directories.



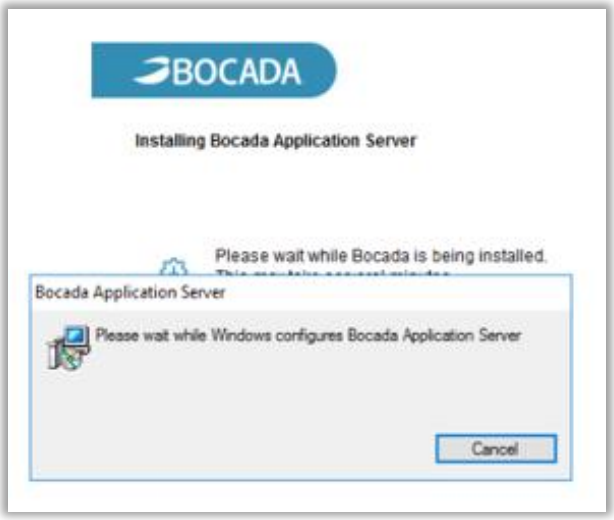
Installation

After confirming the intent for new installations click *Install* to begin installation.

Bocada Data Collection

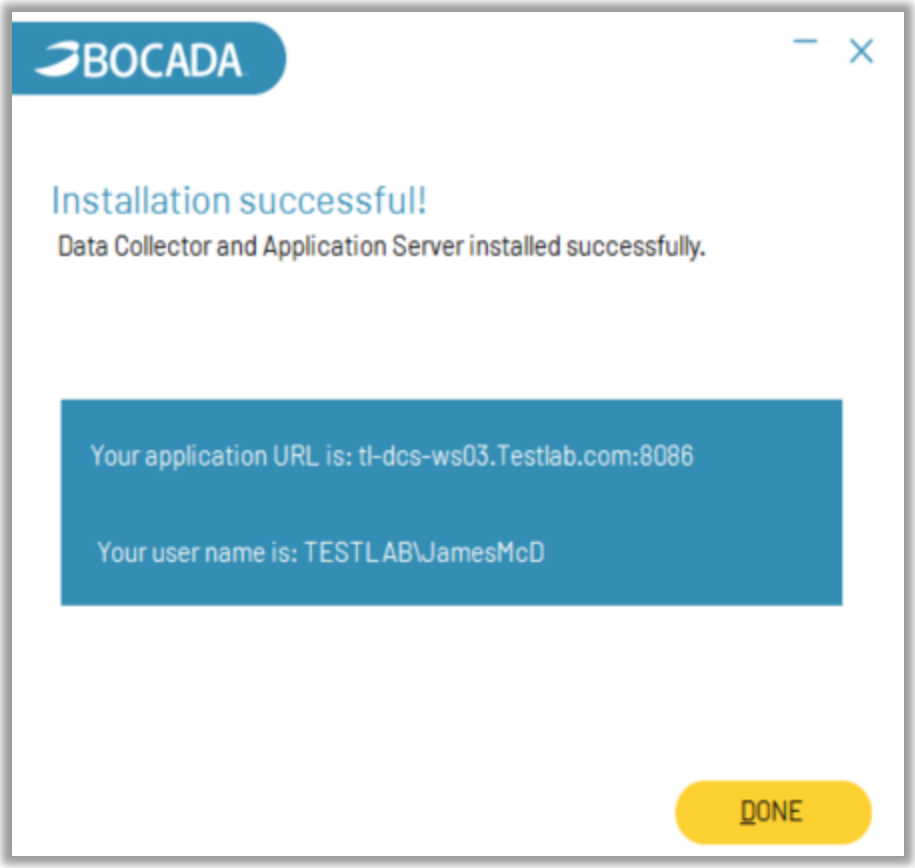


Bocada Application Server



Installation Complete

Once the installation is successful, you will be presented with an option to view the installation log. Select *Show the Windows Installer log* to view the installation log if desired, then click *Finish*.



Installation Note: If the installer is unable to start the Bocada Data Collection Service, please see the Troubleshooting section below.

HTTPS: Deploy Certificate

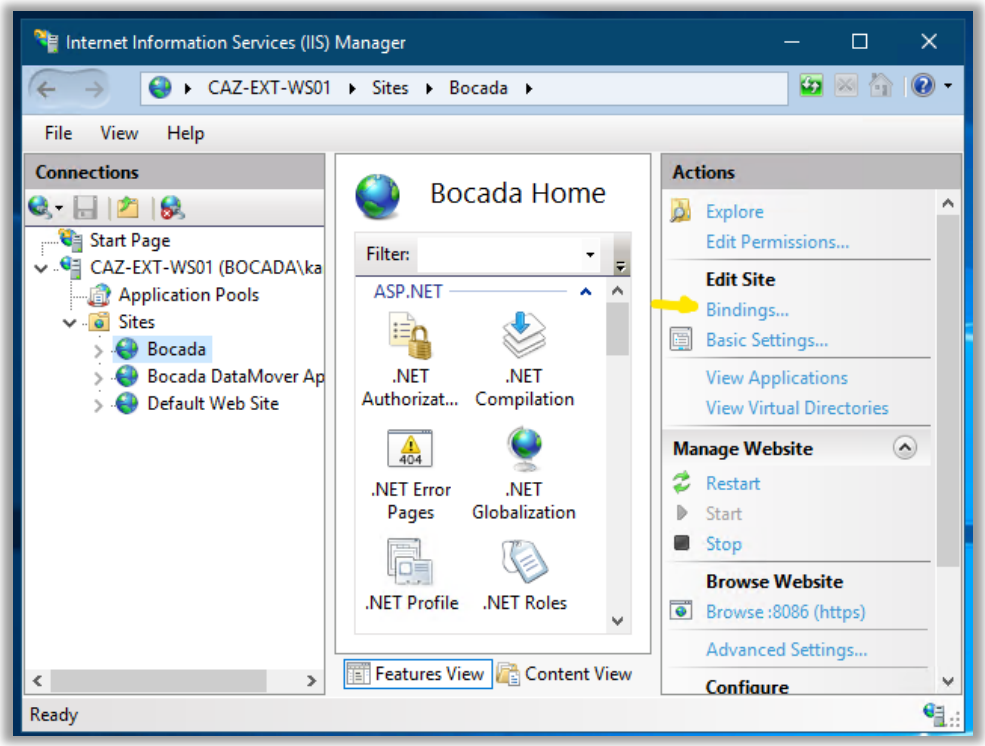
If HTTPS was selected during the Application install, the following steps will provide a guide for deploying your SSL certificate. If you are changing from HTTP to HTTPS, then you will need to completely uninstall Bocada Enterprise and reinstall it choosing HTTPS.

Note: Bocada is not a Certificate Authority and cannot provide a certificate. You can temporarily use a self-signed certificate that you create in IIS.

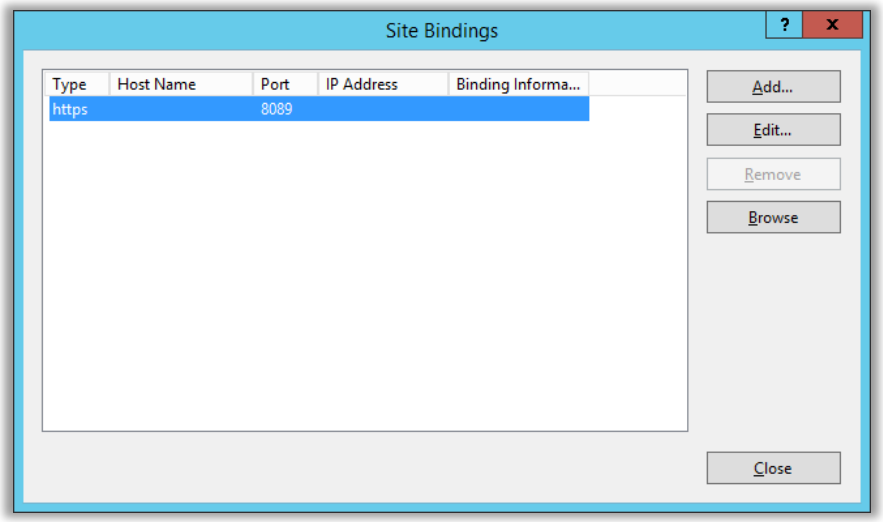
After acquiring a certificate, it will need to be applied to the binding in IIS Manager.

1. Open the IIS Manager
2. Select the Bocada Web Site

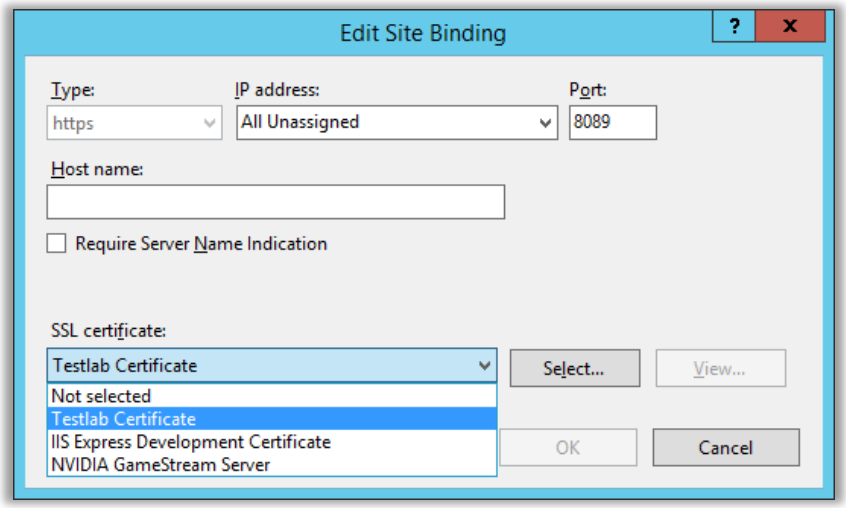
3. Select “Bindings” from the right-hand panel of the Manage



4. Select your Site Binding and click “Edit...”



5. Select your certificate from the SSL Certificate drop down and then click OK.



Upgrade Bocada

Bocada Installer will upgrade previous Bocada application to the latest version. Please visit the current version of the *Bocada Upgrade Guide* for instructions and notes on the upgrade process.

Access Bocada

After completing installation, you can access the application by clicking or copying the URL and pasting into your preferred web browser:

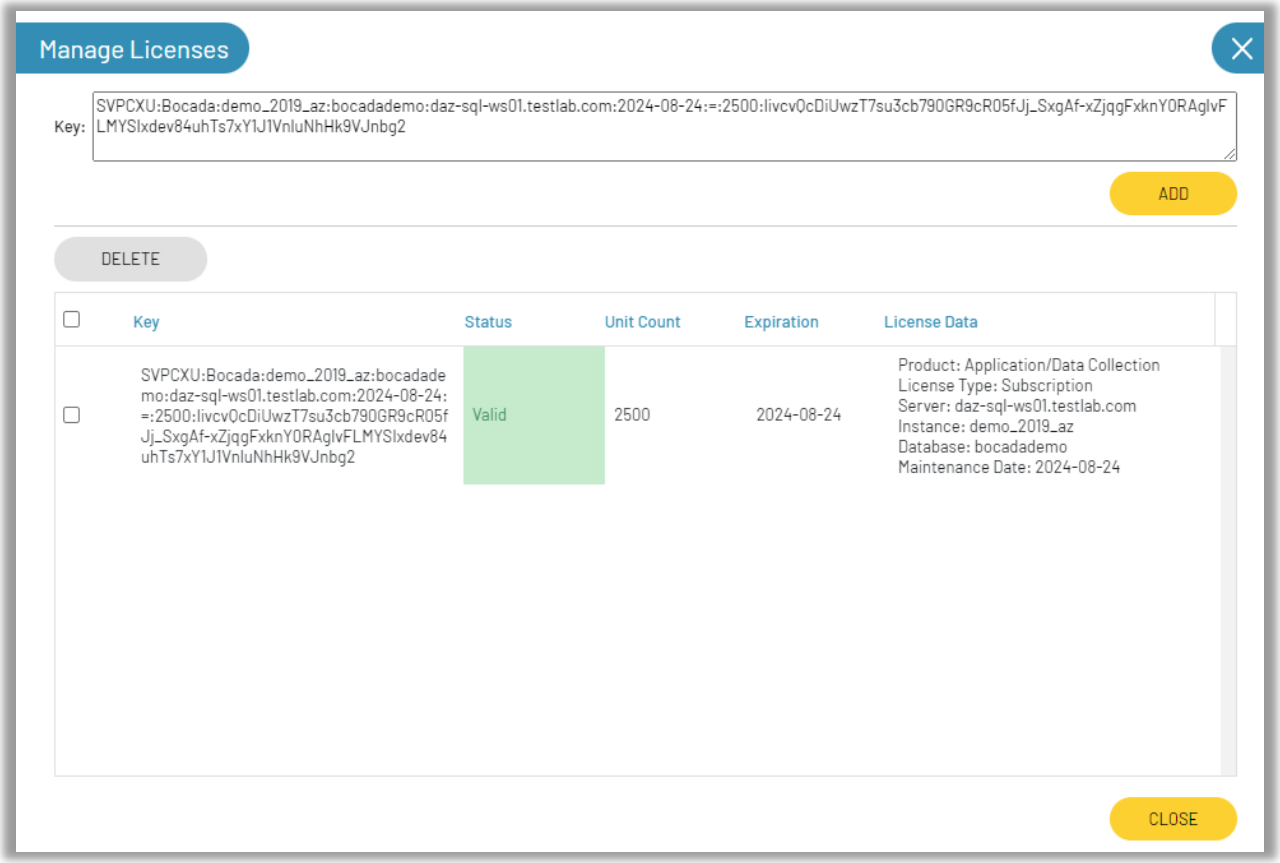
Accounts as Bocada Admin Users.

The following accounts will automatically have access to the Bocada Enterprise application as Administrators:

1. User running the Bocada installer
2. Domain user specified to run the Bocada services

Add Bocada License

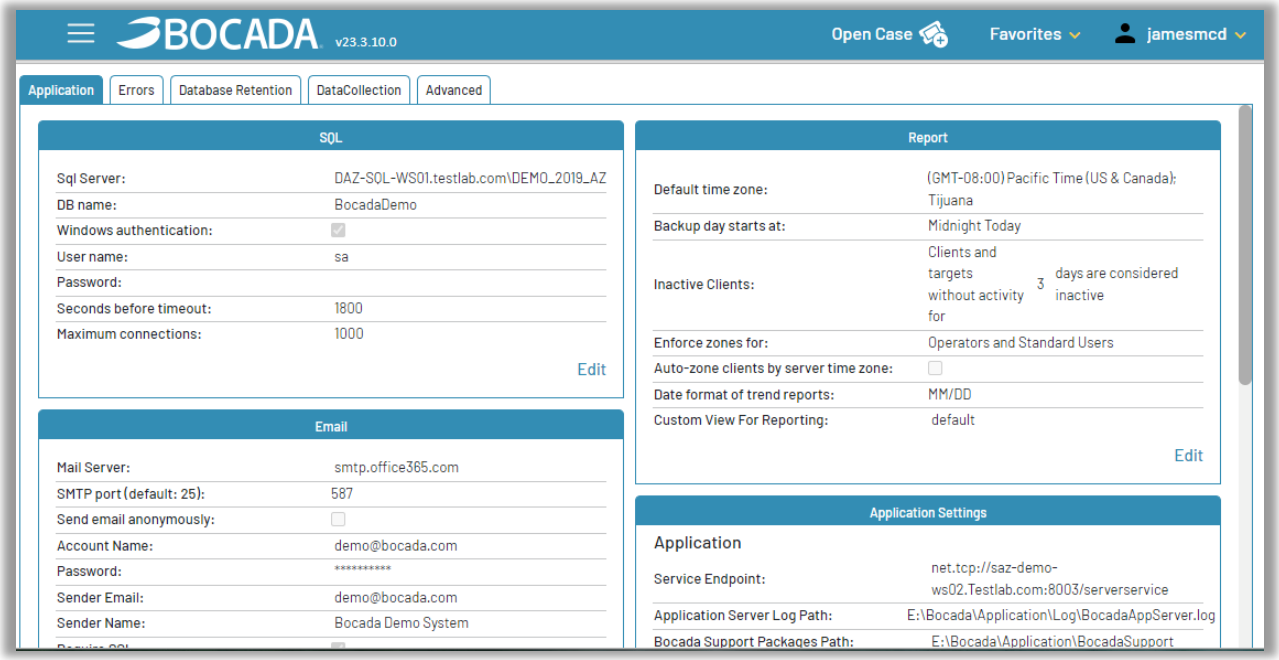
Upon initial login, a licensing dialog will be displayed. Paste the product key into the field and click *Add, verify the license is valid* then *Finish*.



Congratulations, Bocada is now licensed and ready to use!

Settings

After installation, configuration begins with giving additional users to administer the product and configuring global settings. Select *Settings* om the Administration module to review and set your global settings. Your Bocada Deployment Engineer will help guide you through the most common settings.



- Most users will want to set the Default Time Zone to match the time zone of their backup servers (if backup servers are in multiple time zones, these can be configured individually).
- Since most backup jobs are done at night and can take an indeterminate length of time to start/finish, most users will want to set their Backup Day to begin before midnight on the previous day.
- See the *Bocada Administration Guide* or contact Bocada Support for common next steps.

Appendix A: Troubleshooting

Antivirus

In some environments running Symantec anti-virus the executable file for the Bocada installation may get flagged and/or removed by the anti-virus. In those cases, please contact your security and/or the Symantec support team to exclude the detection of Bocada files.

Installer Log Files

In case the installation resulted in error message, it will be beneficial to review installer log files to find the root cause. The following steps describe the process to collect these log files.

1. Remote desktop to Bocada server (where you ran the installer)
2. Open File Explorer
3. Go to %temp%
4. Go one folder up (to original Temp folder)
5. Sort the files by Date modified
6. Open the log files that match the time of the installation to review the issue

Possible Errors during Installation:

Issue	Possible Reason	Troubleshooting Step(s)
Cannot connect to SQL database	SQL server is incorrect, or server short name is used.	Confirm SQL Server name is correct and FQDN is used.
	Instance or Port specified is incorrect.	Confirm Instance and Port (leave blank for default).
	Domain/SQL User specified does not have access to SQL Server.	Confirm access using SQL Server Management Studio.
	SQL Server services are not running.	Confirm that SQL Server Services are running.
Remote connection failure	SQL Server is not allowing Remote Connection	Configure SQL Server to Allow Remote Connections.
Installation or Upgrade fails	SQL Server version is unsupported	Specify different SQL Server with supported version. Upgrade SQL Server to supported version.
ERROR: Must install Bocada with the DBO schema, but schema is currently: <*other*>	The domain account used must be assigned the DBO schema as the default	Set DBO Schema for Bocada SQL User
Windows Services cannot be started on Windows 2017 and above.	Services user account must have '**Log on as a service**' user rights.	For detailed example on setting up a user see: https://docs.microsoft.com/en-us/system-center/scsm/enable-service-log-on-sm?view=sc-sm-2019

Install fails with : *** Exception Text *** System.Reflection.TargetInvocationException: Exception ... ... System.InvalidOperationException: This implementation is not part of the Windows Platform FIPS validated cryptographic algorithms...	FIPS is enabled	See Appendix E for how to disable FIPS

Appendix B: Windows Services and User Management

Services management (including manually starting services) and User management processes are described in the following two Microsoft TechNet references:

Windows Services Management

https://technet.microsoft.com/en-us/library/cc772408%28v=ws.11%29.aspx?f=255&MSPPError=-2147217396

Windows User Management

https://technet.microsoft.com/en-us/library/dd391974(v=ws.10).aspx

The following settings for the Bocada services must be met for the application to function properly:

Bocada Data Collection Service

- Startup Type is Automatic.
- The account assigned to start the service (Log On) has sufficient privileges to start services.
- Local System account is not used when Data Collection and Application are on separate servers.

Bocada Service (Application Server)

- Startup Type is Automatic.
- The account assigned to start the service (Log On) has sufficient privileges to start services.
- Local System account is not used when Data Collection and Application are on separate servers.

Note: Management of the Bocada Data Collection and Application services requires Administrative privileges on the server(s) where the applications are installed. If launching the application results in an error, one possible solution is to explicitly raise the permissions of the user running the Bocada Service on the Bocada installation directory to Admin.

Application Will Not Start (service account permissions)

In some cases, if the user does not have proper permission to star an IIS web server/service, you may need to authorize. This issue should be remedied in current Bocada versions, but in this case you can manually allow the service account to start the service:

To achieve follow below steps

1. Stop Bocada Service

2. Open Command Prompt as administrator run below commands (replace the [Domain User] with the domain username which will start Bocada Service):
    a. List all registered URL on the current machine by running command:
        netsh http show urlacl
    b. Delete any services which already occupy the port 8002, or the port Bocada Service Endpoint is using:
        netsh http delete urlacl url=http://+:8002/Serverservice
        netsh http delete urlacl url=https://+:8002/Serverservice
        netsh http delete urlacl url=http://+:8002/serverservice
        netsh http delete urlacl url=https://+:8002/serverservice
    c. Register again, note (please use: serverservice, all in lowercase, also it is https)
        netsh http add urlacl https://+:8002/serverservice/ user=[Domain User]
    d. Change the Bocada Service logon user to [Domain User]
3. Start Bocada Service

Confirm DBO Schema for Bocada SQL User

The SQL User (using Windows or SQL Authentication methods) must have DBO as the default schema. This can be confirmed through SQL Server Management Studio:

1. Navigate to Security (instance level) --> Logins
2. Open the Login Properties window for that user (Right click the user --> select Properties)
3. Select User Mapping.
4. Verify that the Default Schema for that user is set to ‘dbo’.

Appendix C: Website Configuration

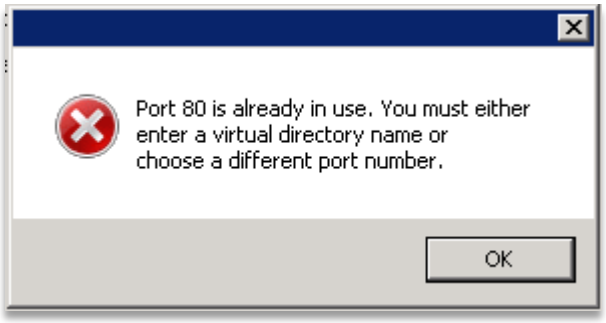
During Application Server installation, the following web site options are supported for set up:

Example IIS Configuration	Reason	Web Site Address
HTTP Port = 8086	Using default HTTP Port when NOT already in use	http://appserver.domain.com:8086/
HTTP Port = 80	Using default HTTP Port 80 (Default Website has been deleted	http://appserver.domain.com/
HTTPS Port = 443 Directory = “bocada”	Using non-Default HTTPS Port (not already in use)	https://appserver.domain.com/
HTTPS Port = 443 Directory = “bocada”	Using non-Default HTTP Port HTTP Port is in use	https://appserver.domain.com/bocada

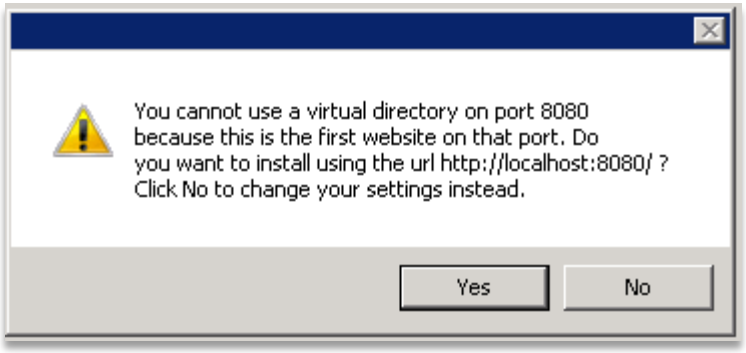
For illustration purposes, *appserver.domain.com* is the Bocada Application Server.

Possible Errors during installation:

HTTP Virtual Directory not specified, selected HTTP Port (80) already in use:



HTTP Virtual Directory is specified for a port which is not already in use:



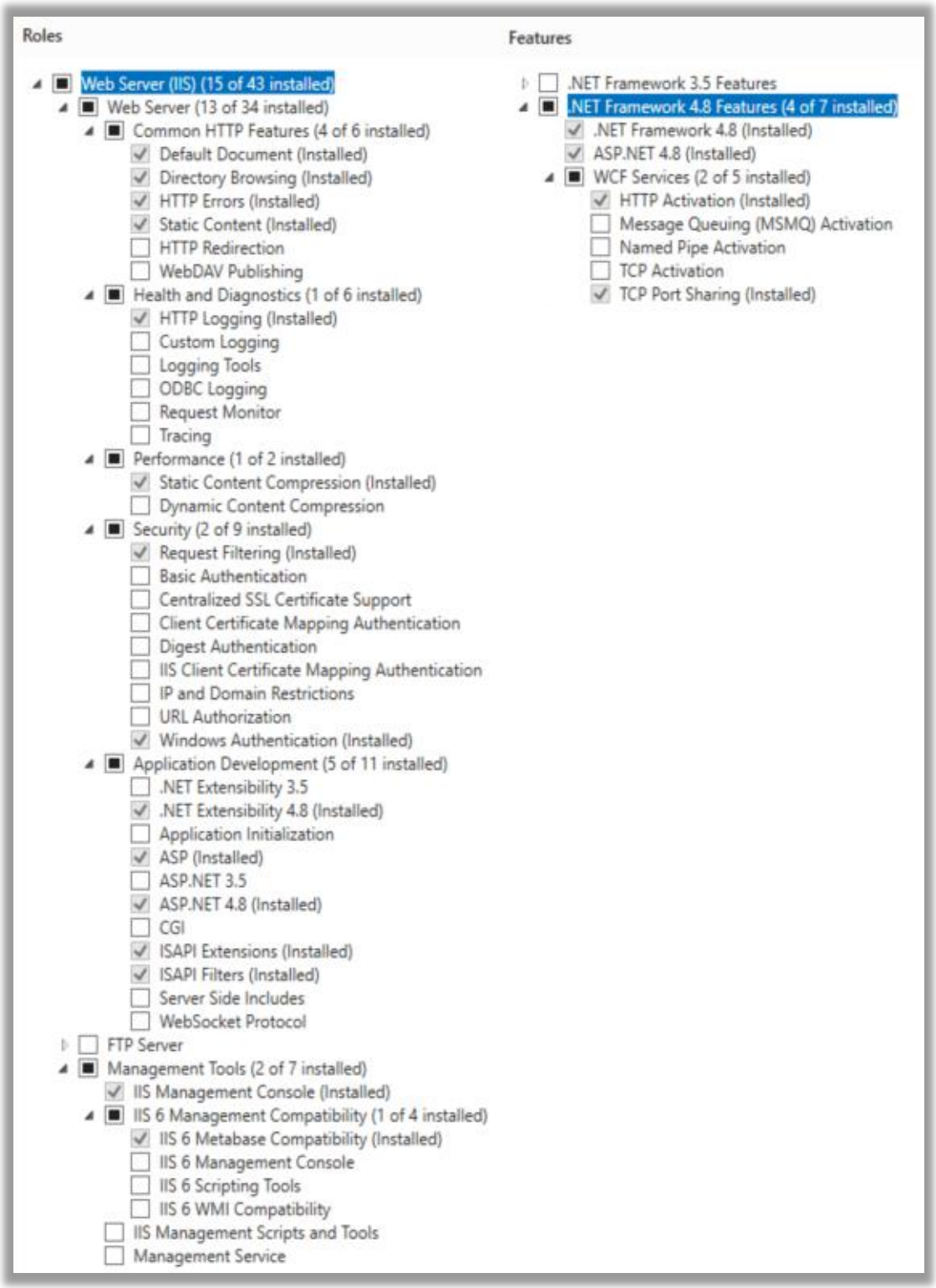
Possible Errors while attempting to access the application:

Occasionally after successful installation of the application server, the application may fail to load. The following are possible errors with solutions.

Error Message	Reason	Solution
HTTP Error 404.17 – Not Found	The requested content appears to be script and will not be served by the static file handler.	Windows Server 2008 & 2012: 1. Issue the following command: C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_regiis.exe -i 2. Restart IIS Windows Server 2016: 1. Open Server Manager and navigate to Features > Add Features 2. Add the Windows Feature "Web Server (IIS) > Web Server > Application Development > ASP.NET 4.6"
Server Error in '/Bocada' Application. Runtime Error Description: An exception occurred while processing your request	C++ runtime libraries are missing on the Application server	Download and install the missing component from the link below: **http://www.microsoft.com/en-us/download/details.aspx?id=5555**
Headings & Menus appear, but Reports display no data	Browser is running in Protected Mode and the Bocada Application site is not a Trusted site.	Navigate to Tools > Internet Options > Security, uncheck the checkbox next to "Enable Protected Mode", and add the site to Trusted Sites. If you then clear the cache (Tools > Internet Options > General > Browsing History > Delete) and refresh the browser session (CTRL-F5), reports should appear as normal.
	The Bocada Database was not correctly updated (some necessary components have been installed to the incorrect schema).	Verify that the Default Schema for the user account performing the installation is set to 'dbo' in SQL Server, then reinstall the Data Collection Server to repair the Bocada database.

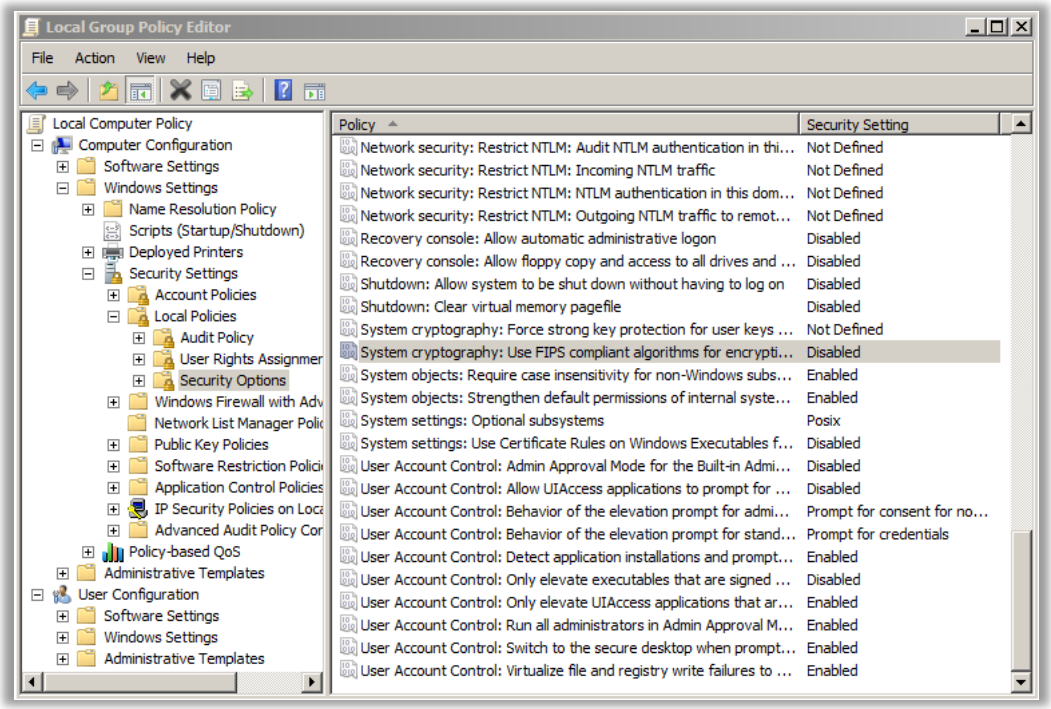
Appendix D: Windows Server Roles & Features

The following Roles and Features are required to run the Bocada Data Collection *and* Application on Windows Server 2022. The roles and features may be presented differently on other versions of Windows Server.



Appendix E: Disable FIPS

1. Click Start > Run > type **gpedit.msc** and press Enter or click OK.
2. In the Local Group Policy Editor, under the **Computer Configuration** node, navigate to Windows Settings > Security Settings > Local Policies > Security Options, scroll down to 'System cryptography: Use FIPS-compliant algorithms for encryption, hashing, and signing'.



3. If this setting is not already 'Disabled', double-click to open the dialog panel, select 'Disabled', and click OK.

Technical Support

For technical support or if you would like a copy of our standard support agreement, please contact us.

E-mail: support@bocada.com
Web: https://www.bocada.com/support/

On the web you will find:

- Online knowledge base
- Product documentation
- You can open a support ticket if you have been added to the portal