

Configuration Manual

MSc Internship Cyber Security

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Configuration Manual

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This configuration manual showcases various tools that are used during the duration of this research. Instructions are provided on how to replicate the experiments that have been performed

1 Software Requirement

1.1 Visual studio

- Download and Install the latest version of Microsoft visual studio 2019 application from the registered website [1]
- Ensure that the "ASP.NET and web development" option as shown in Fig.1. is selected when performing the installation



Fig.1.

1.2 Microsoft SQL server

- Download and Install the latest version of Microsoft SQL Server 2019 application from the registered website[2]
- Ensure that the "New SQL server stand-alone installation" option is selected when performing the installation as shown in Fig.2.

| SQL Server Installation Center | - 0 |
|-----------------------------------|---|
| Planning Installation | New SQL Server stand-alone installation or add features to an existing installation Launch a wizard to install SQL Server 2019 in a non-clustered environment or to add features to an existing SQL Server 2019 instance. |
| Maintenance Tools Resources | Install SQL Server Reporting Services Launch a download page that provides a link to install SQL Server Reporting Services. An internet connection is required to install SSRS. |
| Advanced Options | Install SQL Server Management Tools Launch a download page that provides a link to install SQL Server Management Studio, SQL Server command-line utilities (SQLCMD and BCP), SQL Server PowerShell provider, SQL Server Profiler and Database Tuning Advisor. An internet connection is required to install these tools. |
| | Install SQL Server Data Tools Launch a download page that provides a link to install SQL Server Data Tools (SSDT). SSDT provides Visual Studio integration including project system support for Microsoft Azure SQL Database, the SQL Server Database Engine, Reporting Services, Analysis Services and Integration Services. An internet connection is required to install SSDT. |
| | New SQL Server failover cluster installation Launch a wizard to install a single-node SQL Server 2019 failover cluster. This action is only availabe in the clustered environment. |
| | Add node to a SQL Server failover cluster Launch a wizard to add a node to an existing SQL Server 2019 failover cluster. This action is only availabe in the clustered environment. |
| Microsoft SQL Server 2019 | Upgrade from a previous version of SQL Server Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2019. Click here to first view Upgrade Documentation |



• During installation process, ensure that the "Mixed Mode" in the Authentication Mode is selected and a password is entered, this password will be used for logging into the database console as show in Fig.3.

| 😭 SQL Server 2019 Setup | | | | × |
|--|--|--------------------------------------|------------------|---|
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Fig.3.

1.3 Postman

- Download and Install the latest version of Postman application from the registered website[3]
- Once the installation is completed the application launches with the below interphase as shown in Fig.4.

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| هٔ Good afternoon, Prem! | | | | | | | | | | | | | | |
| Use Launchpad to start something new, pick up where you left off, or explore some resources to help you master Postman. | Use Launchpad to start something new, pick up where you left off, or explore some resources to help you master Postman. | | | | | | | | | | | | | |
| Start something new | Start something new Work smarter with Postman | | | | | | | | | | | | | |
| III Create a request | Learn how Postman can help you at every stage of the API development lifecycle with these in-app tutorials. | | | | | | | | | | | | | |
| Create a collection 🔹 | (a) Designing and mocking APIs | 2 lessons | | | | | | | | | | | | |
| Create an environment | Debugging and manual testing | 4 lessons | | | | | | | | | | | | |
| Create an API | Automated testing | 4 lessons | | | | | | | | | | | | |
| ••• View More | API documentation | 1 lesson | | | | | | | | | | | | |
| Recent workspaces | | | | | | | | | | | | | | |
| Find your most recently used workspaces here | Monitoring | 1 lesson | | | | | | | | | | | | |
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Fig.4.

2 Setup Procedure

2.1 Visual studio

• Navigate the file "Web.config" and add the server name that is generated during the SQL server installation under the option <connectionStrings>as shown in Fig.5.



Fig.5.

• Navigate the file "index.config" and add "http://localhost:<specify any available port number><code location>" to the URL fields as shown in Fig.6.



Fig.6.

• Navigate the file "signup" and add "http://localhost:<specify any available port number><code location>" to the URL fields as shown in Fig.7.

| Ø | File | Edit View | Project | Build Debug | Test | Analyze | Tools | Extension | s Window | / Help | | | | م | JwtA | pi | | |
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Fig.7.

2.2 Microsoft SQL server

• Navigate the Databases and Select the option "New Database" shown in Fig.8.



Fig.8.

• Import the tables "iot.sql" and "iot_auth.sql" from the source codeFig.9.

| 🙀 Microsoft SQL Server Management Studio | | | | | | |
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Fig.9.

2.3 Postman

• Navigate to the open "New", select the option "Request" as shown in Fig.10.

Fig.10.

• Create a Request name "IoT" as shown in Fig.11.

| SAVE REQUEST | | |
|---|------------------|-----------------|
| Requests in Postman are saved in collect Learn more about creating collections | tions (a group o | f requests). |
| Request name | | |
| lot | | |
| Request description (Optional) | | |
| Iot - JSON token | | |
| Descriptions support Markdown Select a collection or folder to save to: | | |
| Q Search for a collection or folder | | |
| ◀ sample | | + Create Folder |
| GET lot | | |
| | Cancel | Save to sample |

Fig.11.

• Once the request is created select the parameter "GET" in the navigation bar as shown in Fig.12.

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| HEAD | | | |
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| LINK | | | |
| UNLINK | | | |
| PURGE | | | |
| LOCK | | | |
| UNLOCK | | | |
| PROPFIND | | | |
| | | | |

Fig.12.

3 Execution

• Navigate the Source code and to perform execution under the option "Build" select "Build Solution" this action is performed to compile the code as shown in Fig.13.

| Ø | File Edit | View Project | Build | Debug | XML Te | st Analyze | Tools | Extensions | Window | Help | Search (Ctrl+Q) | م | JwtApi | | |
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Fig.13.

• One the build is complete, to perform execution under the option "Debug" select the option "Start Without Debugging" as shown in Fig.14.

Fig.14.

• The application launches the index page ,Register and login to the application as shown in Fig.15.

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| | | | |
| | User Login | | |
| | Password | | |
| | New User? Register Here | | |
| | Login | | |

Fig.15.

• In Postman, parse the parameter

"http://localhost:59852/api/student/login/<userid>/<password>" and the output is generated under the "Body" option as shown in Fig.16.

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| GET • http://localhost:59852/api/student/login/premananth.raj@ | @gmail.com/1234 | Send • Save |
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Fig.16.

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