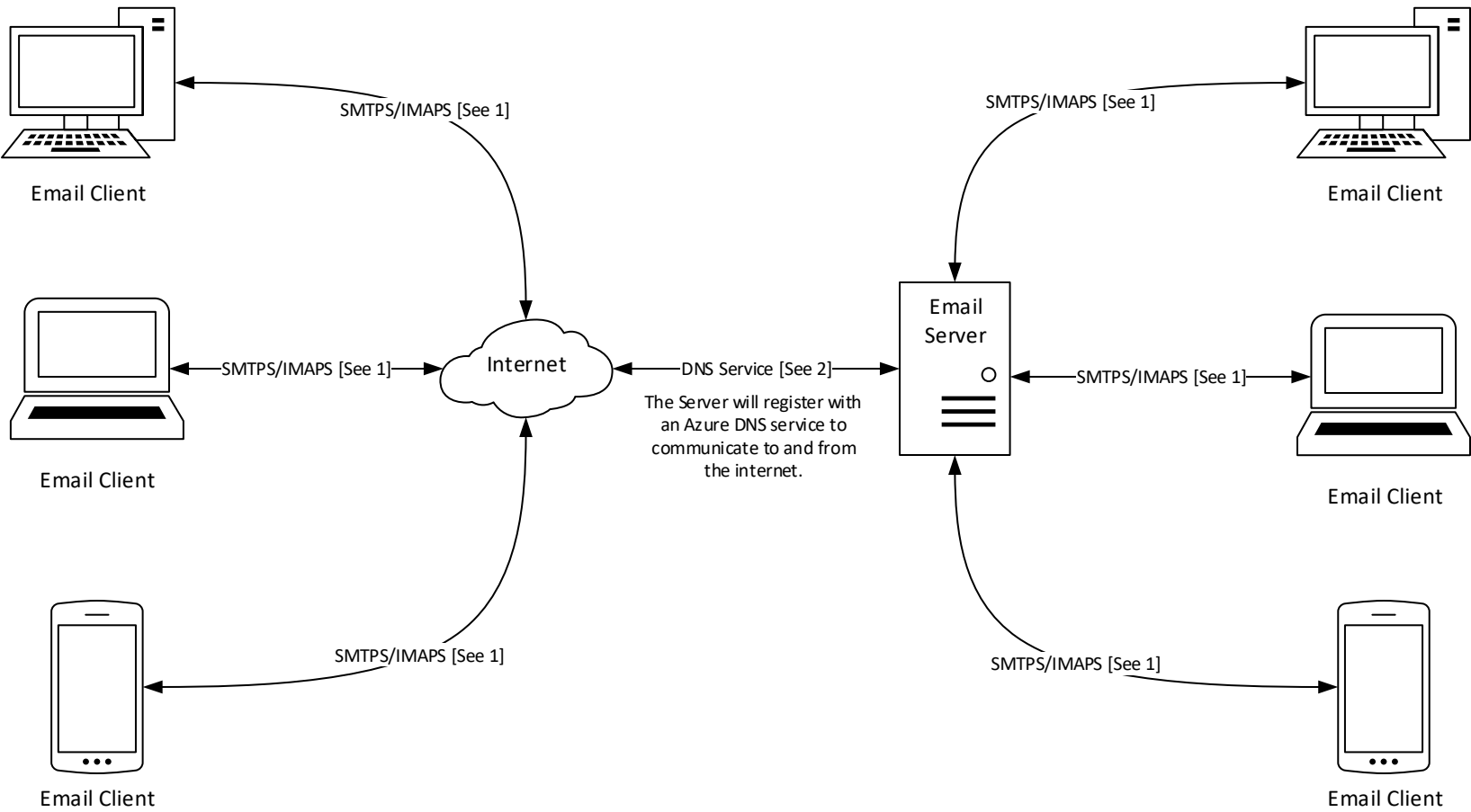


High Level Email System Overview

Tavish Burnah – CS6500

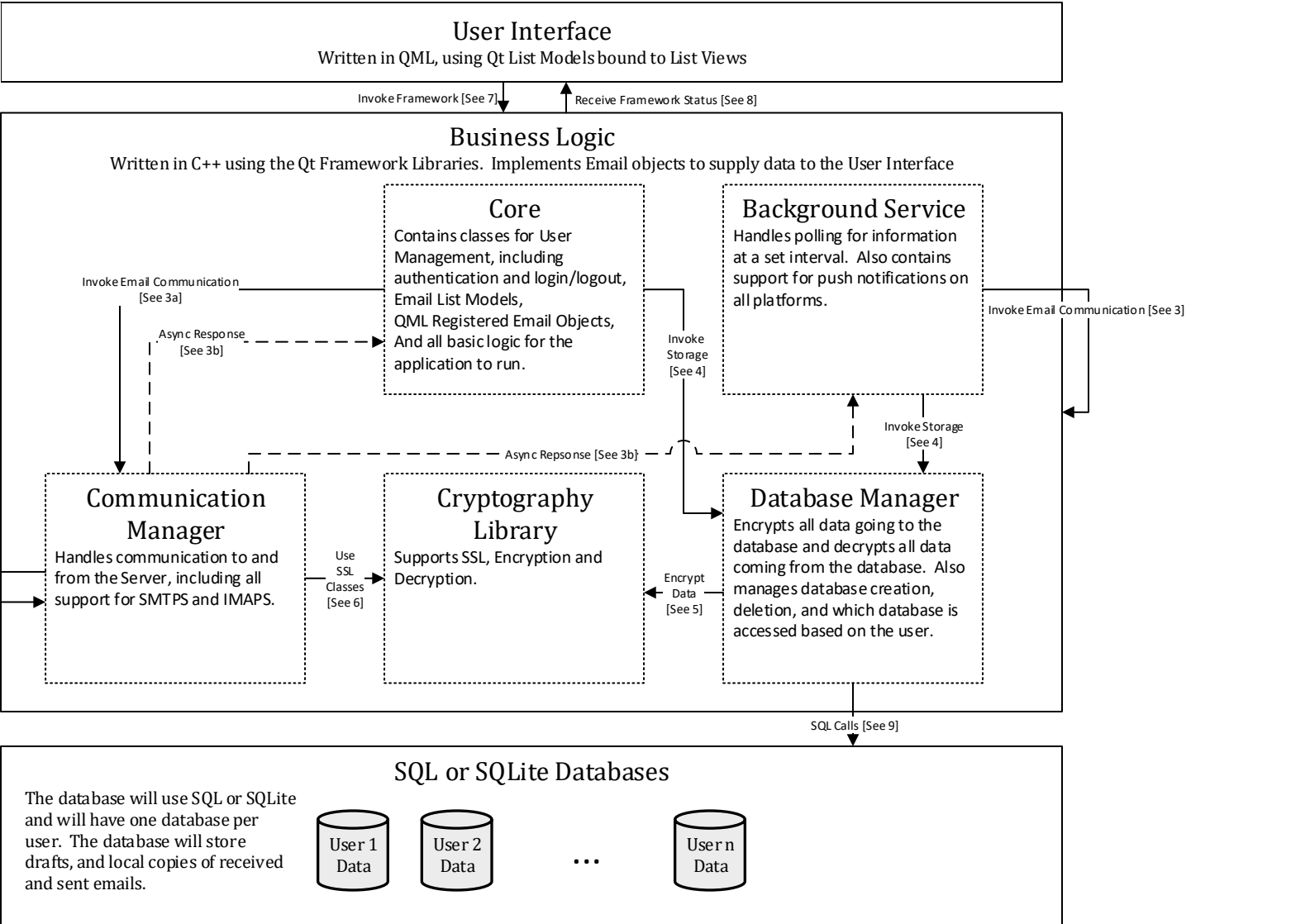


The client will be built using the Qt Cross Platform framework that will create applications for all platforms.

The client will use Secure Simple Mail Transfer Protocol to send emails, and secure internet message access protocol to read messages.

See the Client Architecture Diagram for Details.

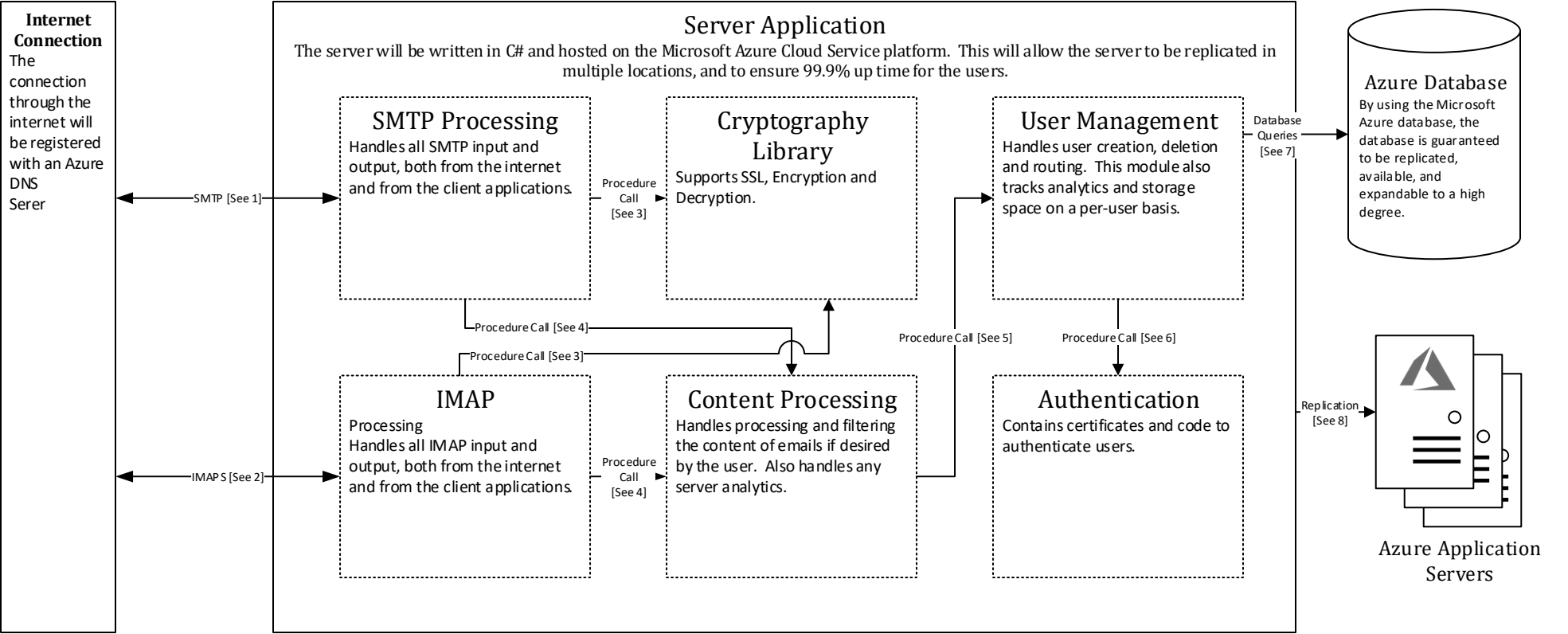
Connectors			
Name	Type	Dimensions	Description
1. SMTPS/IMAPS	Stream	Uses the SMTP or IMAP protocol over SSL: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote and Local, Asynchronous, Structured and many to many.	This connector sends and receives SMTPS and IMAPS data with devices over the local network and the internet.
2. DNS Service	Stream	Uses the HTTPS to register the server on the DNS: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote, Asynchronous, Structured and many to many.	This connector Registers with the Azure DNS Server using HTTPS. From then on, the DNS server routes streaming data to the Email Server.



Connectors			
Name	Type	Dimensions	Description
1. SMTPS	Stream	Uses the SMTP protocol over SSL: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote and Local, Asynchronous, Structured and many to one.	This connector sends and receives SMTPS data with devices over the local network and the internet.
2. IMAPS	Stream	Uses the IMAP protocol over SSL: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote and Local, Asynchronous, Structured and many to one.	This connector sends and receives IMAPS data with devices over the local network and the internet.
3. Invoke Email Communication	Procedure Call	Used for the Send and Get invocations: Single explicit entry points, asynchronous commands, public access to the communication manager. The Asynchronous response is an additional procedure call.	This connector sends email information to the communication manager which then sends out the emails. It also sends a request to receive email from the server which the communication manager formats and passes on.
4. Invoke Storage	Procedure Call	Invokes a procedure call to store information: Single explicit entry point, synchronous call.	This connector passes data to be stored in the database to the database manager, or sends a request for data to the database manager. The response to the invocation includes any requested data.
5. Encrypt Data	Procedure Call	Procedure call to either encrypt or decrypt data. Single explicit entry points, synchronous public calls. Result contains encrypted or unencrypted byte arrays.	This connector passes data to be encrypted or decrypted and receives as the result the transformed information.
6. Use SSL Classes	Procedure Call	Procedure call to create an SSL socket to be used in the communication class. Single explicit entry points, synchronous public call.	This connector queries for and returns an SSL socket fully setup to communicate securely with the server.
7. Invoke Framework	Linkage	Links the user interface to the Business logic for object access through an application framework. The linkage is implicit, and bound at compile time.	This connector links the user interface to the business logic for object access through an application framework.
8. Receive Framework Status	Linkage	Links the user interface to the Business Logic for status registration through an application framework. The linkage is implicit, and bound at compile time.	This connector links the user interface to the business logic for status registration through an application framework, and then handles that status notification.
9. SQL Calls	Data Access	Uses the SQL language and a connection to a SQL like database. Process specific with both accessor and mutator accessibility. Data is sent and stored in a persistent manner in the database.	This connector sends SQL queries and receives responses from the local database.

Email Server Architecture

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Connectors

Name	Type	Dimensions	Description
1. SMTPS	Stream	Uses the SMTP protocol over SSL: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote and Local, Asynchronous, Structured and many to one.	This connector sends and receives SMTPS data with devices over the local network and the internet.
2. IMAPS	Stream	Uses the IMAP protocol over SSL: Delivered Exactly Once, Unbounded, Buffered, Stateful, Remote and Local, Asynchronous, Structured and many to one.	This connector sends and receives IMAPS data with devices over the local network and the internet.
3. Invoke Cryptography Calls	Procedure Call	Procedure call to create an SSL socket to be used in the communication class. Single explicit entry points, synchronous public call.	This connector queries for and returns an SSL socket fully setup to communicate securely with the users.
4. Invoke Message Processing	Procedure Call	Invokes a procedure call with received information. Single explicit entry points, asynchronous commands, public access.	This connector passes received messages from the communication classes to the content processing through a procedure call. The result of the procedure call is whether or not this message was accepted.
5. Invoke User Requests	Procedure Call	Invokes a procedure call with processed information. Single explicit entry points, asynchronous commands, public access	This connector passes processed messages from the content processing module to the user management. It is called with a user ID as a parameter. The user management then authenticates and stores this information.
6. Authenticate User Requests	Procedure Call	Invokes a call to authenticate a message for a user. Single explicit entry points, asynchronous commands, public access	This connector is a procedure call with user authentication information which returns whether or not the user credentials for the message is valid.
7. Push and Pull from Database	Data Access	Uses a database language and a connection to a database management system. Process specific with both accessor and mutator accessibility. Data is sent and stored in a persistent manner in the database.	This connector sends database queries and receives responses from the local database.
8. Replicate Application State	Facilitation	Implicit reference from the azure framework. Provides the support for replication for high availability.	This connector signifies that this application will be running on a framework which ensures replication and high availability.

Email Open/Read Sequence

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