Microsoft Outlook Mailbox Integration

**API Implementation Guide**

**Prepared By:** Shane Sandwith

**Role:** Software Architect

**Date:** 8th April 2025

Table of Contents

[1. Executive Summary 3](#_Toc194916646)

[2. Technologies & Tools 3](#_Toc194916647)

[3. Required App Registration (Azure) 3](#_Toc194916648)

[4. API Endpoints to Implement 4](#_Toc194916649)

[POST /api/outlook/authorize 4](#_Toc194916650)

[POST /api/outlook/token 4](#_Toc194916651)

[GET /api/outlook/mailbox 4](#_Toc194916652)

[5. Token Handling 4](#_Toc194916653)

[6. Microsoft Graph API References 5](#_Toc194916654)

[7. Security Considerations 5](#_Toc194916655)

[8. Testing & Validation 5](#_Toc194916656)

[9. Deliverables 5](#_Toc194916657)

# Executive Summary

This document provides detailed technical instructions for implementing the backend components of the Outlook integration feature. The backend will handle token exchanges, secure storage, API communication with Microsoft Graph, and exposing endpoints for the Angular frontend.

# Technologies & Tools

* **.NET Version:** .NET 6 or later
* **API Framework:** ASP.NET Core Web API
* **HTTP Client:** HttpClientFactory
* **Token Encryption:** AES-256 or Data Protection API
* **Storage:** MongoDB
* **External API:** Microsoft Graph API
* **Identity Provider:** Azure Active Directory (OAuth 2.0)

# API Endpoints to Implement

## POST /api/outlook/token

* **Purpose:** Accepts authorization code from frontend and exchanges for Access and Refresh tokens.
* **Body:** { TBC }
* **Process:**
  + Use HttpClient to call Microsoft Token Endpoint
  + Store tokens securely

## GET /api/outlook/mailbox

* **Purpose:** Fetch latest emails
* **Headers:** Authorization: Bearer <user\_jwt>
* **Process:**
  + Load and validate access token
  + Call Microsoft Graph “/me/messages”
  + Return latest 50 emails

# Token Handling

* **Storage:** Encrypt before saving to DB
* **Refresh Handling:**
  + Monitor expiration time
  + Use refresh token to request new access token before expiry
  + If refresh token fails, notify frontend to reinitiate flow

# Microsoft Graph API References

* Token endpoint: https://login.microsoftonline.com/{tenant}/oauth2/v2.0/token
* Mailbox endpoint: https://graph.microsoft.com/v1.0/me/messages

# Security Considerations

* Do not log tokens or sensitive data
* Enforce HTTPS for all communications

# Testing & Validation

* Use Postman to simulate token flow
* Mock Graph API responses during development
* Validate token refresh logic by reducing expiry time in test tenants

# Deliverables

* Working API endpoints as described
* Encrypted token management system
* Integration with Microsoft Graph for fetching emails
* Unit tests for token and Graph logic
* Integration tested against at least one Microsoft 365 tenant

**Notes:** Please ensure thorough logging (excluding sensitive data) and structured error handling across all flows. Reach out if you need support with Azure app registration or token troubleshooting.