

# Exam MS-600: Building Applications and Solutions with Microsoft 365 Core Services – Skills Measured

**This exam will be updated on November 24, 2020. Following the current exam guide, we have included a version of the exam guide with Track Changes set to “On,” showing the changes that will be made to the exam on that date.**

## Audience Profile

Candidates for this exam are Microsoft 365 Developers who design, build, test, and maintain applications and solutions that are optimized for the productivity and collaboration needs of organizations using the Microsoft 365 platform.

Candidates for this exam are proficient in Microsoft identity and Microsoft Graph. They have general knowledge on UI elements (including Adaptive Cards and UI Fabric), integration points (including Microsoft Teams, Office Add-ins, SharePoint Framework, Actionable Messages), and determining workload platform targets.

Candidates should have experience developing solutions on Microsoft Teams, Office Add-ins, or SharePoint Framework through all phases of software development. They should have a basic understanding of REST APIs, JSON, OAuth2, OData, OpenID Connect, Microsoft identities (including Azure AD and Microsoft accounts), Azure AD B2C, and permission/consent concepts.

## Skills Measured

NOTE: The bullets that appear below each of the skills measured are intended to illustrate how we are assessing that skill. This list is not definitive or exhaustive.

NOTE: In most cases, exams do NOT cover preview features, and some features will only be added to an exam when they are GA (General Availability).

## Implement Microsoft Identity (20-25%)

### Register an Application

- determine the supported account type
- select authentication and client credentials for app type and authentication flow
- define app roles

### Implement Authentication

- configure Microsoft Authentication Library (MSAL JS) for endpoint and token cache
- plan and configure scopes for dynamic or static permission

- use the MSAL JS login method

### **Configure Permissions to Consume an API**

- configure Delegated permissions for the app
- configure Application permissions for the app
- identify admin consent requirements

### **Implement Authorization to Consume an API**

- configure incremental consent scopes
- call MSAL JS using AcquireTokenSilent/AcquireToken pattern

### **Implement Authorization in an API**

- validate Access Token
- configure effective permissions for delegated scopes
- implement app permissions using roles
- use a delegated access token to call a Microsoft API

### **Create a Service to Access Microsoft Graph**

- configure client credentials using a certificate
- configure Application permissions for the app
- acquire an access token for Microsoft Graph using an application permission and client credential certificate
- acquire an access token using the client secret

## **Build Apps with Microsoft Graph (20-25%)**

### **Optimize Data Usage with query parameters**

- use \$filter query parameter
- use \$select query parameter
- order results using \$orderby query parameter
- set page size of results using \$skip and \$top query parameters
- expand and retrieve resources using \$expand query parameter
- retrieve the total count of matching resources using \$count query parameter
- search for resources using \$search query parameter
- determine the appropriate Microsoft Graph SDK to leverage

### **Optimize network traffic**

- monitor for changes using change notifications

- combine multiple requests using \$batch
- get changes using a delta query
- implement error 429 handler

### **Access User data from Microsoft Graph**

- get the signed in users profile
- get a list of users in the organization
- get the users profile photo
- get the user object based on the users unique identifier
- get the users manager profile

### **Access Files with Microsoft Graph**

- get the list of files in the signed in users OneDrive
- download a file from the signed in users OneDrive using file unique id
- download a file from a SharePoint Site using the relative path to the file
- get the list of files trending around the signed in user
- upload a large file to OneDrive
- get a user object from an owner list in a group and retrieve that user's files

### **Manage a group lifecycle on Microsoft Graph**

- get the information on a group by id
- get the list of members in a Group
- get the list of owners of a Group
- get the list of Groups where the signed in user is a member
- get the list of Groups where the signed in user is an owner
- provision a Group
- provision a Team with a Group
- delete a group

## **Extend and Customize SharePoint (20-25%)**

### **Describe the components of a SharePoint Framework (SPFx) web part**

- identify the appropriate tool to create an SPFx Web Part project
- describe properties of client-side web parts
- describe Office UI Fabric in client-side web parts
- describe when to use an app page
- differentiate between app page and web part
- describe rendering framework options

### **Describe SPFx extensions**

- identify the appropriate tool to create an SPFx Extension project
- describe page placeholders from Application Customizer
- describe the ListView Command Set extension
- describe the Field Customizer extension

### **Describe the process to package and deploy an SPFx solution**

- describe the options for preparing a package for deployment
- describe the options for packaging a solution
- describe the requirements of tenant-scoped solution deployment
- describe the requirements of domain isolated web parts
- describe the options to deploy a solution

### **Describe the consumption of Microsoft Graph**

- describe the purpose of the MSGraphClient object
- describe the methods for granting permissions to Microsoft Graph

### **Describe the consumption of third-party APIs secured with Azure AD from within SPFx**

- describe the purpose of the AadHttpClient object
- describe the methods for granting permissions to consume a third-party API

### **Describe Web Parts as Teams Tabs**

- describe the considerations for creating a SPFx Web Part to be a Teams Tab
- describe the options for deploying a SPFx Web Part as a Teams Tab

### **Describe branding and theming in SharePoint**

- describe the options for SharePoint site theming
- describe the options for site designs and site scripts

## **Extend Teams (15-20%)**

### **Describe the components of a Teams app**

- describe the purpose of a Teams app manifest
- describe App Studio functionality and features
- identify the components of an app package for Microsoft Teams
- describe the options for distributing a Teams app
- describe the benefits of using deep links

- describe task modules

### **Describe webhooks in Microsoft Teams**

- describe when to use webhooks
- describe the limitations of webhooks
- describe the differences between incoming and outgoing webhooks

### **Describe tabs in Microsoft Teams**

- describe when to use tabs
- describe the capabilities of personal tabs
- describe the capabilities of channel tabs
- describe the requirements for tabs for mobile clients

### **Describe messaging extensions**

- describe when to use messaging extensions
- describe where messaging extensions can be invoked from
- describe search-based messaging extensions
- choose the appropriate message extension command type based on requirements
- describe action-based messaging extensions with adaptive cards
- describe action-based messaging extensions with parameters

### **Describe conversational bots**

- describe when to use conversational bots
- describe the scoping options for bots
- describe when to use a task module from a bot

## **Extend Office (15-20%)**

### **Describe fundamental components and types of Office Add-ins**

- describe task pane and Content Office Add-ins
- describe dialogs
- describe custom functions
- describe Add-in commands
- describe the purpose of Office Add-ins manifest

### **Describe Office JS APIs**

- describe the Office Add-in programming model

- describe Office Add-in developer tools
- describe the capabilities of the Excel JavaScript API
- describe the capabilities of the Outlook JavaScript API
- describe the capabilities of the Word JavaScript API
- describe the capabilities of the PowerPoint JavaScript API
- describe the capabilities of custom functions

### **Describe customization of Add-ins**

- describe the options of persisting state and settings
- describe Office UI Fabric in Office Add-ins
- describe when to use Microsoft Graph in Office Add-ins
- describe authorization when using Microsoft Graph in Office Add-ins

### **Describe testing, debugging, and deployment options**

- select deployment options based on requirements
- describe testing and debugging concepts for Office Add-ins

### **Describe actionable messages**

- describe the features of actionable messages with an adaptive card
- describe the scenarios for refreshing an actionable message

**The exam guide below shows the changes that will be implemented on November 24, 2020.**

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- ~~• describe the options for SharePoint site theming~~
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### **Extend Microsoft Teams (20-2515-20%)**

#### **Create a Microsoft Teams app manifest**

- [configure an app manifest using App Studio](#)
- [manually create an app manifest to deploy a SPFx Web Part to Teams](#)
- [create an app package for a Microsoft Teams app](#)

### **Deploy a Teams app**

- [describe the options for deploying a Teams app](#)
- [sideload an app in Microsoft Teams](#)
- [publish a Teams app to an organization app catalog](#)

### **Create and use task modules**

- [create a card-based task module](#)
- [create an iframe-based task module](#)
- [invoke a task module from a tab](#)
- [invoke a task module from a bot](#)
- [chain task module invocations](#)

### **Create a webhook**

- [create an outgoing webhook](#)
- [create an incoming webhook](#)

### **Implement custom Teams tabs**

- [create a personal tab](#)
- [create a channel/group tab](#)
- [create a tab with a deep link](#)
- [add authentication to a tab](#)

### **Create a messaging extension**

- [create a search command extension](#)
- [create an action command extension using an adaptive card](#)
- [create an action command extension using parameters](#)

### **Create a conversational Bot**

- [create a personal bot](#)
- [create a group/channel bot](#)
- [use proactive messaging with a bot](#)
- [send actionable messages from a bot](#)
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