Study guide for Exam PL-500: Microsoft Power Automate RPA Developer

Purpose of this document
This study guide should help you understand what to expect on the exam and includes a summary of the topics the exam might cover and links to additional resources. The information and materials in this document should help you focus your studies as you prepare for the exam.

<table>
<thead>
<tr>
<th>Useful links</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review the skills measured as of December 20, 2022</strong></td>
<td>This list represents the skills measured AFTER the date provided. Study this list if you plan to take the exam AFTER that date.</td>
</tr>
<tr>
<td><strong>Review the skills measured prior to December 20, 2022</strong></td>
<td>Study this list of skills if you take your exam PRIOR to the date provided.</td>
</tr>
<tr>
<td><strong>Change log</strong></td>
<td>You can go directly to the change log if you want to see the changes that will be made on the date provided.</td>
</tr>
<tr>
<td><strong>How to earn the certification</strong></td>
<td>Some certifications only require passing one exam, while others require passing multiple exams.</td>
</tr>
<tr>
<td><strong>Certification renewal</strong></td>
<td>Microsoft associate, expert, and specialty certifications expire annually. You can renew by passing a free online assessment on Microsoft Learn.</td>
</tr>
<tr>
<td><strong>Your Microsoft Learn profile</strong></td>
<td>Connecting your certification profile to Learn allows you to schedule and renew exams and share and print certificates.</td>
</tr>
<tr>
<td><strong>Passing score</strong></td>
<td>A score of 700 or greater is required to pass.</td>
</tr>
<tr>
<td><strong>Exam sandbox</strong></td>
<td>You can explore the exam environment by visiting our exam sandbox.</td>
</tr>
<tr>
<td><strong>Request accommodations</strong></td>
<td>If you use assistive devices, require extra time, or need modification to any part of the exam experience, you can request an accommodation.</td>
</tr>
</tbody>
</table>
Updates to the exam

Our exams are updated periodically to reflect skills that are required to perform a role. We have included two versions of the Skills Measured objectives depending on when you are taking the exam.

We always update the English language version of the exam first. Some exams are localized into other languages, and those are updated approximately eight weeks after the English version is updated. Other available languages are listed in the Schedule Exam section of the Exam Details webpage. If the exam isn’t available in your preferred language, you can request an additional 30 minutes to complete the exam.

Note
The bullets that follow each of the skills measured are intended to illustrate how we are assessing that skill. Related topics may be covered in the exam.

Note
Most questions cover features that are general availability (GA). The exam may contain questions on Preview features if those features are commonly used.

Skills measured as of December 20, 2022

Audience profile
Candidates for this exam automate time-consuming and repetitive tasks by using Microsoft Power Automate. They review solution requirements, create process documentation, and design, develop, troubleshoot, and evaluate solutions.

Candidates work with business stakeholders to improve and automate business workflows. They collaborate with administrators to deploy solutions to production environments, and they support solutions.

Additionally, candidates should have experience with JSON, cloud flows and desktop flows, integrating solutions with REST and SOAP services, analyzing data by using Microsoft Excel, VBScript, Visual Basic for Applications (VBA), HTML, JavaScript, one or more programming languages, monitoring and understanding the health of flows, and the Microsoft Power Platform suite of tools (process advisor, AI Builder, Power Apps, Dataverse, and Power Virtual Agents).

- Design solutions (25–30%)
- Develop solutions (40–45%)
- Deploy and manage solutions (30–35%)
Design solutions (25–30%)

Determine how to interact with an application targeted for automation

- Evaluate whether a target application can be automated
- Choose which automation technology to use to interact with a target application, including using selectors and user interface element inspection
- Plan connection, payload, and other relevant information for required APIs
- Verify access to target applications

Determine which types of Power Automate flows to implement

- Differentiate cloud flows and desktop flows
- Select which logical components are required for a solution, including flows, trigger connectors, canvas apps, and model-driven apps
- Develop a strategy for running flows, including running flows serially or in parallel
- Choose connectors for a solution, including custom connectors

Design the solution

- Design an automation model that includes required flow types and automation methods
- Select the types of triggers to use to meet specific business requirements
- Choose whether to run a desktop flow attended versus unattended
- Develop fault tolerance requirements for the solution
- Design required user interface elements for a solution
- Design retry and exception handling logic
- Design a strategy for scaling a solution and reusing solution components
- Design required variables and variable types

Develop solutions (40–45%)

Create core solution components

- Create custom connectors
- Create components to launch, connect to, and authenticate with target applications
- Create components to perform business logic and process transactional work
- Create components to safely exit from and close target applications
- Create components that perform actions by calling external APIs
- Implement actions to perform application integration tasks
- Implement system actions to run custom scripts and change target screen resolution
- Implement Power Automate actions to run Office Scripts
- Create flows by using Microsoft Visio, the mobile app for Power Automate, and other tools

Configure solution components

- Select an environment for the solution, and configure environment details
- Map target application accounts to environments and other solution components
- Configure connection features, and manage references to connections
- Configure flow queues, triggers, and schedules

**Enhance solution components**
- Create exception handling blocks to manage business and system exceptions
- Create routines to handle and log errors and business exceptions
- Create routines to manipulate Power Automate data objects, including JSON objects
- Configure role-based security
- Configure security for sensitive data

**Integrate AI Builder and Azure Cognitive Services with solutions**
- Describe use cases for and capabilities of AI Builder
- Describe the Bring your own AI model feature
- Differentiate between prebuilt and custom-trained AI Builder models
- Select the appropriate AI Builder model for a solution

**Finalize development and test solutions**
- Differentiate between features and behaviors of debug and compiled solutions
- Create and implement a test plan
- Perform unit testing, and resolve identified issues
- Configure and run attended and unattended desktop flows
- Debug solutions by using Power Automate debugging features, including Run from here and breakpoints
- Identify machine-level differences and dependencies
- Prepare and deploy solutions to a user acceptance testing (UAT) environment

**Deploy and manage solutions (30–35%)**

**Configure solution infrastructure**
- Configure machine management options, including machine registration and machine groups
- Implement queue management to distribute workloads
- Implement logging and alerts
- Implement role-based access control (RBAC)
- Manage credentials by using Azure Key Vault
- Determine whether to implement data loss prevention (DLP) policies at the tenant level or the environment level
- Implement Data Loss Prevention (DLP) policies and other options to help prevent exposure of sensitive and confidential data
- Connect to on-premises data sources by using an on-premises data gateway
Prepare solutions for deployment to production
- Create and manage environment variables and solution configuration files
- Select a package type, and prepare a solution package
- Configure priority for flows
- Configure machines and machine groups
- Configure child flows

Deploy and manage solutions
- Replicate settings from development and user acceptance testing (UAT) environments to production
- Deploy a solution to a production environment
- Describe use cases for and capabilities of process advisor
- Monitor solutions by using process advisor
- Upgrade and update solutions

Share solutions and collaborate with others
- Describe the process for sharing solutions
- Create a copy of a cloud flow, and send the flow to other users
- Share a cloud flow with a user as a co-owner or run-only user
- Share a desktop flow
- Share machines and machine groups

Study resources
We recommend that you train and get hands-on experience before you take the exam. We offer self-study options and classroom training as well as links to documentation, community sites, and videos.

<table>
<thead>
<tr>
<th>Study resources</th>
<th>Links to learning and documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get trained</td>
<td>Choose from self-paced learning paths and modules or take an instructor led course</td>
</tr>
<tr>
<td>Find documentation</td>
<td>Microsoft Power Platform documentation</td>
</tr>
<tr>
<td></td>
<td>Power Automate documentation</td>
</tr>
<tr>
<td>Ask a question</td>
<td>Microsoft Q&amp;A</td>
</tr>
<tr>
<td>Get community support</td>
<td>Power Platform Community (microsoft.com)</td>
</tr>
<tr>
<td>Follow Microsoft Learn</td>
<td>Microsoft Learn - Microsoft Tech Community</td>
</tr>
</tbody>
</table>
## Change log

<table>
<thead>
<tr>
<th>Skill area prior to December 20, 2022</th>
<th>Skill area as of December 20, 2022</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience profile</td>
<td>Design solutions</td>
<td>Minor</td>
</tr>
<tr>
<td>Design solutions</td>
<td>Design solutions</td>
<td>No change</td>
</tr>
<tr>
<td>Determine how to interact with an application targeted for automation</td>
<td>Determine how to interact with an application targeted for automation</td>
<td>No change</td>
</tr>
<tr>
<td>Determine which types of Power Automate flows to implement</td>
<td>Determine which types of Power Automate flows to implement</td>
<td>Minor</td>
</tr>
<tr>
<td>Design the solution</td>
<td>Design the solution</td>
<td>Minor</td>
</tr>
<tr>
<td>Develop solutions</td>
<td>Develop solutions</td>
<td>No change</td>
</tr>
<tr>
<td>Create core solution components</td>
<td>Create core solution components</td>
<td>Minor</td>
</tr>
<tr>
<td>Configure solution components</td>
<td>Configure solution components</td>
<td>No change</td>
</tr>
<tr>
<td>Enhance solution components</td>
<td>Enhance solution components</td>
<td>No change</td>
</tr>
<tr>
<td>Integrate AI Builder and Azure Cognitive Services with solutions</td>
<td>Integrate AI Builder and Azure Cognitive Services with solutions</td>
<td>No change</td>
</tr>
<tr>
<td>Finalize development and test solutions</td>
<td>Finalize development and test solutions</td>
<td>No change</td>
</tr>
<tr>
<td>Deploy and manage solutions</td>
<td>Deploy and manage solutions</td>
<td>No change</td>
</tr>
<tr>
<td>Configure solution infrastructure</td>
<td>Configure solution infrastructure</td>
<td>Minor</td>
</tr>
<tr>
<td>Prepare solutions for deployment to production</td>
<td>Prepare solutions for deployment to production</td>
<td>Minor</td>
</tr>
<tr>
<td>Deploy and manage solutions</td>
<td>Deploy and manage solutions</td>
<td>Minor</td>
</tr>
<tr>
<td>Share solutions and collaborate with others</td>
<td>Share solutions and collaborate with others</td>
<td>No change</td>
</tr>
</tbody>
</table>

### Skills measured prior to December 20, 2022

- Design solutions (25–30%)
- Develop solutions (40–45%)
- Deploy and manage solutions (30–35%)

**Design solutions (25–30%)**

**Determine how to interact with an application targeted for automation**
- Evaluate whether a target application can be automated
- Choose which automation technology to use to interact with a target application, including using selectors and user interface element inspection
- Plan connection, payload, and other relevant information for required APIs
- Verify access to target applications

**Determine which types of Power Automate flows to implement**
- Differentiate cloud flows and desktop flows
- Select which logical components are required for a solution, including flows, triggers connectors, canvas apps, and model-driven apps
- Develop a strategy for running flows, including running flows serially or in parallel
- Choose connectors for a solution, including custom connectors

**Design the solution**
- Design an automation model that includes required flow types and automation methods
- Select the types of triggers to use to meet specific business requirements
- Choose whether to run the solution attended versus unattended
- Develop fault tolerance requirements for the solution
- Design required user interface elements for a solution
- Design retry and exception handling logic
- Design a strategy for scaling a solution and reusing solution components
- Design required variables and variable types

**Develop solutions (40–45%)**

**Create core solution components**
- Create custom connectors
- Create components to launch, connect to, and authenticate with target applications
- Create components to perform business logic and process transactional work
- Create components to safely exit from and close target applications
- Create components that perform actions by calling external APIs
- Implement actions to perform application integration tasks
- Implement system actions to run custom scripts and change target screen resolution
- Implement Power Automate actions to run Microsoft Office scripts
- Create flows by using Microsoft Visio, the mobile app for Power Automate, and other tools
Configure solution components
- Select an environment for the solution, and configure environment details
- Map target application accounts to environments and other solution components
- Configure connection features, and manage references to connections
- Configure flow queues, triggers, and schedules

Enhance solution components
- Create exception handling blocks to manage business and system exceptions
- Create routines to handle and log errors and business exceptions
- Create routines to manipulate Power Automate data objects, including JSON objects
- Configure role-based security
- Configure security for sensitive data

Integrate AI Builder and Azure Cognitive Services with solutions
- Describe use cases for and capabilities of AI Builder
- Describe the Bring your own AI model feature
- Differentiate between prebuilt and custom-trained AI Builder models
- Select the appropriate AI Builder model for a solution

Finalize development and test solutions
- Differentiate between features and behaviors of debug and compiled solutions
- Create and implement a test plan
- Perform unit testing, and resolve identified issues
- Configure and run attended and unattended desktop flows
- Debug solutions by using Power Automate debugging features, including Run from here and breakpoints
- Identify machine-level differences and dependencies
- Prepare and deploy solutions to a user acceptance testing (UAT) environment

Deploy and manage solutions (30–35%)

Configure solution infrastructure
- Configure machine management options, including machine registration and machine groups
- Implement queue management to distribute workloads
- Implement logging and alerts
- Implement role-based access control (RBAC)
- Manage credentials by using Azure Key Vault
- Determine whether to implement data loss prevention (DLP) policies at the tenant level or the environment level
- Implement Data Loss Prevention (DLP) policies and other options to protect sensitive and confidential data
• Connect to on-premises data by using a data gateway

**Prepare solutions for deployment to production**
• Create and manage environment variables and solution configuration files
• Select a package type, and prepare a solution package
• Configure priority for flows
• Configure machines and machine groups
• Configure child flows

**Deploy and manage solutions**
• Replicate settings from development and user acceptance testing (UAT) environments to production
• Deploy a solution to a production environment
• Describe use cases for and capabilities of process advisor
• Monitor solutions by using process advisor
• Upgrade and patch solutions

**Share solutions and collaborate with others**
• Describe the process for sharing solutions
• Create a copy of a cloud flow, and send the flow to other users
• Share a cloud flow with a user as a co-owner or run-only user
• Share a desktop flow
• Share machines and machine groups