

## 1. Design and implement processes and communications

### └ 1.1 Design and implement traceability and flow of work

#### └ 1.1.3 Integrate GitHub Projects, Azure Boards, repositories

1. What are the benefits of integrating GitHub Projects with Azure Boards?
  2. How do you connect a GitHub repository to Azure Boards?
  3. What permissions are required to enable GitHub–Azure Boards integration?
  4. How do you automatically link GitHub commits and pull requests to Azure Boards work items?
  5. How can you synchronize work item state between Azure Boards and GitHub Projects?
  6. What are best practices for maintaining traceability between code and work items?
  7. How do you configure automation between GitHub issues and Azure Boards?
  8. What are common troubleshooting steps if integration fails?
  9. How do you use service hooks/webhooks to enhance integration?
  10. What limitations exist when integrating GitHub Projects, Azure Boards, and repositories?
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#### 1. What are the benefits of integrating GitHub Projects with Azure Boards?

- Enables end-to-end traceability between code, pull requests, and work items.
  - Facilitates agile planning and tracking using *Azure Boards* while developing in *GitHub*.
  - Automatically updates work items from *GitHub* activity, increasing visibility and reducing manual effort.
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#### 2. How do you connect a GitHub repository to Azure Boards?

- Install the *Azure Boards* app for *GitHub* from the *GitHub Marketplace*.
  - Authorize the app and select the repository.
  - In *Azure Boards*, link the *GitHub* repository using *Project Settings > GitHub Connections*.
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#### 3. What permissions are required to enable GitHub–Azure Boards integration?

- You need admin permissions on the *GitHub* repository.
  - You must have at least Basic access to the *Azure DevOps* project.
  - The *Azure Boards* app must be authorized with appropriate OAuth permissions to access repos and metadata.
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#### 4. How do you automatically link GitHub commits and pull requests to Azure Boards work items?

- Use the syntax AB#{work item ID} OR Fixes AB#{work item ID} in commit messages or PR titles/descriptions.
  - Linked work items are updated automatically in *Azure Boards* with commit and PR information.
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#### 5. How can you synchronize work item state between Azure Boards and GitHub Projects?

- Changes to linked work items in *Azure Boards* are not automatically reflected in *GitHub* Projects.
  - Manual updates or third-party automation (e.g., *GitHub Actions* or *Azure Logic Apps*) are needed for bi-directional state sync.
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#### 6. What are best practices for maintaining traceability between code and work items?

- Always reference work item IDs in commit messages and PRs.
- Use branch naming conventions (e.g., feature/AB#123-description).
- Enforce PR templates that require work item linkage.
- Periodically audit links between code and work items.

### **7. How do you configure automation between GitHub issues and Azure Boards?**

- Use *Azure Logic Apps* or *GitHub Actions* to create workflows that create or update *Azure Boards* work items based on *GitHub* issue events.
  - *Service hooks* in *Azure Boards* can trigger actions in response to *GitHub* issue activity.
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### **8. What are common troubleshooting steps if integration fails?**

- Verify *Azure Boards* app is installed and authorized in *GitHub*.
  - Check repository and user permissions in both *GitHub* and *Azure DevOps*.
  - Ensure the repository is correctly linked in *Azure Boards* settings.
  - Review integration logs in *Azure DevOps* for errors.
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### **9. How do you use service hooks/webhooks to enhance integration?**

- Configure service hooks in *Azure DevOps* to send updates to external systems (like *GitHub* or *Teams*) based on work item changes.
  - Set up *GitHub webhooks* to trigger automation in response to repo or issue events.
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### **10. What limitations exist when integrating GitHub Projects, Azure Boards, and repositories?**

- Work item state is not bi-directionally synced by default.
- Some features (e.g., advanced queries or cross-org integration) may not be supported.
- Large numbers of repositories may require individual configuration.