

## 4. Monitor and troubleshoot Azure solutions

### └ 4.1 Monitor and troubleshoot solutions by using Application Insights

#### └ 4.1.2 Implement Application Insights web tests and alerts

1. What are Application Insights web tests and their core types?
2. How do you create a URL ping test in Application Insights?
3. What are multi-step web tests and when should you use them?
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10. What best practices apply to monitoring app availability with web tests?

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#### 1. What are Application Insights web tests and their core types?

Application Insights web tests are synthetic availability tests. The two core types are:

- URL ping tests: Periodically hit an endpoint to verify availability.
- Multi-step tests: Scripted tests that simulate user journeys (deprecated for new use).

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#### 2. How do you create a URL ping test in Application Insights?

Go to the “Availability” tab in App Insights, choose “Add test”, select “URL ping test”, configure the test name, URL, locations, frequency, success criteria, and alert settings.

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#### 3. What are multi-step web tests and when should you use them?

Multi-step tests use .webtest files uploaded to App Insights to simulate complex scenarios. They're useful for emulating real user workflows but are deprecated and replaced by Azure Load Testing or Playwright tests in GitHub Actions.

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#### 4. What are availability test locations and why are they important?

Availability tests run from multiple Azure datacenters (e.g., US West, Europe North). This validates global uptime and helps detect region-specific failures or latency issues.

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#### 5. How are alerts configured for availability tests?

When creating a web test, you can enable alerts on failure. Alternatively, use Azure Monitor to create an alert rule that triggers when the `availabilityResults` signal detects failed tests.

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#### 6. How do you use metric-based alerts in Application Insights?

Navigate to Azure Monitor > Alerts > New Alert Rule. Choose an App Insights resource, then select metrics like `requests/failed`, `availabilityResults/availabilityPercentage`, define condition, and assign an action group.

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#### 7. What is the difference between classic alerts and new Azure Monitor alerts?

Classic alerts are legacy and limited in flexibility. Azure Monitor alerts support advanced logic, dynamic thresholds, metric-based conditions, and integration with action groups.

### **8. How can you configure alerts for failed requests or dependencies?**

Create an alert rule in Azure Monitor using Application Insights as the resource. Select signals like requests/failed OR dependencies/failed, define a threshold (e.g., count > 5 in 5 mins), and link to an action group.

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### **9. How do action groups work with alerts in Application Insights?**

Action groups define how alerts notify users or systems. You can trigger emails, SMS, webhooks, Azure Functions, or Logic Apps. They are reusable across multiple alert rules.

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### **10. What best practices apply to monitoring app availability with web tests?**

- Test from multiple regions
- Set up alerts for sustained failures, not transient ones
- Use short intervals for mission-critical endpoints
- Use secure URLs (HTTPS) and validate content in the response