

Exam Alert: Monitor and Back Up Azure Resources

AZURE MONITOR “NEED TO KNOW” EXAM INFORMATION



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Exam Breakdown of Objective Domain

Monitor and Backup Up Azure Resources (10-15%)

- Monitor resources by using Azure Monitor
- Implement backup and recovery



Monitoring Resources by using Azure Monitor



Objectives

Configure and Interpret Metrics

- Analyze metrics across subscriptions

Configure Log Analytics

- Implement a Log Analytics workspace
- Configure diagnostic settings

Set up Alerts and Actions



Objectives

Query and analyze logs

- Create a query
- Save a query to the dashboard
- Interpret graphs

Set up alerts and actions

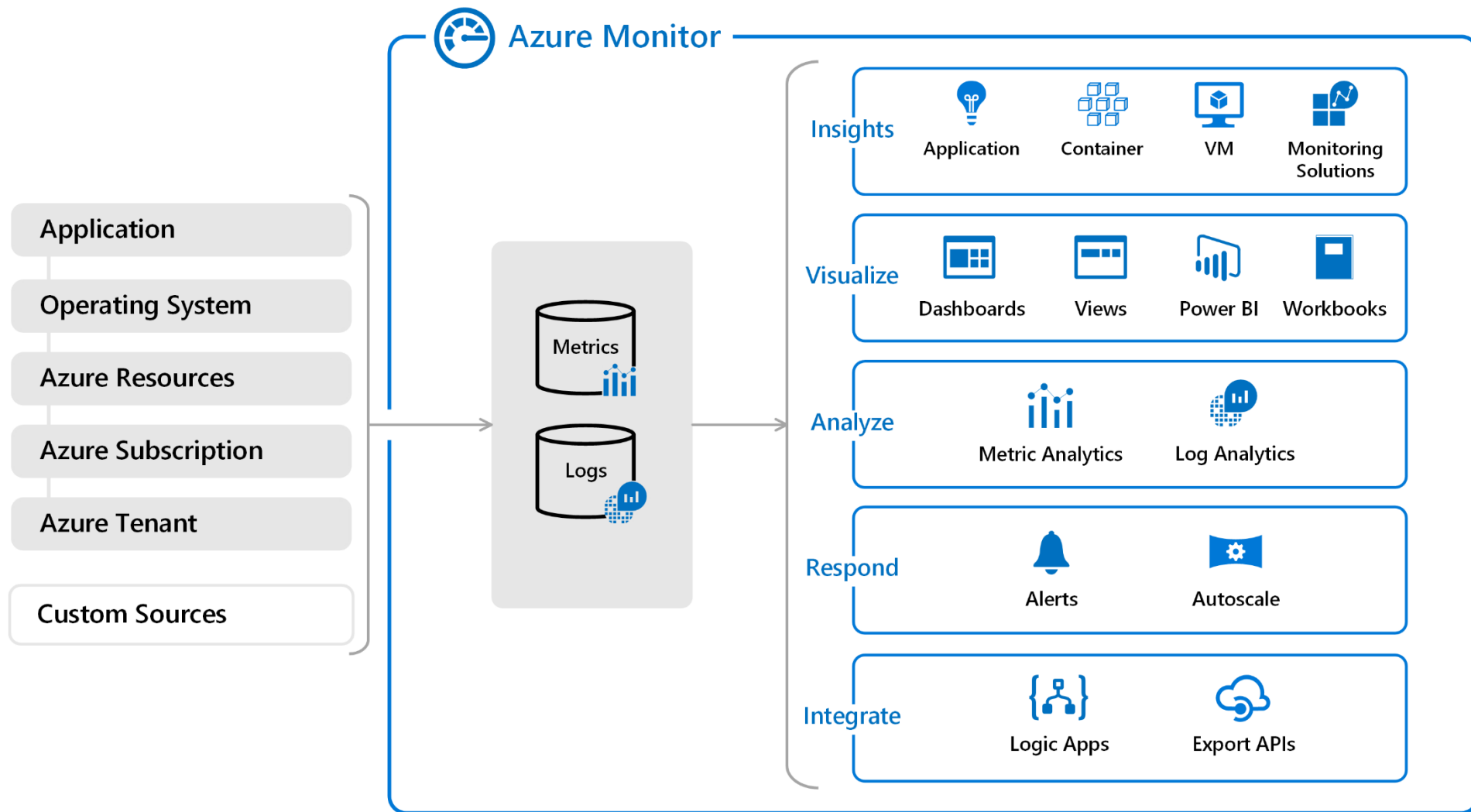
- Create and test alerts
- Create action groups
- View alerts in Azure Monitor
- Analyze alerts across subscriptions

Configure Application Insights

Network monitor NOT on exam



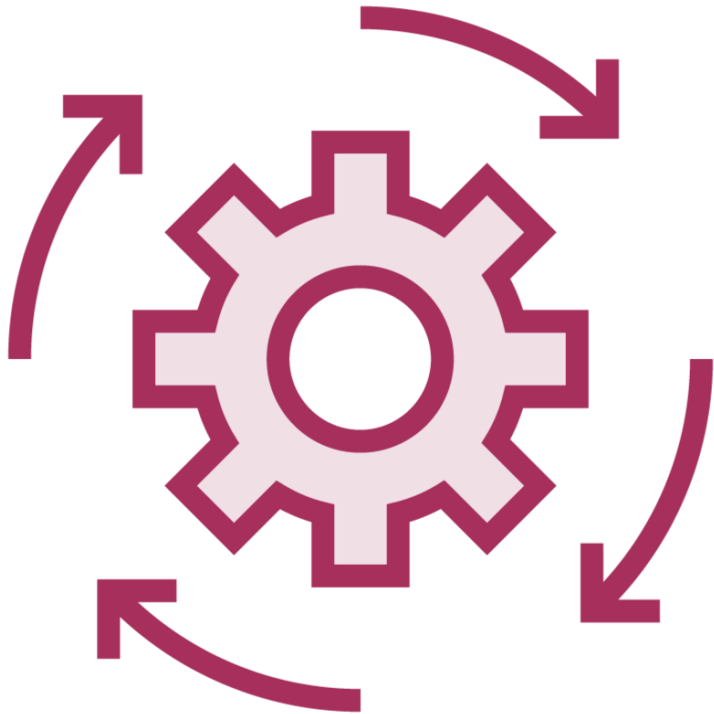
Azure Monitor



Configure Log Analytics



Implement a Log Analytics Workspace



Create the Log Analytics workspace

- Works across regions

Enable Connection to Resource

- Know the different agents

Collect information

- Configure diagnostic settings on resources

Configure Diagnostics Settings

The screenshot displays the Microsoft Azure portal interface for configuring diagnostics on a virtual machine. The top navigation bar shows the Microsoft Azure logo, a search bar, and user information for 'mbender@bentech.net'. The left sidebar contains a navigation menu with categories like 'Operations' and 'Monitoring'. The main content area is titled 'data001 | Diagnostic settings' and shows the 'Agent' tab selected. The configuration options include:

- Storage account:** A dropdown menu showing 'sagpv2storage001'.
- Disk quota (MB):** A text input field with the value '5120' and a green checkmark.
- Diagnostic infrastructure logs:** A toggle switch set to 'Enabled'.
- Log level:** A dropdown menu with options: All, Verbose, Information, Warning, Error (selected), and Critical.

Below the configuration options, there is a section titled 'Help' with a link to 'Learn more about the agent' and a note stating 'When the agent is removed, you can re-configure the agent might help.'



Set up Alerts and Actions



Create Alert Rule

Define the scope

- Targets

Select conditions

- Configure signal logic

Select Action Group

- Notifications to send
- Action type to perform

Define rule details

Test Rule

- Use a notification-only action group



View Alerts in Azure Monitor

The screenshot displays the Azure Monitor Alerts interface. The left sidebar contains navigation links for Overview, Activity log, Alerts (selected), Metrics, Logs, Service Health, Workbooks, and Insights. The main content area shows a summary of alerts and a table of alert details.

Alerts Summary:

- Total alerts:** 3 (Since 11/17/2020, 5:04:01 PM)
- Smart groups (preview):** 0 (0% Reduction)
- Total alert rules:** 2 (Enabled 2)
- Action rules (preview):** 0 (Enabled 0)

Alerts Table:

Severity	Total alerts	New	Acknowledged
Sev 0	0	0	0
Sev 1	0	0	0
Sev 2	0	0	0
Sev 3	0	0	0
Sev 4	3	3	0



View Alerts in Azure Monitor

Microsoft Azure Search resources, services, and docs (G+)

Home > Monitor > All Alerts

+ New alert rule Edit columns Manage alert rules View classic alerts Refresh Change state Provide feedback

Don't see a subscription? [Open Directory + Subscription settings](#)

Subscription : 2 selected Resource group : 15 selected Resource type : 11 selected Resource : All selected Time range : Past 24 hours Severity : Sev 4

+ Add filters

All alerts Alerts by smart group (preview)

Search by name (case-insensitive)

<input type="checkbox"/> Name ↑↓	Severity ↑↓	Monitor condition ↑↓	Alert state ↑↓	Affected resource ↑↓	Monitor service ↑↓	Signal type ↑↓	Fired time
<input type="checkbox"/> alert-start-vm	Sev4	Fired	New	vm-data-east001	ActivityLog Administra...	Log	11/18/2020
<input type="checkbox"/> alert-start-vm	Sev4	Fired	New	vm-data-east001	ActivityLog Administra...	Log	11/18/2020
<input type="checkbox"/> alert-start-vm	Sev4	Fired	New	vm-data-east001	ActivityLog Administra...	Log	11/18/2020



Analyze Alerts across Subscriptions

The screenshot shows the Microsoft Azure Monitor Alerts interface. The left sidebar contains navigation links: Overview, Activity log, Alerts (selected), Metrics, Logs, Service Health, Workbooks, Insights, Applications, Virtual Machines, Storage accounts, Containers, Networks (preview), Azure Cosmos DB, Key Vaults, Azure Cache for Redis, and Insights Hub. The main content area displays the 'Monitor | Alerts' page for the user 'mbender@bentech.net'. It includes a search bar, a toolbar with 'New alert rule', 'Manage alert rules', 'Manage actions', 'View classic alerts', 'Refresh', and 'Provide feedback', and a filter bar with 'Subscription: 2 selected', 'Resource group: 15 selected', 'Time range: Past 24 hours', and 'Resource: All'. A dropdown menu is open under the 'Subscription' filter, showing a search input 'Type to start filtering...' and three checked options: 'Bender Technology Consultin...', 'MSDN', and 'Visual Studio Enterprise'. Below the dropdown, summary statistics are shown: 'Total alerts: 3 Since 11/17/2020, 6', 'Total alert rules: 2 Enabled 2', and 'Action rules (preview): 0 Enabled 0'. A table at the bottom lists alert severities from Sev 0 to Sev 4, with counts for 'New' and 'Acknowledged' alerts. Sev 4 has 3 new alerts and 0 acknowledged.

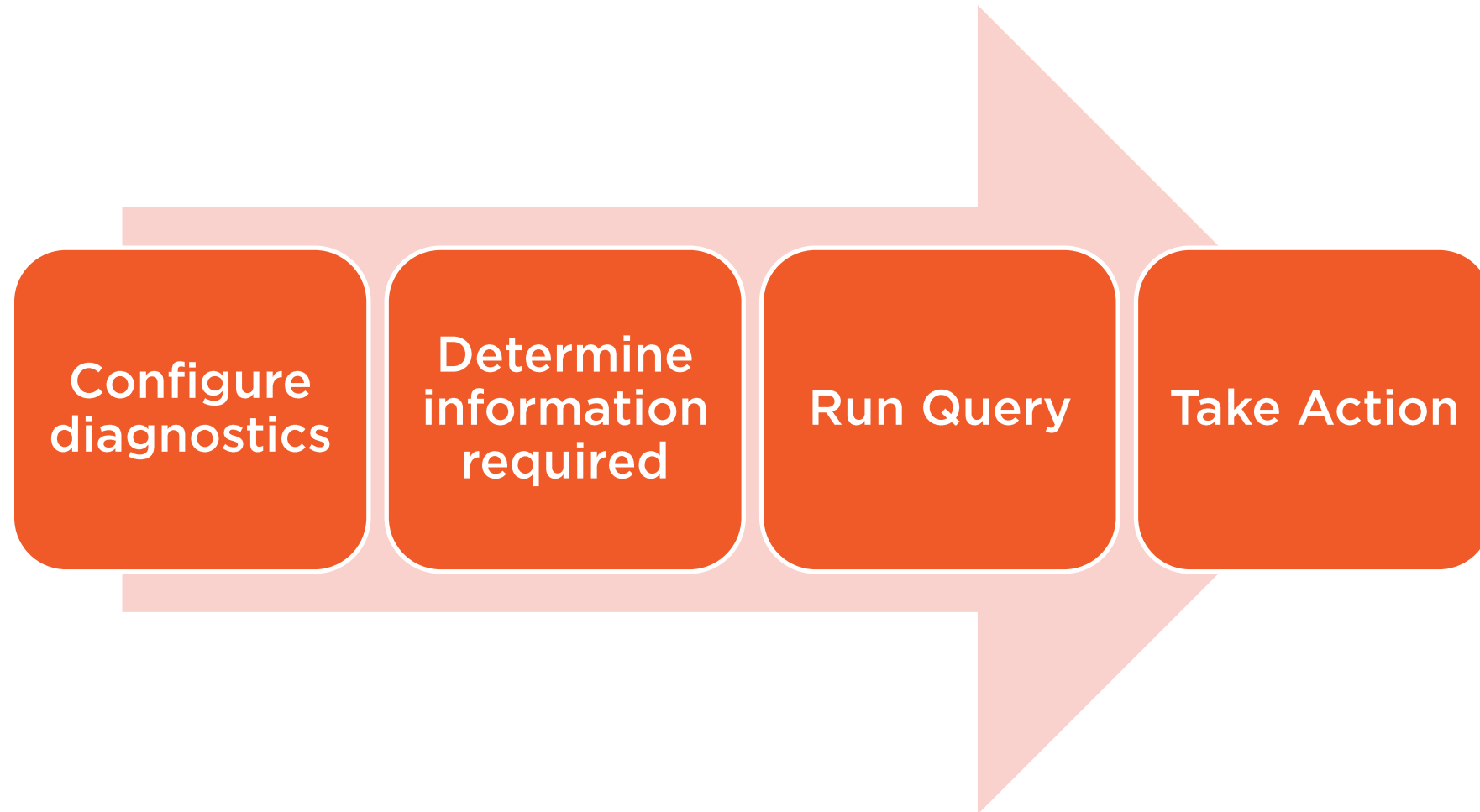
Severity	Count	New	Acknowledged
Sev 0	0	0	0
Sev 1	0	0	0
Sev 2	0	0	0
Sev 3	0	0	0
Sev 4	3	3	0



Query and Analyze Logs



Log Search Workflow



Event

Table Reference

| where EventLog == "Application"

Filters

| where TimeGenerated > ago(24h)

Filters

| where RenderedDescription contains "cryptographic"

Filters

Create a Query with Kusto Query Language

Understand the syntax

Be able to differentiate KQL from other queries

Check out the resources at <https://docs.microsoft.com/en-us/azure/data-explorer/kusto/concepts/>



Configure and Interpret Metrics



Configure and Interpret Metrics

Metrics are real-time numbers like CPU%

Use Metrics Explorer to visualize & analyze the data

Use filters to refine data

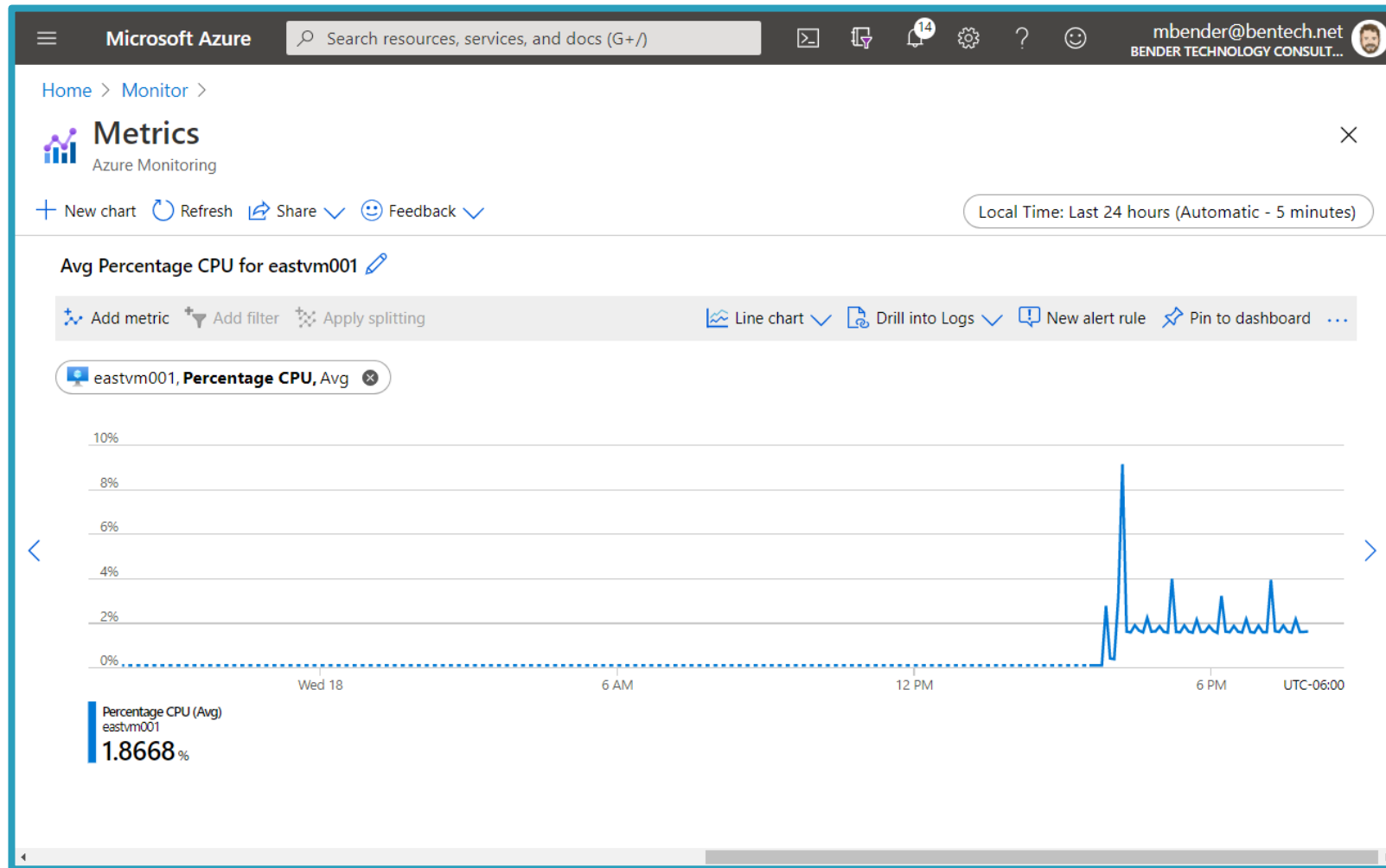
Change views in Metrics Explorer

Pin to dashboard for regular use

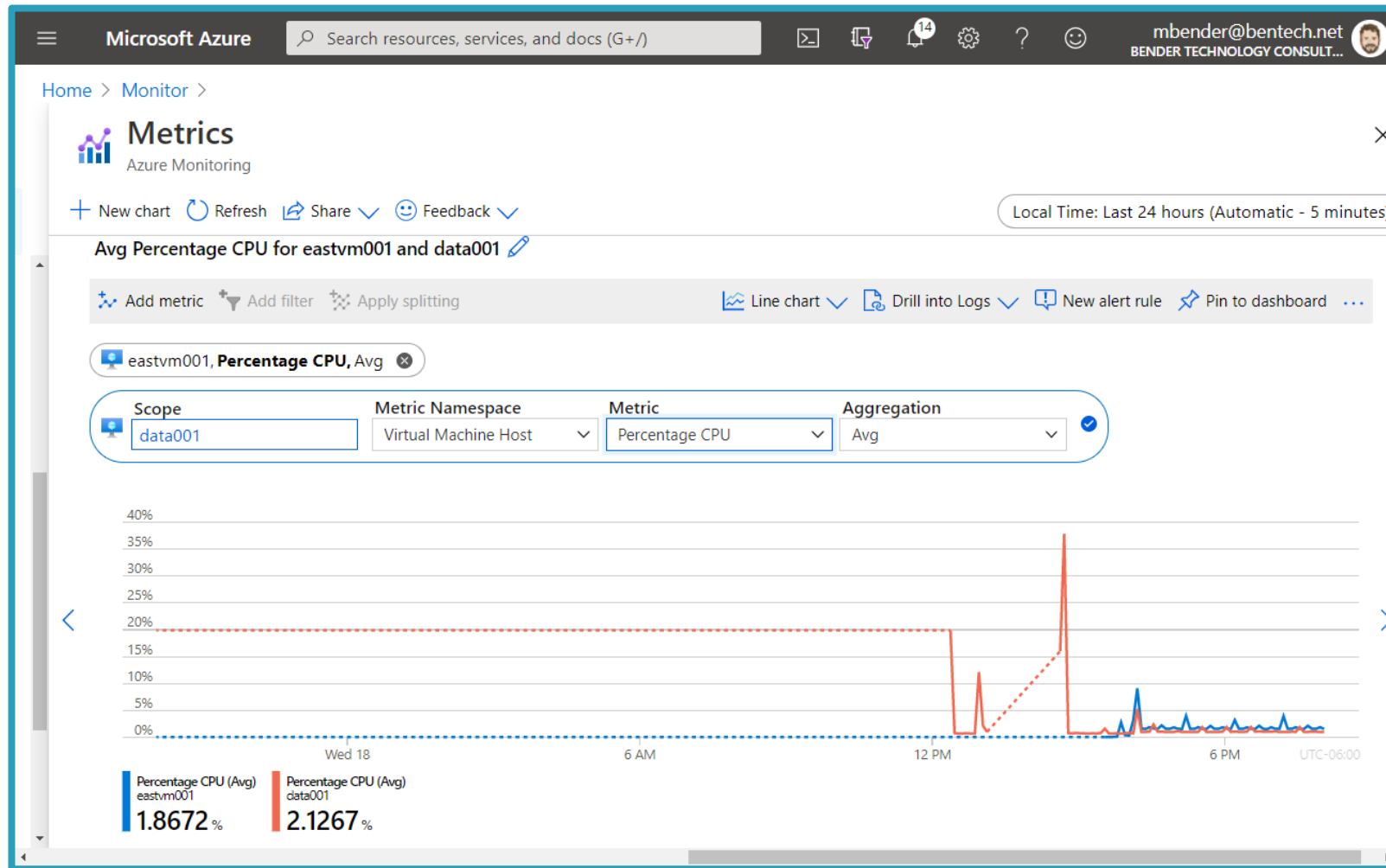
Create a rule



Multiple Subscriptions in Metric Explorer



Multiple Subscriptions in Metric Explorer



Configure Application Insights



Configure and
Interpret
Metrics

Monitoring service for live applications
Deployed with agent or via code
Configured through Azure portal or Code





Azure Backup “Need to Know” Exam Information



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Exam Breakdown of Objective Domain

Monitor and Backup Up Azure Resources (10-15%)

- Monitor resources by using Azure Monitor
- Implement backup and recovery



Objectives

Configure and review backup reports

Perform backup and restore operations by using Azure Backup

Create a Recovery Services Vault

- use soft delete to recover Azure VMs

Create and configure backup policy

Perform site-to-site recovery by using Azure Site Recovery



Perform Backup and Restore Operations by using Azure Backup



Implement
Backup and
Recovery

Create a



Functional Group

Implement backup and recovery

Implement backup and recovery

- configure and review backup reports
- perform backup and restore operations by using Azure Backup [Service](#)
- create a Recovery Services Vault
 - use soft delete to recover Azure VMs
- create and configure backup policy
- perform site-to-site recovery by using Azure Site Recovery
- NOT: SQL or HANA



Areas that are not covered

**Backup of SQL and SAP
HANA**

Network Monitor

Preview Items

Azure Backup Center



Configure and Review Backup Reports



Configure Backup Reports

Support multiple backup sources

Requires a Log Analytics workspace

Configure diagnostic settings in Recovery Services Vault

Know the Azure Backup log events for Resource specific diagnostics

View Reports in the Recovery Services Vault



Log Events for Resource Specific Diagnostic Logs

Microsoft Azure Search resources, services, and docs (G+/)

mbender@bentech.net BENDER TECHNOLOGY CONSULT...

Home > demovault >

Diagnostic setting

Save Discard Delete Provide feedback

log

- ☐ AzureBackupReport
- ☐ CoreAzureBackup
- ☐ AddonAzureBackupJobs
- ☐ AddonAzureBackupAlerts
- ☐ AddonAzureBackupPolicy
- ☐ AddonAzureBackupStorage
- ☐ AddonAzureBackupProtectedInstance
- ☐ AzureSiteRecoveryJobs
- ☐ AzureSiteRecoveryEvents

☒ Send to Log Analytics workspace

Subscription
Visual Studio Enterprise

Log Analytics workspace
DefaultWorkspace-afab04a1-b389-446a-9228-ad4d59680dc6-EUS (eas...

Destination table

Azure diagnostics Resource specific

i You need to create separate diagnostic settings for Azure Backup and Azure Site Recovery events to prevent potential data loss. For Azure Backup events, if you choose the 'Resource specific' mode, you must select the following events only - CoreAzureBackup, AddonAzureBackupJobs, AddonAzureBackupAlerts, AddonAzureBackupPolicy, AddonAzureBackupStorage, AddonAzureBackupProtectedInstance. The AzureBackupReport event works only in 'Azure diagnostics' mode. [Learn more](#)

☐ Archive to a storage account

☐ Stream to an event hub



Create and Configure Backup Policy



Create a Backup Policy



Stored in Recovery Services Vault in region of resources

Defines how a backup plan is implemented

Setup asks for backup configuration

Multiple retention periods

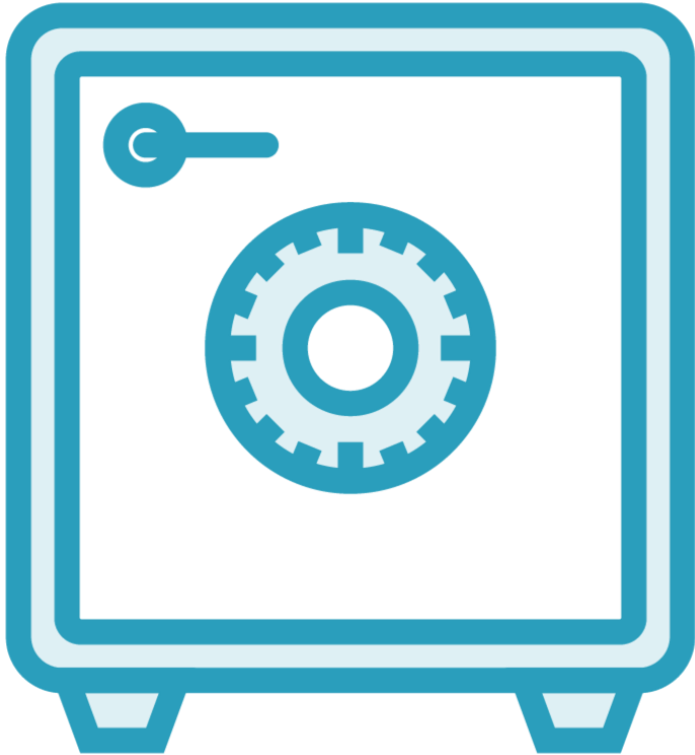
Policy for each resource type



Create a Recovery Services Vault



Recovery Service Vault



Storage Entity for backup and recovery resources

Centralized management

Work with on-premises and cloud-based workloads.

Backup resources in same region as RSV

- RSV and VMs in East US

Site recovery resources in different region

- RSV in East US
- Source VMs in West US



Understand what you can
and can't protect based on
Azure region



Perform Backup and Restore Operations by using Azure Backup



Performing Backup Operations

Supports on-premises and Azure workloads

App-consistent backups

Require resources and vault in same region

Initiate backup manually or scheduled



You can only backup
resources in the SAME
region as your Recovery
Services Vault



Restoring VM Backups

Point-In-time Restores

VM Restore Options

- Entire VM
- Individual disks
- Files

Mount Files in VM Backup via Script



Restoring File Shares

Based on Snapshots

Incorporates Soft Delete for 14 days of retention by default

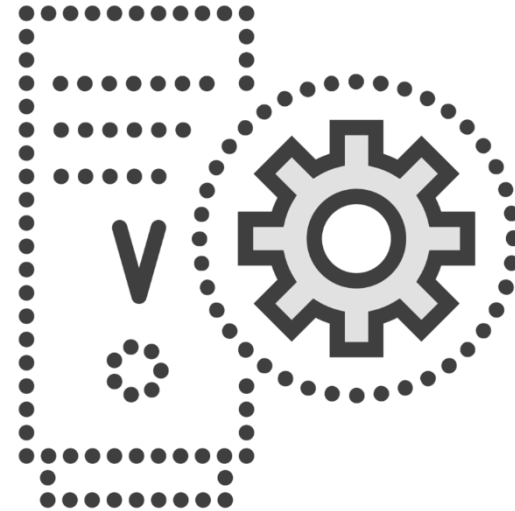
File Share backup data is in storage account



Backup Agents



Azure Backup extension
For all Azure VMs



Microsoft Azure Recovery Services
agent (MARS)
For On-premises servers or AWS
VMs

Virtual Machine Soft Delete

Protects against unintended VM deletions

Stored for up to 14 days

Requires a backup to have been completed

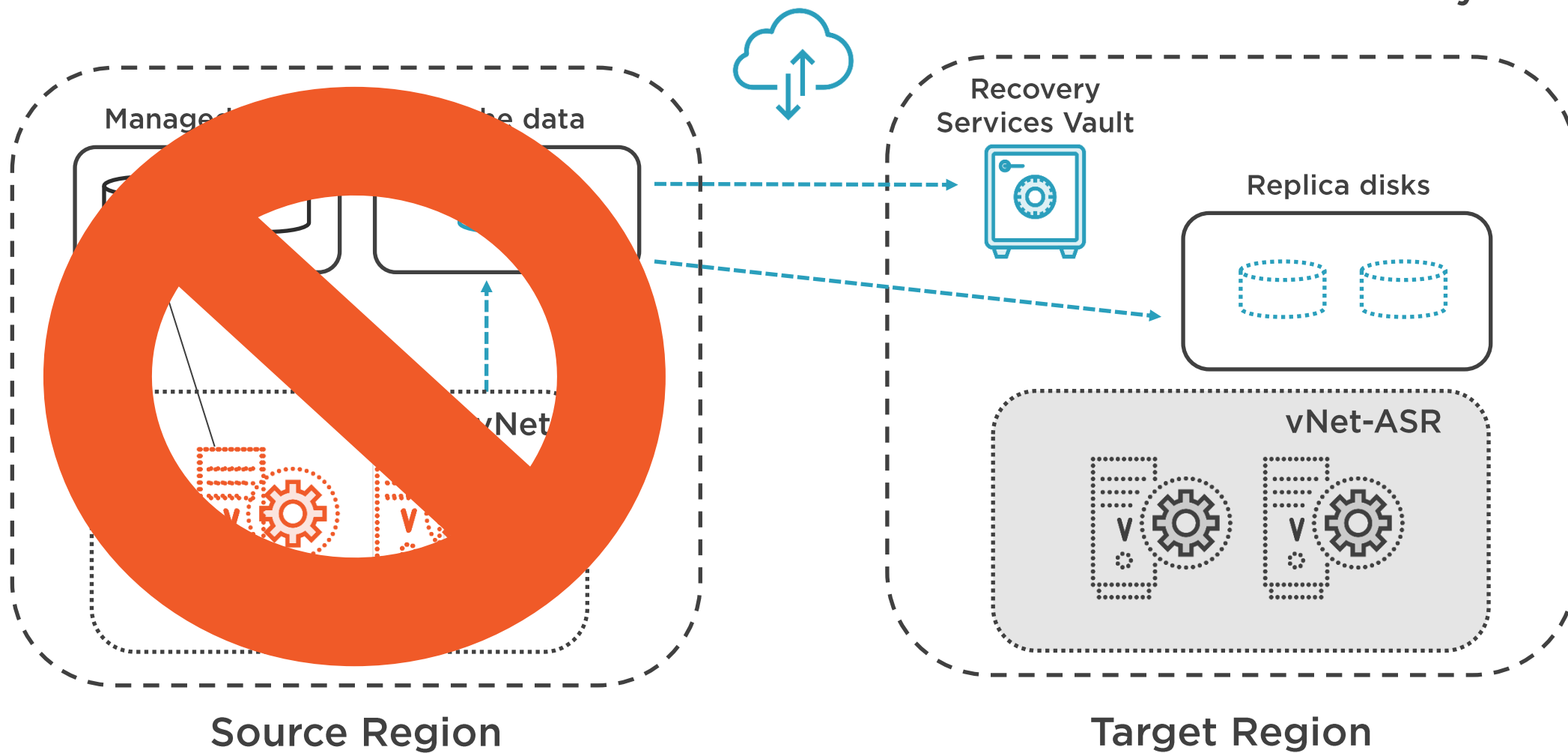
Multiple tools for completing



Perform Site-to-site Recovery by Using Azure Site Recovery



Azure Site Recovery Topology



Perform Site-to-site Recovery by Using Azure Site Recovery

Set up site recovery at VM level or in recovery services vault

RSV and VM resources for replication must be in different regions

Example:

- VMs in East US and West US Regions
- Existing RSV in West US Region
- Only East US VMs can be protected

You can perform test failovers or production failovers.



Site-Recovery Protected
VMs must be in a different
Azure region from your
Recovery Services Vault.



Exam Strategy

Know how services fit together

- For example, how would you backup up VMs and Azure Files
- Creating Alerts in Azure Monitor

Be familiar with implementations in portal and with code

Weight your study time based on exam percent

- Monitor and Backup will be approximately 5-8 questions



Exam Strategy

Build on your weaknesses

Make sure to check the AZ-104 exam guide regularly

Remember this is an Administrator Associate Exam

Get hands-on experience



Best of Luck on the Exam!!!



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