



THE ULTIMATE AZURE DEVOPS TROUBLESHOOTING PLAYBOOK



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DevOps Shack

The Ultimate Azure DevOps

Troubleshooting Playbook

1. Error: **Agent Job Timed Out**
 - Solution: Increase job timeout and optimize pipeline steps.
 - RCA: Task execution exceeded the default timeout due to complex builds or insufficient agent resources.
2. Error: **Error: Unable to resolve dependency**
 - Solution: Update dependencies or clear cache in pipeline tasks.
 - RCA: Version conflicts in dependencies or missing updates in the pipeline.
3. Error: **Repository is not authorized**
 - Solution: Reauthorize the repository or verify service connection permissions.
 - RCA: Token expired or incorrect access token permissions.
4. Error: **Unable to locate a suitable build agent**
 - Solution: Check agent pool availability or adjust parallelism limits.
 - RCA: No free agents due to concurrency limits or demand mismatches.
5. Error: **Docker build failed**
 - Solution: Verify Dockerfile syntax, context path, and agent Docker support.
 - RCA: Incorrect Dockerfile configuration or unsupported agent environment.

6. Error: Pipeline cannot access secrets

- **Solution:** Reconfigure the variable group or service connection for secrets.
- **RCA:** Expired or misconfigured Azure Key Vault or service connections.

7. Error: 403 Forbidden: Push is not permitted

- **Solution:** Update permissions or reconfigure branch protection rules.
- **RCA:** Branch policies or insufficient user rights.

8. Error: Pull request validation failed

- **Solution:** Fix code style issues or address failing PR policies.
- **RCA:** Linting errors or test failures in the pipeline.

9. Error: Git fetch failed with exit code 128

- **Solution:** Reconfigure credentials or verify the repository URL.
- **RCA:** Authentication issues or incorrect URL formatting.

10. Error: Merge conflict detected

- **Solution:** Resolve conflicts locally and update the PR branch.
- **RCA:** Simultaneous updates to the same files in different branches.

11. Error: Package upload failed

- **Solution:** Verify storage permissions and retry.
- **RCA:** Insufficient permissions for Azure Artifacts storage.

12. Error: Artifact not found

- **Solution:** Verify artifact name and ensure build artifacts are published.
- **RCA:** Missing or incorrect artifact publishing task.

13. Error: Failed to restore NuGet packages

- Solution: Check `NuGet.Config` file paths and credentials.
- RCA: Invalid credentials or missing feed configurations.

14. Error: `Test Run Failed`

- Solution: Debug failing tests locally or analyze logs for root causes.
- RCA: Code changes caused functional or integration test failures.

15. Error: `No tests discovered`

- Solution: Validate test path and framework version in the pipeline.
- RCA: Misconfigured test discovery paths or framework compatibility.

16. Error: `Test adapter not found`

- Solution: Install the required test adapter on the agent.
- RCA: Missing adapter for the test framework (e.g., NUnit, MSTest).

17. Error: `ARM template deployment failed`

- Solution: Validate the template and ensure referenced resources exist.
- RCA: Syntax errors, missing dependencies, or invalid parameters.

18. Error: `Deployment slot swap failed`

- Solution: Verify slot compatibility and ensure no active deployments.
- RCA: Locked resources or mismatched configurations between slots.

19. Error: `Azure resource provisioning failed`

- Solution: Ensure quota availability and validate resource group configurations.
- RCA: Exceeding quota limits or invalid resource settings.

20. Error: `Kubernetes deployment failed`

- Solution: Debug Kubernetes manifests and validate cluster connectivity.
- RCA: Incorrect manifest files or cluster misconfiguration.

21. Error: Unrecognized pipeline schema or invalid syntax

- Solution:
 - Validate the YAML syntax using the Azure Pipelines YAML schema reference.
 - Use the pipeline editor in Azure DevOps for syntax validation.
- RCA:
 - Occurs due to invalid indentation, missing keys, or unsupported schema versions.
 - YAML syntax errors are common when copying configuration from external sources.

22. Error: Unexpected value: 'steps'

- Solution:
 1. Check indentation and ensure `steps` is nested under `job` or `stage`.
 2. Review the pipeline hierarchy for missing `jobs` or `stages` keys.
- RCA: Misaligned or misplaced keys disrupt the YAML structure.

23. Error: Variables are not substituting in YAML

- Solution:
 - Ensure variables are defined correctly (`$ (variableName)`).
 - Use `variables` block at the correct scope (global, stage, or job-level).
- RCA:
 - Variables defined in incorrect scopes or referenced using incorrect syntax.

24. Error: Task 'XYZ' not found in agent

- Solution:
 1. Verify the task name and version in the YAML file.
 2. Ensure the agent includes the task or manually install it for self-hosted agents.
- RCA: Missing task versions or incompatible agent configurations.

25. Error: Condition '' failed

- Solution:
 - Debug the conditional expression and ensure it evaluates correctly.
 - Use debugging tools to log variable values in the pipeline.
- RCA:
 - Conditional expressions fail due to undefined or mismatched variables.

26. Error: Build pipeline not triggering automatically

- Solution:
 - Check the trigger section in the YAML pipeline (`trigger: branches`).
 - Ensure branch names are correctly configured for continuous integration (CI).
- RCA:
 - Misconfigured trigger paths or branch patterns.

27. Error: Release pipeline failed to deploy artifacts

- Solution:
 1. Verify that artifacts are properly linked in the release pipeline.
 2. Check permissions for artifact download tasks.
- RCA: Missing or incorrect artifact links in release pipelines.

28. Error: Service connection authentication failed

- Solution:
 1. Revalidate the service connection credentials.
 2. Ensure the service principal has sufficient permissions in Azure or other cloud providers.
- RCA: Expired tokens, revoked credentials, or insufficient permissions.

29. Error: Agent unable to download task definitions

- Solution:
 1. Verify internet connectivity for the agent.
 2. Update the agent to the latest version.

- RCA: Network restrictions or outdated agents.

30. Error: Cannot update deployment status in release pipeline

- Solution:
 1. Grant the release pipeline user permissions to update deployments.
 2. Check for ongoing deployment conflicts.
- RCA: Lack of permissions for deployment updates or simultaneous deployments.

31. Error: Personal Access Token (PAT) expired

- Solution:
 1. Regenerate the PAT and update its reference in pipelines or tools.
 2. Use Azure Active Directory (AAD)-based authentication for long-term stability.
- RCA: Expired or revoked PAT, often due to default expiration policies.

32. Error: Insufficient permissions for accessing Azure resources

- Solution:
 1. Update the role assignments for the service principal or user.
 2. Use the **Reader** or **Contributor** role depending on the required access level.
- RCA: Misconfigured RBAC settings in Azure subscriptions.

33. Error: Token audience is not recognized

- Solution:
 1. Update the service principal to include the correct resource or scope.
 2. Regenerate the token with the appropriate audience claim.
- RCA: Misconfigured token scopes or incorrect audience claims during token generation.

34. Error: User lacks permission to queue builds

- Solution:
 1. Grant the user the `Queue build` permission in the pipeline's security settings.
 2. Assign `Contributor` or higher role to the user in the project.
- RCA: Insufficient user permissions in Azure DevOps security settings.

35. Error: `Docker image push failed`

- Solution:
 1. Verify the Docker registry credentials in the pipeline.
 2. Check storage limits and ensure the image tag matches the registry format.
- RCA: Invalid credentials, incorrect image tags, or exceeding storage quotas.

36. Error: `Kubernetes pod stuck in 'Pending' state`

- Solution:
 1. Check for resource limits or quotas in the Kubernetes cluster.
 2. Validate the YAML manifest for nodeSelector or affinity rules.
- RCA: Resource constraints or misconfigured scheduling rules.

37. Error: `Ingress not resolving traffic`

- Solution:
 1. Validate ingress annotations and ensure the DNS records point to the ingress IP.
 2. Check for misconfigured TLS certificates.
- RCA: Incorrect ingress configurations or missing DNS records.

38. Error: `ImagePullBackOff` in Kubernetes pods

- Solution:
 1. Verify the container registry credentials and image path.
 2. Check for rate limits or pull policies (e.g., `IfNotPresent`).

- RCA: Invalid registry credentials or image pull policy mismatches.

39.Error: Terraform apply failed with HTTP 403

- Solution:
 1. Verify the service principal's permissions on the Azure subscription.
 2. Ensure the resource group exists and is accessible.
- RCA: Misconfigured RBAC role assignments or resource group access restrictions.

40.Error: State file not found in Terraform

- Solution:
 1. Verify the backend storage account (e.g., Azure Blob) is accessible.
 2. Check for the correct state file configuration in `terraform.tfstate`.
- RCA: Backend storage was deleted, inaccessible, or misconfigured.

41.Error: ARM template parameter value not supported

- Solution:
 1. Validate parameter values using `az deployment validate`.
 2. Match parameter types with the template schema.
- RCA: Unsupported or incorrect parameter values were passed during deployment.

42.Error: Ansible playbook execution failed

- Solution:
 1. Debug the playbook with `-vvv` for detailed logs.
 2. Ensure all hosts in the inventory file are accessible.
- RCA: Host connectivity issues, missing SSH keys, or playbook syntax errors.

43.Error: Work item type not found

- Solution:
 1. Verify the work item type exists in the current process template.

2. Add the work item type in **Project Settings > Process**.

- RCA: Work item type mismatch or missing process configuration.

44. Error: Area path or iteration path invalid

- Solution:

1. Update the area's configuration in **Project Settings > Area Paths**.

2. Verify iteration paths are correctly defined for the project.

- RCA: Area paths were not updated after process changes.

45. Error: Azure Monitor metrics not visible in pipelines

- Solution:

1. Verify the Azure Monitor integration in the pipeline settings.

2. Check for permissions to read metrics in the Azure subscription.

- RCA: Insufficient access or misconfigured Azure Monitor integration.

46. Error: Failed to create log analytics workspace

- Solution:

1. Ensure the subscription has sufficient quota for log analytics workspaces.

2. Check for resource naming conflicts or policy restrictions.

- RCA: Exceeding resource quotas or conflicting naming conventions.

47. Error: Unable to download NuGet package

- Solution:

1. Verify feed credentials and permissions for the user or service principal.

2. Update the **NuGet.Config** file with the correct feed URL.

- RCA: Incorrect credentials or outdated feed references.

48. Error: Universal package download failed

- Solution:

1. Verify the universal package exists in the Azure Artifacts feed.

2. Check permissions for accessing the feed in **Artifacts Security**

- RCA: Package was deleted, or permissions were misconfigured.

49.Error: Service connection expired or not authorized

- Solution:

1. Revalidate the service connection in **Project Settings**

> **Service Connections**.

2. Update expired credentials or tokens for the connection.

- RCA: Tokens expired or were revoked, or the associated principal lost permissions.

50.Error: Azure Resource Manager service connection failed

- Solution:

1. Validate the service principal's role assignments in the subscription.

2. Grant **Contributor** or appropriate role access.

- RCA: Service principal lacks necessary permissions on the target resources.

51.Error: Self-hosted agent went offline

- Solution:

1. Restart the agent and check the logs in the **Agent_diag** folder.

2. Verify the network connectivity between the agent and Azure DevOps.

- RCA: Network interruptions or misconfigured agent configurations.

52.Error: Agent could not resolve hostname

- Solution:

1. Verify the DNS settings on the self-hosted agent machine.

2. Use IP addresses as a temporary workaround to check connectivity.

- RCA: DNS resolution issues or restricted access to the target.

53.Error: Out of disk space on build agent

- Solution:

1. Clean up temporary files and workspace folders on the agent.
 2. Increase disk space or switch to a different agent.
- RCA: Disk space was exhausted due to large artifacts or build outputs.

54. Error: Email notifications not received

- Solution:
 1. Check the email subscription settings in [Project Settings > Notifications](#).
 2. Verify the email address in Azure DevOps user profile settings.
- RCA: Notification rules were disabled, or email delivery failed.

55. Error: Service hooks delivery failed

- Solution:
 1. Check the endpoint configuration and retry the failed hooks.
 2. Validate the webhook endpoint's accessibility and response.
- RCA: Endpoint was unavailable or misconfigured.

56. Error: Resource unavailable: Quota exceeded

- Solution:
 1. Increase quotas in the Azure subscription for the affected resources.
 2. Use existing resources where possible.
- RCA: Resource quota limits were reached in the Azure region.

57. Error: Cannot connect to Azure DevOps organization

- Solution:
 1. Verify Azure DevOps organization status at Azure DevOps Service Status.
 2. Check for network connectivity issues.
- RCA: Service outages or regional connectivity issues.

58. Error: User session expired

- Solution:
 1. Re-login to Azure DevOps and clear browser cache.

2. Increase session duration if using a personal access token.
- RCA: Authentication tokens expired or session timeout policies were applied.

59. Error: `Pod configuration invalid`

- Solution:
 - Validate the Kubernetes manifest file using `kubectl apply --dry-run`.
 - Check for missing fields, improper formatting, or invalid values.
- RCA:
 - Syntax or structural errors in the YAML manifest.
 - Deprecated fields used in the manifest.

60. Error: `CrashLoopBackOff for deployed containers`

- Solution:
 - Use `kubectl logs <pod-name>` to inspect logs for error details.
 - Check readiness probes, environment variables, and application configurations.
- RCA:
 - Application failed to start due to incorrect configurations or missing dependencies.

61. Error: `Service not exposing application`

- Solution:
 - Validate service type (ClusterIP, NodePort, LoadBalancer) in the manifest.
 - Verify DNS resolution and ensure Ingress rules are applied correctly.
- RCA:
 - Incorrect service configuration or missing Ingress annotations.

62. Error: `ImagePullBackOff`

- Solution:
 - Verify container registry credentials in the Kubernetes secret.

- Ensure the image name and tag are correct.
- RCA:
 - Authentication failure or missing image in the registry.

63. Error: **Unauthorized error accessing AKS cluster**

- Solution:
 - Ensure the Azure DevOps service connection is authorized to access the AKS cluster.
 - Update Kubernetes RBAC permissions to allow required operations.
- RCA:
 - Insufficient permissions or expired credentials in the service connection.

64. Error: **GitHub webhook delivery failed**

- Solution:
 - Verify the webhook URL and secret in the GitHub repository settings.
 - Check for firewall or network restrictions blocking webhook requests.
- RCA:
 - Invalid webhook URL or network issues.

65. Error: **Unable to fetch GitHub repository**

- Solution:
 - Ensure the GitHub service connection is configured with proper access tokens.
 - Reauthorize the connection in Azure DevOps.
- RCA:
 - Expired personal access token or revoked OAuth app permissions.

66. Error: **GitHub Actions conflicts with Azure Pipelines**

- Solution:
 - Decide on a single CI/CD tool for the repository (Azure Pipelines or GitHub Actions).

- Ensure no conflicting `.yml` files are triggering multiple builds simultaneously.
- RCA:
 - Both tools are triggered for the same repository, causing resource conflicts.

67. Error: `Terraform plan failed`

- Solution:
 - Debug the Terraform task output to identify syntax or resource configuration issues.
 - Use the `terraform validate` command locally to test the plan.
- RCA:
 - Incorrect or missing variables, syntax errors, or invalid resource definitions.

68. Error: `Publish Build Artifacts task failed`

- Solution:
 - Verify the artifact path in the pipeline and ensure it exists after the build.
 - Use the `Copy Files` task to ensure artifacts are moved to the correct directory.
- RCA:
 - Missing artifact files due to incorrect paths or failed build steps.

69. Error: `Azure CLI task failed`

- Solution:
 - Verify the Azure CLI version compatibility for the task.
 - Check the Azure subscription context in the task configuration.
- RCA:
 - Outdated Azure CLI version or invalid subscription ID.

70. Error: `KeyVault task failed to fetch secrets`

- Solution:

- Ensure the Azure Key Vault is accessible from the service principal.
- Add proper access policies to allow secret retrieval.
- RCA:
 - Misconfigured Key Vault access policies or expired service principal credentials.

71. Error: Failed to deliver service hook event

- Solution:
 - Verify the endpoint configuration for the service hook.
 - Ensure the target application (e.g., Slack, Jenkins) is online and accessible.
- RCA:
 - Network issues or invalid endpoint URLs.

72. Error: Service hook authentication failed

- Solution:
 - Revalidate the authentication method used (e.g., OAuth, PAT).
 - Update expired credentials or tokens.
- RCA:
 - Expired or invalid authentication credentials for the target service.

73. Error: Power BI data pipeline not refreshing

- Solution:
 - Ensure the Azure DevOps Analytics connector is authorized in Power BI.
 - Check the dataset configuration for schedule refresh settings.
- RCA:
 - Authorization issues or misconfigured dataset refresh schedules.

74. Error: Data not syncing with Azure DevOps Analytics

- Solution:
 - Verify the analytics service is enabled in the Azure DevOps organization.
 - Check if there are delays in analytics data processing.

- RCA:
 - Service latency or analytics processing delays.

75.Error: Azure Function deployment failed

- Solution:
 - Debug the deployment logs for errors in configuration or runtime settings.
 - Ensure the App Service plan supports the Azure Function's requirements.
- RCA:
 - Misconfigured deployment settings or incompatible App Service plan.

76.Error: App Service slot swap failed

- Solution:
 - Verify that both deployment slots have compatible settings.
 - Resolve any application conflicts, such as locked resources.
- RCA:
 - Deployment slots configured with conflicting settings.

24. Advanced Deployment and Infrastructure Errors

77.Error: App Service deployment failed due to locked resources

- Solution:
 - Check the resource group for locked resources in the Azure portal.
 - Remove the locks or coordinate with administrators to release them.
- RCA:
 - Resource locks (read-only or delete locks) prevent changes to the App Service.

78.Error: Azure Application Gateway configuration failed

- Solution:
 - Validate the backend pool settings and health probe configuration.

- Ensure the target endpoints are reachable from the Application Gateway.
- RCA:
 - Incorrect backend settings, misconfigured probes, or network issues.

79. Error: **VM Scale Set deployment failed**

- Solution:
 - Verify the VM image and SKU compatibility with the scale set configuration.
 - Check for resource availability in the selected Azure region.
- RCA:
 - Unsupported VM image or insufficient regional resources.

80. Error: **Traffic Manager endpoint not resolving**

- Solution:
 - Ensure the endpoint is online and reachable.
 - Verify DNS configurations and Traffic Manager profiles.
- RCA:
 - Offline endpoints or incorrect DNS configurations.

81. Error: **Pipeline condition evaluation failed**

- Solution:
 - Validate the condition syntax (e.g., `and`, `or`, `eq`) in the YAML file.
 - Use pipeline variables and debugging to trace condition execution.
- RCA:
 - Misconfigured or unsupported conditional expressions.

82. Error: **Stages skipped due to condition failure**

- Solution:
 - Check the dependencies between stages.
 - Verify that the correct variables and outputs are used in the conditions.

- RCA:
 - Stage conditions not matching due to variable scope or incorrect expressions.

83.Error: JIRA integration failed to sync work items

- Solution:
 - Reconfigure the JIRA service connection with updated credentials.
 - Verify webhook configuration in JIRA for Azure DevOps sync.
- RCA:
 - Expired tokens, revoked permissions, or incorrect webhook settings.

84.Error: Slack notifications not triggered

- Solution:
 - Verify the webhook URL in the service hook configuration.
 - Check for network restrictions between Azure DevOps and Slack.
- RCA:
 - Invalid webhook configuration or blocked requests.

85.Error: SonarQube analysis failed in pipeline

- Solution:
 - Verify the SonarQube service connection credentials.
 - Ensure the Prepare Analysis task is configured correctly in the pipeline.
- RCA:
 - Incorrect token or server URL in the service connection.

86.Error: PersistentVolumeClaim pending in Kubernetes

- Solution:
 - Check if the storage class used is available and properly configured.
 - Validate the size and access modes in the PVC definition.
- RCA:

- Misconfigured storage class or insufficient storage availability.

87. Error: `Helm chart deployment failed`

- Solution:
 - Debug the `helm install` or `helm upgrade` logs for detailed error messages.
 - Ensure the correct values file is used during deployment.
- RCA:
 - Missing or incorrect values in the Helm chart configuration.

88. Error: `Kubernetes node not ready`

- Solution:
 - Inspect the node logs using `kubectl describe node <node-name>`.
 - Check for resource limits or issues with node components (e.g., kubelet).
- RCA:
 - Resource exhaustion or node component failures.

89. Error: `Ingress TLS certificate error`

- Solution:
 - Verify the certificate and private key used for the Ingress resource.
 - Check the annotation for the correct certificate provider (e.g., Cert-Manager, Let's Encrypt).
- RCA:
 - Invalid or expired TLS certificates.

90. Error: `Failed to link work item to build`

- Solution:
 - Check if the build is associated with the correct branch and repository.
 - Ensure permissions allow linking work items to builds.
- RCA:

- Missing build association or insufficient permissions.

91.Error: Work item query execution failed

- Solution:
 - Validate the query syntax in Azure Boards.
 - Check for invalid area paths or iteration paths in the query.
- RCA:
 - Invalid paths or incorrect field references in the query.

92.Error: Pipeline execution data missing in reports

- Solution:
 - Enable pipeline analytics in Azure DevOps organization settings.
 - Wait for data processing to complete if the pipeline was recently executed.
- RCA:
 - Analytics data delayed due to processing lags or misconfigured settings.

93.Error: Reports not generating in Power BI

- Solution:
 - Ensure the Azure DevOps Analytics connector is set up correctly in Power BI.
 - Refresh the dataset manually or review automatic refresh settings.
- RCA:
 - Connector misconfiguration or invalid dataset queries.

94.Error: Environment approval not triggered

- Solution:
 - Check the environment settings and ensure approval is enabled.
 - Add required approvers in the environment configuration.
- RCA:
 - Missing approvers or disabled approval settings.

95.Error: Artifact clean-up task failed

- Solution:
 - Verify the retention policy for artifacts in pipeline settings.
 - Ensure the agent has permission to delete artifacts.
- RCA:
 - Retention policy misconfigurations or insufficient permissions.

96.Error: Self-hosted agent pool limit reached

- Solution:
 - Increase the number of self-hosted agents in the pool.
 - Optimize pipeline concurrency to reduce contention.
- RCA:
 - Pool limits exceeded due to high concurrency.

97.Error: Failed to update project settings

- Solution:
 - Verify the user has Project Administrator permissions.
 - Recheck the validity of input fields in the settings update.
- RCA:
 - Insufficient permissions or invalid configurations.

98.Error: Azure DevOps extension installation failed

- Solution:
 - Check for compatibility of the extension with the Azure DevOps version.
 - Reinstall the extension after resolving connectivity issues.
- RCA:
 - Incompatible extension version or network interruptions.

99.Error: Pipeline fails to trigger on branch updates

- Solution:
 - Validate trigger paths and branch filters in the YAML pipeline.
 - Check repository permissions for the pipeline trigger.

- RCA:
 - Misconfigured branch filters or insufficient repository permissions.
100. Error: **Failed to clone repository in pipeline** - Solution:
- Ensure the service connection or PAT used for repository access is valid.
 - Verify the repository URL and credentials. - RCA:
 - Authentication issues or incorrect repository URLs.