

| Error / Issue | Category | Fix / Mitigation |
|--|---------------------------------|--|
| AccessDenied ... storage.objects.get | Authentication/IAM | Give user Project Viewer + Cloud Build Editor roles or use a dedicated logs bucket with correct permissions. |
| Missing necessary permission iam.serviceAccounts.actAs | Authentication/IAM | Grant iam.serviceAccounts.actAs permission between accounts. |
| cloudfunctions.functions.get denied | Deployment / Authentication/IAM | Add Cloud Functions Developer role to build SA. |
| cloudbuild.builds.create denied | Deployment / Authentication/IAM | Grant Cloud Build SA role or specific permission to create builds. |
| serviceusage.services.use permission denied | Authentication/IAM | Ensure Cloud Build service agent exists and has roles/cloudbuild.serviceAgent. |
| Failed to trigger build: Couldn't read commit | Configuration | Verify trigger branch, repo, commit SHA; correct trigger config. |
| Request is prohibited by organization's policy | Configuration / Trigger | Temporarily allow Pub/Sub, create trigger, then reapply org policy. |
| fatal: could not read Username for '<REMOTE_URL>' | Dependency / Source | Provide SSH key or token in build to authenticate. |
| invalid empty ssh-agent socket | Dependency / Source | Ensure SSH_AUTH_SOCK is set; configure SSH agent correctly. |
| Unable to connect ... no route to host | Networking / Private Pool | Use non-overlapping IP range for private pool. |
| Failed to connect to <external_domain>; Connection timed out | Networking / Private Pool | Assign external IPs to pool or configure NAT for external access. |
| Timeout - last error: dial tcp i/o timeout | Networking | Fix VPC peering, firewall, routing; configure private pool internal access. |
| 404 : Requested entity was not found | Configuration / Trigger | Double-check source location, triggers, config files, IAM. |
| Quota restrictions, cannot run builds in this region | Quota / Resource | Request quota increase or use supported region. |
| docker build failed: failed to solve: file not found | Build | Check Dockerfile paths and build context. |
| Compilation failed: symbol not found | Build | Update dependency versions; sync build tools. |
| Cannot read property 'xyz' of undefined | Build / Runtime | Ensure environment variables exist and build script passes them. |
| Container failed to start: PORT env variable not set | Startup / Runtime | Modify code to listen on process.env.PORT. |
| CrashLoopBackOff | Startup / Runtime | Add required secrets, confirm network access, check env vars. |
| ImagePullBackError | Deployment / Startup | Grant Artifact Registry read permission to build SA. |
| jest: command not found | Test Runner | Install dev dependencies in build or run tests inside build environment. |
| pytest failed: database connection refused | Test Runner | Use additional build step or service to run DB during test stage. |
| JUnit test failed: null pointer | Test Assertion | Debug test locally, mock dependencies, ensure env variables. |
| denied: Permission denied to access repository | Upload / Artifact | Add roles/artifactregistry.writer to Cloud Build SA. |
| Object upload failed: 403 Forbidden | Upload / Artifact | Assign roles/storage.objectAdmin or bucket ACL. |
| Internal Error (status = INTERNAL_ERROR) | Build / Internal | Retry build; check quota usage; file support ticket if persistent. |
| Error response: i/o timeout (docker pull) | Build / Dependency | Pre-pull image using crane or configure proxy / network. |
| Unauthenticated (long-running Docker push/pull) | Authentication / IAM | Use custom token with sufficient lifespan. |
| Builds stuck / queued in private pool | Startup / Networking | Fix VPC peering or recreate private pool. |
| Approving old builds fails | Deployment / Lifecycle | Re-submit a new build instead of approving old one. |
| Secure Source Manager: "Build cannot be created" | Configuration / Trigger | Validate triggers.yaml; ensure SSM and Build SA have correct IAM. |
| Cloud Build logs not visible | Authentication / IAM | Grant Storage Object Viewer or Project Viewer role. |
| Cloud Run deploy internal error | Deployment / Startup | Ensure build SA has correct roles; check Cloud Build logs. |
| App Engine: Duplicate tags not allowed | Configuration | Remove or correct instance_tag in app.yaml. |
| App Engine: Max instances exceeded | Quota / Resource | Lower max_instances or delete old versions. |
| App Engine: Build succeeds but logs missing | Build / Config | Use Google-managed encryption keys; adjust retention policy. |
| GitLab + Cloud Build: Failed to fetch repo | Configuration / Source | Re-authorize GitLab connection; verify SCM permissions. |
| Flaky build / inconsistent errors | Build / Resource | Retry builds; monitor memory/CPU; consider different machine type. |
| UI / console missing builds | UI / Authentication | Try CLI; check IAM; clear browser cache. |
| Build cannot be canceled | Build Lifecycle | Use CLI cancel; contact support if persists. |
| Cloud Build SA cannot get build | Deployment / Authentication | Grant cloudbuild.builds.get permission. |
| Artifact Registry upload denied | Upload / Artifact | Grant artifactregistry.repositories.uploadArtifacts to Cloud Build SA. |
| Accessing private GCS fails | Dependency / Upload | Use GCS client library or authorized requests. |
| App Engine node build fails (tsconfig missing) | Build / Config | Include tsconfig.json in build context; avoid ignoring necessary files. |
| Placeholder image deployed on Cloud Run | Deployment / Config | Reconfigure CD trigger; check trigger setup and permissions. |
| Internal "INTERNAL_ERROR" | Build / Internal | Retry; check quota; contact support if persists. |
| Cross-project trigger creation failing | Configuration / Trigger | Grant tokenAccessor role or recreate trigger with correct IAM. |
| Permission error deploying to Cloud Run | Deployment / Authentication | Add cloudbuild.builds.get or Viewer/Editor roles. |
| Artifact Registry upload denied on function deploy | Upload / Artifact | Grant Artifact Registry write permission to Cloud Build SA. |
| Region quota exceeded | Quota / Resource | Check quotas in GCP Console; request increase. |
| Container crash on Cloud Run | Startup / Runtime | Confirm app listens on correct port; adjust startup timeout. |
| Unexpected error for Firebase Function | Deployment / Upload | Fix IAM permissions; check build config; ensure correct registry path. |