

# CX-Catalyst - Error Reference

Comprehensive reference for all error codes, error responses, and diagnostic procedures.

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## API Error Codes

Errors returned by the CX-Catalyst webhook API endpoints.

Code	HTTP Status	Description	Resolution
VALIDATION_ERROR	400	Invalid request data	Check request body against the API Reference schema
MISSING_FIELD	400	Required field not provided	Include all required fields (customer_email, customer_name, description)
INVALID_FORMAT	400	Field format incorrect	Verify email format, UUID format, enum values
NOT_FOUND	404	Case or resource not found	Verify the case_id or resource ID exists
ALREADY_PROCESSED	409	Action already taken on this case	Case was already approved/rejected/resolved
RATE_LIMITED	429	Too many requests	Wait and retry after the retry_after period
INTERNAL_ERROR	500	System error	Check n8n execution logs for the failing workflow
SERVICE_UNAVAILABLE	503	Dependency unavailable	Check status of Supabase, Anthropic, OpenAI, Confluence

### Error Response Format

```
{
  "success": false,
  "error": {
    "code": "ERROR_CODE",
    "message": "Human-readable error message",
    "details": {
      "field": "affected_field",
      "suggestion": "How to fix this"
    }
  },
  "timestamp": "2026-01-15T10:30:00Z"
}
```

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## Workflow Execution Errors

Errors that occur during n8n workflow execution.

### Workflow 1: Smart Intake & Triage

Error	Cause	Resolution
Webhook timeout	Workflow execution exceeds timeout	Increase EXECUTIONS_TIMEOUT in n8n settings
Customer lookup failed	Customer not found in database	Workflow auto-creates customer record; check DB connection
Classification failed	AI API returned an error	Check Anthropic API key and quota
Routing error	Confidence score parsing failed	Verify AI response format matches expected JSON schema

### Workflow 2: Self-Service Resolution

Error	Cause	Resolution
KB search returned no results	No matching articles in vector store	Check embedding index; ensure articles are indexed
Solution generation failed	AI API error during solution creation	Check API key, rate limits, and prompt size
Email delivery failed	Gmail credential expired	Re-authorize Gmail OAuth in n8n credentials
Approval link expired	Customer clicked link after case was already resolved	No action needed; inform customer case is resolved

### Workflow 3: Proactive Detection

Error	Cause	Resolution
Schedule trigger missed	n8n was down during scheduled execution	Workflow will run at next interval; check n8n uptime
Health metrics query failed	Database connection error	Check PostgreSQL credentials and network access
Jira ticket creation failed	Invalid project key or issue type	Verify Jira configuration matches project setup
Alert threshold not configured	Missing environment variables	Set CONFIDENCE_THRESHOLD_HIGH and related variables

#### Workflow 4: Collaborative Support Hub

Error	Cause	Resolution
Slack message failed	Bot token invalid or channel not found	Re-authorize Slack bot; verify channel names
Review timeout missed	Timeout scheduler error	Check Wait node configuration (2-hour default)
Edit submission failed	Malformed edited solution JSON	Validate the edit form submission format
Escalation routing error	Senior queue channel not configured	Create #support-alerts channel and update workflow

#### Workflow 5: Continuous Learning

Error	Cause	Resolution
Analysis query timeout	Large dataset with complex aggregation	Add date range filters to limit query scope
Confluence page creation failed	Space doesn't exist or auth error	Verify PKB space exists; check Confluence credentials
Report email failed	SMTP/Gmail error	Check email credentials and recipient addresses
KB gap detection returned empty	No cases in the analysis window	Normal if no new cases; check date range

#### AI Service Errors

Errors from the Anthropic (Claude) and OpenAI APIs.

### Anthropic API Errors

HTTP Status	Error	Cause	Resolution
400	invalid_request_error	Malformed request or prompt too long	Reduce prompt size; check JSON formatting
401	authentication_error	Invalid API key	Regenerate key at <a href="https://console.anthropic.com">console.anthropic.com</a>
403	permission_error	Key lacks required permissions	Check API key tier and permissions
429	rate_limit_error	Too many requests	Add delays between calls; check rate limit tier
500	api_error	Anthropic service error	Retry with exponential backoff; check <a href="https://status.anthropic.com">status.anthropic.com</a>
529	overloaded_error	API overloaded	Retry after delay; consider queuing requests

### OpenAI API Errors (Embeddings)

HTTP Status	Error	Cause	Resolution
400	invalid_request_error	Input too long for embedding model	Chunk text to under 8,191 tokens for text-embedding-3-small
401	invalid_api_key	Invalid API key	Regenerate at <a href="https://platform.openai.com">platform.openai.com</a>
429	rate_limit_exceeded	Token or request limit hit	Add batch delays; check usage dashboard
500	server_error	OpenAI service error	Retry with backoff; check <a href="https://status.openai.com">status.openai.com</a>

## Database Errors

### PostgreSQL Connection Errors

Error	Cause	Resolution
ECONNREFUSED	Database not reachable	Check host, port, and network/firewall rules
FATAL: password authentication failed	Wrong credentials	Verify username and password in n8n credential
FATAL: database "X" does not exist	Wrong database name	Verify database name (default: support_system)
SSL connection required	SSL not configured	Enable SSL in the n8n PostgreSQL credential
too many connections	Connection pool exhausted	Increase max_connections in PostgreSQL config or reduce concurrent workflows

### Query Errors

Error	Cause	Resolution
relation "X" does not exist	Table missing	Run the schema migration from ADMIN-GUIDE.md
column "X" does not exist	Schema mismatch	Check column names match the expected schema
duplicate key value violates unique constraint	Attempting to insert duplicate	Use UPSERT (ON CONFLICT) or check for existing records
value too long for type character varying(N)	Input exceeds column length	Truncate input or increase column size

## Integration Errors

### Confluence Errors

Error	Cause	Resolution
Space does not exist	Wrong space key	Verify space key (default: PKB)
A page with this title already exists	Duplicate page title	Implement upsert logic or delete/rename existing page
401 Unauthorized	Invalid HTTP Basic Auth	Check email + API token from id.atlassian.com
403 Forbidden	Insufficient permissions	Grant write access to the API user for the space

### Slack Errors

Error	Cause	Resolution
channel_not_found	Channel doesn't exist or bot not added	Create channel; invite bot with /invite @bot-name
not_authed	Invalid bot token	Re-authorize Slack OAuth in n8n
missing_scope	Bot lacks required permissions	Add scopes: chat:write, channels:read, reactions:write
rate_limited	Too many Slack API calls	Add 1-second delays between consecutive Slack messages

### Jira Errors

Error	Cause	Resolution
Project not found	Wrong project key	Verify project key in Jira settings
Issue type not found	Invalid issue type name	Check exact name (case-sensitive): Bug, Task, Incident
Field validation errors	Missing required fields	Query issue type metadata to check required fields
ADF formatting error	Invalid description format	Use Atlassian Document Format or plain text

## Gmail Errors

Error	Cause	Resolution
invalid_grant	OAuth token expired	Re-connect Gmail credential in n8n
insufficientPermissions	Missing API scopes	Re-authorize with gmail.send, gmail.readonly scopes
rateLimitExceeded	Daily send limit reached	Gmail: 500/day; Workspace: 2,000/day

## Vector Search Errors

Error	Cause	Resolution
Empty search results	No documents in vector store	Run the KB Embedding Generator workflow
Low similarity scores	Embeddings out of date or poor article quality	Re-index; improve article titles and content
Dimension mismatch	Embedding model changed	Ensure all embeddings use text-embedding-3-small (1536 dimensions)
match_documents function not found	Missing database function	Run the vector store setup SQL from ADMIN-GUIDE.md
Search timeout	Index too large or missing	Create IVFFlat index on the embedding column

## Product Error Codes

These are error codes that customers may report in their support requests. The `error_codes` database table tracks known error codes and their resolutions.

### Error Code Format

Product error codes follow the pattern: `ERR_{CATEGORY}_{NUMBER}`



Category Prefix	Domain	Examples
ERR_AUTH_	Authentication and login	ERR_AUTH_001 (Invalid token), ERR_AUTH_002 (Session expired)
ERR_BILL_	Billing and payments	ERR_BILL_001 (Payment declined), ERR_BILL_002 (Invalid plan)
ERR_CFG_	Configuration	ERR_CFG_001 (Invalid setting), ERR_CFG_002 (Missing required config)
ERR_API_	API errors	ERR_API_001 (Rate limit), ERR_API_002 (Invalid endpoint)
ERR_PERF_	Performance	ERR_PERF_001 (Timeout), ERR_PERF_002 (Memory exceeded)
ERR_INT_	Integrations	ERR_INT_001 (Connection failed), ERR_INT_002 (Sync error)

## Managing Error Codes

Error codes are stored in the error\_codes table:

```
-- View all error codes
SELECT error_code, product, description, severity,
       automated_fix_available, occurrence_count
FROM error_codes
ORDER BY occurrence_count DESC;

-- Add a new error code
INSERT INTO error_codes (error_code, product, description, severity,
                        diagnostic_steps, resolution_steps,
                        automated_fix_available)
VALUES (
    'ERR_AUTH_003',
    'web-portal',
    'MFA verification timeout',
    'medium',
    ARRAY['Check MFA device sync', 'Verify time settings'],
    ARRAY['Reset MFA enrollment', 'Generate backup codes'],
    false
);
```

The AI uses error codes for direct-match resolution — when a customer reports an error code, the system looks it up directly before falling back to vector search.

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## Diagnostic Procedures

### General Troubleshooting Steps

1. **Check n8n execution logs** — Workflows > [workflow name] > Executions
2. **Review node outputs** — Click on a failed execution to see each node's input/output
3. **Check API dashboards** — Anthropic, OpenAI, and Supabase dashboards show usage and errors
4. **Query the database** — Use the SQL queries from ADMIN-GUIDE.md Appendix for system health checks
5. **Check Slack alerts** — The #support-alerts channel receives notifications of critical failures

### Health Check Queries

```
-- Recent workflow execution failures
SELECT workflow_name, error_message, COUNT(*) as failures
FROM workflow_executions
WHERE status = 'error'
      AND start_time > NOW() - INTERVAL '24 hours'
GROUP BY workflow_name, error_message
ORDER BY failures DESC;

-- Cases stuck in processing
SELECT case_id, status, created_at,
       NOW() - created_at as age
FROM cases
WHERE status IN ('new', 'triaged', 'in_progress')
      AND created_at < NOW() - INTERVAL '2 hours'
ORDER BY created_at;

-- API error frequency
SELECT DATE(start_time) as date,
       workflow_name,
       COUNT(CASE WHEN status = 'error' THEN 1 END) as errors,
       COUNT(*) as total
FROM workflow_executions
WHERE start_time > NOW() - INTERVAL '7 days'
GROUP BY date, workflow_name
ORDER BY date DESC, errors DESC;
```

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