

DEVOPS

INTERMEDIATE

3 DAYS

# n8n for DevOps

Build a strong foundation in operational automation using n8n, from event-driven workflows to incident enrichment and deployment automation. Learn how to build secure, auditable workflows with retries, approvals, integrations, and production-safe execution patterns across DevOps and platform operations.

## Why n8n for DevOps?

### Faster workflow automation

Automate repetitive DevOps tasks like alerts, approvals, and deployments without heavy coding.

### Improved incident response

Route alerts, create tickets, notify teams, and execute remediation steps instantly.

### Unified tool integrations

Connect Slack, Jira, GitHub, cloud tools, and monitoring platforms into a single automation flow.

### Better governance

Standardize operational workflows with versioned and repeatable automation pipelines.

### Reduced manual operations

Eliminate human-driven runbooks by triggering actions automatically from events.

## What you'll be able to do

- ✓ Understand what n8n is and where it fits in DevOps automation.
- ✓ Build workflows for incident response automation, infra checks, approvals, CI/CD notifications, and scheduled operations.
- ✓ Integrate n8n with GitHub or GitLab, Slack or Microsoft Teams, and ticketing tools (Jira concept and optional).
- ✓ Use Webhooks, REST APIs, and Cron triggers to automate operational tasks reliably.
- ✓ Implement secure patterns: secrets handling, role separation concepts, approvals, and safe automation defaults.
- ✓ Design workflows with reliability practices: retries, timeouts, error handling, logging, and audit trails.
- ✓ Deploy n8n in a production-safe way (Docker-first, Kubernetes option).
- ✓ Deliver an end-to-end DevOps automation capstone using n8n.

## Who this is for

- DevOps Engineers
- SRE Engineers
- Platform Engineering teams
- Cloud Engineers
- Engineering productivity teams
- Technical leads who want automation-first operations
- IT operations teams working with incident workflows

## Curriculum

### 01 n8n Fundamentals for DevOps Automation (Where It Fits)

- What n8n is (workflow automation platform concepts)
- DevOps use cases (incident automation, ops checks, approvals, notifications)
- Core n8n building blocks (nodes, triggers, executions, credentials)
- Workflow design mindset (event-driven vs scheduled automation)
- **Hands-on:** Lab: Create your first workflow and validate execution history and logs

### 02 Operational Workflow Patterns (Incidents, Checks, Approvals, Notifications)

- Incident response automation patterns (triage, enrich, notify, ticket)
- Infrastructure checks automation (health endpoints, service status)
- Approval workflows (human gate before action)
- CI/CD notifications and release communications patterns
- **Hands-on:** Lab: Build an incident workflow that enriches alerts and posts structured updates to chat

### 03 Integrations (GitHub/GitLab, Slack/Teams, Jira Concepts)

- Connecting to GitHub or GitLab (PR events, workflow status, webhooks)
- ChatOps integration with Slack or Microsoft Teams (alerts, actions)
- Ticketing integration concepts (Jira issue create/update as optional)
- Standard payload patterns (context fields, links, correlation ids)
- **Hands-on:** Lab: Build a workflow that posts CI status to Slack/Teams and optionally creates a Jira ticket

### 04 Webhooks, REST APIs, and Cron Triggers (Reliable Automation)

- Webhook triggers (event-driven automation entry point)
- Calling REST APIs (auth patterns, request validation basics)
- Cron triggers for scheduled operations (daily checks, cleanup jobs)
- Idempotency concepts for repeated triggers
- **Hands-on:** Lab: Build a webhook-triggered workflow that calls an API and schedules a daily health check

### 05 Secure Automation Patterns (Secrets, Role Separation, Approvals)

- Secrets handling best practices (use credentials store, never hardcode)
- Role separation concepts (who can trigger, who can approve, who can execute)
- Approval gates for risky actions (prod deploy, restart, scaling)
- Safe defaults (read-only first, limit scope, validation before action)
- **Hands-on:** Lab: Add approval step and secure credentials to an automation that performs a controlled operation

### 06 Reliability Practices (Retries, Timeouts, Error Handling, Audit Trails)

- Retries and backoff concepts (when to retry vs fail fast)
- Timeouts and preventing stuck workflows
- Error handling patterns (fallback paths, notify on failure)
- Logging, execution history, and audit trails for compliance
- **Hands-on:** Lab: Add robust error handling and audit-friendly logging to an existing workflow

## 07 Production Deployment of n8n (Docker-First, Kubernetes Option)

- Docker-first deployment approach (persisting data, upgrades)
- Environment configuration patterns (env vars, secrets management)
- Access and security basics (auth, TLS concepts, network exposure)
- Kubernetes option overview (scaling, persistence, ingress concepts)
- **Hands-on:** Lab: Deploy n8n with Docker in a production-safe configuration and validate persistence

## 08 Capstone Project (End-to-End DevOps Automation with n8n)

- Capstone goal: Deliver a complete DevOps automation workflow using n8n
- Trigger from webhook/Cron (incident or scheduled ops)
- Enrich context (API calls) and notify Slack/Teams
- Approval gate before executing an action (optional but recommended)
- Create/update ticket (Jira concept optional) and store audit trail
- **Hands-on:** Capstone Lab: Demo the workflow end-to-end with failure simulation and recovery behavior