SITE RELIABILITY ENGINEERING

The SRE Toolkit

Your hands-on field kit — a complete catalog of 15+ essential SRE tools with use cases, ready-to-use runbook and postmortem templates, all 12 Learn-by-Doing activities, the full GSDC syllabus, and exam details.

- 15+ Tools Catalog
- Runbook + Postmortem Templates
- 12 Learn-by-Doing Activities
- 7-Module Syllabus
- Exam & Certificate

INTRODUCTION

The modern SRE toolchain

Reliability is a practical craft, and the right tools make it possible. This toolkit catalogs the platforms SREs actually use in 2026 — organized by the layer of the reliability lifecycle they serve — plus the templates and hands-on activities that turn knowledge into job-ready skill.

15+
Tools with use cases

2
Ready-to-use templates

12
Hands-on activities

7
Syllabus modules

Five layers of the modern stack

Layer	Purpose
Monitoring & Observability	See system state through metrics, logs, and traces.
Incident Management & On-Call	Detect, route, and coordinate fast response.
Automation & IaC	Provision and manage infrastructure as code.
CI/CD & Orchestration	Ship safely and run containers at scale.
ITSM & Collaboration	Track work and coordinate across teams.

The best toolkit isn't every tool — it's the right combination for your team's maturity and reliability goals. The pages ahead break down each layer.

Tool selections and use cases reflect widely reported 2026 SRE practice (incident.io, Rootly, Uptrace, Vinsys, OpenObserve and others).

TOOLS CATALOG · 1 OF 4

Monitoring & observability

LAYER 1 Metrics · Logs · Traces

Prometheus
Open-source · CNCF

De-facto standard for metrics collection in Kubernetes and cloud-native environments. Scrapes time-series data and triggers alerts.

Grafana
Open-source

Unified dashboards and visualization across many data sources. Real-time metrics, dynamic dashboards, and alerting.

Datadog
Commercial

Full-stack observability — metrics, logs, traces, APM, and synthetics in one platform with AI-powered anomaly detection.

New Relic
Commercial

APM-first observability with AI enhancements for application performance monitoring and troubleshooting.

Loki
Open-source

Log aggregation designed to pair with the Grafana stack for cost-efficient, label-based log queries.

Jaeger
Open-source · CNCF

Distributed tracing to follow a request across microservices and pinpoint the upstream call behind a cascade.

OpenTelemetry
Open-source · CNCF

Vendor-neutral instrumentation standard for emitting metrics, logs, and traces consistently across the stack.

TOOLS CATALOG · 2 OF 4

Incident management & on-call

LAYER 2 Detect · Route · Respond

PagerDuty — Commercial
Industry-standard incident response and on-call management. Receives alerts from any source, applies intelligent routing via escalation policies, and notifies the right person via call, SMS, push, or Slack.

incident.io — Commercial
Slack-native incident management with a lighter workflow — declare, coordinate, and document incidents where teams already work.

Grafana OnCall — Open-source
On-call scheduling and alerting built for direct integration with the Grafana, Prometheus, and Loki stack.

Alertmanager — Apache 2.0
Handles alerts sent by Prometheus — deduplicates, groups, and routes them to the right receiver (email, Slack, PagerDuty).

Why this layer matters

SLO-based alerting
Modern teams alert on objective breaches, not raw thresholds, to cut noise.

Fast coordination
The right person is paged in minutes, with context attached automatically.

Learning loop
Every incident feeds a postmortem that hardens the system (see the template ahead).

TOOLS CATALOG · 3 OF 4

Automation, IaC & orchestration

LAYER 3 Provision · Configure · Orchestrate

Terraform
Open-source

Most widely adopted IaC tool. Automates provisioning across AWS, GCP, and Azure, reduces configuration drift, and codifies disaster-recovery plans.

Ansible
Open-source

Agentless configuration management and automation that enforces consistency and removes repetitive manual work (toil).

Kubernetes
Open-source · CNCF

Container orchestration foundation. Automates deployment, scaling, and self-healing of services with a declarative, IaC-friendly model.

Helm
Open-source · CNCF

The package manager for Kubernetes — templated, versioned application deployments that keep clusters consistent.

TOOLS CATALOG · 4 OF 4

CI/CD & collaboration

LAYER 4 Build · Deploy

Jenkins
Open-source

Mature CI/CD automation server that moves code from commit to production safely and repeatably.

GitLab CI/CD
Commercial / OSS

Integrated pipelines tied to source control for build, test, and deploy in one platform.

Argo CD
Open-source · CNCF

GitOps continuous delivery for Kubernetes — the desired state lives in Git and is reconciled automatically.

LAYER 5 Track · Govern

Jira Service Management
Commercial

ITSM and incident tracking for Atlassian-based teams — request, change, and incident workflows.

ServiceNow
Commercial

Enterprise ITSM and governance for large organizations managing change and compliance at scale.

That's 18 tools across 5 layers — a complete starting catalog. Choose the combination that matches your environment and reliability goals.

FROM TOOLKIT TO CURRICULUM

Where you learn each tool

Every layer of the toolkit maps to a module in the GSDC SRE syllabus, so you don't just collect tools — you learn when and how to use them.

Toolkit layer	Representative tools	Module
Observability	Prometheus, Grafana, Datadog, OpenTelemetry	4
Incident management	PagerDuty, incident.io, Alertmanager	6
Automation & IaC	Terraform, Ansible, Kubernetes	5
CI/CD & orchestration	Jenkins, Argo CD, Helm	5
SLOs & error budgets	SLO tooling & alerting policy	2
Toil & culture	Automation patterns, ITSM workflows	3 & 7

Context, not just names

Learn which tool fits which reliability problem — and why.

Build a real stack

Hands-on activities assemble these tools into a working toolkit.

READY-TO-USE TEMPLATE · 1 OF 2

The runbook template

A runbook turns tribal knowledge into repeatable action. Use this structure to document how to operate and recover any service — so anyone on-call can respond consistently.

Service Runbook

TEMPLATE

Service name	Service / system this runbook covers
Owner & on-call	Owning team, escalation contacts, on-call rotation
Purpose & SLOs	What the service does; key SLIs and SLO targets
Architecture	Key components, dependencies, and data flows
Dashboards & alerts	Links to monitoring dashboards and active alert rules
Common operations	Start, stop, deploy, scale, rollback procedures
Known failure modes	Symptoms → likely cause → remediation steps
Recovery steps	Step-by-step restore and failover instructions
Escalation path	When and how to escalate; severity definitions
Verification	How to confirm the service is healthy after action

A reusable structure you can adapt per service. You'll build one for a sample service as a hands-on activity in the certification.

READY-TO-USE TEMPLATE · 2 OF 2

The blameless postmortem

Postmortems turn failure into durable improvement. The blameless format focuses on systems and process — never individuals — so teams learn openly.

Incident Postmortem	BLAMELESS TEMPLATE
Title & date	Short incident name and date/time window
Severity & impact	Sev level; users, services, and revenue affected
Summary	2–3 sentence plain-language overview
Timeline	Detection → escalation → mitigation → resolution
Root cause	Contributing factors (systems & process, not people)
Detection	How it was found; time-to-detect; gaps
Resolution	What restored service; time-to-recover
What went well	Effective responses worth repeating
Action items	Owners, due dates, and preventive fixes
Lessons learned	Durable takeaways shared across teams

ALL 12 LEARN-BY-DOING ACTIVITIES · PART 1 OF 2

Activities & portfolio deliverables

Each Learn-by-Doing (LBD) activity produces a concrete deliverable you keep — building a portfolio that proves your skills to employers.

#	Activity	Portfolio deliverable
01	Draft an SLA / SLO / SLI set	Documented objective sheet
02	Calculate & allocate an error budget	Error-budget worksheet
03	Define an error-budget policy	Written policy doc
04	Audit a workflow for toil	Toil audit & score
05	Design a toil-removal automation	Automation design spec
06	Build an Infrastructure-as-Code template	Reusable IaC snippet

Keep what you build
Every deliverable is yours to show in interviews and on your profile.

Tool-backed
Activities use the same tools cataloged earlier in this toolkit.

ALL 12 LEARN-BY-DOING ACTIVITIES · PART 2 OF 2

From monitoring to capstone

#	Activity	Portfolio deliverable
07	Map the four golden signals to a dashboard	Dashboard design
08	Tune alerting to reduce noise	Alerting ruleset
09	Run a simulated incident response	Incident log & runbook
10	Write a blameless postmortem	Completed postmortem
11	Plan a chaos-engineering experiment	Experiment plan
12	Capstone: SRE adoption & reliability plan	End-to-end capstone

By the end you'll have a 12-piece portfolio — objective sheets, automation specs, dashboards, a runbook, a postmortem, and a capstone — that demonstrates real reliability skill.

GSDC SRE SYLLABUS · PART 1 OF 2

The 7-module curriculum

1 SRE Principles & Practices

- What is Site Reliability Engineering
- SRE vs. DevOps
- Core SRE principles
- Embracing & managing risk
- The role of an SRE
- Reliability as a feature

2 Service Level Objectives & Error Budgets

- SLAs, SLOs & SLIs
- Defining meaningful objectives
- Error budgets & purpose
- Error budget policies
- Reliability vs. velocity
- Measuring success

3 Reducing Toil

- What is toil
- Identifying toil
- The cost of toil
- Eliminating toil via automation
- Toil-reduction strategies
- Measuring reduction

4 Monitoring & Service Level Indicators

- Monitoring fundamentals
- The four golden signals
- Service Level Indicators
- Observability vs. monitoring
- Alerting & on-call health
- Dashboards & metrics

GSDC SRE SYLLABUS · PART 2 OF 2

Automation, resilience & adoption

5 SRE Tools & Automation

- Automation principles
- Infrastructure as Code
- CI/CD & release engineering
- Configuration management
- Self-healing systems
- Tooling landscape

6 Anti-Fragility & Learning from Failure

- Designing for failure
- Blameless postmortems
- Incident management
- Chaos engineering basics
- Anti-fragile systems
- Continuous improvement

7 Organizational Impact & Adopting SRE

- Building an SRE culture
- Team models & engagement
- Psychological safety
- Measuring SRE success
- Scaling SRE
- Adoption roadmap

SALARY GUIDE

What toolkit mastery pays

Fluency in this toolkit maps directly to pay. Tool-specific skills — observability platforms, chaos engineering, Kubernetes — carry measurable premiums on top of strong base salaries.

$120K–$170K
Typical US average SRE range

+8–15%
Premium for observability tooling skills

+5–12%
Premium for chaos-engineering skills

Career stage	Indicative annual range (US)
Entry-level SRE	$80,000 – $110,000
Mid-level SRE	$110,000 – $145,000
Senior SRE	$145,000 – $185,000+
Lead / Principal SRE	$170,000 – $210,000+

Indicative US ranges aggregated from public 2025–2026 sources; skill premiums per market analysis. Total comp (bonus + equity) often adds 20–40%. Figures vary by employer, location, and experience.

CAREER ROADMAP

From entry-level to leadership

Toolkit fluency compounds over a career. Each rung adds scope, autonomy, and compensation.

START
SysAdmin / DevOps background
Foundational experience with infrastructure and automation.

01
Junior / Associate SRE
Hands-on with monitoring, automation, and cloud under guidance.

02
Site Reliability Engineer
Own services, define SLOs, drive reliability and automation.

03
Senior SRE
Lead incidents and architecture; mentor and set standards.

04
Staff / Principal SRE
Set technical direction; design resilience across teams.

05
SRE Manager / Head of Reliability
Own reliability strategy, headcount, and culture enterprise-wide.

AI GOVERNANCE & AIOPS TOOLING

The toolkit goes autonomous

Autonomous IT is the 2026 operational standard. AI now correlates signals, surfaces root cause in seconds, and drives remediation — and a new family of roles keeps those AI systems reliable and governed.

AI capability in the toolkit	What it does
AI anomaly detection	ML flags abnormal behavior across metrics, logs, and traces.
Automated root-cause analysis	AI agents correlate alerts to recent deploys and surface causes fast.
Intelligent alert correlation	Noise reduction groups related alerts into a single incident.
Autonomous remediation	Safe, guardrailed auto-fixes for known failure patterns.

Emerging roles & why SRE transfers

AIOps Engineer · ML Platform SRE · AI Reliability Engineer · AI Governance Lead · Observability Engineer (AI)

- ✓ **SLOs for AI** — objective discipline defines AI-service guarantees.
- ✓ **Observability first** — governing AI needs the instrumentation SRE teaches.
- ✓ **Guardrailed automation** — autonomous remediation needs SRE safety controls.

AI-tooling context from incident.io, OpenObserve, StackGen and PagerDuty AIOps reporting (2026).

HIRING TRENDS

Tool fluency is in demand

As organizations adopt cloud-native and AI-driven operations, employers increasingly screen for hands-on tool experience — exactly what this toolkit and the certification build.

Industries hiring SREs

Big Tech | Finance & Banking | Healthcare | E-commerce | Telecom | SaaS & Cloud | Gaming & Streaming | Startups

Trend	What it means for you
Autonomous IT / AIOps standard	AI-tool fluency becomes a hiring differentiator.
SLO-based alerting over thresholds	Employers want engineers who think in objectives.
Open-source stacks (Prometheus/Grafana)	Hands-on experience with the standard stack is prized.
75% enterprise SRE adoption by 2027	Sustained, rising demand for certified, tool-fluent talent.

★ ENROLLMENT OPEN

Seats for the next cohort are filling fast

Build the tool fluency employers screen for. Enrollment is open now — join the GSDC SRE certification and get hands-on with the full stack.

Reserve My Spot →

EXAM FORMAT, PASSING SCORE & VALIDITY

How the exam works

40
Multiple-choice questions

60 min
Total exam duration

Lifetime
Credential validity

Exam attribute	Detail
Question type	Multiple-choice (knowledge & scenario-based)
Number of questions	40
Duration	60 minutes (extra time may apply for non-native English speakers)
Passing score	Approximately 65–70%
Delivery	Online, remotely proctored, closed book
Attempts	2 attempts (1 free retake included)
Validity	Lifetime — no renewal or recertification fees
Result	Recognized credential with a unique certification ID

Set up for success

- ✓ **Practice exams** until you consistently clear the passing threshold.
- ✓ **Complete the 12 activities** to reinforce applied understanding.
- ✓ **Use 1-on-1 SME sessions** to close any knowledge gaps before exam day.

Exam parameters reflect the standard SRE Foundation format; confirm current specifics at enrollment, as details may be updated by the certification body.

SAMPLE CERTIFICATE

What you'll earn

Complete the program and pass the exam to receive a globally recognized, verifiable certificate and digital badge — proof of toolkit mastery you can show employers.

Verifiable

Unique ID lets employers confirm your credential instantly.

Shareable badge

Add to LinkedIn, resumes, and email signatures.

Lifetime validity

No expiry, no renewal fees.

⏰ FINAL 48 HOURS

Last call — your offer expires soon

This is the final window. Enroll in the GSDC SRE certification within 48 hours and turn this toolkit into a recognized credential.

Enroll Before It Ends →

YOUR NEXT STEP

Put the toolkit to work

You've got the tools catalog, the templates, the activities, the syllabus, and the market context. The reliable next move is to make it official.

How it works

01 **Enroll**
Choose the GSDC SRE certification and start online.

02 **Learn & build**
Work the 7 modules and 12 hands-on activities with the full toolkit.

03 **Certify**
Sit the online proctored exam — with a free retake if needed.

04 **Get hired**
Use your portfolio, badge, and job-support to land the role.

Ready to master the SRE toolkit?

Start the GSDC SRE certification and join 75,000+ professionals who chose a globally recognized credential.

Get Certified →

Global Skill Development Council
www.gsdcouncil.org
accreditations@gsdcouncil.org

Lewes, Delaware, USA
Glattbrugg, Switzerland
Singapore