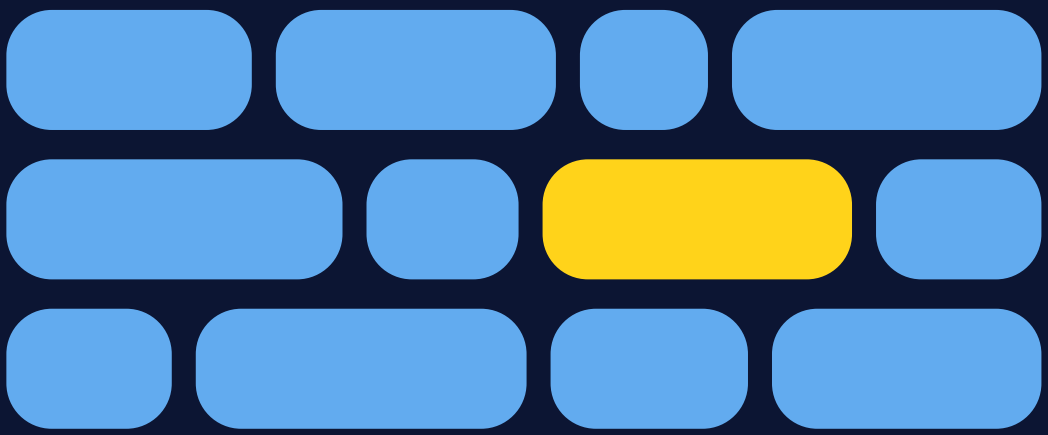
PRACTICAL SRE LEARNING PROGRAM

SRE Starting Point
From Alert to RCA

Understand how an SRE handles production - from the moment an alert fires to triage, mitigation and RCA.



Complete program topics and practical learning path

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PROGRAM MAP

A real-world SRE journey

Six stages that connect the complete offering.

01

Understand

Role, responsibilities and tools

02

Respond

On-call and alert management

03

Coordinate

Incident, severity and escalation

04

Investigate

Metrics, logs, APM and triage

05

Recover

Mitigation, validation and closure

06

Improve

Problem management, RCA and reliability

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MODULE 01

SRE Fundamentals

- What is SRE
- How SRE Roles Look in Real Organizations
- What SREs Do
- What SREs Don't Do
- Day in the Life of an SRE
- SRE vs DevOps
- SRE vs Platform Engineering
- Junior vs Senior vs Staff SRE Responsibilities
- SRE Team Collaboration

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MODULE 02

SRE Tools - Operational Stack

The tools used from detection through incident closure.

Alerting & On-Call

- PagerDuty
- On-call schedules
- Escalation policies

Metrics & Dashboards

- Grafana
- Prometheus
- Dashboard correlation

Logs & Search

- Splunk
- Loki
- Elasticsearch

APM & Tracing

- Datadog
- Dynatrace
- New Relic
- AppDynamics
- OpenTelemetry
- Jaeger

Collaboration

- Slack
- Microsoft Teams
- Incident channels

ITSM & Tracking

- ServiceNow / SNOW
- Jira
- Incident, problem and change records

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MODULE 02

SRE Tools - Platform Stack

The supporting technologies an SRE works with day to day.

Containers

- Kubernetes
- Docker

Operating System

- Linux
- System services
- Networking tools

Source Control

- Git
- GitHub

Infrastructure as Code

- Terraform
- Cloud provisioning

CI/CD

- Jenkins
- GitHub Actions

Cloud

- AWS
- Azure
- GCP

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MODULE 03

On-Call

- On-Call Fundamentals
- On-Call Rotation
- Primary and Secondary On-Call
- On-Call Handover
- On-Call Checklist
- Alert Acknowledgement
- Escalation Policies
- On-Call Communication
- On-Call Best Practices
- On-Call Burnout Prevention

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MODULE 04

Alert Management

- Alert Validation
- Alert Triage
- Alert Prioritization
- Alert Routing
- Alert Ownership
- Alert Deduplication
- Alert Correlation
- Alert Suppression
- Alert Tuning
- Alert Fatigue
- Flapping Alerts
- Threshold Tuning
- Warning vs Critical Alerts
- Symptom vs Cause Alerts
- Actionable Alerts
- Runbook-Driven Alerts

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MODULE 05

Incident Management

- Incident Lifecycle
- Incident Detection
- Incident Declaration
- Incident Triaging
- Incident Commander Role
- Incident Ownership
- Incident Communication
- Incident Channels
- Incident Bridge Management
- Stakeholder Communication
- Incident Escalation
- Incident Handover
- Mitigation
- Recovery
- Incident Closure

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MODULE 06

Severity and Impact Analysis

Understand impact, scope and urgency before choosing the response.

- **Severity Identification**
- **Severity Matrix**
- **SEV1 / SEV2 / SEV3 / SEV4**
- **Customer Impact Analysis**
- **Business Impact Analysis**
- **Blast Radius Analysis**
- **Scope Identification**
- **Regional Impact Analysis**
- **Service Impact Analysis**
- **Dependency Impact Analysis**

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MODULE 07

Escalation

- Escalation Matrix
- Technical Escalation
- Functional Escalation
- Hierarchical Escalation
- Application Team Escalation
- Database Team Escalation
- Network Team Escalation
- Platform Team Escalation
- Security Team Escalation
- Vendor Escalation
- Leadership Escalation
- Time-Based Escalation
- Severity-Based Escalation

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MODULE 08

Incident Triage

Move from an alert to a focused, evidence-based investigation.

- **Initial Triage**
- **Issue Reproduction**
- **Recent Change Tracking**
- **Change Window Analysis**
- **Deployment Tracking**
- **Configuration Change Tracking**
- **Feature Flag Tracking**
- **Infrastructure Change Tracking**
- **Dependency Analysis**

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MODULE 08

Structured Troubleshooting

- Healthy vs Unhealthy Comparison
- Before vs After Comparison
- Timeline Building
- Hypothesis-Driven Troubleshooting
- Evidence Collection
- Mitigation Identification
- Recovery Validation

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MODULE 09

Metrics and Observability

- Golden Signals
- Latency
- Traffic
- Errors
- Saturation
- CPU Analysis
- Memory Analysis
- Disk Analysis
- Network Analysis
- Kubernetes Metrics
- Application Metrics
- Database Metrics
- Infrastructure Metrics
- Dashboard Navigation
- Dashboard Correlation
- Metrics Comparison

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MODULE 10

Logs - Application and System

- Application Logs
- System Logs
- Useful System Logs
- Syslog
- Journalctl
- Kernel Logs
- dmesg
- Authentication Logs
- Network Logs
- Container Logs

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MODULE 10

Logs - Workload Investigation

- Kubernetes Logs
- Kubernetes Events
- Node Logs
- OOM Events
- Crash Logs
- Error Pattern Identification
- Request ID Tracking
- Trace ID Tracking
- Log Correlation

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MODULE 11

APM and Distributed Tracing

- APM Fundamentals
- Application Latency Analysis
- Transaction Analysis
- Slow Request Analysis
- Error Analysis
- Exception Analysis
- Service Maps
- Dependency Maps
- Distributed Tracing
- Trace Analysis
- Span Analysis
- Database Call Analysis
- External API Analysis

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MODULE 12

Troubleshooting Frameworks

- What Happened
- When Did It Start
- What Changed
- What Is Impacted
- What Is Different
- Expected vs Actual Behaviour
- Reproduction Steps
- Environment Comparison
- Frequency Analysis
- Application -> Container -> Host -> Network -> Dependency Troubleshooting
- Metrics -> Logs -> Traces Correlation

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MODULE 13

Runbooks and ServiceNow / ITSM

Runbooks

- Runbook Fundamentals
- Runbook Structure
- Runbook Usage
- Runbook Maintenance
- Troubleshooting Runbooks
- Escalation Runbooks
- Recovery Runbooks

Incident Records

- Incident Records
- Incident Assignment
- Assignment Groups
- Priority Management
- Incident Updates
- Incident Closure

Problem and Change

- Problem Records
- Change Management
- Change Requests
- Known Errors

Follow-Through

- RCA Tracking
- Corrective Action Tracking

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MODULE 14

Problem Management

- Problem Management Fundamentals
- Incident vs Problem
- Recurring Incident Analysis
- Problem Ticket Creation
- Known Error Management
- Technical Debt Identification
- Corrective Actions
- Preventive Actions
- Problem Ownership

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MODULE 15

Root Cause Analysis

- Root Cause Analysis
- Trigger Identification
- Contributing Factors
- Systemic Cause Identification
- 5 Whys
- Timeline Analysis
- Change Analysis
- Fault Tree Thinking
- Evidence-Based RCA
- Blameless RCA
- RCA Documentation
- RCA Review
- RCA Findings
- RCA Action Items

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MODULE 16

RCA Collaboration

- Application Team Collaboration
- Infrastructure Team Collaboration
- Network Team Collaboration
- Database Team Collaboration
- Security Team Collaboration
- Product Team Collaboration
- Support Team Collaboration
- SME Engagement
- Cross-Team Investigation
- RCA Review Meetings
- Action Item Ownership

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MODULE 17

Reliability Fundamentals

- SLI
- SLO
- SLA
- Error Budgets
- Availability
- Reliability
- Latency Objectives
- Error Rate Objectives
- Service Health
- Operational Readiness

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MODULE 18

Post-Incident Management

- Post-Incident Review
- Corrective Actions
- Preventive Actions
- Action Item Ownership
- Priority Assignment
- Due Dates
- Follow-Up Tracking
- Monitoring Improvements
- Alert Improvements
- Automation Opportunities
- Runbook Improvements
- Lessons Learned

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THE COMPLETE OUTCOME

From alert to learning

One connected production SRE operating playbook.

1. ALERT
2. TRIAGE
3. INCIDENT
4. MITIGATE
5. RCA
6. IMPROVE

SRE Starting Point

Practical. Scenario-based. Built for production work.

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