

# Adopt AI-driven SRE best practices for reliable, scalable IT

Brillio's AI-infused Site Reliability Engineering (SRE) strategy for enterprises ensures applications run around the clock, meeting ROI goals with minimal human intervention.

# SRE: An increasingly vital consideration for today's modern enterprises

SRE, a term Google coined in the early 2000s, combines the best practices of software engineering and systems engineering to ensure optimal performance. Fast-forward 20 years, and SRE is even more prominent today in upholding an IT system's performance, reliability, and scalability. Modern enterprises have digital systems, and any downtime of these systems can lead to financial losses and reputational damage. SRE strikes a crucial balance between innovation and stability. While successfully threading the needle of innovation is good, it is imperative to remember that long-term scalability is equally vital. As businesses grow, their systems do, too. A robust SRE framework helps enterprises build resilient architectures that adapt to higher demand with minimal disruption.

SRE best practices help organizations maintain applications around the clock. By automating scaling, deployment, and monitoring, SRE reduces human dependencies and errors, allowing teams to focus on strategic tasks, save costs, and improve user experience and customer satisfaction. SRE is also an excellent way for organizations to embrace modern trends like cloud-native architectures and DevOps practices to help them stay competitive. SRE blurs the line between development and operations teams by fostering better collaboration and shared accountability. Both groups can align with the common goal of building and maintaining scalable, reliant systems.

## What does an SRE maturity assessment require, and how do you build on it?

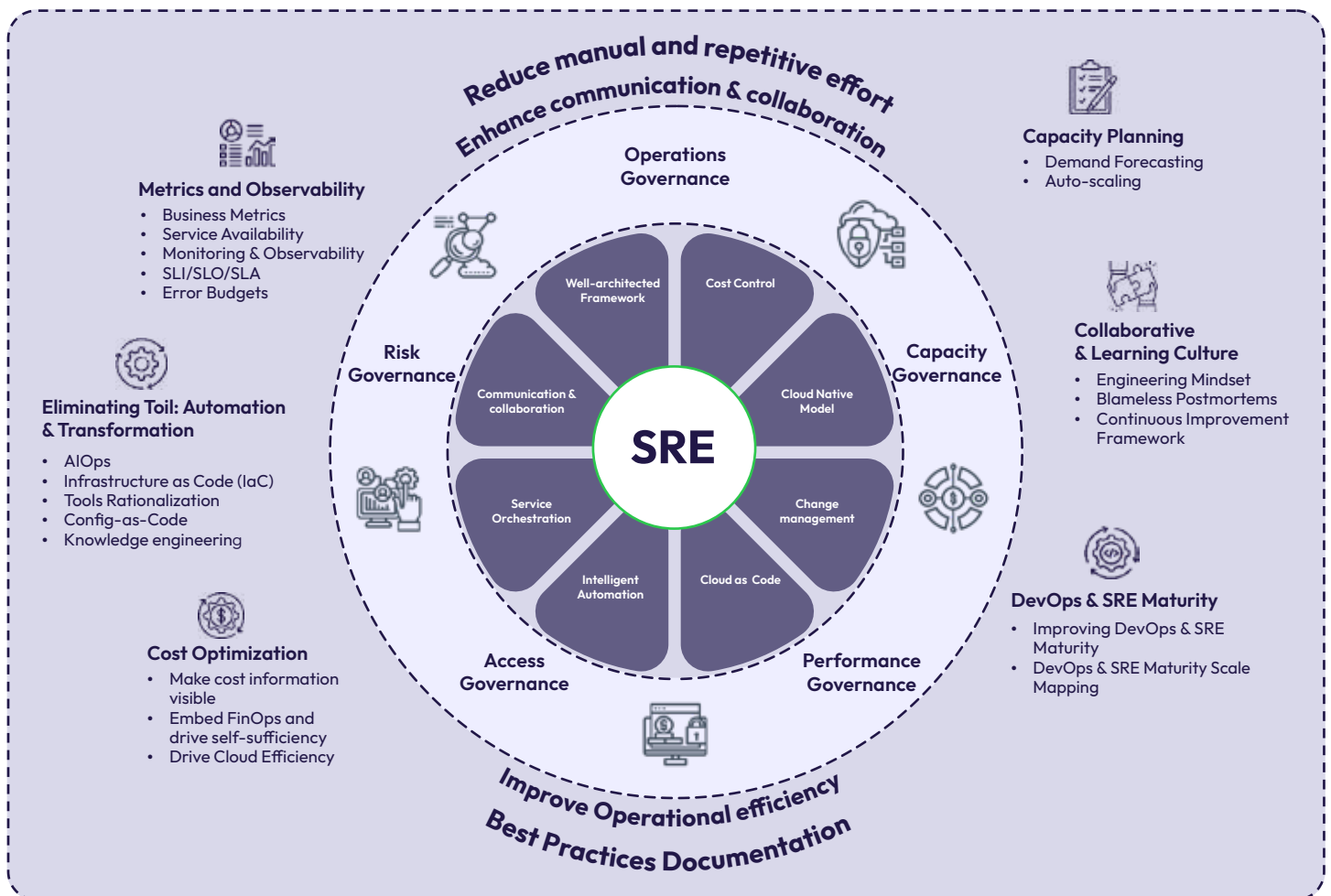
An organization's SRE maturity journey begins by evaluating its ability to implement and sustain robust practices. It's a multi-fold strategy that addresses activities across critical areas like observability, automation, cost optimization, capacity planning, and cultural alignment. Organizations must build or adopt a structured maturity model and framework to benchmark their current applications. It's a continuous, iterative process that may take weeks or months to examine how effectively they track the relevant metrics. Many SRE-related activities depend on the organization's size, complexity, and current SRE practices (if they exist in some form). Subsequent assessments and improvements are also iterative and progress as the organization evolves its practices.

Every organization's SRE maturity journey is different. It starts with a strong foundation that defines the necessary metrics, SLOs, SLAs, and SLIs, capacity, and how to move deliverables to production seamlessly. Once the foundation is set, the next goal is to establish a knowledge base. Assessing application performance in production and any pitfalls that may arise from potential downtime is essential. The next stage is 'observability,' where teams monitor the systems and find patterns in when these systems slow down and the reasons behind the slowdown. Predictive analytics help analyze these patterns and take pre-emptive measures to raise alarms or perform self-healing during poor performance and downtime.

Furthermore, advanced AI integration and persona-based assistants prevent issues from ever happening with automated self-healing. DevOps toolkits, observability dashboards, maturity models, and assessment scorecards are great accelerators to ensure SRE maturity is progressing as expected. Brillio engages with clients to baseline where they are in their SRE maturity journey and creates a backlog list to help them transition from their 'as-is' to their 'to-be' state through highly specific focus areas.

## Enterprise SRE **practice focus areas**

The assessment framework covers six key focus areas and evaluates a client's applications and infrastructure for AWS Cloud suitability and migration readiness. This holistic evaluation covers multiple dimensions, risks, potential for scalability, and future-readiness, enhancing preparedness to align the migration strategy with the client's operational and business objectives.



# DevOps and **SRE maturity**

Building maturity in DevOps and SRE practices is a continuous journey. Organizations should consistently improve their DevOps and SRE maturity by adopting industry best practices and refining their workflows. With suitable DevOps and SRE maturity scales, teams can benchmark progress, identify gaps, and focus on improvement areas, ensuring long-term operational excellence and ROI. The focus areas of a good SRE practice include:

**Metrics and observability:** Metrics and observability are foundational to building resilient and high-performing systems. Organizations must ensure that their operations align with their strategic objectives. How? By tracking business metrics and ensuring service availability to deliver seamless user experiences. Advanced monitoring and observability practices help detect and address issues proactively. Defining and adhering to SLIs, SLOs, and SLAs is crucial to setting measurable reliability goals. Using error budgets further allows teams to balance innovation with system stability effectively.

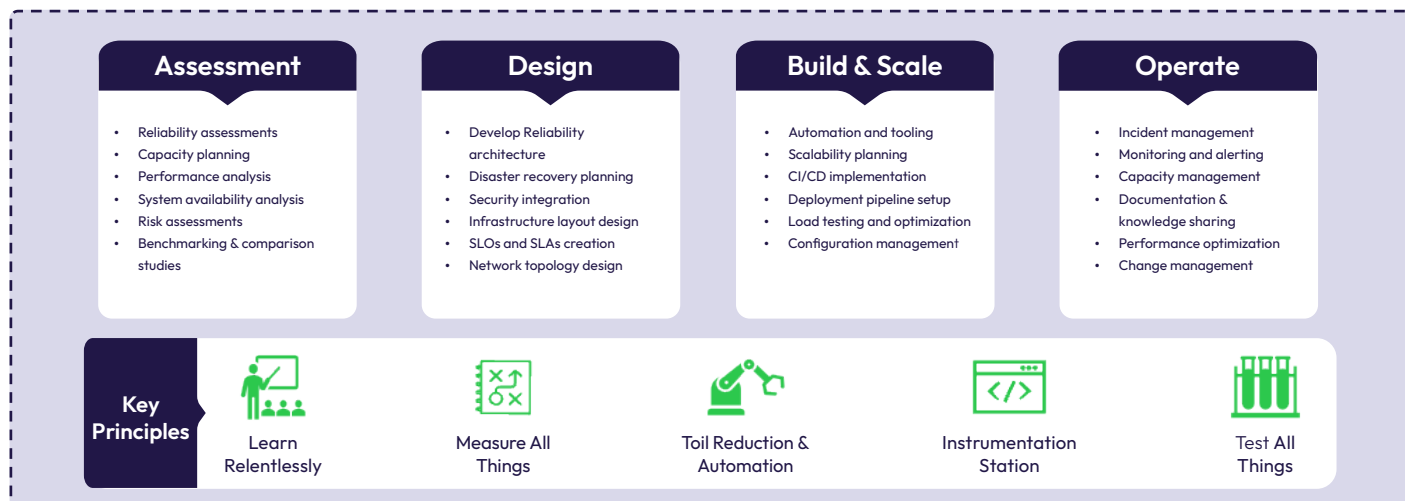
**Eliminate toil through automation and transformation:** Addressing redundant, manual tasks improves operational efficiency. AIOps drives intelligent operations and accelerates issue resolution. Implementing Infrastructure-as-code ensures scalable and consistent infrastructure management. Tools rationalization streamlines processes by eliminating unnecessary complexities, while Config-as-code simplifies configuration management. Teams can also leverage knowledge engineering to build more intelligent workflows and promote enhanced decision-making across business functions.

**Cost optimization:** One of the main objectives of SRE is to optimize costs and unnecessary overheads. Incorporating cost optimization measures ensures that an organization's operational efficiencies align with its financial goals. Therefore, it is crucial for leaders to make cost information visible as it empowers teams to understand and manage expenses better. FinOps principles, once embedded, will foster self-sufficiency and financial accountability. Lastly, prioritizing cloud efficiency will maximize resource utilization and reduce wastage.

**Capacity planning:** Effective capacity planning helps organizations stay vigilant for future challenges. With demand forecasting, teams can anticipate growth and demand and plan resource allocation accordingly. Autoscaling technologies ensure systems dynamically adjust to workload fluctuations, providing scalability and resilience during peak usage.

**Collaborative and learning culture:** To implement SRE or address its importance with peers and stakeholders, leaders must foster a collaborative and learning-focused culture to drive resilience. Cultivating an engineering mindset encourages high-quality innovation. Furthermore, blameless postmortems (a vital SRE practice) create a safe environment to help people learn from incidents without fear by fostering a culture of continuous improvement. A continuous improvement framework helps teams iteratively enhance processes, sustaining growth and adaptability over time.

# A phased roadmap to SRE maturity



Achieving SRE maturity is a structured, phased process. To progress on this journey, the four-phased roadmap below puts organizations on the path by focusing on specific goals and deliverables.

## Phase I: Assessment

**Goal:** Learn relentlessly

The first phase is centered on evaluating an organization's current system reliability and identifying areas for improvement. The activities during this phase include:

- Conducting reliability assessments to understand baseline performance.
- Undertaking capacity planning and performance analysis to align resources with projected demand.
- Analyzing system availability and performing risk assessments to identify vulnerabilities.
- Benchmarking performance and comparison studies against current industry standards.

## Phase II: Design

**Goal:** Measure everything

In this phase, organizations create a blueprint for resilient systems. The activities during this phase include:

- Developing reliability architecture and planning for disaster recovery.
- Integrating security to protect systems from threats.
- Designing the infrastructure layout and network topology to optimize operations.
- Establishing SLOs and SLAs to set measurable goals.

## Phase III: Build and scale

**Goal:** Reduce toil with automation

The third phase focuses on implementing tools and scaling systems to handle growth and demand effectively. The activities during this phase include:

- Implementing automation and tooling to reduce manual intervention.
- Planning for scalability and setting up a CI/CD pipeline for continuous delivery.
- Performing load testing and optimization so that systems can handle peak demand.
- Managing configuration and deploying reliable systems.

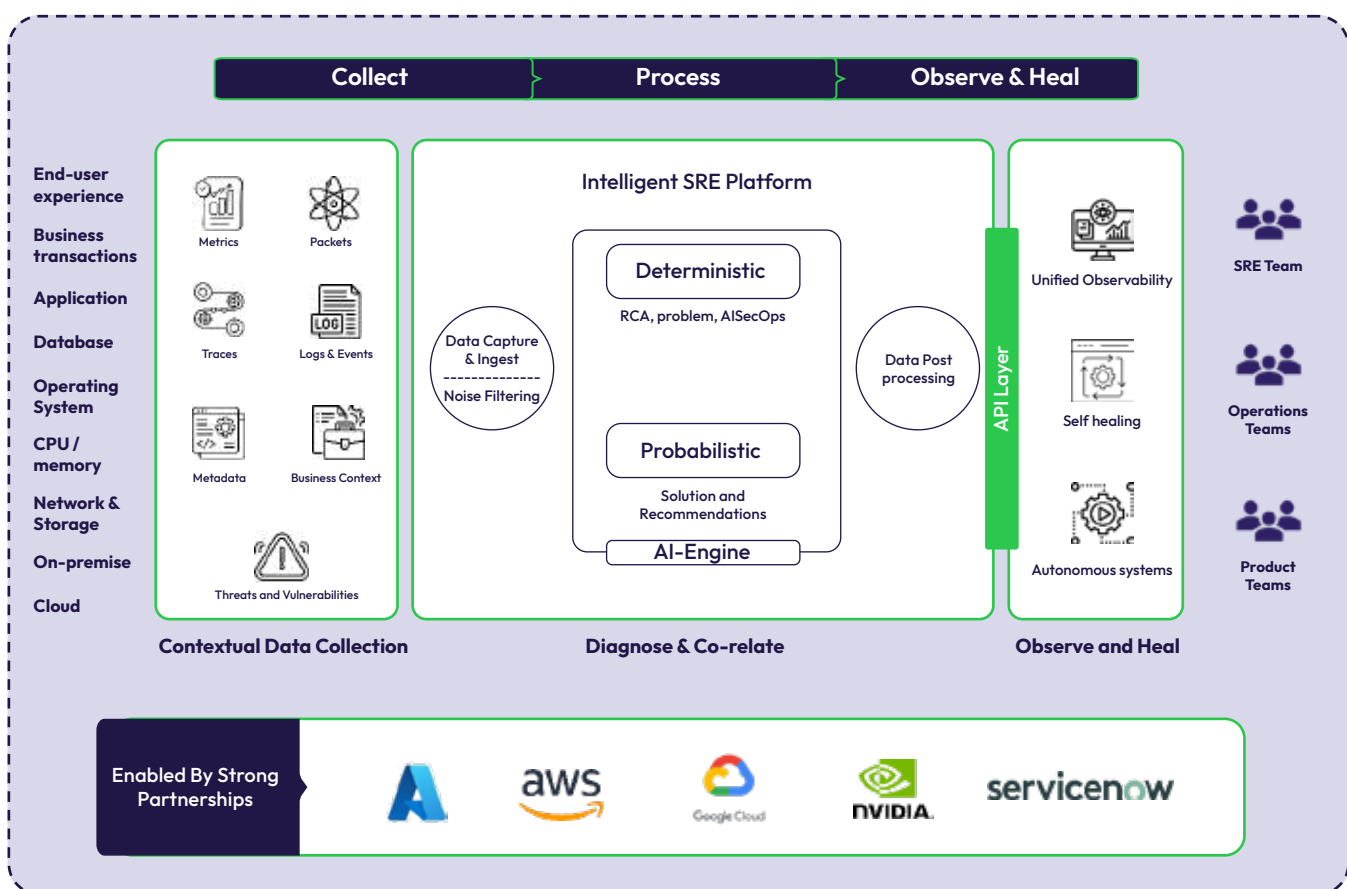
## Phase IV: Operate

### Goal: Test everything

The final phase emphasizes efficient operations and continuous optimization once an application or capability is launched. The activities during this phase include:

- Managing incident response and building effective monitoring and alerting systems.
- Ensuring robust capacity management to meet the organization's business needs.
- Fostering documentation and knowledge sharing to promote collaboration.
- Driving superior performance optimization and structured change management.

## Brillio's AI-led **approach to SRE**



A futuristic SRE platform comprises vast and diverse data collection, processing, and action-oriented monitoring. AI-led practices transform traditional practices to enhance system resilience, performance, and self-healing capabilities. Brillio's AI-led approach to SRE is built on its three core pillars: **Collect**, **Process**, and **Observe and Heal**. Here's how.

### **Collect: Contextual data collection**

Effective SRE begins with a comprehensive data collection exercise across multiple technology stack layers. The key components include:

- **End-user experience and business transactions:** Capture metrics directly affecting customer satisfaction and business outcomes.

- **Application and database layers:** Monitor traces, logs, and events to gain visibility into application performance and database integrity. **Infrastructure and cloud monitoring:** Gather metadata, CPU or memory usage, network and storage activity, and cloud performance metrics.
- **Threats and vulnerabilities:** Identify potential security risks and contextual business insights to ensure proactive issue management.

**Outcome:** Data capture and ingestion are streamlined by filtering noise, ensuring that only the actionable insights are processed.

### Process: Intelligent SRE platform

Once the required data is collected, it is processed using an intelligent SRE platform using deterministic and probabilistic techniques.

- **Deterministic analysis:** Conduct root cause analysis, identify problems, and execute AIOps for precise issue detection and resolution.
- **Probabilistic insights:** Leverage AI engines to provide solution recommendations, predict failures, and correlate patterns for informed decision-making.

**Outcome:** Data post-processing ensures that the actionable insights derived are ready for the next steps given below.

**Observe and heal:** During the final stage, the focus is on ensuring system reliability through a dashboard comprising all the derived deterministic and probabilistic insights and then taking the following measures:

- **Unified observability:** Provide end-to-end visibility into system performance across teams.
- **Self-healing capabilities:** Automate resolution processes to reduce manual intervention and downtime.
- **Autonomous systems:** Enable systems to predict, respond, and adapt to issues without human oversight.

**Outcome:** An API layer ensures seamless integration of these measures with the organization's existing tools and workflows.

Brillio's AI-led approach is supported by a world-class partner ecosystem that helps customers realize rapid innovation. Partnerships with leading platforms like AWS, Google Cloud, and ServiceNow help enterprises leverage the latest in technology solutions and retain their digital advantage. Brillio brings together best-of-breed talent across the digital value chain to help enterprises shape their future and bring their next big idea to market.

# Brillio's DevOps and **SRE IP and accelerators**

## Brillio's accelerators

### DevOps toolkit

- Pre-built, customizable CI/CD workflows
- Security, monitoring and logging integrated into development or product lifecycle
- Infra automation and management

### brillioOne.ai dashboard

- Predictive issue and bottleneck identification
- Customizable KPIs for targeted insights
- Unified cross-platform project analytics

### DevOps maturity model and fitness assessment scorecard

- Tailored maturity assessment
- Scorecard with actionable improvement
- Competitive benchmarking within the industry

### brillioOne.ai cloud analytics

- Recommendations for cloud cost optimization
- Granular cloud performance metrics
- Trend analysis for strategic cloud resource planning.

## At a glance

- **50%** SRE and DevOps transformations across geographies
- **100%** Agile workforce with 1000+ DevOps/xRE SMEs
- **60%** workforce trained on DevOps
- **90%** architects with expertise in DevOps and automation

## Business impact

**Faster** time-to-market

**Improved** team productivity

**Quicker** realization of investments or ROI

**Enhanced** transparency across the value stream

# Empowering success with real stories from our valued clients

**Client:** A renowned global financial services organization with a rich 200-year legacy, known for its customer-centric approach and innovative solutions in banking, investment banking, and asset management.

**Challenge:** The client's complex and outdated network design hindered scalability, limiting its ability to implement iterative changes swiftly and integrate new technologies. Furthermore, its security measures were inadequate at the time, comprising of an outdated firewall and insufficient vulnerability patching. There was an urgent need for 24x7 support to maintain uptime and capacity. A lack of efficient tools and upgrades further exacerbated these issues.

## What Brillio did

Brillio helped the client build its SRE-driven network resilient infrastructure managed services. We performed a gap analysis to analyze and simplify the client's IT architecture and address network insufficiencies. We then implemented unified monitoring and configuration management, supported by a playbook for consistent visibility and incident response. We also helped integrate ITSM systems like JIRA and ServiceNow with real-time system performance visibility. AIOps drove optimization, automated scaling, regular tuning, and capacity planning to handle peak demand and maintain 24x7 global support for the client's WAN and telecom operations.

## What the client achieved

- **25%** workload efficiency achieved through automation
- **40%** savings on annual TCO
- **Improved** security and visibility



# Empowering success with real stories from our valued clients

**Client:** A leading global telecommunications provider offering various services, including wireless communications, broadband, and enterprise solutions.

**Challenge:** The client's fragmented and inefficient deployment system resulted from acquiring more than ten smaller operators, each with its own billing and application development process. With multiple disparate monitoring tools like Dynatrace, AppDynamics, and Splunk, the client faced siloed visibility and a need for more standardization in its application deployment pipeline. This led to prolonged downtime and poor troubleshooting.

## What Brillio did

Brillio enhanced observability and efficiency by implementing SRE and DevOps best practices for the client. We performed a gap analysis and implemented unified monitoring and configuration management supported by runbooks using Jenkins CI/CD, Bitbucket and Git for version control, and Terraform and Ansible to drive automation. We helped the client build a centralized portal to visualize deployment processes and integrate observability tools for real-time monitoring and faster issue resolution. We automated incident detection and response and used AIOps for real-time event correlation and closed-loop automation for proactive issue detection and automated remediation.

## What the client achieved

- **Enhanced** scalability and efficiency that reduced downtime and optimized costs
- **Accelerated** deployment cycles that sped up releases and reduced the time to market
- **Proactive** monitoring that boosted performance and user satisfaction



## About Brillio

Brillio is one of the fastest growing digital technology service providers and the partner of choice for many Fortune 1000 companies seeking to turn disruption into a competitive advantage through innovative digital adoption. We help clients harness the transformative potential of the four superpowers of technology: cloud computing, Internet of Things (IoT), artificial intelligence (AI) and mobility. Born digital in 2014, we apply our expertise in customer experience solutions, data analytics and AI, digital infrastructure and security, and platform and product engineering to help clients quickly innovate for growth, create digital products, build service platforms, and drive smarter, data-driven performance. With 17 locations across the U.S., the UK, Romania, Canada, Mexico, and India, our growing global workforce of nearly 6,000 Brillians blends the latest technology and design thinking with digital fluency to solve complex business problems and drive competitive differentiation for our clients. Brillio has been certified by Great Place to Work since 2021.



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