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The continuous evolution of IT systems means that the roles within IT departments must change as well. The emergence of the Site Reliability Engineer (SRE) is a textbook example. First starting at Google at 2003, the role has grown in popularity and scope over the past 15 years, with major organizations like LinkedIn currently listing over 1,000 job postings for SREs.

But how well-defined is the role, and what can somebody looking to become an SRE expect? Past resources such as [Site Reliability Engineering: How Google Runs Production Systems](#) are great sources of information, but only provide insight into the role at a single organization. This report is designed to fill that knowledge gap.

To understand variations in the role across industries and organizations, Catchpoint launched an SRE survey in January, 2018. The goal was to find out what it really means to be an SRE by examining the types of organizations, skills, and organizations cultures where SREs work. By building a profile of an SRE, we aim to identify a core set of principle across organizations:

Who are SREs?

What is their experience level and skillset?

Where do they work?

What type of organizations hire SREs? What is the team structure and culture typically like?

What are they doing?

How is their time spent? How is their role defined?

How are they doing it?

What tools and processes are they using on a daily basis?
What metrics and methods do they use to define success?

We analyzed responses from 416 SREs globally across a range of industries and company sizes about their background, role, company, and job responsibilities. As the SRE title is relatively new and titles vary widely across companies, we didn't want to exclude respondents based on title alone and collected data from those who identify as doing SRE-type work.



Four key findings from the survey

There's no such thing as the perfect skillset or background for SREs

A mixture of technical and non-technical skills are needed to be an effective SRE, but adopting the latest and greatest technology is not necessary. Containers, serverless, or microservices are not considered necessary technical skills to be a successful SRE. One important point that was raised by a respondent is the need to have a well-balanced team – an SRE does not need to have all the skills as long as somebody on the team does. Written and verbal communication skills were included in the top five for non-technical skills, although some may argue that communication skills are technical skills.

Nothing else matters if a site is not available

There appears to be a laser focus on availability and uptime. End-user availability is the most important service-level indicator, alerting and notification top the list of must-have tools, and alerting is the primary goal of monitoring and observability tools.

There is still a lot of work to do when it comes to automation

It was no surprise that automation topped the list of top technical skills. The 2017 State of DevOps Report revealed that high performing IT teams have automated significantly more than other teams, but there is still room to automate more. Very few felt that their teams have automated everything.

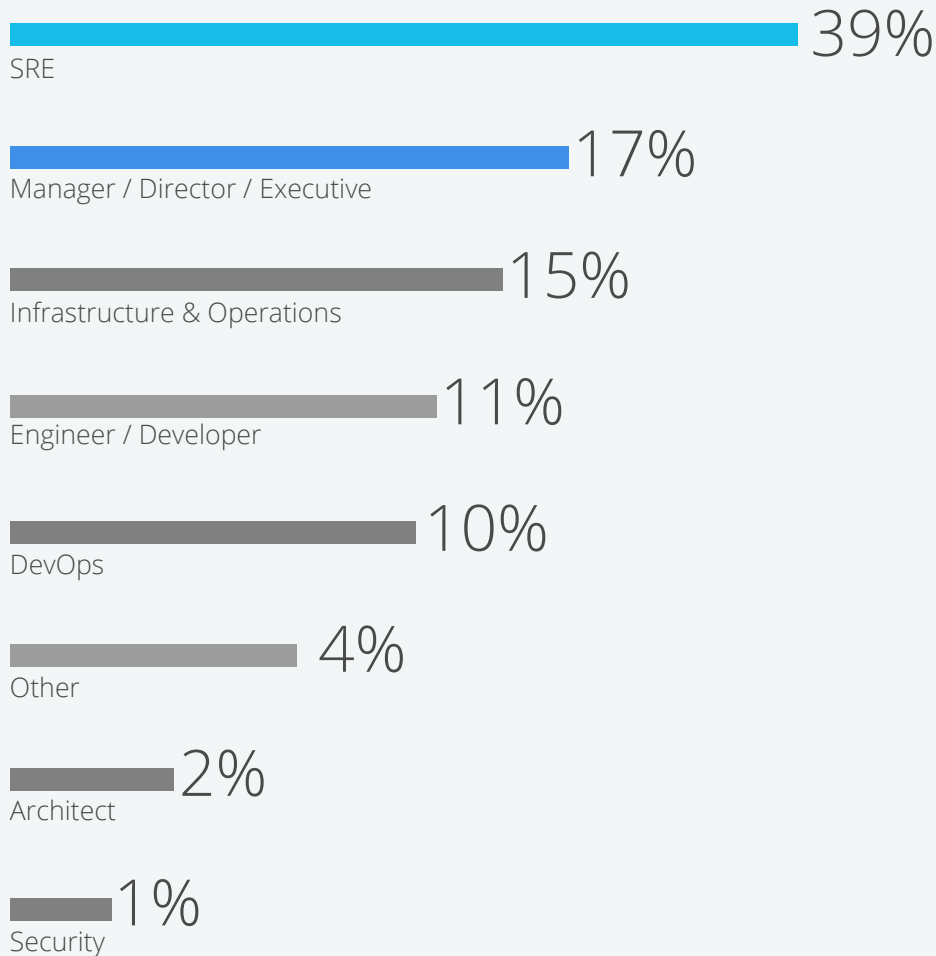
SREs feel they are a critical part of the organization but lack respect

While the majority of SREs feel their job directly contributes to one of the organization's core business values, but don't feel their role is well understood and respected throughout the organization.

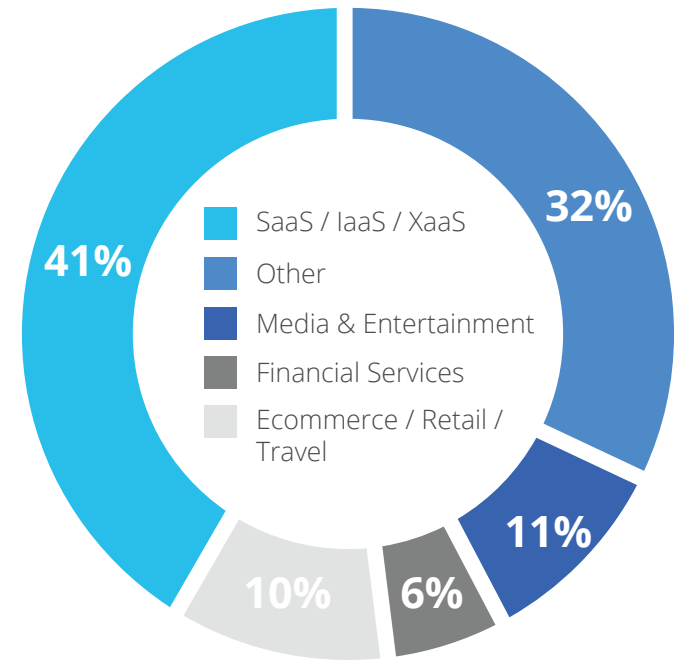
Survey demographics & firmographics

The 416 responses we analyzed included practitioners and management across a variety of industries and company sizes. Organizations ranging from start-ups to large enterprises were included. 52% of respondents work for companies in a technology-focused industry

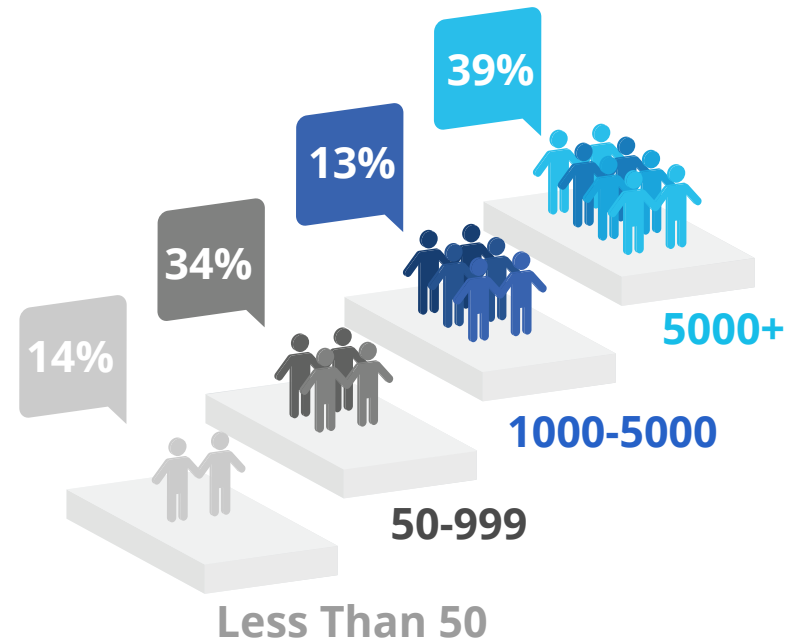
Role



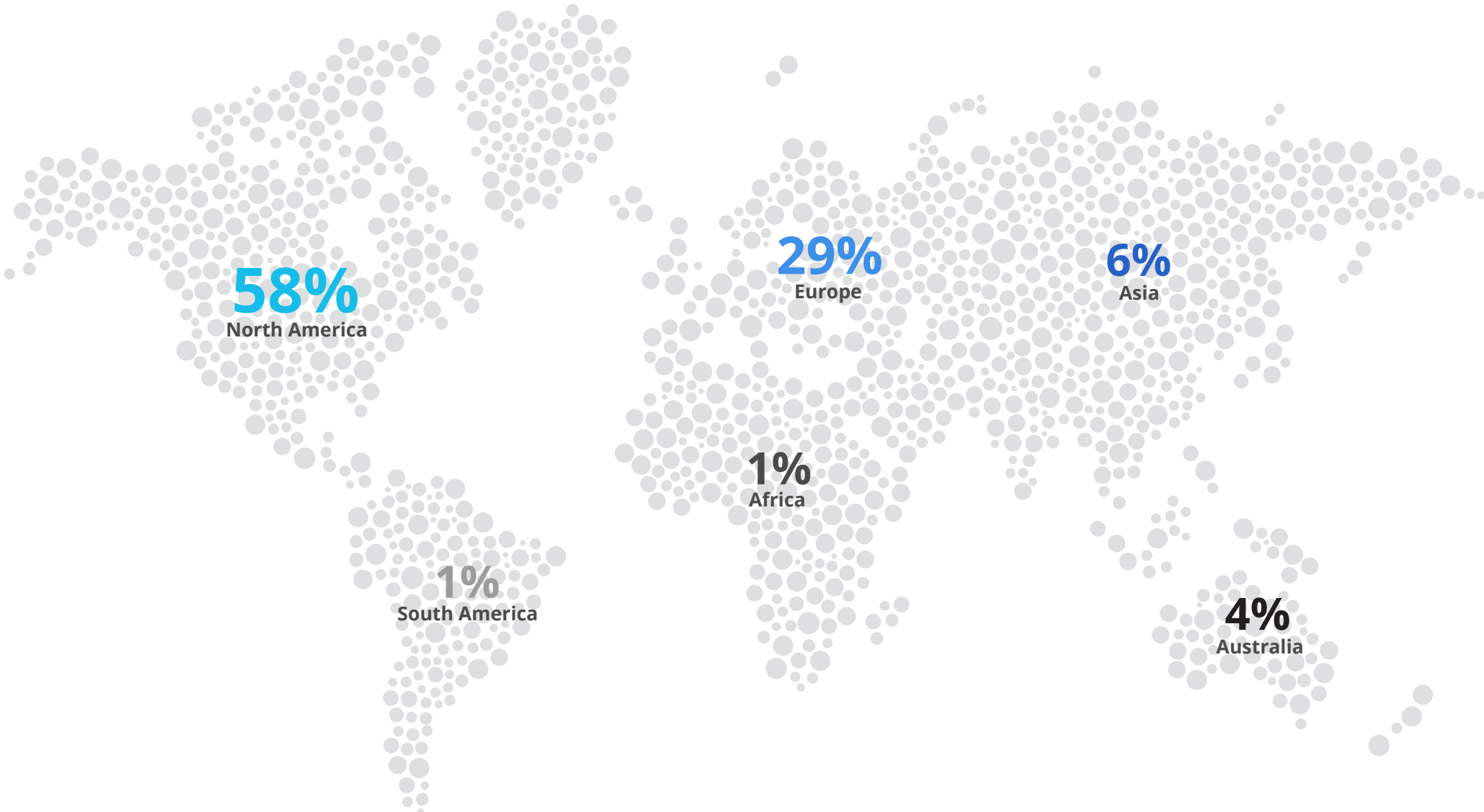
Industry



Number of employees



Continents

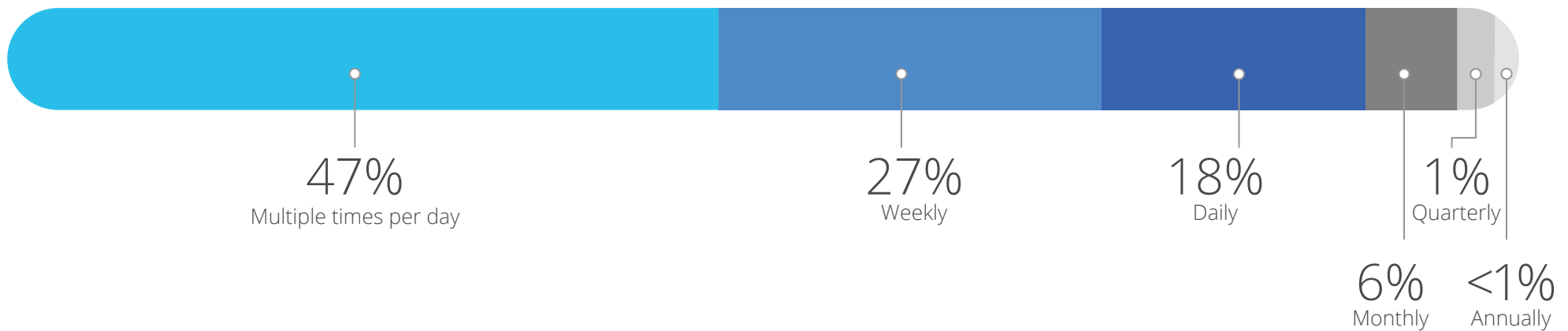


Where does your infrastructure live?



Organizations that have implemented the SRE function have also embraced the cloud and continuous deployment. **65% of SREs** have infrastructure fully or partially in the cloud and are deploying code at least once a day.

How often do you deploy code?





What it takes to be an SRE

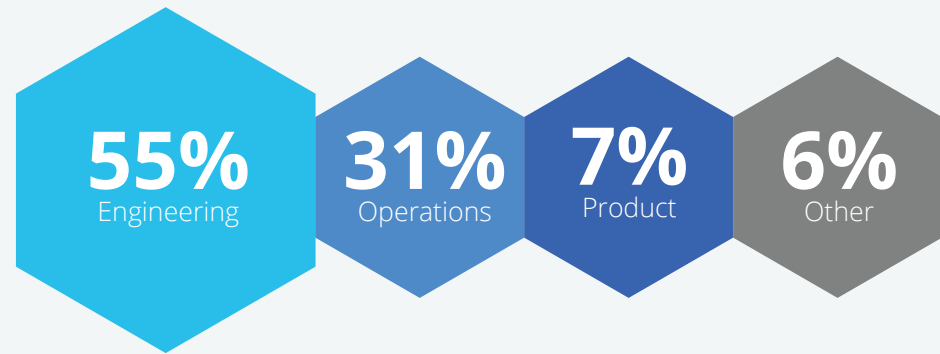
There's no such thing as the perfect skillset or background for SREs

Key Findings

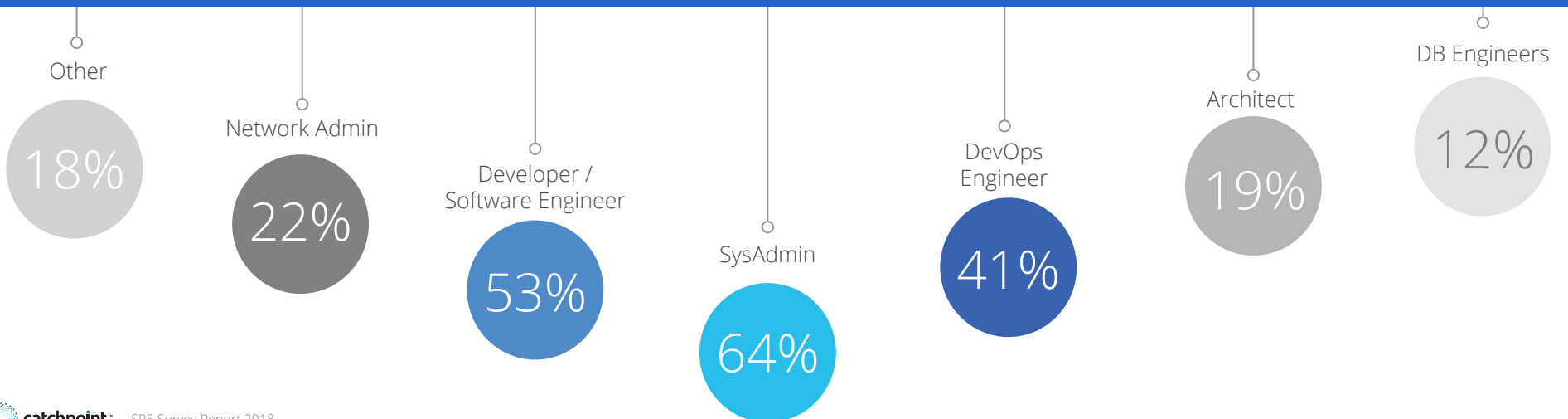
The SRE role is not an entry level job as 80% of SREs have been working for six or more years and have a college degree. While a computer science or information technology degree isn't a necessity, 73% of SREs studied a technical field. That doesn't mean if you have a degree in psychology, political science, or even theater, to forget about a career as an SRE.

Before moving into the SRE role, 64% held a role as a SysAdmin, while only 53% held a role as a developer or software engineer. This was surprising given that the majority of SREs report into the engineering department and not operations.

Department SREs report into:



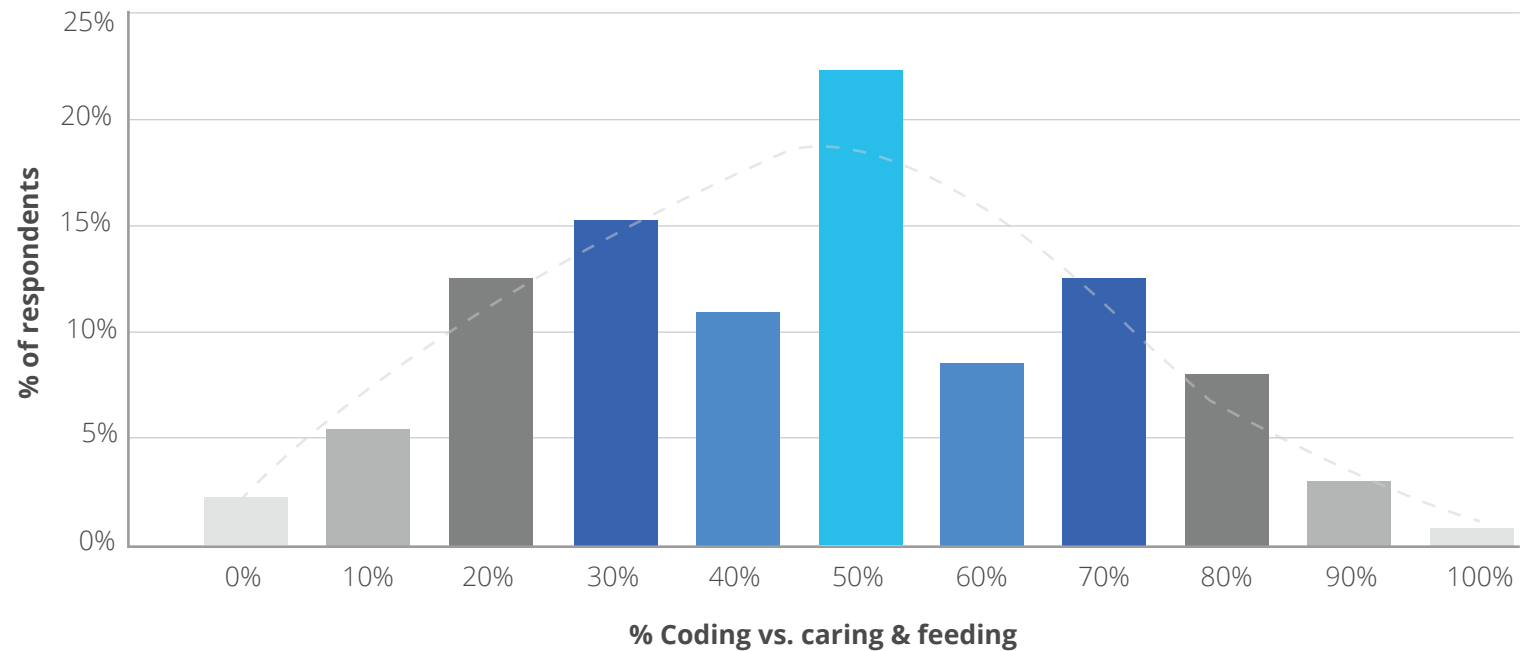
Roles assumed prior to SRE



If you're looking to work remotely the SRE role may not be the role for you. While some SREs work remotely, **81% of SREs state all or most of their team work in an office.** And smaller teams seem to be the norm rather than larger teams. **55% of SREs** work on teams with fewer than 10 people, although **25% of SREs** report having more than 100 SREs in their organization.

% of time spent of care and feeding of applications versus writing code

The role of an SRE covers both writing code and supporting existing systems. Organizations strive for a 50/50 split between the two but reality can sometimes paint a different picture. There is a pretty expected distribution in responses, across the spectrum forming an almost perfect bell curve.



According to both managers and non-managers the **top 5 technical skills** for SREs are:

- 1 Automation
- 2 Logging, monitoring, and observability
- 3 Infrastructure configuration
- 4 Scripting languages
- 5 Application and network protocols

The rankings change slightly based on the industry/vertical of the organization. For ecommerce/retail and SaaS logging, monitoring, and observability took the number one spot over automation

The **top 5 non-technical skills** were the same for managers and non-managers across industries:

- 1 Problem Solving
- 2 Teamwork
- 3 Composure under pressure
- 4 Written communication
- 5 Verbal communication

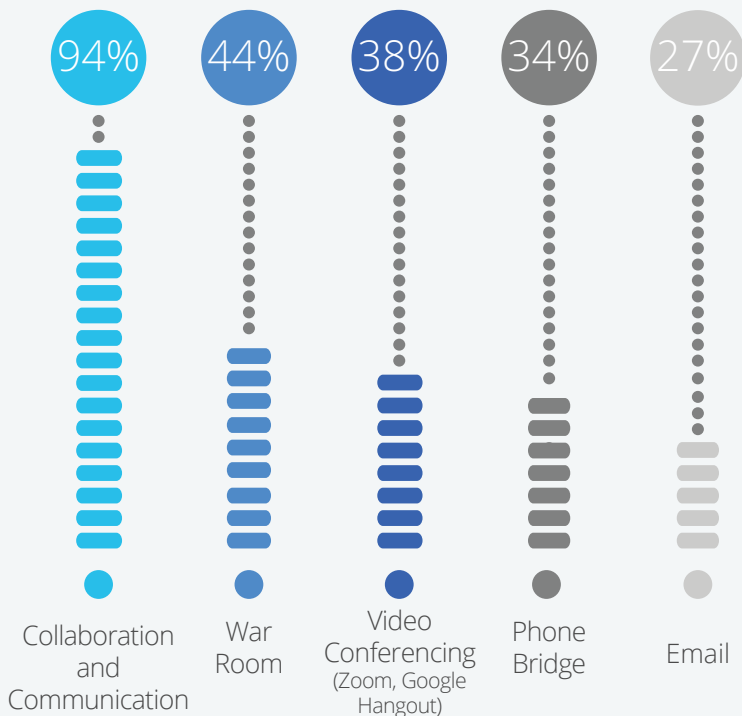
Availability matters

Nothing else matters if a site is not available

Availability of applications and services is the main concern of SREs. 84% of respondents list end-user availability as one of the most important service-level indicators for their services. Error rate and latency trail at 61%.

Real-time communication is essential when attempting to resolve problems quickly. During incident resolution, 94% of respondents rely on real-time collaboration and communication solutions like Slack over other methods.

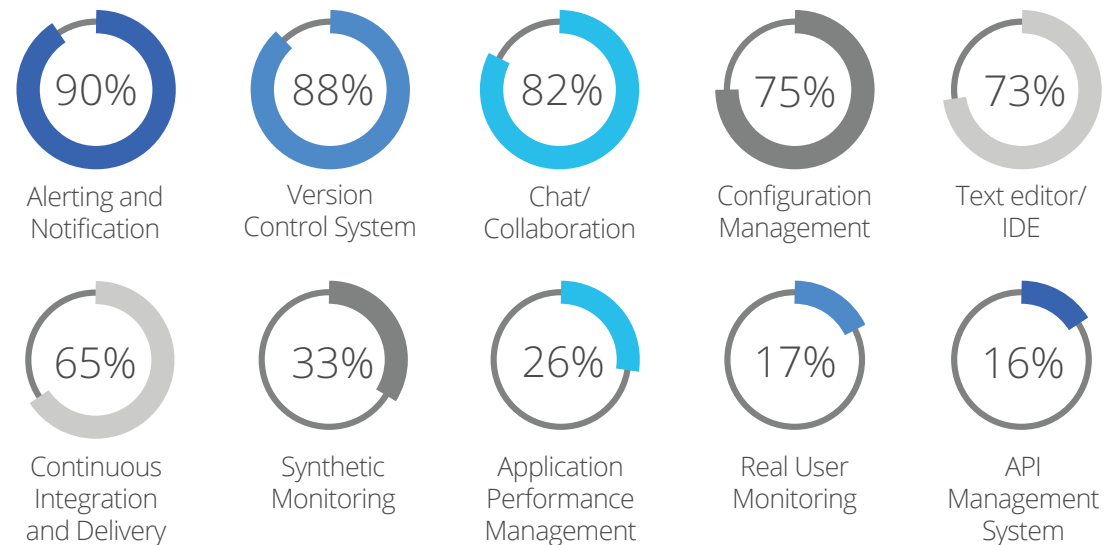
Top tools used to resolve issues



Given the focus on availability, it is no surprise that three of the top non-technical skills are closely related to incident resolution: problem solving, teamwork and composure under pressure. Resolving incidents typically requires working with others and when the clock is ticking to resolve incidents quickly there can be a lot of pressure. Being able to work as part of team and maintain composure under pressure are needed traits in an SRE.

Organizationally, 44% of companies do not strictly adhere to and follow error budgets. However, the larger the company the more likely they are to do so with 44% of SREs working at companies with 5000 or more employees indicating they do strictly adhere to and follow set error budgets. SREs use a variety of tools, two of the most important ones relate to availability and triage. 90% of SREs can't live without alerting and notification tools, and 82% are dependent on chat and collaboration tools.

What tools can you not live without?



Monitoring and observability tools can generate alerts and help organizations resolve incidents quickly. But SREs at smaller companies do not feel they have access to a wide range of monitoring and observability tools. 52% of those at companies with fewer than 1000 employees feel they have access to a wide range of tools, compared to 75% at companies with more than 1000 employees. Finance and insurance industries (48%) have less access to these tools as well.

Automate everything

There is still a lot of work to do when it comes to automation

92% of respondents listed automation as a top technical skill necessary for SREs. Although automation is important, very few respondents feel like their team has automated everything. There is more room for automation. Only 18% of respondents feel like their team has automated everything. 32% of SREs in financial services industries feel they have automated all there is to be automated. The smaller the company the greater the chance that more has been automated with 22% at companies with fewer than 50 employees vs 12% at companies with 5000 or more employees. This may be a factor of there is more to automate at larger organizations.

Our team has automated everything that can possibly be automated →

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1000-5000	19%	28%	26%	25%	2%
5000+	12%	29%	29%	25%	5%
50-999	20%	34%	21%	20%	4%
Under 50	22%	27%	27%	14%	7%

Organizational alignment

SREs feel they are a critical part of the organization, but lack respect

Demographics, responsibilities, and structure are important, but the SRE role is part of a larger organization and frequently has to collaborate with others across the organization. In order to work together to drive business outcomes, the role of the SRE needs to be clearly defined and understood and the SRE should feel like they are a vital part of the organization. SREs working in ecommerce and media/entertainment feel less respected than those working in other industries.

The SRE team is a well-respected and valued part of the organization →

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Ecommerce/Retail	25%	44%	22%	2%	7%
Media/Entertainment	35%	17%	22%	22%	4%
Financial Services	20%	16%	28%	32%	0%
SaaS	40%	32%	18%	8%	2%
Other	49%	20%	14%	10%	7%

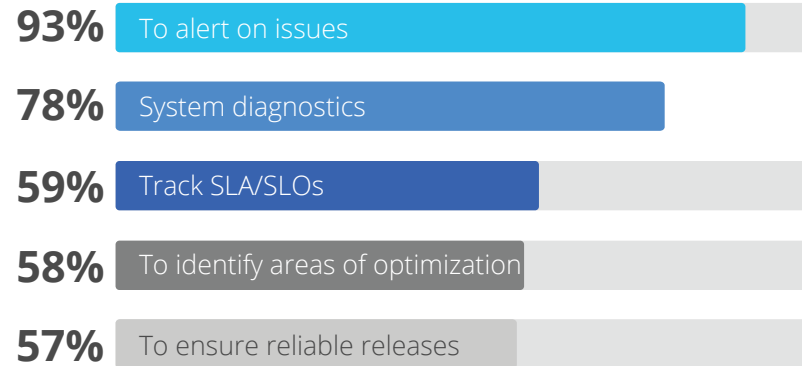
Not surprisingly, the smaller the company the more visibility into what others are doing **67% compared to 57%**. Across the board **70%** of people find it easy to collaborate with others on their team and in the organization.

The majority of SREs feel their job directly contributes to one of the organization's core business outcomes. 28% of those working in financial services industries do not agree. When asked about metrics used to measure success at the individual, team, or organizational level, 30% indicated revenue which shows alignment with a common business outcome (expanded data on page 14). A few write-in answers also reflect organizational alignment with metrics such as member growth and retention, cost, and user adoption. On the flip side, a handful of respondents revealed frustration around a lack of metrics or constantly moving targets with responses including "surely you jest, we have no stable metrics" and "incredibly stupid ones."

Many organizations these days are dealing with large amounts of shadow IT, hardware or software used without explicit approval. Shadow IT can exist because it is faster to purchase or download software on your own instead of going through the proper channels. Small startups (**46%**) and large enterprises (**41%**) report lower amounts of shadow IT compared to **15-20%** for companies between **50-5000**.

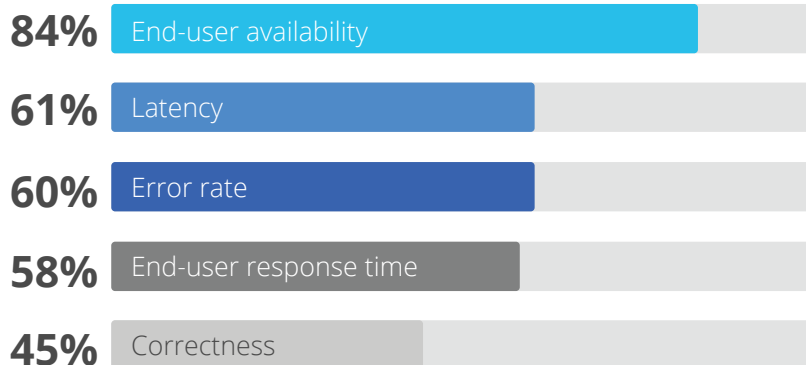
How SREs define and track success

What are the primary uses of monitoring / observability data?

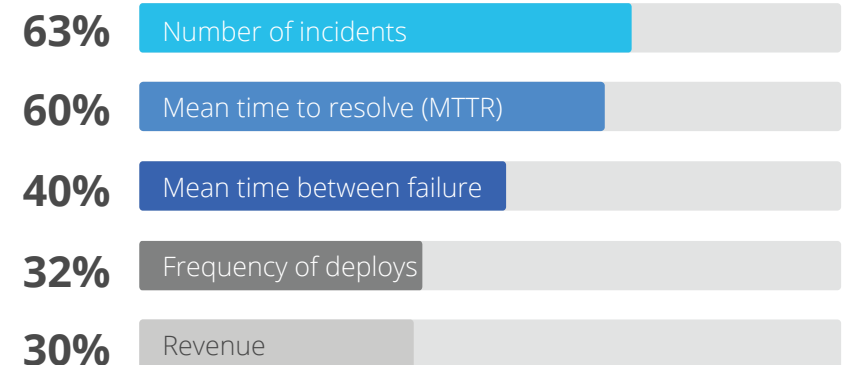


Regardless of how organizations use their monitoring and observability data, it consistently serves as the bedrock for how they measure their success.

What service level indicators are most important for your services?



What metrics are used to define success at the individual, team, and organization level?





Methodology

In January 2018, Catchpoint conducted an SRE survey promoted via email lists and social media. The survey questioned technical professionals from around the world across a variety of industries about their background, role, and organization.

As titles vary widely across organizations and the SRE role being relatively new, we asked respondents for their title as well as whether the majority of their time is spent doing SRE-type work. We used the answers to these questions to exclude 10 surveys, leaving a sample of 416. The respondents ranged from practitioners to executives and held a variety of titles. For simplicity in the report, we refer to respondents as SREs even though their titles may not be 'SRE'.



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About Catchpoint

Catchpoint is revolutionizing end-user experience monitoring to help companies deliver amazing digital experiences. Our platform provides complete visibility into your users' experiences from anywhere – and real-time intelligence into your applications and services to detect and fix issues faster. See how Catchpoint can reduce your Mean Time to Detect at www.catchpoint.com/freetrial.