20 VictorOps 14

THE STATE
of
ON-CALL

The inaugural report describing the on-call triumphs
and challenges of the average IT professional.

Motivation

Over the last 20 years, software has slowly eaten the world. Businesses that historically operated on 8-hour business days are now 24x7, navigating a global economy that never sleeps. The internet enablement of everything has thrust what was originally an important support role into the lifeline of business.

Then, a decade ago, Agile software development forced more pressure into the IT system by deploying software at an ever-increasing rate to the point it's at today - where innovative companies can deploy new software multiple times a day. DevOps is at the forefront of addressing the question of how IT deals with these problems but like Agile before it, there's a learning curve.

Methodology

All participants were 18+ and located in North America. We received 500 responses that were acquired through a variety of partners and channels. The statistical relevance of this survey is based on a 95% confidence and a +/- 5% margin of error.
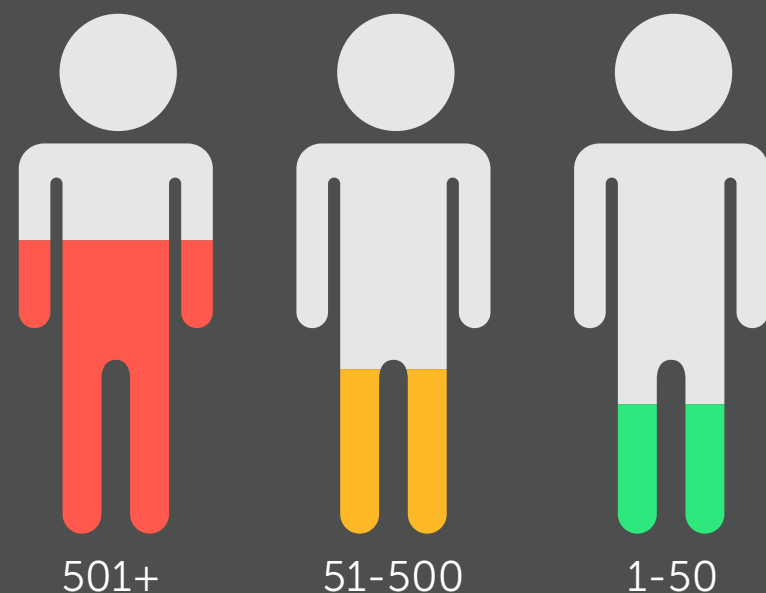
This report, the first of its kind, is designed to capture the challenges of those who do the hard job of being on-call.

Who took this survey?

COMPANIES

Companies taking part were equally balanced between **SMB** and **Enterprise**.
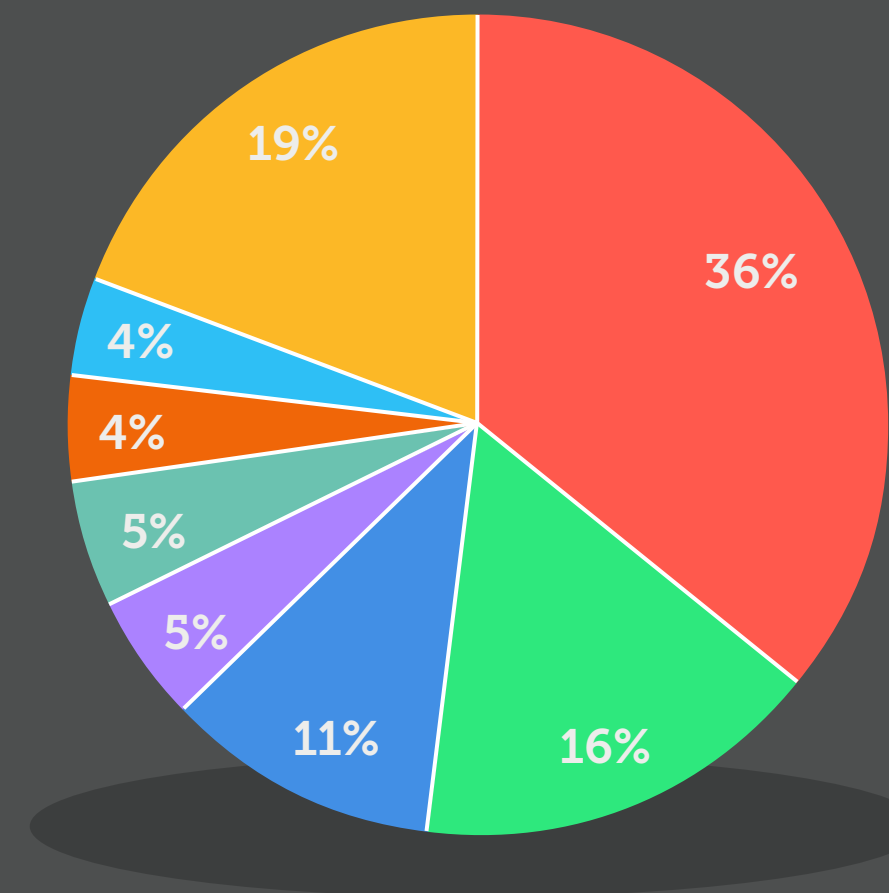
= Company Size

501+   51-500   1-50

Industry Breakdown

Half of all those who responded are from internet-forward businesses (internet services & software), meaning they deliver their value via the internet.

- Internet Service
- Software
- Professional Services
- Financial Services
- Media/Entertainment
- Healthcare
- Manufacturing
- Other

19%
4%
4%
5%
5%
11%
16%
36%

DOERS: RESPONDENTS WERE THE PRIMARY PEOPLE DEALING WITH THE ISSUES.

Role: System Administrator, Operations, IT, Developer, VP/Director, Programmer

TL;DR - Summary of Data

→ On-call is not getting any better and many believe there are huge inefficiencies in the current process.

→ Over 70% of respondents are doing something with DevOps and consider themselves Agile.

→ It takes most companies an average of 10-30 minutes to resolve an incident with an average of 5 people involved in the resolution.

→ Alert fatigue is a real thing (over 60% agree) and respondents believe that almost a quarter of all alerts are false alarms.

→ Most teams believe that post-mortems (aka retrospectives) are an important piece of the process but are not doing them all of the time.

Being on-call sucks.

OVER 60% BELIEVE THAT THE PROBLEMS AROUND BEING ON-CALL ARE ONLY "SORT OF" GETTING BETTER OR ARE ACTUALLY GETTING WORSE.

BIGGEST PROBLEMS NOTED:

→ Not enough people sharing the load (burnout)

→ People not responding to calls of help (and lack of accountability)

→ Not revisiting incidents to reduce noise and adjust thresholds (lack of reporting & incident follow-up)

→ Lack of documentation that is easily available

VICTOROPS INTEL:
The average on-call rotation of our customers is 7.6 days.

What respondents said:

"I get stressed, and that causes tension which then affects my marriage."

"I always have to warn my family when it's my week on-call. Making sure I have my laptop with me at all times when I'm on-call is a hassle. Having to plan family activities around when I'm on-call."

"I have had to leave movies, cut dates short, affected Thanksgiving dinner (now a family joke on what will break on Thanksgiving Day) - can be fairly disruptive. Also affects planning functions during on-call times."

"It affects my health due to complications of tension, and anxiety over missing family events."

But it's not all bad.

We were amazed that in the face of adversity while being on-call, there were many people who reported that they enjoyed the responsibility of the role.

The best part of the job?

What respondents said:

"You make an impact and truly help the customer."

"It only lasts a week."

"Being able to truly help someone out quickly when they are stressed and think it's the end of the world/ can't be fixed."

"I get to work on so many different situations so its never boring."
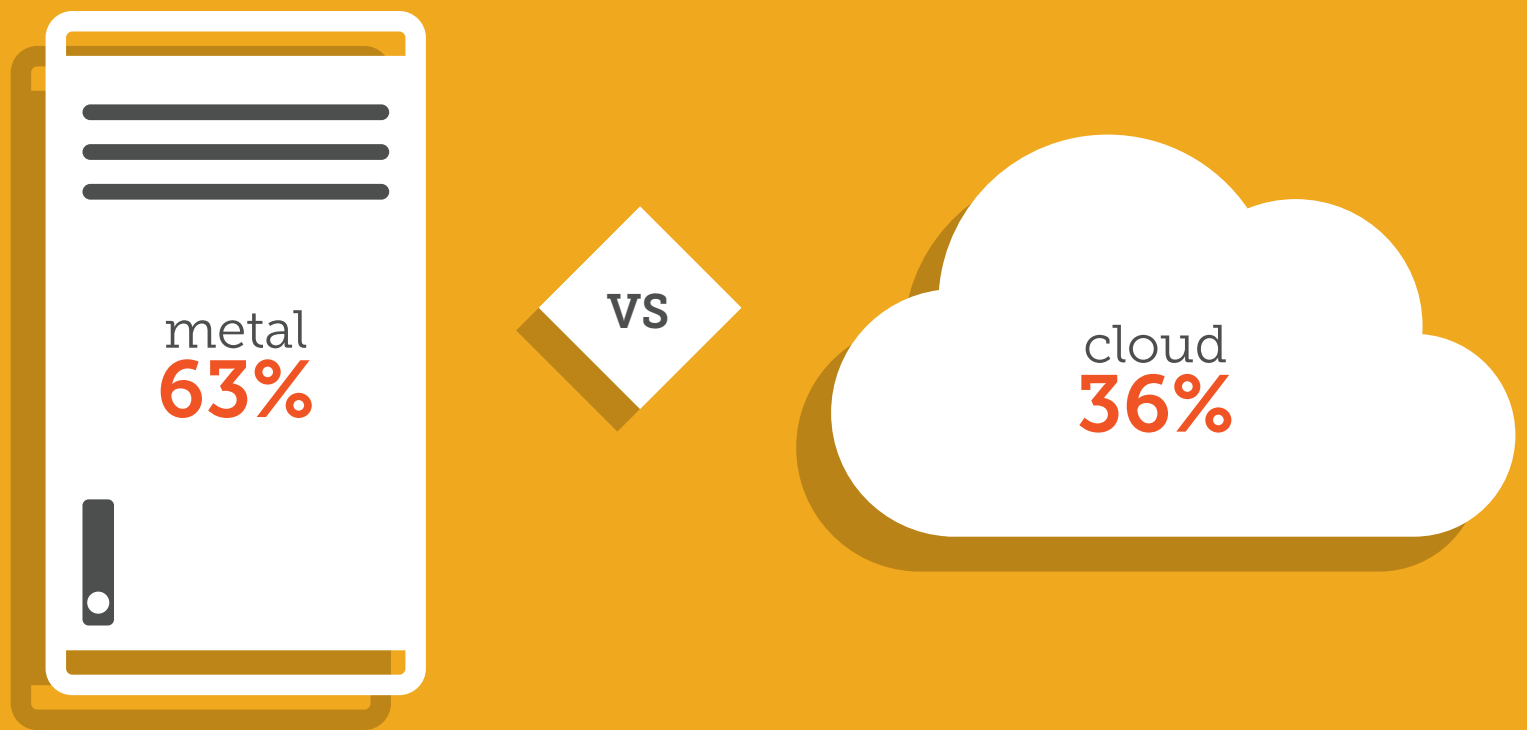
"Working with great engineers."

Want to make on-call suck less? You should invest in tools & processes that remove the pain.

Organizationally...

HARDWARE IS STILL KING.

While respondents stated that most of their infrastructure is still physical, more and more are moving to the cloud every year.

The infrastructure breakdown:

metal
63%

VS

cloud
36%

RESPONDENTS USE A NUMBER OF MONITORING SYSTEMS, EVEN WITHIN THE SAME COMPANY, BUT THE MAJORITY OF ANSWERS WERE:

Nagios/Icinga, New Relic and Other (Pingdom, Splunk, Cacti, Cloudwatch, Solarwinds, Microsoft Network Monitor, Zabbix, Zenoss, Sensu, CA Nimsoft, AppDynamics, Loggly, Datadog, Sentry, BMC Remedy, Dotcom-Monitor, Circonus, Crittercism, LogicMonitor)

VICTOROPS INTEL:
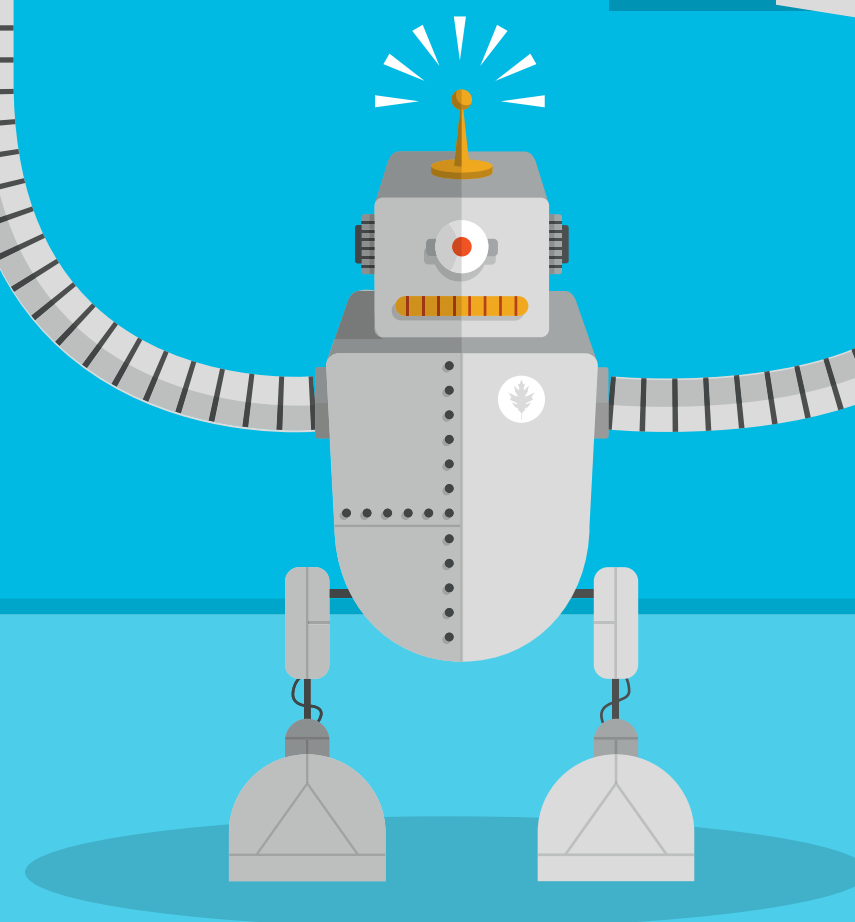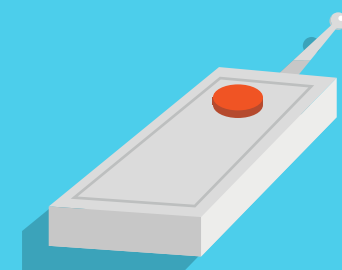We see that most customers are using as many as 5 monitoring services.

DevOps means automation and solving the problem faster.

AGILE PROCESSES ARE MATURE AND DEVOPS IS NOT FAR BEHIND.

→ 60% of respondents consider themselves Agile

→ 52% of teams have a year or more of DevOps experience. Most have heard of it but the adoption of processes is still a work in progress.

58% are using infrastructure automation tools

Of those, **75%** agree that these automation tools have made being on-call easier

If you haven't looked at automation tools like Puppet or Chef yet, you probably should. Many of the respondents use one or the other.
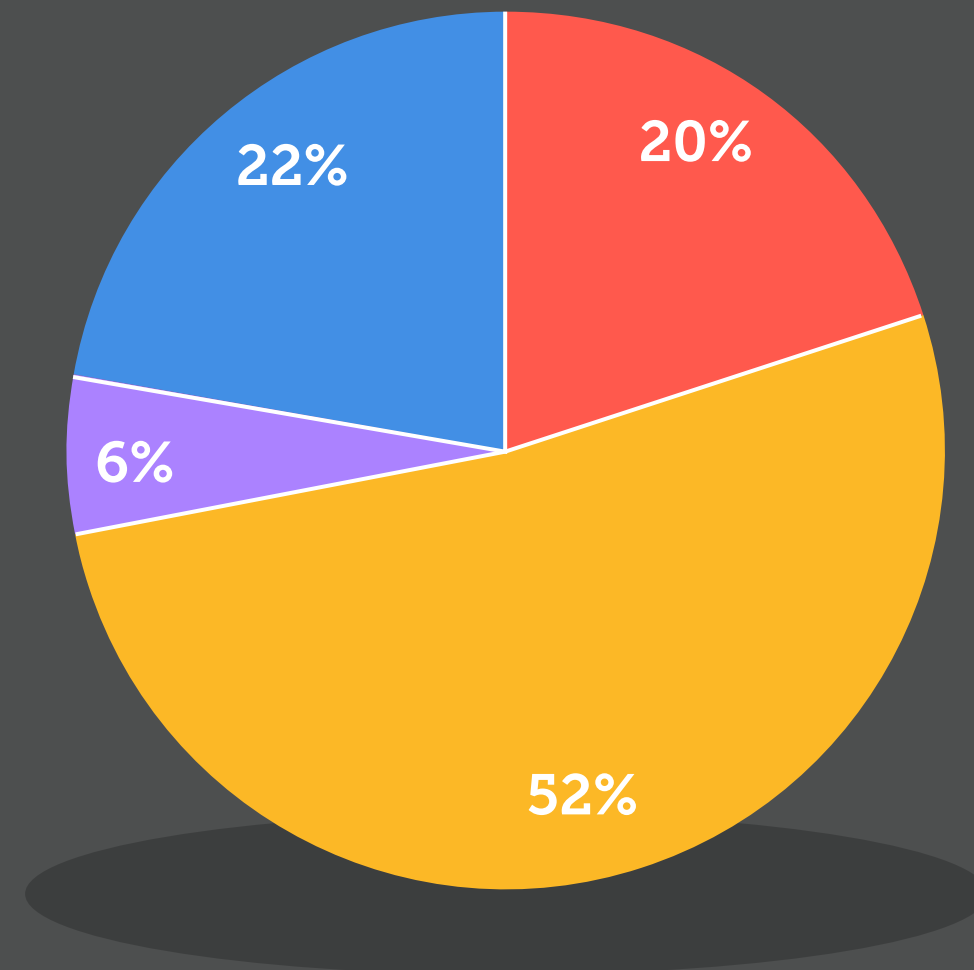
The Job of On-Call | The Basics

ON-CALL RESPONSIBILITIES ARE SHARED AMONGST A WIDE VARIETY OF ROLES.

One of the difficult aspects of being on-call is that the role is inherently multidisciplinary. From issue to issue, the problem can be completely different.

TODAY'S ON-CALL TEAMS ARE MADE UP OF MEMBERS FROM IT, SUPPORT, OPERATIONS, DEVOPS, AND DEVELOPMENT.

VICTOROPS INTEL:
Across the VictorOps customer base, we see most companies resolve through collaborative problem solving, averaging 4-5 people in the ultimate resolution.

Average duration of an on-call rotation:

- 🔴 Less than a week
- 🟠 One week
- 🟣 Two weeks
- 🔵 More than two weeks

20%

52%

6%

22%

Managing On-call

ABOUT **70%** USE HOMEGROWN TOOLS OR PROCESSES TO SOLVE ON-CALL PROBLEMS.

While the vast majority of respondents had homebuilt systems, they were not happy with them. The relatively new availability of tools like VictorOps, PagerDuty and OpsGenie are moving those numbers and we expect to see more people turning to SaaS solutions.

TWO BIGGEST PROBLEMS WITH CURRENT SOLUTION:

→ The scheduling and communications of who is on-call and the ability to change that easily

→ Sharing information and getting the right person involved to solve the problem faster

ALMOST **50%** HAVE NO IDEA WHAT THEY ARE PAYING FOR THEIR CURRENT SOLUTION.

This is largely due to the fact that most are using homebuilt tools. Internally-developed solutions are typically very expensive to build and support, even if they are quite simple. Additionally, most companies have not conducted an analysis of what downtime actually costs them.

What respondents said when we asked them about their homegrown solutions:

"(Do) anything other than grow it yourself."

"Pros are that it is built specifically for our company and how we work to support our clients. Cons is that it's now 7 years old, hasn't been given the dev time to evolve with the company's needs so is no longer really fit for purpose."

Alerts, oh my!

63% REPORT ALERT FATIGUE AS AN ISSUE.

This is what we expected to see. We believe that using social toolsets and conducting retrospectives is helping, resulting in alarms being effectively tuned and noise being removed.

VICTOROPS INTEL:
The average VictorOps customer sends us over 123 monitoring system notifications a day. As a result, the average customer is notified of a critical issue 20.9 times a day.

STEPS TAKEN TO REDUCE THE NOISE:

→ Adjust alert thresholds

→ Regularly evaluate and delete superfluous alerts

→ Route incidents to specific people or teams

VICTOROPS MATH:

Out of our respondents, 64% believe that up to a quarter of all alerts are false alarms.

Each false alarm could conservatively cost an organization approximately $72.

Avg of 3 devs working to resolve each incident

Avg time to resolve an incident is 30 minutes

VictorOps data shows a company average of 7,716 alerts per year

IF 1/4 of all those are assumed to be false, the total cost to an organization could conservatively be $138,888.

Best practice: Consider having retrospectives once a week, when doing the on-call handoff, in order to address alert thresholds and how to improve them.
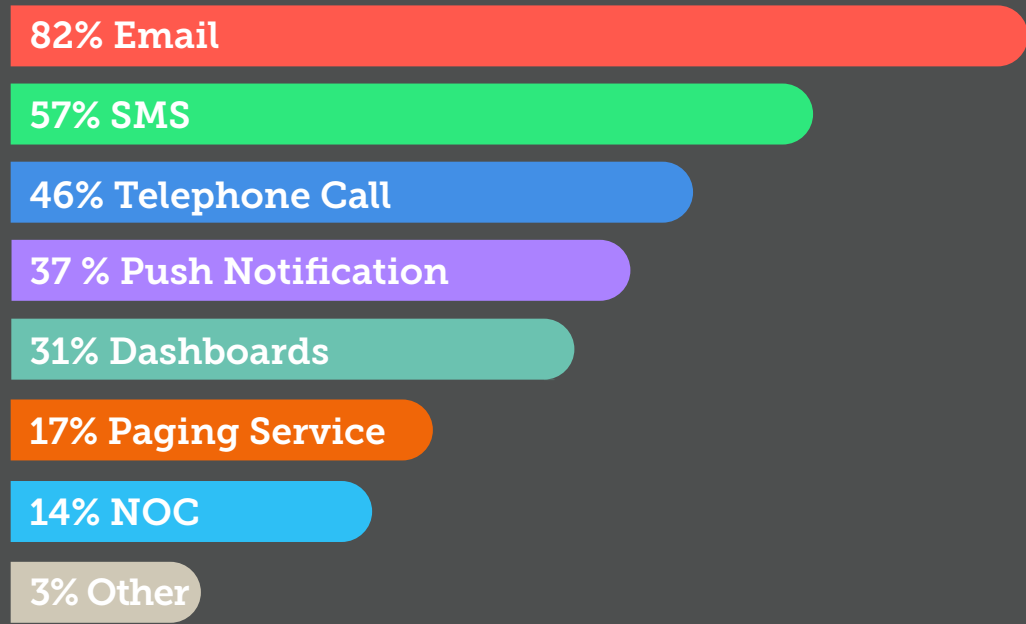
The when and how of alerting:

OUTAGES WILL HAPPEN WHEN THEY HAPPEN.

When asked about when the majority of incidents take place, the responses were divided pretty equally between daytime and nighttime. Incidents are just as likely to occur anytime.

EMAIL IS STILL THE NUMBER ONE WAY TO KNOW ABOUT PROBLEMS. SADLY.

There is a plethora of reasons why this is ineffective (low signal-to-noise ratio, chance of email getting lost, no sense of urgency) but **82%** report that email is how they are alerted to issues.

Following that, the most popular means of alert delivery are (respondents chose all that applied):

- 82% Email
- 57% SMS
- 46% Telephone Call
- 37 % Push Notification
- 31% Dashboards
- 17% Paging Service
- 14% NOC
- 3% Other

Learn how to NOT have alert details lost in your email inbox by using push notifications via VictorOps mobile apps.

During the firefight...

PEOPLE FIX PROBLEMS.

The top 3 things that people are using to solve problems all involve communication and collaboration between people.

The list of tools used during a firefight involve (respondents chose all that applied):

- 72% Chat Platform
- 65% 1-to-1 Phone Call
- 50% Conference Call
- 33% Wiki Articles
- 30% Graph Tools
- 24% Video Conferencing
- 23% Google Hangout
- 23% Runbooks

Over **80%** said that 1-5 people are normally involved in resolving a problem.

TEAMS OFTEN UNDERESTIMATE HOW LONG THE FIX WILL TAKE.

44% said that it takes **10-30** minutes, on average, to resolve the problem while **33%** said that resolution takes a bit longer, from **30** minutes to an hour.

33%

44%
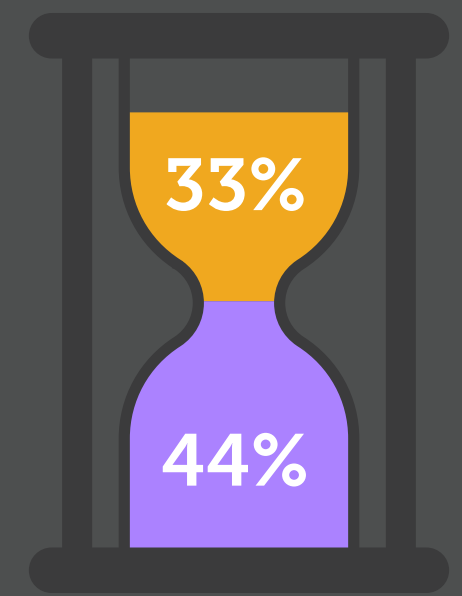
Other remediation

CHATOPS IS A GROWING TREND.

Only 28% are currently practicing ChatOps. In order to facilitate that process, most are using HipChat and before that, Campfire. Some are reporting the move to Slack, which shows that chat seems to be a fairly fluid capability inside companies.

INTERNAL WIKIS ARE THE MOST USED MEANS OF ACCESSING INFORMATION TO SOLVE PROBLEMS.

Most teams keep good wikis but often access to the right data is still a problem. The top reported issue to problem remediation was effective surfacing of correct internal wikis.

After the firefight...

Half of all companies conduct post-mortems, or retrospectives, but sadly, the majority of those (75%) only do it after significant outages.

VICTOROPS INTEL:
Our system data suggests that companies that use our post-mortem/retrospective tools have less false alarms and less downtime.

Of those that do post-mortems or retrospectives, 65% strive for them to be blameless.

The purpose of the post-mortem is to learn, not point fingers or call anyone out. Most of the teams doing post-mortems (retrospectives) are using them primarily to make their teams smarter, but also to share findings with the executive team.

Solving the problem faster.

MOST TEAMS ARE USING COMMUNICATION AS A METRIC OF SUCCESS.

Ways to improve your remediation process (respondents chose all that applied):

- 56% Documentation
- 55% Reporting
- 50% Post-Mortems
- 44% Alert Accuracy
- 15% MTTR
- 8% MTBF

AUDIO STILL DOMINATES.

56% are using audio/video conferencing as part of remediation but the majority of those only use it when the outage necessitates it.

When asked about the most valuable thing done to solve problems faster, the majority of those surveyed answered ...

RUNBOOKS AND COLLABORATION.

In Summary

DevOps is a growing trend from enterprise IT to SaaS solution providers. On-call support is no longer the exception but an ever-growing reality of what business has become.

IT no longer operates under the doctrine of the "check engine" light, which used to alert to a generic problem that could be handled out-of-band. Today, with the emergence of DevOps, what was a support function inside of companies is now a critical part of business. The people, that make up these on-call teams, work real-time 24/7 to solve IT's biggest challenges and are quickly becoming the backbone of what business is today.

Full-stack applications involving multiple disciplines have changed the equation of what being on-call means. Teams now have 5 monitoring systems or more that are capable of providing very specific insights and data. Alongside this newfound power of visibility and measurement across systems, also comes the pain of alert fatigue and added complexity in problem solving.

A new breed of tools, technologies and philosophies are being developed to help teams deal with this stress.

CLEAR TRENDS INCLUDE:

1. **Widening the responsibilities of being on-call**. Respondents reported that a wider array of disciplines are now on-call to support system problems. Alert fatigue is being managed with larger on-call teams.

2. **Investigation of new platform tools to manage and inform team members to problems**. Most companies in the survey were using homebuilt systems to manage on-call people but the majority planned to move off those tools citing the lack of improvements in those tools compared to new off-the-shelf tools and services.

3. **Collaboration is essential to solving problems quickly**. The top three ways of dealing with system problems were collaborative in nature, showing that problems can no longer be solved by just a few people, as systems have grown too complex. Scalable ways to bring other people into the resolution process are key to quick resolution.

4. **Ways to enable integrated documentation is a trend that is gaining speed**. Many respondents stated it was easier to just solve the problem (again) than find the resolution in their documentation. Documentation needs to be delivered alongside the problem with annotation technology.

The 2014 State of On-call report was the first of its kind opportunity to capture this sea-change in technology and how it is supported. We intend to continue to track this dynamic part of the technology problem and update this report annually to see how the story changes year to year.

Many thanks to the following partners who helped us with this report:

New Relic

rackspace

DevOps.com

stackoverflow