

DevOps and You

Advice for Building
Your Career



Maybe you've heard people who work in DevOps tend to earn higher salaries (more on that later) and spend less time on routine tasks and firefighting. Maybe you've always wanted to write more code, and work more closely with other teams and with the software you're delivering.

Whether you want to land a new job with a title like DevOps engineer, site reliability engineer or release engineer; start adopting DevOps practices at your current job; or move to an organization that has more mature DevOps practices, this paper is for you.

We talked with dozens of engineers practicing DevOps, managers who hire people to do DevOps work, and recruiters who are trying to fill IT and DevOps positions. In this ebook we share the most interesting stories and bits of advice, along with a few comments of our own.



What is DevOps?

4

DevOps as a title or role

9

Why should you embrace DevOps?

18

What skills and personality attributes do you need to succeed in DevOps?

33

How do people get started in DevOps?

51

Don't stress about a degree

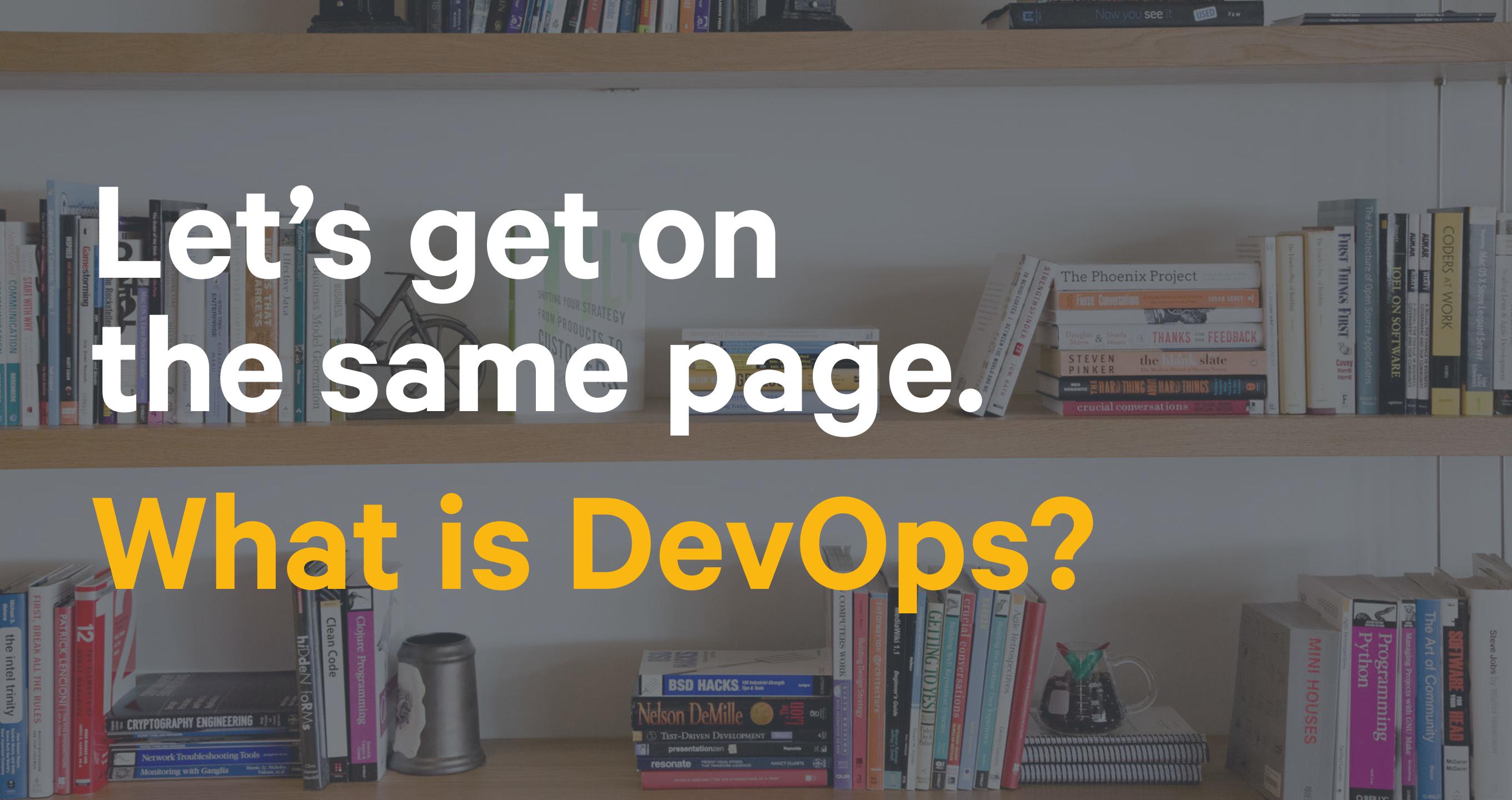
62

Advice on how to get started and ahead

68

Some things to avoid on your DevOps journey

94



Let's get on
the same page.

What is DevOps?



What is DevOps?

DevOps is a set of principles aimed at building culture and processes to help teams work more efficiently and deliver better software faster.

As the name suggests, DevOps brings development and operations together — and ideally, testing, QA, product, security and management as well — so together they can produce better results for the business, with fewer headaches and surprises.

In the earliest days of the DevOps movement, Damon Edwards and John Willis described it with an acronym: CAMS, which stands for culture, automation, measurement and sharing. These components sound broad, and they're meant to be. DevOps isn't a prescribed workflow or toolset, but a way of thinking and working that can be applied to any organization.

Culture Automation Measurement Sharing





What is DevOps?

In fact, DevOps can look quite different from one organization to the next, yet certain DevOps practices are fundamental:

- managing infrastructure as code
- automating common processes
- creating cross-functional teams and breaking down silos within teams
- creating visibility and collaboration across teams
- increasing visibility into metrics and work in progress
- utilizing version control
- deploying smaller changes more often



DevOps shouldn't be limited to a specific team (like the ops team) or role (such as DevOps engineers).

Everyone involved with the company's software should be aware of and practicing DevOps.

Let's clear
the air.

DevOps as
a title or role

Since DevOps is about creating a culture of collaboration between different teams and roles, some feel there shouldn't be a separate DevOps team — and some even think the word DevOps shouldn't be in someone's job title.

“Beware of anyone who calls themselves a ‘DevOps engineer.’ Also, don’t try and recruit ‘DevOps engineers’ for a ‘DevOps team’ — it’s kinda missing the point.”



Sam Eaton
[@thesamoth](https://twitter.com/thesamoth)

VP of Engineering
for Operations and
Infrastructure
Yelp
United States

“DevOps is a cultural movement fuelled by process and technology. DevOps is not one person; it’s not a team or a function. Everyone in the organisation should be doing DevOps. **The more purist, DevOps-capable engineers will not apply for roles with a DevOps job title.** I changed our job title to infrastructure developer and this has been well-received within the community, but not by my HR team who liked the DevOps branding!”



Mike Dilworth

@enspect

Technical Director - DevOps

Capgemini

United Kingdom

However ... Sometimes there's a reason to have a DevOps team, and the title DevOps engineer is common and popular.

“When we advertise our job roles, we talk about ‘DevOps engineers’ — largely because the term has become a de facto standard in job ads.”



Jon Topper

@jtopper

Principal Consultant
and CTO
The Scale Factory
United Kingdom

“I’ve changed my mind on this a few times over the last few years. I used to think it was a ridiculous idea to have anyone with the DevOps title or to have a team with DevOps in the name. It seemed stupid. What are you going to do, will you have an operations team, a development team, and then a DevOps team? That’s an anti-pattern. It won’t actually solve anything.

I’ve come to the conclusion that DevOps is an important cultural signifier if you’re in a relatively traditional enterprise environment that has generations of dysfunction around the way you work and the work that you do. Having the DevOps title is a sort of signifier that you’re trying to do things differently. It’s important for retaining people, for hiring the right people, just sending the right signals around the organization.”



Nigel Kirsten

[@nigelkersten](https://twitter.com/nigelkersten)

CIO and VP of Operations
Puppet
United States

So, the jury's a bit hung on whether a title like DevOps engineer is a good or bad idea. But the people we've talked with — and the results of our [2016 State of DevOps Report](#) — are pretty unanimous that adopting DevOps practices and culture is a good thing.





Whether your title — or the title of someone you're hiring — is DevOps engineer, site reliability engineer, infrastructure developer, release engineer or something else, **what really matters is that you're all on board with DevOps.**

Why should you embrace DevOps?

You may very well
make more money.

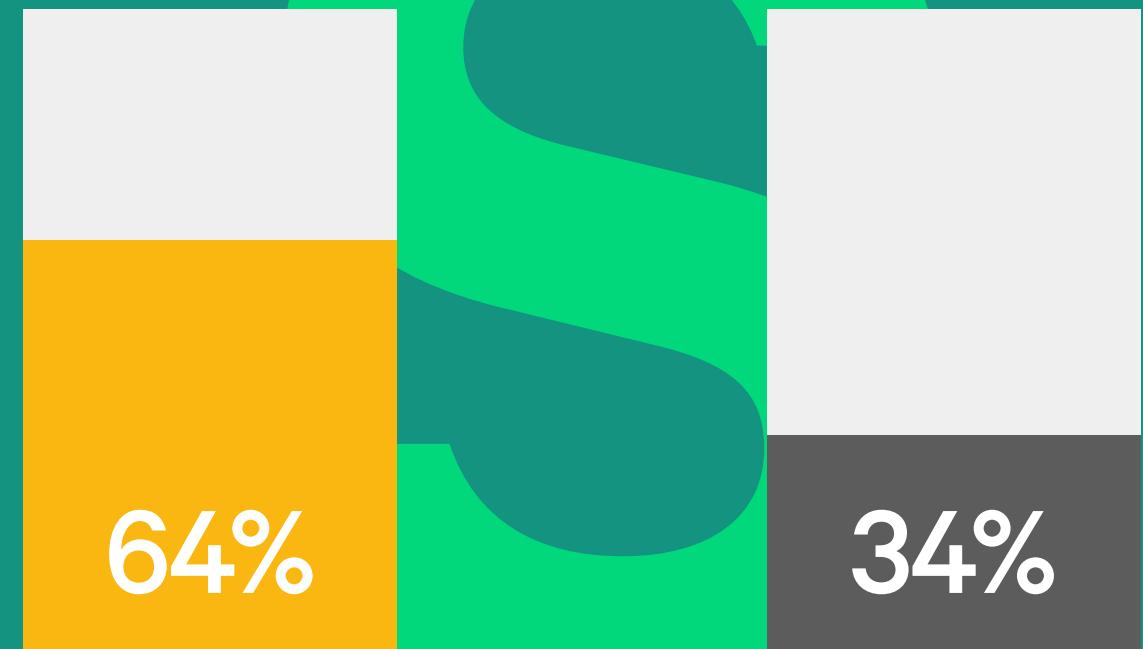
Jobs in DevOps are
in demand ...

... and they'll likely
stay in demand.

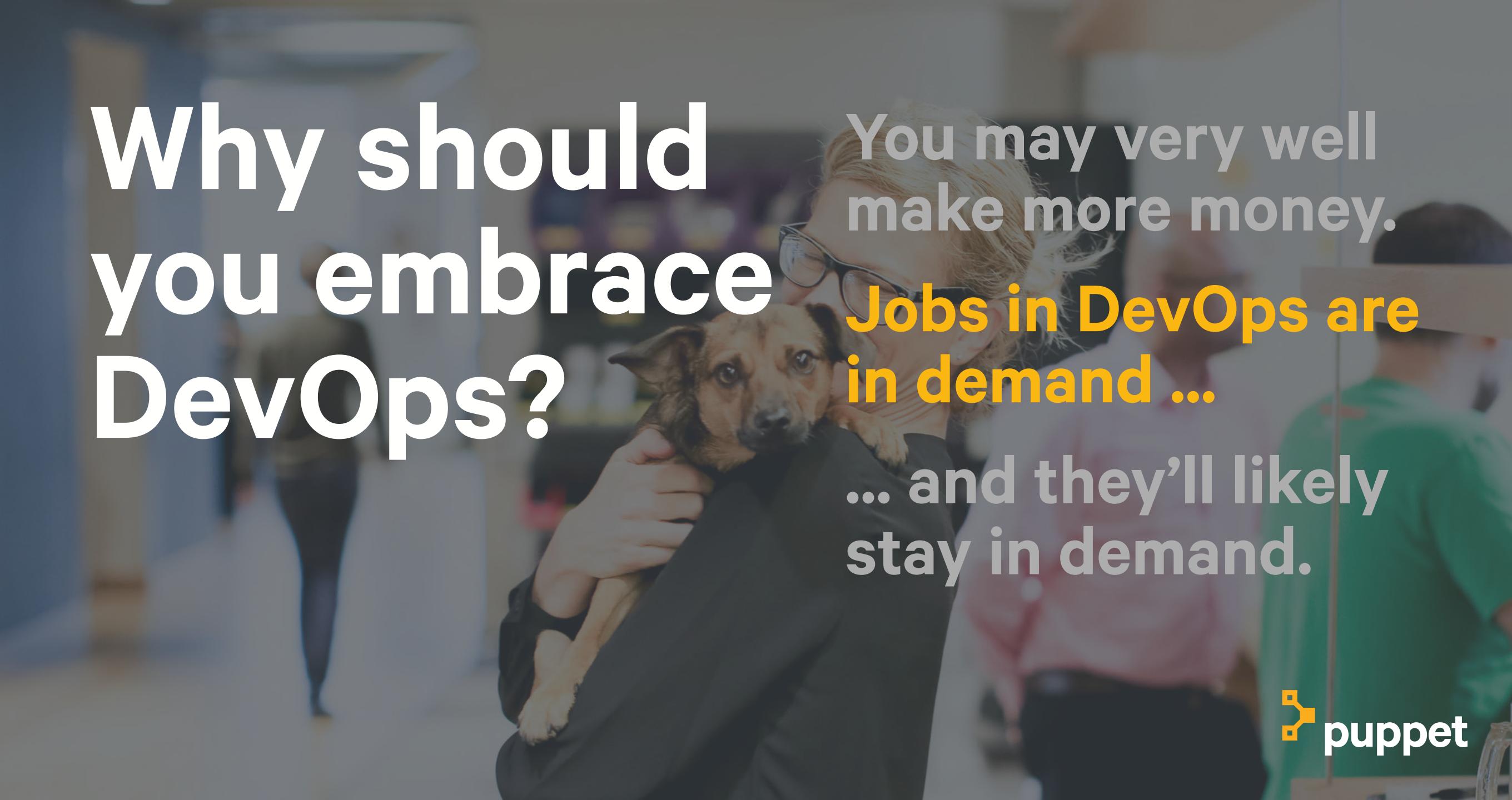
In our [2016 DevOps Salary Report](#), we reported that 64 percent of people in the United States with titles like DevOps engineer make over \$100,000, compared to 34 percent of system administrators.

The most common salary range for a DevOps engineer in the United States was \$100,000-\$125,000.

Percentage of people with salaries above \$100,000



Why should you embrace DevOps?

A woman with blonde hair and glasses is holding a small brown dog. They are in an office environment with other people and desks visible in the background.

You may very well
make more money.

**Jobs in DevOps are
in demand ...**

**... and they'll likely
stay in demand.**

“There are more DevOps roles than candidates right now.”



Ingrid de Jong
[@IngridCdeJong](https://twitter.com/IngridCdeJong)
IT & Diversity Recruiter
ING Bank
The Netherlands

“Every day me and my colleagues are busy with DevOps positions.”



Neil Robertson
Head Researcher
Team Prime
United Kingdom

“I recruited my first DevOps engineer about two years ago and since I have been focusing purely on cloud and DevOps-aligned positions from junior to management levels.”

* Now, Aurelie typically has 10-15 DevOps roles to fill at any given time.



Aurelie Viger
[@aureliedevops](https://twitter.com/aureliedevops)
Recruiter
Ashdown People
Australia

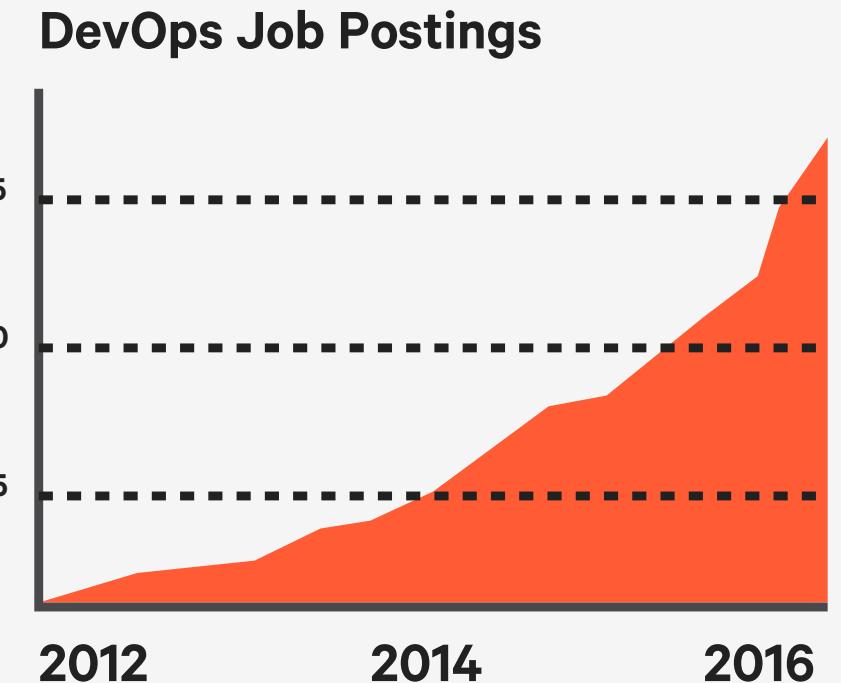
Why should you embrace DevOps?

You may very well
make more money.
Jobs in DevOps are
in demand ...

... and they'll likely
stay in demand.

Data from Indeed.com shows the **percentage of job postings mentioning DevOps rose by 20x** from January 2012 to August 2016, and that trend is likely to continue.

Software is increasingly powering everything around us, and all kinds of companies are beginning to realize they have to start behaving like software companies. Besides helping them stay competitive, companies also realize DevOps helps them recruit better IT talent.



Why should you embrace DevOps?

You don't need
to worry about
being bored or not
learning new things.

A photograph showing several people in an office environment, focused on a large whiteboard or wall chart. The chart appears to be a complex flowchart or process map with many nodes and arrows. One person is pointing at a specific part of the diagram. The scene is well-lit, suggesting a professional workspace.

If you're feeling bored, or like you've been doing the same things for too long, working for a company that's adopted DevOps practices could be a significant change and learning opportunity.

Since automation is fundamental to DevOps, the common and routine tasks that bore you now will be automated, leaving you more time for solving higher-level problems and innovation.

Why should you embrace DevOps?

There's a good chance
you'll be fighting fewer
fires and putting them
out faster.



In the [2016 State of DevOps survey](#) of more than 4,600 tech professionals, we found that high-performing teams have a change failure rate that's three times lower than their lower-performing peers — and they recover 24 times faster.

Also, it's common for organizations with mature DevOps practices to include developers in the on-call rotation. That encourages devs to release cleaner code in the first place.



24x faster recovery
from failures



3x lower change
failure rate

A person is sitting at a desk in an office environment, facing away from the camera. They are wearing a light-colored hoodie. In front of them are three computer monitors. The monitor on the left shows a terminal window with command-line text. The middle monitor displays a graphical user interface with several windows open, possibly a code editor or a web browser. The monitor on the right is mostly blank. To the left of the person, there's a white mug on a wooden surface. The background is slightly blurred, showing office cubicles and other people.

But...

**It's not all
puppies and rainbows.**

Making the move from your current job to a DevOps workplace may very well be a pleasant upgrade, but it's probably best to keep any expectations of DevOps work utopia grounded in reality.

“A person who wants to work in this space is both smart and very dumb. Smart, because if you take it on, you’ll be learning a million things every day. If you like learning, you will never stop in this role. A person is foolish because there’s a lot of specialized knowledge that is required that really does take a long time to get a handle on — it’s not for the half-committed. In addition, this work can put a person in the middle of a lot of tension, especially when things go wrong. It’s a role that frequently comes with an on-call rotation or late nights. Oftentimes the work is only noticed when something goes wrong, not when it goes right. What I’m trying to say is that there’s very little that is glamorous about DevOps. If you like getting your hands dirty and being in the middle of a little bit of organized chaos, you’ll have an incredible time and a fun career.”



Amy Marco

[@Big_Amy](https://twitter.com/Big_Amy)

Director of Technology
Argent
United States

“Don’t be surprised if that first job, even at a great company, is unappealing. IT is huge, and you won’t know what you like until a few years in — if ever.”



Rob Nelson
[@rnelson0](https://twitter.com/rnelson0)

IT Consultant
United States

A person with blonde hair and glasses is sitting at a desk in an office environment. They are wearing a white t-shirt with a graphic of a basketball player and are wearing a headset with a microphone. They are looking down at a laptop computer. The laptop has several stickers on it, including a red one with the word "SAP" and another with a blue fish logo, and a yellow one that says "puppet".

What skills and
personality attributes
do you need to
succeed in DevOps?

- 
- A photograph of a man with a beard and short brown hair, wearing a blue and white plaid shirt. He is looking down at a white computer keyboard on a desk, his hands resting on the keys. In the background, there's a white shelving unit with various items on it, and a person's arm is visible on the right side of the frame.
1. A desire to learn and improve things
 2. Communication and collaboration
 3. Tech chops and tools: ops need to dev
 4. Caring about the big picture

“First and foremost, I think a desire to make things better through automation and a hunger for fixing issues.”



Travis Fields

[@tefields](https://twitter.com/tefields)

Senior DevOps Engineer

Nike

United States

“More than complete mastery in any one particular subject, you need the willingness to learn a broad array of tools, techniques, architectures, and communication styles.”



Kyle Olsen
DevOps Engineer
Datapipe
United States

“Success in DevOps boils down to flexibility and eagerness to learn. There is definitely a base skill set required, but you don’t need to be an expert developer or operations engineer; you need to be able and eager to learn technologies that are new to you or new to the industry.”



Erin Fahy
Senior DevOps Engineer
Stanford University
United States

“A desire to understand the pieces is a prerequisite to understanding the pieces. If you don’t care to figure out the deep whys of why something broke or went well, it’ll be very hard to do advanced automation work.”



Amy Marco

[@Big_Amy](https://twitter.com/Big_Amy)

Director of Technology

Argent

United States

“Our team looks for out-of-the-box thinkers, people who are curious and not afraid to ask questions. Experience is important, but having the right soft skills is just as important. Whenever we hire, we always look to understand a potential candidate’s ability to break down complex problems into small, manageable building blocks.”



Jason Man

@mrjasonman

DevOps & Continuous Delivery Consultant
Forest Technologies
United Kingdom

- 
- A woman with curly hair and glasses is pointing towards the right while speaking. She is wearing a blue denim jacket over a white shirt. In the background, there are shelves with books and papers, and a computer monitor is visible on the right.
1. A desire to learn and improve things
 2. **Communication and collaboration**
 3. Tech chops and tools: ops need to dev
 4. Caring about the big picture

“The core parts of working effectively in DevOps are openness, communication, empathy, and lack of ego — the ability to work well with others, see things from their point of view, and learn together with them how to make the organisation succeed. Experience in teams with these kinds of characteristics is always helpful.”



Sam Eaton
[@thesamoth](https://twitter.com/thesamoth)
VP of Engineering for
Operations and Infrastructure,
Yelp
United States



Cate Connelly
Senior Recruiter
Simple
United States

“We look for candidates who exemplify our company values (Craft, Curiosity, Efficacy, Empathy); who are passionate about contributing to an inclusive and welcoming environment; who are collaborative; and who participate in the open source community and care about sharing their work.”

“Teamwork is the number-one skill a DevOps person needs to be successful. Yes, there are the technical skills that keep the DevOps phenomenon growing — coding, continuous integration and deployment, server management, etc. — but even as those tools we use change, the team stays the same. When dev and ops roles realize that the goal for both is to produce a high-quality product, that’s when everyone becomes successful at DevOps.”



Michael Jenkins

[@managedkaos](https://twitter.com/managedkaos)

Linux Engineer

United Business Media

United States

“DevOps engineers need to have technical acumen, but I think it’s even more important that they know how to work well on a team ... The automation and velocity of DevOps amplifies any flaws and misunderstandings in a project, so getting the requirements and relationships right is a key attribute for a successful DevOps engineer.”



Dwayne Melancon

@ThatDwayne

CTO & VP of Research
and Development
Tripwire
United States

“You can have all the automation of the world, implement Agile methodologies by the book, but if there isn’t a communication channel between your teams, then your flow is broken.”



Javier D'Ovidio
[@jdovidio](https://twitter.com/jdovidio)
VP of Operations
Edrans
Argentina

- 
1. A desire to learn and improve things
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“It’s become pretty clear that operations people now need to have their feet more in the development side of things. You used to be able to get by as a sysadmin by doing a little shell scripting or knowing a little Perl. That’s still the case in some shops, but if you want to work somewhere really interesting you need to be able to write some code.”



Rich Burroughs
[@richburroughs](https://twitter.com/richburroughs)
Operations Engineer
Yesmail
United States

“We look for some coding familiarity and scripting experience. It’s also helpful to have hands-on knowledge of Docker, Puppet, Chef, Vagrant, GitHub, and a lot of other tools commonly used in DevOps.”



Steve Dazzo
Recruiter
PayPal
United States

“The skills I was looking for in my roles were Linux OS, Puppet or Ansible, Bash Shell or Python for scripting, continuous integration and/or continuous delivery, Git source control and Jenkins.”



Dwayne Melancon
[@ThatDwayne](https://twitter.com/ThatDwayne)
CTO & VP of Research
and Development
Tripwire
United States

“Without understanding how the operating system works you won’t be able to do most of the operations work. You should be familiar with the command line and all of the functionality that is available there. Without the ability to do some programming, whether that’s shell scripting, Puppet, Ruby, Python, etc., you will be stuck doing things the manual, hard way and you won’t be able to scale.”



Klynton Jessop
[@ klyntonj](https://twitter.com/klyntonj)
DevOps Engineer
HelloSign
United States

- 
- A photograph of a man with a beard and short hair, wearing a dark t-shirt and jeans, sitting on a light-colored couch. He is laughing heartily, his head tilted back and eyes closed. He is looking at a laptop screen. Behind him is a bookshelf filled with books and various items. In front of him is a low wooden table with a game board and some boxes on it.
1. A desire to learn and improve things
 2. Communication and collaboration
 3. Tech chops and tools: ops need to dev
 4. Caring about the big picture

“Really it just comes down to giving a crap about things that happen outside your text editor, understanding that there’s a business and a human context to everything we do, and that those are more important than any technical implementation.”



Jon Topper

@jtopper

Principal Consultant and
CTO
The Scale Factory
United Kingdom

“I believe the primary characteristics to look for are strong commitment to end-user outcomes and customer service capability; strength in collaboration to thrash out the best solutions and readily take on constructive criticism; a comfort with rapid change, with willingness to accept and adhere to diligence checks; all underpinned with a strong technical background to provide robust, considered design and development work.”



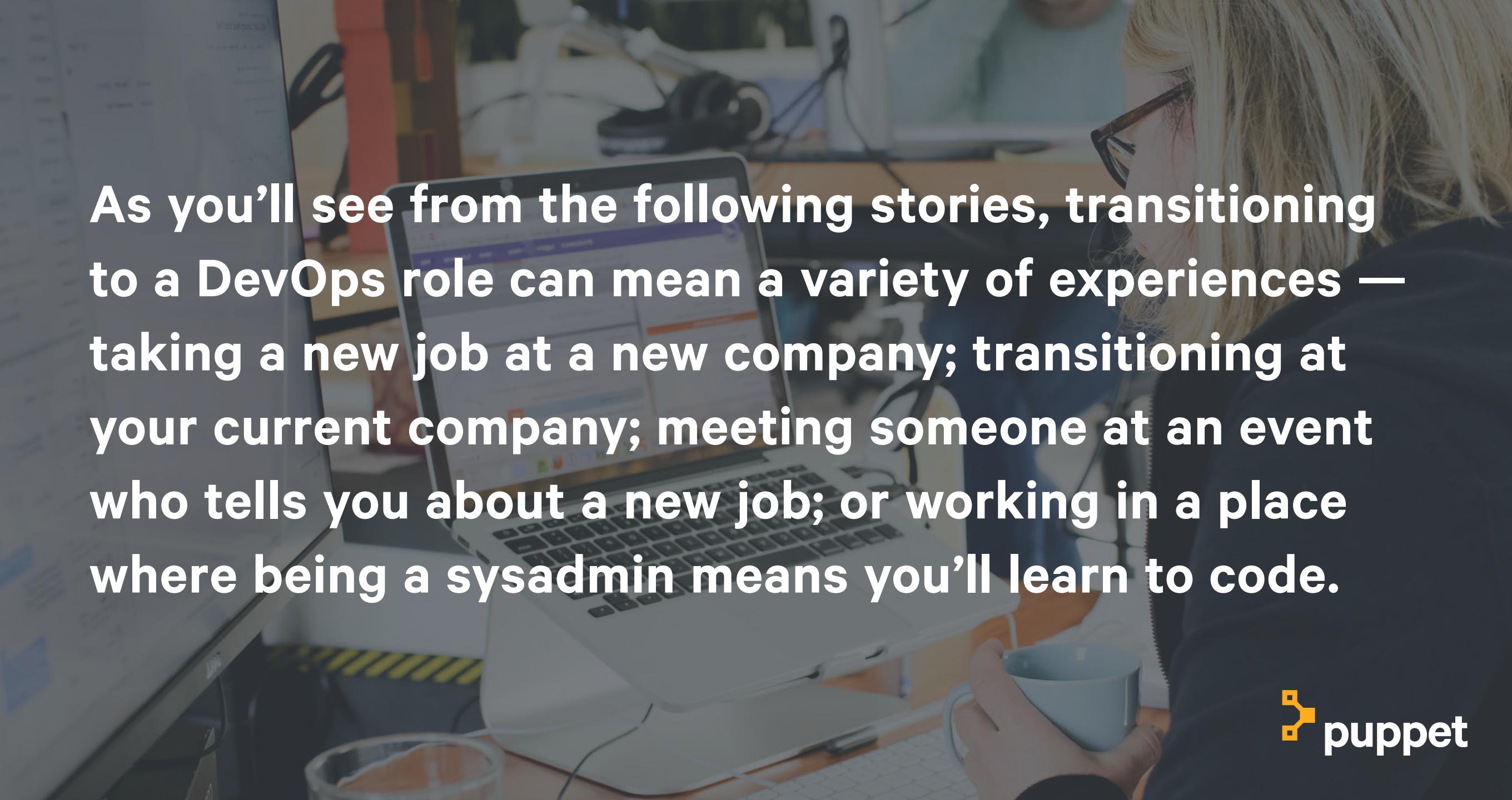
Jon Faulkner
CIO
London School of
Hygiene & Tropical Medicine
United Kingdom

A photograph of a woman with dark, curly hair and glasses, wearing a grey t-shirt, sitting at a desk and working on a laptop. She is looking down at the screen. In the background, there are other people in an office environment.

How do people get started in DevOps?

A photograph showing several people in an office setting. In the foreground, a man with glasses and a beard stands looking at a whiteboard. Behind him, other people are visible, some sitting at desks with laptops and others standing near whiteboards. The scene suggests a collaborative work environment.

There isn't one clear-cut path for how you should transition from the job you're doing now to one — whether it's at your current employer or somewhere new — where you and your team are using DevOps practices.

A woman with blonde hair and glasses, wearing a dark hoodie, is sitting at a desk. She is looking down at a laptop screen which displays a colorful interface. On the desk in front of her is a clear glass containing an orange liquid. To her right, a hand holds a light blue mug. The background is slightly blurred, showing office equipment like a printer and some papers.

As you'll see from the following stories, transitioning to a DevOps role can mean a variety of experiences — taking a new job at a new company; transitioning at your current company; meeting someone at an event who tells you about a new job; or working in a place where being a sysadmin means you'll learn to code.

“I originally started my career in third-line support, and I swiftly moved to a software engineer role, where I spent most of my time doing everything but development! I was building the software, running manual tests and then creating the environment to run my code. It drove me to automation. If I found it that problematic, I couldn’t imagine how the 100-plus developers felt! I was sure a lot of the repetitive tasks could be more efficient and done in a better way. Having automated the build system to reduce the time from two hours to 30 minutes, I was hooked on the idea of automation — and without knowing it, I had started my very own DevOps journey.”



Jason Man

@mrjasonman

DevOps & Continuous
Delivery Consultant
Forest Technologies
United Kingdom

“The trigger event that pushed me into a DevOps role was a layoff. I was working as an IT project manager and was laid off from that position. I started to do some consulting and contracting in the high performance computing space as a result of my experience with Linux and job scheduling software. I was contacted by a recruiter who was filling a role focused on automation in an environment built on virtual machines. The main skill that made me a good candidate for the role was my experience scripting with Perl and Bash.”



Michael Jenkins
[@managedkaos](https://twitter.com/managedkaos)
Linux Engineer
United Business Media
United States

“A few years ago at a conference I met an applications manager from Stanford’s Digital Library, who told me about a new DevOps sysadmin position for which they were hiring. I thought DevOps was a compelling field and had heard a lot of good things about Puppet and other configuration management tools. I was interested in learning more, so I applied. They hired me a few months later and it’s honestly the best job I’ve ever had ... The first thing I did when starting my new DevOps role was to learn Puppet. I attended training at a PuppetConf and got to know our infrastructure by reading our existing Puppet codebase and setting up new systems.”



Erin Fahy
Senior DevOps Engineer
Stanford University
United States

“I started in DevOps well before it had a name. I started out in the late ‘90s at small ISPs, and later at e-commerce startups where there just wasn’t room in the budget for separate dev, ops, and systems engineering departments. We all had to be jacks-of-all-trades, which is the hallmark of a good DevOps engineer ... There wasn’t really a trigger event or even a transition for me; what I’d always done just acquired a new name.”



Kyle Olsen
DevOps Engineer
Datapipe
United States

“My career has been a hodgepodge of IT jobs. I have been a network engineer for Time Warner Cable, a web administrator, a QA engineer and a developer. While I was a developer, I kept seeing my ops team struggling with deployments and having enough staff to automate and address issues. I was big into scripting shortcuts for myself via PowerShell, and had posed an offer to my director of operations to hire me to help automate our release deployments — thus the beginning of wearing both hats. I monitored and deployed our systems using PowerShell, and kept our configs and machine spin-up using Puppet Open Source.”



Travis Fields

@tefields

Senior DevOps Engineer

Nike

United States

“I started at a hosting company as a support engineer then moved into a sysadmin role. At the hosting company everyone wrote code to some degree, and as a sysadmin I ended up writing a lot of code as well as doing a lot of operations work. Depending on whose definition you use, I think that counts as DevOps ... I transitioned from training people how to use configuration management directly into a DevOps role. So it was just getting back to building things instead of teaching people how to build things.”



Klynton Jessop
[@ klyntonj](https://twitter.com/klyntonj)
DevOps Engineer
HelloSign
United States

“DevOps was part of my job before I knew what DevOps was.”

“I think for me, DevOps was part of my job before I knew what DevOps was. I was working on raising the initial infrastructure for what was to be my employer’s first major data center effort. While the building construction was finishing up, the network infrastructure work was just beginning, and with the weight of a well-organized medium-sized enterprise behind the project, there was lots to be done. Trucks of pre-racked gear were arriving weekly.

I was in an ops department, but I had been hitting the books pretty hard on writing Perl the previous year, and so began to apply what I’d been learning. Our organization was serving the engineering teams, so we had lots of infrastructure to deploy to get the test

environments up and online. The first of which was to get the DNS zones connected to the larger system for the new site.

The tasks at hand were such that coding them was not necessary and the work could be done by hand in about the same time, but that was boring. As someone who is averse to boredom, I wrote code to do the work. At first, it seemed slow, but as I got better at coding, the time it took me decreased and the quality went up. This happened to the point where I would end up doing lots of the jobs that no one else wanted, due to their perceived tedium. I thought all sysadmins were supposed to write code.”



Zach Leslie
[@xaque208](https://twitter.com/xaque208)
Devops Engineer
Womply
United States

"I started in the operations world by doing tech support and futzing around with computers. I eventually moved on to network engineering, and then into the murky world involving networks, servers, and anything else infrastructure-related. I think the transition to DevOps came naturally as the industry moved towards automation and a larger scale with fewer people ... I started thinking more about automation and using a different mindset when I was a network engineer at Twitter. The server team was able to set up services much more quickly, with fewer people, than the network team. When I moved to the Wikimedia Foundation, I was able to take on a more hybrid role between network and server engineering. This gave me the opportunity to use and learn the server tools. That began my quest to bring the DevOps tools and mindset into the networking industry."



Leslie Carr

[@lesliegeek](https://twitter.com/lesliegeek)

Senior DevOps Engineer
Clover Health
United States

A close-up photograph of a person's head and shoulders. The person has short brown hair and is wearing a yellow long-sleeved shirt over a blue and white polka-dot collared shirt. They are wearing a VR headset and looking down at a black electronic keyboard. The background is blurred, showing what appears to be a room with shelves and other equipment.

**Don't stress
about a degree**

Don't stress about a degree

Of the 13 engineers practicing DevOps we talked to, nine have a degree — five in something related to DevOps (from library science to security to computer science). Now, that's not even close to statistically significant, but there's probably some truth there.

We talked to some people who manage and hire DevOps people about degrees. Here are some of their perspectives.

“Whilst I don’t think a degree is a prerequisite for a career in DevOps, I did learn a lot of useful things — functional and imperative languages, database theory, algorithmics, compilers, design patterns — that have come in handy over the years.”



Jon Topper

@jtopper

Principal Consultant
and CTO
The Scale Factory
United Kingdom

“A relevant degree is a plus, but since a lot of the DevOps world is still new, curriculum hasn’t really caught up yet. For that reason, hands-on experience can be more valuable. Quick learners, autodidacts, and interested individuals with passion and energy are good, too. For example, we see students (currently going for CS degrees, for example) who have a passion for DevOps and get involved during an internship, who become great candidates for full-time employment after they graduate. We’ve also seen tech-savvy people with industrial or factory automation backgrounds pick up on DevOps very quickly — there is a lot of value in creative, system-level thinking when it comes to DevOps.”



Dwayne Melancon

@ThatDwayne

CTO & VP of Research
and Development
Tripwire
United States

"I place great value on seeing demonstrable signs that a person has been educated and continues in their education. The university system is a great way for someone to demonstrate and measure their success at this ... However, there are other ways for a candidate to demonstrate their education and continued appetite and ability to learn and develop ... Generally, great DevOps-capable engineers have many years experience under their belt, they have been active in the community, and can demonstrably show they have consistently solved problems and added value to systems with innovative approaches. I tend not to look at the formal educational qualifications of those people."



Mike Dilworth

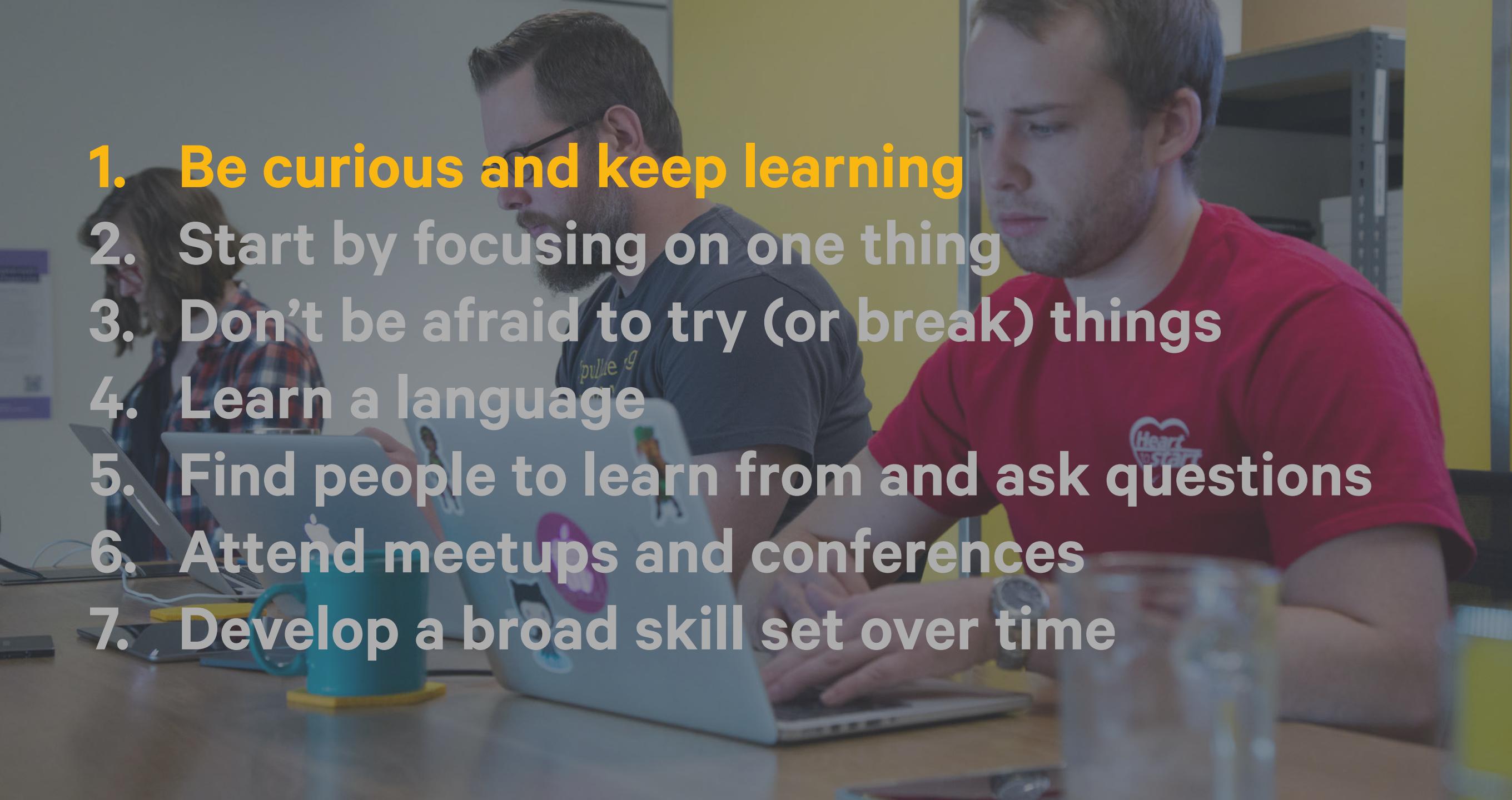
@enspect

Technical Director - DevOps
Capgemini
United Kingdom

So if you have a degree in something related to computer science, that's great — and you're probably in the minority. But if you're trying to decide whether or not to take a few years to get a degree, and you're in a position to learn new and relevant things on the job or you have the time and motivation to learn on your own, a degree may not be the best investment of your time and money, and may not be a necessary addition to your resume or CV.

A photograph showing four people working at their desks in an office environment. A man in a red shirt is on the left, a bald man in a grey sweater is in the center, a woman in a patterned top is in the foreground, and a woman in a dark blue shirt is on the right. They are all looking at computer monitors. The background shows office cubicles and windows.

**Advice on how to
get started and ahead**

- 
- A photograph showing two men in an office environment. One man, wearing glasses and a dark t-shirt, is visible from the side, looking at his laptop screen. The other man, wearing a red t-shirt with a logo, is facing forward, also looking at his laptop. They are sitting at a desk with various office supplies like a blue mug, a water bottle, and papers. The background shows shelves and other office equipment.
1. Be curious and keep learning
 2. Start by focusing on one thing
 3. Don't be afraid to try (or break) things
 4. Learn a language
 5. Find people to learn from and ask questions
 6. Attend meetups and conferences
 7. Develop a broad skill set over time

**“Keep learning. The more you know,
the better you’ll be at everything.
The more perspective you have,
the easier the problems are to solve.”**



Zach Leslie
[@xaque208](https://twitter.com/xaque208)
DevOps Engineer
Womply
United States

**“If you write code, give a shit how it’s deployed.
If you run systems, give a shit about what runs
on them. Think about the how and why that both
the infrastructure and the applications connect.”**

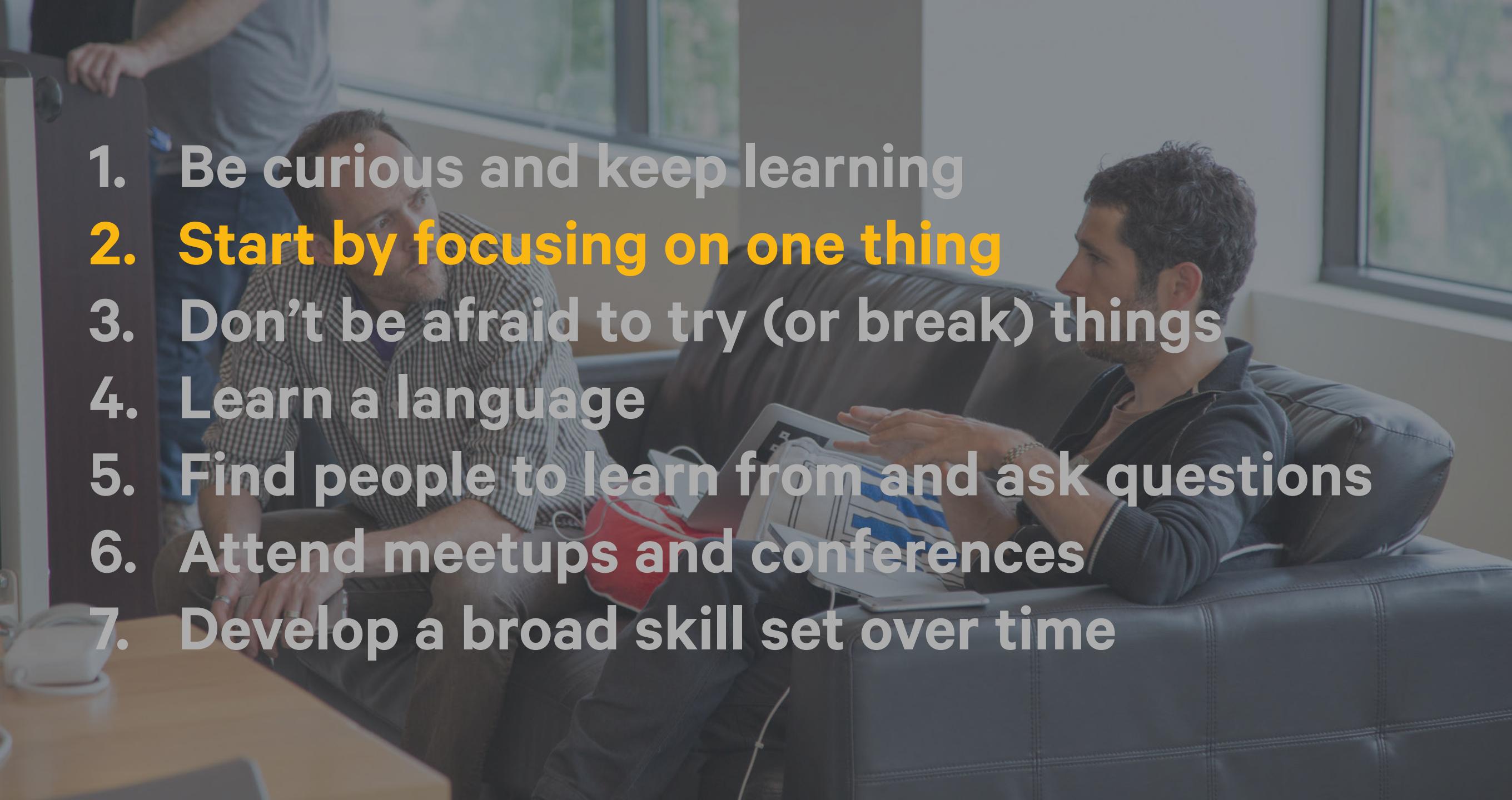


Klynton Jessop
[@klyntonj](https://twitter.com/klyntonj)
DevOps Engineer
HelloSign
United States

“You need to constantly learn new technologies and concepts. It is not enough to just read books or articles to gain the knowledge. You need to gain hands-on experience as well. You will also need to be able to connect with people in order to introduce cultural changes. If you are the kind who thinks that “if something is not broken then don’t fix it” is the best policy, then you are probably not suitable. In DevOps, we are always looking for ways to improve and optimize, without breaking what is already working of course.”



Kok Hoong Wai
[@KokhoongWai](https://twitter.com/KokhoongWai)
DevOps Consultant
Forest Technologies
Singapore

- 
- A photograph of two men sitting on a dark leather couch. The man on the left is wearing a light-colored button-down shirt and jeans, looking towards the camera with a thoughtful expression. The man on the right is wearing a dark zip-up hoodie and jeans, looking down at a white tablet device he is holding. A small white dog is visible between them. In the foreground, a wooden coffee table holds a pair of white headphones. The background shows a window with a view of greenery.
1. Be curious and keep learning
 2. Start by focusing on one thing
 3. Don't be afraid to try (or break) things
 4. Learn a language
 5. Find people to learn from and ask questions
 6. Attend meetups and conferences
 7. Develop a broad skill set over time

“Jump straight into learning a new tool or technical approach that interests you, and use it to make your infrastructure more predictable, reliable, and secure.”



Mike Dilworth
[@enspect](https://twitter.com/@enspect)
Technical Director - DevOps
Capgemini
United Kingdom

“If you are just starting out in your career, then become a subject matter expert (SME) in your field. This could be software or network engineering or as an Agile coach.”



Erin Fahy
Senior DevOps Engineer
Stanford University
United States

“The DevOps space is so big! To keep from getting lost at the beginning, I would suggest picking a space and focusing on it. I would ask, ‘Are you more interested in coding than the servers the code runs on?’ If the answer is yes, then I would suggest a focus on development. I could also ask, ‘Do you like debugging hardware and don’t really care what the code looks like?’ If the answer is ‘yes’ to that question, I would suggest a focus on ops. In either case though, I would also recommend keeping tabs on the other skill set and knowing what’s important to people in that role.”

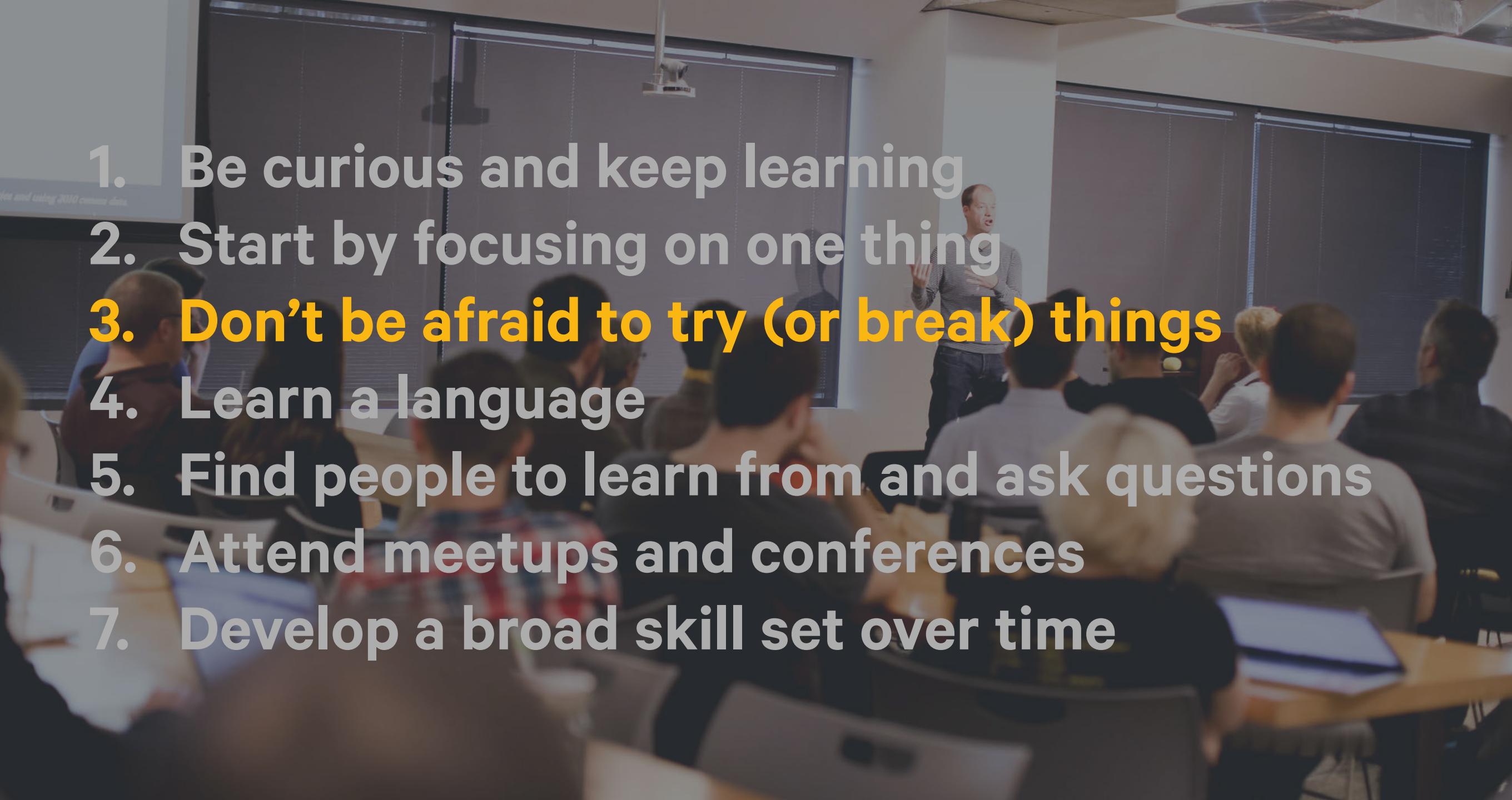


Michael Jenkins
[@managedkaos](https://twitter.com/managedkaos)
Linux Engineer
United Business Media
United States

“Start small and solve those problems first. You may want to ‘automate all the things,’ but those things have things and those too have things. Rome wasn’t built in a day. Make a list from the largest to smallest until you can go no further, and go from there.”



Rudy McComb
[@rudymccomb](https://twitter.com/rudymccomb)
Senior OpenStack
Operations Engineer
Mirantis
United States

- 
- A photograph of a man standing and speaking to a group of people seated in rows of chairs, likely in a lecture hall or conference room. The man is gesturing with his hands while speaking. The audience is facing him, with their backs to the camera. The room has large windows in the background.
1. Be curious and keep learning
 2. Start by focusing on one thing
 3. **Don't be afraid to try (or break) things**
 4. Learn a language
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 7. Develop a broad skill set over time

“Spend time breaking things. With all of the virtualization technology around these days, you can get full environments to break without damaging your machine or losing customer data.”



Leslie Carr
[@lesliegeek](https://twitter.com/lesliegeek)
Senior DevOps Engineer
Clover Health
United States

“The rise of containers means that it’s easier than ever to set up a system on your laptop and test out something you’re curious about. Read blogs and articles to investigate the trends and latest technologies and if you have the time, try to recreate what they’re talking about!”



Klynton Jessop
[@klyntonj](https://twitter.com/klyntonj)
DevOps Engineer
HelloSign
United States

“Don’t be afraid to make mistakes. In fact, fail often, fail royally! Or else you’ll never know how to fix or truly make something better. Understand that there’s a reason why employers pay for experience.”

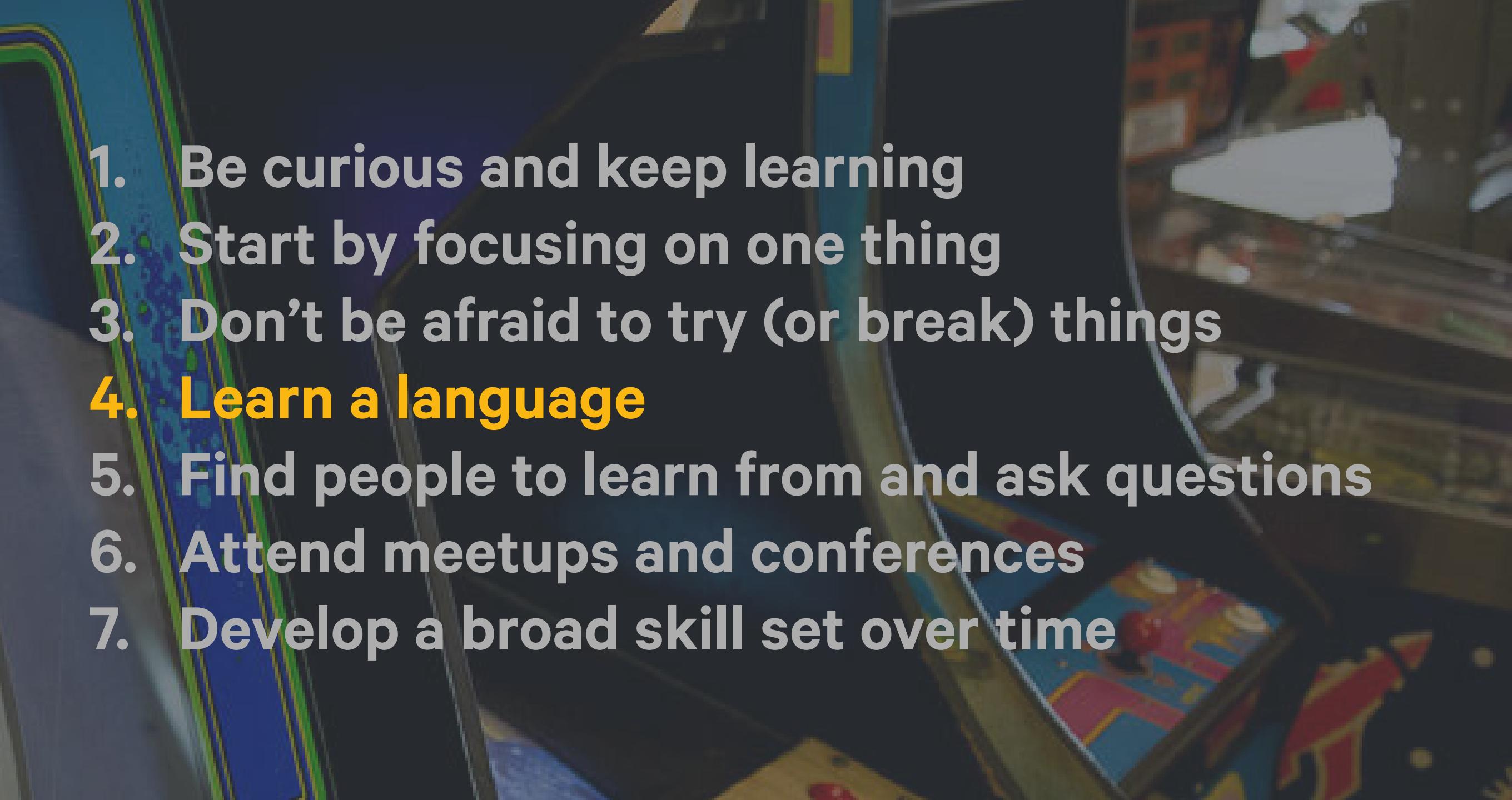


Zach Leslie
[@xaque208](https://twitter.com/xaque208)
Devops Engineer
Womply
United States

“Don’t shy away from writing a bit of code to solve your problem rather than scouring the internet for a solution that someone solved for you. Both approaches have their place.”



Joe Rodriguez Jr.
[@r0dr1gu3zjr](https://twitter.com/r0dr1gu3zjr)
DevOps/Linux Engineer
Rackspace
United States

- 
- A stack of colorful children's books on a shelf, with one book slightly pulled out, serving as a background for the list.
1. Be curious and keep learning
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“You’re going to have to have some basic software development skills. It doesn’t mean you need to be a four-year computer science degree expert programmer in order to do this work. You just need to understand how to work like a software developer.”



Nigel Kirsten
[@nigelkersten](https://twitter.com/nigelkersten)

CIO and VP of Operations
Puppet
United States

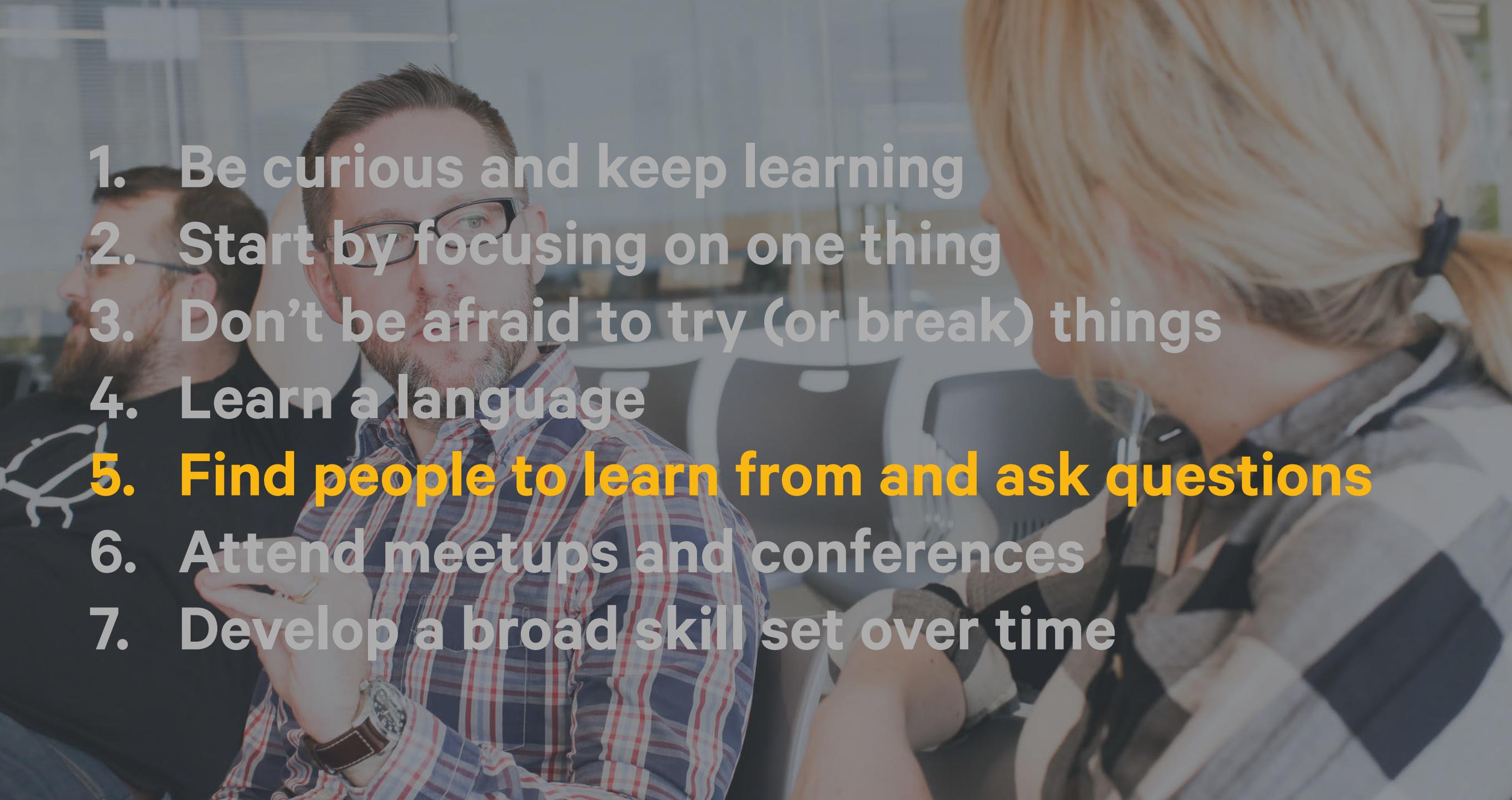
“Master at least one language. This is key to learning how to think like a developer.”



Joe Rodriguez Jr.

[@r0dr1gu3zjr](https://twitter.com/r0dr1gu3zjr)

DevOps/Linux Engineer
Rackspace
United States

- 
- A photograph showing a group of people, including a man with glasses and a beard, and a woman with blonde hair, sitting around a table and looking at a laptop screen together, suggesting a collaborative learning environment.
1. Be curious and keep learning
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 5. Find people to learn from and ask questions
 6. Attend meetups and conferences
 7. Develop a broad skill set over time

“Find role models and ask them what they are doing and why.”



Rob Nelson
[@rnelson0](https://twitter.com/rnelson0)
IT Consultant
United States

“Find a mentor. Generic advice is good, but specific advice is great.”



Leslie Carr
[@lesliegeek](https://twitter.com/lesliegeek)
Senior DevOps Engineer
Clover Health
United States

“If you’re a developer, shadow your ops team and see how they deploy your products, look at how they do it and what processes could be improved. As an ops person, look at how your developers deploy their product for testing and QA. You might learn some tricks in how to automate.”



Travis Fields

[@tefields](https://twitter.com/tefields)

Senior DevOps Engineer

Nike

United States

“If you can find someone to let you work on a project in a sort of apprentice model, that can go a long way in building your credibility.”

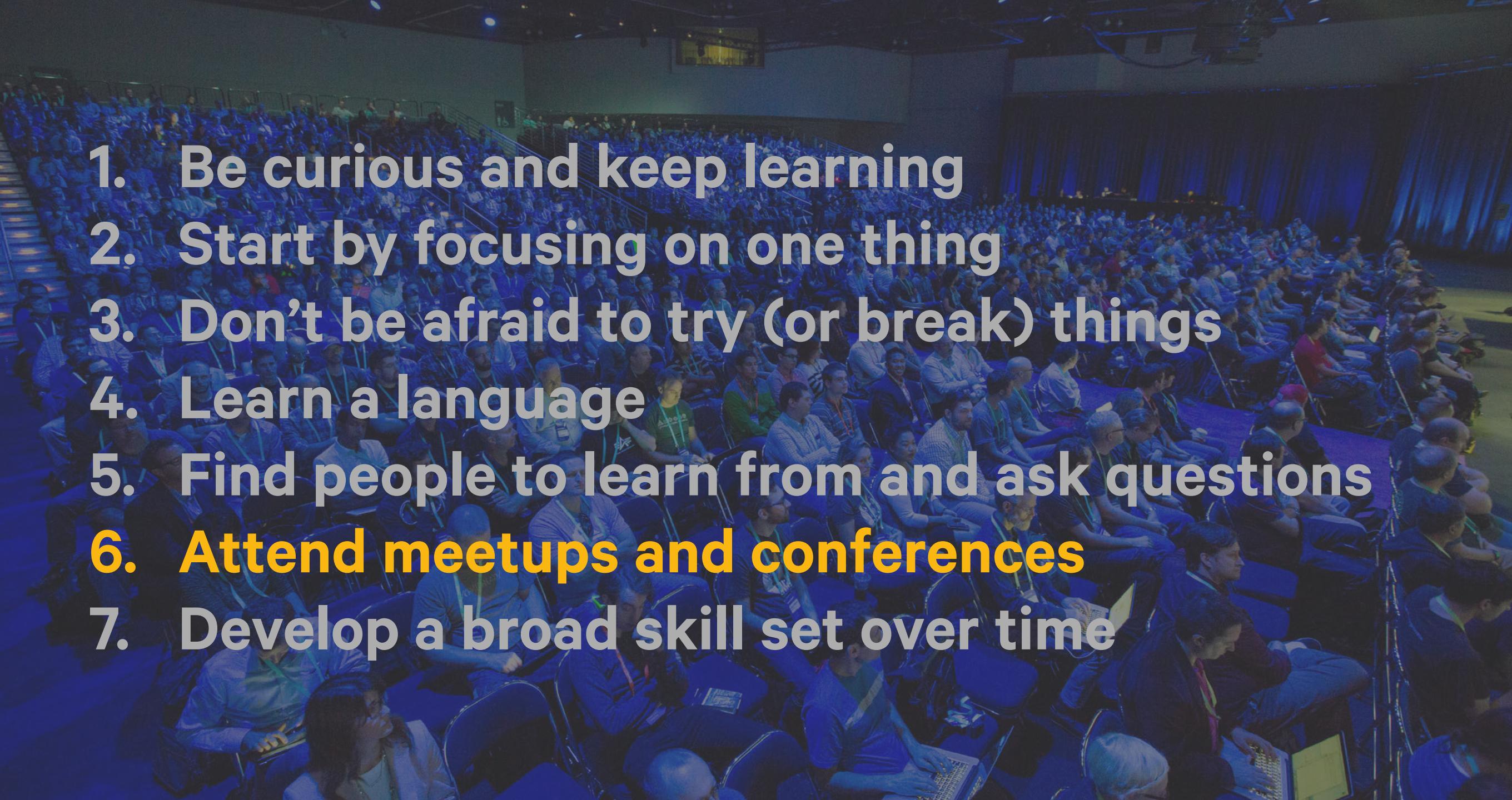


Amy Marco [@Big_Amy](#)
Director of Technology
Argent
United States

“Find someone nice to help show you tricks. Pay attention and look over shoulders. Offer to help. Offer to listen.”



Dwayne Melancon
[@ThatDwayne](#)
CTO & VP of Research
and Development
Tripwire
United States

- 
1. Be curious and keep learning
 2. Start by focusing on one thing
 3. Don't be afraid to try (or break) things
 4. Learn a language
 5. Find people to learn from and ask questions
 6. **Attend meetups and conferences**
 7. Develop a broad skill set over time

“Attending local meetups and conferences is a great way to meet people and pick up knowledge quickly. I met a lot of people early on in my IT career through my local Linux users group. Nowadays there are a lot of specific groups, depending on where you’re located, for things like Puppet, Docker and DevOps.”



Rich Burroughs
[@richburroughs](https://twitter.com/richburroughs)
Operations Engineer
Yesmail
United States

“Go to local meetups and vendor conferences and be friendly, say hi, introduce yourself, and ask questions to the point that it makes you uncomfortable. The squeaky wheel gets the oil. The answer to your biggest question is just a greeting away. Keep in touch with the people you meet.”



Rudy McComb
[@rudymccomb](https://twitter.com/rudymccomb)
Senior OpenStack
Operations Engineer
Mirantis
United States

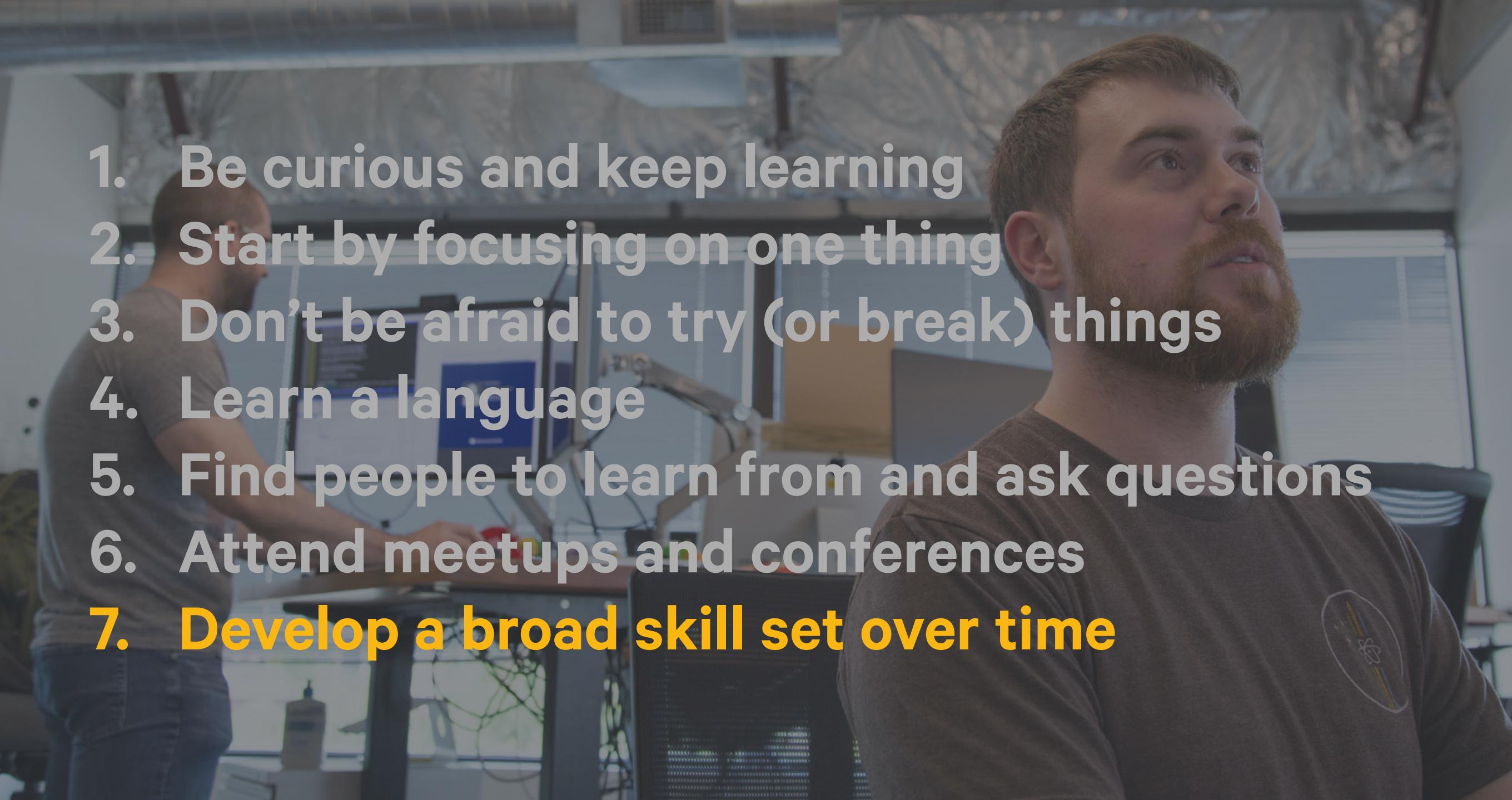
“I think if you’re getting started in DevOps, the best thing you can do is engage with the community, both online and at meetups and conferences. Across the world, there’s a huge community of friendly people sharing the things they’ve learned.”



Jon Topper

@jtopper

Principal Consultant
and CTO
Scale Factory
United Kingdom

- 
- A photograph of a man with a beard and short hair, wearing a brown t-shirt with a small circular logo on the shoulder. He is looking upwards and to his right with a thoughtful expression. In the background, there are shelves with various items and what appears to be a robotic arm or some industrial equipment.
1. Be curious and keep learning
 2. Start by focusing on one thing
 3. Don't be afraid to try (or break) things
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“Developing a broad skill set is crucial, so learn a little bit about a lot of things, then dig deeper into what interests you. Be platform and language agnostic. Learn to use OS X, Linux, Windows, Solaris, and OpenBSD. Learn to program in Python, Ruby, PHP, Java, and Swift. Learn PostgreSQL, MySQL, Oracle, SQL Server, and MongoDB, because DevOps is all about bringing cohesion and automation together across a huge array of platforms and technologies, and you never know what you’ll have to automate next.”



Kyle Olsen
DevOps Engineer
Datapipe
United States

“Be prepared to learn many other skills, and aim to become an all-rounder or generalist. This is important for anyone in a transitional phase of their career. It is important to continue learning the other disciplines within the system. If we are looking to create full-stack autonomous teams capable of delivering value end to end, then we need more generalists who are adaptable, flexible and able to react quickly to changing environmental needs.”



Mike Dilworth

@enspect

Technical Director - DevOps
Capgemini
United Kingdom

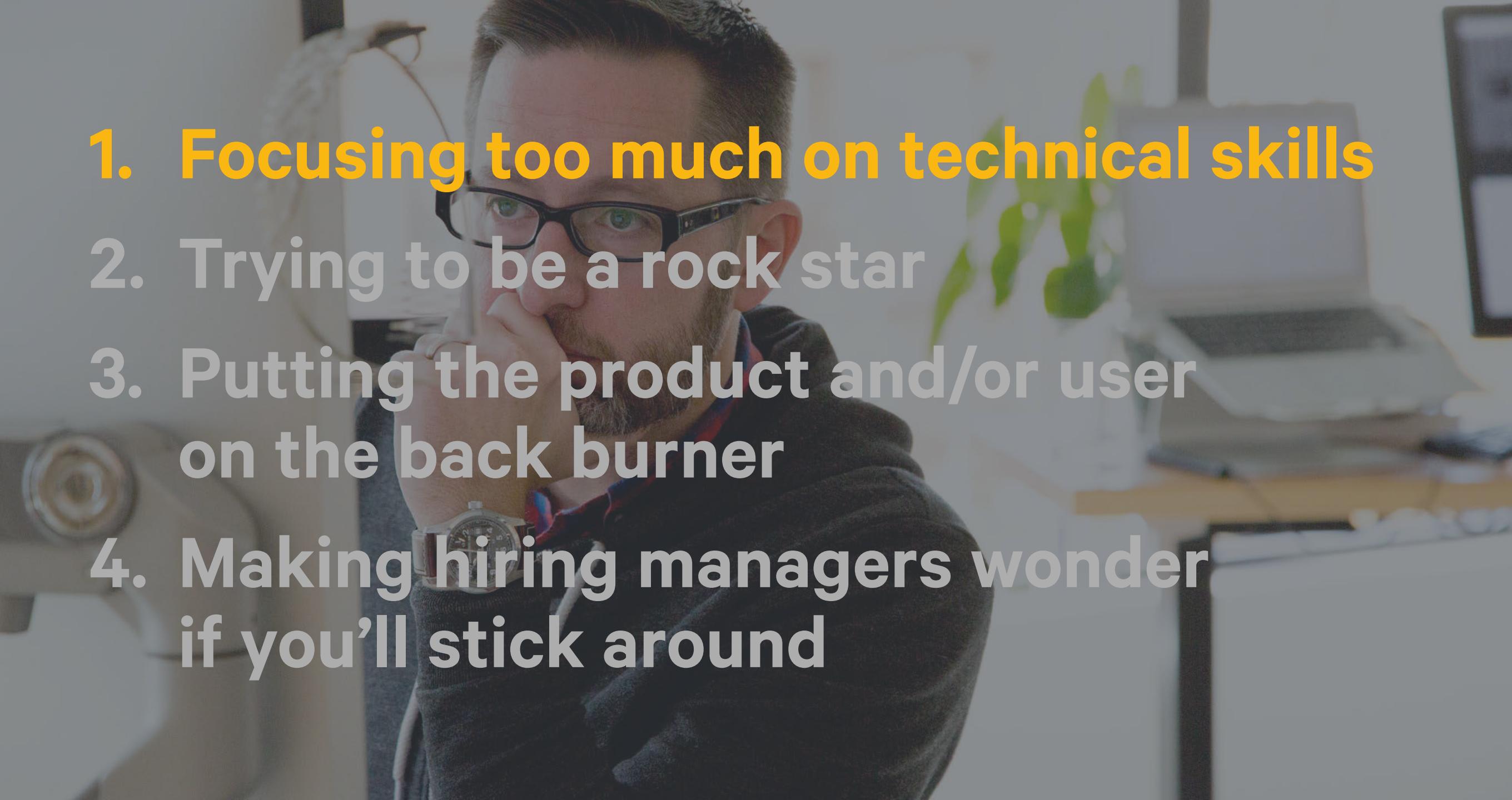
“Focus on the concepts, not the tools. Over the course of your career, you’re going to solve the same problem over and over. If you understand the concepts, it’s easier to use whatever tool is best for the job.”



Klynton Jessop
[@klyntonj](https://twitter.com/klyntonj)
DevOps Engineer
HelloSign
United States



Some things to avoid on
your DevOps journey

- 
- A photograph of a man with dark hair and a beard, wearing black-rimmed glasses and a dark t-shirt. He is looking slightly to his left with a thoughtful expression, resting his chin on his hand. In the background, there are several books on a shelf, suggesting a study or office environment.
1. Focusing too much on technical skills
 2. Trying to be a rock star
 3. Putting the product and/or user on the back burner
 4. Making hiring managers wonder if you'll stick around

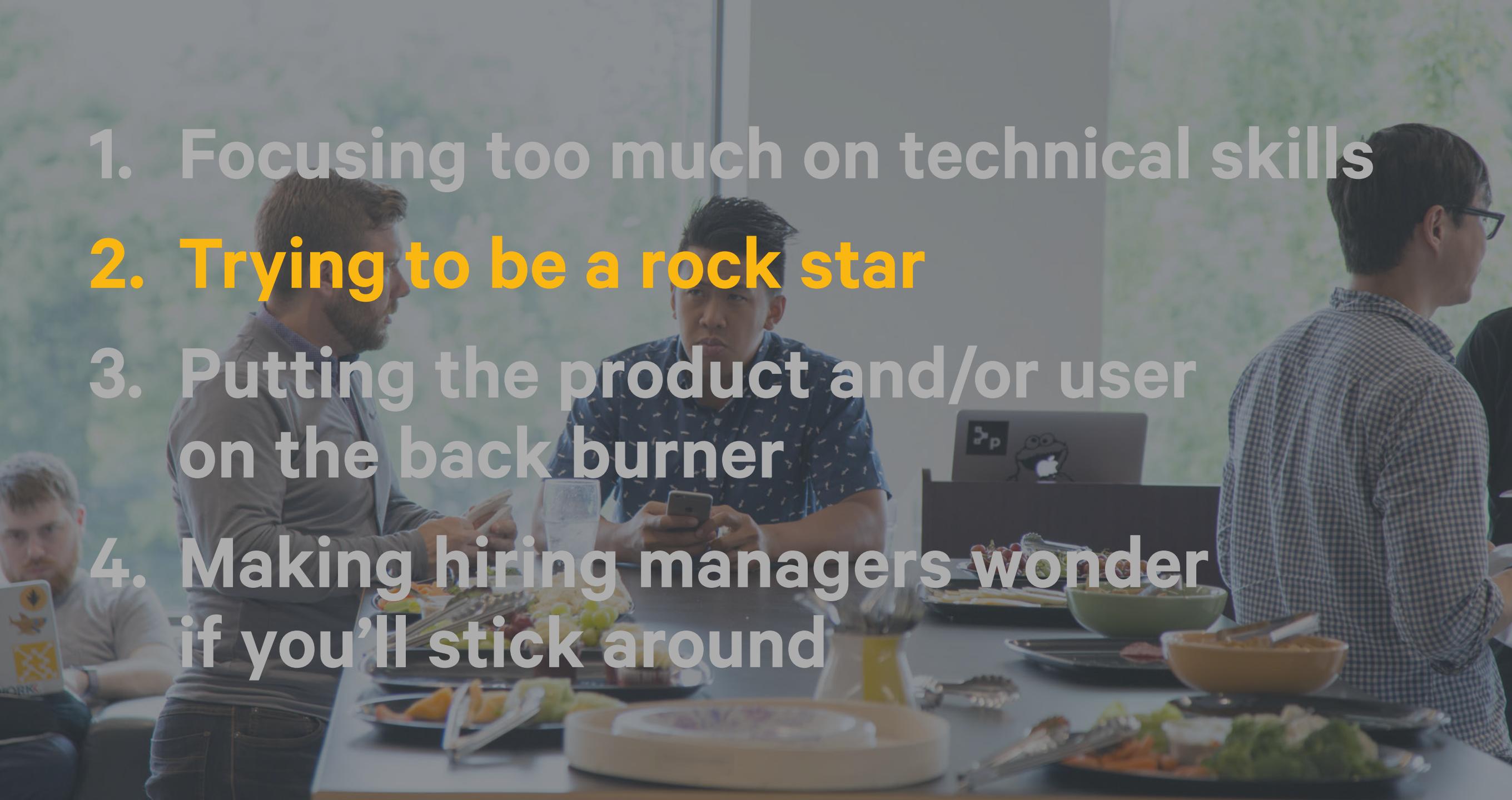
“Don’t become enamored with technical skills only. I’ve had team dynamics ruined by superhero mentality in a lot of scenarios, and DevOps is just as susceptible. Some of the traits we test for in our hiring process are more the soft skills like promoting teamwork; behaving in a manner that establishes trust; the ability to make sound decisions; meeting customers’ needs; fostering open communication; meeting commitments; problem-solving skills; and speaking, writing, and listening effectively.”



Dwayne Melancon

@ThatDwayne

CTO & VP of Research
and Development
Tripwire
United States

- 
- A photograph of a social gathering or office party. In the foreground, a man with a beard and a grey shirt is looking down at his phone. Next to him, another man in a blue patterned shirt is also looking at his phone. On the far left, a man is holding a small book or card with a logo on it. In the background, there are several laptops on a table, one of which has a cartoon character on the screen. The table is filled with various dishes of food. A man in a checkered shirt is standing on the right side of the frame.
1. Focusing too much on technical skills
 2. Trying to be a rock star
 3. Putting the product and/or user on the back burner
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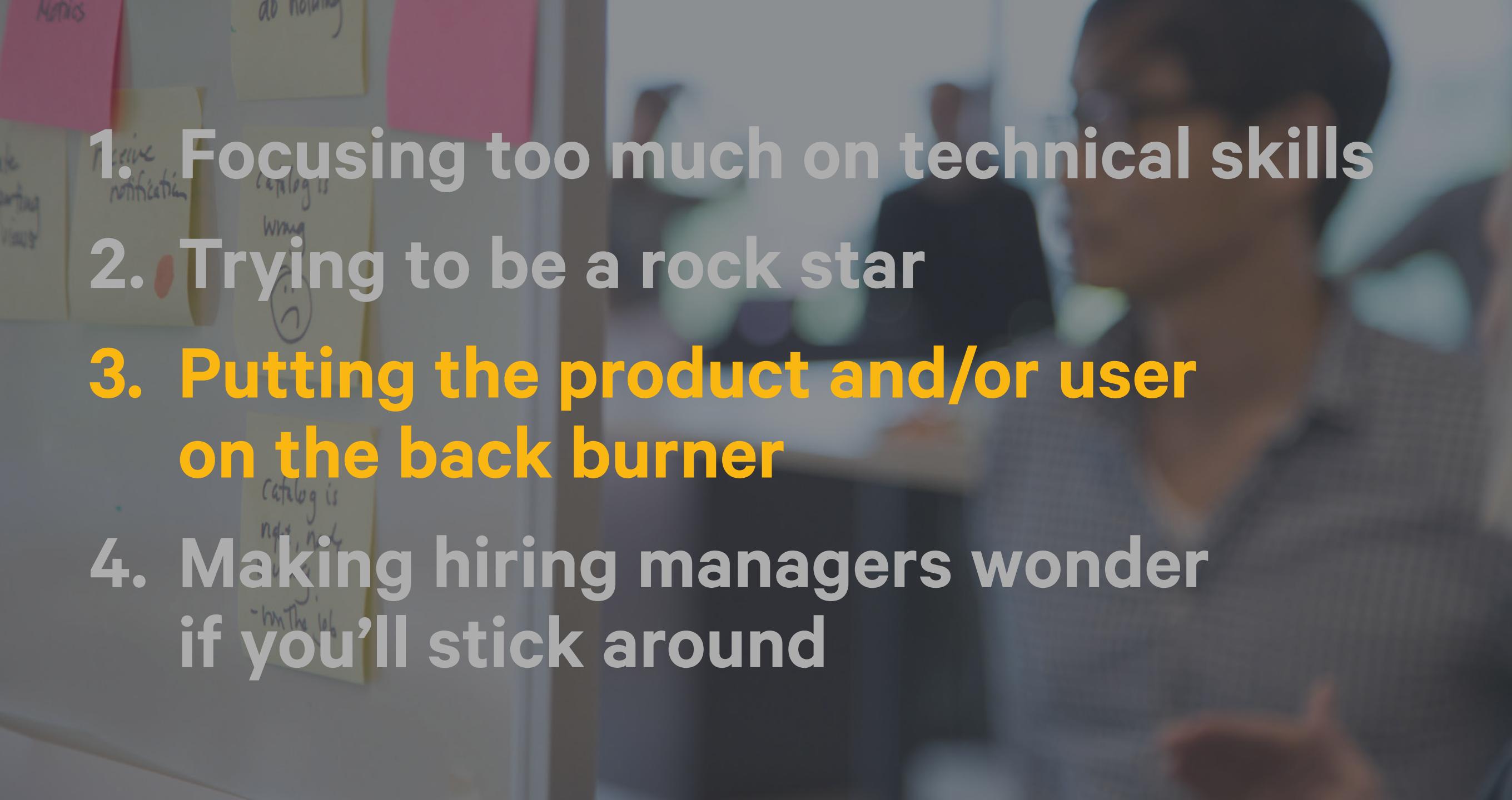
“Look for developers who think about sustainability and longevity, or systems administrators who think about innovation. Look for people who are interested in solving problems in a team context, not ‘rock star’ or ‘ninja’ developers who are more likely to hog the spotlight and sacrifice long-term maintainability for short-term glory.”



Bess Sadler

@eosadler

Manager of
Application Development
Digital Library at Stanford
United States

- 
- A blurred background image of a person sitting at a desk, looking at a computer screen. On the wall behind them are several sticky notes with handwritten text and drawings, including "do nothing", "receive notification", "Catalog is wrong", and "Catalog is not ready".
1. Focusing too much on technical skills
 2. Trying to be a rock star
 3. Putting the product and/or user on the back burner
 4. Making hiring managers wonder if you'll stick around

“The people we aren’t hiring tend to be overly focused on their particular tooling interests and are less communicative about wanting to build something that others will use.”



Cate Connelly
Senior Recruiter
Simple
United States

- 
- A woman with long blonde hair and glasses is smiling while wearing a headset and working at a desk. She is wearing a white t-shirt with a yellow graphic. In the background, there are other people working at desks in an office environment.
1. Focusing too much on technical skills
 2. Trying to be a rock star
 3. Putting the product and/or user on the back burner
 4. Making hiring managers wonder if you'll stick around

“Also, in today’s job market, I’m very wary of the job hoppers. I want someone who can grow and learn with us, and stick around for the long term.”



Dwayne Melancon

@ThatDwayne

CTO & VP of Research
and Development
Tripwire
United States

A photograph of three people in an office environment. A man in a plaid shirt stands on the left, looking towards the right. In the center, a woman with long blonde hair, wearing a grey t-shirt, looks towards the right. On the right, a man with a beard and glasses, wearing a dark shirt, is writing on a whiteboard with a green marker. The background shows a bulletin board with various items pinned to it, including a blue sign that reads "PUPPET ENTERPRISE".

Alright then ...
Think you're ready?

We hope this helps you figure out how eager and prepared you are to work for a DevOps organization — and gives you ideas to help you reach your goal. Thank you to all the engineers, managers and recruiters who contributed their perspectives and advice to this ebook.

In addition to all the advice in this paper, on the next page, we've provided links to some resources that might be helpful to you.

- [**The 2016 DevOps Salary Report.**](#) The results of our survey of more than 4,600 tech professionals should give you an idea of what to expect to earn in different parts of the world, with different job titles, at different sizes of companies and data centers, and more.
- [**DevOpsDays.**](#) Two-day conferences happening regularly around the world.
- [**Puppet User Groups.**](#) Evening meetups in more than 60 cities around the world (and you can start your own!) for Puppet users to network and learn from each other.
- [**Conferences and tradeshows.**](#) Check out the other events we attend.
- [**The Tools for Learning Puppet: A Guide to Getting Started with Command Line, Vim and Git.**](#) If you could use a tutorial or refresher on any of these tools, this cat-filled ebook is for you.

A photograph of a man and a woman sitting on a light-colored couch in a living room. The man, on the left, has a beard and is wearing a dark hoodie, looking towards the camera with a slight smile. The woman, on the right, has long brown hair and is also wearing a dark hoodie, looking down at a laptop she is holding. They are both smiling. In the background, there is a bookshelf filled with books, a small yellow shelving unit with various items, and a large green plant on the left. A whiteboard with some writing and diagrams is visible behind them. The overall atmosphere is casual and friendly.

Now ...
Go get
the DevOps!