DevOps has come a long way, and there is no doubt it will continue to shine this year. Since many companies are looking for best practices around their digital transformation, it's important to see where leaders think the industry is going. In that sense, the following article is a collection of responses from the DevOps leaders on DevOps trends to watch for in 2021.

1. Migrating to microservice will become a must - Lead DevOps Engineer at Wipro Limited

"Migrating from monolithic to microservice and containerized architecture will be a must for all the company for their Digital Transformation journey. It's not going to be a choice or option anymore. This is where the adoption of Kubernetes will be on rise and when organizations will adopt multi-cloud, Terraform will be the ultimate choice to automate Infrastructure."
- *Sachidananda Pattnaik, Lead DevOps Engineer at Wipro Limited*

2. Hybrid will become the deployment norm - VP of Developer Relations at JFrog

"2020 accelerated remote work, expedited the migration to cloud, and turned DevOps from a best practice to an essential part of every business. As we move into 2021 the industry will embrace hybrid on multiple facets. First, businesses will fully embrace hybrid workforces that combine the advantages of remote work and on-site team collaboration. Second, business models will become hybrid, such as conferences that merge virtual scale with local networking. Finally, hybrid will become the deployment norm as companies modernize their stack to take advantage of cloud-native technologies, but realize that not everything can move off-prem. The winners in 2021 will be companies who embrace hybrid across their business, model, and products." - *Stephen Chin, VP of Developer Relations at Jfrog*

3. DataOps will boom - Senior DevOps Engineer at Rakuten

“DataOps will definitely boom in 2021, and COVID might play a role in it. Due to COVID and WFH situation, consumption of digital content is skyrocket high which demands a new level of automation for self-scaling and self-healing systems to meet the growth and demand.

So far, DevOps are setting up systems for Logging, Monitoring, and Alerting only (ELK/EFK Stacks, Prometheus/Grafana/Alertmanager, and so on) Now, it is high time for DevOps to step up and use available data and metrics to generate valuable insights, learn and apply machine learning models to predict incidents or outages, develop automation which learns itself from the data and forecast capacity to improve budget planning. Many have already started calling MLOps/AIOps to this part.” - *Nirav Chotai, Senior DevOps Engineer at Rakuten*

4. Resilience testing will become mainstream - Head of Product at Neotys

“The intersection between Observability, Performance Testing, and Resilience Testing will become mainstream from my point of view. With the recent Ops issues of WW leaders such as AWS and Google, and digital transformation accelerating in all verticals, the market will come to realize that infinite scalability provided by public or private cloud flavors is not enough.”
- *Patrick Wolf, Head of Product at Neotys*

5. GitOps will become a norm - Principal Architect at Macy's

“A “you build it, you own it” development process requires tools that developers know and understand. GitOps is the name for how DevOps use developer tooling to drive operations.

GitOps is a way to do Continuous Delivery. More specifically, it is an operating model for building Cloud Native applications

that unify Deployment, Monitoring, and Management. It works by using Git as a source of truth for declarative infrastructure and applications. Automated CI/CD pipelines roll out changes to your infrastructure when commits are pushed and approved in Git. It also makes use of diff tools to compare the actual production state with what's under source control and alerts you when there is a divergence. The ultimate goal of GitOps is to speed up development so that your team can make changes and updates safely and securely to complex applications running in Kubernetes." - *Soumen Sarkar, Principal Architect at Macy's*

6. There will be more migrations to serverless - Site Reliability Engineering Manager at Lifion by ADP

"2021 will be a year to watch for more migrations to serverless .. if containers and orchestration were Generation Z .. live loads on serverless will be Gen z+ .. pay per use will go to pay only when you use model .. pay per use and pay only when you use may appear the same ..but think of running k8s pod-based microservice to running the same on serverless when you need." - *Shivaramakrishnan G, Site Reliability Engineering Manager at Lifion by ADP*

7. NoOps comes to the scene - CEO at ClickIT Smart Tech

"I envision more managed services appearing and reducing our DevOps operations and reducing OPEX in customers. More Serverless apps, more serverless services like Aurora Serverless, Fargate, Amazon S3, and serverless static websites. Amazon ECS/EKS in data centers(new release re:invent 2020), and cloud management services that allow you to reduce maintenance and development in data centers. In the same lines, more cloud-native principles and features ported to data-centers, Ex. Knative." - *Alfonso Valdes, CEO at ClickIT Smart Technologies*

8. BizDevOps will emerge big time - DevOps Manager at Petco

“The movement toward cost optimization with regard to architectures and corporate hierarchies - as business GROKS the value from DevOps.

Focus on flexible, cloud-native, architectures and tooling that land capabilities once reserved for the "big guys" in packaging palatable for smaller organizations (Snowflake or Hazelcast vs Oracle/Teradata)

FaaS is just getting started (serverless, Lambda etc) - the operational issues are being sorted out and people are realizing the potential.” - *Chad Prey, DevOps Manager at Petco*

9. Infrastructure as Code (IaC) will take its stand even higher - Senior Solutions Architect at Volvo Cars

“Infrastructure as code (IaC): A core tenet of DevOps in the cloud. Your infrastructure—i.e. servers, networks, and storage devices whether on-premises or in the cloud—defined as a code. This allows a company to automate and simplify its infrastructure. IaC also delivers a straightforward infrastructure version control system that allows teams to roll back to the “last configuration that worked” in case of a catastrophic failure. That means rapid recovery and reduced downtime.” - *Niraj Tripathi, Senior Solutions Architect at Volvo Cars*

10. Automation & chaos engineering become much important - Group Development Manager at Gibraltar India Development Center

“Everything automated - Build, deploy, test, infra and release.

Single line of going to Production with required quality gates. Faster, Repeatable, Customisable and Reliable automation is key to the success of any project. Chaos engineering - Very

critical aspect in today's hybrid infra world. System behavior and Customer Experience are tightly coupled, the sooner you test this and better experience you provide to your customers.” - *Nikhil Bhandari, Group Development Manager at Gibraltar India Development Center*

11. Cloud-native approaches will be standardized - Ben Sapp

“Since the cloud space has gotten really advanced (the last 10 years or so) and containerization has become the norm, everything is pretty standardized almost like the mainframe era.

Sure, there will be trends and money to be made. But I don't see what the next big disruptor is. Everything now is essentially the same as best practices from five years ago but just a little more reliable. I suppose more and more folks will continue to move from pets to cattle, leaving tools like Ansible and puppet for just packer and cloud init to build container hosts.

It's kind of a golden age for software development, imo. The DevOps and cloud native approach has achieved a lot of its goals. Pipelines, hosting, storage, load balancing... all of that is resolved in 5 minutes these days.” - *Ben Sapp*

12. Security will become a high priority - CloudSkiff

“Definitely tracking uncontrolled changes in your infras in a DevSecOps perspective. Infrastructure as code is awesome, but there are too many moving parts : codebase, state file, actual cloud state. Things tend to drift. Those changes can have multiple causes: from developers creating or updating infrastructure through the web console without telling anyone, to uncontrolled updates on the cloud provider side. Handling infrastructure drift vs the codebase can be challenging.” - *CloudSkiff*

13. Chaos Engineering will become an increasingly more important - CTO at International Technology Ventures, In

“Chaos Engineering will become an increasingly more important (and common) consideration in the DevOps planning discussions in more organizations. Chaos Engineering - which is the discipline of experimenting on a software system in production in order to build confidence in the system's capability to withstand turbulent and unexpected conditions - is generally not practiced by most organizations.

If we think of DevOps within a framework of a traditional five levels of maturity model - Chaos Engineering would be a a 4th or 5th level discipline that would be included within the umbrella of DevOps practices. Just as the traditional role of a separate Testing / Quality Assurance group is folded into the discipline of DevOops - so too should Chaos Engineering.”
- *Kelvin Meeks, Consulting Architect/CTO at International Technology Ventures, In*

14. More focus on instant logs to quickly validate success or failure - Director, Platform Stability at ADESA

“The use of logs in post deploys to validate the release was successful, or had critical errors. The biggest connection people need to make is defining the manual processes and then the big leap to automation. One click to deploy, instant logs to quickly validate success or fail and then trigger the rollback. The complication then comes along with cross service dependencies and if something can be rolled back or if it needs to have further testing on other services. Imagine 100 microservices (aka pipelines and even another 100 containers.

As one item, I always celebrate the successful rollback since it isn’t service impacting and was successful.” - *Craig Schultz, Director, Platform Stability at ADESA*

15. DevSecOps will become a default part of DevOps - DevOps Architect at JFrog

“The "Sec" part of DevSecOps will become more and more an integral part of the Software Development Lifecycle. A real security "shift left" approach will be the new norm. There will be less dedicated security steps in the CI/CD pipelines and security automatic awareness and actions will be part of all pipeline steps. Starting from developer's IDE, into the dependency and static code analysis. A software component will not be released without proper (automatic?) mediation of these issues. Customers will be delivered with true security issues free software.” - *Eldad Assis, DevOps Architect at the CTO office at JFrog*

Hope you enjoyed our expert round-up responses on the DevOps trends to watch for in 2021. If you think we are missing something that should be considered, please share your views in the comments.