

Game changing — From zero to Autonomous Cloud today

Best practices

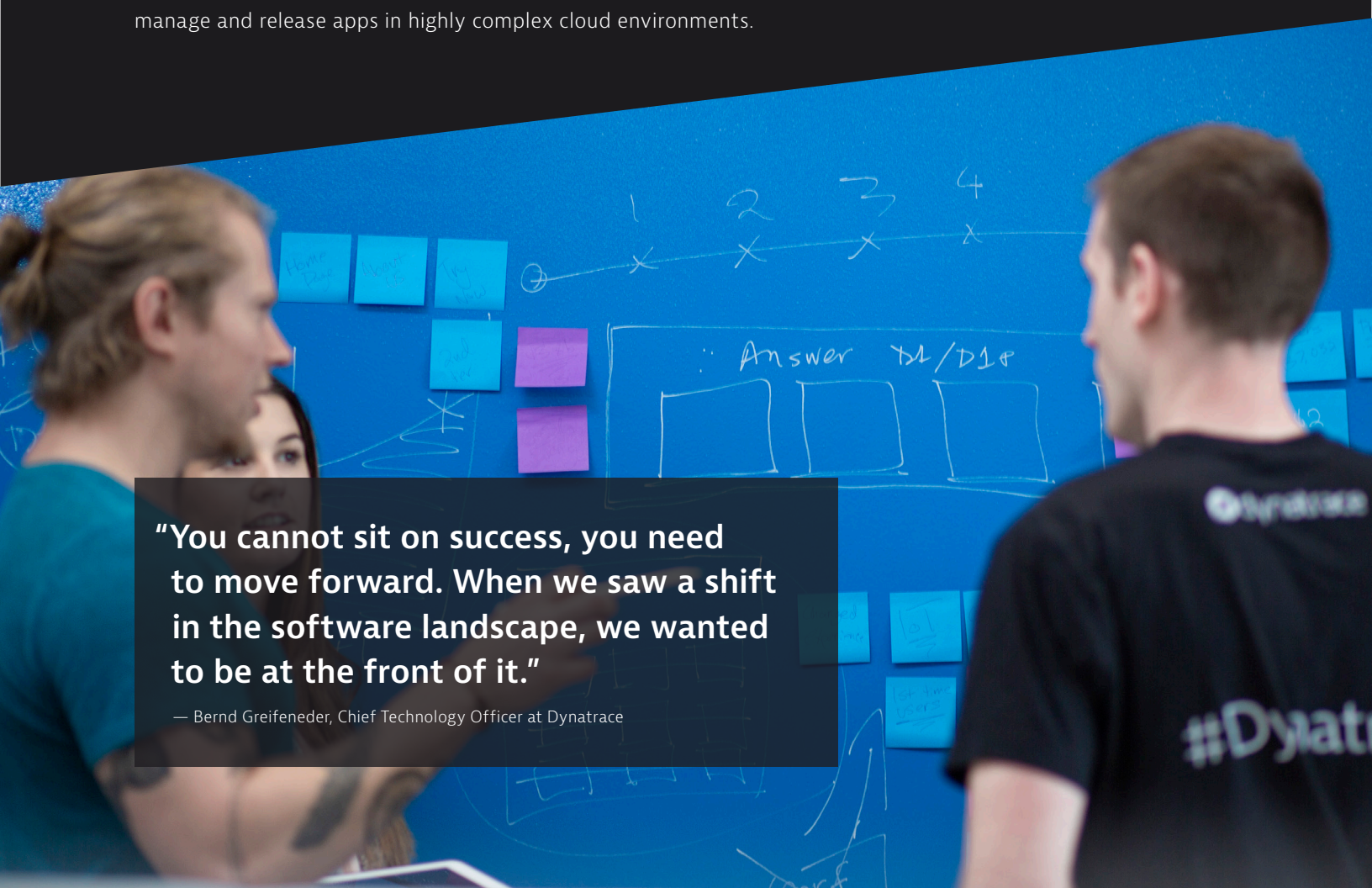
Overview

In today's digital world, almost every business is a software business and most organizations are looking for innovative ways of creating new products, or identifying new ways of operating, to be more competitive. This is the story of Dynatrace, a company that saw the digital shift early on and transitioned from delivering software through a traditional on-premise model to the successful hybrid-SaaS innovator it is today. The results have been exciting:

- A move from two releases per year to 26
- From 0 to over 5,000 daily deployments
- Today: 0 Ops resources & 7 R&D resources
- Named furthest for completeness of Vision and highest for ability to Execute in the [Gartner Magic Quadrant for Application Performance Monitoring](#)

Today these best practices and learning are the culmination of Dynatrace's Autonomous Cloud (AC). We use these, and share these with our customers, to continually automate the enterprise, innovate faster, and deliver better business ROI.

Read on to pick up tips on these capabilities, or if you are interested in discovering more innovative ways to manage and release apps in highly complex cloud environments.



"You cannot sit on success, you need to move forward. When we saw a shift in the software landscape, we wanted to be at the front of it."

— Bernd Greifeneder, Chief Technology Officer at Dynatrace

The Dynatrace transformation leap

Market disruptions can spark innovation and radical change. And this is what happened to vendors in Dynatrace's market — application performance management (APM).

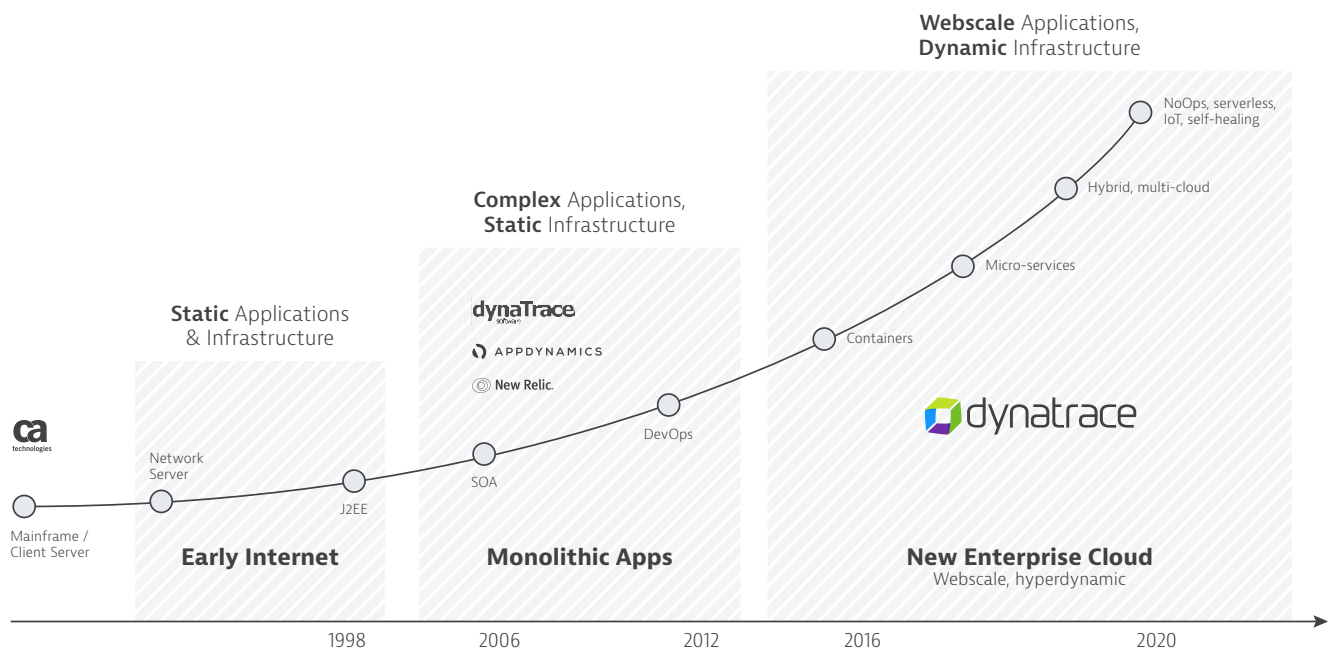
Although the company was disrupting and pioneering 2nd generation APM tools in the early 2000's, by 2011 it became apparent that cloud, microservices and containers were creating a better, faster way of developing and deploying software.

Dynatrace foresaw a need to transform their own development and product monitoring strategy in order to embrace these new environments and maintain and expand the company's market leadership.

At this start, Dynatrace was putting out new releases twice a year and customers installed them on-premise.

This was in line with the rest of the industry, but created significant problems:

- New features and innovation were not fully utilized — for most, Dynatrace learned, the health of a shaky environment took precedence over installing new releases.
- When problems would occur, Dynatrace engineers had to understand dependencies and configurations of a customer environment before they could resolve the defect.
- True quality of the code was not fully known until post-release (as scores of tickets came in) making Dynatrace engineers blind to the quality of code in production.
- Firefights consumed good resources that were needed for continuous improvement; a hot fix took an average of five working days and was ad hoc and reactive to the problems.



Traditional approaches and the old way — Dynatrace seeing the future of cloud native and a new way.



The vision

To adapt, Dynatrace took 40 of its best engineers off its existing market-leading product and empowered them to transform how the next generation of monitoring software would be designed, developed, tested, and built:



Move beyond traditional APM, to a hybrid SaaS and managed [All-in-one Software Intelligence Platform](#) that would auto-engineer entire complex cloud environments, from the smallest variation in any code, process, service or user experience.



Deployment would be a [single agent](#) architecture, which would automatically be deployed at scale, and would embrace modern architecture stacks — including microservices and containers — without any human intervention.



High-fidelity monitoring data would feed a deterministic AI-powered engine, [Davis](#), in real-time and return not only root cause, but contextual data for remediation and repair.

Because the product would be both the business, and servicing the business, *speed and constant innovation was a key goal*, and the entire initiative was supported by management from the top down.



Embracing disruption and sparking innovation — the new way

“Cloud native” is not just architecture; it also means bringing cloud-centric best practices to software and IT generally. With that in mind, here are a few of the key best practices the team aspired to:

1 Focus on innovation and the application, not the infrastructure. Ops resources were shifted to dev and using our own monitoring product strategically (putting the total performance environment into context for tighter collaboration), all developers were now responsible for their own code in production. This releases quality improvements faster and serves customers in near real-time.

2 Improve together, faster, by adding robust real-time automated feedback loops into the pipeline. Dynatrace embraced a [“shift-left” strategy](#) and built automated quality gates for feedback at each step in the dev cycle. Today, 93% of bugs are found proactively by Dynatrace early in the dev cycle, or proactively in production.

3 Shift-right and automate deployments, pushing code, along with tool chain and monitoring data, to alert for performance issues. This pushes higher quality code to production and deployment frequency is increased. Today 85% of Dynatrace’s customers are on Dynatrace code that is four weeks old or newer.

4 Look for opportunities to build “self-healing” processes and take common, time-consuming corrective actions and automate them. These kinds of non-human interaction maintain high performance and remove or reduces MTTR.

Dynatrace Pipeline UFO Operationalizes Performance Culture



The health of the pipeline is everyone’s common goal. The Dynatrace DevOps team has installed a floating reminder of this called a pipeline UFO. It resides above the teams working on code and different settings sound alarms when the quality of the release is in danger. Focusing on pipeline health like this has encouraged teams to police their own quality. The Dynatrace UFO is an open source project, and if you have a 3D printer, you can print one yourself.

For more information, see:


<https://github.com/Dynatrace/ufo>

The stats are a success story on their own

Increased agility	~200 code commits / day	340 stories per two-week sprint	2 to 26 releases per year
Increased quality	31,000 unit & integration tests / hour	68h UI tests per build	93% of bugs found by development
Increased stability	~1,000 global hybrid instances	99.99% global availability	~5,000 deployments per day

These actions, alongside others, allowed Dynatrace to achieve the goal of transforming into a DevOps, cloud-native / cloud-centric best practices-led software company. We continually improve our product and today offer what we call the Dynatrace Software Intelligence Platform, the industry's only AI-based all-in-one platform for enterprise cloud performance monitoring. And, in terms of continuous innovation, we enjoy being named furthest for Completeness of Vision and highest for Ability to Execute in the [Gartner Magic Quadrant for Application Performance Monitoring](#).

Our journey most recently took us to a pivotal moment in our company where we saw the work, the lessons learned, the development of best practices all [pay off!](#) We completed our initial public offering and listed our shares on the New York Stock Exchange on August 1, 2019.



"The reinvention of our platform and company to prepare for and benefit from the adoption of the enterprise cloud is delivering tremendous results."

— John Van Sichen, Chief Executive Officer at Dynatrace

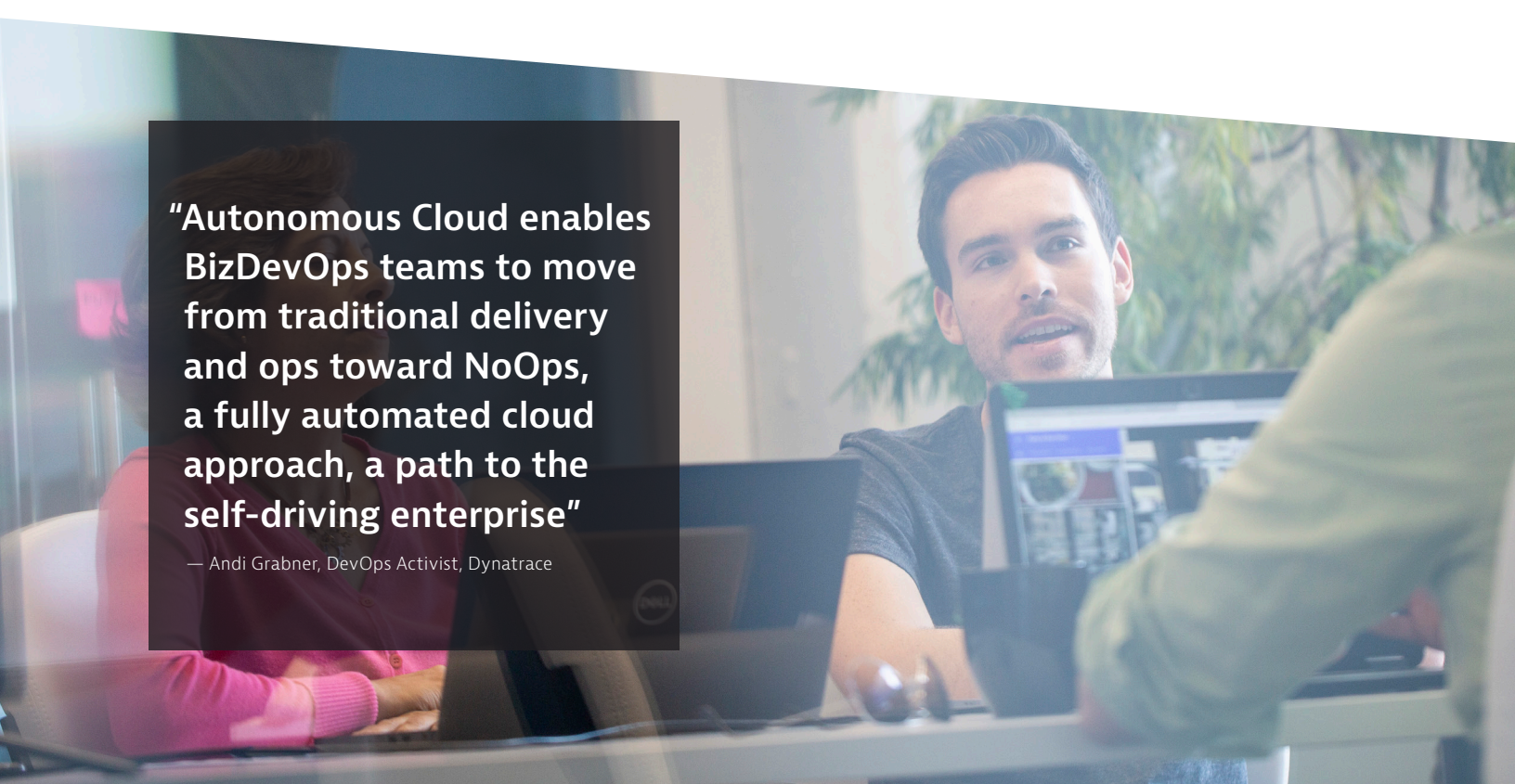
You can take the leap, too

Dynatrace did a [survey](#) including two important dimensions, MTTR (length of time to remediate and resolve an issue) and mean-time-to-innovation (the time it takes for fully built and tested functionality to push out to end-users in production). Our DevOps Advocate at Dynatrace, [Andi Grabner](#), says these in particular can tell a lot about the maturity of a company and their level of automation. The results surprisingly showed us that only about 5% of the people we surveyed are achieving top performance. 95% of companies today are not leveraging the full potential of cloud native technology.

	Median	95 th percentile
Code to production commit cycle time	2.5 weeks	2 days
Business impacting deployments	3 out of 10	1 out of 10
Per production deployment	3 hotfixes	0 hotfixes
MTTR (mean-time-to-repair)	4.8 days	~ 4 hours

We can help. Dynatrace has taken our best practices and learnings and is sharing these in what we are calling Autonomous Cloud (AC). We'll help you automate your dev, ops and business teams so that you can continuously improve digital experiences, break down silos, and take the steps towards autonomous cloud operations.

So, don't just use our product, use it strategically and follow our path, too. You'll be able to fully realize cloud native technology and gain a nice ROI on your own digital transformation, too.



“Autonomous Cloud enables BizDevOps teams to move from traditional delivery and ops toward NoOps, a fully automated cloud approach, a path to the self-driving enterprise”

— Andi Grabner, DevOps Activist, Dynatrace

Software Intelligence for the Enterprise Cloud

We hope this brief has inspired you to take the next step in your digital journey.

Dynatrace is committed to providing enterprises the data and intelligence they need to be successful with their enterprise cloud and digital transformation initiatives, no matter how complex.

If you are ready to learn more, please visit dynatrace.com/platform for assets, resources, and a free 15-day trial.

[Learn more](#)

Learn more at dynatrace.com

Dynatrace provides software intelligence to simplify enterprise cloud complexity and accelerate digital transformation. With AI and complete automation, our all-in-one platform provides answers, not just data, about the performance of applications, the underlying infrastructure and the experience of all users. That's why many of the world's largest enterprises, including 72 of the Fortune 100, trust Dynatrace to modernize and automate enterprise cloud operations, release better software faster, and deliver unrivaled digital experiences.

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