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CIO REPORT

Observability and security convergence

Enabling faster, more secure innovation in the cloud

Growing demand for faster, more secure software delivery

Organizations are facing increasing pressure from their customers and competitors to deliver faster, more secure innovation as the world relies more heavily on digital services. However, it has become a constant struggle for DevOps teams to keep up with this demand while maintaining the reliability and security of their software. The faster pace of innovation and growing complexity of modern digital services and the clouds that power them create greater opportunities for software defects and vulnerabilities to enter production.

Organizations now experience a greater sense of urgency to automate software delivery pipelines and enable greater collaboration between their DevOps and security teams. These capabilities are key to easing pressure on teams and ensuring they embrace shared goals to improve the success of transformation initiatives.

This report draws on the findings of a global survey commissioned by Dynatrace to examine the challenges organizations experience as they work toward these goals. Additionally, it highlights how organizations can overcome these challenges with a new, more unified, and intelligent approach to observability and security.

What's inside

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Digital transformation knows no bounds

Digital transformation has become ubiquitous as organizations respond to the growing demand for faster, better, more secure software innovation. The code powering this transformation underpins the digital services that define how users bank, shop, receive government services and communicate.

Organizations in every industry — from retailers and financial service providers to manufacturers and energy companies — are also transforming. Their goal is to drive efficiencies and deliver process innovations that keep them ahead of their competitors and help them to navigate the headwinds of macroeconomic uncertainty.
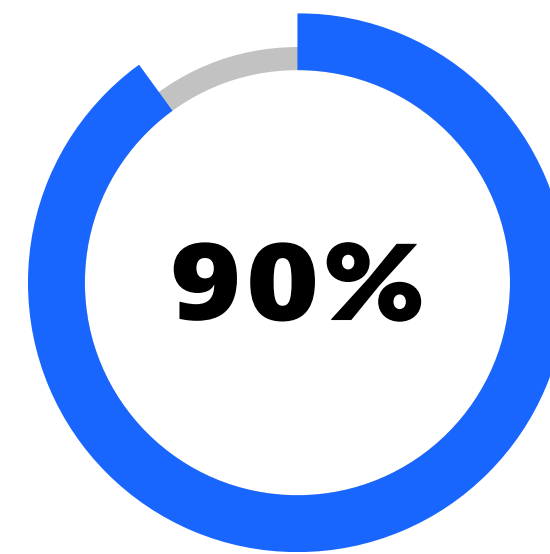
90% of organizations say digital transformation has accelerated in the past 12 months.
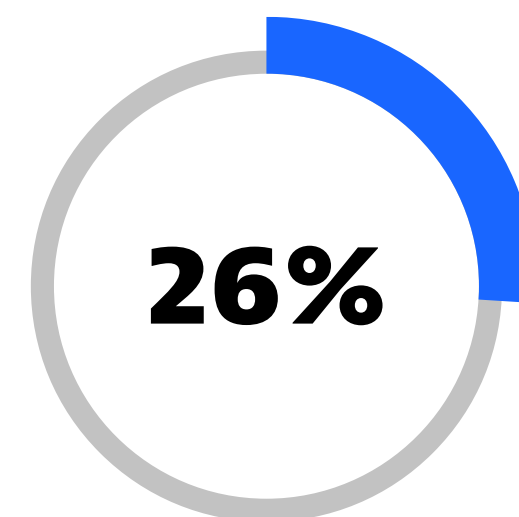
26% of organizations expect digital transformation will continue to speed up.

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The accelerating pace of software innovation

Frequency with which organizations deploy software updates into production:

78% deploy updates every 12 hours or less

54% deploy updates every 2 hours or less

20% deploy updates every minute or less

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Emphasis on fast software delivery creates tradeoffs between quality and security

As teams work to drive faster transformation, it's becoming more difficult to balance innovation with service reliability and security. The growing frequency of software updates, coupled with the increasing complexity of today's cloud-native architectures, makes it easier for defects and vulnerabilities to go undetected and enter production.

With multiple code deployments per day, there's simply not enough time for teams to test code as rigorously as they once did with monthly or even quarterly release cycles. This is creating a move toward practices such as DevSecOps, to empower DevOps and security teams to secure their code at the speed and scale demanded by rapid innovation — but these approaches are still in their infancy.

55%
of organizations admit they're **forced to make tradeoffs** among quality, security, and user experience to meet the need for rapid transformation.

41%
of CIOs say they must **sacrifice code quality and user experience** due to increasing pressure to meet the demand for faster innovation — an increase from 22% last year.

34%
of CIOs say they must **sacrifice code security** because they are under so much pressure to meet the demand for faster innovation.

28%
of CISOs **are confident that applications have been fully tested for vulnerabilities** before going live in production.

Source: Dynatrace 2022 CISO Report

34%
of organizations **have a mature DevSecOps culture.**

Source: Dynatrace 2022 CISO Report

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Automation is key to software delivery

With increasing business demands and limited resources at their disposal, DevOps teams need to find more effective ways to innovate faster without sacrificing software quality and security. Manual approaches simply aren't scalable and generate human error. Teams can't afford to waste time chasing problems and troubleshooting issues. Rather, they need to focus on bringing high-quality, secure innovation to users as quickly and effectively as possible, through practices such as DevSecOps.

These needs are driving increased investment in automation of the entire software delivery pipeline to reduce wasted effort and free teams to focus on tasks that create real business value.

To enable this, DevOps and security teams need to create a feedback loop from runtime environments so the artificial intelligence (AI) solutions they adopt can use this context to calculate risk and impact. However, for organizations to accept these more automated approaches, these teams also need to be able to trust that the AI is reaching the right conclusions and making the best decisions.
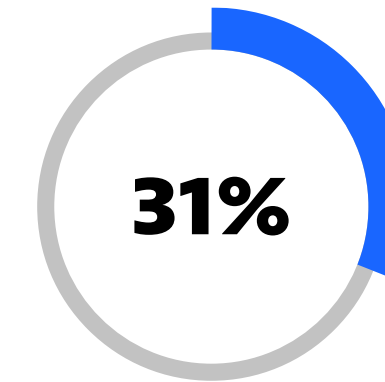
31% of DevOps teams' time is spent on manual tasks such as detecting code quality issues and vulnerabilities, affecting time spent on innovation.

$9.1 million is the average annual organizational spend on automation across development, security, and operations.
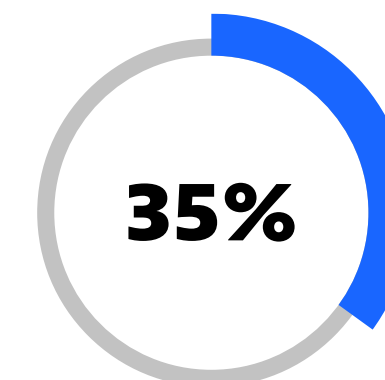
35% is the average increase organizations expect in their annual investment in DevSecOps automation by 2024.

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Organizations are increasing investment in automation

Average annual organizational spend on automation of development, security, and operations processes ($)

| | 2022 | 2024 (expected) |

Over 20,000: $17.5MM (2022), $24.15MM (2024 expected) +38%

Between 10,000 and 20,000: $5.9MM (2022), $8.2MM (2024 expected) +38%

Between 5,000 and 10,000: $4.3MM (2022), $5.7MM (2024 expected) +35%

Between 3,000 and 5,000: $2.5MM (2022), $3.1MM (2024 expected) +25%

Between 1,000 and 3,000: $3.4MM (2022), $4.4MM (2024 expected) +28%

Organization size (employees)
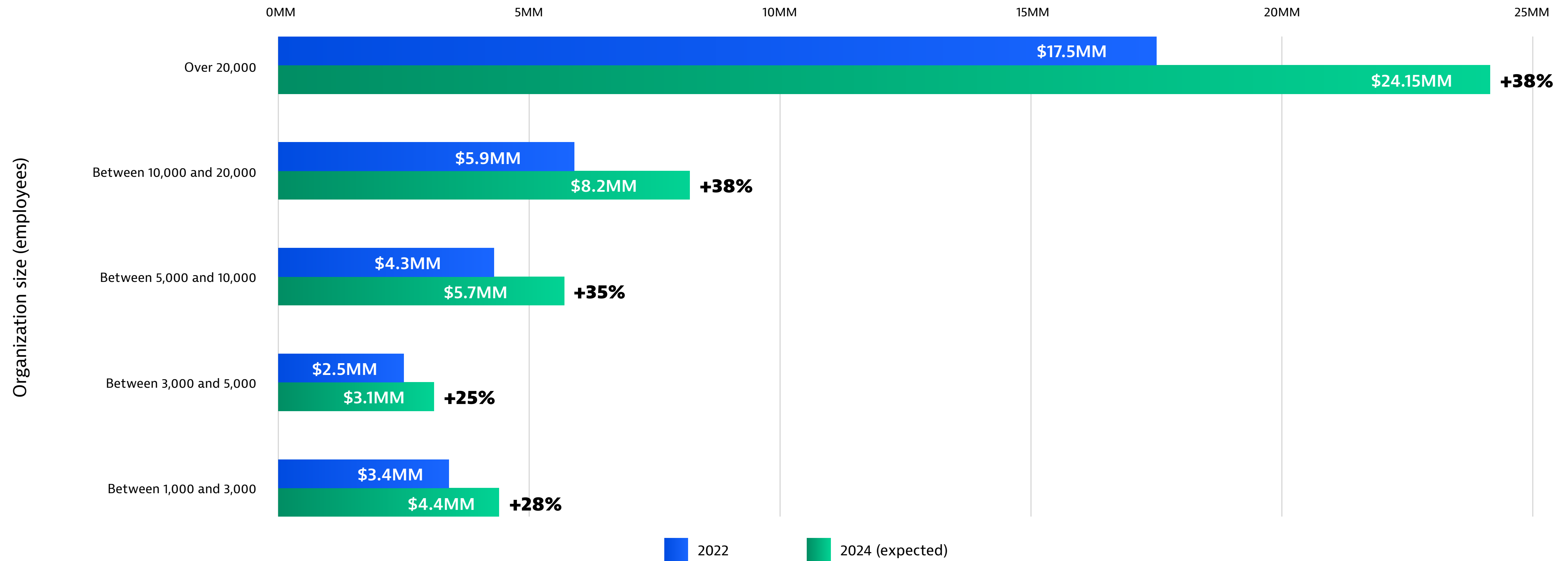
70% **of CIOs**
say they need to
improve their trust in
the accuracy of AI's
decisions before they
can automate more of the
CI/CD pipeline and drive
application self-healing.

Top areas of investment in automation to boost **software quality** include
the following:

54%
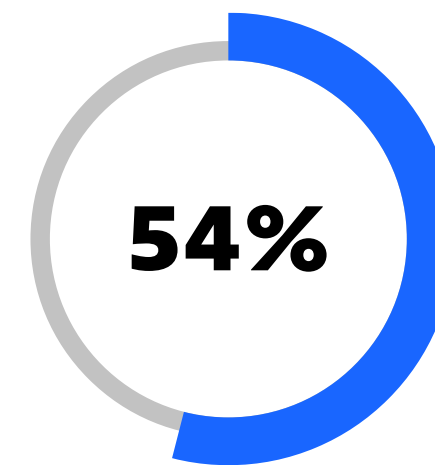
Continuously testing software quality
in production (e.g., shift-right)

35%
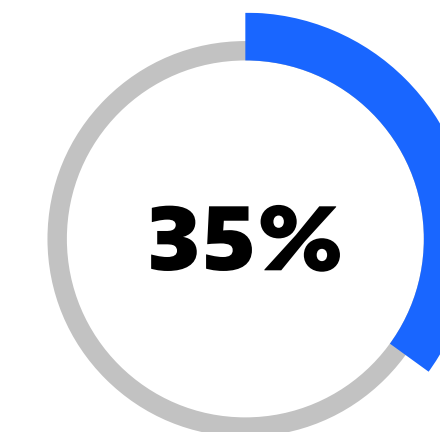
Automating release validation to stop defects
from entering production

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Top areas of investment in automation to boost **software security** include the following:

49% Continuously testing software security in production (shift-right)

41% Automatic detection and blocking of zero-day and unknown vulnerabilities

31% Continuously testing software security earlier in the development cycle (shift-left)
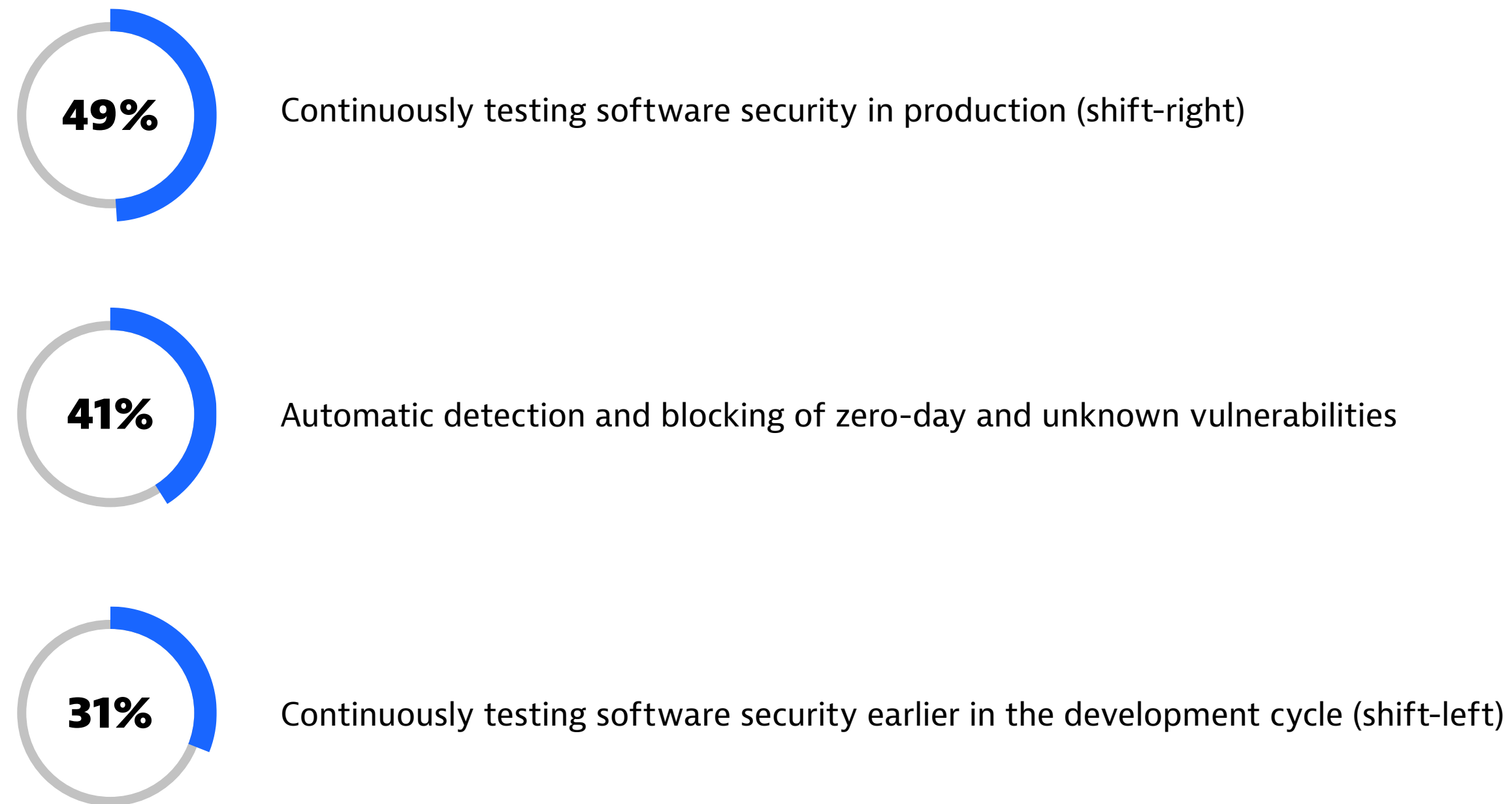
Just 25% of CIOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation — compared to 63%* of CISOs indicating a need for greater alignment between the two.

*Dynatrace 2022 CISO Report

Collaboration drives successful transformation

Digital transformation is a team effort. As a result, IT leaders increasingly want to adopt a DevSecOps culture, to bring DevOps and security teams together to accelerate innovation. However, these teams are often skeptical about the benefits of new approaches, preferring to remain entrenched in their traditional, often siloed, ways of working.

As they often rely on different data streams to get their jobs done, this generates siloed tool sets, creating multiple versions of the truth. This hinders their ability to collaborate to resolve problems or understand the wider impact of individual contributions to transformation projects. Teams become contentious and often dysfunctional, resorting to finger-pointing and requiring "war room" team meetings to solve problems when they arise, which results in lost time and delayed innovation.

94% of CIOs say **extending a DevSecOps culture to more teams and applications is key** to accelerating digital transformation and driving faster, more secure software releases.

27% of CIOs say their teams **fully adhere to a DevSecOps culture.**

CIOs list the following as the biggest barriers to DevSecOps:
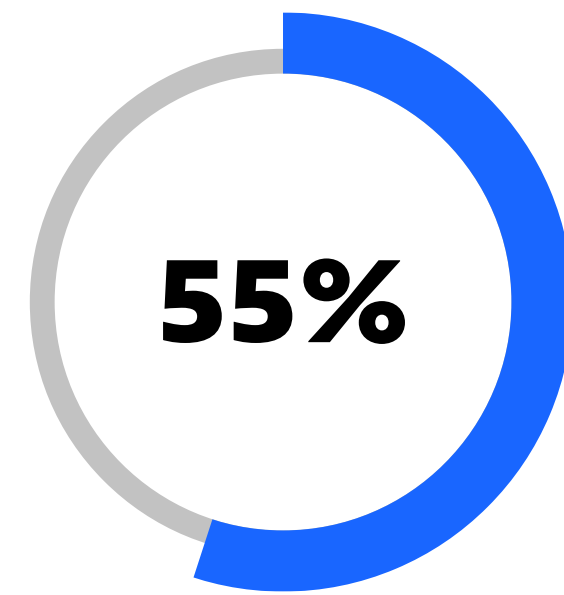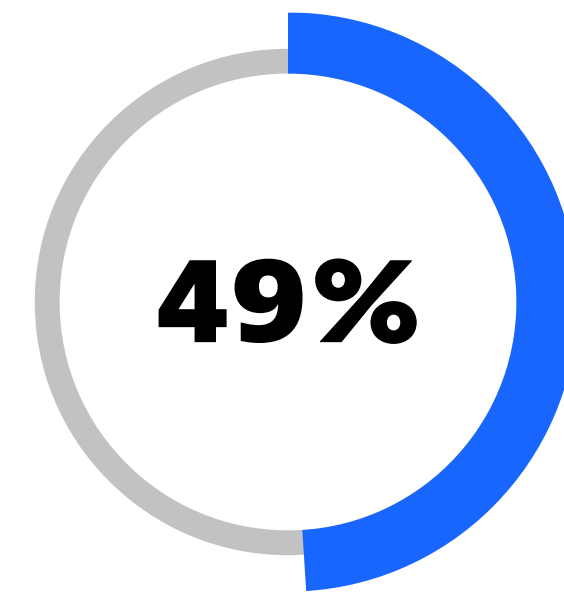
55%

Security teams don't trust
developers and won't
embrace DevSecOps

49%

Developers perceive
security teams as a blocker
to innovation

36%
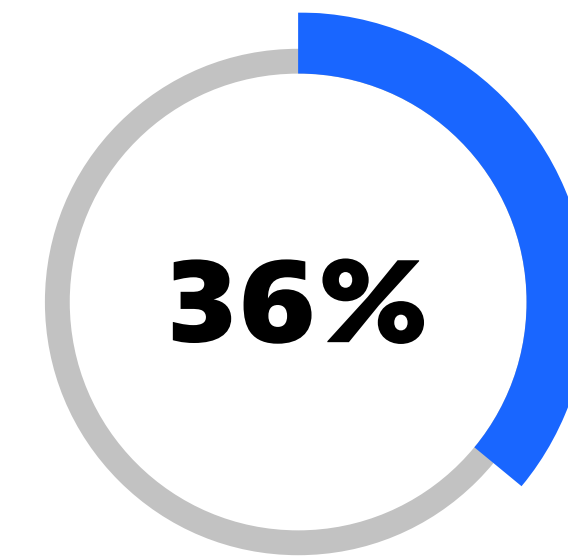
The siloed culture between
DevOps and security teams leads
to a resistance to collaboration

Observability and security are converging

Organizations recognize they need a new approach to software delivery to keep up with the demand for faster, better, and more secure digital experiences. They can't afford to make tradeoffs among innovation, security, and reliability.

To succeed, organizations need to facilitate closer collaboration between DevOps and security teams and increase their confidence in their ability to innovate quickly without sacrificing security. Therefore, these teams need solutions that deliver precise and trustworthy answers in real time. This can best be achieved by converging observability and security on a single, AI-powered platform that breaks down silos between teams and brings together all the data they need to accelerate innovation, deliver frictionless user experiences, and maintain secure applications.
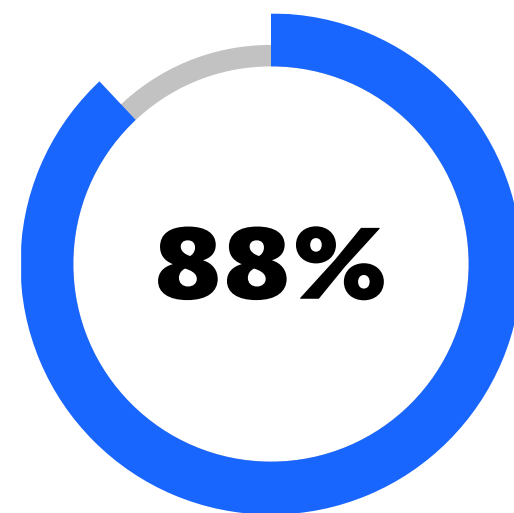
88% of CIOs say **the convergence of observability and security practices will be critical** to building a DevSecOps culture.
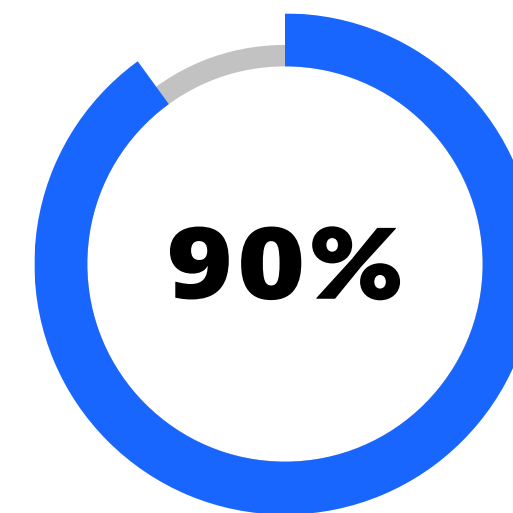
90% of IT leaders say **increasing the use of AIOps within DevOps and security projects will be key** to scaling up DevSecOps.

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The most important factors to delivering software that works perfectly

57%

47%

35%

31%

Ability to **capture all metrics, logs, and traces** for on-demand querying and analytics

Ability to **access real-time insights from observability data,** so it is more actionable in the quality evaluation and delivery process

Eliminate the need for teams to manually analyze or query observability data for answers, so they can focus on innovation

Ability to **conduct real-time analytics on all observability data** in full context, so teams can automate CI/CD pipelines

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The Dynatrace difference

The world needs software to work perfectly. So, Dynatrace® combines observability, AIOps, and application security in one unified platform to give teams the precise answers and intelligent automation they need to deliver exceptional digital experiences at scale. Our comprehensive approach to observability — which we call Cloud done right — empowers organizations across the globe to simplify cloud complexity, speed innovation, and do more with less in the modern cloud.

Methodology

This report is based on a global survey of 1,303 CIOs and senior IT practitioners involved in DevOps management in large enterprises with more than 1,000 employees, conducted by Coleman Parkes and commissioned by Dynatrace.

The sample included 200 respondents in the U.S., 100 in Latin America, 603 in Europe, 150 in the Middle East, and 250 in Asia Pacific. For a detailed breakdown of findings by region, refer to the global data summary appendix.

Global data summary: U.S. and Latin America

Sample includes 200 respondents from the U.S. and 50 respondents from each of Brazil and Mexico.

Chapter 1: Digital transformation knows no bounds

	U.S.	Brazil	Mexico
Organizations say digital transformation has accelerated in the past 12 months	89%	100%	92%
Organizations say digital transformation will continue to speed up	26%	22%	78%
Organizations say digital transformation is stabilizing, or happening at the same pace as last year	74%	78%	82%

Global data summary: U.S. and Latin America

Chapter 1: Digital transformation knows no bounds

Average speed at which organizations deploy software updates

	U.S.	Brazil	Mexico
Every minute or less	30%	2%	2%
Every two hours or less	64%	12%	20%
Every 12 hours or less	89%	84%	90%

Global data summary: U.S. and Latin America

Chapter 2: Emphasis on fast software delivery creates tradeoffs with quality and security

	U.S.	Brazil	Mexico
Organizations admit they're forced to make tradeoffs among quality, security, and user experience to meet the need for rapid transformation	64%	44%	58%
CIOs say they must sacrifice code quality and user experience due to increasing pressure to meet the demand for faster innovation	42%	20%	28%
Increase from last year	26%	-6%	-2%
CIOs say they must sacrifice code security because they are under so much pressure to meet the demand for faster innovation	28%	4%	24%
CISOs are confident that applications have been fully tested for vulnerabilities before going live in production	28%	16%	14%
Organizations say they have a mature DevSecOps culture	32%	54%	28%

Global data summary: U.S. and Latin America

Chapter 3: Automation is key to software delivery

	U.S.	Brazil	Mexico
DevOps teams' time is spent on manual tasks such as detecting code quality issues and vulnerabilities, affecting time spent on innovation	29%	31%	31%
Increase from last year	2%	1%	1%
Average annual organizational spend on automation across development, security, and operations	$18.2 million	$2.7 million	$2 million
The average increase organizations expect in their annual investment in DevSecOps automation by 2024	34%	33%	31%
CIOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	31%	30%	22%
CISOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	68%	82%	80%
CIOs say they need to improve their trust in the accuracy of AI's decisions before they can automate more of the CI/CD pipeline and drive application self-healing.	76%	88%	92%%

Global data summary: U.S. and Latin America

Chapter 3: Automation is key to software delivery

Top areas of investment in automation to boost software quality:

	U.S.	Brazil	Mexico
Continuously testing software quality in production	51%	74%	72%
Automating release validation to stop defects entering production	36%	44%	50%
	14%		

Top areas of investment in automation to boost software security:

	U.S.	Brazil	Mexico
Continuously testing software security in production (shift-right)	60%	72%	78%
Automatic detection and blocking of zero-day and unknown vulnerabilities	33%	38%	48%
Continuously testing software security earlier in the development cycle (shift-left)	30%	22%	14%

Global data summary: U.S. and Latin America

Chapter 4: Collaboration drives successful transformation

	U.S.	Brazil	Mexico
CIOs say extending a DevSecOps culture to more teams and applications is key to accelerating digital transformation and driving faster, more secure software releases.	92%	98%	100%
CIOs say their teams fully adhere to a DevSecOps culture.	33%	24%	20%

Global data summary: U.S. and Latin America

Chapter 4: Collaboration drives successful transformation

The biggest barriers for CIOs embracing DevSecOps

	U.S.	Brazil	Mexico
Security teams don't trust developers and won't embrace DevSecOps	54%	48%	58%
Developers perceive security teams as a blocker to innovation	62%	78%	66%
The siloed culture between DevOps and security teams leads to a resistance to collaboration	32%	14%	10%

Global data summary: U.S. and Latin America

Chapter 5: Observability and security are converging

The most important factors in organizations' ability to deliver software that works perfectly

	U.S.	Brazil	Mexico
Ability to capture all metrics, logs, and traces for on-demand querying and analytics	70%	62%	54%
Ability to access real-time insights from observability data, so it is more actionable in the quality evaluation and delivery process	42%	54%	42%
Eliminate the need for teams to manually analyze or query observability data for answers, so they can focus on innovation	39%	32%	52%
Ability to conduct real-time analytics on all observability data in full context, so teams can automate CI/CD pipelines	32%	38%	46%

Global data summary: U.S. and Latin America

Chapter 5: Observability and security are converging

	U.S.	Brazil	Mexico
CIOs say the convergence of observability and security practices will be critical to building a DevSecOps culture	89%	82%	86%
CIOs say increasing the use of AIOps within DevOps and security projects will be key to scaling up DevSecOps	93%	98%	80%

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Global data summary: Europe

Sample includes 100 respondents from each of the U.K., France, Germany, Spain, and Italy, 28 respondents from Denmark and 25 from each of Sweden, Finland, and Norway.

Chapter 1: Digital transformation knows no bounds

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Organizations say digital transformation has accelerated in the past 12 months	93%	100%	97%	99%	98%	96%	89%	96%	92%
Organizations say digital transformation will continue to speed up	31%	34%	35%	22%	23%	28%	39%	24%	20%
Organizations say digital transformation is stabilizing, or happening at the same pace as last year	69%	66%	64%	78%	77%	72%	61%	76%	80%

Global data summary: Europe

Chapter 1: Digital transformation knows no bounds

Average speed at which organizations deploy software updates

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Every minute or less	21%	28%	23%	30%	25%	4%	40%	4%	32%
Every two hours or less	62%	47%	45%	44%	43%	16%	48%	12%	48%
Every 12 hours or less	82%	66%	66%	73%	56%	28%	48%	24%	60%

Global data summary: Europe

Chapter 2: Emphasis on fast software delivery creates tradeoffs with quality and security

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Organizations admit they're forced to make tradeoffs among quality, security, and user experience to meet the need for rapid transformation	50%	38%	43%	51%	48%	48%	64%	28%	52%
CIOs say they must sacrifice code quality and user experience due to increasing pressure to meet the demand for faster innovation	27%	37%	34%	31%	39%	36%	64%	12%	40%
Increase from last year	1%	15%	19%	1%	14%	20%	44%	-8%	24%
CIOs say they must sacrifice code security because they are under so much pressure to meet the demand for faster innovation	37%	25%	26%	38%	25%	24%	21%	24%	40%
CISOs are confident that applications have been fully tested for vulnerabilities before going live in production	36%	4%	22%	31%	40%	21%	-	41%	9%
Organizations say they have a mature DevSecOps culture	35%	32%	31%	41%	45%	36%	-	24%	42%

Global data summary: Europe

Chapter 3: Automation is key to software delivery

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
DevOps teams' time is spent on manual tasks such as detecting code quality issues and vulnerabilities, affecting time spent on innovation	30%	29%	31%	27%	29%	32%	32%	29%	32%
Increase from last year	0%	-4%	0%	0%	0%	5%	9%	-2%	-1%
Average annual organizational spend on automation across development, security, and operations	$8.4 million	$6.9 million	$6 million	$4 million	$3.5 million	$8.9 million	$6.2 million	$2.2 million	$14.3 million
The average increase organizations expect in their annual investment in DevSecOps automation by 2024	36%	31%	30%	35%	34%	18%	33%	19%	29%
CIOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	27%	16%	17%	15%	11%	28%	29%	40%	20%
CISOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	42%	81%	64%	49%	52%	76%	-	74%	58%
CIOs say they need to improve their trust in the accuracy of AI's decisions before they can automate more of the CI/CD pipeline and drive application self-healing.	70%	45%	55%	64%	41%	32%	46%	32%	28%

Global data summary: Europe

Chapter 3: Automation is key to software delivery

Top areas of investment in automation to boost software quality:

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Continuously testing software quality in production	62%	47%	45%	54%	45%	40%	43%	48%	56%
Automating release validation to stop defects entering production	35%	24%	21%	25%	23%	44%	50%	24%	28%

Top areas of investment in automation to boost software security:

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Continuously testing software security in production (shift-right)	55%	30%	32%	34%	32%	40%	39%	36%	12%
Automatic detection and blocking of zero-day and unknown vulnerabilities	37%	40%	33%	44%	30%	36%	43%	16%	36%
Continuously testing software security earlier in the development cycle (shift-left)	26%	28%	41%	34%	36%	28%	46%	32%	48%

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Global data summary: Europe

Chapter 4: Collaboration drives successful transformation

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
CIOs say extending a DevSecOps culture to more teams and applications is key to accelerating digital transformation and driving faster, more secure software releases.	93%	98%	98%	99%	99%	96%	100%	96%	100%
CIOs say their teams fully adhere to a DevSecOps culture.	31%	38%	30%	26%	19%	36%	43%	24%	40%

Global data summary: Europe

Chapter 4: Collaboration drives successful transformation

The biggest barriers for CIOs embracing DevSecOps

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Security teams don't trust developers and won't embrace DevSecOps	53%	45%	45%	48%	59%	36%	29%	36%	20%
Developers perceive security teams as a blocker to innovation	55%	21%	26%	41%	26%	24%	25%	16%	32%
The siloed culture between DevOps and security teams leads to a resistance to collaboration	30%	37%	46%	33%	26%	52%	57%	56%	48%

Global data summary: Europe

Chapter 5: Observability and security are converging

The most important factors in organizations' ability to deliver software that works perfectly

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
Ability to capture all metrics, logs, and traces for on-demand querying and analytics	51%	45%	38%	51%	51%	48%	43%	44%	48%
Ability to access real-time insights from observability data, so it is more actionable in the quality evaluation and delivery process	50%	39%	49%	42%	39%	44%	50%	28%	44%
Eliminate the need for teams to manually analyze or query observability data for answers, so they can focus on innovation	39%	24%	27%	25%	24%	28%	14%	44%	32%
Ability to conduct real-time analytics on all observability data in full context, so teams can automate CI/CD pipelines	34%	23%	16%	22%	15%	44%	46%	28%	20%

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Global data summary: Europe

Chapter 5: Observability and security are converging

	U.K.	France	Germany	Italy	Spain	Sweden	Denmark	Finland	Norway
CIOs say the convergence of observability and security practices will be critical to building a DevSecOps culture	93%	83%	80%	76%	86%	96%	89%	92%	96%
CIOs say increasing the use of AIOps within DevOps and security projects will be key to scaling up DevSecOps	96%	91%	79%	83%	89%	96%	93%	76%	96%

Global data summary: Middle East

Sample includes 31 respondents from Qatar, 30 respondents the UAE and Saudi Arabia, 25 from Kuwait, 20 from Egypt and 15 from Bahrain.

Chapter 1: Digital transformation knows no bounds

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
Organizations say digital transformation has accelerated in the past 12 months	80%	75%	94%	88%	70%	86%
Organizations say digital transformation will continue to speed up	17%	30%	23%	20%	30%	13%
Organizations say digital transformation is stabilizing, or happening at the same pace as last year	80%	70%	77%	80%	67%	86%

Global data summary: Middle East

Chapter 1: Digital transformation knows no bounds

Average speed at which organizations deploy software updates

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
Every minute or less	3%	10%	6%	16%	23%	0%
Every two hours or less	67%	65%	54%	48%	70%	61%
Every 12 hours or less	87%	100%	95%	100%	80%	100%

Global data summary: Middle East

Chapter 2: Emphasis on fast software delivery creates tradeoffs with quality and security

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
Organizations admit they're forced to make tradeoffs among quality, security, and user experience to meet the need for rapid transformation	87%	65%	42%	56%	57%	60%
CIOs say they must sacrifice code quality and user experience due to increasing pressure to meet the demand for faster innovation	80%	60%	35%	28%	23%	53%
Increase from last year	58%	35%	0%	8%	-7%	23%
CIOs say they must sacrifice code security because they are under so much pressure to meet the demand for faster innovation	63%	60%	16%	36%	20%	60%
CISOs are confident that applications have been fully tested for vulnerabilities before going live in production	28%	16%	24%	-	36%	-
Organizations say they have a mature DevSecOps culture	60%	53%	23%	60%	-	-

Global data summary: Middle East

Chapter 3: Automation is key to software delivery

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
DevOps teams' time is spent on manual tasks such as detecting code quality issues and vulnerabilities, affecting time spent on innovation	33%	32%	31%	31%	30%	37%
Increase from last year	8%	4%	8%	3%	10%	9%
Average annual organizational spend on automation across development, security, and operations	$6.7 million	$1.7 million	$2.9 million	$0.6 million	$2.2 million	$21 million
The average increase organizations expect in their annual investment in DevSecOps automation by 2024	45%	40%	32%	32%	26%	43%
CIOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	23%	25%	16%	24%	50%	33%
CISOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	60%	44%	60%	-	52%	-
CIOs say they need to improve their trust in the accuracy of AI's decisions before they can automate more of the CI/CD pipeline and drive application self-healing.	93%	100%	94%	92%	80%	100%

Global data summary: Middle East

Chapter 3: Automation is key to software delivery

Top areas of investment in automation to boost software quality:

	UAE	Egypt	Qatar	Kuwait	Saudia Arabia	Bahrain
Continuously testing software quality in production	67%	60%	74%	64%	37%	53%
Automating release validation to stop defects entering production	20%	60%	35%	52%	37%	40%

Top areas of investment in automation to boost software security:

	UAE	Egypt	Qatar	Kuwait	Saudia Arabia	Bahrain
Continuously testing software security in production (shift-right)	60%	60%	74%	92%	53%	73%
Automatic detection and blocking of zero-day and unknown vulnerabilities	63%	75%	52%	48%	20%	47%
Continuously testing software security earlier in the development cycle (shift-left)	33%	35%	19%	8%	30%	27%

Global data summary: Middle East

Chapter 4: Collaboration drives successful transformation

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
CIOs say extending a DevSecOps culture to more teams and applications is key to accelerating digital transformation and driving faster, more secure software releases.	80%	90%	87%	88%	67%	93%
CIOs say their teams fully adhere to a DevSecOps culture.	13%	35%	16%	28%	23%	13%

Global data summary: Middle East

Chapter 4: Collaboration drives successful transformation

The biggest barriers for CIOs embracing DevSecOps

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
Security teams don't trust developers and won't embrace DevSecOps	70%	85%	65%	76%	53%	73%
Developers perceive security teams as a blocker to innovation	60%	65%	81%	72%	60%	87%
The siloed culture between DevOps and security teams leads to a resistance to collaboration	47%	35%	23%	20%	40%	13%

Global data summary: Middle East

Chapter 5: Observability and security are converging

The most important factors in organizations' ability to deliver software that works perfectly

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
Ability to capture all metrics, logs, and traces for on-demand querying and analytics	67%	85%	55%	52%	73%	60%
Ability to access real-time insights from observability data, so it is more actionable in the quality evaluation and delivery process	73%	50%	35%	40%	7%	40%
Eliminate the need for teams to manually analyze or query observability data for answers, so they can focus on innovation	37%	35%	65%	52%	77%	73%
Ability to conduct real-time analytics on all observability data in full context, so teams can automate CI/CD pipelines	30%	45%	39%	48%	40%	27%

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Global data summary: Middle East

Chapter 5: Observability and security are converging

	UAE	Egypt	Qatar	Kuwait	Saudi Arabia	Bahrain
CIOs say the convergence of observability and security practices will be critical to building a DevSecOps culture	97%	95%	97%	96%	93%	93%
CIOs say increasing the use of AIOps within DevOps and security projects will be key to scaling up DevSecOps	90%	100%	97%	76%	90%	100%

Global data summary: Asia Pacific

Sample includes 100 respondents from Australia and 50 respondents from each of India, Singapore, and Malaysia.

Chapter 1: Digital transformation knows no bounds

	Australia	Singapore	India	Malaysia
Organizations say digital transformation has accelerated in the past 12 months	78%	78%	72%	82%
Organizations say digital transformation will continue to speed up	23%	24%	30%	26%
Organizations say digital transformation is stabilizing, or happening at the same pace as last year	73%	76%	64%	72%

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Global data summary: Asia Pacific

Chapter 1: Digital transformation knows no bounds

Average speed at which organizations deploy software updates

	Australia	Singapore	India	Malaysia
Every minute or less	8%	10%	18%	12%
Every two hours or less	66%	72%	76%	84%
Every 12 hours or less	91%	90%	86%	88%

Global data summary: Asia Pacific

Chapter 2: Emphasis on fast software delivery creates tradeoffs with quality and security

	Australia	Singapore	India	Malaysia
Organizations admit they're forced to make tradeoffs among quality, security, and user experience to meet the need for rapid transformation	72%	70%	52%	66%
CIOs say they must sacrifice code quality and user experience due to increasing pressure to meet the demand for faster innovation	59%	60%	50%	70%
Increase from last year	37%	40%	34%	56%
CIOs say they must sacrifice code security because they are under so much pressure to meet the demand for faster innovation	60%	48%	58%	58%
CISOs are confident that applications have been fully tested for vulnerabilities before going live in production	40%	22%	55%	18%
Organizations say they have a mature DevSecOps culture	38%	37%	18%	18%

Global data summary: Asia Pacific

Chapter 3: Automation is key to software delivery

	Australia	Singapore	India	Malaysia
DevOps teams' time is spent on manual tasks such as detecting code quality issues and vulnerabilities, affecting time spent on innovation	33%	30%	35%	35%
Increase from last year	12%	8%	12%	12%
Average annual organizational spend on automation across development, security, and operations	$13.1 million	$10 million	$15 million	$19.8 million
The average increase organizations expect in their annual investment in DevSecOps automation by 2024	41%	39%	45%	42%
CIOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	31%	34%	34%	40%
CISOs say AI-driven prioritization of application vulnerabilities is a priority area for investment in automation	65%	62%	66%	64%
CIOs say they need to improve their trust in the accuracy of AI's decisions before they can automate more of the CI/CD pipeline and drive application self-healing.	91%	88%	88%	94%

Global data summary: Asia Pacific

Chapter 3: Automation is key to software delivery

Top areas of investment in automation to boost software quality:

	Australia	Singapore	India	Malaysia
Continuously testing software quality in production	47%	58%	58%	56%
Automating release validation to stop defects entering production	51%	44%	42%	44%

Top areas of investment in automation to boost software security:

	Australia	Singapore	India	Malaysia
Continuously testing software security in production (shift-right)	51%	56%	44%	58%
Automatic detection and blocking of zero-day and unknown vulnerabilities	56%	40%	52%	52%
Continuously testing software security earlier in the development cycle (shift-left)	32%	28%	40%	34%

Global data summary: Asia Pacific

Chapter 4: Collaboration drives successful transformation

	Australia	Singapore	India	Malaysia
CIOs say extending a DevSecOps culture to more teams and applications is key to accelerating digital transformation and driving faster, more secure software releases.	94%	92%	88%	84%
CIOs say their teams fully adhere to a DevSecOps culture.	20%	22%	24%	16%

Global data summary: Asia Pacific

Chapter 4: Collaboration drives successful transformation

The biggest barriers for CIOs embracing DevSecOps

	Australia	Singapore	India	Malaysia
Security teams don't trust developers and won't embrace DevSecOps	61%	74%	72%	74%
Developers perceive security teams as a blocker to innovation	56%	62%	54%	60%
The siloed culture between DevOps and security teams leads to a resistance to collaboration	49%	38%	48%	42%

Global data summary: Asia Pacific

Chapter 5: Observability and security are converging

The most important factors in organizations' ability to deliver software that works perfectly

	Australia	Singapore	India	Malaysia
Ability to capture all metrics, logs, and traces for on-demand querying and analytics	71%	68%	62%	64%
Ability to access real-time insights from observability data, so it is more actionable in the quality evaluation and delivery process	65%	62%	70%	52%
Eliminate the need for teams to manually analyze or query observability data for answers, so they can focus on innovation	30%	40%	30%	42%
Ability to conduct real-time analytics on all observability data in full context, so teams can automate CI/CD pipelines	36%	24%	48%	46%

Global data summary: Asia Pacific

Chapter 5: Observability and security are converging

	Australia	Singapore	India	Malaysia
CIOs say the convergence of observability and security practices will be critical to building a DevSecOps culture	87%	90%	90%	98%
CIOs say increasing the use of AIOps within DevOps and security projects will be key to scaling up DevSecOps	94%	88%	88%	94%

Automatic and intelligent observability for hybrid multiclouds

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Dynatrace (NYSE: DT) exists to make the world's software work perfectly. Our unified software intelligence platform combines broad and deep observability and continuous runtime application security with the most advanced AIOps to provide answers and intelligent automation from data at enormous scale. This enables innovators to modernize and automate cloud operations, deliver software faster and more securely, and ensure flawless digital experiences. That's why the world's largest organizations trust the Dynatrace® platform to accelerate digital transformation.

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