The State of Salesforce DevOps Report

How the Leading Companies Operate Salesforce at Scale

2019 Annual Report
The first annual report on how the most sophisticated companies operate Salesforce at scale using DevOps best practices. Based on thousands of data points collected from over 300 global Salesforce customers using DevOps to accelerate and improve the speed and quality of their implementations, this report was conducted by Beagle Research, an independent research company founded in 2004, specialized in technology advisory, research and publishing. Thank you to the Tableau team whose Analytics we used to analyze the data. Their intuitive interface and powerful visualizations provided many of the important cross referenced insights in the report.
75% of CIOs say IT Departments are experiencing the biggest historical shift of their role.
Executive Summary

Every year, thousands of companies spend millions of dollars on Salesforce as the foundation of their digital transformation strategy. With such a large investment, you want to ensure you are getting the maximum return. Our research shows that in order to maximize your Salesforce investment, teams must align it with a DevOps strategy that will unify the entire team, optimize the delivery pipeline, and establish the highest levels of security and governance.

The Copado State of Salesforce DevOps Report is the first report of its kind focused solely on the emerging benchmarks and DevOps best practices within the Salesforce ecosystem. Our goal was to identify and understand the capabilities and practices that lead to excellence in innovation delivery and drive real business results among the leading Salesforce customers.

This research is inspired by the Accelerate State of DevOps Report. We would like to acknowledge and thank them for their inspiration and for 6 years of research and data-driven insights into the impact of DevOps. They’ve clarified how to measure the most effective and efficient ways to develop and delivery technology for the entire industry.

The survey was conducted by Beagle Research Group who demonstrated the deepest understanding of the Salesforce ecosystem and ensured a broad and deep data set of Salesforce customer executives.

Why Salesforce DevOps?

Which of these areas do you believe you could improve for your organization if your team was able to prioritize improvements to your Salesforce development and release process over the next 3-5 years?

- Productivity: 58%
- Security: 37%
- Innovation: 36%
- Speed to market: 33%
- Costs: 33%
- Customer Relevance: 28%
- Release quality: 26%
- Employee satisfaction: 23%
- Revenue: 19%
- Market share: 7%
We surveyed over 300 executives, managers, and members of Salesforce delivery teams to learn about their development lifecycles. Here’s what we learned. Software Delivery Performance has been studied carefully over 6 years by the team at DevOps Research and Assessment. Guided by their insights, we analyzed performance among these Salesforce teams in terms of the dual goals of innovation velocity and quality. We were able to identify four performance profiles to further analyze the characteristics and causes of both high and low performance.

The research shows that the industry-standard Four Key Metrics of software delivery performance drive organizational performance in technology transformations. We also see a clear confirmation that it is possible to “optimize for stability without sacrificing speed”.

At the end of this report, we have identified five distinct stages of the Salesforce DevOps evolution, and the critical practices at each stage that help you achieve success and progress to the next phase of your journey.

While no company starts their Salesforce DevOps journey in the same place, the methods and processes for improvement are becoming clear. Companies who pursue a three-layered strategy that balances the organization of the team, establishment of end to end CI/CD processes, all running on an integrated technology platform outperform the rest.

Salesforce DevOps Is Paying Off

ROI

17% of Respondents

$5M

46x more deployments

2555x shorter lead times

8x less change failures

96x faster recovery times

17% of Respondents
Companies that combine the Salesforce platform with a disciplined DevOps strategy drive real business results.

The highest performing companies are building a DevOps strategy around Salesforce to maximize their returns, with over 17% reporting an ROI of over $5M. One big surprise in the survey is the level of velocity and stability that teams using Salesforce experience compared to the broader IT industry. Even teams with relatively immature DevOps processes compared to the broader IT industry performed better on average through the power of the platform.

The primary driver of DevOps is speed but velocity alone won’t make you elite.

The study confirms that innovation speed is the #1 reason companies adopt DevOps. But top performers scored high in both velocity and quality. High innovation delivery performance has been shown to drive organizational performance.

The size of your delivery team is the #1 factor affecting the throughput of innovation.

We see the size and complexity of the largest Salesforce implementation teams growing exponentially as multi-million dollar global implementations become more common. The organization and discipline of these heterogeneous teams is the key to maximizing performance of Salesforce projects.

The enterprise Salesforce delivery team has evolved over the last few years as the scale of Salesforce deployments has grown.

Teams are regularly comprised of very large numbers of admins and developers. Almost 50% of our respondents had more than 25 contributors, and many teams were managing 10 or more production orgs.
The security and regulatory risks facing Salesforce customers are more numerous and sophisticated today than ever before. Specific regions including EMEA and most industries such as Financial Services, Life Sciences, and even Consumer Goods face massive fines for the mishandling of customer data. We see a new level of collaboration between the IT development, operations, compliance and security teams running Salesforce.

Teams want to go faster.
Teams admire the progress in DevOps made outside of the Salesforce ecosystem. Teams with more than 10 contributors were four times more likely to agree that non-Salesforce teams have more mature practices for managing the development lifecycle.

Innovation Performance requires both CI and CD.
Higher performers were far more likely to integrate developers’ changes on an ongoing basis. Practices such as version control are widespread, and Elite performers were five times more likely to automate all of their deployments.

Larger teams rely on commercial tools.
80% of larger teams used Salesforce-specific commercial tools to aid in their development lifecycle. While smaller teams relied on generic DevOps tools or tools built in-house, none of the larger teams of Elite performers did so.
Who took the survey?

DEMOGRAPHICS & FIRMOGRAPHICS
Participation across regions generally aligns with Salesforce growth with the majority in NA, then EMEA and Asia.
DevOps is mostly being supported through IT operations. The survey drew deep participation from Operations and Security roles at 45%. The Second highest was SIs at 21.9%. The majority of respondents in the survey come from technical backgrounds often working for IT.

Which most closely describes your work role?

- Development or Engineering: 16.55%
- Other: 1.44%
- C-Level Exec: 16.19%
- Consultant, Coach, Trainer: 4.32%
- Sales Eng, Sales or Marketing: 4.68%
- Release Engineering: 2.52%
- Quality Eng or Assurance: 6.12%
- Product Mgmt: 9.71%
- Information Security, IT Ops: 35.61%
- DevOps or SRE: 2.88%

Industry

All major industries were represented in the survey with Technology 21.4% and Financial Services 16.4% leading the way as they have historically lead the transition to the Salesforce and the Cloud.

Which industry are you in?

- Education: 16.4%
- Financial Services: 16.4%
- Energy: 8%
- Healthcare & Pharmaceuticals: 14.48%
- Industrials & Manufacturing: 14.48%
- Insurance: 15.9%
- Media/Entertainment: 21.4%
- Retail/Consumer/E-Comm: 15.9%
- Technology: 21.4%
- Telecommunications: 10.9%
- Other: 10.9%
- Government: 2.88%
Company Size

The survey included companies of all sizes with an emphasis on enterprise companies with over 10,000 employees. Company size will prove a central theme contributing to overall platform performance.

Production orgs

One surprise was the number and scale of different orgs companies are using to run their Salesforce implementations. Over 59% of customers surveyed were supporting more than 5 production orgs with over 11.9% supporting more than 10 production orgs. The ratio of Sandboxes and development orgs per production org are many to one and represent massive challenges in managing, deploying and synchronizing metadata and data across orgs.
Years on Salesforce

Every year of Salesforce's 20 year history is represented in the survey. It was interesting to see the number of years with Salesforce did not directly affect overall performance metrics.

Aproximately what year did your company first begin using Salesforce?

Salesforce Users

Salesforce implementations are far bigger now than ever before. The survey showed that over half of companies supported over 5,000 users and 22% support over 10,000 users.

Business Units

The survey shows that many companies run different Salesforce orgs based on business units. Only 8% reported running Salesforce for a single business unit while over 40% supported Salesforce on behalf of 8 or more business units. Managing the needs of different Business Units creates additional strain on managing and deploying the Salesforce metadata.
Business or IT Leadership

Salesforce is perhaps the technology platform most commonly shared between the business and IT. We see a clear evolution away from the days when the business ran Salesforce on their own to a hybrid model with IT driving much of the DevOps best practices.

Which team is in charge of your Salesforce implementation?

- **42.8%**: Business / Sales Teams
- **40.3%**: IT Leadership
- **15.9%**: Business and IT Together
- **15.9%**: Other

Size of the Delivery Team

Salesforce teams are large and growing. Almost 75% of the teams we surveyed had more than 10 contributors, and 16% had more than 100 contributors. Larger teams require more sophisticated methods for collaborating.

How many people are currently involved in customizing your Salesforce org (including admins, developers, etc)? Please include consultants, employees, contractors, etc.

- **27.86%**: 1-10 contributors
- **24.88%**: 11-25 contributors
- **20.9%**: 26-50 contributors
- **15.92%**: 51-100 contributors
- **10.45%**: 101+ contributors
Expectations of SIs

As Salesforce implementations grow, they require additional expertise in operations and development. Naturally the largest customers turn to System Integrators to help them build out their customizations and tailor the platform to their business. We see many customers use multiple SIs. Customers were overwhelmingly expected System Integrators and Consultants to come prepared with DevOps COEs and best practices.

We expect our consultants and SI to come prepared with DevOps Best Practices

- STRONGLY DISAGREE: 12.4%
- DISAGREE: 47.3%
- NEITHER AGREE OR DISAGREE: 34.3%
- AGREE: 47.3%
- STRONGLY AGREE: 34.3%
How do you compare?
Innovation delivery performance

INNOVATION VELOCITY

BUILD  TEST  DEPLOY  RELEASE

DELIVERY PIPELINE

FEEDBACK LOOP

PLAN  MONITOR

SFDC DEVOPS NEEDS

- No structured release process
- No source repositories
- Lack of version controls
- Keeping sandboxes in sync
- Merge conflicts
- No collaboration tools
- No 3rd party DevOps tools
- Lack of security & compliance

TRUST & QUALITY

GO-LIVE GAP
The research shows that the industry-standard Four Key Metrics of software delivery performance and operations apply to the development and operation of Salesforce just as they do for other industries. This finally provides us an industry standard way to evaluate how a company is performing on Salesforce compared to their peers.

It is clear the four key metrics drive positive organizational performance and business outcomes in Salesforce transformations. We see a clear confirmation that it is possible to “optimize for stability without sacrificing speed”.

### The Four Measures of Salesforce

<table>
<thead>
<tr>
<th>INNOVATION VELOCITY</th>
<th>RELIABILITY &amp; TRUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD TIME FOR CHANGE</td>
<td>DEPLOYMENT FREQUENCY</td>
</tr>
<tr>
<td>Time from code committed to production</td>
<td>How often you release to production</td>
</tr>
<tr>
<td>Shorter is better</td>
<td>More is better</td>
</tr>
<tr>
<td>Faster feedback cycles</td>
<td>Small batch size</td>
</tr>
<tr>
<td>Adjust quickly to the market</td>
<td>More market agility</td>
</tr>
<tr>
<td>20 MIN</td>
<td>0.43</td>
</tr>
<tr>
<td>CHANGE FAILURE RATE</td>
<td>MEAN TIME TO RECOVERY (MTTR)</td>
</tr>
<tr>
<td>How long it takes to recover from failures in production</td>
<td>Percentage of releases requiring rollback and/or fixes</td>
</tr>
<tr>
<td>Shorter is better</td>
<td>Less is better</td>
</tr>
<tr>
<td>Decrease customer exposure</td>
<td>Early detection is critical</td>
</tr>
<tr>
<td>Decrease down time</td>
<td>Automation is important</td>
</tr>
<tr>
<td>0%</td>
<td>6 MIN</td>
</tr>
</tbody>
</table>

The Four Measures of Salesforce
The Four Performance Profiles

Performance Profile
% of Total Number of Records

0% 20% 40% 60% 80% 100%

Elite
High
Medium
Low

The Velocity vs. Stability Balance

Median performance by Profile

<table>
<thead>
<tr>
<th>Performance profile</th>
<th>Lead Time (Minutes)</th>
<th>Deployments / Year</th>
<th>Change fail %</th>
<th>Time to restore (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>153,300</td>
<td>32</td>
<td>63%</td>
<td>96</td>
</tr>
<tr>
<td>Medium</td>
<td>10,080</td>
<td>209</td>
<td>38%</td>
<td>96</td>
</tr>
<tr>
<td>High</td>
<td>1,440</td>
<td>209</td>
<td>8%</td>
<td>12</td>
</tr>
<tr>
<td>Elite</td>
<td>60</td>
<td>1,460</td>
<td>8%</td>
<td>1</td>
</tr>
</tbody>
</table>
The Best Companies Balance Speed and Quality on the Salesforce

The Four Performance Profiles

- **Elite (12%)**: On-demand release frequency, less than a day development lead time, 0-15% change failures, less than one hour restore time.
- **High (23%)**: Less than a day release frequency, between a day and a week development lead time, 16% - 40% change failures, less than a day restore time.
- **Medium (40%)**: Between a day and a week release frequency, between a week and a month development lead time, 41% - 75% change failures, between a day and a week restore time.
- **Low (7%)**: More than a week release frequency, more than a month development lead time, 76% - 100% change failures, more than a week restore time.

Salesforce innovation performance
## Overall Industry Benchmarks

### Aspect of Software Delivery Performance*

<table>
<thead>
<tr>
<th></th>
<th>Elite</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deployment frequency</strong></td>
<td>On-demand (multiple deploys per day)</td>
<td>Between once per day and once per week</td>
<td>Between once per week and once per month</td>
<td>Between once per month and once every six months</td>
</tr>
<tr>
<td><strong>Lead time for changes</strong></td>
<td>Less than a day</td>
<td>Between one day and one week</td>
<td>Between one week and one month</td>
<td>Between one month and six months</td>
</tr>
<tr>
<td><strong>Time to restore service</strong></td>
<td>Less than one hour</td>
<td>Less than one day^a</td>
<td>Less than one day^a</td>
<td>Between one week and one month</td>
</tr>
<tr>
<td><strong>Change failure rate</strong></td>
<td>0-15%^bc</td>
<td>0-15%^bd</td>
<td>0-15%^cd</td>
<td>46-60%</td>
</tr>
</tbody>
</table>

*Evaluations based on responses from 100+ organizations.
ROI Benefits from Salesforce DevOps

DevOps ROI Impact

The most striking results of the survey was the clear business impact of DevOps when combined with the Salesforce Platform. The faster a business can adjust to changing market conditions, the more competitive it can be. This competitiveness underlines the new differentiators in the modern digital economy.
How you can improve

THE TOP FACTORS THAT AFFECT DELIVERY PERFORMANCE
What Factors Affect Performance? – Company Size and Scale

We very quickly noticed that size (especially when measured against the number of delivery team members), negatively impacted performance. The *Accelerate 2019 State of DevOps Report* also noticed a decline in performance for organizations over 5,000 employees.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of the delivery team</td>
<td></td>
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<tr>
<td>Size of the Salesforce User Base</td>
<td></td>
</tr>
<tr>
<td>Number of Production Orgs</td>
<td></td>
</tr>
<tr>
<td>Number of Employees</td>
<td></td>
</tr>
<tr>
<td>Number of Business Units</td>
<td></td>
</tr>
</tbody>
</table>

**Median Lead by # Contributors**  
*Admin/Developers*

**Performance by # Contributors**  
*Admin/Developers*
What Factors Affect Performance? – Team Organization

There were a large number of “elite performing” teams of 10 people or less. Salesforce as a platform is extremely stable and easy to customize, so it’s not surprising that small teams can thrive on this platform. But we were particularly interested in what factors enable larger teams of 10+ contributors to thrive. The remainder of this analysis focuses on these larger teams and their characteristics.

Who’s responsible for Salesforce (Teams of 10+)

Salesforce’s ease of customization means that it can be directly managed by business teams. This is in contrast to most IT systems, which need to be managed by IT specialists. Elite performing teams of 10+ were 145% more likely to have Business teams in charge of their Salesforce implementation.

Leadership understanding (Teams of 10+)

Teams generally felt that their leadership understood their Salesforce DevOps strategy. Elite performing teams were 28% more likely than low performing teams to say that both Business and IT leadership understood their DevOps strategy.
What Factors Affect Performance? – Development Lead Time Roadblock

Median Lead by # Contributors
Admin/Developers

Median Change Fail by # Contributors
Admin/Developers

Median Deployment Frequency by # Contributors
Admin/Developers

Median Time to Recover by # Contributors
Admin/Developers
What Factors Affect Performance? The Effect of Continuous Integration

Integration Frequency (Teams of 10+)

- On demand (multiple deployments per day)
- Between once per hour and once per day
- Between once per day and once per week
- Between once per week and once per month
- Less than once per month

Integrating developers’ code changes daily is a hallmark of continuous integration. Integrating smaller changes more frequently reduces the complexity of merges, and allows teams to refactor and keep their codebase more maintainable. Elite performers were 173% more likely to integrate changes between developers at least daily.

Collaboration with Security (Teams of 10+)

Performance Profile
What Factors Affect Performance?  
The Journey to Continuous Delivery

CI Drives Performance

Version Control is Widespread

Deployment Method

Use of version control is widespread but version control alone does not correlate with performance. Version control should be understood as a basic foundation for more advanced practices.

Increasingly sophisticated deployment methods are positively correlated with release velocity. Concerningly, they are negatively correlated with stability. This means that as teams are speeding up, they are inducing more failures. The State of DevOps Report also observed a ‘J’ curve effect wherein teams experienced initial setbacks as they began to move faster. Increasing stability should be a key goal for teams as they begin to move faster.
Our team works closely with security and compliance teams while developing and deploying new capabilities on Salesforce.

When the automated tests pass, I am confident the software releasable.

We are making the appropriate investments in the security and compliance of our Salesforce deployments.
Higher performers are more likely to feel prepared for future years of digital disruption.

Roughly 30% of Medium and Low performers feel they should be deploying more frequently than they are today. Larger teams are more likely to feel that their processes are less mature than those of non-Salesforce teams.

Larger teams are more likely to feel that they are making the appropriate investments in the security compliance of their Salesforce deployments. Unfortunately, that seems to be coming at the expense of long lead times. Significantly, it does not seem to be reducing the incidence of failures!

Roughly 30% of Medium and Low performers feel they should be deploying more frequently than they are today.
As teams grow, the number who only use open source solutions drops from 32% to only 9%. Similarly, the number who use a commercial solution increases from 55% to more than 90%. More than 80% of teams of 10+ contributors use commercial tools.

Users of both open source and commercial tools struggle at larger sizes.

Users of both open source and commercial tools struggle at larger sizes.
Future strategy

Thinking about your future Salesforce Devops Strategy, it’s best to consider:

- Be mindful of the size and makeup of your delivery team
- Build a DevSecOps COE
- Strive for Daily Releases especially as your team gets bigger
- Adopt a Commercial DevOps Platform designed for the Salesforce Platform
- Implement Continuous Integration Across All Dev, Security, and Admin Teams
- Design and automate your Continuous Delivery Processes
The demand for SFDC roles is higher than any other role

Closing The Salesforce Skills Gap: DevOps Is the Fastest Growing Role in the Salesforce Ecosystem

DevOps Is a Teamsport


Companies are at a crux. The demand for Salesforce skilled jobs is higher than ever, and the supply cannot keep up. This results in a skills gap. How does one solve for this without hiring more and more talent? The answer is simple: DevOps.

DevOps improves team productivity and collaboration. This, in turn, amplifies the skills and talent that you already have at your disposal, resulting in a single, focused delivery team. DevOps enables teamwork, transparency and trust, which ultimately yields to a better return on your investment and a quicker path to innovation.

The 3 “Ts” of DevOps: Teamwork, Transparency and Trust. These three work in conjunction to streamline your release process, and help address the Salesforce skill gap. Copado provides solutions for each of the three DevOps “Ts”:

Teamwork: Teams communicate and create team centric workflows across the entire DevOps chain in order to increase collaboration.

Transparency: Copado provides complete visibility across all departments, shared goals and shared data with one common source of truth.

Trust: Protect your data and innovation with industrial-strength security to increase the trust your customers and partners place on your business.

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</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>12,410</td>
<td>13,729</td>
<td>14,685</td>
<td>15,537</td>
<td>16,224</td>
<td>16,845</td>
<td>17,400</td>
<td>17,950</td>
<td>18,500</td>
</tr>
<tr>
<td>Developer</td>
<td>13,729</td>
<td>14,685</td>
<td>15,537</td>
<td>16,224</td>
<td>16,845</td>
<td>17,400</td>
<td>17,950</td>
<td>18,500</td>
<td>19,100</td>
</tr>
<tr>
<td>Technical Architect</td>
<td>5,134</td>
<td>6,204</td>
<td>7,275</td>
<td>8,256</td>
<td>9,237</td>
<td>10,218</td>
<td>11,200</td>
<td>12,182</td>
<td>13,164</td>
</tr>
<tr>
<td>Consultant</td>
<td>9,465</td>
<td>10,536</td>
<td>11,607</td>
<td>12,678</td>
<td>13,749</td>
<td>14,820</td>
<td>15,891</td>
<td>16,962</td>
<td>18,033</td>
</tr>
</tbody>
</table>

Total for Established Markets:

- Administrator: 12,410 - 19,855
- Developer: 13,729 - 32,337
- Technical Architect: 5,134 - 19,855
- Consultant: 9,465 - 18,033

*2018 10K
Copado Drives Performance By Unifying the Delivery Team With the #1 Native DevOps Platform for Salesforce
Operational experience is driven by 5 levels of automation

5 STEPS TO DEVOPS ENLIGHTENMENT

01 SELECT AND DEPLOY

Salesforce as Source of Truth - Ad Hoc Component Releases

02 VERSION CONTROL

Version Control as the Single Source of Truth - Manual Branch Management

03 AGILE RELEASES

Releases based on user stories for better collaboration/merging between multiple developers and teams

04 INTELLIGENT AUTOMATION

Automate manual tasks to scale your delivery and increase efficiency

05 CONTINUOUS DELIVERY

Continuously release changes all the way to production for a faster time to value
Copado provides a full end-to-end devops solution

SALESFORCE DEVOPS 360
Innovation Performance Metrics
CI/CD Dashboards and Rpts
Real Time Monitoring and Alerts
Team Benchmarking

COMPLETE CI/CD PROCESSES

AGILE PLANNING
Metadata Tracking
Agile Planning

CREATE
Metadata Tracking
Environments Mgt
Static Code Analysis

VERIFY
Selenium Recorder
Apex Tests
Metadata Validation
Manual Test Scripts
Pull Requests

DEPLOY
Pipelines
Deployment
Rollbacks
Data Management
Env Branches

RELEASE
Permissioner
Permission Sets
Release Dashboard

SFDC NATIVE EXPERIENCE
Lightning UX
Native Dashboards
Einstein Analytics
Salesforce Mobile
Salesforce Flow
Chatter Collaboration
Workflows and Alerts
Dev/Test Environments

100% SALESFORCE NATIVE INTEGRATION
DevOps Orchestration
Proxy Agent
Merge Engines
Security / Auth
OAuth 2.0 support
Process Builder
Webhooks
Job Scheduling
Global Find & Replace
Alerts & Notifications
Dashboard and Reports
Salesforce APIs
Prod Environments
Profiles
Permission sets
Page Layouts
Roles
Metadata XML

PREBUILT INTEGRATION
Agile Planning
IDEs
CI/CD
Monitoring
Testing
AI/Analytics
Security/Compliance

SECURITY & COMPLIANCE
100% Salesforce Security Rules
All major certifications:
ISO, SOC, HIPAA, GDPR, Truste.
Secure API-based architecture
Encrypted credentials
OAuth Support / SSO-enabled
Secure access to repository
On-premise or cloud repositories
User access controls
Compliance hub
Configurable compliance rules
Exception reporting with Alerts
Data Backup & Recovery
Business Continuity
Disaster Recovery
#1 Across Native Salesforce DevOps Platforms

G2 Crowd named Copado a Leader in Continuous Integration and ranked #1 in Customer Satisfaction.

- **Ease of Use**: 88%
- **User Love**: 94%
- **High Performer**: 96%
- **Customer Satisfaction**: 89%

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