

## Enterprise Survey Series

In its second year, the Enterprise Survey Series is a distinct survey series in Evans Data's stable of market research and explores technologies and methodologies that are important to enterprise IT and development. This report, the first in the annual series, focuses on DevOps and is an important asset for any organization looking to sell DevOps technologies, tools and services to other companies, as well as for any organization that wants to automate its own processes through DevOps. Along the way, organizations need to get a sense of the current DevOps landscape, the tactics current DevOps users have embraced, and the challenges that these technical professionals face.

**DevOps 2020** -- the first report in this series which covers the essentials of DevOps; provisioning, handoffs, orchestration tools, organizational structure, etc

*Released April 2020: [Read on for more information](#)*

**DevOps and the Cloud** - Cloud dynamics and DevOps; multi-cloud and hybrid cloud dynamics; cloud orchestration; microservices and containers; security and governance, etc

*Expected Release Date: May 2020*

**DevOps in a Legacy Environment** - Integrating a DevOps structure and strategy for legacy systems, ITIL, other ITSMs, and similar

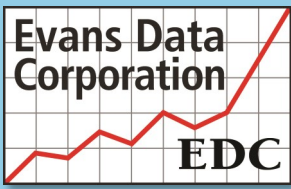
*Expected Release Date: August 2020*

**DevOps and Emerging Technologies** - How DevOps is being impacted by and incorporating new technologies like AI, ML, AR, block chain, HPC etc.

*Expected Release Date: November 2020*

## Why This Report Matters to DevOps Tool Vendors:

The practical applications of DevOps have helped push DevOps practices and philosophies into the limelight. Nevertheless, developers and IT professionals may perceive DevOps as being more appropriate for specific fields, and may also perceive challenges along the way. For this reason, it is important for tool and service providers to understand the frustrations that developers and operations professionals experience in their existing development, as well as the perceived challenges in using DevOps, and address them. Ultimately, tool and service providers need to understand the behaviors and perceptions of developers and IT professionals, and particularly the differences between them, in order to gain a clearer understanding of their target market.



## Why This Report Matters to Those Implementing DevOps Within Their Own Organizations:

Ops initiatives are well underway in IT organizations throughout the world. Putting DevOps into practice within an organization requires a keen understanding of how developers and IT managers are already using DevOps, including which assets they need to provision, where the handoffs occur between the development and operations teams, and how the Cloud functions as a means of facilitating automation. Furthermore, DevOps implementation requires an awareness of how technical staff members across a variety of different industries perceive the interaction of development and operations and its challenges.

DevOps builds upon numerous technological advances and patterns of thought. Understanding developers' perceptions and preferences can help organizations with budding DevOps strategies formulate the smoothest path to adoption. In order to create this path, organizations need to understand the behaviors and preferences that developers and IT professionals alike have at this intersection between development and operations, and how they may differ across the two groups. As with tools providers and other tech companies, organizations with nascent DevOps strategies also must understand the difficulties that exist in current development efforts and the perceived challenges of DevOps implementation.

## Enterprise Survey Series: DevOps 2020

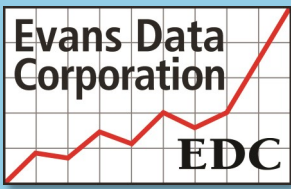
This survey gives a comprehensive view of the attitudes, adoption patterns, and intentions of developers and IT managers within the enterprise as they relate to DevOps. Evans Data Corporation wishes to make this survey series as valuable as possible to our clients; thus, we solicit input from subscribers prior to the publication of each volume. This subscriber input is incorporated into the content of the survey, providing answers and insight into issues of interest to our clients. Publication rights to any of the results are not granted to any subscribers outside of their own companies without written permission from Evans Data Corp.

## Survey Methodology

This survey series is completed entirely online. Respondents from Evans Data's International Panel were sent invitations to participate and complete the survey online. Incentives for completing the survey are the ability to influence tool makers and receive points that build up and can be used to redeem cash cards.

## The Sample – Software Developers and IT Managers

This survey consists of 430 in-depth interviews conducted with an even number of English-speaking developers and also IT managers worldwide who have DevOps initiatives within their organizations. This provides a margin of error of 4.6%.



## New Sections in This Volume

### Environments

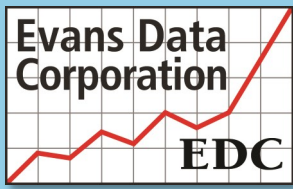
The combination of environments used to develop, test, and deploy enterprise solutions may be relatively narrow in scope or sprawling, depending on how strictly enterprises control tool and environment acquisition, and different organizations may be in various stages of transition to a DevOps environment. New questions in this section ask developers and IT managers about their organizations' frequency of deploying code and their tendency to favor specific vendors in regards to development and/or deployment environments, as well as their approach to software audits and whether or not they consider these audits to be "pain points."

### Provisioning

This section explores various considerations surrounding provisioning, including self-provisioning infrastructure, the advantages of automated provisioning, and the use of manual versus automated processes. New to this section, analysis explores API versus script-based execution of various provisioning and monitoring tasks, the types of databases respondents and their organizations are likely to use, and the criteria used for evaluating third-party code as it is pulled into the development lifecycle.

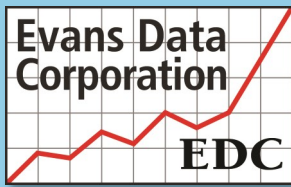
### Application Handoff

Whether as part of a DevOps initiative or as part of a more traditional approach, much of the focus of developers and operations' interactions surrounds the handoffs. In this mostly-new section we take a look at a variety of topics surrounding application handoff, from lead time for code changes and challenges in deploying both internal and external apps to respondents' familiarity with, and implementation of, chaos engineering.

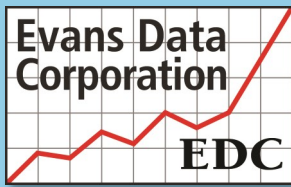


## Table of Contents

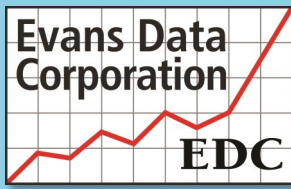
|   |           |
|---|-----------|
| <b>ABOUT THIS REPORT</b> .....                                      | <b>2</b>  |
| <b>OVERVIEW</b> .....   | <b>3</b>  |
| Objectives of the Survey .....                                      | 3         |
| Survey Methodology .....  | 3         |
| Research Design .....   | 3         |
| Relative Rankings .....   | 3         |
| The Sample – Software Developers and IT Managers.....               | 3         |
| <b>WHAT'S NEW</b> .....   | <b>4</b>  |
| <b>ABOUT EVANS DATA</b> .....                                       | <b>10</b> |
| The EDC Panel .....   | 10        |
| Other Evans Data Corp. Services.....                                | 11        |
| Multi-Client Survey Series .....                                    | 11        |
| Custom Surveys .....  | 13        |
| Targeted Analytics .....  | 13        |
| <b>EXECUTIVE SUMMARY</b> .....                                      | <b>14</b> |
| <b>DEMOGRAPHICS &amp; ORGANIZATIONAL REPORTING STRUCTURE</b> .....  | <b>21</b> |
| Job Role .....  | 23        |
| IT Manager Job Role .....   | 24        |
| Developer Job Role.....   | 25        |
| Drivers for DevOps Initiatives .....                                | 26        |
| DevOps Drivers by Developers vs. IT Managers .....                  | 26        |
| Company Size.....   | 27        |
| Company Size by Developers vs. IT Managers.....                     | 27        |
| Company's Length of Time in Business.....                           | 28        |
| Company's Time in Business by Developers vs. IT Managers .....      | 28        |
| Team Size .....   | 29        |
| Team Size by Developers vs. IT Managers .....                       | 29        |
| Age .....   | 30        |
| Age by Developers vs. IT Managers.....                              | 30        |
| Industry.....   | 31        |
| Industry by Developers vs. IT Managers .....                        | 32        |
| Government-regulated Industries .....                               | 33        |
| Government-regulated Industries by Developers vs. IT Managers ..... | 33        |



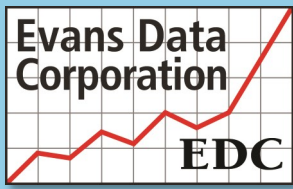
|  |           |
|--|-----------|
| Organizational Reporting Structure .....   | 34        |
| Organizational Reporting Structure by Developers vs. IT Managers.....            | 35        |
| Team Responsibilities within an Organization .....                               | 36        |
| IT Managers: Team Responsibilities within an Organization .....                  | 37        |
| Developers: Team Responsibilities within an Organization .....                   | 37        |
| Test/QA's Organizational Fit.....  | 38        |
| Test/QA's Organizational Fit by Developers vs. IT Managers .....                 | 38        |
| Individual Responsibilities for Typical Apps.....                                | 39        |
| Responsibilities for Typical Apps by Developers vs. IT Managers.....             | 39        |
| <b>ENVIRONMENTS – DEVELOPMENT VS. DEPLOYMENT .....</b>                           | <b>40</b> |
| Use of a Formal DevOps Plan.....   | 43        |
| Use of a Formal DevOps Plan by Developers vs. IT Managers .....                  | 43        |
| Organizational Deployment Practices .....  | 44        |
| Organizational Deployment Practices by Developers vs. IT Managers .....          | 45        |
| Frequency of Software Releases .....   | 46        |
| Frequency of Software Releases by Developers vs. IT Managers .....               | 47        |
| Frequency of Deploying Code.....   | 48        |
| Frequency of Deploying Code by Developers vs. IT Managers.....                   | 49        |
| Organizational Team Composition .....  | 50        |
| Team Composition by Developers vs. IT Managers.....                              | 50        |
| Organizational Importance of Technologies.....                                   | 51        |
| IT Managers: Organizational Importance of Technologies .....                     | 52        |
| <b>DEVELOPERS: ORGANIZATIONAL IMPORTANCE OF TECHNOLOGIES .....</b>               | <b>53</b> |
| Biggest Challenge in Creating New Apps .....                                     | 54        |
| Biggest Challenge in Creating New Apps by Developers vs. IT Managers.....        | 55        |
| Biggest Organizational Development Challenges.....                               | 56        |
| Biggest Organizational Development Challenge by Developers vs. IT Managers ..... | 57        |
| Preferred Vendors for Development and Deployment .....                           | 58        |
| Preferred Vendors by Developers vs. IT Managers .....                            | 58        |
| Frequency of Internal Software Audits .....                                      | 59        |
| Frequency of Audits by Developers vs. IT Managers.....                           | 59        |
| Software Audits as Pain Points.....  | 60        |
| Software Audits as Pain Points by Developers vs. IT Managers.....                | 60        |



|   |           |
|---|-----------|
| Gathering Information for Software Audits .....   | 61        |
| Gathering Information for Audits by Developers vs. IT Managers .....                      | 61        |
| Time Needed to Set Up Environments for Changing Teams .....                               | 62        |
| Time Needed to Set Up Environments for Changing Teams by Developers vs. IT Managers ..... | 62        |
| Biggest Challenges in Using DevOps .....  | 63        |
| Biggest Challenges in Using DevOps by Developers vs. IT Managers .....                    | 64        |
| <b>PROVISIONING – SELF SERVICE AND REQUISITION .....</b>                                  | <b>65</b> |
| Likely Outcome of Unexpected Development Needs.....                                       | 68        |
| Likely Outcome of Unexpected Needs by Developers vs. IT Managers .....                    | 68        |
| IT Assets - Self Service vs. IT Approval .....  | 69        |
| IT Managers: IT Assets - Self Service vs. IT Approval .....                               | 70        |
| Developers: IT Assets - Self Service vs. IT Approval .....                                | 70        |
| Operations Involvement in Development.....  | 71        |
| Operations Involvement in Development by Developers vs. IT Managers .....                 | 71        |
| Automation of Infrastructure Components.....  | 72        |
| Automation of Infrastructure Components by Developers vs. IT Managers .....               | 73        |
| Self-Service Provisioning Outside of IT.....  | 74        |
| Self-Service Provisioning Outside of IT by Developers vs. IT Managers.....                | 74        |
| Primary Advantage to Automated Provisioning .....   | 75        |
| Primary Advantage to Automated Provisioning by Developers vs. IT Managers .....           | 75        |
| Most Important Features of Self-Provisioning Infrastructure .....                         | 76        |
| Most Important Features by Developers vs. IT Managers.....                                | 77        |
| Design Patterns Used.....   | 78        |
| Design Patterns Used by Developers vs. IT Managers.....                                   | 79        |
| Strategies for Development & Deployment.....  | 80        |
| Strategies for Development-Deployment by Developers vs. IT Managers.....                  | 80        |
| Time Spent Writing Code for Provisioning .....  | 81        |
| Time Spent Writing Code for Provisioning by Developers vs. IT Managers .....              | 81        |
| Hardware Infrastructure Provisioned via DevOps .....                                      | 82        |
| IT Managers: Hardware Infrastructure Provisioned via DevOps .....                         | 83        |
| Developers: Hardware Infrastructure Provisioned via DevOps .....                          | 83        |
| Working across Multiple Deployment Platforms.....   | 84        |
| Working across Multiple Deployment Platforms by Developers vs. IT Managers .....          | 84        |

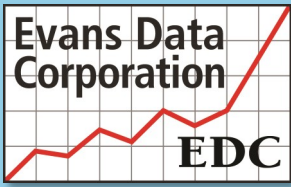


|  |            |
|--|------------|
| Platforms Identified in Multi-platform Deployment.....                                 | 85         |
| Platforms in Multi-platform Deployment by Developers vs. IT Managers .....             | 86         |
| Preference for API vs. Script Execution .....  | 87         |
| Preference for API vs. Script Execution by Developers vs. IT Managers .....            | 88         |
| Types of Databases Used in Projects .....  | 89         |
| IT Managers: Types of Databases Used in Projects .....                                 | 90         |
| Developers: Types of Databases Used in Projects .....                                  | 90         |
| Criteria for Assessing Outside Code .....  | 91         |
| Criteria for Assessing Outside Code by Developers vs. IT Managers .....                | 92         |
| <b>AUTOMATION AND ORCHESTRATION TOOLS .....</b>  | <b>93</b>  |
| Worst Omissions in App Deployment.....   | 94         |
| Worst Omissions in App Deployment by Developers vs. IT Managers.....                   | 95         |
| Automation and Orchestration Tool Use .....  | 96         |
| IT Managers: Automation and Orchestration Tool Use.....                                | 97         |
| Developers: Automation and Orchestration Tool Use.....                                 | 98         |
| Compelling Features of Code Management .....   | 99         |
| Features of Code Management Platforms by Developers vs. IT Managers .....              | 100        |
| <b>APPLICATION HANDOFFS .....</b>  | <b>101</b> |
| Typical Method of App Handoff .....  | 103        |
| Typical Method of App Handoff by Developers vs. IT Managers .....                      | 103        |
| Lead Time for Code Changes .....   | 104        |
| Lead Time for Code Changes by Developers vs. IT Managers.....                          | 104        |
| Automated Testing Use.....   | 105        |
| Automated Testing Use by Developers vs. IT Managers .....                              | 105        |
| Challenges when Testing Internal Apps .....  | 106        |
| Challenges when Testing Internal Apps by Developers vs. IT Managers .....              | 107        |
| Challenges when Testing External Apps.....   | 108        |
| Challenges when Testing External Apps by Developers vs. IT Managers .....              | 109        |
| Analytics and Testing in the Development Lifecycle.....                                | 110        |
| Analytics and Testing in the Development Lifecycle by Developers vs. IT Managers ..... | 111        |
| Build and Deploy Processes Used .....  | 112        |
| Build and Deploy Processes Used by Developers vs. IT Managers .....                    | 112        |
| Challenges when Deploying Internal Apps.....   | 113        |
| Challenges when Deploying Internal Apps by Developers vs. IT Manager .....             | 114        |



|  |            |
|--|------------|
| Challenges when Deploying External Apps .....  | 115        |
| Challenges when Deploying External Apps by Developers vs. IT Managers .....              | 116        |
| Frequency of Testing in Various Stages.....  | 117        |
| Frequency of Testing in Various Stages by Developers vs. IT Managers .....               | 118        |
| Testing Software in Production .....   | 119        |
| Testing Software in Production by Developers vs. IT Managers.....                        | 120        |
| Familiarity with Chaos Engineering .....   | 121        |
| Familiarity with Chaos Engineering by Developers vs. IT Managers .....                   | 121        |
| Implementation of Chaos Engineering.....   | 122        |
| Implementation of Chaos Engineering by Developers vs. IT Managers.....                   | 122        |
| Primary Reason for Using Chaos Engineering .....   | 123        |
| Reasons for Using Chaos Engineering by Developers vs. IT Managers .....                  | 123        |
| Interaction between Development and IT/Ops.....  | 124        |
| Interaction between Development and IT/Ops by Developers vs. IT Managers.....            | 125        |
| Cloud Deployment Responsibilities.....   | 126        |
| Cloud Deployment Responsibilities by Developers vs. IT Managers.....                     | 127        |
| CxO Involvement in DevOps.....   | 128        |
| CxO Involvement in DevOps by Developers vs. IT Managers .....                            | 129        |
| Developer Access to Production Systems.....  | 130        |
| Developer Access to Production Systems by Developers vs. IT Managers .....               | 131        |
| <b>CONTINUOUS INTEGRATION, DEVELOPMENT AND TESTING .....</b>                             | <b>132</b> |
| Use of Continuous Integration Processes .....  | 133        |
| Use of Continuous Integration Processes by Developers vs. IT Managers.....               | 133        |
| Most Important Feature of Continuous Delivery Systems .....                              | 134        |
| Most Important Feature of Continuous Delivery Systems by Developers vs. IT Managers..... | 135        |
| Continuous Integration Tool Use .....  | 136        |
| Continuous Integration Tool Use by Developers vs. IT Managers.....                       | 137        |
| Reasons for Using Multiple CI Tools.....   | 138        |
| Reasons for Using Multiple CI Tools by Developers vs. IT Managers .....                  | 139        |
| Type of DevOps Toolchain Used.....   | 140        |
| Type of DevOps Toolchain Used by Developers vs. IT Managers .....                        | 140        |
| Other DevOps Tools Used .....  | 141        |
| Other DevOps Tools Used by Developers vs. IT Managers.....                               | 141        |





|   |            |
|---|------------|
| <b>WORKLOADS AND WORKFLOW .....</b>                                       | <b>142</b> |
| <b>Organizational Workflow Management Practices.....</b>                  | <b>143</b> |
| Workflow Management Practices by Developers vs. IT Managers.....          | 143        |
| <b>Biggest Troubles with Workflow Management Solutions.....</b>           | <b>144</b> |
| Troubles with Workflow Mgmt. Solutions by Developers vs. IT Managers..... | 144        |
| <b>Most Used Workflow Patterns .....</b>                                  | <b>145</b> |
| Most Used Workflow Patterns by Developers vs. IT Managers.....            | 146        |
| <b>Greatest Benefit to Workflow Management .....</b>                      | <b>147</b> |
| Benefits to Workflow Management by Developers vs. IT Managers .....       | 147        |