

How is Performance Addressed in DevOps?

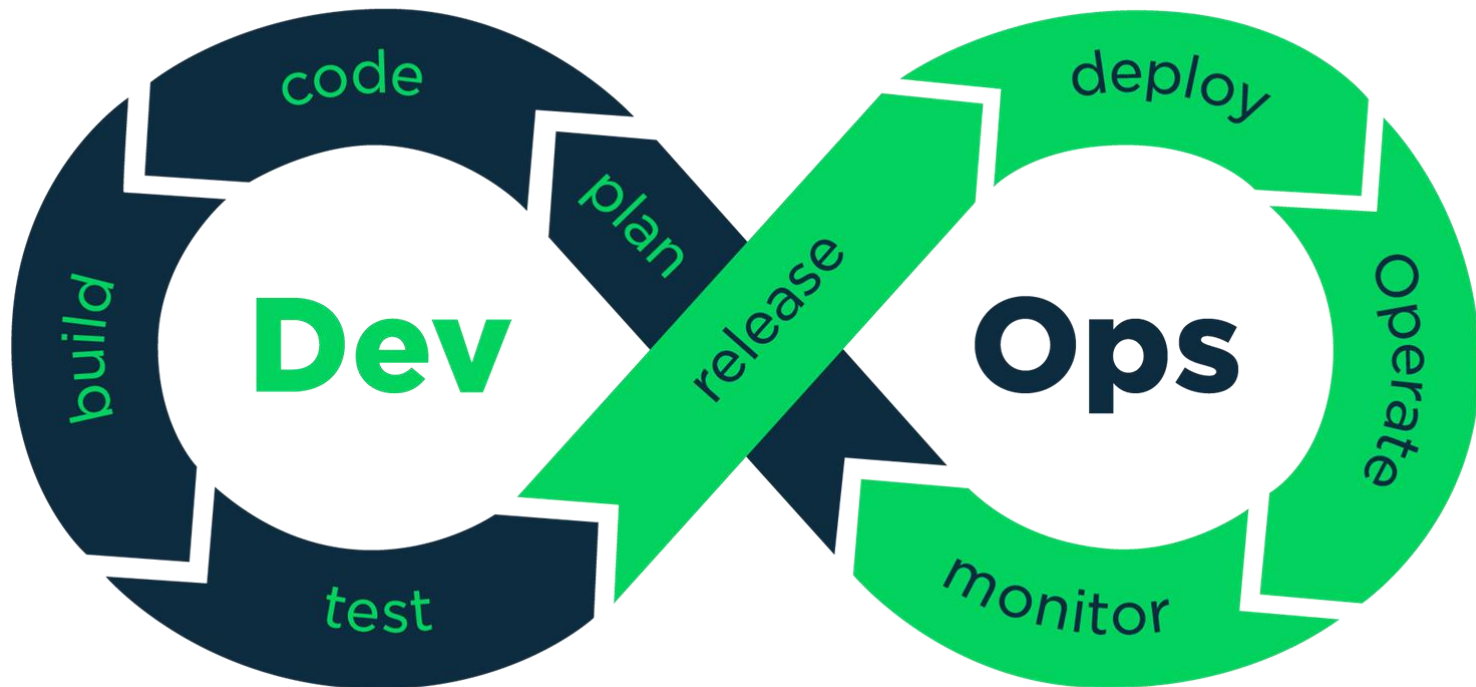
A Survey on Industrial Practices

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What is DevOps?

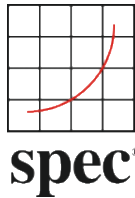
Tight feedback loop between Dev and Ops



High degree of automation possible

A Survey on Industrial Practices

58 questions to companies that do DevOps



26 full responses (108 partial)

Topics:

Participant's professional information

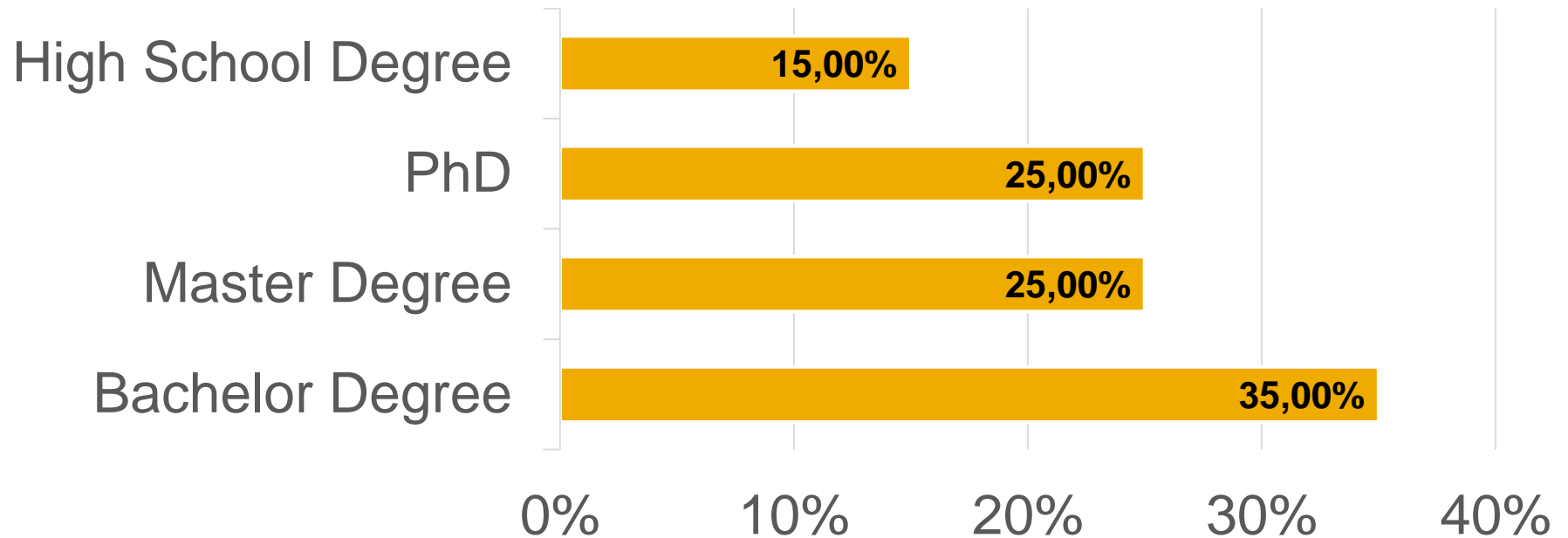
Development process and team org.

Performance assessment and evaluation

Main Questions we wanted to Answer

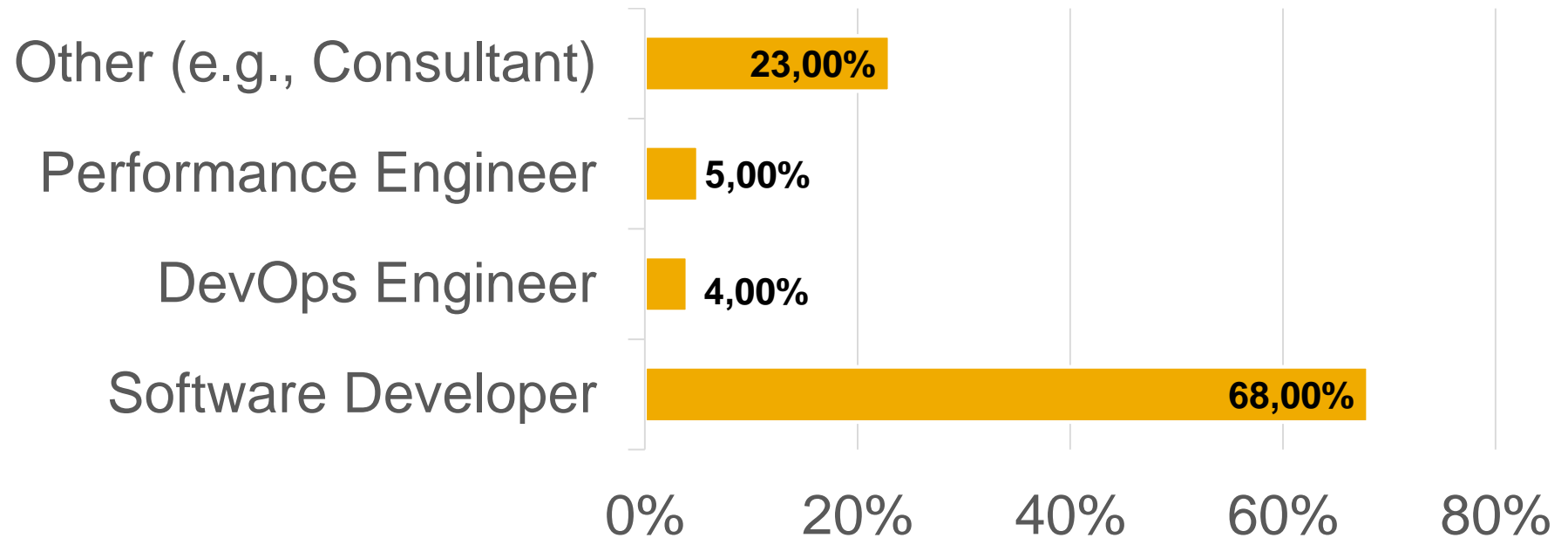
1. How often are performance evaluations of applications developed using DevOps conducted in industry?
2. Which performance evaluation tools are being used in the Continuous Delivery (CD) pipeline?
3. What is the granularity of the analyzed performance data?
4. Are performance models used in the CD pipeline?

Participants of our survey: Education



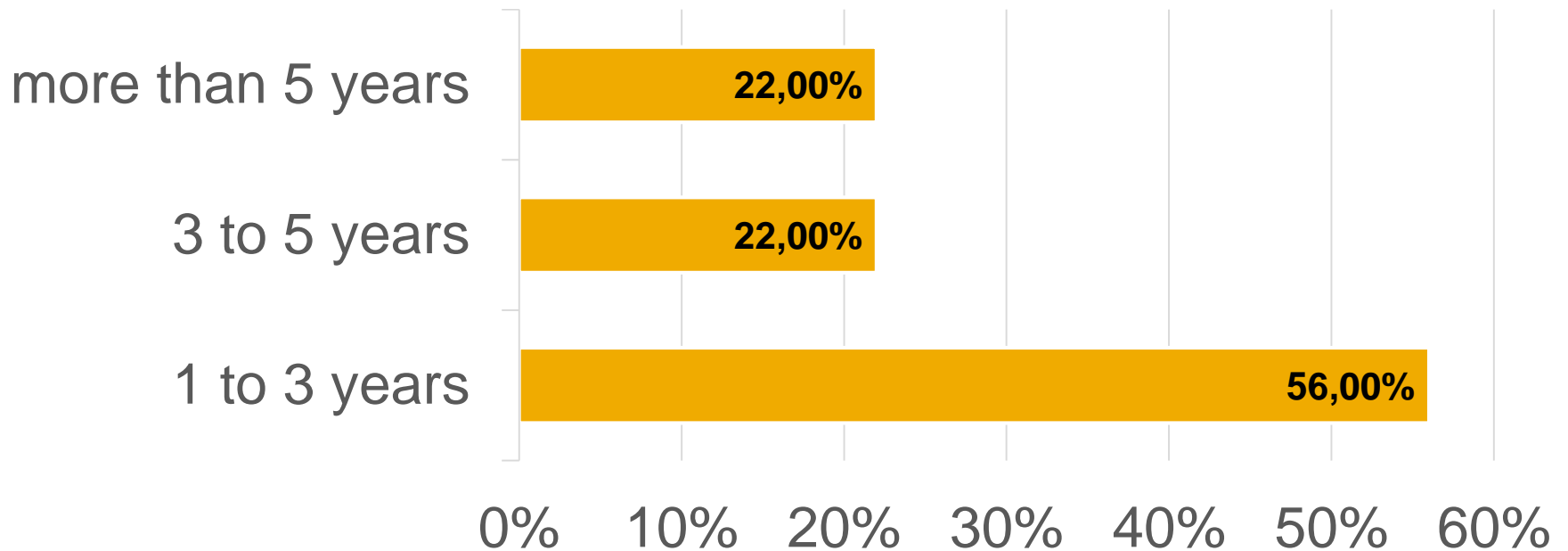
Approximately 85% of the participants have a university degree

Participants of our survey: Job Role



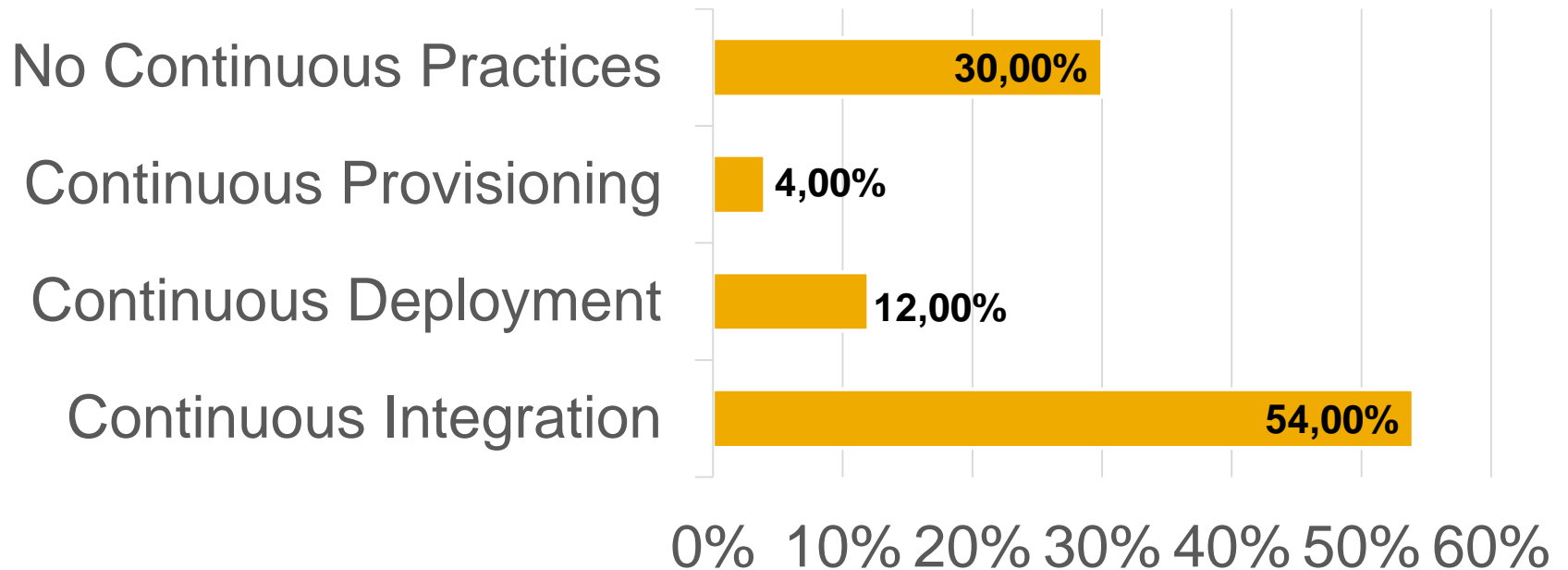
Most of survey participants are Software Developers

Participants of our survey: Work Experience



More than half of the participants have 1 to 3 years of experience in the current role in small to medium size companies

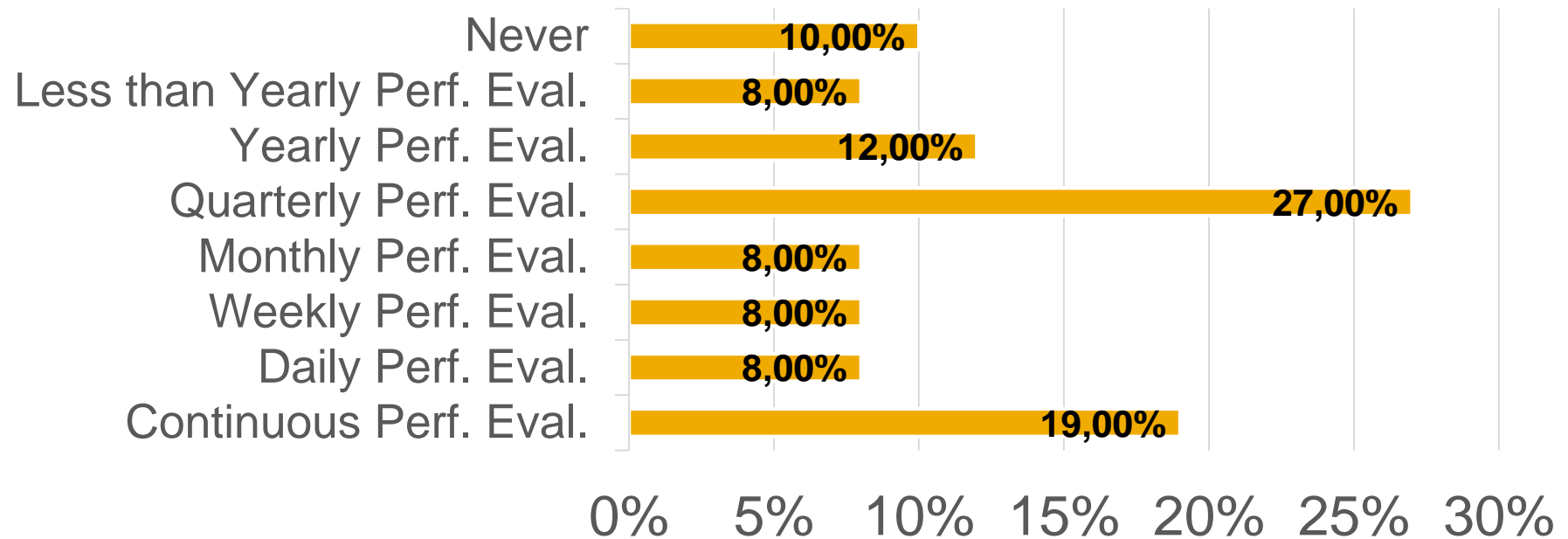
Participants of our survey: DevOps Practices



Most participants apply continuous integration. Continuous deployment and continuous provisioning are applied less frequently

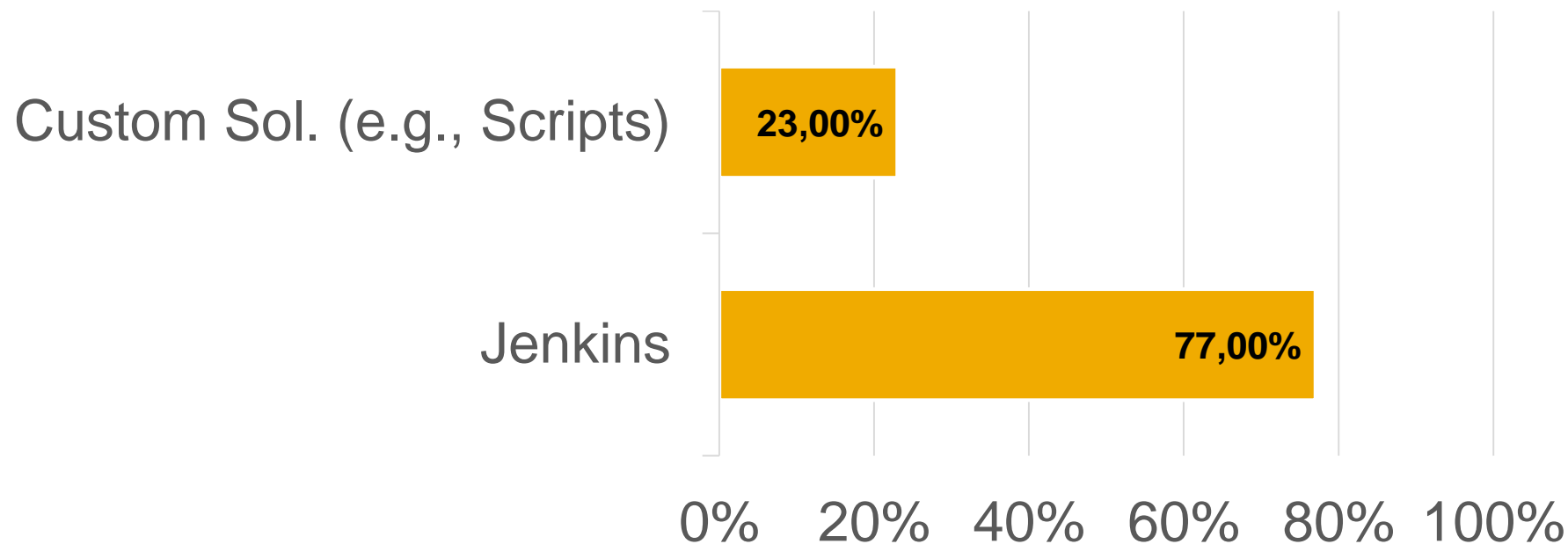
Main Results of the Survey

Performance evaluations are not regularly conducted in most companies



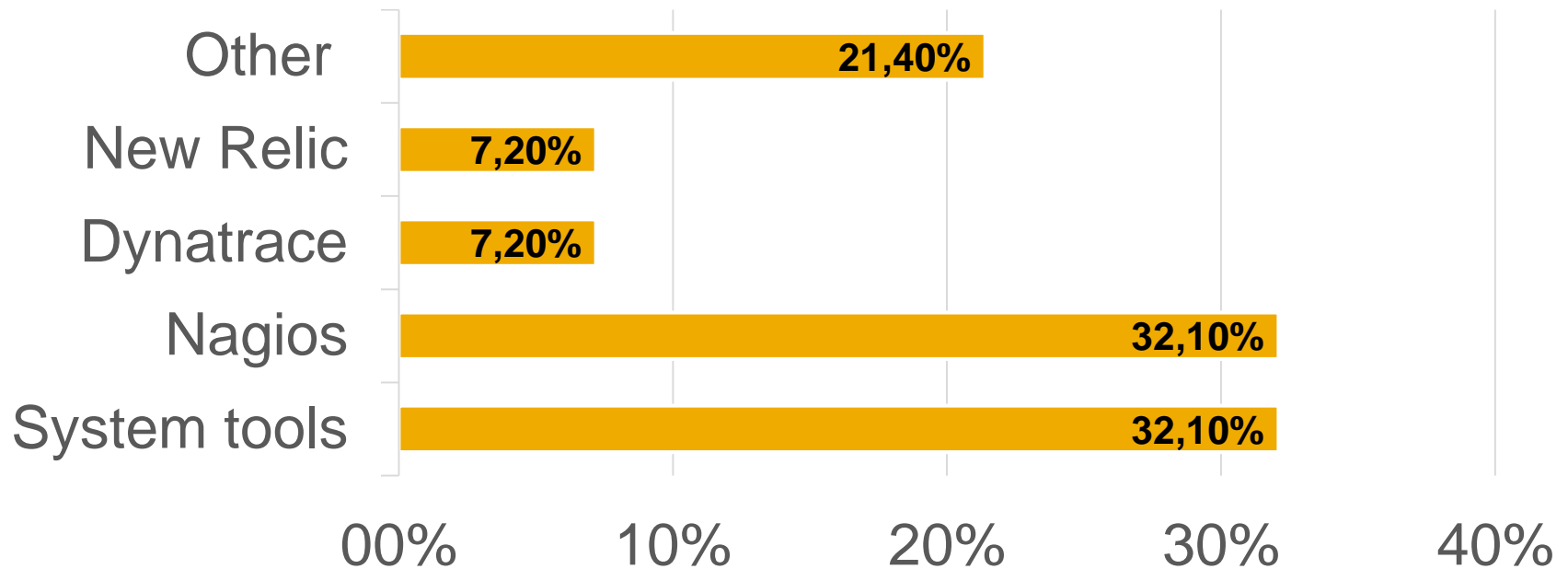
Only approximately one third of the participants conducts performance evaluations on a regular basis and they spend on average 10% of their time on performance evaluation

Jenkins is by far the most widespread continuous integration solution



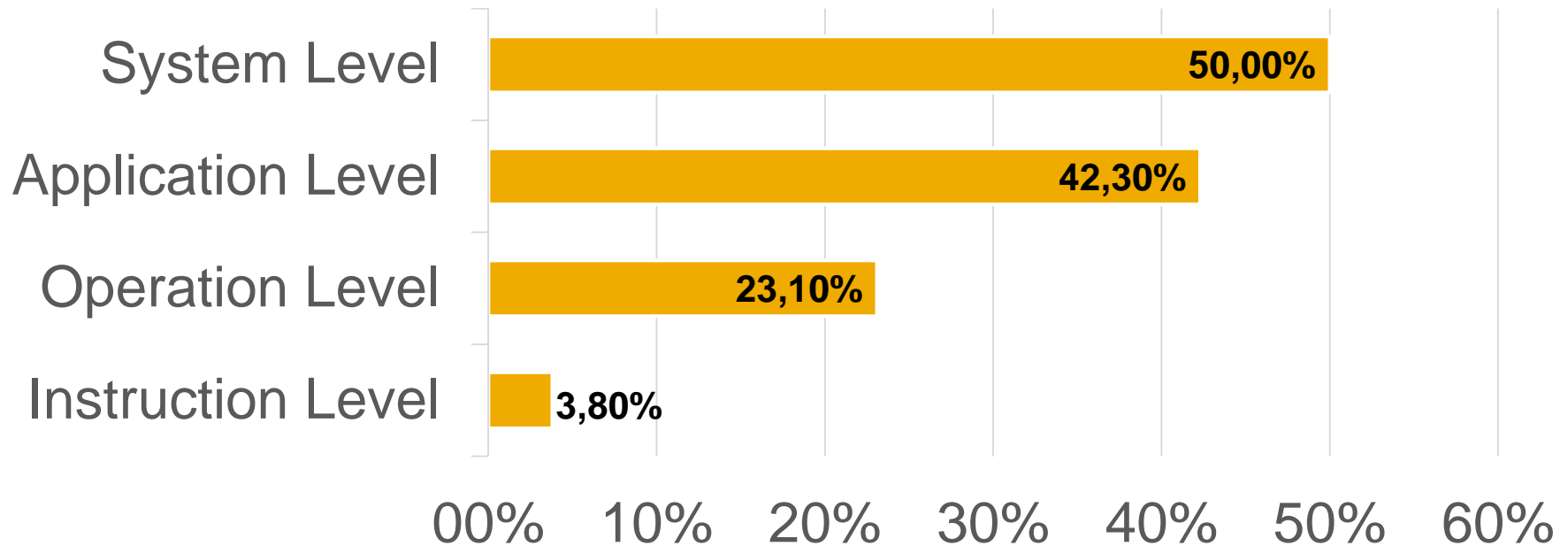
77% uses Jenkins for continuous builds. 65% uses Jenkins also for software deployment, while the remaining practitioners uses Puppet (31%) or custom solutions.

Application-level monitoring (APM) is mostly done in an ad-hoc manner



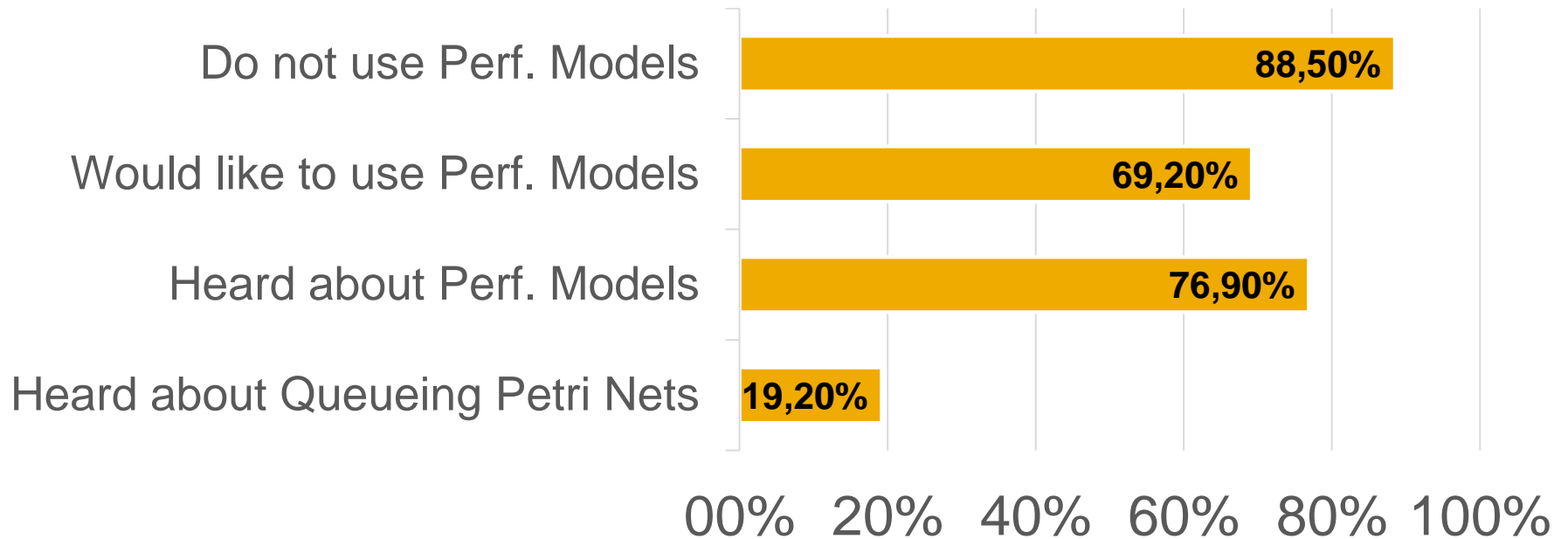
To monitor performance, practitioners tend to rely on lower level system tools, such as top, or Nagios. APM tools (which are advertised as tools that support CI) are hardly used by practitioners.

Application-level monitoring (APM) is mostly done in an ad-hoc manner



Application-internal metrics are not widely used. Most of the practitioners measure performance at system or application levels.

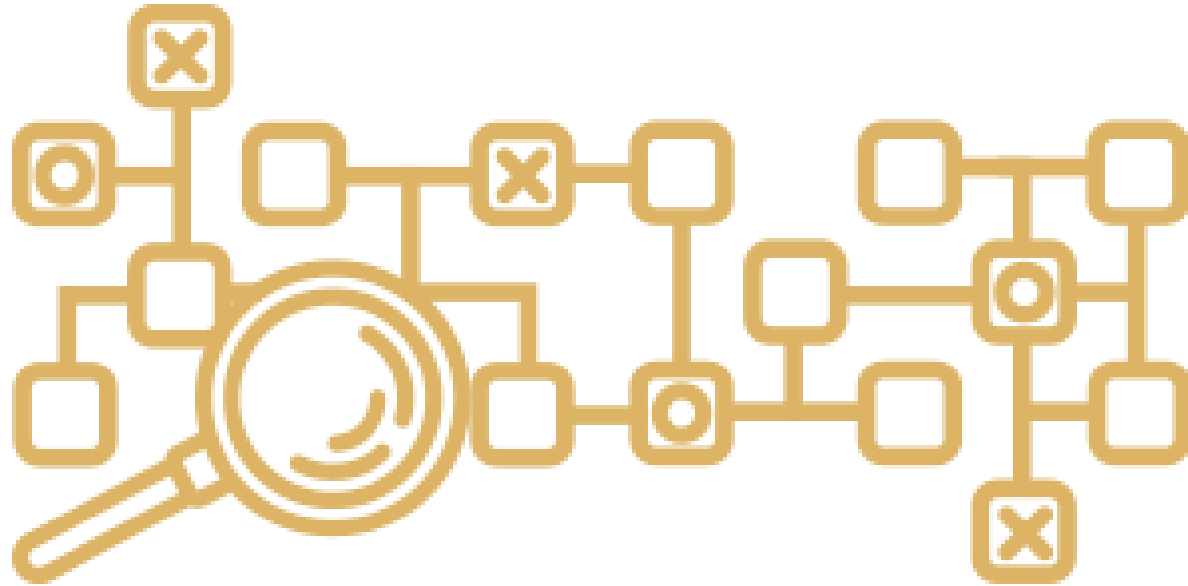
Few practitioners use performance models, despite widespread interest



Performance models are currently not used in industry and there appears to be no trend towards their adoption either.

**So what do these
results tell us?**

Complexity of Approaches



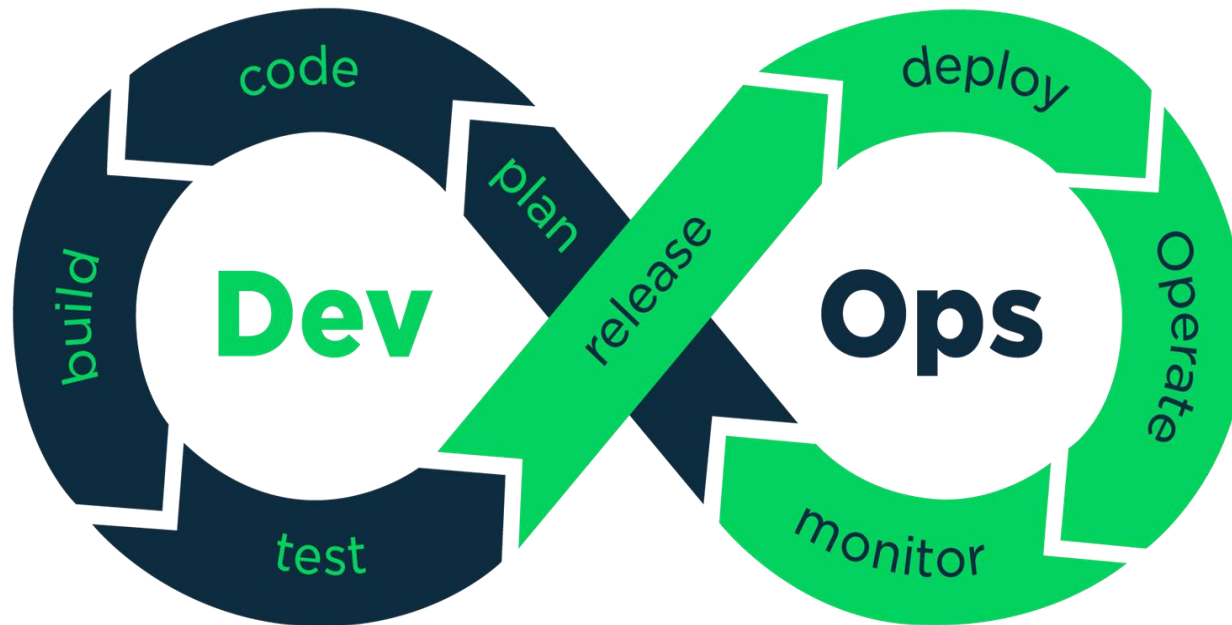
The complexity of performance engineering approaches is a barrier for wide-spread adoption by practitioners.

Approaches need to be Lightweight



Performance engineering approaches must be lightweight.

Approaches need to be Integrated with DevOps



Performance engineering approaches must smoothly integrate with existing tools in the DevOps pipeline.

There is a mismatch between performance engineering research and the needs of industry



Are too complex



Are not lightweight enough



Do not integrate well with DevOps pipelines