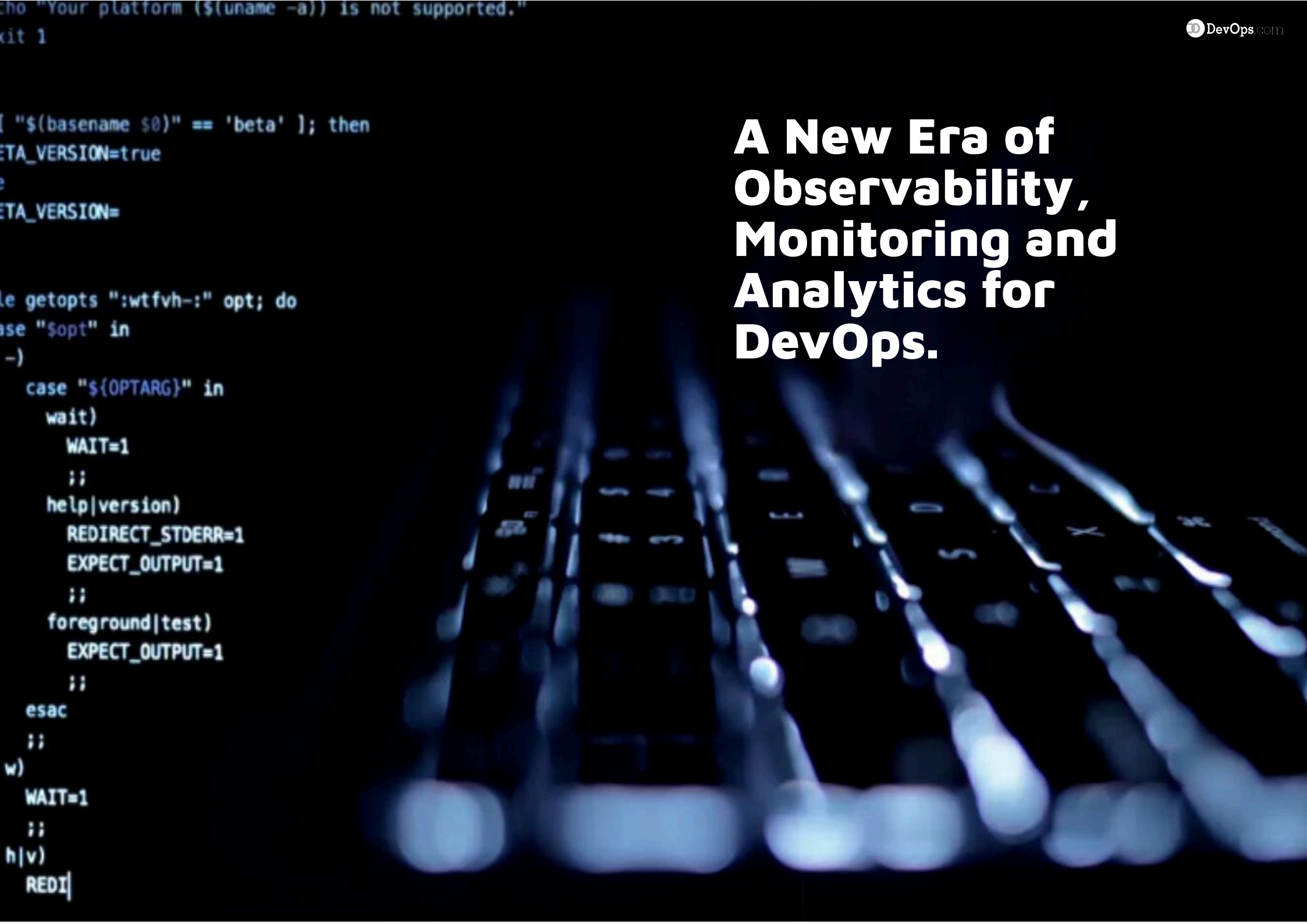
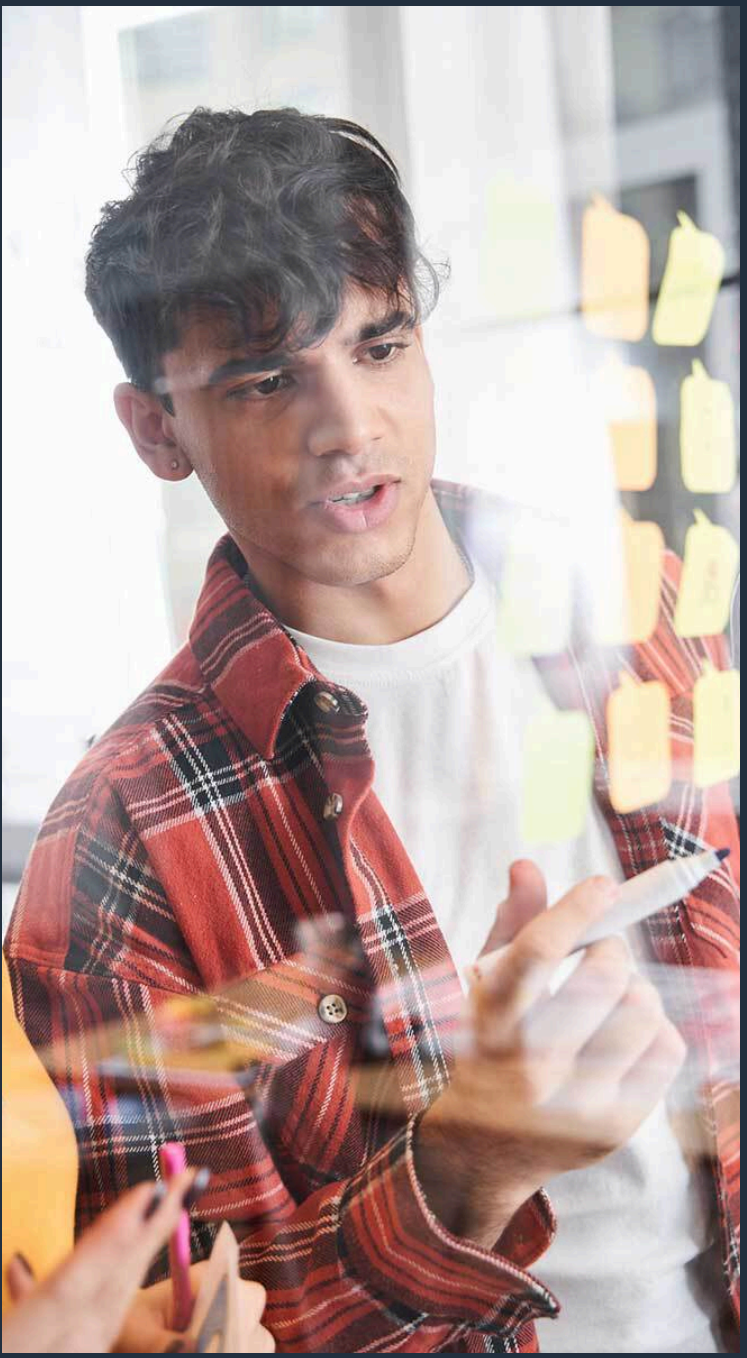
A New Era of Observability, Monitoring and Analytics for DevOps.




DevOps.com
What is Observability?



Observability in one way or another has always been a core tenet of any best DevOps practice. Initially, DevOps teams focused on continuous monitoring as the most effective way to proactively manage application environments. However, it could take days, sometime weeks, to discover the root cause of an issue.

Now, observability platforms that correlate events in a way that make it easier for analytics tools to identify anomalous behavior indicative of a root cause of an IT issue are emerging. Armed with the insights, it becomes a lot simpler for IT teams to resolve issues faster.

In fact, there may even come a day when so-called “war room” meetings that need to be convened to identify the cause of an IT issue via a painstaking process of elimination are no longer required.

How is Observability Different from Monitoring?

Monitoring focuses on predefined metrics to identify when a specific platform or application is performing within expectations. The metrics tracked generally focus on, for example, resource utilization.

Observability combines metrics, logs and traces – a specialized form of logging – to instrument applications in a way that makes it simpler to troubleshot issues without having to rely solely on a limited set of metrics that have been pre-defined to monitor a specific process or function.

The Observability Challenge

With the rise of microservices-based applications, the shift to the cloud, and more end users than ever working remotely, it becomes even more difficult to achieve observability.

Nearly **three-quarters of organizations (72%)** require IT teams to toggle between at least two different tools.

Nearly a quarter (23%) can't attain observability at all.

Only **26% of organizations** have a mature observability practice in place.

Source

Lack of context remains a major challenge with most existing monitoring tools.

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More than half of IT teams have application requests that touch more than 25 different technologies.

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Lack of visibility across the stack (53%) is the most cited cloud-app monitoring challenge

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Observability Gains Traction

A full **61% of respondents** reported that their teams are practicing observability, an 8% increase from 2020.

Naturally, the level of observability being achieved will vary widely by organization....

What Observability Requires

Observability at its core is based on exploring properties and patterns not defined in advance.

DevOps teams should have:

Reporting on the overall health of systems.

Reporting on system state as experienced by customers.

Monitoring for key business and systems metrics.

Tooling to help you understand and debug your systems in production.

Tooling to find information about things you did not previously know.

Access to tools and data that help trace, understand, and diagnose infrastructure problems in your production environment, including interactions between services.

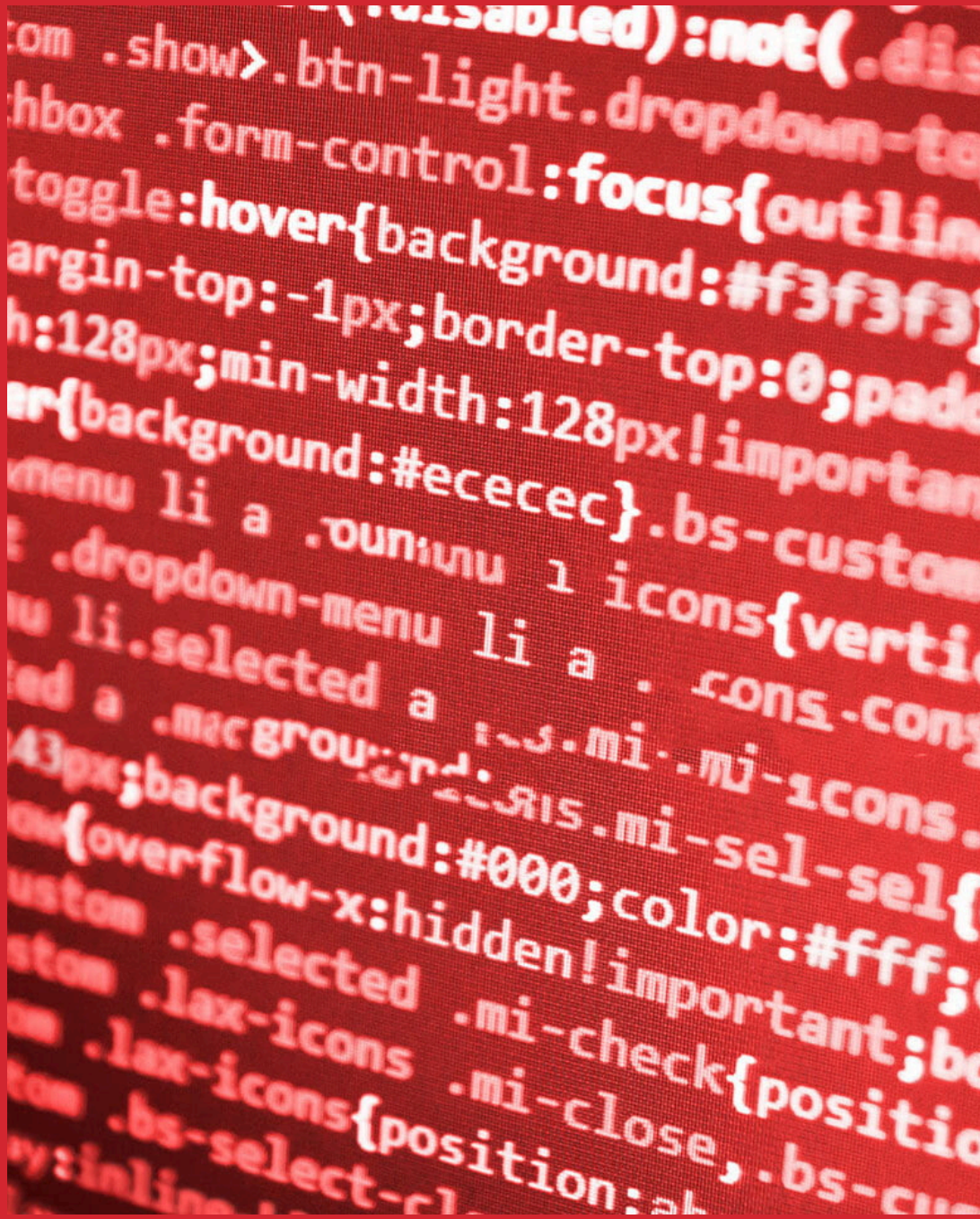
Source

The Role of Open Source

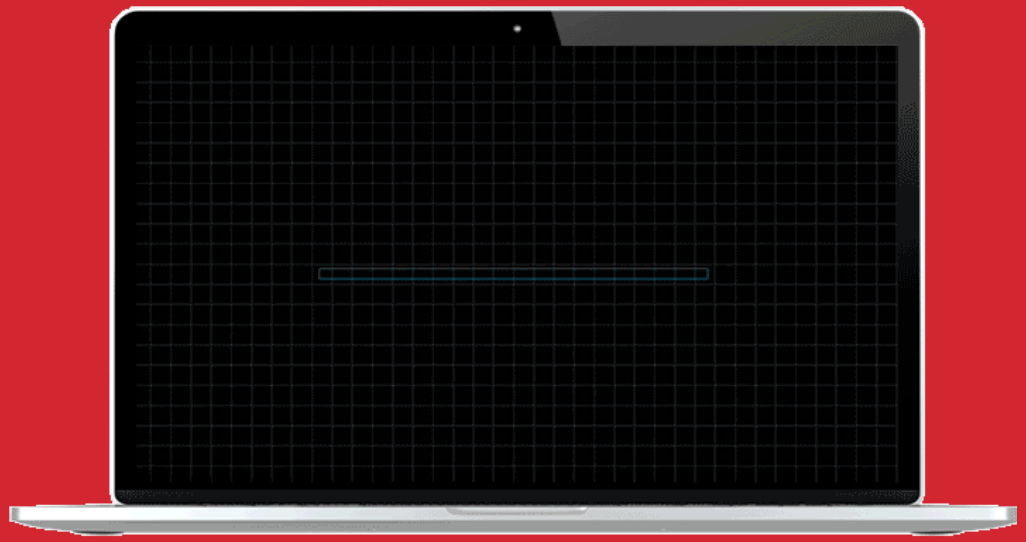
Open source technologies are now starting to play a critical role in advancing observability. The Cloud Native Computing Foundation (CNCF), for example, is advancing an OpenTelemetry initiative that promises to make it more affordable to instrument applications.

There's also an open source Pixie observability platform being advanced under the auspices of the CNCF, alongside a Prometheus monitoring tool that is being more widely employed across both emerging microservices-based applications and legacy monolithic applications.

Collectively, these projects promise to greatly reduce the total cost of instrumentation.



Return on Investment for Observability



Beyond reducing the amount of time required to diagnose and remediate IT issues, observability platforms may also enable IT teams to rationalize some of the monitoring tools they employ today.

Observability doesn’t eliminate the need for all monitoring tools, but it does reduce the dependency many organizations have on them today.

The Future of Observability

The next major step is to make it easier to automate the deployment of the open source agent software that will be relied on to drive down the cost of instrumentation.

After that goal is achieved, machine learning algorithms that are at the core of IT service management (ITSM) platforms infused with artificial intelligence (AI), otherwise known as AIOps, will gain access to more data to improve overall observability. The more instrumented applications become, the more data organizations will have to train AI models.

Still a Long Observability Way to Go

Only 11% of organizations qualify as observability leaders based on their ability to satisfy four criteria:

- observability experience of more than 24 months
- ability to correlate data
- efforts to rationalize vendors
- adoption of AI.

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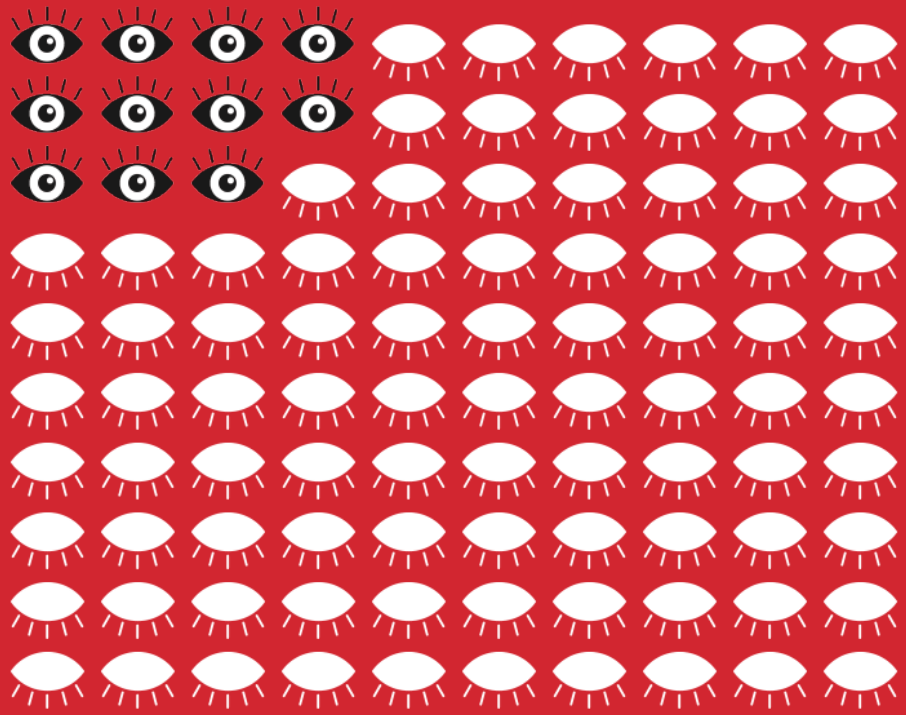

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