StackStorm automates and monitors a core DevOps asset: the software delivery pipeline

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Founded in 2013, StackStorm is serving the DevOps market with a suite of open source-based tools to automate, monitor and fix problems in the continuous integration and delivery pipeline. This space is currently a motley collection of tools and custom scripts, but also several vendors servicing that varied landscape. If our DevOps surveys are any indication, interest in this so-called 'pipeline' will rise in the coming years.

The 451 Take

StackStorm fancies itself an automation company, and with experience from Opalis Software, it's little wonder. What's interesting about its approach is that it's automating the DevOps pipeline, including the continuous integration/continuous delivery (CI/CD) process. This may seem like a minor concern, namely, working on developer tools. And 'developers don't pay for anything,' right? However, in cloud native application and DevOps teams, the CI/CD pipeline is the core factory for a company: it's a mission-critical process that needs as much monitoring and automation as production itself. If your business depends on being able to deploy new code every week – or daily – anything that slows down that pipeline is bad, very bad. Not only that, integrating the pipeline with production monitoring and automation helps realize the full continuous delivery vision. Hence, StackStorm finds itself in an interesting position, vision-wise: we'll take care of the new mission-critical asset for you, the DevOps pipeline. Few other vendors have that scope of vision, at the moment at least.

Context

Founded in 2013 and based in Palo Alto, California, StackStorm has been operating in stealth mode until recently. It's made clear that it wanted to be involved in cloud and DevOps, but little beyond that. The company has seed funding and is headed up by Evan Powell as CEO (most recently from Nexenta, where he was the founding CEO) and Dmitri Zimine as CTO (from VMware and before that Opalis, sold to Microsoft years back). The rest of the staff of 13 is engineering, typing away at the core products. These products are open source and while the company sells the expected professional services around the stack, it's clear to us that it will add products in the future, ones that the company will charge for.

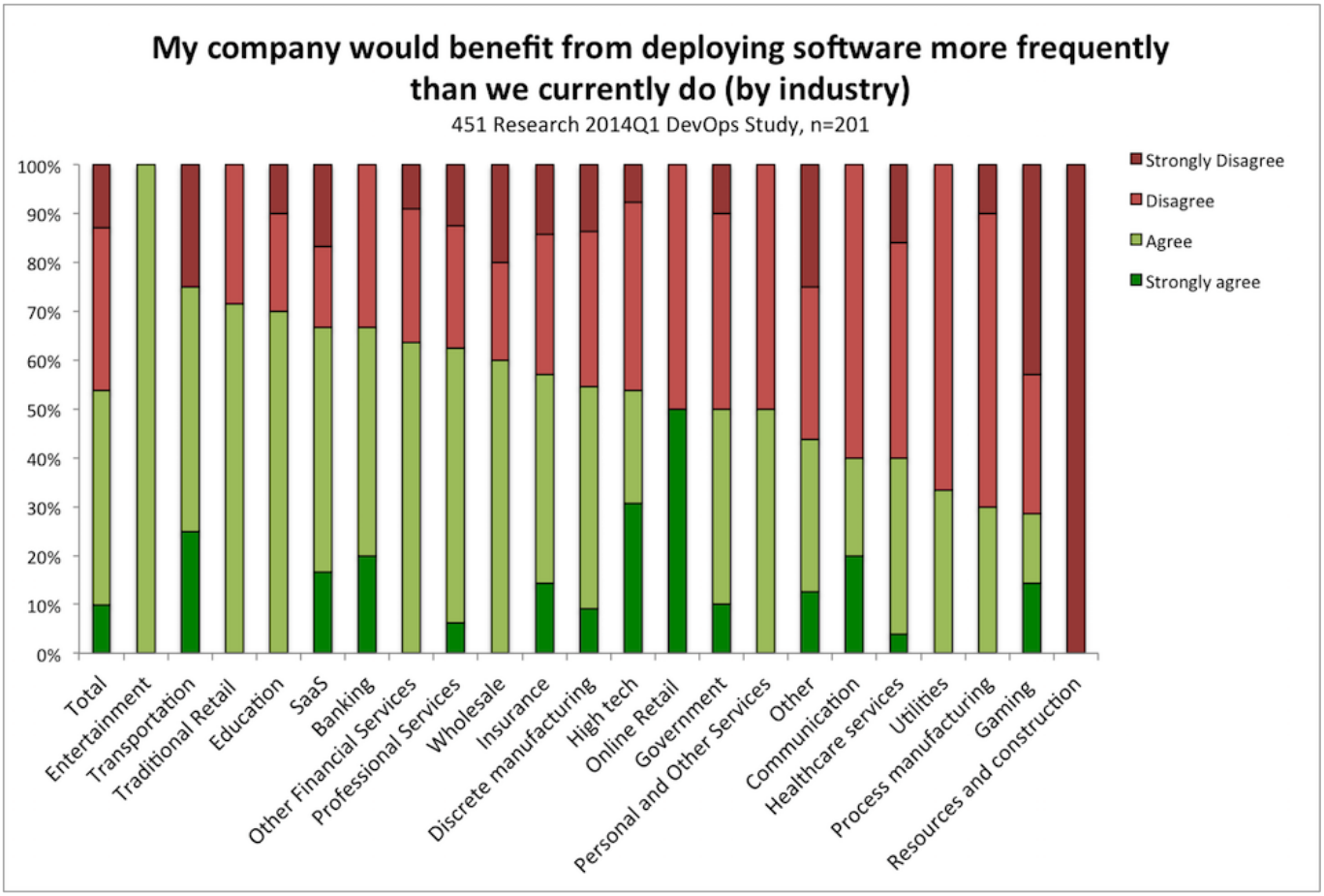
StackStorm is currently running off seed funding from XSeed Capital (where Evan Powell served as EIR for eight months), Finaves and Stanford University's Angels & Entrepreneurs group. The company does not disclose total funding to date.

The pipeline: making developers

In the emerging field of DevOps – and development processes driven by CI/CD – one of the core assets is the software delivery pipeline. This pipeline can be thought of as a factory process that includes developers writing code, packaging the code, testing the code and then deploying the code to staging and production. As many phases are automated as possible because the goal is to allow the delivery of new bits of software into production weekly, if not daily.

This benefit – rapidly and consistently being able to deploy the product – is one of the core value propositions of doing DevOps. With this ability to move faster, as any student of lean manufacturing will recall, is the ability to make better business decisions: with such small windows of change, the business is given a tremendous amount of feedback about what works and does not work with the finished product and can adjust accordingly. That is, if you're delivering software as your primary asset, you can learn from failures and tune what's in your software on a weekly basis. This, of course, contrasts with larger cycles on the order of three to 12 months, where being 'responsive' can seem to move a snail's pace in comparison to DevOps.

After fielding two studies of the mainstream DevOps market this year, we've seen broad industry interest in DevOps, as represented by the desire to speed up production releases. The chart below breaks out such desire by industry vertical:



The n on this sample set is only 201 (making the n of each industry even smaller), but it still serves as good confirmation and directional input – along with other data from our surveys – that there's interest in DevOps beyond the 'unicorns' like Netflix. All the horses and donkeys out there in the real world want and need DevOps tools too.

Product

In this context, then, it's easy to understand the gap StackStorm is trying to fill: helping companies monitor and automate that software delivery pipeline. StackStorm's core product is a suite of integrated tools that perform three tasks, all centered on said pipeline:

- Automates the CI/CD process and overall pipeline – there are still many manual steps needed to get the full pipeline up and running. Here, think of StackStorm as helping build the 'factory.'
- Instrumenting the pipeline – much of the CI/CD pipeline was not written to be easily monitorable. Worse, in each install there can be so much variation in the exact tool chain, that monitoring it can be a headache. StackStorm has several adapters to collect data and attempt to provide a monitoring overlay on top of the pipeline.
- Monitor the pipeline and try to fix problems – once instrumented and automated, the next step is to monitor the health of the pipeline and automatically fix problems as they're encountered, just as one would do with monitoring tools in production.

These three points represent the overall vision of StackStorm. Being new, there's various degrees of completeness in each part – fixing problems automatically, for example, is one of the harder problems to solve in any IT situation. By nature of being open source, StackStorm can hope to harness contributions and benefit from the evolution of underlying frameworks it uses, like OpenStack's Mistral, for workflow management.

Another capability that emerges from such a rig is the ability to capture and perform audits. If StackStorm is establishing and then automating the pipeline, there are records of the current state and which individuals created not only the pipeline, but also committed code and even deployed it to production.

Also adding to the audibility – although more as a side effect than by design – is StackStorm's foray into 'ChatOps.' The ChatOps concept seeks to replace email ticket systems and face-to-face communication as the primary means of release management integration with group chat systems. Along with bots that allow humans in the chat to do things like promote builds and change configuration, ChatOps is a practice that emerged in places like GitHub and since spread to early mainstream users.

With the promise to integrate and automate this dizzying array of moving parts, StackStorm is forced to integrate with numerous different components such as Jenkins, Puppet, Chef, Ansible, Salt, git and GitHub, Atlassian's JIRA, Nagios, New Relic, OpenStack, AWS, Heroku, Cloud Foundry, Splunk, VMware, Docker and more. Keeping up with all of the new and evolving components will prove a challenge and, we suspect, an area that could be monetized by StackStorm in the future.

Customers

Being new, StackStorm reports only a handful of customers: fewer than 10, the company says. These customers are skewing toward large companies and/or having large IT environments (like SaaSes, we'd think) to manage. At the moment, these customers are paying StackStorm for professional services, not for a for-pay product, which, of course, doesn't exist yet.

Competition

The CI/CD, release management, and software delivery pipeline space is full of players. XebiaLabs seems to most closely match with the breadth and intentions of StackStorm. Rundeck (sprung from DTO Solutions) is an example of a tool that has tirelessly worked at the DevOps space over the years, while existing and new release management vendors operate here as well.

Several CI/CD vendors and projects compete with the overall 'mindshare' for what StackStorm has to offer. Few are targeting the full-on vision. The open source project Jenkins is the core asset here, with companies like CloudBees commercializing it. Jenkins, of course, forked off Hudson when Oracle acquired Sun, with Hudson now residing at the Eclipse Foundation. There's also Atlassian's Bamboo CI/CD product, JetBrains TeamCity and Codeship, as well as a panoply of vendors with 'CI' in their names: TravisCI, CircleCI and MagnumCI.

In the more general automation category, there are the stalwarts of automation at BMC and HP, but also the new generation automation tools of Puppet, Chef, Ansible and Salt.

General ALM tools and suites also play here, all the way from Microsoft TFS, Serena, IBM, CollabNet, MicroFocus and Perforce to SmartBear and several others. There are also vendors offering release management options that bump up against StackStorm's notions, such as CA Technologies (that has an impressive DevOps portfolio). Both VMware (with its Code Stream beta) and Amazon Web Services (covered in our re:Invent summary) have come out with integrating offerings in this space as well

Finally, Tasktop provides an interesting, possible competitor, as always. Both StackStorm and Tasktop put an overlay on top of the software delivery process: an event-driven network that ingests all the relevant data and normalizes that data into their own schemas, and then shoots those events out to the relevant components in the software delivery pipeline. Each company does something different with that framework (Tasktop synchronizes data across tools, StackStorm automates and monitors the pipeline itself) but have very similar underlying architectures and, thus, futures.

SWOT Analysis

Strengths

The company has a good vision for what's needed in the fast-evolving DevOps space: a tool that brings production-grade monitoring and automation back into the development phase.

Weaknesses

At 13 staff members, the company is tiny compared with the many midsized to giant-sized companies in this space. StackStorm will also need to find a product-driven revenue source soon, or risk buyers taking their budget elsewhere.

Opportunities

We continue to see deep, mainstream interest in DevOps and native cloud application development in our research. The ALM space has been sleepy for some time, so there will likely be a desire for tools like StackStorm over the next few years.

Threats

There is much potentially direct competition in this space: many of them are 'lumbering' giants, but plenty of them are crafty operators looking for just the right gap to fill to start collecting revenue.