

# Software Containers

*& Capital Markets*

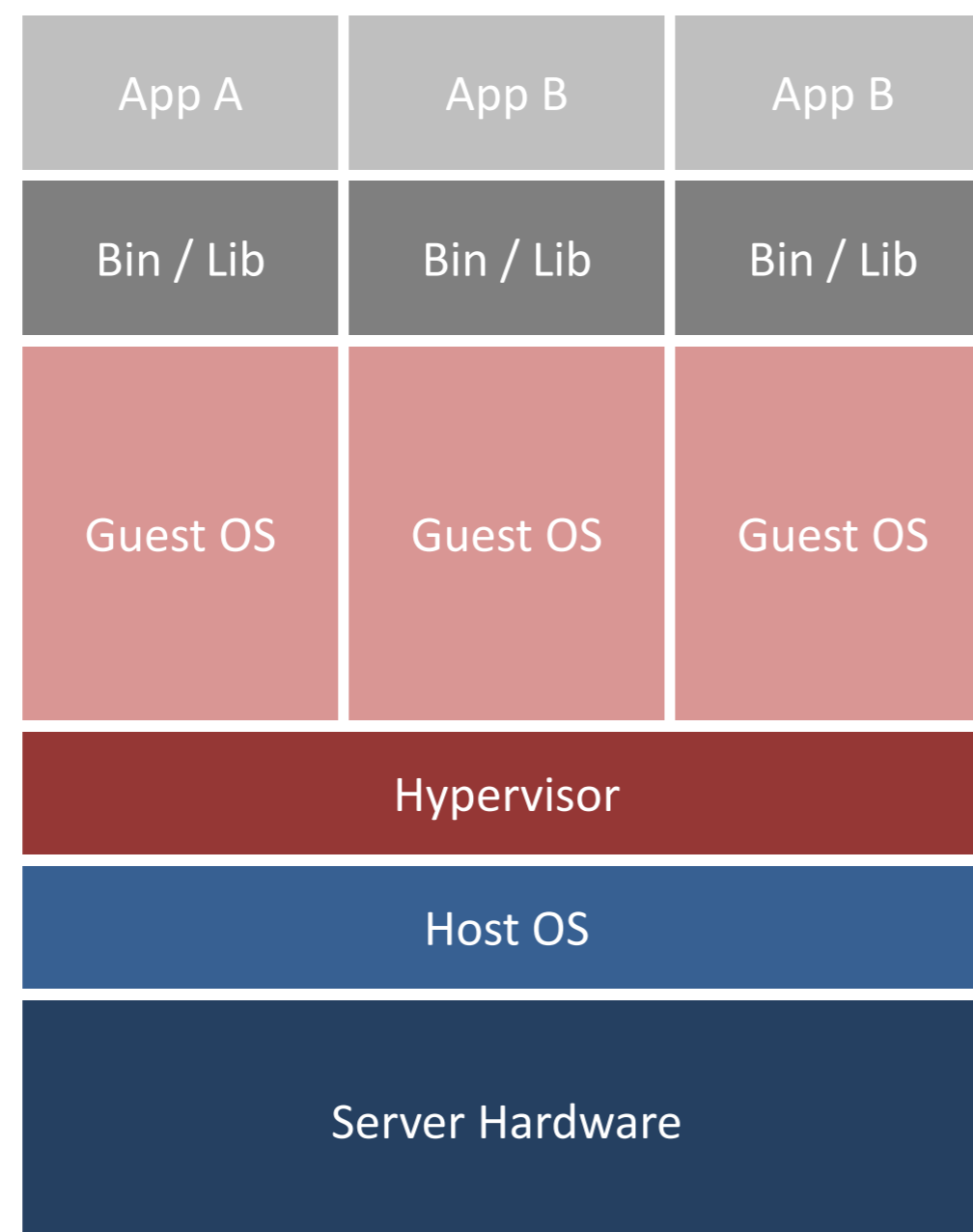


# Application Infrastructure Is Changing

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Monolithic code bases and periodic updates are being replaced by microservices architecture and continuous software improvements

Virtual machines and guest operating systems create computational overhead that bog down application delivery and development

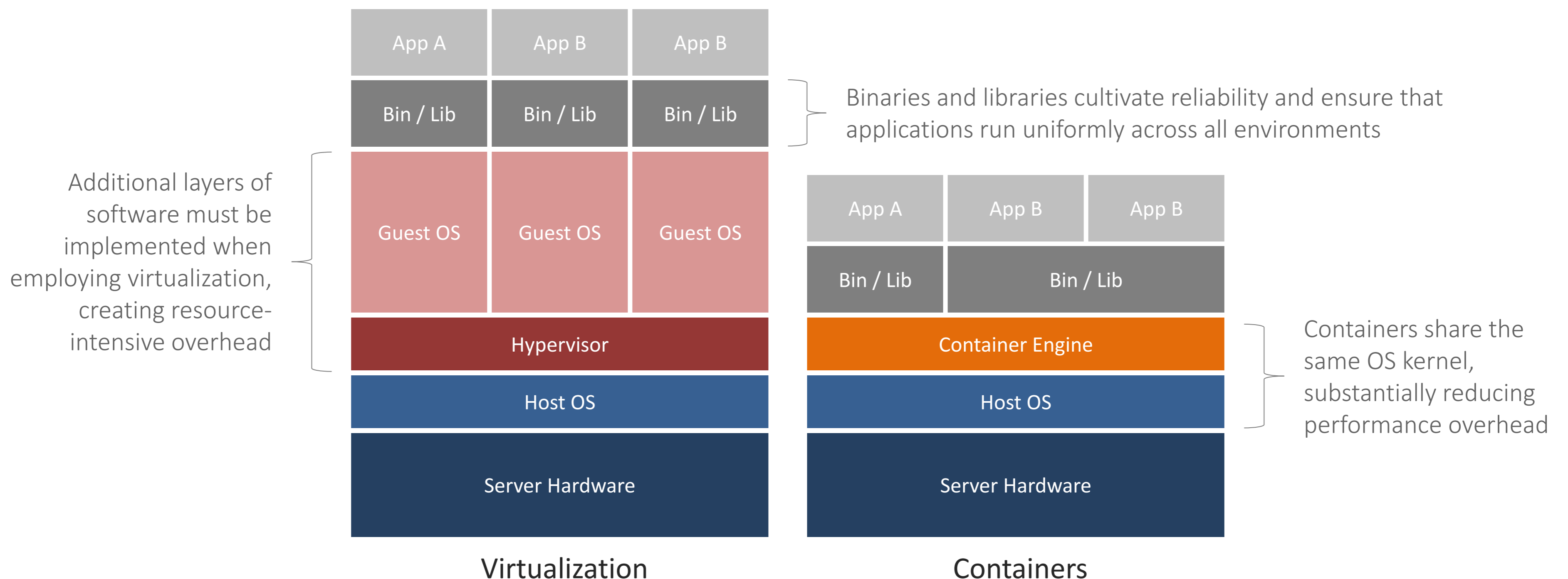


Virtualization

# Containers Solve Critical Challenges

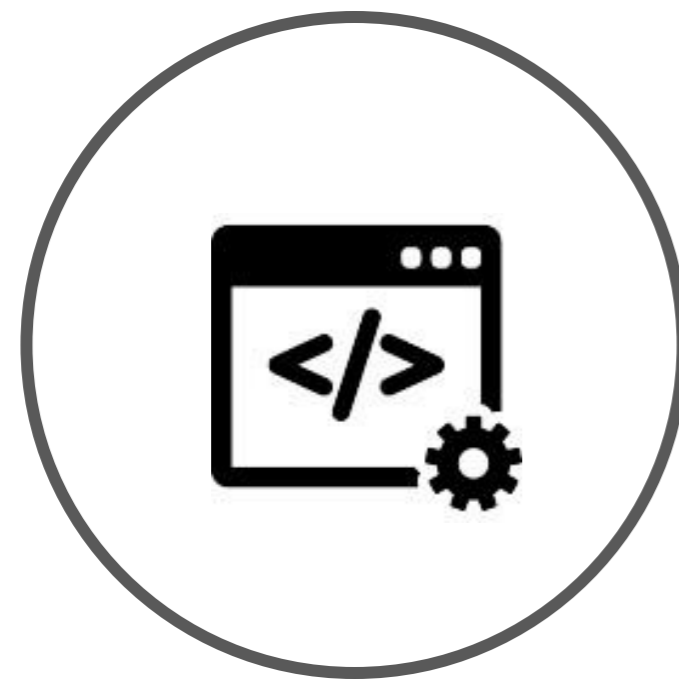
Linux containers, independent runtime environments that possess the elements necessary to run an application, offer an alternative to traditional and virtual runtime environments

Despite having been developed more than a decade prior, containers were ushered into the limelight by Docker in 2014



# Containers Have Many Performance Benefits

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## Developer Collaboration

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Containers expedite development work flows and allow multiple developers to work in identical environments



## Storage Efficiency

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By sharing an OS kernel and incorporating only the minimum resources necessary, containers reduce infrastructure costs



## Deployment Enablement

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Containers reduce the time it takes to add, remove, or redistribute code in response to fluctuations in demands on servers

# Renowned Organizations Use Containers

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Google runs all of its software in containers, orchestrated by its internally developed container manager Kubernetes. Google spins up over two billion containers per week



The U.S. Department of Treasury has struck a \$90,000 deal with Mesosphere to leverage its DCOS technology



Goldman Sachs runs 90% of its software on Docker containers. In 2015, Goldman Sachs joined The Linux Foundation's Open Container Initiative



The backend for the third-generation Siri is run on Mesosphere's Apache Mesos. The shift reduces latency and enables scalability and deployment of new services



Yelp relied on Docker containers to migrate their code onto AWS servers, and currently launches over one million containers each day to run software tests

# Capital Markets Have Taken Note

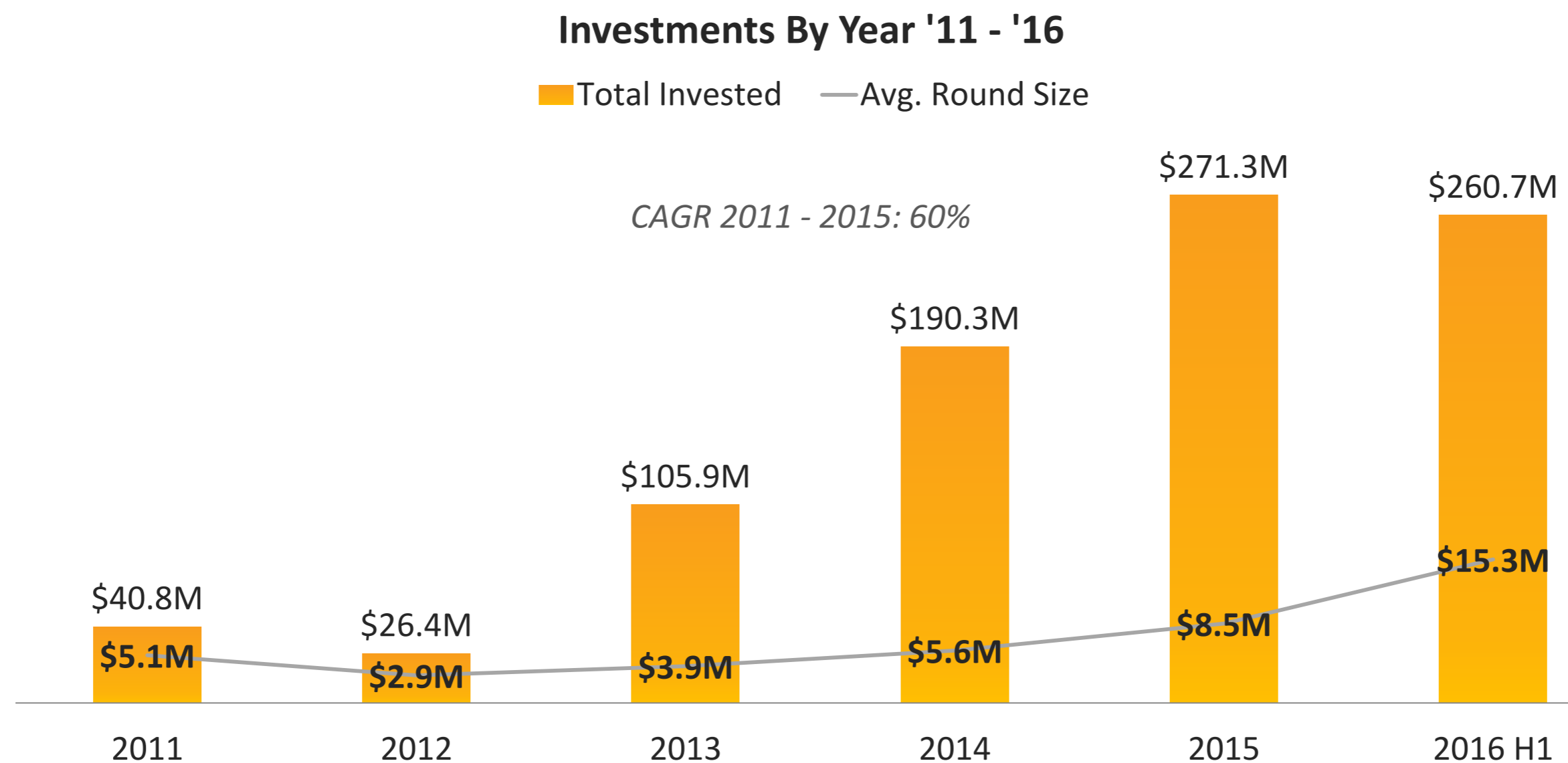
Numerous high-profile strategic and institutional investors have taken a meaningful stake in the increasingly competitive container space through venture investment and M&A

Institutional Investors				
				
				
Strategic Investors				

# Venture Landscape

MergerTech has identified 61 startups with targeted container solutions that have raised a total of \$898M in venture capital across 127 rounds since 2011

\$263M was invested in H1 2016, just shy of the \$271M of venture capital that was deployed in 2015; funding in H1 2016 grew 66.3% year-over-year, and average funding round size grew 64.7%



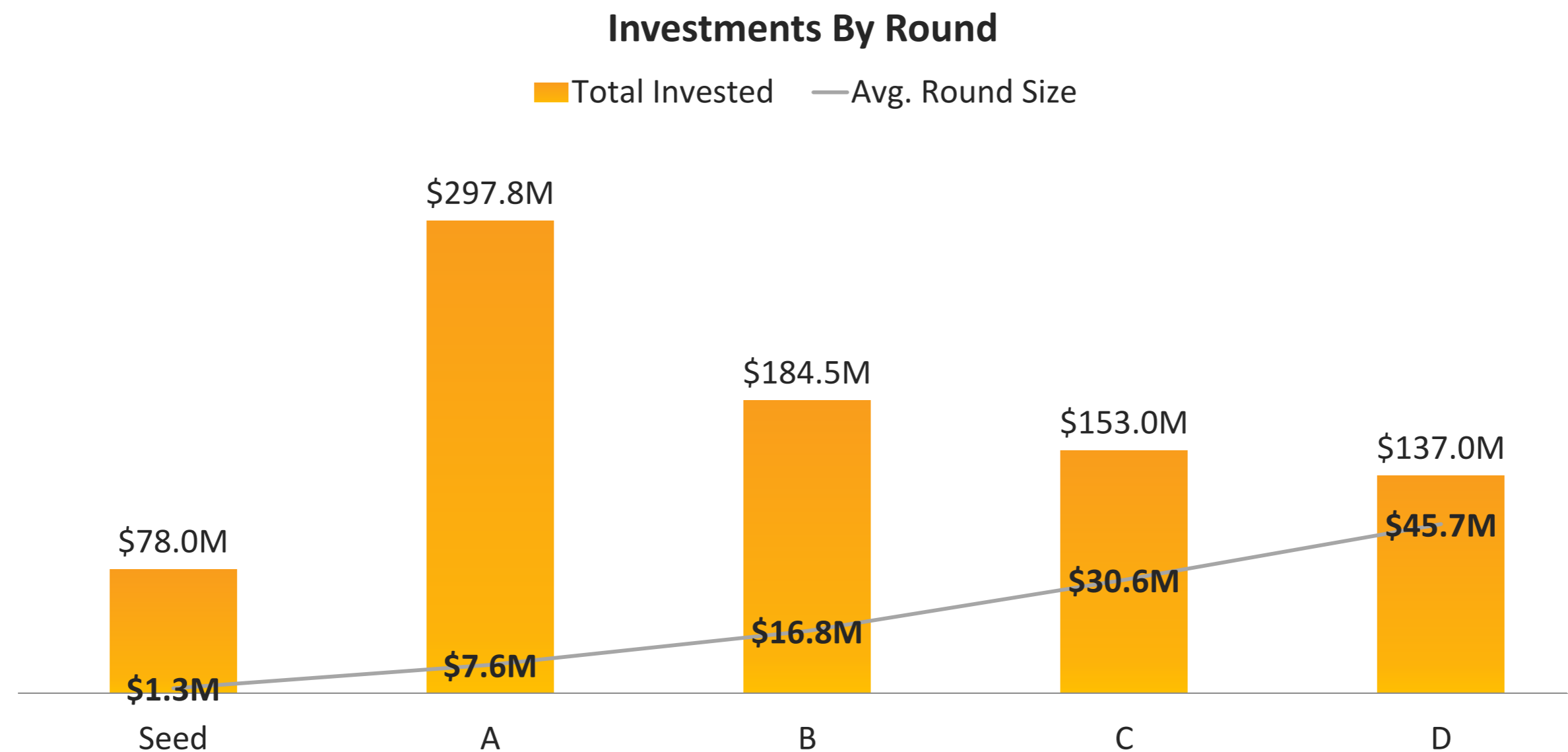


# Venture Trends

A significant majority of container startups are in initial growth stages, with seed rounds comprising 46.9% of round volume followed by series A rounds at 30.5%

42% of capital raised was for seed and series A rounds, comprising 8.7% and 33.2% of dollars raised, respectively

Only a handful of companies received later stage financing, with the number of B, C and D rounds totaling eleven, five and three, respectively

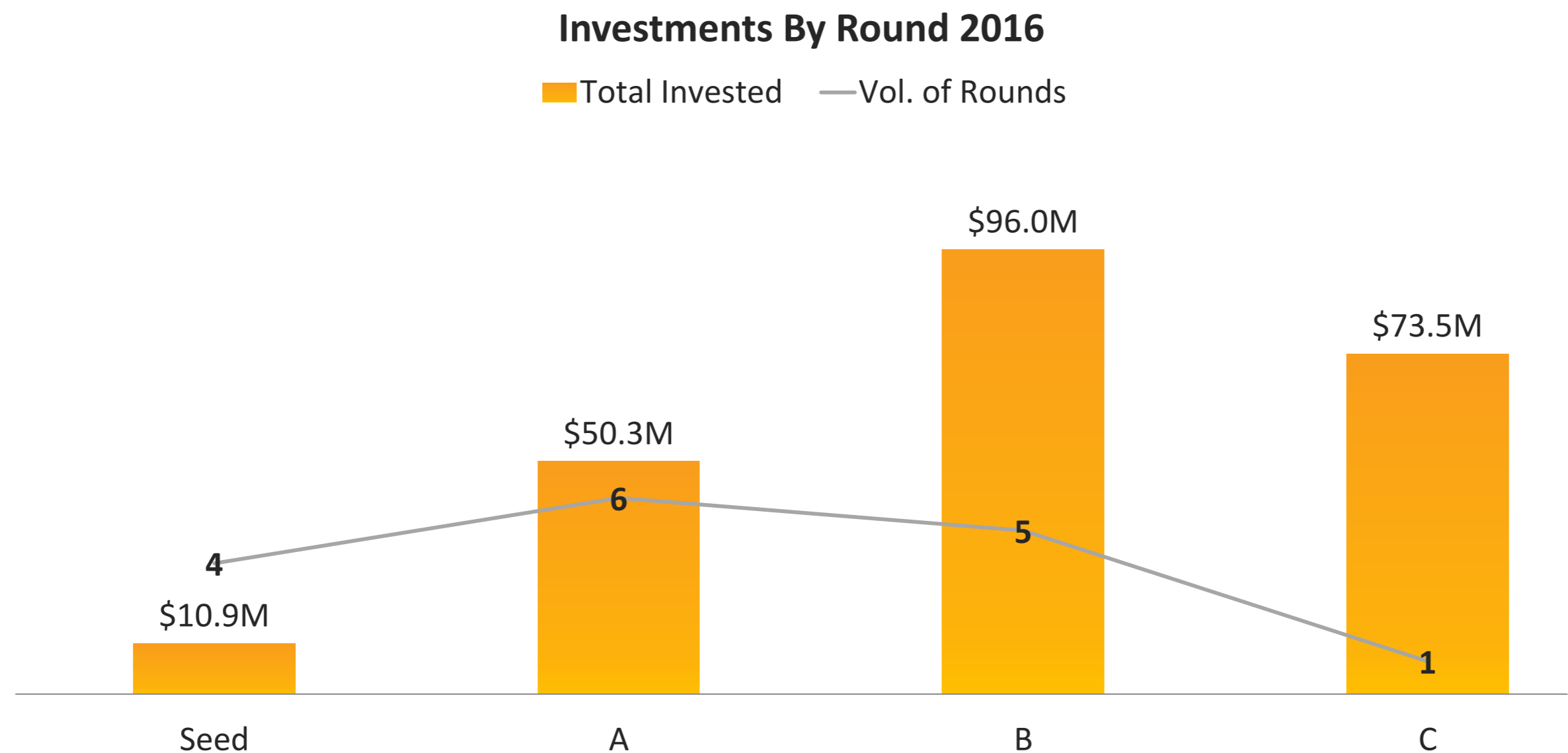


# Venture Trends In H1 2016

MergerTech identified 17 container venture rounds in the first half of 2016, representing \$262.7M, up 66% year-over-year from \$157.9M across 17 venture deals in H1 2015

A shift in capital deployment towards later stage financing indicates maturation of the container ecosystem

36.8% (\$96.0M) of capital deployed in H1 2016 was for series B financing, compared to 4.2% (\$11.5M) in all of 2015 and 26.8% (\$51.0M) in 2014



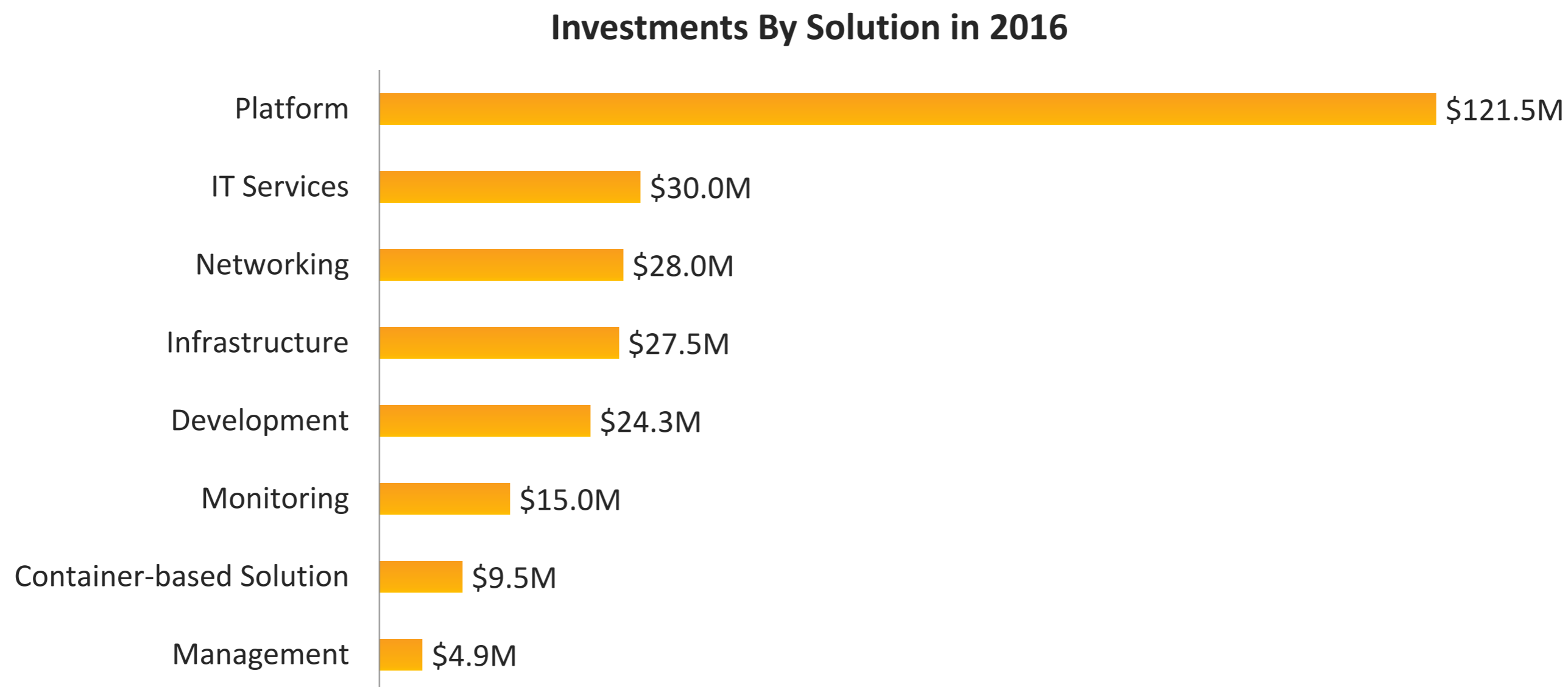
# Venture Financing Across Solutions

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A study commissioned by ClusterHQ found that the top three barriers to container adoption are persistent storage, networking and data storage

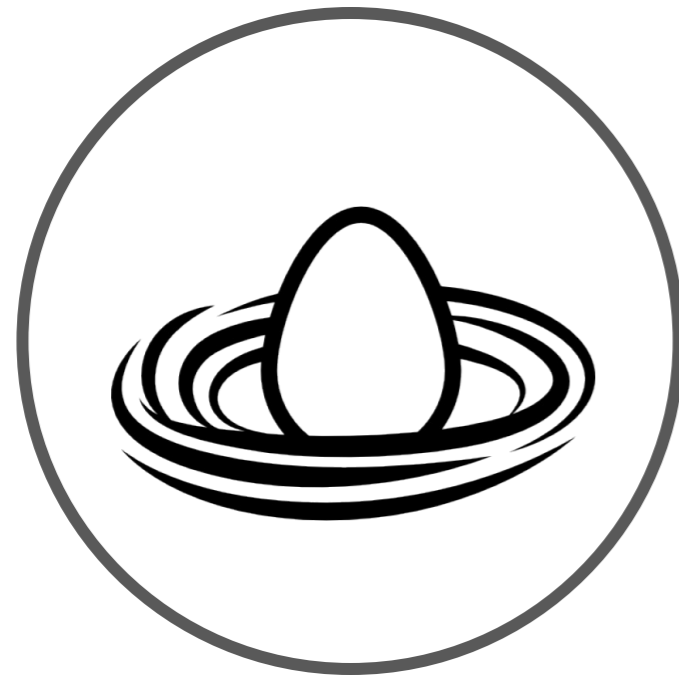
A similar survey conducted on behalf of CloudFoundry cited the top container challenges as management, monitoring and persistent storage

Venture firms are funding companies that address adoption roadblocks. As well-capitalized contenders attempt to gain an edge, they may seek out startups that solve critical pain points as acquisition targets



# Container Mergers & Acquisitions

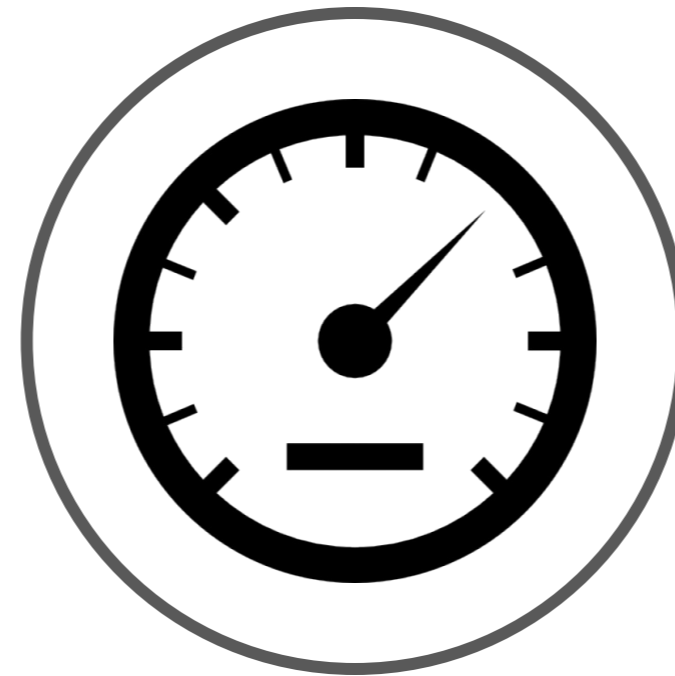
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## Fledgling Market

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M&A activity reflects the early stage of the market – the majority of purchases have been executed for tech and talent



## Rapid Acceleration

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M&A accelerated significantly in 2015, with the volume of transactions increasing 100% from 2014



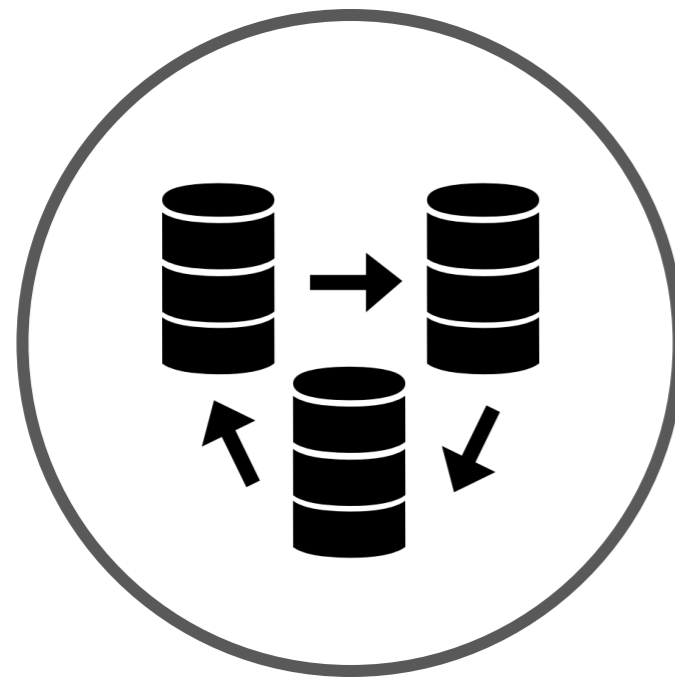
## Enterprise Contenders

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Enterprises entered the fray in Q3 2014 when IBM purchased Compose and HP bought ActiveState the following week

# Drivers of Consolidation

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Management & Orchestration

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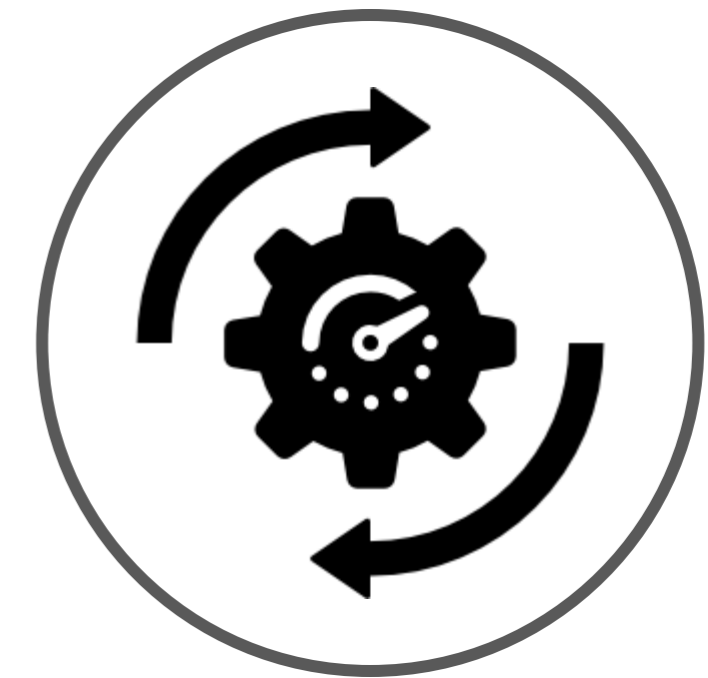
There is no standard in container management and orchestration. Leaders such Docker, Amazon, Mesosphere and CoreOS are often used in conjunction with each other and smaller startups. Top incumbents continue to buy up contenders to gain headway in management and orchestration



Container Platforms

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Some of the largest deals in containerization have been enterprises purchasing container platforms to break into the space and accelerate time to market. Such transactions include Samsung acquiring Joyent, HP rolling up ActiveState and Centurylink buying Elastic Box



Container Automation

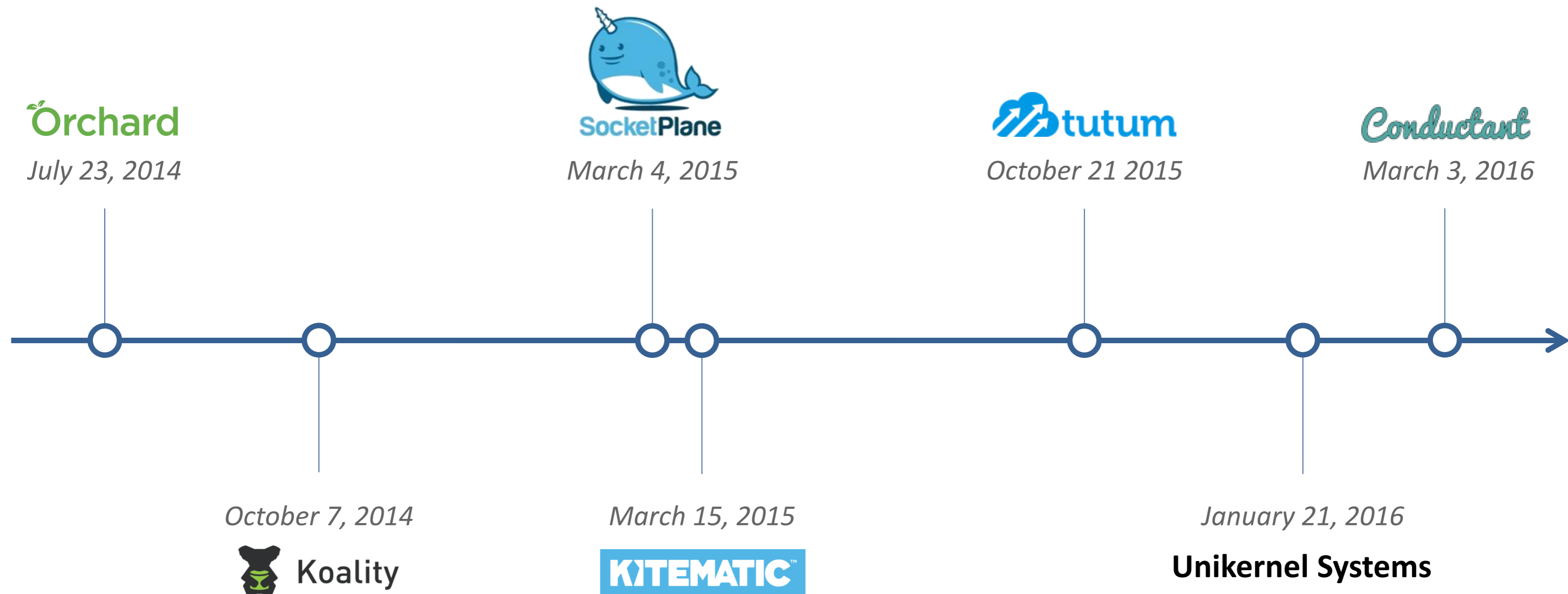
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Container automation is another area of stiff competition. While VMware is developing an automation solution internally, others have approached it inorganically. Such players include Red Hat with its purchase of Ansible, and Oracle with its acquisition of StackEngine



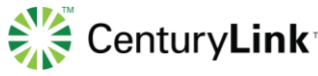












# Docker Is Leading the Herd

Docker, the pioneer of mainstream commercial container technology, has been the dominant force in container M&A















Its acquisition strategy has been to onboard top talent and expand technological capacity to offer an enterprise-ready suite of container solutions



# Precedent Transactions

Announced	Acquirer	Target	Acquisition Summary
6/16/2016	 <b>SAMSUNG</b>	 <b>Joyent</b>	After using Joyent's cloud and container service, Samsung purchased the company for \$170M to provide its own cloud for software development, infrastructure management, mobile, IoT and other verticals.
6/14/2016	 <b>CenturyLink™</b>	 <b>ElasticBox</b>	The acquisition of ElasticBox strengthens and enhances CenturyLink's development and deployment of multi-cloud management functions to its cloud portfolio. ElasticBox had previously raised \$12.4M.
5/20/2016	 <b>pprenda</b>	 <b>K I S M A T I C</b>	Apprenda acquired container management startup Kismatic to deepen its support for open source container management and orchestration software project Kubernetes.
3/3/2016	 <b>docker</b>	 <b>Conductant</b>	Docker acquired stealth-mode orchestration startup Conductant to onboard world class talent that will focus on building a solution to integrate scheduling system Apache Aurora with Docker.
1/21/2016	 <b>docker</b>	<b>Unikernel Systems</b>	Docker acquired container management solution provider Unikernel Systems to develop lighter-weight microcontainers for customers requiring hyper-efficient application computing environments.
12/18/2015	 <b>ORACLE®</b>	 <b>StackEngine</b>	Oracle acquired StackEngine to bring Oracle Public Cloud key functionality around big data, DevOps and containers, in a bet on the convergence of IaaS and PaaS.
10/21/2015	 <b>docker</b>	 <b>tutum</b>	Docker acquired Tutum to enable business IT teams to build, deploy and manage Docker containerized applications across cloud and on-premise environments.
10/16/2015	 <b>redhat</b>	<b>A N S I B L E</b>	Red Hat acquired open source-based IT automation software provider Ansible for \$125.5M to bolster its DevOps, container and OpenStack support.
7/28/2015	 <b>hp</b>	<b>ActiveState</b>	HP acquired ActiveState to establish its own PaaS play, as well as to break into containerization via Stackato, ActiveState's integration and support solution for Docker containers.

# Precedent Transactions (cont.)

Announced	Acquirer	Target	Acquisition Summary
4/14/2015	 Engine Yard™	 OpDemand®	Application deployment PaaS provider Engine Yard acquired OpDemand to expand its offerings into the Docker container space, differentiating itself in the crowded PaaS market.
3/15/2015	 docker	 KITEMATIC	Docker acquired Apple-facing container setup automation and GUI provider Kitematic to enhance its developer support for Mac users.
3/4/2015	 docker	 SocketPlane	Docker acquired open-source Docker and Linux-based SDN provider SocketPlane to fill gaps in its networking functionality for enterprise deployment, which had not received significant focus prior.
10/7/2014	 docker	 Koality	Docker acquired continuous integration provider Koality to accelerate the development of lifecycle management solutions for containerized applications.
8/20/2014	 vmware®	 CloudVolumes Manage as one..	VMware acquired CloudVolumes, which provides enterprise services and desktop workload virtualization SaaS, to compete with Docker by offering a lighter weight virtualization solution.
8/13/2014	 CoreOS	 Quay.io	CoreOS acquired Quay.io, which provides the first Docker container registry PaaS for enterprise IT networks, and subsequently launched the CoreOS Enterprise Registry.
7/23/2014	 docker	 Orchard	In its first of a series of acquisitions to enhance its Docker Hub enterprise stack, Docker acquired Orchard Labs to enable better management of complex, multi-container applications.



# Microservices Architecture And Devops M&A

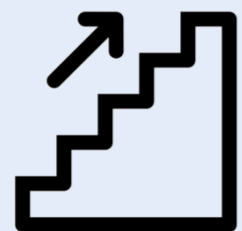
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Given the nascence of container M&A, there is minimal financial information available for prior transactions. To approximate valuations in container M&A, MergerTech examined transactions in virtualization, devops, and other verticals related to microservices architecture



















In this corner of the market, we see a number of growth stage companies being acquired, typically for enterprise values ranging from \$24M to \$85M, by enterprises seeking to gain or retain a competitive edge



Valuations are high, reflecting the targets' potential for further scalability and high margins; typical revenue multiples range from 2.4x to 7.0x and EBITDA multiples range from 7.3x to 14.5x

# MSA & DevOps Precedent Transactions

Announced	Acquirer	Target	Target Summary	TEV	TTM Rev	TEV / Rev
<i>(\$ in millions)</i>						
6/23/2016	 redhat	 3SCALE	Provides API management SaaS that enables the creation, deployment, management and monetization of web-based enterprise API's.	\$ 27.0	\$ 4.0	6.8 x
4/5/2016	 servicenow	 ITAPP	Offers cloud app management software to enable migration, governance and management of apps from on-prem, cloud or hybrid cloud environments.	15.0	2.0	7.5
1/29/2015	 solarwinds	 librato	Provides AWS, Heroku, Collected and AppHarbor cloud monitoring and application performance management IaaS.	40.0	2.5	16.0
9/18/2014	 redhat	 FEEDHENRY	Provides mobile application PaaS to enable the development, integration, deployment and management of mobile applications.	82.2	5.9	13.9
6/18/2014	 redhat	 enovance Multi-Cloud Experts	Provides open source cloud hosting and virtualization build and deployment IaaS and managed hosting.	94.8	12.5	7.6
6/17/2014	 CISCO	 tail-f	Provides software-defined networking-related device configuration and management, datacenter management and network control software.	175.0	10.0	17.5
6/13/2014	 informatica	 STRIKEIRON	Provides application performance management and application programming interface management SaaS.	54.6	6.0	9.1
6/9/2014	 Progress	 MODULUS	Provides systems and application lifecycle management PaaS and on-prem software to enable hosting, deployment, scaling and monitoring applications.	12.5	2.0	6.3
Max				\$ 175.0	\$ 12.5	17.5 x
<b>3rd Quartile</b>				<b>85.4</b>	<b>7.0</b>	<b>14.5</b>
Mean				62.6	5.6	10.6
Median				47.3	5.0	8.3
<b>1st Quartile</b>				<b>24.0</b>	<b>2.4</b>	<b>7.3</b>
Min				12.5	2.0	6.3

# Final Thoughts

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Containers have only recently become a mainstream technology, and adoption is gaining rapid momentum as they are increasingly being recognized as a critical component of modern application computing



Top tier startups and enterprises alike are vying to play a central role in the formative wave of container innovation through organic and inorganic means



M&A activity swelled through Q2 2016, but has tapered off in Q3. Overall activity in this space continues to accelerate – venture funding has reached record levels and enterprises such as Red Hat, IBM and Microsoft are increasing their container offerings



As container startups raise more capital and enterprises invest more into container solutions, the proliferation of cash-rich players who are competing neck and neck, combined with growing adoption of container technologies, indicates a favorable environment for M&A in the coming quarters

# Thank you.

Whether you are considering M&A or simply interested in making a connection, we are always delighted to speak with entrepreneurs who are redefining the way we use technology

**Please get in touch** at your convenience