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Kubernetes-Defined Monitoring

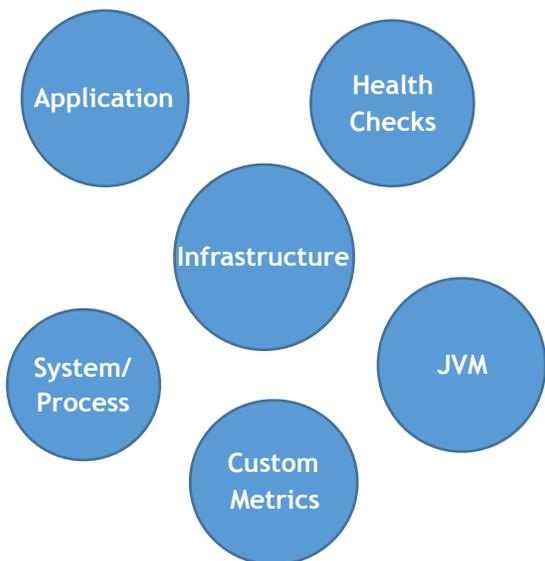
Gianluca Borello, Chief Architect, Sysdig



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Data



Big Honkin'
Data Engine



Unicorns and Rainbows
Dashboards



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Me

Gianluca Borello

Chief Architect, Sysdig

<https://github.com/gianlucaborello>



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Today

- Monitoring Kubernetes
 - Few best practices
 - Some ideas
 - Some proposals



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Using

- Sysdig
 - <https://github.com/draios/sysdig>
- Sysdig Cloud
 - <https://sysdig.com/>



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In a Vendor Neutral Way



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We Are in the Middle of a Big Change

PCs/Servers

Virtual
Machines

Containers



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We Are in the Middle of a Big Change

PCs/Servers

Virtual
Machines

Containers

Unit: machine
Orchestration: none
Architecture: monolithic

Unit: machine
Orchestration: external
Architecture: monolithic

Unit: app/service
Orchestration: native
Architecture: service-based



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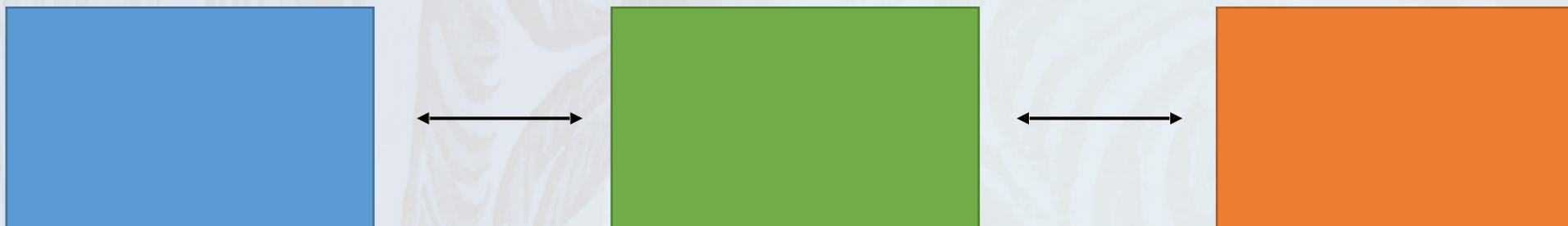


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Things Are More Complex Now

- Cache
- Webserver
- Database





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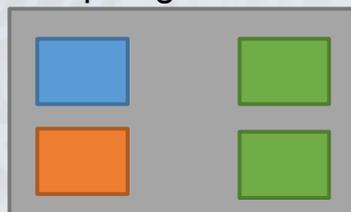


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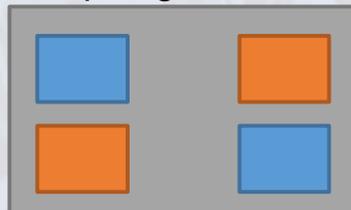


Things Are More Complex Now

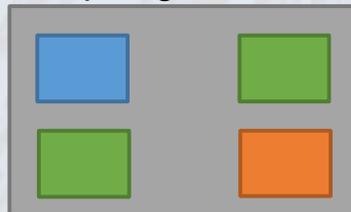
Computing Node



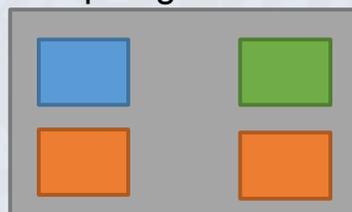
Computing Node



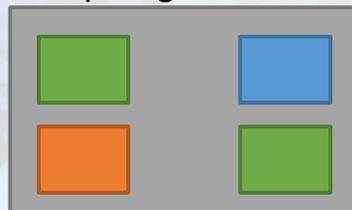
Computing Node



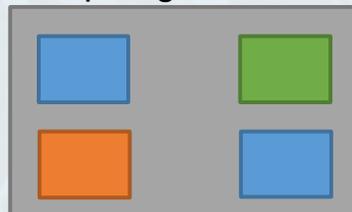
Computing Node



Computing Node



Computing Node



- Service1
- Service2
- Service3



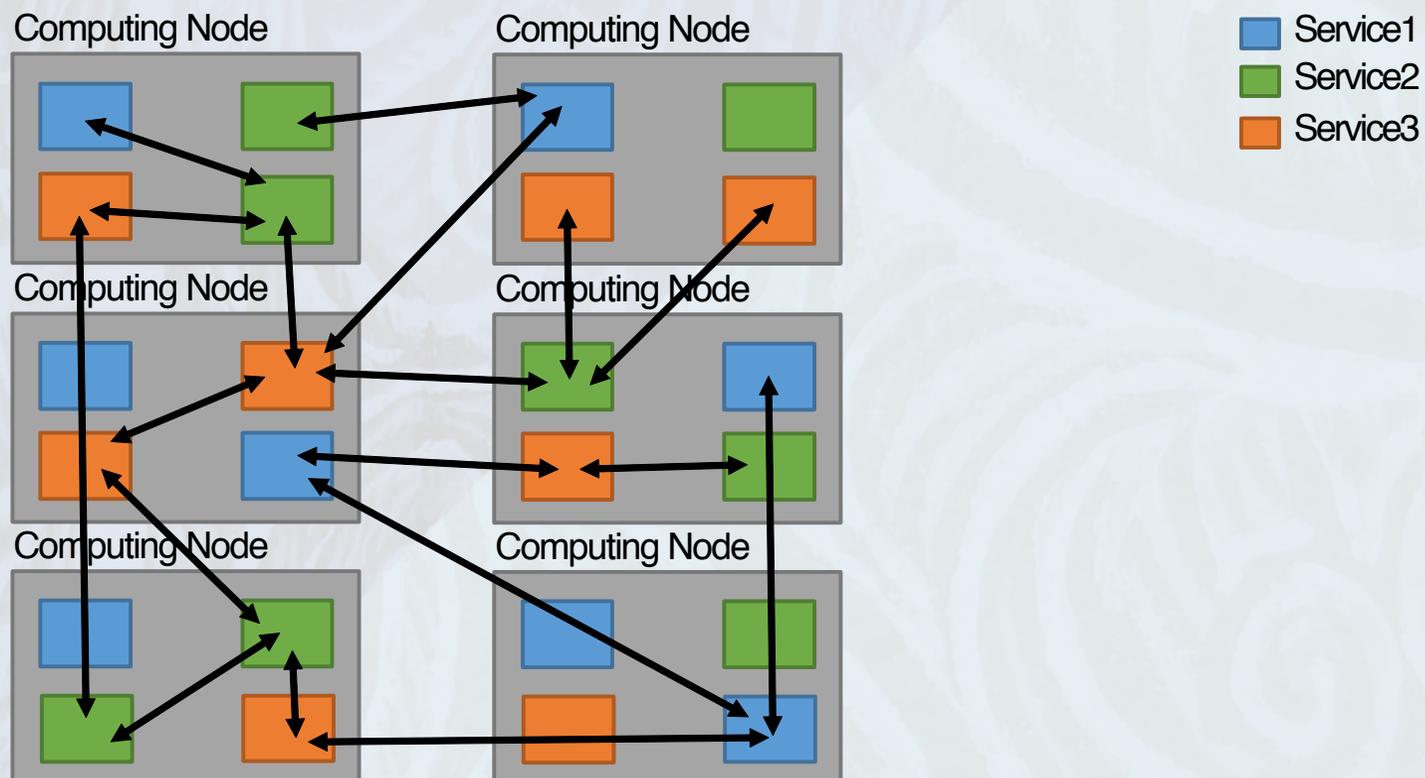
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Things Are More Complex





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This Time Is More Than Servers and Processes





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How Does This Impact Monitoring?



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4 Things That Are Harder Now

1. Getting the data
2. Making sense of the data
3. Troubleshooting
4. People



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Getting The Data

- What makes containers great...
 - Simple
 - Small
 - Isolated
 - Few dependencies
- ... Also makes them more opaque



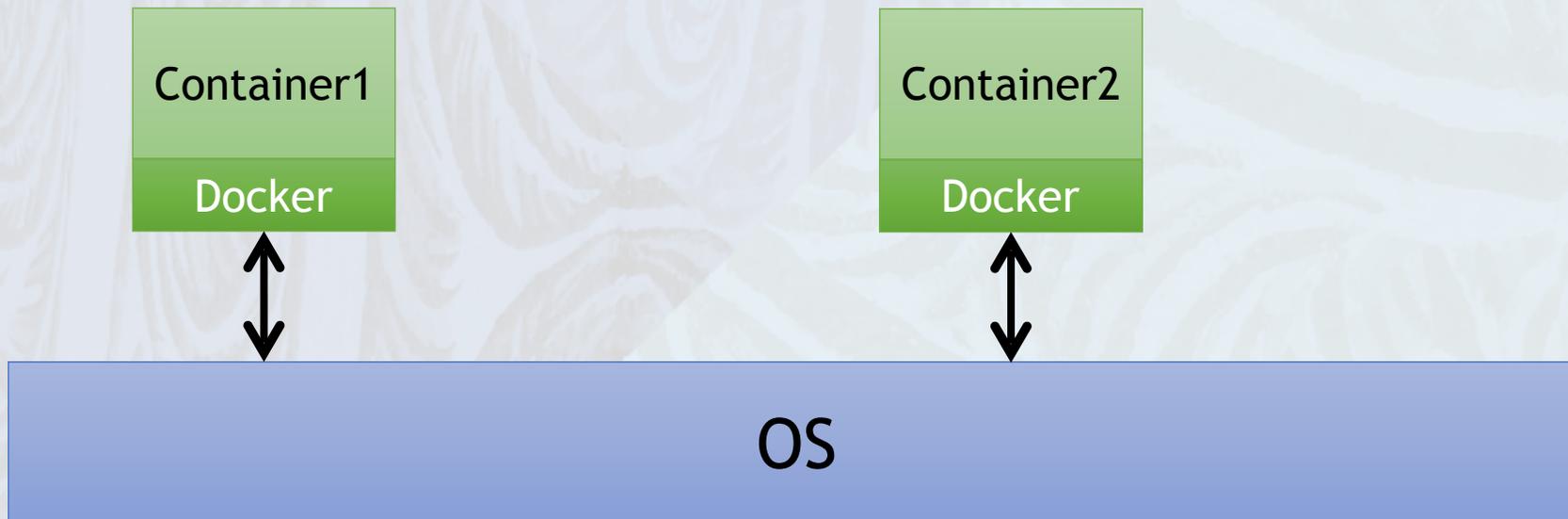
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Getting The Data: Pods





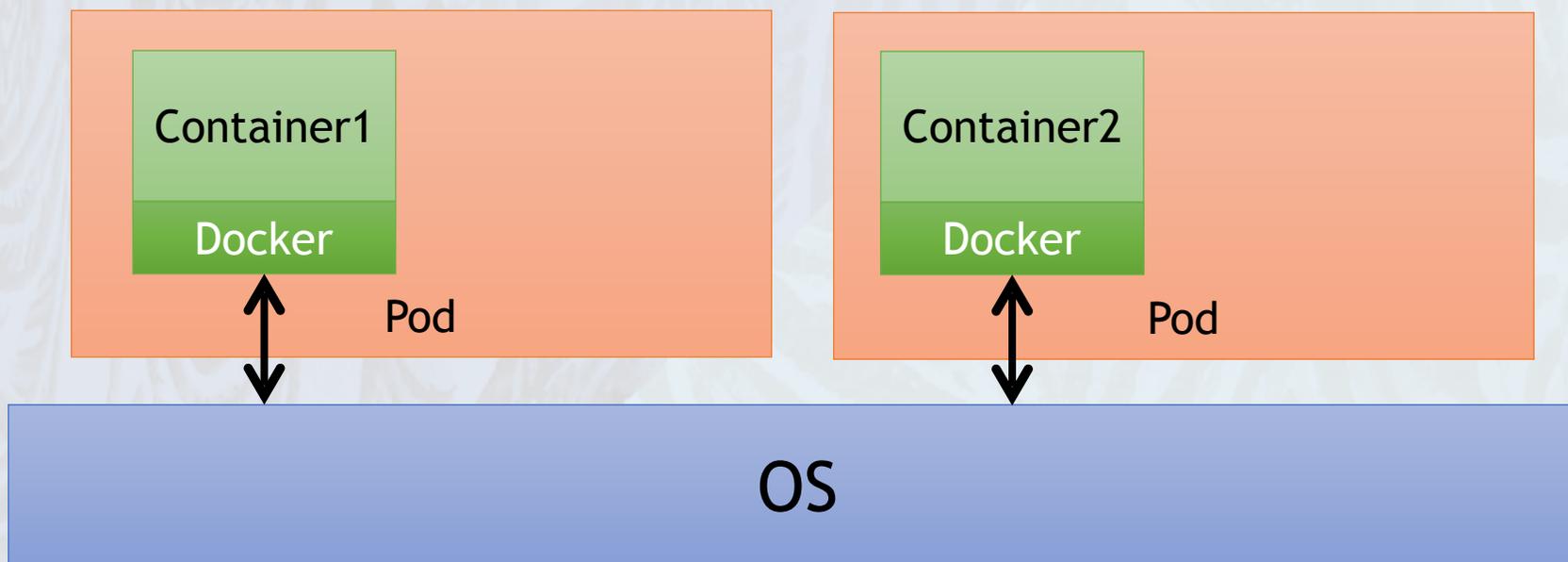
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Getting The Data: Pods





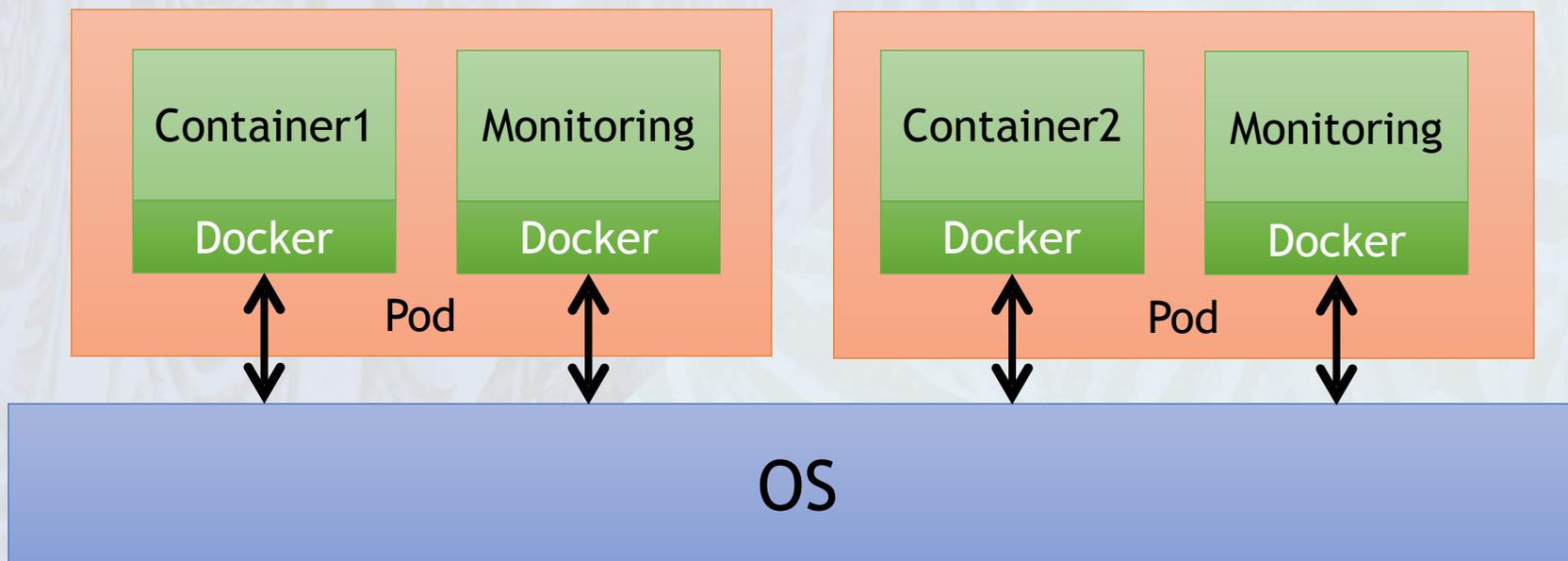
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Getting The Data: Pods





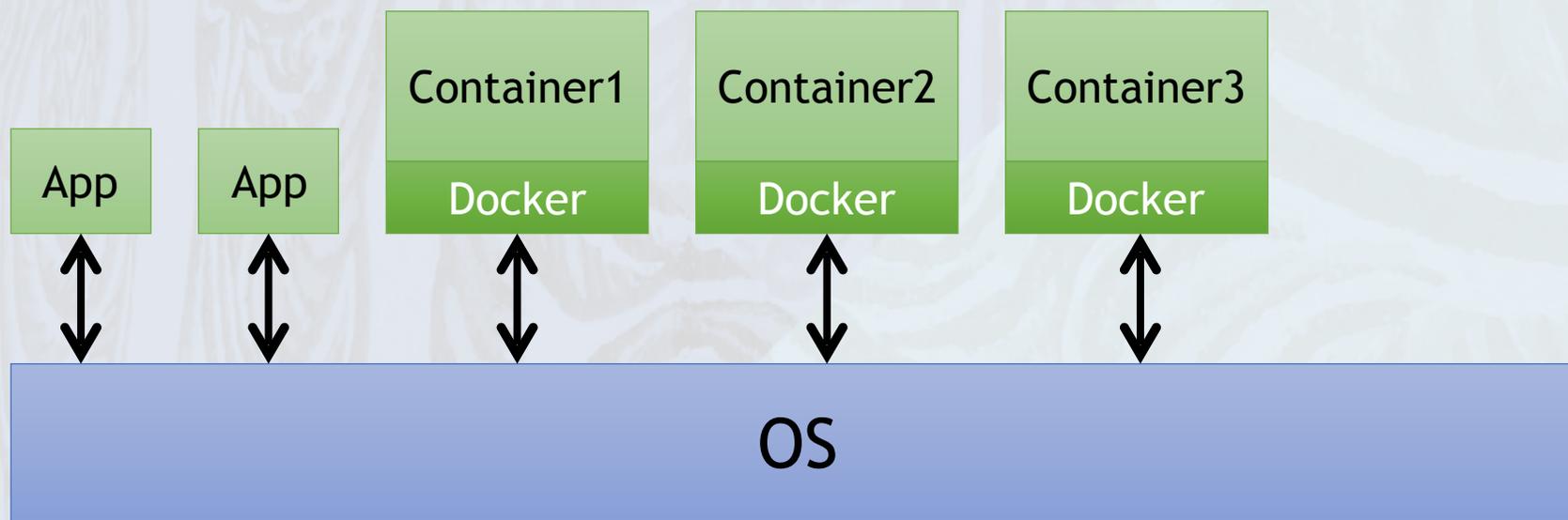
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Getting The Data: Sysdig





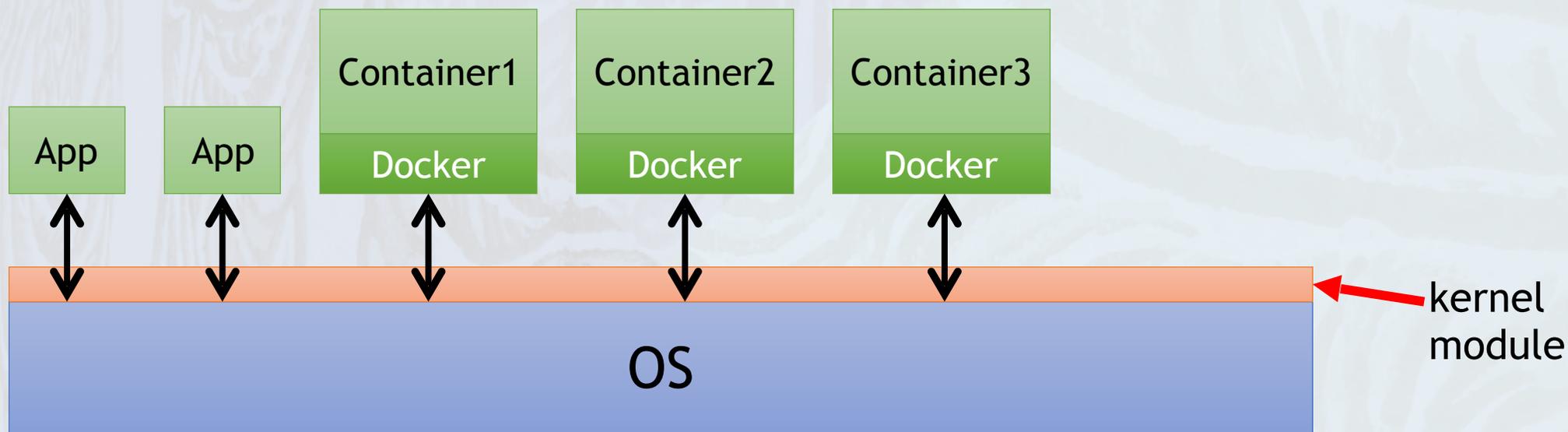
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Getting The Data: Sysdig





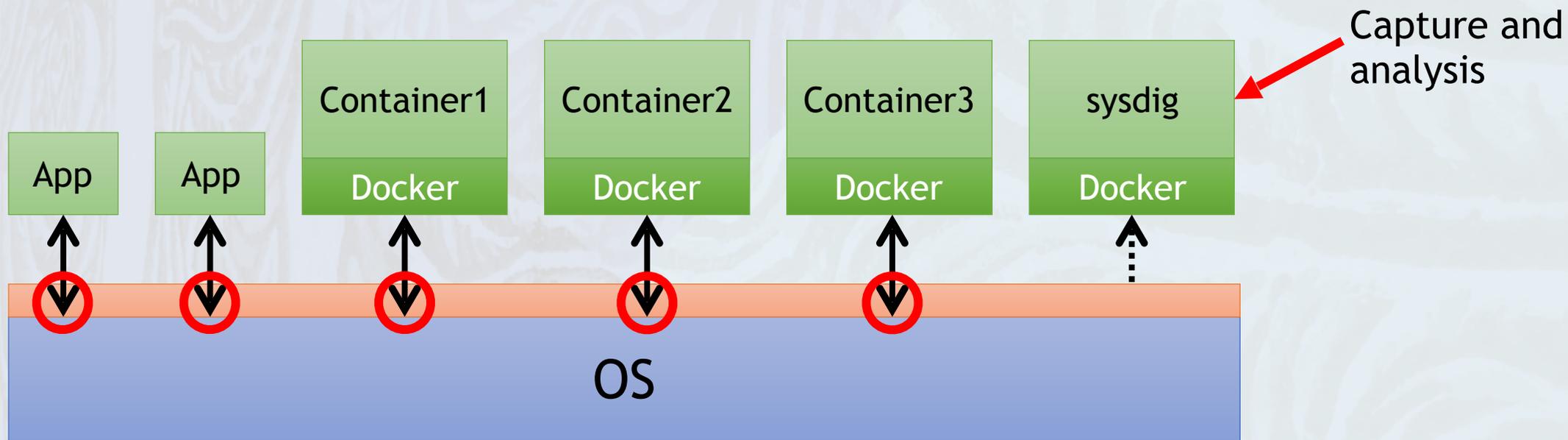
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Getting The Data: Sysdig





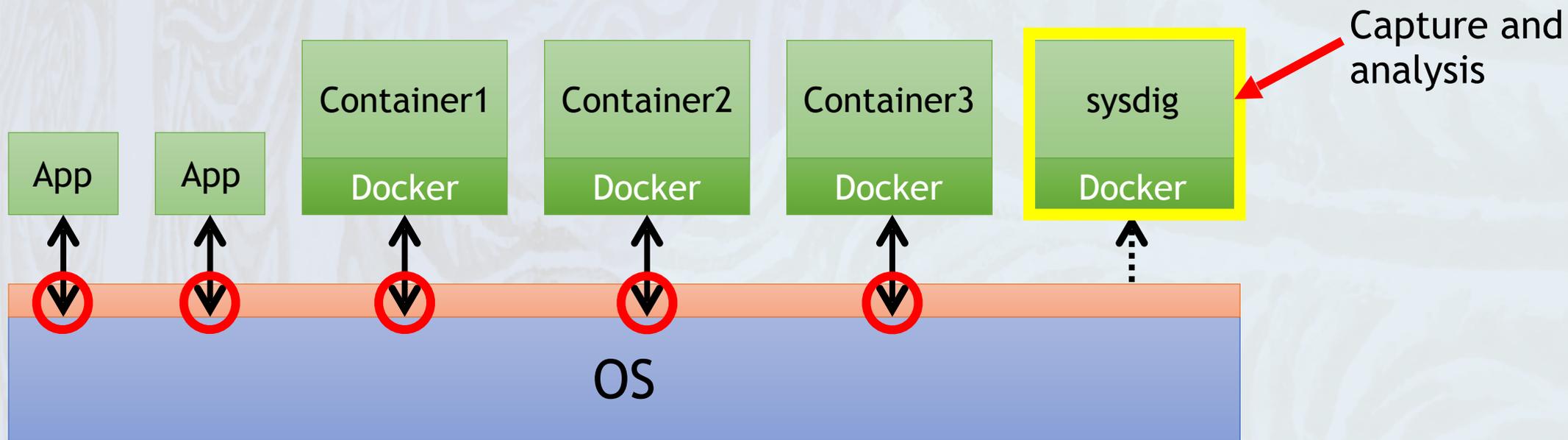
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Getting The Data: Sysdig





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Getting/Making Sense The Data: Guidelines

- You should **not** be involved in monitoring instrumentation
- You should **not** be involved in producing anything that is not a custom metric
- **Every** metric should be tagged
 - Tagging must be integrated with Kubernetes
 - You should **not** be involved in tagging metrics
- You should collect **everything**, with no filters



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Troubleshooting

 thockin commented on Sep 16, 2015

kubernetes member



Weird. There's CLEARLY a 20 second timeout on something. Sadly there are not many debug tools available in busybox. If you're willing to dig further (since I can not repro it), add a new container to this pod with image "debian:wheezy" and command `bash -c "while true; do sleep 1000000; done"`, and update to this.

(<https://github.com/kubernetes/kubernetes/issues/14051>)



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People

- Microservices are about people
- Monitoring microservices should be about people too

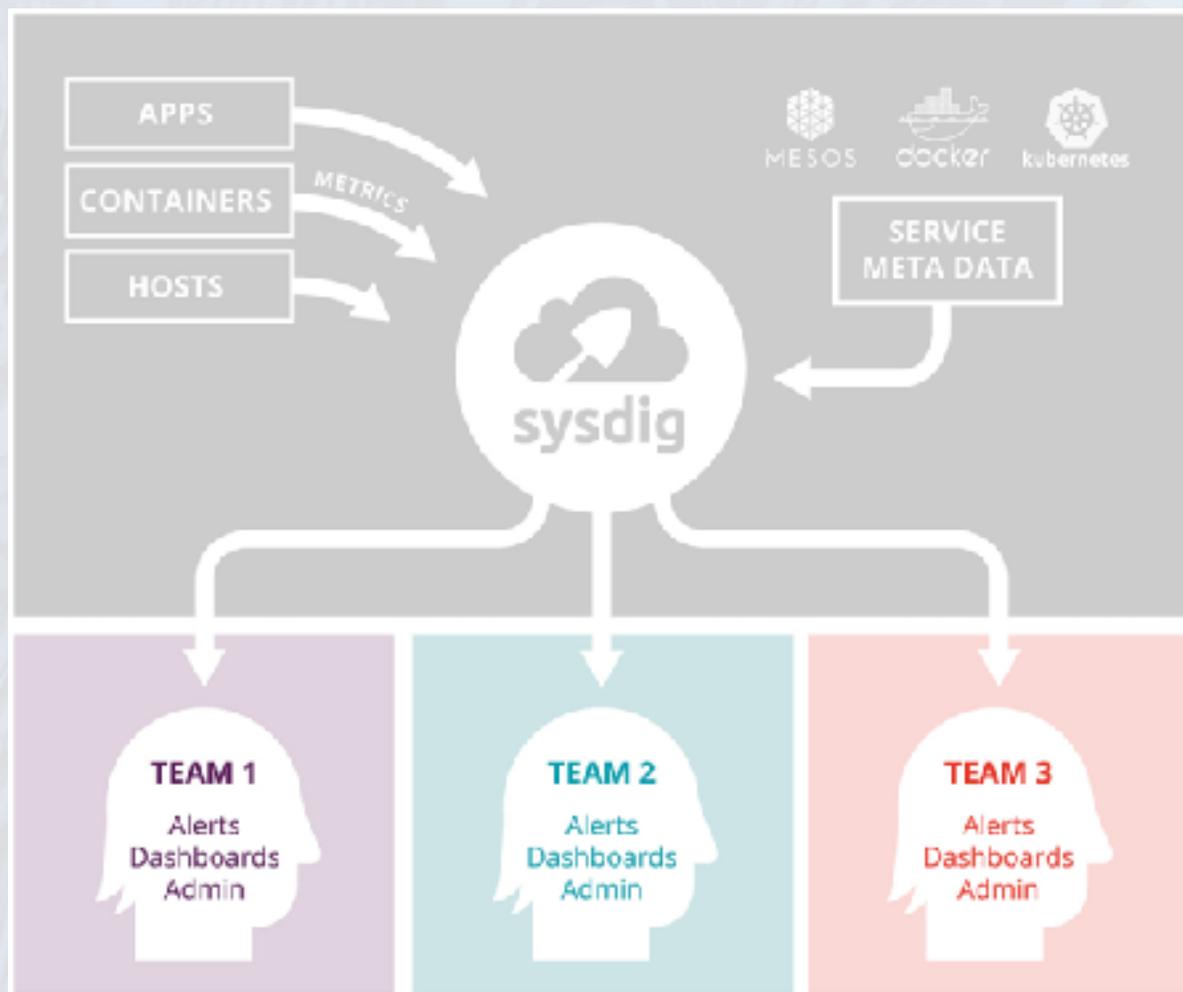
Sysdig Teams



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Sysdig Teams

- Designed to reflect teams of people
- Integrated with Kubernetes
- Support isolation and customization
- Self service
- Centralized



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Use Cases

- “dev vs prod” split
- Team per Microservice
- PaaS
- Restricted environments



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Links

- Sysdig
 - <https://github.com/draios/sysdig>
- Sysdig Cloud
 - <https://sysdig.com/>
- Teams
 - <https://sysdig.com/blog/introducing-sysdig-teams/>