

Hybrid Cloud & Container Resource Optimisation

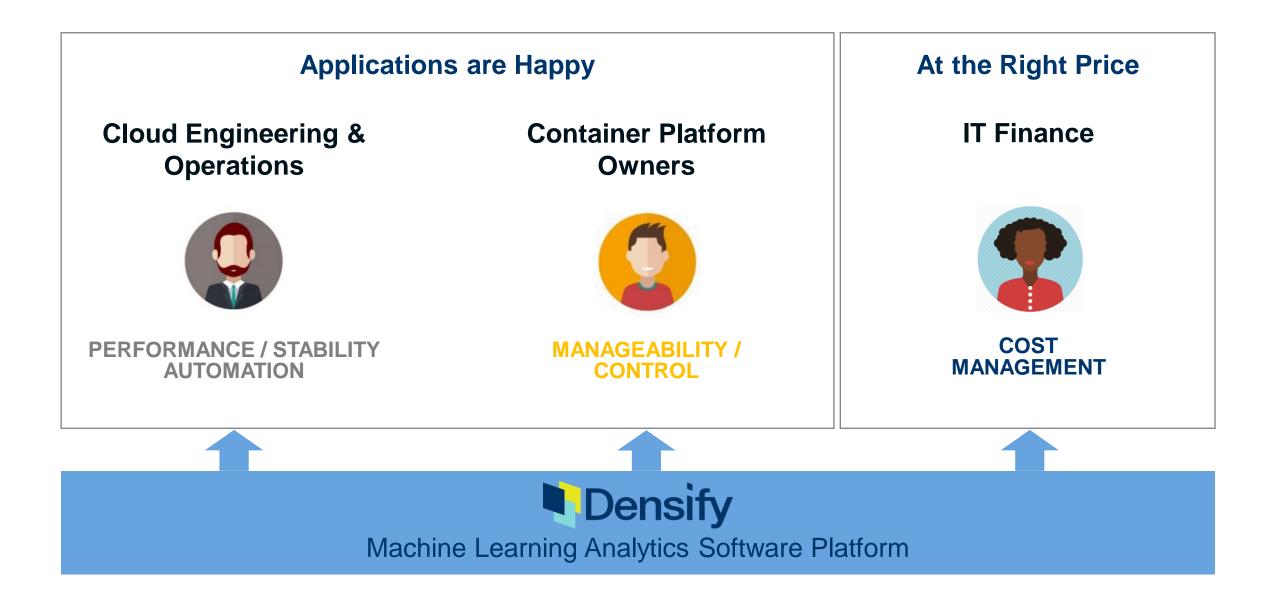
Ayman Gabarin SVP EMEA

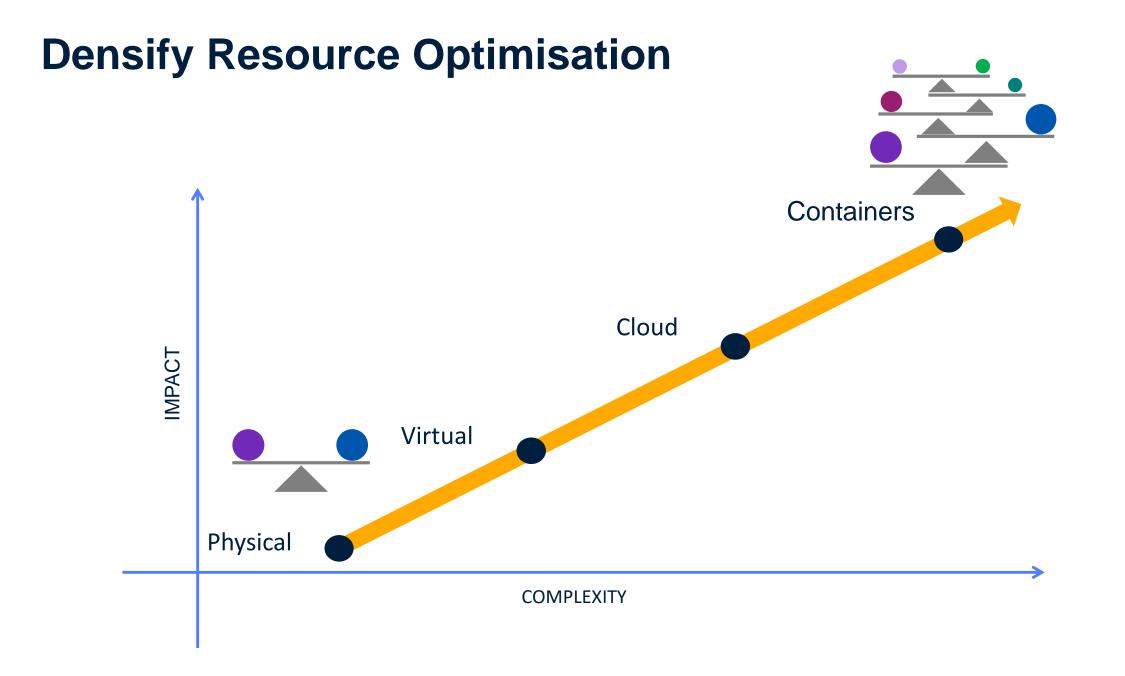
Cloud Expo Europe

10 March 2020

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A Single Analytics Platform to Address Everyone's Needs





Optimizing Hybrid Cloud Resources

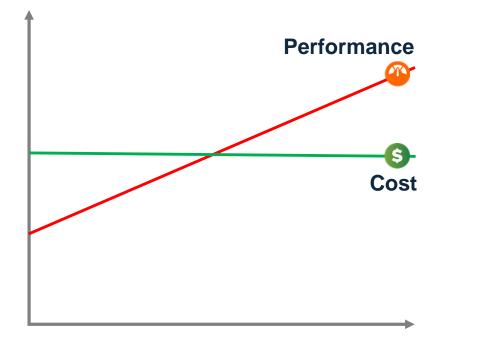


What is "Optimal"?



Cloud Engineering & Operations / App Owners

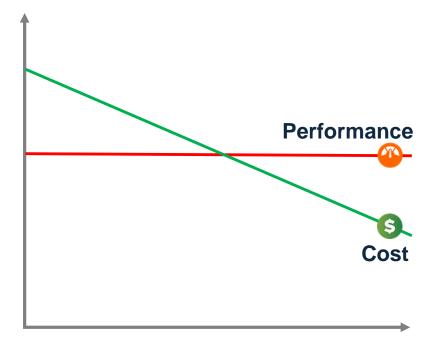
PERFORMANCE / AGILITY FIRST





IT Finance

COST FIRST





Strategies & Tactics to Get It Right



Operations App Owners

Performance & Stability

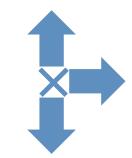
Cost Appropriate



IT Finance



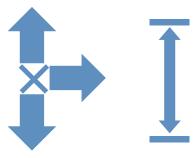
Instance Resource Optimisation

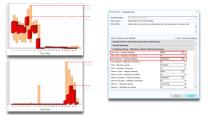


Upsize
Modernise
Cross-Family
Reclaim
Terminate

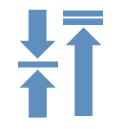


Scale Group Optimisation





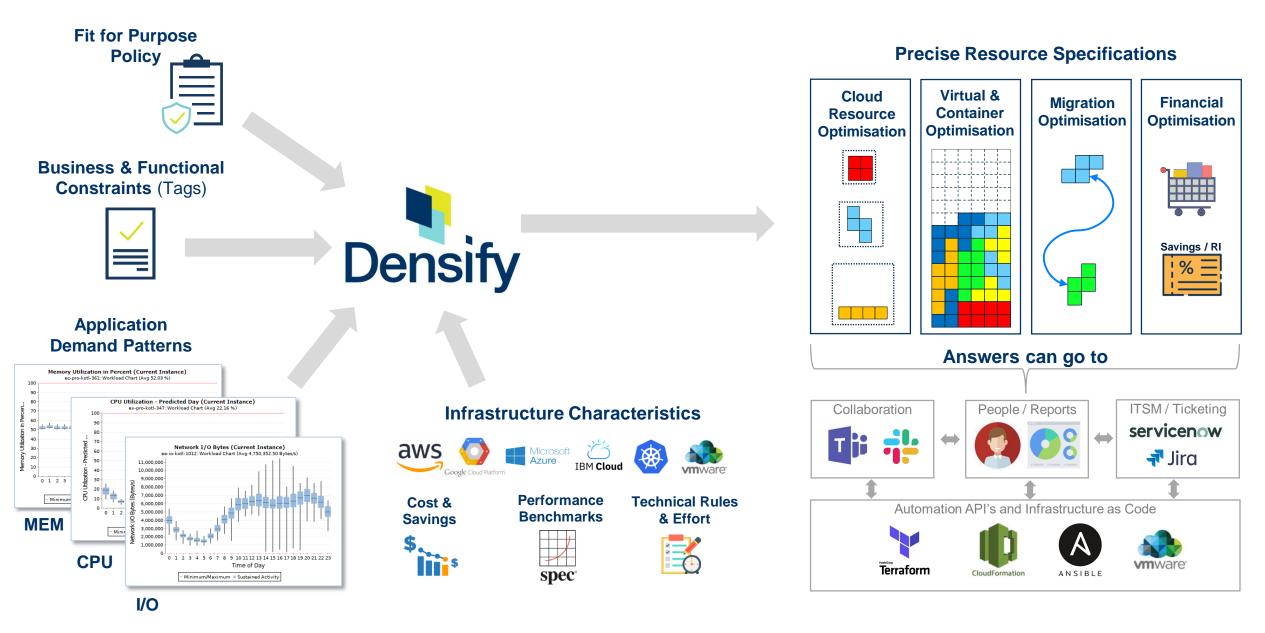
Container Resource Optimisation



- Node Upsize
 Node Downsize
 Modernise
 Cross-Family
- S 🍄 Scaling Min/Max
- S Or Requests
 S Or Limits
 S Or Initial Values

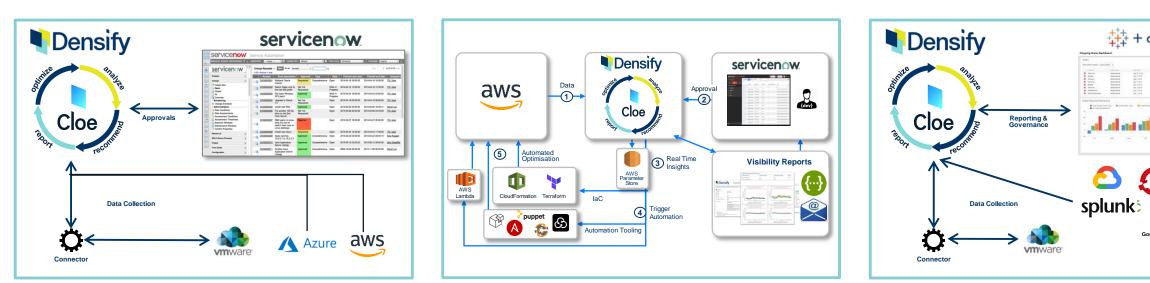


Predictive Analytics - How it Works



The Hybrid Journey - Customer Examples

Financial



80,000 Instances

> \$20M in annual spend

Tech

47,000 Instances

Retail

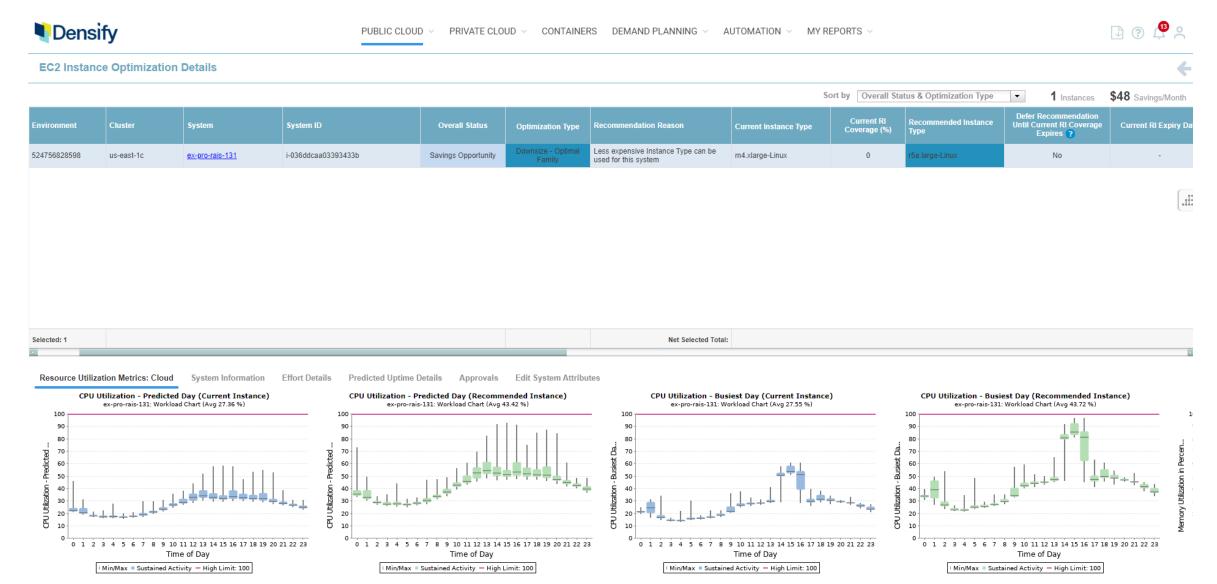


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red hat OPENSHIFT

Google Kubernetes Engine

Example Cloud Optimisation Analysis and Answers





Step 1: Build Confidence with the App Owner

Changes

r5a.2xlarge (Recommended)

	Utilization Metrics	r4.2xlarge (Current)	r5a.2xlarge (Recommended)	Changes
	CPU Utilization (%)	83.1	64.8	↓ 18.2
	Memory Utilization (%)	55.7	53	↓ 2.6
is report provides details at lization, instance costs, res source utilization and estim Summary	ec-dev-stoc-2351: Work	ed Day (Current Instance) God Chart (Avg 27.52 %)	CPU Utilization - Predicted Day (Recomme ec-devstor-2361: Workload Chart (Aug 21.3	
System Name	130		190 -	
ystem ID	.; 10-		_ 10-	
ublic Cloud	2 70-		2 ro-	Pa
ccount Name				A LEO
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rchasing Strategy Recomm	N ⁻		10	
edicted Uptime %		ine dAdvida – Upper Limit 181	0 0 1 3 3 4 4 7 8 0 10 11 10 10 14 4 14 10 10 Time of Day	
Nicy	ec-dev-stoc-2351: Work	ercent (Current Instance) and Chart (Avg 51.36 %)	Memory Utilization in Percent (Recomme ec-dev-stoo-2361: Workload Chart (Arg 48, 9 100 e - 100	
stimization Benefits Use reserved instance to Run workload on newer	00000000000000000000000000000000000000			880
Estimated savings of \$62	013346878090	11 10 01 14 14 14 17 18 13 30 21 23 23 into of Day ined Adivits = Upper Limit 133	0 0 1 3 3 4 6 6 7 8 0 10 11 12 10 14 16 16 1 Timo of Day	

r4.2xlarge (Current)

Predicted Utilization (CPU & Memory)

Utilization Metrics

	Impact on Effort	Property	Instance Property Value	
n			Current	Recommended
(Nitro Hypervisor) from	Small (3%)	Catalog Model - Instance Generation	4	5
ame Instance Family and ion	Small (2%)	Catalog Model - Instance Generation	4	5
Family	Info (0%)	Catalog Model - Instance Family	Memory optimized r	Memory optimized

Impact

ly Cost	\$257.02 Cost is blended from RI and on-demand prices due to partial RI coverage.		
Cost	\$194.33 Cost is based on RI price with full RI coverage.		
35 .	\$62.69		
	24.4%		
me %:	77.6%		
	r4.2xlarge (Current)	r5a.2xlarge (Recommended)	
/Month)	388.36	-	
onth) [†]	228.33	194.33	
itegy	Partially Reserved [‡]	Reserved	
	60.8% [‡]	100%	

nce (RI) Price is based on 'Reserved Pricing Option' in the Policy.

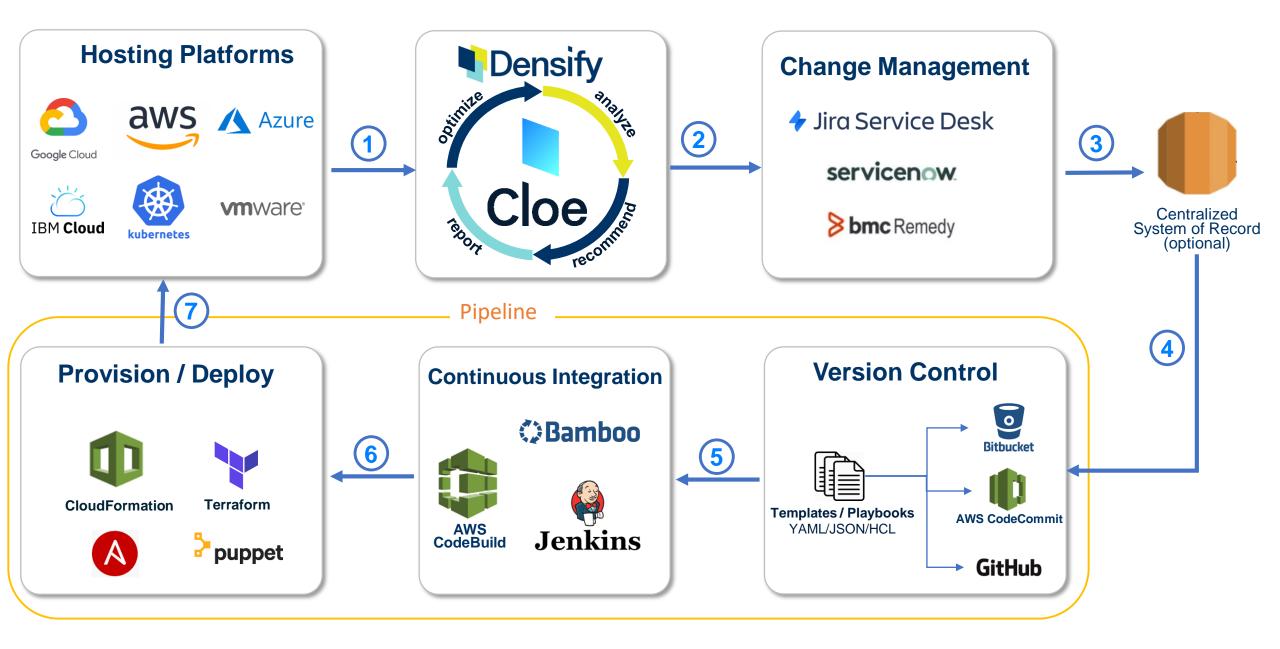
Instances purchased for this instance type is not enough for all the instances.





Densify

Step 2: Enable CI/CD/"CO"



Continuous Optimisation with "Infrastructure as Code"









Continuous Optimisation with "Infrastructure as Code"



```
provider "aws" {
       region = "${var.aws_region}"
 2
 3
4
     resource "aws_instance" "web" {
 5
         name = "Web Server"
 6
 7
         instance type = "m4.large"
 8
         instance type =["${aws instance.tags:Densify-optimal-instance-type}"]
 9
10
11
         ami = "${lookup(var.aws amis, var.aws region)}"
12
```

From "hard coded guess" to "self optimising"

Step 3: Complete Self-Service





Cloud Engineering



Subscribe to what I care about

Get Optimisation Recommendations

Ensure my Apps are always Happy

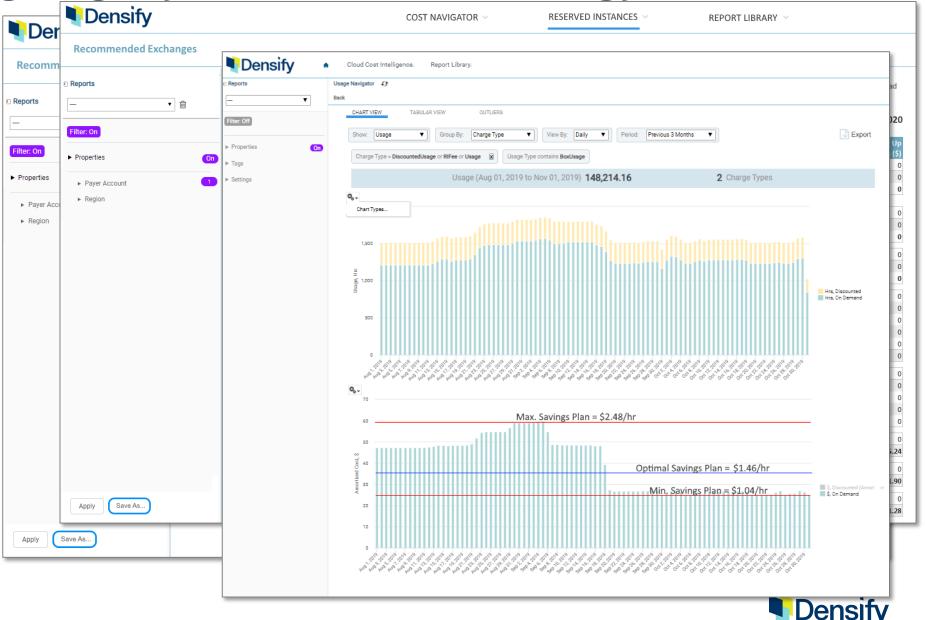
≡ Slack - Densify		×
Densify ~ f_{3}^{z} & Henry Jurgens	#densify-notifications ☆ & 5 ☆ 0 Ø Add a topic Vesterday	o (i) 儆 (Q Search) @ ☆ :
Eq Jump to @ Threads Drafts ∥ Jamie Davie	ASG mobile-svc-asg-analysisGrid Downscare Type from c4.large to c5.large Max group size from 16 to 8 Min group size from 4 to 2 Ticket created by @Bill Chatzidakis at 07-08-2019 19:29: See less	:03 UTC
Channels autodesk_densify autodesk-internal	Today Densify Notifications APP 6:11 AM Today's notifications from Densify:	☞ @ \$ \$
 # customer-conference d3 # densify # densify-notifications # freemium # industry-news # linuxacademy managementmeeting # markham # mktg-content operationsportal 	Today's notifications for app Mobile-Service: RDS mobile-svc-aurora-db Downsize From db.t2.medium to db.t3.small EC2 mobile-svc-stage1 Upsize From t2.medium to t3a.large EC2 mobile-svc-stage2 Terminate Terminate the t2.medium instance EC2 mobile-svc-api Just Right Keep the m4.xlarge instance ASG mobile-svc-asg-analysisGrid Downscale Type from c4.large to c5.large	Select an action Select an action Approve automated change to t3a.large Suppress further notifications Select an action
 prodmgmt prodmgmt-docs prodmgmt-questions sales sales-rfp-responses tech-containers 	Max group size from 16 to 8 Min group size from 4 to 2 See less Message #densify-notifications	@ @

What about aligning my Procurement Strategy?



Constantly leverage the right RI portfolio

Optimise with Savings plans



So...what's involved in trying it?







Thank you!

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