



Capacity Optimization Tool:

What you should expect from a good capacity optimization tool and a surprising benefit of having a good tool

Presented to you by:



BEN DAVIES

We make heavy use of the comments section.
Download the presentation for that data.



Agenda

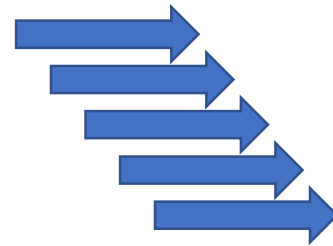
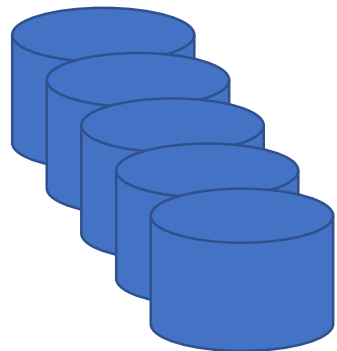
- Define our Purpose/ Goal of Capacity Management
- Keys to achieving the Goal – A good tool
- A good tool delivers Reports and Actionable Intelligence
- Gestalt Psychology (yes it applies!)
- Summary and Capacity Management “Must Haves”
- Questions

Purpose / Goal of Capacity Management

“Transparently and consistently arrive at useful capacity optimization insights, in a reasonable amount of time, with reasonable effort, and in enough time to effect a positive capacity management outcome.”

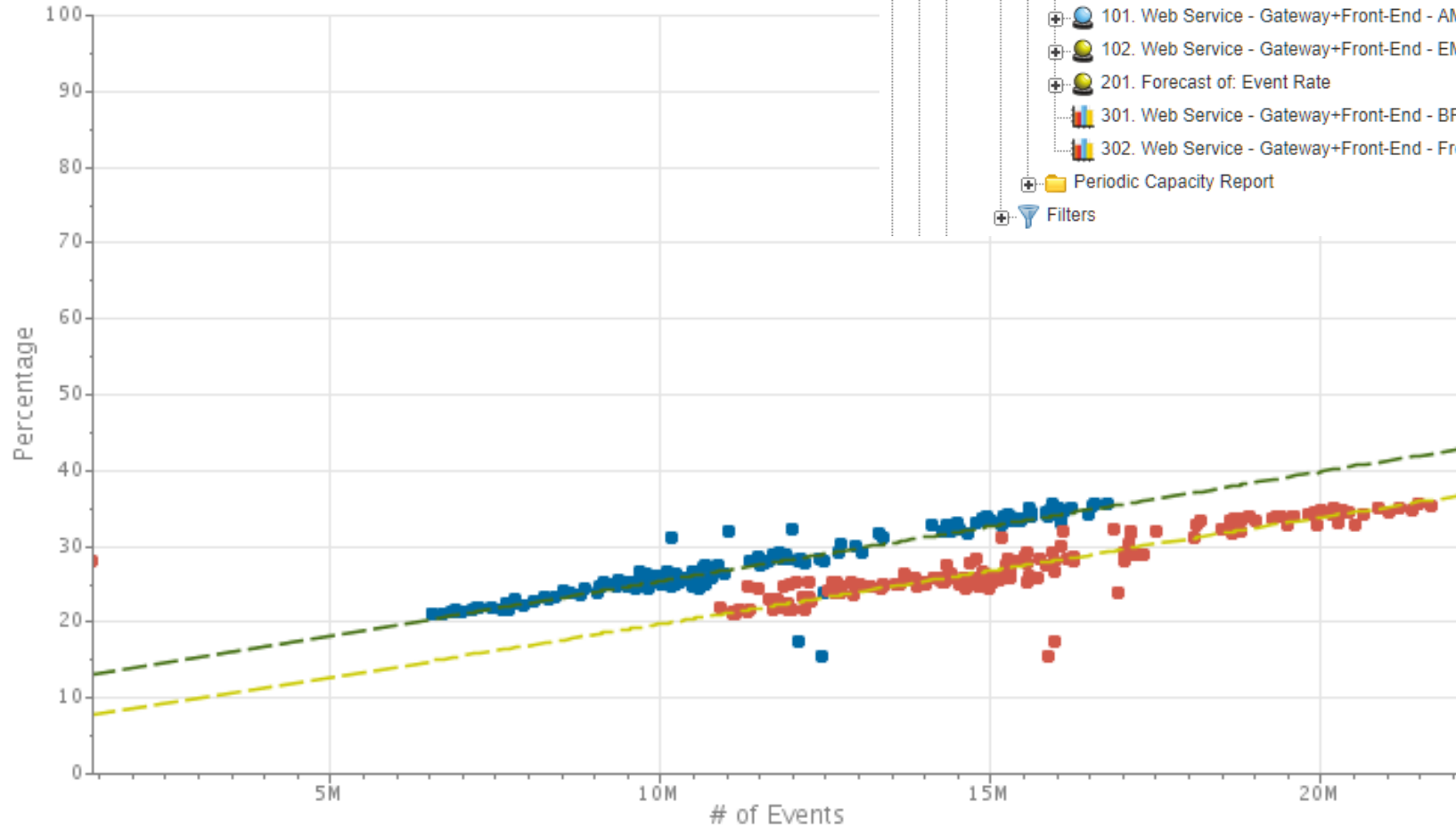
The goal is not ‘Zero Waste’ but Efficient Utilization

Multiple Data Sources



Fancy Correlation Analysis

BarbaRossa - BRISTF0017L
from Jan 07,2018 to Feb 01,201



- 003. Chargeback View
- Business Drivers
- Business Drivers
- eCommerce
- Web Service - Gateway+Front-End
- Systems
- Business Drivers
- Works
 - Application Performance Report
 - Capacity Plan Report
 - 001. Web Service - Gateway+Front-End - Correlation Analysis**
 - 101. Web Service - Gateway+Front-End - AMER
 - 102. Web Service - Gateway+Front-End - EMEA
 - 201. Forecast of: Event Rate
 - 301. Web Service - Gateway+Front-End - BRIS - Capacity Report
 - 302. Web Service - Gateway+Front-End - Front-End - Capacity Report
 - Periodic Capacity Report
- Filters

Edit Delete Copy Move Add to Report Card
Save as template

Correlation map Charts

Run now

Last refresh: 3 months and 2

1. BarbaRossa - BRIS+Front-End - AMER - from Jan 07 2018 to Feb 01 2018

2. BarbaRossa - BRIS+Front-End - EMEA - from Jan 07 2018 to Feb 01 2018

Capacity Analysis and What IF Modeling

- 003. Chargeback View
- 004. Business-Aligned Capacity Management
 - Compute Capacity Management
 - eCommerce
 - Web Service - Gateway+Front-End
 - Systems
 - Business Drivers
 - Works
 - Application Performance Report
 - Capacity Plan Report
 - 001. Web Service - Gateway+Front-End
 - 101. Web Service - Gateway+Front-End
 - 102. Web Service - Gateway+Front-End
 - Baseline
 - 201. Forecast of: Event Rate
 - 301. Web Service - Gateway+Front-End
 - 302. Web Service - Gateway+Front-End
 - Periodic Capacity Report
 - Filters
- Network Capacity Management
- Storage Capacity Management
- Filters
- All systems and business drivers
- Administration domains
- Calendar

Business Drivers Estimate current values

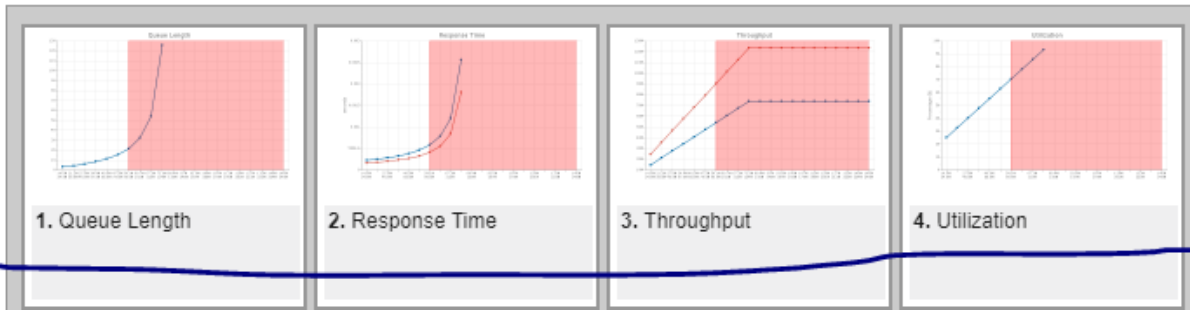
Name	Current value	Target		Supported value	Supported growth factor	Residual capacity
		Growth factor	Value			
BarbaRossa - BRIS - EMEA-Total Events	14,624,842.3 requests/hour	10	146,248,423.7 requests/hour	47,530,737.73	3.25	69.23%
BarbaRossa - Front-End - EMEA-Total Events	24,478,438.7 requests/hour	10	244,784,387.7 requests/hour	79,554,926	3.25	69.23%

Systems

Name	Current system	What-if system	Current multiplicity	What-if multiplicity	Resource				
					Resource name	Current quantity	What-if quantity	Scenario speed-up	Utilization at maximum capacity
Web Service - Gateway+Front-End - EMEA			9		CPU	1		%	0.63

Run estimation and prediction
Run only prediction

Last refresh: 12 hours and 50 minutes ago (2018-05-09 00:00)



Threshold Violation Reporting

Navigation

- SYSTEM
- DATA WAREHOUSE
- ETL & SYSTEM TASKS
- COMPONENTS
- GATEWAY MANAGER
- USERS
- ADVANCED REPORTING
- RESOURCE MONITOR**
 - Thresholds
 - Rules
 - Indicator Parameters
 - Alert log**
- TAG MANAGEMENT
- TEMPLATE MANAGEMENT
- BENCHMARK MANAGEMENT
- EVENT MANAGER

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Alert reason

This mail has been automatically sent by TrueSight Capacity Optimization.

System	Metric	Subresource	Resolution	Period	Severity	Value	Threshold	Description	Sample values
mov-nen-asa-01-pri	Input Utilization by Network Interface	ADAPTIVE SECURITY APPLIANCE 'INTERNAL-DATA1/0' INTERFACE	HOUR	Last 10 days including the current day	Warning	47.33%	45%	The maximum value of hourly sample at hour 09:00 is greater than 45%	Average 43.14% Minimum 40.56% Maximum 47.33% Sum 43.14% # samples 10 Good 0% Warn 0% Poor 0%
	Input Utilization by Network Interface	ADAPTIVE SECURITY APPLIANCE 'INTERNAL-DATA1/0' INTERFACE	HOUR	Last 10 days including the current day	Warning	56.3%	45%	The maximum value of hourly sample at hour 10:00 is greater than 45%	Average 54.34% Minimum 48.78% Maximum 56.3% Sum 54.34% # samples 10 Good 0% Warn 0% Poor 0%
	Input Utilization by Network Interface	ADAPTIVE SECURITY APPLIANCE 'INTERNAL-DATA1/0' INTERFACE	HOUR	Last 10 days including the current	Warning	58.04%	45%	The maximum value of hourly sample at hour 11:00	Average 56.88% Minimum 54.62% Maximum 58.04%



So if these (preceding) studies
take time,
what can I do right away??

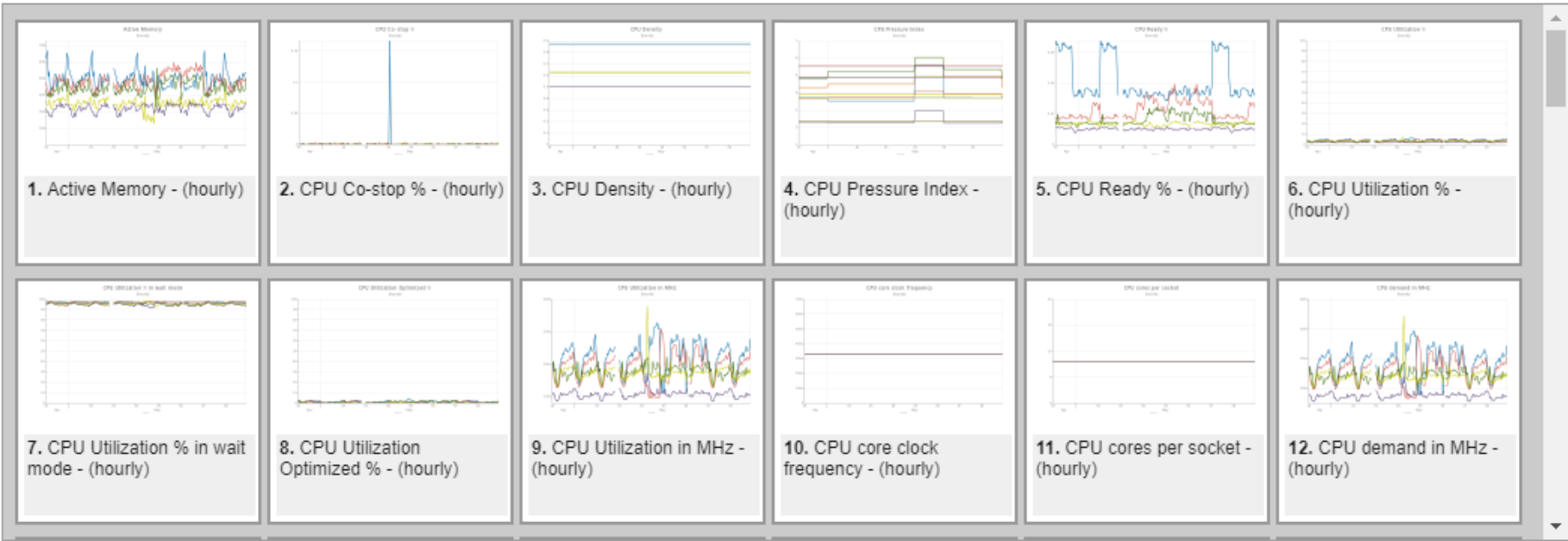
Actionable Intelligence Based on Grouping

Navigation

- All Domains
 - [Reporting Examples]
 - [Sandbox]
 - BNC - AppDynamics
 - FlyCastPartners.com
 - FCP B2CWeb Application
 - FCP B2CWeb Application - Dev
 - FCP B2CWeb Application - PreProd
 - FCP B2CWeb Application - Prod
 - Systems
 - Business Drivers
 - Works
 - Business vs Resource
 - By Metric Type
 - By Series With Ext. Loads
 - Estimated Utilization Over Time
 - Single Series
 - Utilization / Load Ratio Over Time
 - All Global Metrics By Device
 - All Global Metrics By Metric**
 - CPU MEM Swap RunQueue by Device
 - CPU MEM Swap RunQueue by Metric
 - Disk by Device
 - Disk by Metric
 - FileSystem by Mount point
 - Forecast of: CPU Utilization %; Memory U

Type	Performance analysis
Tags	
Template	All Global Metrics
Resolution	Automatic
Time filter	Last 07 days
Entity filters	All entities in container domain and its subdomains

Last refresh: 15 hours and 27 minutes ago (2018-05-08 22:23)



Actionable Intelligence Based on Filters

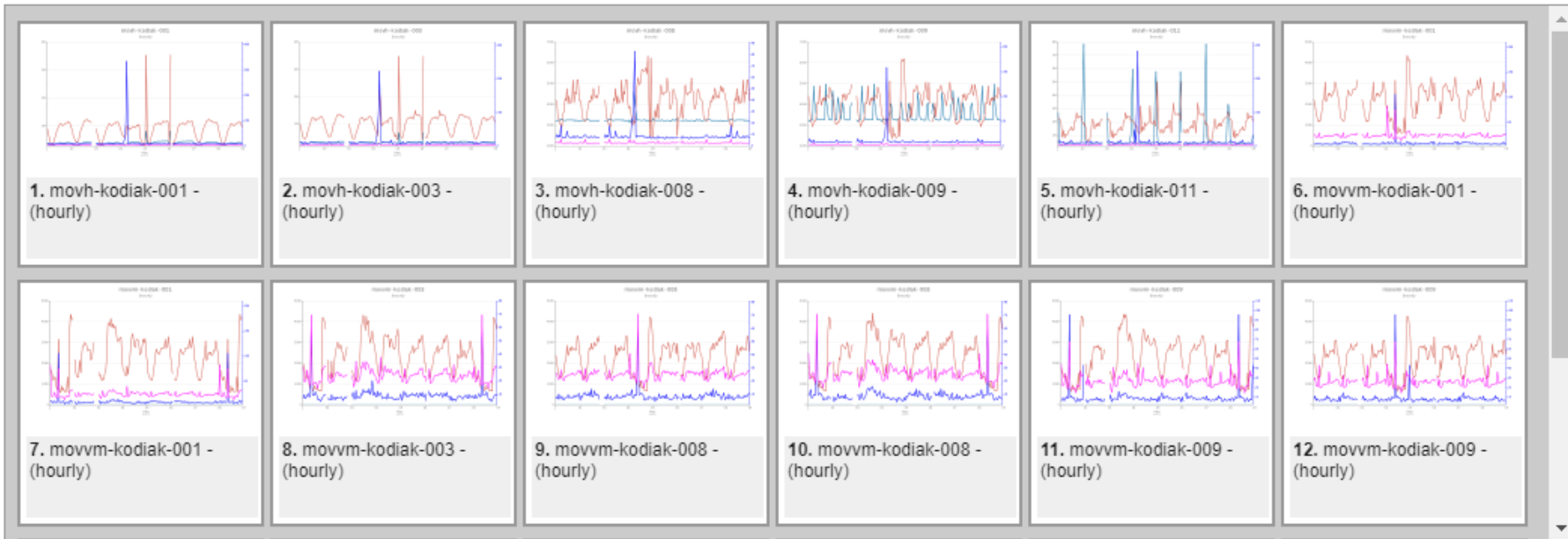
Navigation

- Network Rates
- FCP Filter Based Reporting
 - Works
 - All Global Metrics by Device
 - CPU MEM Swap RunQueue by Device
 - CPU MEM Swap RunQueue by Metric
 - Disk By Device**
 - Disk By Metric
 - FileSystem size and used by Metric
 - FileSystem size and used by mount point
 - Last Hardware Conf. by Servers
 - Filters
 - FlyCastFilter
- Moviri - MS SCOM extractor
- ServiceNOW test
- 000. Integrations
- 001. Infrastructure View
- 002. Service View
- 003. Chargeback View
- 004. Business-Aligned Capacity Management
 - Compute Capacity Management
 - Network Capacity Management
- Systems
 - mov-dsn-asa-01-pri
- Business Drivers
 - TPS

Type	Performance analysis
Tags	
Template	All Collected Metrics
Resolution	Automatic
Time filter	Last 07 days
Entity filters	FlyCastFilter

[Run now](#)
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[Copy](#)
[Move](#)
[Add to Report Card](#)
[Promote to Golden](#)
[Save as template](#)

Last refresh: 13 hours and 15 minutes ago (2018-05-09 00:39)



The goal is not 'Zero Waste' but Efficient Utilization





This is great! So where do I start??

DATA. Data is where you start.

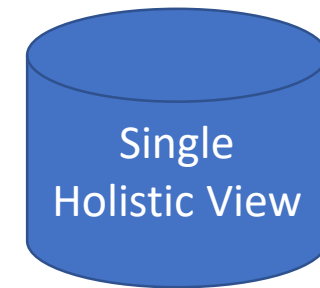
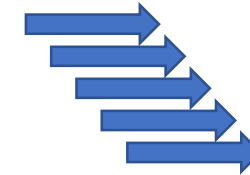
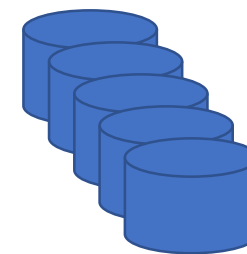
Gather Data from Sources

Navigation

- 000. Integrations
 - Big Data
 - Cloudera
 - Cloud
 - AWS
 - Azure
 - Compute
 - AppDynamics
 - Demo Gateway Server
 - Dynatrace
 - Performance Agents
 - SCOM
 - VMware vCenter
 - Filters
 - Container

- Container
 - Kubernetes
- Database
 - Oracle Enterprise Manager
 - Database instances
 - Database servers
 - Works
- Facilities
 - Aperture
- Network
 - Entuity
 - LAN
 - Netflow
 - WAN
 - NetScout
 - Network Links
 - SolarWinds Orion
- Splunk
- Storage

- Storage
 - EMC Storage Arrays (via SMI-S)
 - Hitachi
 - Infinidat
 - NetApp API
 - NetApp ONTAP
 - Unisphere
 - Works
 - Works
- 001. Infrastructure View



Incorporate Other Data

Navigation

- All Domains
 - [Reporting Examples]
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 - BNC - AppDynamics
 - FlyCastPartners.com
 - FCP B2CWeb Application** ←
 - FCP B2CWeb Application - Dev
 - FCP B2CWeb Application - PreProd
 - FCP B2CWeb Application - Prod
 - FCP Filter Based Reporting
 - Moviri - MS SCOM extractor
 - ServiceNOW test
- 000. Integrations
- 001. Infrastructure View
- 002. Service View
- 003. Chargeback View
- 004. Business-Aligned Capacity Management
- Filters

FCP B2CWeb Application

Type: Generic
Tags: +

Edit Delete Move Add... Add works... | View lookup | Thresholds

Subdomains | **Metrics** | Hierarchy

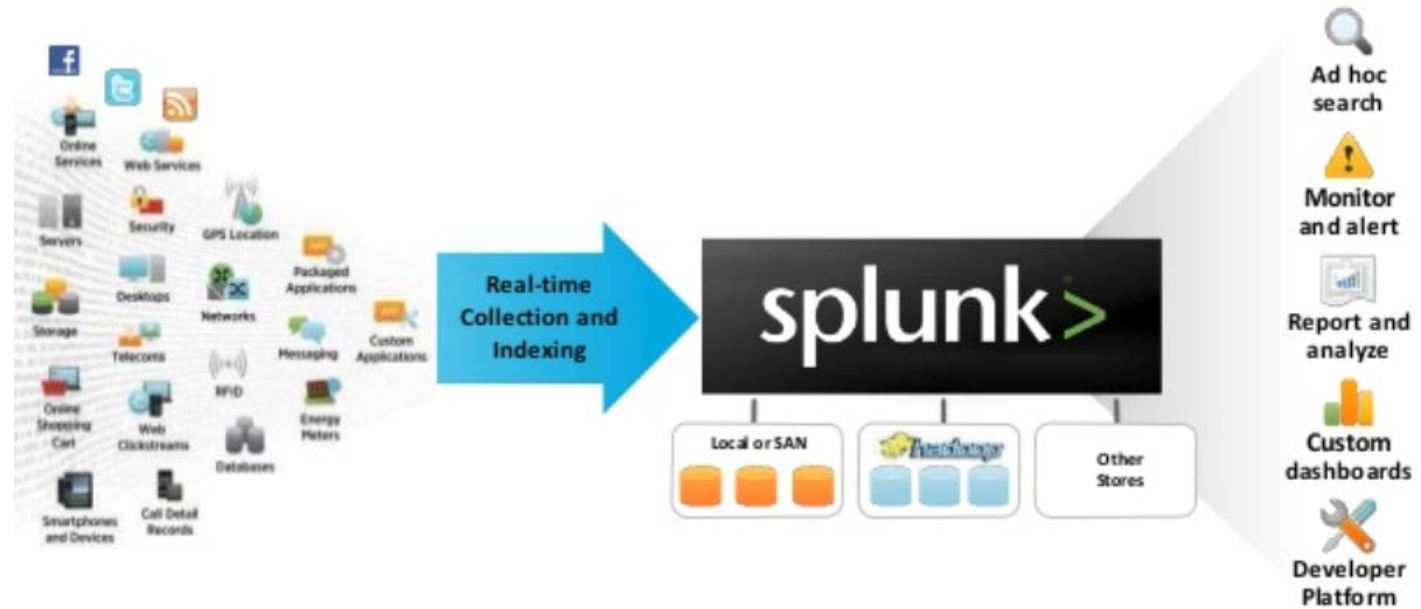
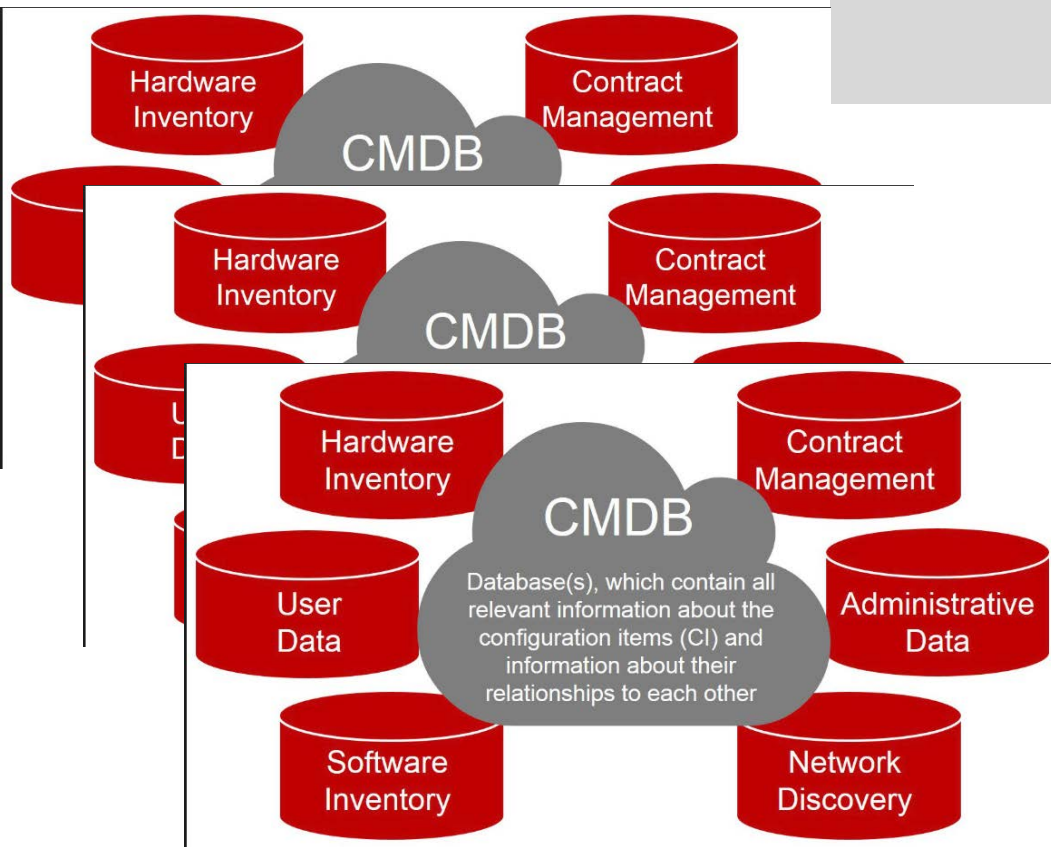
Configuration data

+ Add domain conf

Resource	Name	Subresource	Location	Value
APP_OLA	Service Operating Level Agreement definition	GLOBAL	UNKNOWN	24x7x365 for Prod 15 minute Escalation
APP_OWNER	Owner	GLOBAL	UNKNOWN	Director of Applications
APP_TYPE	Domain type	GLOBAL	UNKNOWN	A mission critical Business 2 Customer web based application that is the main method for our customers to conduct business with us and manage their account.

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Indirect Data Sources



This context and association data is **disproportionately helpful** in maturing the capacity optimization effectiveness



Different and apart from the sum of its parts

- "the whole is something else than the sum of its parts"[2] is often incorrectly translated[3] as "The whole is greater than the sum of its parts", and thus used when explaining gestalt theory, and further incorrectly applied to systems theory.[4] Koffka did not like the translation. He firmly corrected students who replaced "other" with "greater". "This is not a principle of addition" he said.[5] The whole has an independent existence.

---https://en.wikipedia.org/wiki/Gestalt_psychology



Summary

“Transparently and consistently arrive at useful capacity optimization insights, in a reasonable amount of time with reasonable effort and in enough time to effect a positive capacity management outcome.”

- Consolidate data to one place.
- Eat the data you have from the sources you have
- Do the fancy correlation analysis and what if modeling
- Import other data – like from CMDBs
- Threshold violation reporting
- Group in ways that facilitate reporting (by application, service, location etc)
- Provide actionable intelligence with anomaly detection and ad-hock customer reporting
- Recognize goal is not ‘zero waste’ but rather Efficient Utilization



Mr. Ben Davies
Senior Consultant
www.Moviri.com
283 Franklin St, Floor 2, Boston MA 02110-3123
Office +1 (704) 819-7892
Ben.Davies@moviri.com

Contacts

Headquarters

Via Schiaffino 11C
20158 Milan Italy
T +39-024951-7001

USA East

283 Franklin Street
Boston, MA 02110
T: +1-617-936-0212

USA West

425 Broadway Street
Redwood City, CA 94063
T +1-650-226-4274





Questions?

Why are my monitoring tools not enough?

I am not yet doing 'anything' with capacity management. How should I get started?

I am doing capacity management now. I do not wish to throw it out and start over.

Why have I never heard of
Co-Stop - VMWare
Minimum idle workers - Apache
CPU RunQueue
file descriptors (ulimit)
network port mismatch
database locking
Why should I pay attention to these, and how did I miss them.

[Download the presentation for the answers](#)