

”The Ball” Radical Cloud Resource Consolidation

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What to Consolidate?

(Cloud) Infrastructure Resource Usage => Reduce Costs

Primitives That Cost

- Pricing calculator ("vendor agnostic"):
<http://www.windowsazure.com/en-us/pricing/calculator/>

Stand-by Costs

- Storage = \$0.07 per GB per month

Action Costs

- Storage Transactions = \$0.01 per 100000
- Outbound Network = \$0.12 per GB
- Computing = \$0.02 - \$1.80 per hour

Bound by realities

- Storage = maintained, on-line, scalability, capacity
- Network = maintained capacity, bandwidth
- Computing = active virtualized hardware
 - Flavors in memory, amount of cores
- Compared to existing resources, it feels expensive
 - Include maintenance troubles/costs, and it's not

What can I get for \$100 USD?

- 1429 GB of storage
 - For one month
- 1,000,000,000 storage transactions
- 833 GB of network outbound storage
- 55 to 5000 hours of computing
 - 2.3 days to 6.6 months

Computing is the target

The most expensive component...

What is computing?

What is computing?

- Computer/VM that is powered up and running
- The costs is to pay for reserved capacity

What if I don't actively compute anything?

Online Services = Computing

- Servers serving web pages
- Database servers responding to queries
- What about the time when they're idle?
- Cost to pay comes from available/reserved capacity
 - Tools are estimating and reactive auto-scaling

How much computing is needed?

- Cheapest/smallest instance is \$15 USD a month
 - 768 MB of RAM, shared CPU core
- That's not much for anything real-time responses
- It still has quite a bit of CPU cycles during the month, much more than average office server uses for its tasks combined for that month.
- What if... Computing could be counted as CPU cycles?

Reminding the Ball model

- Pure distributed model to security groups'
 - Platform/instance/installation level owns no data
 - Infrastructure services come from the core
- Each group owns the information
- Processing is ran within the group's context
 - ... Infrastructure such as network / storage is provided

Let's see some numbers

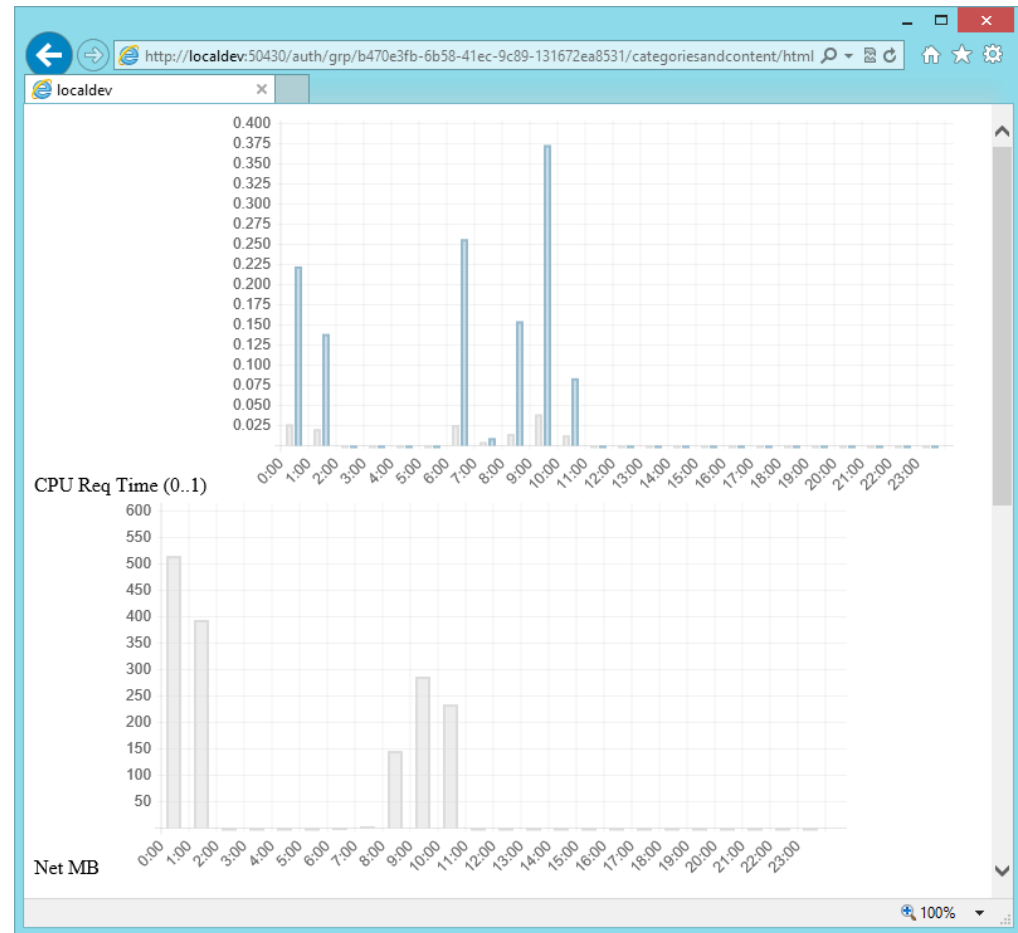
"The Ball" unified processing with real website group

The Scenario: Company Website

- 30 content pages
- 300 edits / month to maintain them
- 1500 visitors a month (50 a day)
 - Each land to home page and click 8-9 articles

Simulation load scenario

- Load test content was decent sized website with 30 content pages
- Midnight: "visitor-simulator" 1000 times home page load + few article clicks
- Running the batch operations on "remote browser" around 7:00 to calculate usage reports
- 9 – 10: 300 edits of articles
- 10-11: "visitor simulator" for 500 times



https://manage.windowsazure.com/@prodemotest.onmicrosoft.com#Workspaces/CloudServicesExtension/CloudService/caloomdemo/monitor

Cloud services - Windows ...

Windows Azure Subscriptions kalle.launiala@protonit.net

caloomdemo

DASHBOARD MONITOR CONFIGURE SCALE PREVIEW INSTANCES LINKED RESOURCES CERTIFICATES

PRODUCTION STAGING

NETWORK OUT(THEBALLWE...
 CPU PERCENTAGE(THEBALLWE...
 1 MORE
 RELATIVE
24 HOURS

NAME	SOURCE	MIN	MAX	AVG	TOTAL	ALERT R...
<input checked="" type="checkbox"/> Network Out	TheBallWebFarm	4.99 MB	371.75 MB	6.77 MB	1.75 GB	Not Configured
<input checked="" type="checkbox"/> CPU Percentage	TheBallWebFarm	0.94 %	6.57 %	2.27 %	---	Not Configured
<input checked="" type="checkbox"/> CPU Percentage	WorkerRoleAcc...	2.96 %	3.82 %	3.15 %	---	Not Configured

+ NEW ADD METRICS ?

100%

Comparison the Ball vs traditional

Net MB

Monthly Summary

Pricing instance sizes as following: XS = \$0.02, S = \$0.08

Network pricing is based as \$0.12/GB

Small Instance Size Comparison

Item	The Ball S	Traditional (Single) - S	Traditional (Redundant) - S
Network Outbound GB	1.698	1.698	1.698
Network Price	\$0.2	\$0.2	\$0.2
Computing Hours	1.767	750	1500
Computing Hours Price	\$0.14	\$60	\$120
Total Price	\$0.34	\$60.2	\$120.2
Cost compared to most expensive	0.28%	50.08%	
Relative cost saving	99.72%	49.92%	

XS Instance Size Comparison

Item	The Ball XS	Traditional (Single) - XS	Traditional (Redundant) - XS
Network Outbound GB	1.698	1.698	1.698
Network Price	\$0.2	\$0.2	\$0.2
Computing Hours	1.767	750	1500
Computing Hours Price	\$0.04	\$15	\$30
Total Price	\$0.24	\$15.2	\$30.2
Cost compared to most expensive	0.79%	50.33%	
Relative cost saving	99.21%	49.67%	

Demo - time