More Bang for your Buck

How to get the most out of your cloud

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Microsoft Cloud Day
April 23rd 2013
Who am I?

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Cloudyn optimize the way cloud customers uses cloud resources.

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How can we find optimization opportunities?

Bringing real cloud usage data from 700 IaaS customers into the mix:

~2.5m

Virtual instances, thousands of databases and billions of storage objects monitored in the survey.
How do you measure your cloud efficiency?
Overwhelming information

# of deployment cycles, idle servers, costs, % utilization, jobs, application performance, speed, databases, network bandwidth, server performance, end user performance, application response time, revenue, green benefits.
Cool.
Now we have a good grasp on our cloud!
Usage trend: compute utilization

By looking at CPU, Memory, I/O, Network:

**Most cloud deployment are significantly underutilized.**

- **87%** Underutilization
- **64%** Max RAM Utilization
- **17%** Average CPU Utilization
Usage trend: price utilization

How customers pay cloud vendors:

Most customers use the least economical pricing modules.

26% use most economical Pricing structure

74% Most expensive pricing structure

91% Can work in better pricing structure
How do you measure your car efficiency?
Keep it simple

CITY MPG
23

Fuel Economy
Information

HIGHWAY MPG
30
The only thing that matters is the business impact!
OK, let's keep it really simple

User Experience = \frac{Workload}{Capacity}
Houston, we have a problem

Cloud capacity is

STOP

∞
The right metric

Cloud Value = \frac{Cost}{Throughput}
What does this mean?
What should I do?
Three steps to get more out of your cloud

1. **Think big** – Scalable architecture
2. **Act Small** – Rightsize it
3. **Go green** – recycle and retire
4. **Use your cash** – reserve capacity

Negotiation has zero impact...
Surprise! You have storage.

- Typically represents **15%** of cloud spend
- Only **12%** are using cheaper storage options
- **15%** of volumes are disconnected

Does it make sense to keep the light on when you leave the room?
One large cappuccino with an extra 5GB of RAM please...

Coffee customization,
Starbucks @ IaaS

If you do it to your coffee, why not treat your instances the same? It’s 20% of your monthly cost.
**Comparing large to x-large for RDBMS workload:**

<table>
<thead>
<tr>
<th>Spec</th>
<th>Large</th>
<th>X-Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM</td>
<td>7.5 GB</td>
<td>15 GB</td>
</tr>
<tr>
<td>CPU</td>
<td>4 EC2 CU</td>
<td>8 EC2 CU</td>
</tr>
<tr>
<td>Storage</td>
<td>850 GB</td>
<td>1690 GB</td>
</tr>
<tr>
<td>I/O Performance</td>
<td>Moderate</td>
<td>High</td>
</tr>
</tbody>
</table>

Large instance, volume-optimized with 500 MBPS provisioned IOPS performed better than single x-large and cost less!
*Cloud vendors love charging less

* Yep, this is not a typo, but they have to run a business too... So, how does it work?
Pricing trend: reserved, on-demand

You will have to reserve your capacity

- Requires one time payment
- Pay less for each hour
- Resource availability is guaranteed

91% of the on-demand instances should be reserved.
Price optimization

Why they love charging you less?

- Customer satisfaction
- The upfront payment
- Capacity projection
- The Jevons paradox

Hi, It’s me, William Stanley Jevons
Large instance: on-demand vs. reserved capacity comparison

Breakeven after 4mon, 30% Runtime
Common reservation mistake

Optimal Reservation

Safe Reservation
Summary: the cycle

- Optimization
- Planning
- Tracking
Thank you

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