AKASIA
Cloud Planning

“Cloud Planning Analytics”

AIM & ACM
Ideal planning solutions for
Cloud services

AKASIA Cloud Planning

AKASIA Cloud Planning

We offer SaaS solutions that enterprises use to plan for transition to the cloud.

Customers have used Akasia SaaS to model **over 1 Million** VMs and physical machines for migration to the cloud.

Akasia identifies hidden costs and savings in the cloud & builds cloud bill of materials.

Akasia's Customers/Channel Partners

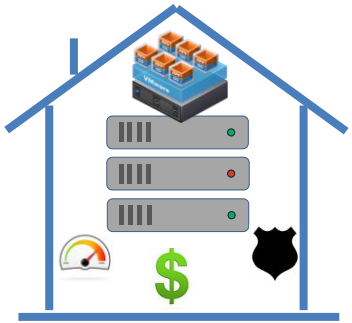
Apache Corporation, Chevron, Cognizant, ConRes Continental Resources, basefarm, polleo systems, CompuNet, Inc., Cisco, Havebury Housing Partnership, Money Mart, AQMesh, PaperClip

Typical Use Case of Akasia:

1. Systems Integrators and MSPs:
    1. Cloud assessments
    2. Pre-migration planning
2. Cloud Platform Providers
    1. Pre-sales business justifications
    2. Pre-migration planning
3. **End-User Enterprises**
    1. **Identify optimal savings**
    2. **Business case for migrations**

Challenges In Cloud Journey:

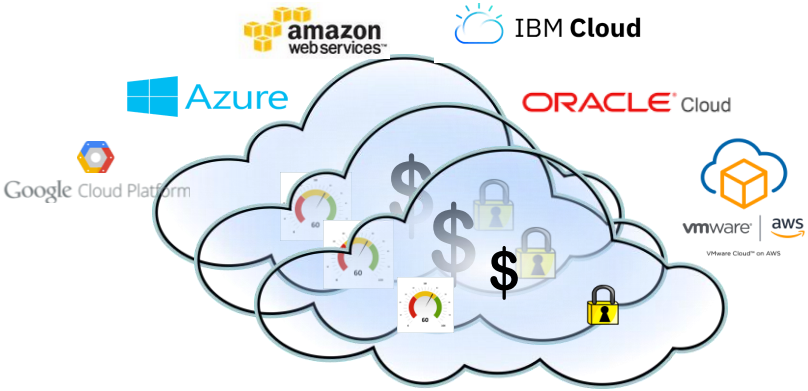
Multiple clouds, options, configurations make cloud resource selection complex



On-Premise

Carefully tuned, known variables

vs.



In-Cloud

Variety of options, unpredictable variables

Over 1 Million Cloud Options Available

- AWS EC2 with 100+ products and their variations and licensing/discounts ► 152,000 options
- Add other non-EC2 products ► 300,000+ options
- Add other Clouds ► 1,000,000+ options

Permutations and combinations are rapidly growing and changing

Planning for the Cloud – 2 Main Issues

Cost Surprises in the Cloud

- On-premise and cloud have different cost paradigms
  - CAPex vs. Opex
- Network and I/O incur significant costs in the cloud vs. on-premise

Identifying Cloud Cost Savings

- Constantly changing products, licensing, discounts
- Complex cloud ordering rules
- Leveraging innovative cloud technology

Planning for the Cloud – How Akasia Helps

Cost Surprises in the Cloud

- On-premise and cloud have different cost paradigms
  - CAPex vs. Opex
- Network and I/O incur significant costs in the cloud vs. on-premise

Akasia discovers the on-premise environment and automatically calculates cloud costs for all on-premise resources

Identifying Cloud Cost Savings

- Constantly changing products, licensing, discounts
- Understanding cloud ordering rules
- Leveraging innovative cloud technology

Akasia automatically maps to the most optimal cloud resources

Akasia guides user on “what-if” analysis to maximize cloud usage

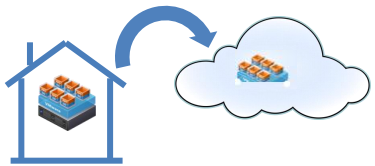
Our Offerings

Akasia Infrastructure Modeler

Cost Planning for "lift & shift" migrations

The Akasia Infrastructure Modeler (AIM) discovers your on-premise resources and provides equivalent and right-sized cloud templates in minutes. AIM includes “hidden costs” such as network and I/O that incur extra charges in the cloud.

The AIM report gives you a cloud bill of materials and costs that form a starting point for your lift and shift cloud migrations.



Akasia Cloud Modeler

Cost Planning for new cloud deployments

The Akasia Cloud Modeler (ACM) allows you to select and configure cloud-native resources such as serverless computing, cloud storage and cloud data bases, etc. and compare the costs across different clouds.

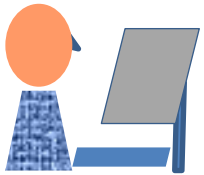
ACM always has the latest cloud resources and is your go-to for refactoring to cloud-native options.

Akasia Cloud Services

Cloud transition services

The Akasia Cloud Experts (ACE) provide you with expert services involved in costs planning, bill of materials, performance estimates as well as cost comparisons across clouds.

Our SaaS tools are easy to use and our experts further simplify your cloud transition projects so that you can focus on your day to day job.



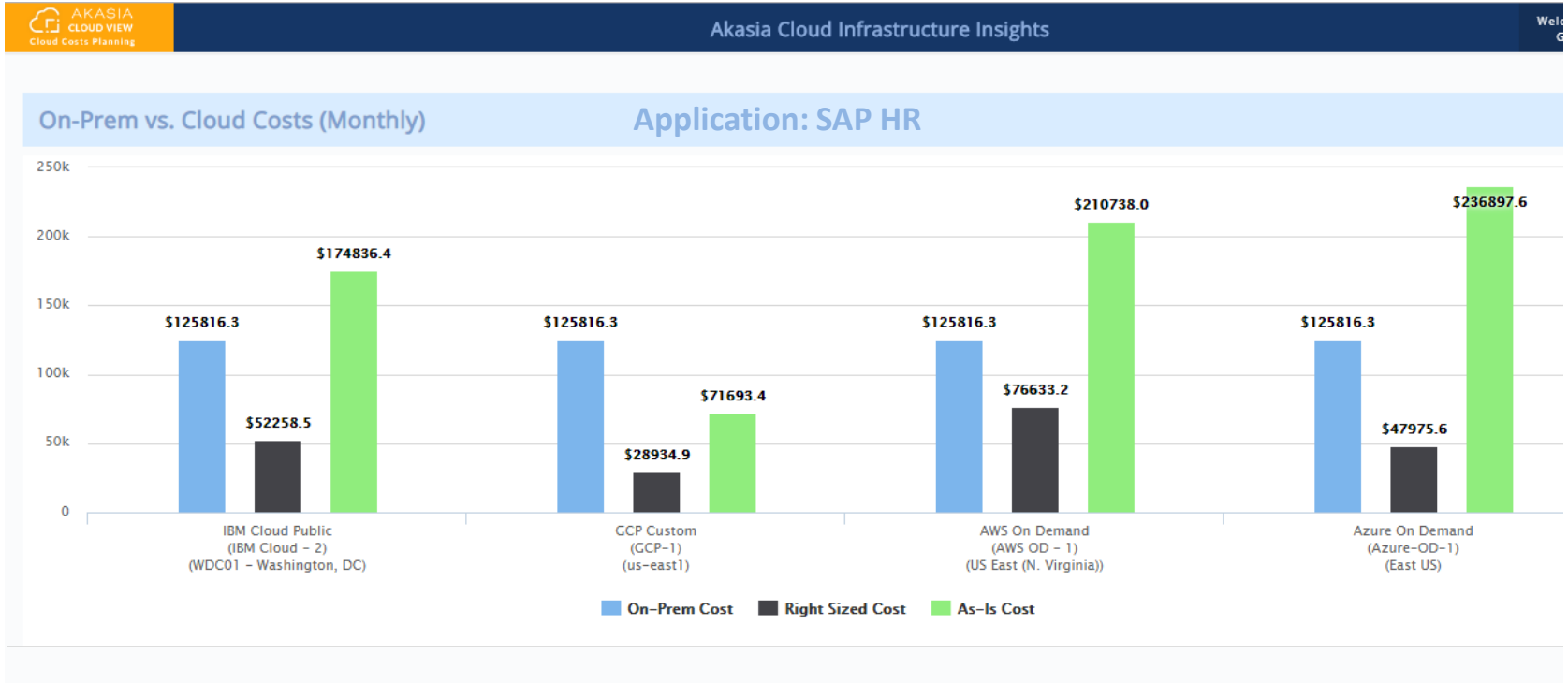
Modeling for a Workload in the Cloud

Thorough TCO Analysis

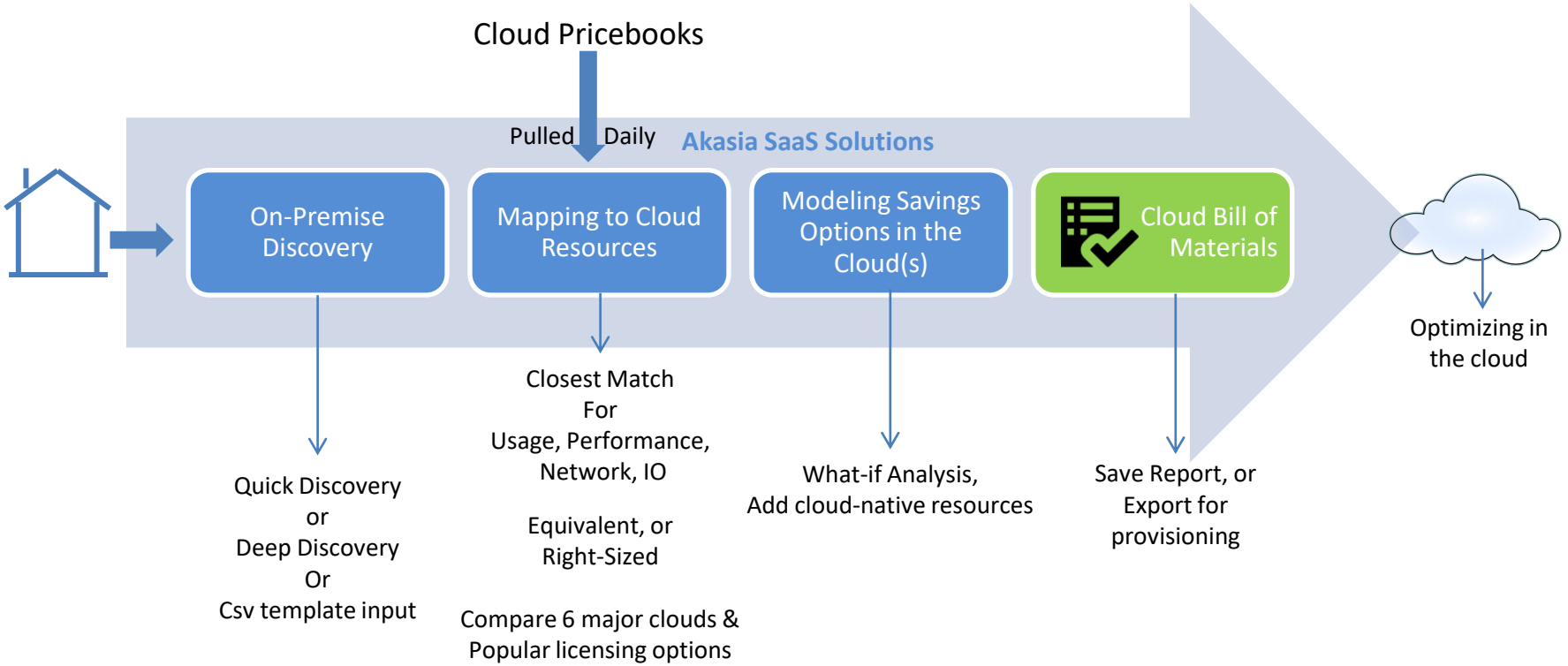
- Cost variables for a workload in the cloud
  - Infrastructure
    - CPU, Memory, Storage
    - Network, IO
    - OS
  - Additional Services
    - Software licenses
    - Security, HA/DR, load balancers, etc.
  - Operational Costs
    - Administration
    - Partial or full payments for reserved instances, etc.

Modeling Costs across Clouds for same workload

Eg: Akasia Output for SAP HR for AWS, Azure, GCP and IBM Cloud



Steps in Akasia's Cloud Planning Process



- Data Discovery Options
  - Quick Discovery – takes minutes
    - VMware: Akasia VMware Collector; RVTools
    - Hyper-V, Openstack: Akasia tools for Hyper-V and Openstack
    - 3rd Party Input using published csv formats
  - Deep Discovery – takes days / weeks
    - Service graph – application, infrastructure, dependencies

- Type of Data Required
  - Parent Hosts data
    - Make, model, CPU type, CPU cores, CPU speed, Memory, Storage capacity, storage type
  - VM data
    - Parent host, vCPUs, Memory, storage, subnet, guest OS, power-on state, etc.
  - Utilization history
    - CPU
    - Memory
    - Network activity
    - Disk I/O activity

- No confidential information such as IP address and username/passwords are collected
- Output of the collector are human readable csv files

- As-is
  - The total CPU cycles and the Total Memory allocated to the VM and the Guest OS are first calculated, and then and is matched with the best-fit cloud instance

- Right-Sizing & Mapping
  1. Determine the Compute Size (CPU/Mem of the target Instance)
     - Calculate the total CPU cycles and the Total Memory allocated to the VM
     - Calculate the 95th percentile CPU and Memory % usage over 12 months
     - Calculate CPU benchmark factors are applied
     - Determine the with the best-fit cloud instance with a 2.5% tolerance
  2. Determine the storage required
     - Calculate EBS storage type and capacity required based on current type and capacity used
  3. Match the Guest OS
  4. Look at region and review availability. Re-map if needed.
  5. Present the final instance, cost On-Demand and Reserved Instance.

Competition among cloud platform providers is intense so they continuously add creative cost savings options – model these in Akasia

1. Selecting Optimal Compute Type
2. Selecting Optimal License Type
3. Right-Sizing
4. Application uptime (Pause/Resume)
5. Elastic Architecture
6. Windows Licensing
7. Bring Your Own License (BYOL)
8. Platform as a Service (PaaS)
9. Serverless Compute / Containers as a Service (CaaS)
10. VMware on AWS, Azure, GCP & IBM Cloud

Modeling Savings in the Cloud (s)

Modeling for Compute Types

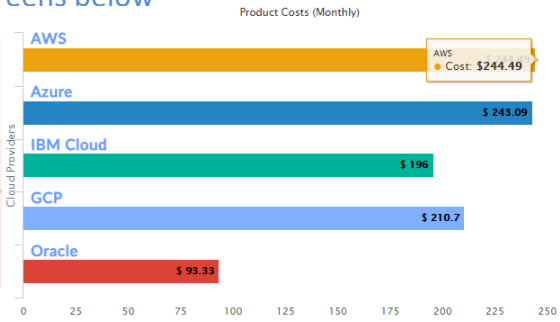
4 vCPU, 6 GB Memory

AKASIA Cloud Planning

Choose the right Compute Types to save costs – Akasia output screens below

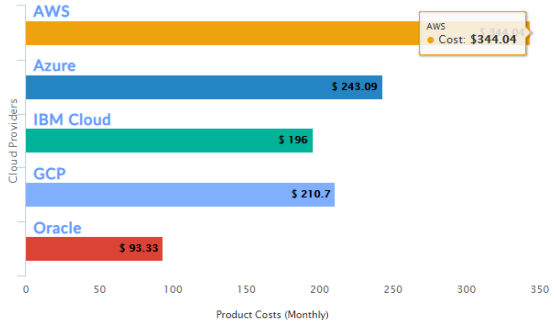
General Purpose

Product	amazon web services	Microsoft Azure	IBM Cloud	Google Cloud Platform	ORACLE
Compute - VMs	a1.2xlarge	B8MS	C1.8x8x25	Custom-6-6	VM.DenseIO2.16
Total Monthly Cost	$ 244.49	$ 243.09	$ 196.00	$ 210.70	$ 93.33
Total Yearly Cost	$ 2,933.86	$ 2,917.08	$ 2,352.00	$ 2,528.40	$ 1,119.96



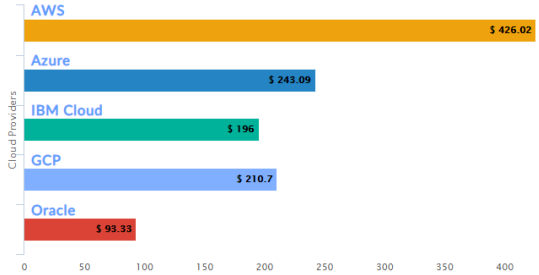
Compute Optimized

Product	amazon web services	Microsoft Azure	IBM Cloud	Google Cloud Platform	ORACLE
Compute - VMs	c5.2xlarge	B8MS	C1.8x8x25	Custom-6-6	VM.DenseIO2.16
Total Monthly Cost	$ 344.04	$ 243.09	$ 196.00	$ 210.70	$ 93.33
Total Yearly Cost	$ 4,128.48	$ 2,917.08	$ 2,352.00	$ 2,528.40	$ 1,119.96



Memory Optimized

Product	amazon web services	Microsoft Azure	IBM Cloud	Google Cloud Platform	ORACLE
Compute - VMs	r5a.2xlarge	B8MS	C1.8x8x25	Custom-6-6	VM.DenseIO2.16
Total Monthly Cost	$ 426.02	$ 243.09	$ 196.00	$ 210.70	$ 93.33
Total Yearly Cost	$ 5,112.29	$ 2,917.08	$ 2,352.00	$ 2,528.40	$ 1,119.96



Modeling Savings in the Cloud (s)

Licensing Options – On Demand & Reserved Instance

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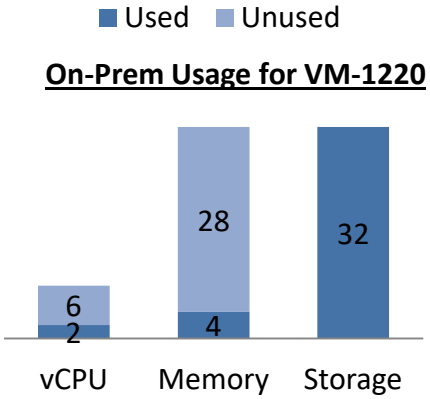
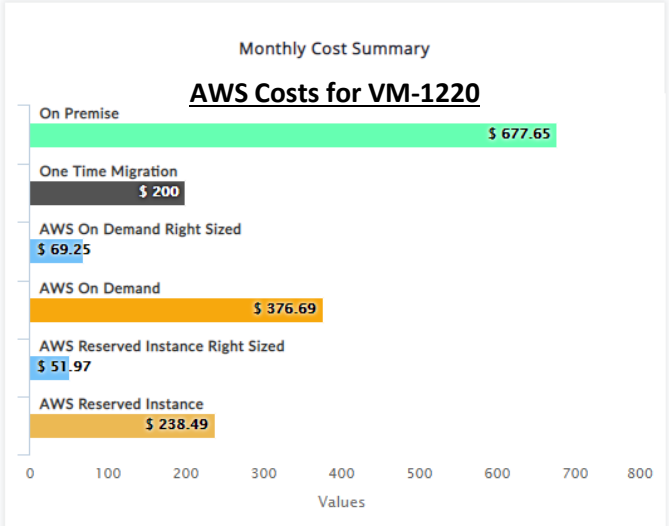
Pricing for a 4 vCPU, 8 GB Memory VM

	Network Cost	I/O Cost	Storage Cost	Compute Cost	Total Cost	Cloud Datacenter
amazon web services On Demand 1/1 mapped SELECT THIS CLOUD	$1.33	$0.00	$8.30	$74.66	$84.30	US East (N. Virginia)
RIGHT SIZED COSTS			Storage Cost $9.13	Compute Cost $18.67	Right Sized Total Cost $29.13	Right Sized Savings $55.17
amazon web services Reserved Instance 1/1 mapped SELECT THIS CLOUD	$1.33	$0.00	$8.30	$32.28	$41.91	US East (N. Virginia)
RIGHT SIZED COSTS			Storage Cost $9.13	Compute Cost $8.05	Right Sized Total Cost $18.52	Right Sized Savings $23.40
Microsoft Azure On Demand 1/1 mapped SELECT THIS CLOUD	$1.29	$0.09	$1.93	$123.37	$126.67	East US
RIGHT SIZED COSTS			Storage Cost $2.12	Compute Cost $31.39	Right Sized Total Cost $34.88	Right Sized Savings $91.79
Microsoft Azure Reserved Instance 1/1 mapped SELECT THIS CLOUD	$1.29	$0.09	$1.93	$45.25	$48.55	East US
RIGHT SIZED COSTS			Storage Cost $2.12	Compute Cost $14.17	Right Sized Total Cost $17.66	Right Sized Savings $30.89

Modeling Savings in the Cloud (s)

Right-Sizing Compute in the Cloud





VM Monthly Costs ($) | Configuration

Enter Keywords to Filter Search Results

Name	ID	Comp Eq.	Comp Eq. Rightsized	Power State	Guest OS	Compute Cost	Storage	Total ($)	Total RightSized ($)	RightSized Savings ($)
houmgmt119	vm-1220	t3.2xlarge	t3.medium	On	Microsoft Windows Server 2008 R2 (64-bit)	351.36	21.60	376.69	69.25	307.44

$ savings per month from right-sizing VM-1220 in the cloud

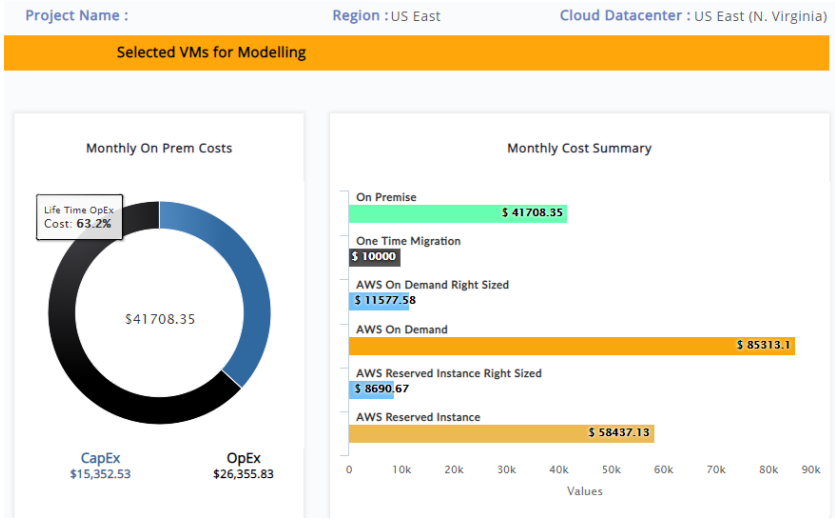
Modeling Savings in the Cloud (s)

Application Uptime

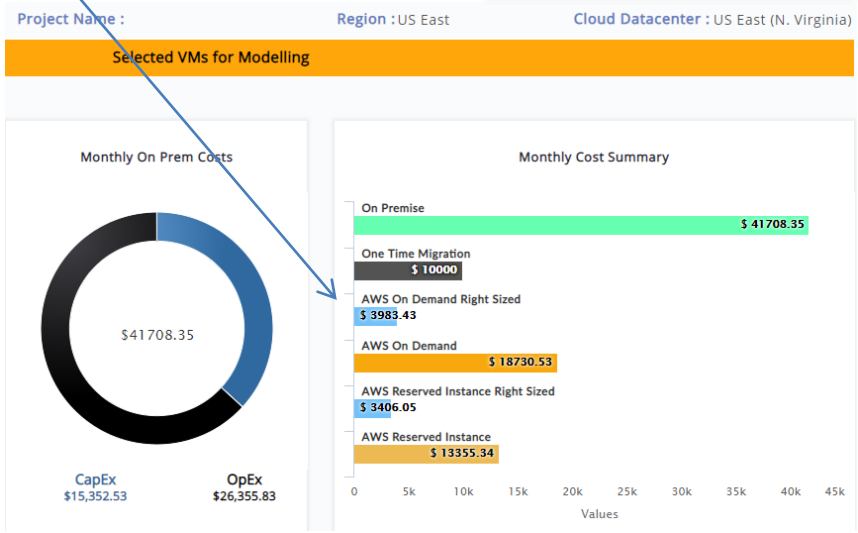
Applications that run intermittently can help save costs in the cloud because you don't pay for resources when they are tuned off

Eg: Analytics app that runs only 20% of the time costs **$4K** per month in AWS instead of **$41K** on-prem

Modeling results for 100% uptime in the cloud

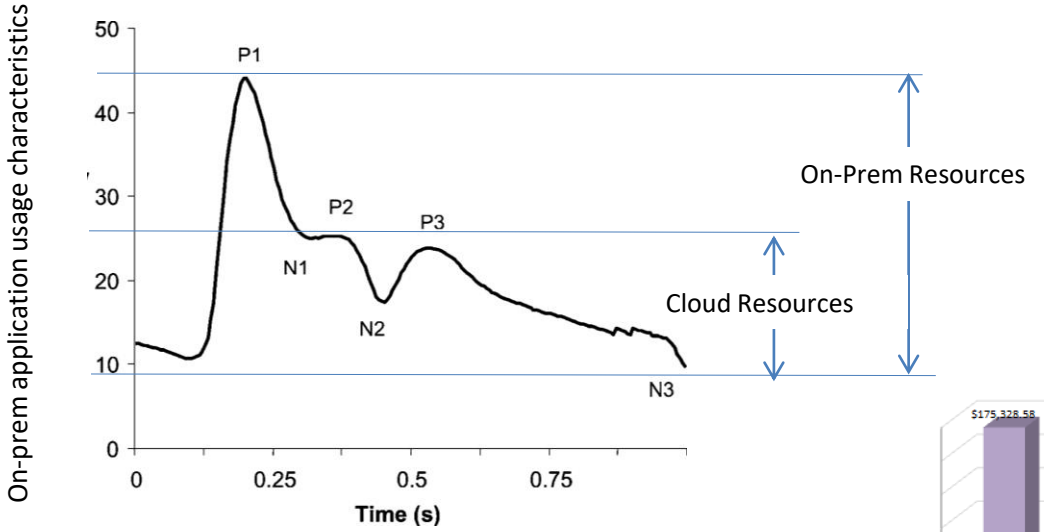


Modeling results for 20% uptime in the cloud

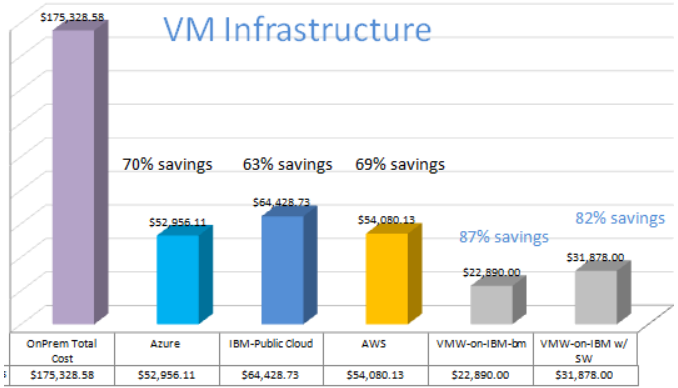


Modeling Savings in the Cloud (s)

Elastic Infrastructure



Modeling showed that this customer can save over 63% - 82% per month in the cloud by architecting for average instead of peak.



Modeling Savings in the Cloud (s)

BYOL vs. OS Included

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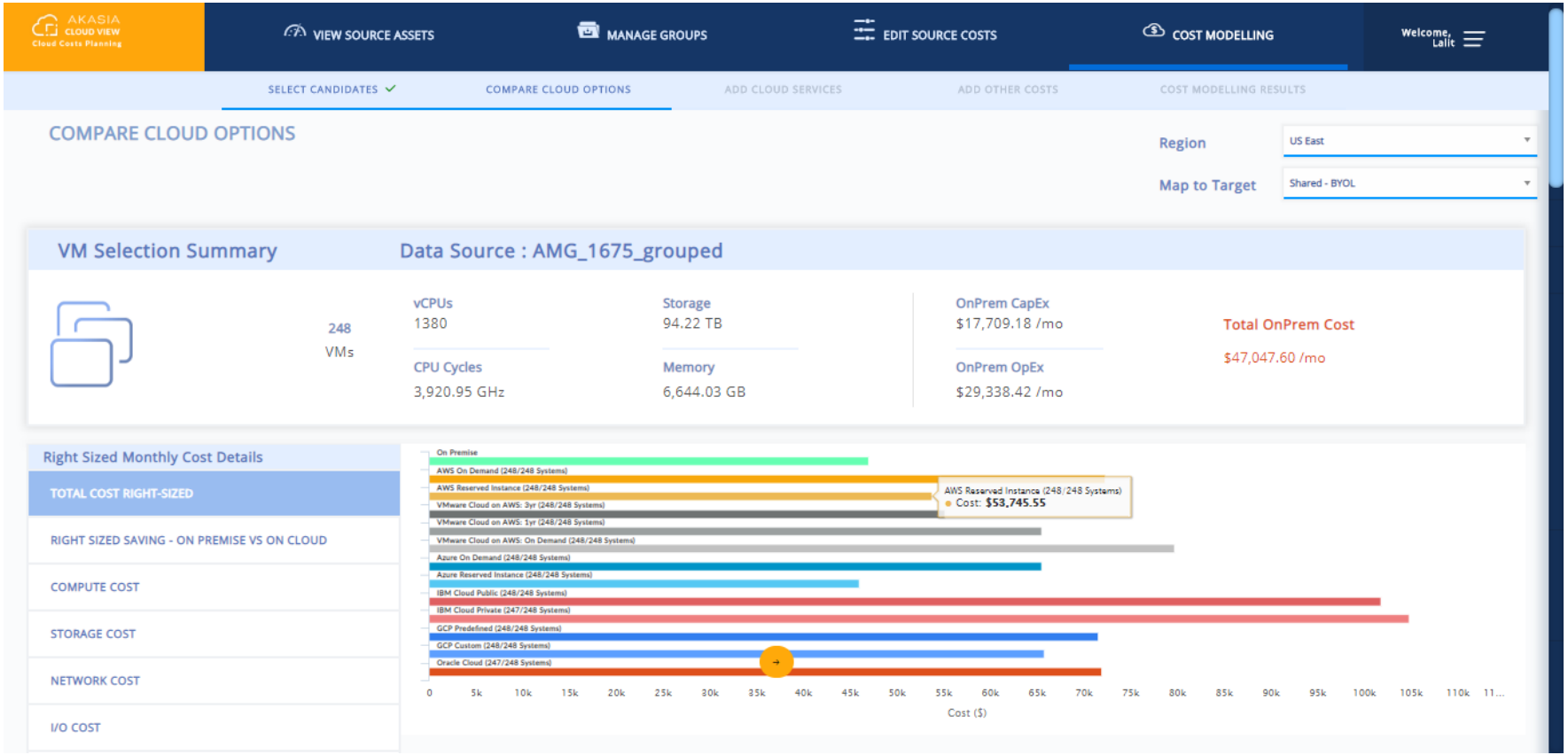
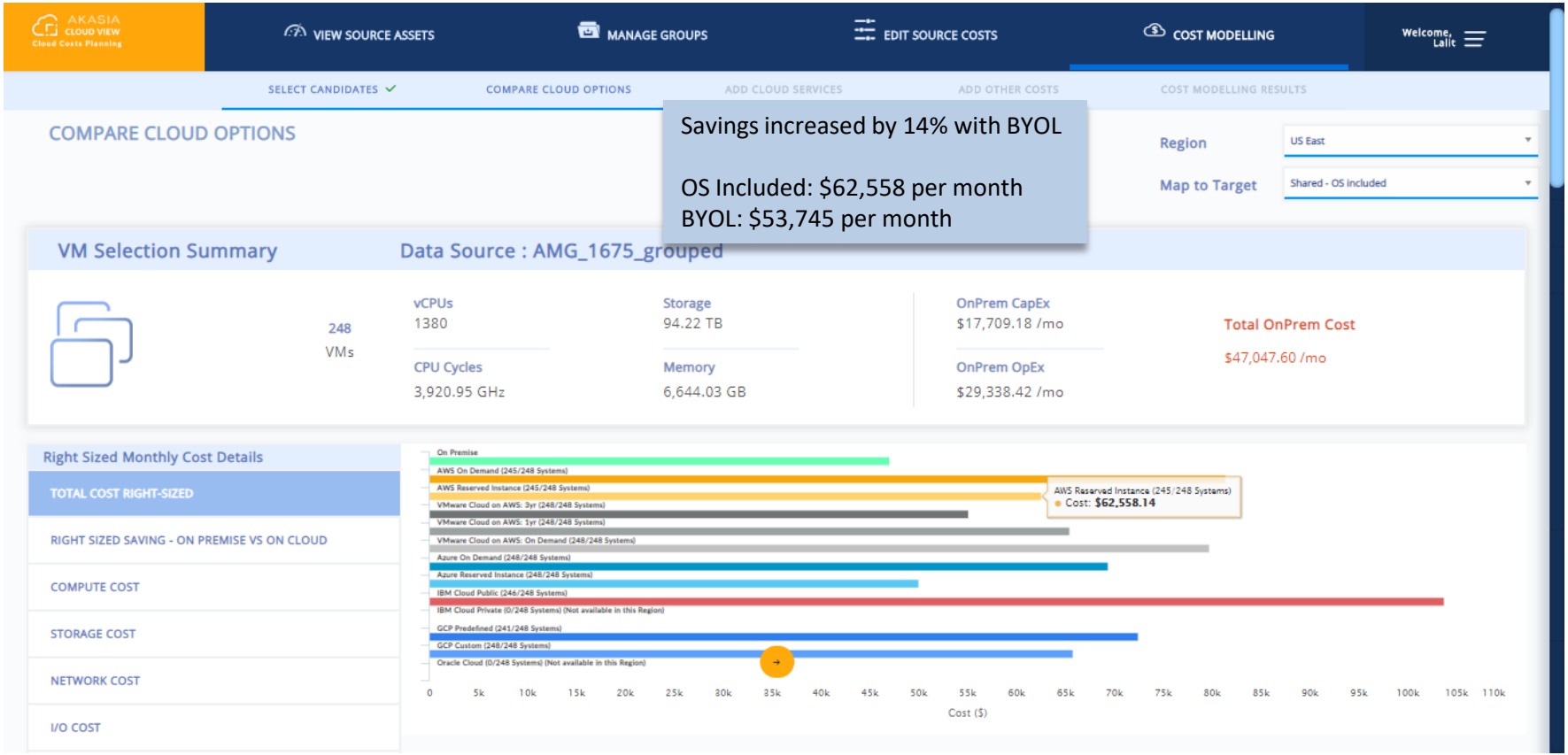


Modeling Savings in the Cloud (s)

BYOL vs. OS Included



Savings increased by 14% with BYOL

OS Included: $62,558 per month
BYOL: $53,745 per month

Modeling Savings in the Cloud (s)

General rule for optimal cost – BYOL vs. OS Included

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- Use BYOL for core infrastructure (slowly varying)
  - Large potential savings by reusing licenses
- Use License included for varying infrastructure
  - Less management overhead, pay as you go
  - Allows easy auto scaling

Modeling Savings in the Cloud (s)

VMware on AWS vs. EC2 native

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Client with wants to migrate 1443 VMs to AWS and wants to compare costs for EC2 and VMC for 3 year Reserved Instance

Results from Akasia Cost Modeling:

Highest Savings

Item	EC2 As-is	EC2 Right-sized	VMC As-is	VMC Right-sized
Monthly cloud charges	224,257.39	208,999.25	196,251.25	168,845.17
Monthly admin charges	27,500.00	27,500.00	1500.00	1500.00
Total Recurring monthly charges	**231,757.30**	**216,499.25**	**197,751.25**	**170,345.17**
One time migration charges	**289,000.00**	**289,000.00**	**22,000.00**	**22,000.00**

Modeling Savings in the Cloud (s)

Planning for on-prem VMware to the Cloud

Akasia Feature	amazon web services, Azure, Google Cloud Platfor, IBM Cloud	vmware | aws VMware Cloud™ on AWS	VMware on IBM Cloud
Discovery of on-premise Infrastructure or Manual Input	✓	✓	✓
Mapping to As-Is Cloud Resources	✓	✓	✓
Mapping to Right-Sized Cloud Resources	✓	✓	✓
Bin-Packing for Bare Metal /VMware Hosts		✓	
Bin-Packing for Multiple Configs of Bare Metal Servers			✓
Model hidden cost savings in Cloud	✓	✓	✓

On-Premise Discovery

Mapping to cloud resources

Modeling Savings in the Cloud(s)

Cloud Bill of Materials

AKASIA Cloud Planning

https://saas.akasiacloud.com/#/comparison-summary/272

AKASIA CLOUD VIEW Cloud Costs Planning

Welcome, Garima

Data Source : AMG-demo2-Grouped **Project Name :** 435 vm AWS **Region :** US East **Cloud Datacenter :** US East (N. Virginia)

Selected VMs for Modelling

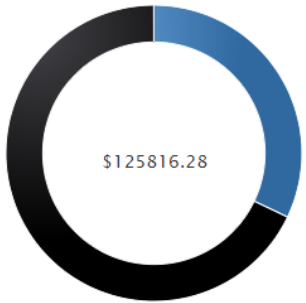
VM Selection Summary

No. Of VMs	VCPUs
435 / 1675	2445
Memory	**Storage**
7,598.50 GB	70.00 TB

VM candidates for migration

1. Houxdc04
2. Houpst02
3. Houapp22
4. Houapp289
5. Housapbsi
6. Houapp35
7. Houtibp01

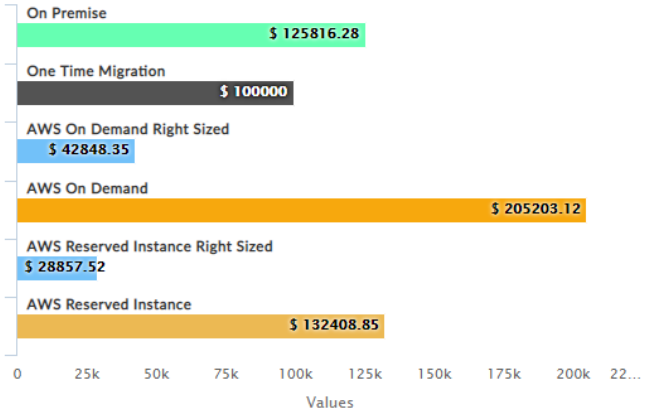
Monthly On Prem Costs



CapEx $40,389.74

OpEx $85,426.54

Monthly Cost Summary



On-Premise Discovery

Mapping to cloud resources

Modeling Savings in the Cloud(s)

Cloud Bill of Materials

AKASIA Cloud Planning

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AKASIA CLOUD VIEW Cloud Costs Planning

Welcome, Garima

Cloud Templates Costs ($)

Serial No.	Name	ID	Comp Eq.	Compute Cost	Storage Cost	Network Cost	I/O Cost	Comp Right Sized	Compute Right Sized Cost	Storage Right Sized Cost	Total Cost	Total Right Sized	Right Sized Savings
1	callrec01	vm-2405	c5.xlarge	124.44	20.00	0.76	0.00	t3.micro	7.61	3.88	145.20	12.25	132.95
2	callrec02	vm-2386	t3.xlarge	121.80	25.00	0.76	0.00	t3.small	15.23	1.63	147.56	17.61	129.95
3	cucmlabmanager	vm-2834	t3.medium	43.92	2.90	0.00	0.00	t3.micro	14.35	1.50	46.82	15.85	30.97
4	endur_11g_template	vm-4623	c4.8xlarge	2,262.61	20.70	1.06	0.00	r5.xlarge	319.15	11.50	2,284.37	331.71	1,952.66

Selected Advanced Services

Serial No.	Service Name	Configuration	Product Instance	Unit Price ($)	Quantity	Total Price
1	Amazon Simple Storage Service (S3)	Storage : 256 (GB)	AmazonS3	5.38	1	$5.38
2	Amazon Glacier	Storage : 256 (GB), Data Transfer : 100 (GB)	AmazonGlacier	2.02	1	$2.02
3	Amazon RDS	vCPUs : 4, Memory : 8 (GB), Data Transaction Unit (For Azure) : 100	db.m4.xlarge	256.20	1	$256.20
					Total	$263.60

Benefits from Akasia

- Proactively model costs of operating on-premise workloads in the cloud

  (No cost surprises after migrating to the cloud!)

  - Automated discovery of on-premise workload characteristics
  - Automated modeling of costs of running that workload in AWS, Azure, GCP, IBM Cloud, Oracle Cloud and VMware Cloud

- Right-Sizing to save Cloud costs

  (Save 30-60% costs by only migrating used capacity to the cloud!)

  - Automated analysis of allocated vs. usage of resources for on-prem workloads
  - Automated visualization of cost savings from right-sizing when moving to cloud

- Editable options for sophisticated “what-if” analysis
  - Ability to edit cloud templates recommended by the tool for what-if analysis

- Consolidation algorithm for Bare Metal Servers
  - Tool generates 3 recommendations for optimal consolidation of on-premise servers to IBM Bare Metal servers as well as for VMware Cloud on AWS, Azure, GCP and IBM Cloud

Read customer case studies at http://akasiacloud.com

Our Customers/Partners Include

Read our Customer Case Studies at https://akasiacloud.com/blog/customer-stories/

Our Technology Partners Include

About Akasia

AKASIA
Cloud Planning

2014

Founded

2

Locations

- Santa Clara (HQ)
- Pune (India)

Funding

TiE LaunchPad

Our Methodology - Selecting a Cloud Platform and Resources

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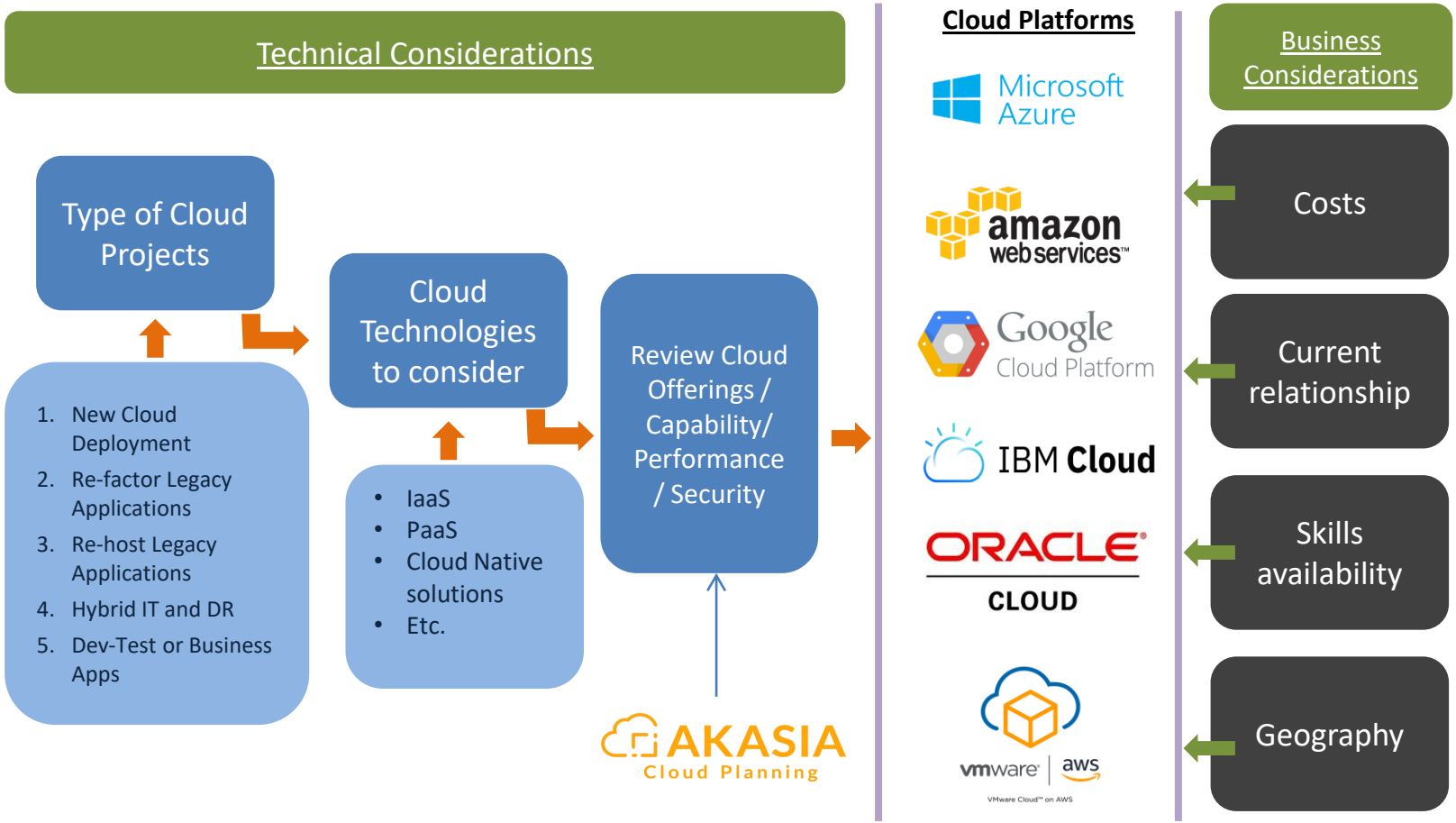

More

- Ideal for cloud planning and assessments
- No more cloud cost surprises – automatic IOPS, network, storage and VM template cost calculation
- More cloud savings – model various cloud savings BEFORE migrations
- Kept current with daily changes in cloud costs & templates

- For information call +1-707-985-8599 or email info@akasiacloud.com

- Free Version at http://akasiacloud.com/free-version/