

# The 5 Phases of Cloud Cost Management



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# Overview



# The Public Cloud Should be Cost Effective

The original promise of the public cloud was to provide a simple and cost-effective alternative to hosting your own servers in a data center. Many new technological innovations have arisen in pursuit of that goal, however, the complexities involved in running a public cloud have only become increasingly troublesome to master—and quite expensive.

## Cloud Costs: a Trending Problem



59%

of IT decision-makers cited spend and cost overruns as a big concern in a [2019 cloud adoption survey by NetEnrich](#).



35%

of the projected \$206.2 billion dollars to be spent on public cloud in 2019 is likely to be wasted.



40%

of AWS resources are believed to be over-allocated (or underutilized).



## Why Public Cloud Costs are Growing

There are several factors that contribute to a company's inflating cloud costs. These factors go overlooked because of the inherent risk and complexity involved in properly addressing them.

Take the task of right sizing resources, for example. Engineers often prefer to wait until absolutely necessary before adjusting capacity allocations—and for good reason. Without proper analysis, right sizing your resources could cause unwanted performance bottlenecks that impact your customers. The time and money required to even conduct such thorough analysis (either through expensive consultants or by building in-house analytic tools) is enough to deter, or at least delay, anyone from starting cost optimization projects.



## How CloudWisdom Helps You Optimize

CloudWisdom believes in the promise of the cloud and is dedicated to building the tools needed to deliver on that promise. By identifying the 6 key phases outlined in this ebook, CloudWisdom has created a framework that addresses the various dimensions of planning and analyzing needed to successfully optimize your public cloud.



# The 5 Phases of Cloud Cost Management



## 1. Bill Analysis

Catching and preventing end-of-the-month surprises



## 4. Right Sizing

Addressing your over-allocated resources and planning for auto-scale



## 2. Idle Resources

Discovering wasted spend that's safest to remove



## 5. Planned Purchases

Striking a balance between deep savings and infrastructure agility



## 3. Monitoring

Detecting performance bottlenecks before your users



# The CloudWisdom Framework

How these phases look in your cloud cost journey:

					<b>Continuous Optimization</b>
<b>Bill Analysis</b>	<b>Idle Resources</b>	<b>Monitoring</b>	<b>Right Sizing</b>	<b>Purchase Planning</b>	
<ul style="list-style-type: none"> <li>✓ Isolate by Budget</li> <li>✓ Compare Historic Trends</li> <li>✓ Set Cost Alerts</li> </ul>	<ul style="list-style-type: none"> <li>✓ Detect Wasted Resources</li> <li>✓ Analyze Contents</li> <li>✓ Archive &amp; Remove</li> </ul>	<ul style="list-style-type: none"> <li>✓ Create &amp; Enable Policies</li> <li>✓ Set up Notifications</li> <li>✓ Review Daily Reports</li> <li>✓ Remove Bottlenecks</li> </ul>	<ul style="list-style-type: none"> <li>✓ Isolate by Metadata</li> <li>✓ Verify Upgradability</li> <li>✓ Analyze Utilization</li> <li>✓ Compare Options</li> <li>✓ Resize Resources</li> </ul>	<ul style="list-style-type: none"> <li>✓ Isolate by Metadata</li> <li>✓ Measure Hourly Usage</li> <li>✓ Compare Options</li> <li>✓ Purchase</li> <li>✓ Track Expiration</li> </ul>	
Tracks progress, budgets, and exposes high-level trends.	Reveals unused resources wasting budgetary spend.	Catches performance bottlenecks and pinpoints where & why they occur.	Determines the most affordable and stable configurations for your resources.	Multiplies the savings of your right sized resources via long-term discounts.	

## 1

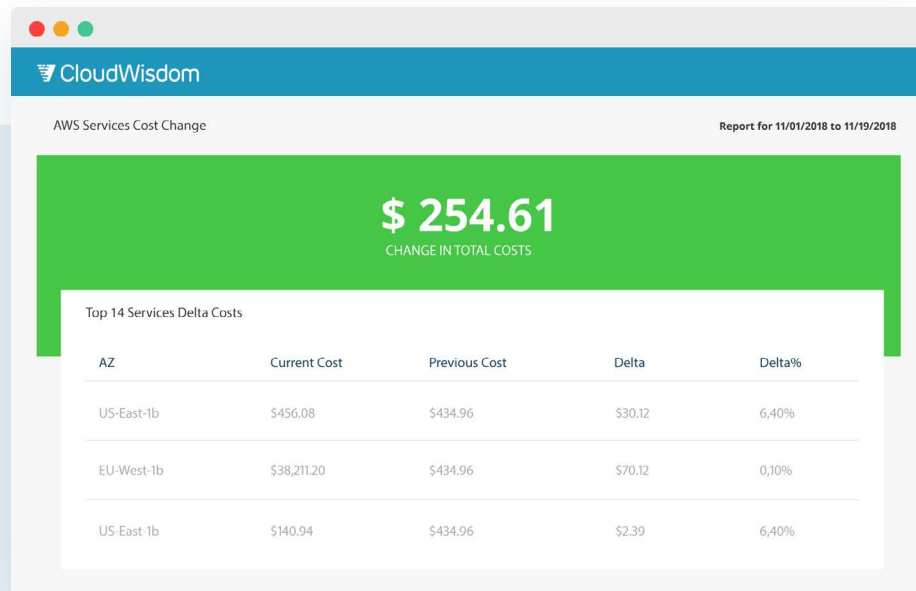
# Bill Analysis



The Billing Analysis phase is informed by the foundational efforts accomplished by indexing and benchmarking your environment. When analyzing your bill, you use metadata such as attributes (Instance type, Availability Zone, etc) and tags to explore dimensions in granular detail, compare spend with previous periods, and save scheduled emailed reports. Finally, we allow you to filter the results by conditions such as percentage of change over time, and send emails upon detecting a sudden change in any sub-category.







Customizable emailed report, showing the weekly change in cost by AWS service

### Benefits to Billing Analysis

- ✓ Get notified of sudden changes in sub-categories
- ✓ Automate management reporting with our scheduled customized emailed reports
- ✓ Avoid end of month surprises

## Billing Analysis Tools & Strategy:



#### Tool:

Use the [Bill Analysis Tool](#) to explore cost dimensions, save reports, and set up email alerts for unexpected changes in sub-categories organized by meta-data.

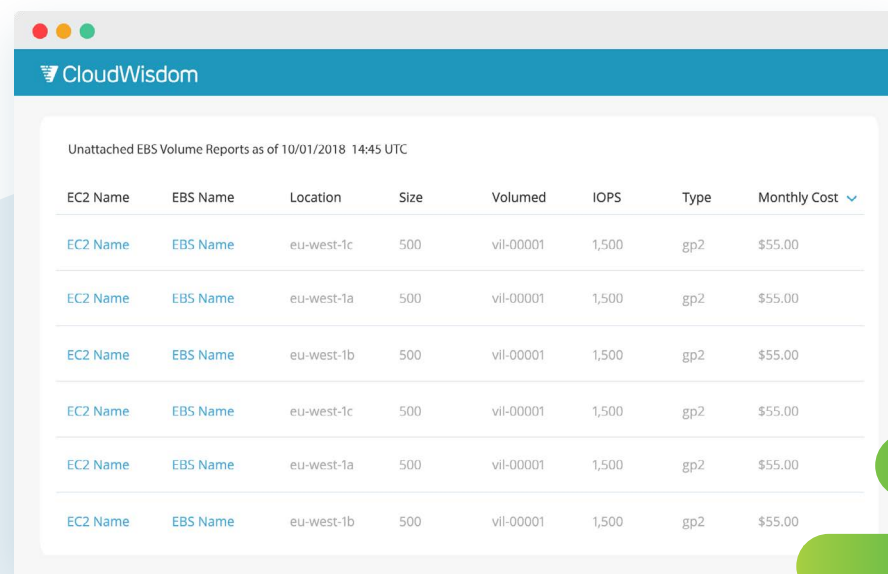


#### Strategy:

Explore your cost deltas by service and many other dimensions. Save time by automating management reporting instead of constantly checking AWS Console for changes in spending.



Once you have an understanding of your overall AWS spend through Billing Analysis, you can start saving costs. Finding and organizing your Idle Resources into actionable workflows (such as archival or termination) is the easiest way to capture savings and reduce your total AWS bill. Keeping track of your unused resources across development, testing, and production environments can be difficult given the rate of change. Now, with our proactive emailed reports, you can be notified of any resource that have recently gone idle before you spend a fortune on those unused resources.



The screenshot shows the CloudWisdom interface with a table titled "Unattached EBS Volume Reports as of 10/01/2018 14:45 UTC". The table lists various EC2 instances and their associated EBS volumes that are not currently attached, providing details on location, size, volume ID, IOPS, type, and monthly cost.

EC2 Name	EBS Name	Location	Size	Volumed	IOPS	Type	Monthly Cost
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1c	500	vol-00001	1,500	gp2	\$55.00
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1a	500	vol-00001	1,500	gp2	\$55.00
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1b	500	vol-00001	1,500	gp2	\$55.00
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1c	500	vol-00001	1,500	gp2	\$55.00
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1a	500	vol-00001	1,500	gp2	\$55.00
<a href="#">EC2 Name</a>	<a href="#">EBS Name</a>	eu-west-1b	500	vol-00001	1,500	gp2	\$55.00



CloudWisdom

Unattached EBS Volume Reports as of 10/01/2018 14:45 UTC

EC2 Name	EBS Name	Location	Size	Volument	IOPS	Type	Monthly Cost
EC2 Name	EBS Name	eu-west-1c	500	vil-00001	1,500	gp2	\$55.00
EC2 Name	EBS Name	eu-west-1a	500	vil-00001	1,500	gp2	\$55.00
EC2 Name	EBS Name	eu-west-1b	500	vil-00001	1,500	gp2	\$55.00
EC2 Name	EBS Name	eu-west-1c	500	vil-00001	1,500	gp2	\$55.00
EC2 Name	EBS Name	eu-west-1a	500	vil-00001	1,500	gp2	\$55.00
EC2 Name	EBS Name	eu-west-1b	500	vil-00001	1,500	gp2	\$55.00

Find storage blocks no longer attached to a compute instance, or attached to a stopped instance

### Benefits to Optimizing Idle Resources

- ✓ Be proactively notified when resources become idle
- ✓ Save unnecessary spend on unused or detached resources

## Idle Resource Optimization Tools & Strategy



#### Tools:

Use the [Unattached ELB](#), [Unattached EBS](#), or [EBS on Stopped EC2](#) Tools.



#### Strategy:

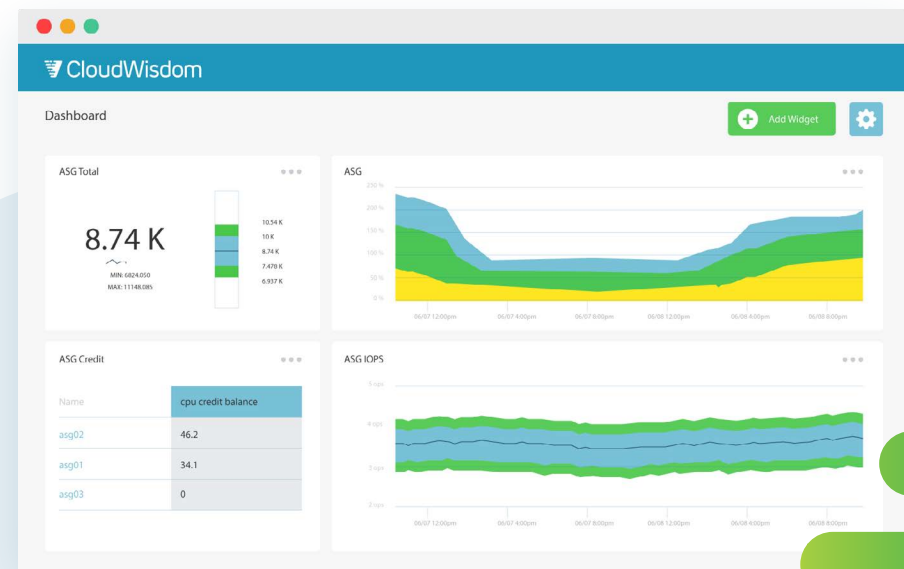
Subscribe to you emailed reports that update you on Idle resources and avoid being caught off guard at the end of the month.

## 3

# Monitoring



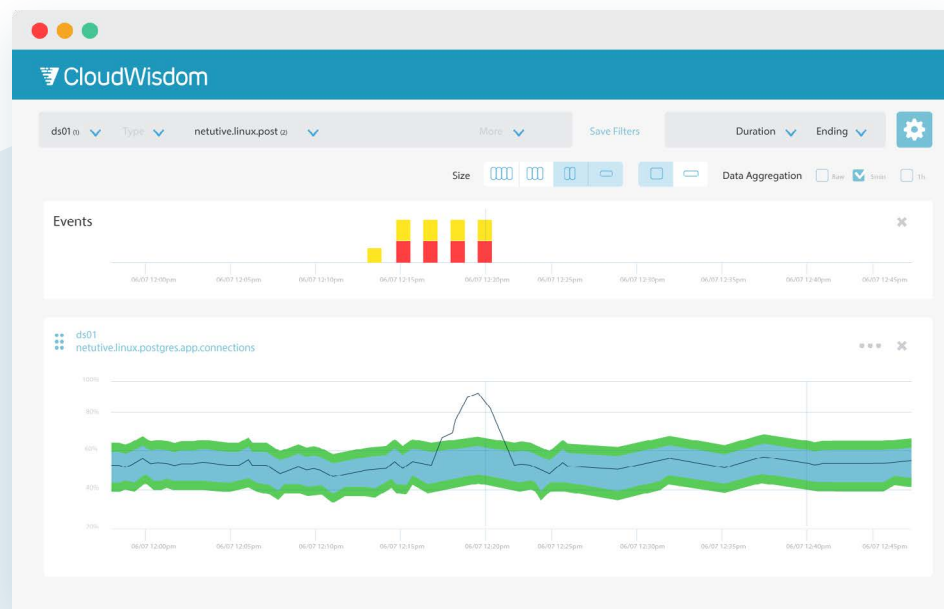
Monitoring provides IT professionals the opportunity to catch performance bottlenecks and pinpoint where and why these performance issues occur. The alerting process is fully automated, using preset multi-conditional policies based on industry best practices for every cloud resource type.





## Benefits to Monitoring

- ✓ Catch performance bottlenecks before your users take notice
- ✓ Automate alerting based on machine-learning and preset policies
- ✓ Create your own multi-conditional custom policies
- ✓ Make right sizing changes with confidence
- ✓ Watch key performance indicators in live dashboards across all of your cloud accounts
- ✓ Add notifications to your policies through email, slack, and others
- ✓ Deploy open source agents to get additional metrics such as memory and I/O wait



The green and blue bands represent the expected metric range based on learned contextual information, like statistical correlation with other metrics

## Billing Analysis Tools & Strategy



**Tool:**  
Use [Policies](#),  
[Alerts](#), and  
[Notifications](#).



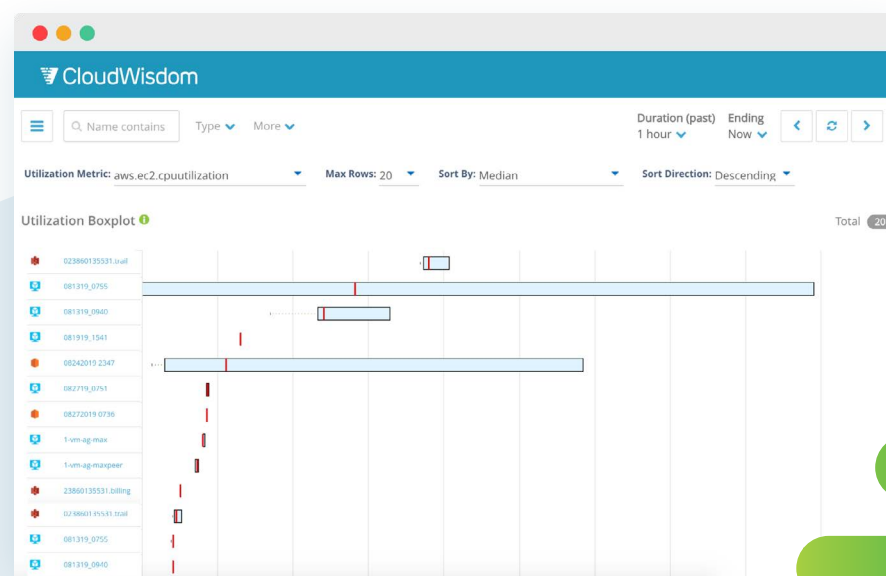
**Strategy:**  
Use our out-of-the-box policies and dashboards or create your own. Add notifications to stay on top of performance changes.

## 4

# Right Sizing



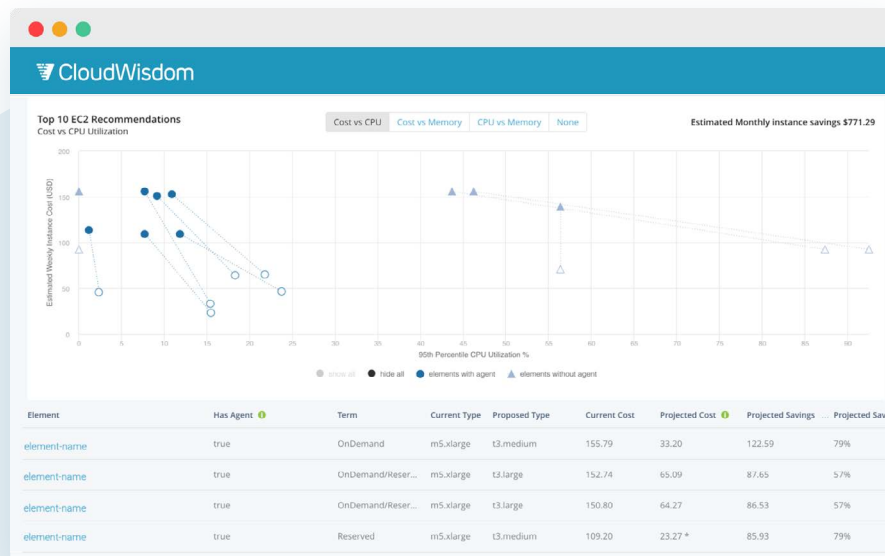
Right Sizing is often the most complex phase. This is because doing it effectively requires real-time measurement and aggregation of resource utilization and product knowledge that contextualizes the workloads within your infrastructure. You also need to know the thousands of available and ever-expanding list of configurations for AWS resources, and calculate the amortized value of your reservations based on instance usage to determine saving potential. Reduce the complexity of this task with CloudWisdom's powerful recommendation tools, which allow you to easily identify opportunities to optimize and save. The analysis is done for you, all you have to do is plug in your special preferences.





## Benefits to Right Sizing

- ✓ Tune over-allocated resources to save on your AWS bill
- ✓ Scale resources up to match workload growth
- ✓ Find ideal resource settings before making long-term reservation commitments
- ✓ Analyze your EC2, RDS, S3 and Lambda utilization and costs



Visualize actual vs. ideal compute configuration to quickly spot under and over-utilized instances

1 Scope of Analysis 2 Utilization Preferences 3 Instance Type Preferences 4 Display options

Select classes and types to be Included or Excluded from instance recommendations. They can also be Fixed. For example, if your current instance is c5 and choose it to be Fixed as a c5 then only the recommended size may change.

Instance Series, Generation and Size ☐ Exclude ☐ Values ☐

Instance Series ☐ Include ☐ Values ☐

Search Values...

- ☐ a1.2xlarge
- ☒ a1.4xlarge
- ☐ a1.large

Set instance preferences based on target utilization levels, series, generation, size, and factor those values into proposal calculations



## Right Sizing Tools & Strategy



**Tool:**  
[EC2 Recommendations](#)



**Tool:**  
[Resource Utilization](#)



**Tool:**  
[EC2, RDS, S3 Cost](#)



**Tool:**  
[Lambda Sizing](#)



### Strategy:

Get specific sizing recommendation sorted by saving and group by meta-data and schedule emailed reports to your extended team to raise awareness. Check out our article, [How to Right Size EC2s and Maximize your AWS Budget.](#)



### Strategy:

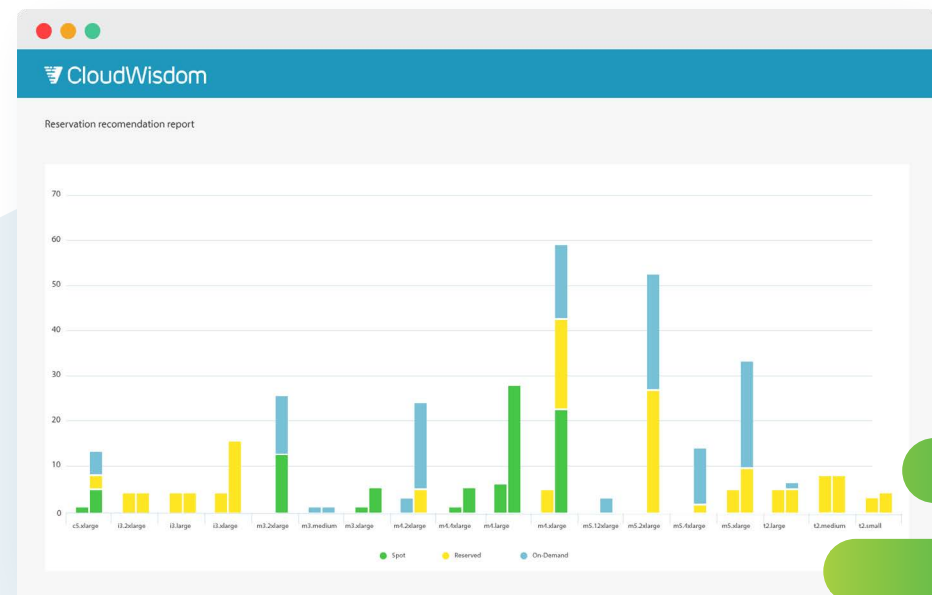
Follow our Lambda guide and understand why allocation the right amount of memory for your Lambda functions can be complicated without a tool to help you, [AWS Lambda Cost — Your Guide to Understand, Calculate, and Optimize.](#)

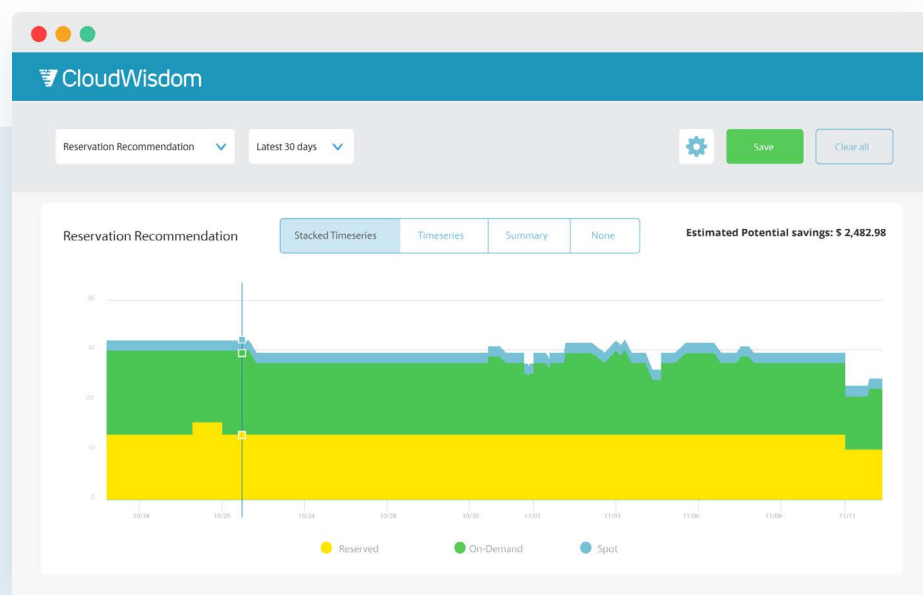


# Purchase Planning



Purchasing Reserved Instances in the cloud opens up savings opportunities across the linked accounts in your portfolio. Reservation planning is usually considered a daunting task. But planning your reservations becomes easy once you've addressed the other phases outlined in this book. You only want to purchase reservations after you right size your resources or confirm they are optimally configured. Typically, you first isolate an area of your infrastructure using tags and attributes, and then you purchase reservations gradually over time. CloudWisdom makes the planning process that much easier by providing you with recommendations along with our Premier services to help you at every step.





Hourly usage data provides accurate purchasing recommendations to avoid over-buying reservations that can't be effectively utilized

## Benefits to Reservation Planning

- ✓ Measure your on-demand and reserved utilization on hourly basis instead of daily averages
- ✓ Know your reservation usage at an instance-level by filtering, sorting, and grouping by meta-data
- ✓ Avoid over-buying reservation skewed by usage during peak hours
- ✓ Get proactive expert advice to help you make decisions
- ✓ Create a cycle of buying that's predictable and organized

## Billing Analysis Tools & Strategy



### Tool:

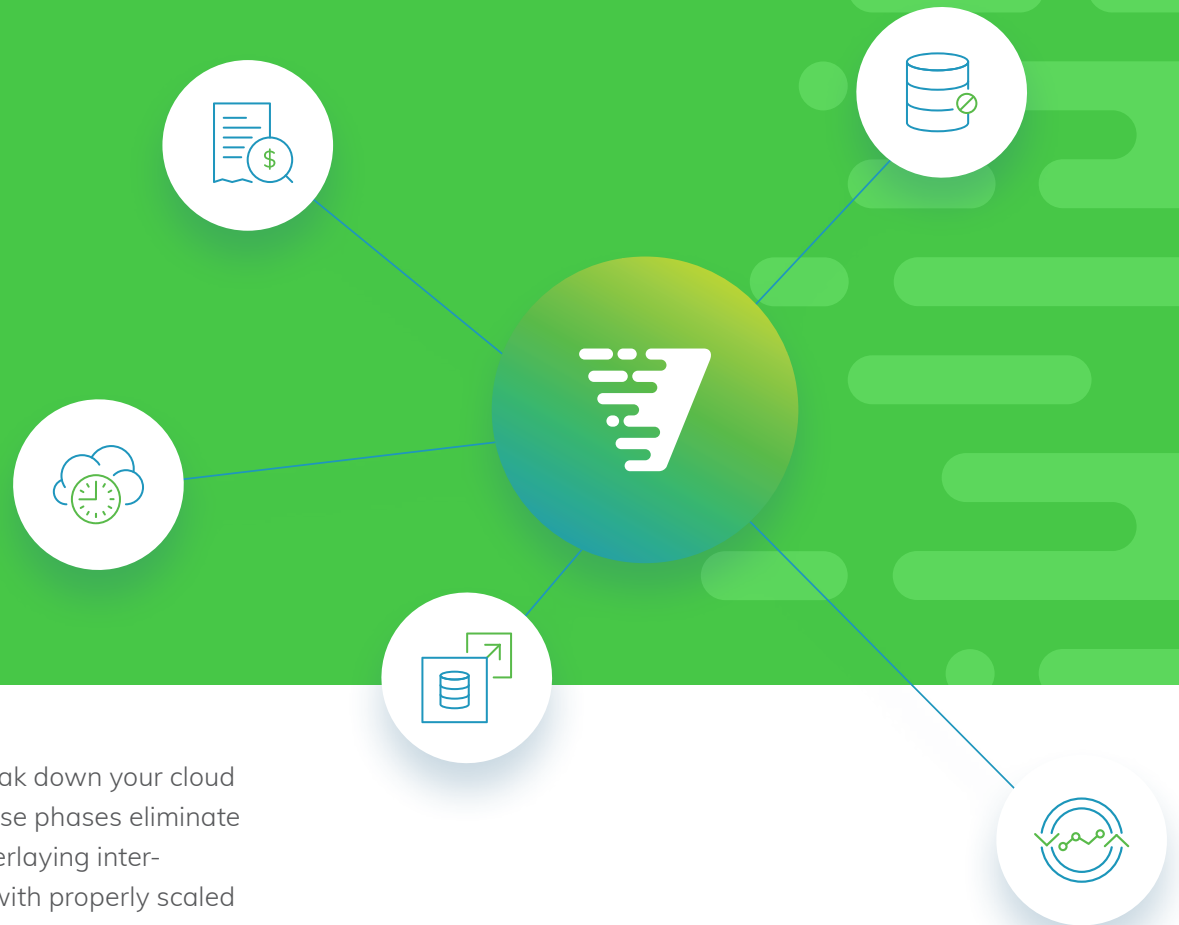
Use the [EC2 Reservation Recommendations tool](#) to discover savings potential and specific reservation recommendations sorted by savings potential.



### Strategy:

Read our [Mistakes to Avoid With AWS Reserved Instances](#) to learn about the risks of buying reservations based on daily averages of instance hour usage

# Bringing it All Together



Cloud cost optimization becomes easy once you break down your cloud cost journey into these 6 main phases. Together, these phases eliminate redundant tasks that bottleneck cost projects by overlaying inter-dependent tasks. The end result is an environment with properly scaled resources that maximize your reservation portfolio to give you the best balance of cost and infrastructure stability.



## See Us in Action

See how we've helped businesses like yours.

[CloudWisdom saves Capgemini's vacation-experience client \\$2 million yearly](#)

[CloudWisdom helps Viewpost find a path to cutting AWS costs in half](#)

[CloudWisdom helps Mixbook achieve "high level of confidence" in AWS monitoring](#)





## Why Our Customers Succeed

CloudWisdom doesn't just provide cost optimization tools. Through our Premiere Services, CloudWisdom offers extended guidance to customers that want help setting up their account or simply learning how to investigate their spending like a pro.



Premiere Services is free,  
and included in your subscription!

This service includes:



Project planning



Routine Check-ins



Cost Analysis coaching



# The 21-day Free Trial

— We are so confident that you'll be able to find savings that we provide a 21-day free trial of CloudWisdom.

Interested? You can [sign up here](#)