

What Makes **Argent for AWS Unique**

Executive Summary

This Argent white paper provides background information on the AWS Console, details of the new Argent for AWS product, and a brief matrix of the marketplace, as well as explaining what features make Argent for AWS unique.

The Amazon AWS Console already provides some monitoring features through CloudWatch and Service Health Dashboards; this white paper explains what is lacking in the AWS Console.

As far as the marketplace is concerned, it seems most competitors are simply doing a small subset of what AWS Console does, and integrating with their own data-center monitoring suite.

The following table is a summary of the leading products:

	Argent	BMC	ManageEngine	SolarWinds	Nagios
CloudWatch	Yes	Yes	Partially	Partially	Partially
EC2 (AWS)	Yes	No	Yes	No	No
EC2 (OS)	Yes	No	No	No	No
EB App	Yes	No	No	No	No
RDS	Yes	No	Yes	Yes	No
DynamoDB	Yes	No	No	No	No
S3	Yes	No	No	No	Some
SimpleDB	Yes	No	No	No	No
Custom Metrics	<u>Yes</u>	Yes	No	No	No
Zero Footprint	<u>Yes</u>	Yes	Yes	No	No

Most competitors simply monitor EC2 instances and only through CloudWatch.

Though EC2 service is popular, it is only one of 36 CloudWatch namespaces.

For a complete list of all CloudWatch namespaces, see Appendix B.

Argent Unique 1:

Capable Of Monitoring All Aspects Exposed By AWS Console And AWS SDK

One critical feature is Custom Metrics.

Application developers can use the AWS API to expose any performance data deemed important to CloudWatch. The namespace, metric and dimensions are up to the developer.

Argent for AWS implements the generic CloudWatch Rule, which behaves similarly to Windows Performance Rule -- with Argent, users can browse, select and monitor any available CloudWatch metric, including Custom Metrics.

Argent Unique 2:

Integrated With Argent Console, The World's Leading Alerting Console

The available alerting and escalation mechanisms are years ahead of the modest email and SMS services provided by AWS.

Argent Unique 3:

Integrated With Argent Predictor For Long-Term Trend Analysis

Argent performance data is not subject to a 14-day limit (all AWS data is deleted after 14 days).

Argent Unique 4:

Capable of Monitoring OS Natively

Both Windows and Linux are supported.

The performance data gathered directly from OS is typically more trustworthy than external CloudWatch metrics.

CloudWatch on EC2 provides the following metrics:

- CPUCreditUsage
- CPUCreditBalance
- CPUUtilization
- DiskReadOps
- DiskWriteOps
- DiskReadBytes
- DiskWriteBytes
- NetworkIn
- NetworkOut
- NetworkPacketsIn
- NetworkPacketsOut
- StatusCheckFailed
- StatusCheckFailed_Instance
- StatusCheckFailed_System

These metrics cover the basic CPU, Disk I/O and Network Traffic, and several are AWS-specific.

Compared to the rich array of Windows Performance Counters (often exceeding 5,000 on a large server), the AWS statistics are very much first-generation and bare bones.

Argent Unique 5:

Capable Of Native Monitoring of Windows And Linux Applications

Typical diagnostic data, such as service/daemon status, CPU utilization, memory usage, handle count, Windows Event Log, file-based application log, etc., are all available for monitoring with Argent for AWS.

Example 1: Monitor a Web Application

Assume a web application is implemented in .NET that it consists of two web front-end servers, a mid-tier application logic server, and SQL Server, and that there are a total of five EC2 Windows instances.

Using the AWS console, the only metrics that can be seen are that the five EC2 instances are in good health, which means hardware and OS are running properly.

But in this example, the web servers are generating hundreds of 500 and 404 errors every minute.

This is unknown to the AWS Console.

Using the AWS console, there is no way to detect any application-level errors, such as:

- Is the IIS service down?
- Mid-tier application crashes
- SQL Server database runs out of space, or excessive queue lengths

In direct contrast, Argent for AWS can determine the root cause using Windows Service Rule, Windows Performance Rule, Windows Event Log Rule, and Windows File Log Rule on SQL error log, etc.

Using the AWS Console to monitor applications is like trying to monitor a Windows web server's applications using SNMP.

Yes, very broad brush strokes, such as ping alive and CPU busy, can be tested, but no detailed application-level metrics are available.

Example 2: SQL Server EC2 Instance

The AWS Console can only provide information on whether the Windows EC2 instance is up.

It has no visibility on health of the internals of SQL Server.

On the other hand, Argent for AWS can answer all the following questions:

- Is SQL Server service running?
- Does SQL Server run out of space?
- Did user authentication error happen?
- Are there too many concurrent users?
- Are there excessive disk queue lengths?
- Are hard page faults ballooning?
- Is CPU usage too high?
- SQL Server deadlock issue happens?

Argent Unique 6:

Comprehensive S3 Monitoring

Instead of treating S3 as a flat structure of individual buckets, Argent for AWS monitors S3 as a typical file system.

This is a vital technical point. According to Forbes, 97% of users use S3 service. See Appendix A.

AWS Console provides almost zero monitoring capability.

Argent for AWS can monitor S3 in the manner similar to monitoring Windows NTFS. The following are some examples:

- Alert can be fired if an object is modified in the past 5 minutes
- Alert can be fired if a folder contains more than 300 objects
- Alert can be fired if a folder size (sum of all objects in the folder) exceeds 1 GB

Argent Unique 7:

Complete Log Monitoring On S3, EBS Volume, Or EC2 Instance Store Volume

AWS has CloudWatch Log service doing typical keyword searching or matching.

However, it requires installing a separate agent on every EC2 instance.

The configuration is not user friendly, and requires direct editing of the configuration files.

Argent has decades of experience in handling logs.

Argent for AWS is superior in all aspects for integrated log monitoring.

Appendix A

Much has been written regarding how businesses are rapidly increasing their use of Amazon Web Services, including:

- The increase in the number of EC2 instances.
- The increasing Windows-based instances.
- The increasing need for Cloud-based security products, given the movement of data and applications to AWS.

For example, see:

<http://www.forbes.com/sites/benkepes/2015/05/22/how-are-organizations-using-amazons-cloud/#522be8023bce>

Appendix B

CloudWatch namespaces are containers for metrics. Metrics in different namespaces are isolated from each other so that metrics from different applications are not mistakenly aggregated into the same statistics.

All AWS services that provide Amazon CloudWatch data use a namespace string, beginning with "AWS/." When you create custom metrics, you must also specify a namespace as a container for custom metrics.

The following services push metric data points to CloudWatch.

AWS Product	Namespace
Amazon API Gateway	AWS/ApiGateway
Auto Scaling	AWS/AutoScaling
AWS Billing	AWS/Billing
Amazon CloudFront	AWS/CloudFront
Amazon CloudSearch	AWS/CloudSearch
Amazon CloudWatch Events	AWS/Events
Amazon CloudWatch Logs	AWS/Logs
Amazon DynamoDB	AWS/DynamoDB
Amazon EC2	AWS/EC2
Amazon EC2	AWS/EC2Spot (Spot Instances)
Amazon EC2 Container Service	AWS/ECS
AWS Elastic Beanstalk	AWS/ElasticBeanstalk
Amazon Elastic Block Store	AWS/EBS
Amazon Elastic File System	AWS/EFS
Elastic Load Balancing	AWS/ELB (Classic Load Balancers)
Elastic Load Balancing	AWS/ApplicationELB (Application Load Balancers)
Amazon Elastic Transcoder	AWS/ElasticTranscoder
Amazon ElastiCache	AWS/ElastiCache

AWS Product	Namespace
Amazon Elasticsearch Service	AWS/ES
Amazon EMR	AWS/ElasticMapReduce
AWS IoT	AWS/IoT
AWS Key Management Service	AWS/KMS
Amazon Kinesis Firehose	AWS/Firehose
Amazon Kinesis Streams	AWS/Kinesis
AWS Lambda	AWS/Lambda
Amazon Machine Learning	AWS/ML
AWS OpsWorks	AWS/OpsWorks
Amazon Redshift	AWS/Redshift
Amazon Relational Database Service	AWS/RDS
Amazon Route 53	AWS/Route53
Amazon Simple Notification Service	AWS/SNS
Amazon Simple Queue Service	AWS/SQS
Amazon Simple Storage Service	AWS/S3
Amazon Simple Workflow Service	AWS/SWF
AWS Storage Gateway	AWS/StorageGateway
AWS WAF	AWS/WAF
Amazon WorkSpaces	AWS/WorkSpaces

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