# 15 Minutes Introduction to AppDynamics

# **KickStarter Series**

Karun Subramanian



www.karunsubramanian.com

# Contents

What is AppDynamics and how it can save the day?	3
The plumbing – How does it work?	4
How can I get started, really?	6
Configure your first Java Agent	7
Look inside your Java Application, like never before	12
Get alerted before things get worse	13
Monitor your hardware too	14
Where to go next?	15

# What is AppDynamics and how it can save the day?

AppDynamics is a leading Application Performance Management (APM) product. It is a tool that monitors your Application Infrastructure and gives you code level visibility. It is supported for all major technologies (Java, .NET, PHP, Node.js, NOSQL etc) and can be installed either as on-premise or as SaaS (Software As a Service) solution.

A piece of software called **Agent** is installed in the Application to be monitored. The Agent collects the performance metrics and sends them to a Server process called **Controller**. Controller processes the metrics and presents them via Web Browser. A monitoring analyst can configure Alerts and generate reports using the Web Interface.

The agent constantly monitors the application. Since it uses byte code instrumentation technology, Agent has hooks to every line of code. This is how AppDynamics is able to provide code level visibility. Agents are available for most of the popular technologies.

Most of the monitoring capability is 'out of the box', including and Alerts. Another neat 'out of the box' feature is the 'Application Flow Mapping'. AppDynamics discovers various subsystems and backends and draws them beautifully on the browser. At times, **you will be surprised** to discover about backends that you never thought your application was talking to. In addition AppDynamics 'learns' application behavior and automatically sets baselines, and alerts when the deviation from baseline is not normal (anomaly).

The image below shows a typical AppDynamics Controller UI.

#### 15 Minutes Introduction to AppDynamics



Image Source: www.appdynamics.com

AppDynamics employs the concept of 'Business Transaction' (BT). A BT represents a service provided by your application that is invoked by the user. All involved subsystems and backends for a given BT are tracked and reported by AppDynamics. BTs are automatically discovered but you can define your own BTs as well.

Using a special type of agent called Machine Agent', AppDynamics can monitor hardware too. Basic resource utilization such as CPU, Memory, Disk usage are monitored. Machine agents are available for most OS (Windows, Linux, Solaris etc).

AppDyanmics lets you write your own extension using shell scripts or Java. It is a very powerful feature that enables you to monitor virtually anything. There are numerous extensions already developed by the community and available for download.

# The plumbing - How does it work?

Image Source: AppDynamics.com

# **AppDynamics High Level Architecture**



© Karun Subramanian

The controller is the engine of AppDynamics. It receives monitoring data from Agents installed on the Application servers (or Database Servers, Web Servers etc). The user accesses and manages the monitoring data by connecting to the Controller via web browser (usually at port 8090). It helps to understand the terminology used in AppDynamics to know how it works.

#### Node

A node is a monitored Server or JVM (or CLR). Typically the node corresponds to an individual Application Server (Physical or Virtual)

#### Tier

A tier is a logical grouping of nodes generally relating to a particular business function. Note that an agent cannot belong to more than one Tier

#### **Business Application**

A Business Application is the top level container in AppDynamics. It contains Tiers. Role Based Access Controls in the Controller UI are implemented at the Business Application Level

#### Backends

Backends are any external systems to the AppDynamics agent that are not instrumented. For example, if a .NET Application that is instrumented makes a call to a SQL Server Database Server, if the SQL Server is not instrumented with AppDynamics agent, it is considered a 'backend' in the .NET application. The response time for the backend calls are recorded (along with load, errors etc). However, deeper level metrics are possible only when the remote system is instrumented. AppDynamics automatically recognizes most of the popular backend systems.

# How can I get started, really?

In order to get the taste of AppDynamics, you can get started for free. At a high level, here is what you have to do:

1. Identify a Server that can serve as AppDynamics Controller. Controller is available for the following platforms

Windows (32 and 64 bit)

- Download and install AppDynamics Controller (<u>https://download.AppDynamics.com</u>). Installation is pretty straight forward.
- Download and install one of the App agents (Agents are available for the following): JVM (Oracle HotSpot, JRockit, IBM JVM)
   .NET
   PHP
   Node.js
   Python
   WebServer on Linux (Apache)
  - DB Agent (DB2,Oracle,MySQL,SQL Server, PostgreSQL, Sybase IQ)
- 4. Configure the App agent; Restart the Application and start monitoring like never before (instruction on configuring a Java agent in the next section)

#### Note:

The controller listens on port 8090 and 8091. Make sure these ports are not blocked by Firewall.

Controller on Linux requires *libaio* installed. Also, the number of File Descriptors available should be at least 65635.

You will need to create two or three user accounts during the install. Remember all the user names and passwords (especially the root user for the Controller)

Instead of installing the Controller in your local environment, you can choose to use one of AppDynamics hosted Controller (SaaS based). I suggest on premise to start with so that you get the real taste of managing the Controller first hand.

# **Configure your first Java Agent**

Installing and Configuring a Java agent is pretty straight forward and simple. You can do this two ways: Use the 'Agent download Wizard' from the controller UI (recommended if this is the first agent you are configuring), or simply download the agent software from <u>https://download.AppDynamics.com</u>.

#### Using the Agent download Wizard

©Karun Subramanian

#### KickStarter Series 15 Minutes Introduction to AppDynamics From the Controller UI, click on the 'Agent Download Tab'. Choose 'Java' as the Agent Type

≡ APPD	YNAMICS			? 🌣 💄
Home	Getting Started	Agent Download Wizard		
Choose the second secon	ne Agent Type Java .NET PHP Node.js iOS Android Web Browser			Agent Download Wizard This wizard guides you through the steps to configure an agent to connect to this AppDynamics Controller. If you are new to AppDynamics, check out the Getting Started section. Advanced users, you can skip the wizard and download the Agent manually.
			Next >	

#### Select JVM

≡ APPI	DYNAMICS	
合く>	Home	
Home	Getting Started	Agent Download Wizard
Java - S	Step 1 of 5	
Select JV	/M	
Sun	and JRockit JVM	
○ IBM	1 JVM	
<< Start 0	Over < Back	

The controller Information is auto populated (this is the advantage of using the wizard)

E APPD				? \$ .	2
	🕞 Home				
Home	Getting Started	Agent Download Wizard	j.		
Java - Ste	ep 2 of 5				
Specify Co	ontroller URL			What is a Controller?	
Set the	controller host and p	ort:		The agent sends monitoring data to the Controller. You are using the Controller right now.	
http://	myServer	: 8090		To change the Controller connection later, edit the host and port properties in the controller-info.xml. See more details.	
03e	55L				
<< Start Ov	er < Back		Next >		

# Choose or create a new Application

APPDYNAMICS     Home     Home     Agent Download Wizard     Home     Getting Started     Agent Download Wizard     Image: Step 3 of 5      Which Application should the agent report to?   Use an existing Application:   Select existing Application:   Select existing Application:   Create a new Application:   AcmeShoppingPortal      What is an Application (or simply Application) models all components or modules in an application environment that provide a comport of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.   See Business Application docs for more info.   The Mapping Applications in AppDynamics	APPDYNAMICS   Mome   Home   Getting Started   Agent Download Wizard      Which Application should the agent report to?   Use an existing Application:   Select existing Application   Select existing Application   Create a new Application:   AcmeShoppingPortal   What is an Application does for more info.   Mapping Application in AppDynamics   Mapping Applications in AppDynamics	APPDYNAMICS       Application       ?         Home       Getting Started       Agent Download Wzzard       ?         Image: Started St	APPDYNAMICS					
Home       Getting Started       Agent Download Wizard         Home       Getting Started       Agent Download Wizard         Image: Step 3 of 5       Which Application should the agent report to?       What is an Application?         Image: Step 4 of 5       What is an Application?       In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a components or modules in an application reported from web application:         Select existing Application:       Image: Create a new Application:       Image: Create a new Application:         AcreeShoppingPortal       See Business Application docs for more info.         Image: Mapping Applications in AppDynamics       See Business Applications in AppDynamics	Home       Getting Started       Agent Download Wizard         Home       Getting Started       Agent Download Wizard         Image: Started       Agent Download Wizard         Image: Started       Agent Download Wizard         Image: Started       Mathematical Started         Image: Started       What is an Application?         Image: Started       Image: Started         Image: Started       What is an Application?         Image: Started       Image: Started Application Image: Started Application Image: Started Application Image: Started Application Image: Started Application:         Image: Started Application:       Image: Started Application Image: Started Application Image: Started Application Image: Started Application Image: Started Application:         Image: Started Application:       Image: Started Application Image: Started Applicat	Home       Getting Started       Agent Download Wizard         Image: Step 3 of 5       Which Application should the agent report to?       What is an Application?         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application:         Image: Select existing Application:       Image: Select existing Application:       Image: Select existing Application docs for more info.         Image: Select existing Application:       Image: Select existing Applications in AppDynamics       Image: Select existing Applications in AppDynamics <th>Nome       Getting Started       Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Download Wizard         Image: Starte Download Mizard Download Wizard       Image: Starte Download Wizard         Image: Starte Download Mizard Download Wizard Download Wizard       Image: Starte Download Mizard Download Wizard         Image: Starte Download Download Mizard Downlo</th> <th>E APPD</th> <th>YNAMICS</th> <th></th> <th></th> <th>?</th>	Nome       Getting Started       Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Agent Download Wizard         Image: Started Agent Download Wizard       Image: Started Download Wizard         Image: Starte Download Mizard Download Wizard       Image: Starte Download Wizard         Image: Starte Download Mizard Download Wizard Download Wizard       Image: Starte Download Mizard Download Wizard         Image: Starte Download Download Mizard Downlo	E APPD	YNAMICS			?
<ul> <li>Java - Step 3 of 5</li> <li>Which Application should the agent report to?</li> <li>Use an existing Application: Select existing Application</li> <li>Create a new Application: AcmeShoppingPortal</li> <li>What is an Application (or simply Application) models all components or modules in an application environment that provide a compo of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.</li> <li>See Business Application docs for more info.</li> </ul>	<ul> <li>International of the product of the pr</li></ul>	<ul> <li>In Application should the agent report to?</li> <li>Use an existing Application: Select existing Application</li> <li>Create a new Application: AcmeShoppingPortal</li> <li>What is an Application consimply Application) models all components or modules in an application environment that provide a comp of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with error to serve a common purpose.</li> <li>See Business Application docs for more info.</li> <li>Mapping Applications in AppDynamics</li> </ul>	Second Secon	Home	Getting Started	Agent Download Wizard		
wave - step 3 or 5         Which Application should the agent report to?         Use an existing Application:         Select existing Application         Select existing Application         Create a new Application:         AcmeShoppingPortal         See Business Application docs for more info.         Image Application and the services of the serve a common purpose.         See Business Application docs for more info.	<ul> <li>Which Application should the agent report to?</li> <li>Use an existing Application: <ul> <li>Select existing Application</li> <li>Create a new Application: <ul> <li>AcmeShoppingPortal</li> </ul> </li> <li>What is an Application (or simply Application) models all components or modules in an application environment that provide a component functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.</li> <li>See Business Application docs for more info.</li> </ul> </li> <li>Mapping Applications in AppDynamics</li> </ul>	<ul> <li>Which Application should the agent report to?</li> <li>Use an existing Application: <ul> <li>Select existing Application</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> </ul> </li> <li>What is an Application (or simply Application) models all components or modules in an application reported from web application;</li> <li>See Business Application docs for more info.</li> </ul> <li>Mapping Applications in AppDynamics</li>	<ul> <li>Which Application should the agent report to?</li> <li>Use an existing Application:         <ul> <li>Select existing Application:</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> </ul> </li> <li>Create an existing application:</li> <li>AcmeShoppingPortal</li> <li>Select with a service a common purpose.</li> <li>Select action:</li> <li>Select action:</li> <li>Mapping Application cor simply Application reported from web application cor simply Application models all components or modules in an application cor simply Application models all components or modules in an application core simply Application web applications, databases, mobile apps, and other services that interact with of the service or sorme on purpose.</li> <li>See Business Applications in AppDynamics</li> </ul>			6		
Which Application should the agent report to?       What is an Application?         Use an existing Application:       In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a comport of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.         See Business Application docs for more info.         Mapping Applications in AppDynamics	Which Application should the agent report to?       What is an Application?         Use an existing Application:       In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a comp of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.         See Business Application docs for more info.         Imapping Application in AppDynamics	Which Application should the agent report to?       What is an Application?         Use an existing Application:       In AppDynamics, a Business Application (or simply Application) models all components or modules in an application reported from web applications.         Image: Select existing Application:       In AppDynamics, a Business Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.         See Business Application docs for more info.       See Business Applications in AppDynamics	Which Application should the agent report to?       What is an Application?         • Use an existing Application:       In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a com of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with other to serve a common purpose. <ul> <li>KrmeShoppingPortal</li> <li>Mapping Applications in AppDynamics</li> </ul> <ul> <li>Start Over</li> <li>Back</li> </ul> <ul> <li>KrmeShoppingPortal</li> <li>Kext</li> </ul> <ul> <li>Start Over</li> <li>Back</li> <li>Mext</li> </ul> <ul> <li>Kext</li> </ul> <ul> <li>Start Over</li> <li> </li> <li>Start Over</li> </ul>	Java - Ste	2p 3 of 5			
<ul> <li>Use an existing Application:</li> <li>Select existing Application</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> <li>In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a compo functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.</li> <li>See Business Application docs for more info.</li> </ul>	<ul> <li>Use an existing Application:</li> <li>Select existing Application</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> <li>In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a comp of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.</li> <li>See Business Application docs for more info.</li> <li>Mapping Applications in AppDynamics</li> </ul>	<ul> <li>Use an existing Application:</li> <li>Select existing Application</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> <li>See Business Application docs for more info.</li> <li>Mapping Applications in AppDynamics</li> </ul>	<ul> <li>Use an existing Application:</li> <li>Select existing Application</li> <li>Create a new Application:</li> <li>AcmeShoppingPortal</li> <li>Select existing Application:</li> <li>AcmeShoppingPortal</li> <li>See Business Application docs for more info.</li> <li>Mapping Applications in AppDynamics</li> <li>Mapping Applications in AppDynamics</li> </ul>	Which Ap	plication should th	e agent report to?		What is an Application?
See Business Application docs for more info.  Mapping Applications in AppDynamics	See Business Application docs for more info.  Mapping Applications in AppDynamics	See Business Application docs for more info.  Mapping Applications in AppDynamics	Kineshoppingr ortai   See Business Application docs for more info.   Mapping Applications in AppDynamics   (* Start Over <back< td="">   Next&gt; Choose or create Tier</back<>	<ul> <li>Use a Select</li> <li>Creat</li> </ul>	In existing Application It existing Application It ea new Application:	n: n ~		In AppDynamics, a Business Application (or simply Application) models all components or modules in an application environment that provide a comp of functionality. An Application can gather information reported from web applications, databases, mobile apps, and other services that interact with e other to serve a common purpose.
Mapping Applications in AppDynamics	Mapping Applications in AppDynamics	Mapping Applications in AppDynamics	Start Over < Back Next >	Acm	eshoppingrontai			See Business Application docs for more info.
			Start Over  Back Next > Choose or create Tier					Mapping Applications in AppDynamics
			<pre></pre>					
			Choose or create Tier					
			Choose or create Tier	<< Start OV	er Sack		Next >	1
<< Start Over <back next=""></back>	<< Start Over <back next=""></back>	<< Start Over < Back Next >	Choose or create Tier					
<start next="" over="" start=""></start>	<< Start Over <back next=""></back>	<< Start Over <back next=""></back>	Choose or create Tier					
<< Start Over <back next=""></back>	<start <back="" next="" over=""></start>	<start over="" over<="" start="" td=""><td></td><td>choose</td><td>or create Tie</td><td>er</td><td></td><td></td></start>		choose	or create Tie	er		

	P <b>DYNAMICS</b>				? 🌣 ᆂ
合 く	> 🕞 Home				63
Home	Getting Started	Agent Download Wizard			
Java Ja	va - Step 4 of 5				
Whic	h Tier should the agen	it report to?		What is a Tier?	
$\bigcirc$	Use an existing Tier:			Application	
	Select existing Tier	*		Web Front	
۲	Create a new Tier:			Order	
	OrderFulfillment			Search Processing Tier Tier	
	Note: This Tier will be cre with this Controller.	ated once you install the Age	ent and it registers	Database	
				Nodes (Individual servers, App Server JVMs, etc.)	
				Tior	
<< S	art Over < Back		Next >		

#### Your agent is now ready for download

APPDYNAMICS     A < > C→ Home		?	٥	<b>⊥</b> ⊗
Home Getting Started Agent Download Wizard				
Java - Step 5 of 5				
Your agent is ready for download.	Java Agent Install & Configuration			
1 Download the Java Agent Click Here to Download	Node - App Server / JVM			
This Agent is pre-configured to connect to this Controller (in controller-info.xml)	AppDynamics UI			
2 Install the Agent Add the java agent parameter to the app server startup script:	-javaagent JVM param points to AppDynamics Agent AppDynamics Controller			I
-javaagent:AGENT_HOME/javaagent.jar Where AGENT_HOME is where the Agent is installed. For example: javaagent:/usr/local/appDynamics/javaagent.jar	javaagent.jar Java Configured by - Controller location, port, SSL - Tier & Node Name			
<< Start Over < Back				

Once you download the Agent (zip or tar file), take the file to the Server you need to instrument and unzip/untar the file. Now all you have to do is configure your java application to load the agent when it

KickStarter Series 15 Minutes Introduction to AppDynamics starts. The only required configuration is done at the java command line that starts the application. Simply add the following parameter

-javaagent:AGENT\_HOME/javaagent.jar

The Agent log file is at <AGENT\_HOME>/logs/<Node name>/agent<date>.log

#### Using AppDynamics download site

Instead of using the wizard, you may choose to download the agent from AppDynamics website and manually configure the agent. You can download the agent from <a href="https://download.AppDynamics.com">https://download.AppDynamics.com</a>. Once you unzip/untar the agent on the server to be instrumented, all you have to do is update controller-info.xml and add the java command line parameter to the startup script of your application.

Configure controller-info.xml

This file is found at <AGENT\_HOME>/conf/controller-info.xml. Here are the important parameters to be configured

```
<controller-host>myServer</controller-host>
```

<controller-port>8090</controller-port>

<application-name>AcmeShoppingPortal</application-name>

<tier-name>OrderFulfillment</tier-name>

<account-name>\*\*\*</account-name>

#### <account-access-key>\*\*\*</account-access-key>

If you don't know the account name and access key, check the license page at the controller UI (You can access the license page by click on the 'Settings' button and choosing 'License').

Add the following parameter to your Application startup script and restart your application.

-javaagent:AGENT\_HOME/javaagent.jar

The Agent log file is at <AGENT\_HOME>/logs/<Node name>/agent<date>.log

# Look inside your Java Application, like never before

As soon as you have your Java application reporting to Controller, you can learn a lot about your application. Some of the things you learn about your application may even be surprising to you. Appdyanmics automatically creates a flow map of your application. It discovers backends and plots it for you.

Login to the Controller UI (typically <u>http://<controllerHost>:8080</u>). Navigate to your Application and Tier if required. A typical application flow may look like the following:



From this point, you can drill down to any of the components to get deeper level metrics.

AppDynamics automatically captures 'slow response times' and presents them in 'Slow response times' Dashboad from the home page of the Application. Slow response times include remote service calls and jdbc calls. In addition AppDynamics captures any application 'errors' such as a Java Exception or a HTTP error code and presents them in its own dashboard.

A tremendous feature of AppDynamics is the Transaction snapshot. With a Transaction snapshot, you can dismantle the transaction down to the code level and see the response time in various subsystems. ©Karun Subramanian 12

For example, you can clearly see if a transaction is slow because of a DB call or because of a remote web service call (or because of JVM time itself, which may indicate Garbage Collection or other Memory issues)



Image Source: www.appdynamics.com

# Get alerted before things get worse

AppDynamics automatically learns the application behavior by determining the baseline value for any metric. When the current value deviates from baseline over a certain limit, it triggers an alert. The deviation is configurable.

AppDynamics implements alerting using two elements: Health rules and Policies. Health rule is where you will define the performance metric to monitor and the threshold to watch for. Policy tells AppDynamics what to do when Health rules are violated. The action could be emailing or paging someone (or a group), or even executing a program.

AppDynamics come prebuilt with several Default Health Rules. An example is JVM memory utilization (Heap). You can update the thresholds for these default health rules.

In addition you can create an Email Digest that includes a summary of events over a certain period. This can be useful item for senior management. ©Karun Subramanian 13



Image Source: www.appdynamics.com

# Monitor your hardware too

With AppDynamics Machine Agent, you can monitor basic metrics such as CPU utilization, Memory Utilization etc for most of the popular Operating Systems.

<b>%-</b>	Dashboard	My Dashboard	ds Hardware	Memory	JVM	JMX	Events	>>	
▼ CP	U								
	4 % current				CPU Utilizatio	on %			
1	5 % last 15 minutes	20	$\frown$						
	Idle 94 %	8 2 5:55 PM 5:56	5 PM 5:57 PM 5:58 PM 5:5	59 PM 6:00 PM	6:01 PM 6:02	PM 6:03 PM	6:04 PM 6:05 PM	6:06 PM 6:07 PM	6:08 PM 6:09 PM
▼ Me	▼ Memory								
4	43 % current	7800			Memory Utilizati	on (MB)			
4	3 % last 15 minutes Total 16383 MB Used 7142 MB Free 9240 MB	7400							
		5:55 PM 5:56	PM 5:57 PM 5:58 PM 5:5	59 PM 6:00 PM	6:01 PM 6:02	PM 6:03 PM	6:04 PM 6:05 PM	6:06 PM 6:07 PM	6:08 PM 6:09 PM

Some default Metrics monitored:

**CPU Metrics** 

**Disks Metrics** 

KickStarter Series Machine Metrics

Memory Metrics

**Network Metrics** 

System Metrics

In addition to monitoring the hardware, Machine Agent lets you write your own monitoring programs and send the data to AppDynamics Controller. This is a very powerful future as it virtually allows you to monitor anything. These programs are called extensions and there are tons of extensions already available for download at <u>https://www.appdynamics.com/community/exchange/</u>

# Where to go next?

Congratulations on learning what AppDynamics can do for your organization. I have just covered the tip of iceberg. What you can do with AppDynamics is only up to you. You can take your monitoring to an entirely different level by leveraging all the features that AppDynamics offers.

I recommend downloading and trying out your own AppDynamics Controller. Install a Java Agent on of environments play it for while. one vour test and with а Start at https://download.appdynamics.com. For documentation, start at https://docs.appdynamics.com. There is also a community at <a href="http://www.appdynamics.com/community/">http://www.appdynamics.com/community/</a>

AppDynamics offers tons of webminars. Check out the events calendar at <a href="http://www.appdynamics.com/community/events/">http://www.appdynamics.com/community/events/</a>

Happy Monitoring !!!