Best Practices for Operations Professionals

- Monitor Overall Application Health
- Monitor Business Transactions
- Monitor Tiers and Nodes
  - General Node Health
  - Hardware
  - Memory (Java)
- Analyze Incidents
- Use Policies, Health Rules, and Actions
  - Deep Links in Notifications
- Share Deep Links
- Suggestions for Customizing AppDynamics
  - Custom Dashboards
  - Executive Dashboard
  - Key Performance Indicator Dashboard
  - System Operations Dashboard
  - DevOps Dashboard
  - E-Com Hosts Dashboard
  - Policies and Alerts
- Learn More

Operations Professionals can use AppDynamics to:

- Assess overall application health by viewing key performance metrics
- Accurately identify trouble spots
- Immediately triage problems and either repair them or alert the responsible team
- Help the team maintain low mean time to recovery (MTTR)

If you are new to AppDynamics, see Application Performance Management.

Monitor Overall Application Health

You can get an idea of overall application health by viewing the Application Dashboard. The Application Dashboard shows all the tiers and nodes (representing app servers) in the business application and how traffic moves between them. The bottom of the dashboard shows key performance indicators.
The **Time Range** pulldown in the upper right of the window sets the duration for the monitoring session. Change the time range to see a larger set of monitoring data.

Color indicators show the health of each subsystem; green indicates normal operation, yellow or orange indicates a warning condition, red indicates a critical condition. Click on yellow, orange, or red indicators to quickly investigate trouble spots.

**Monitor Business Transactions**

Business transactions organize application load into logical operations that represent user requests, such as Login, Search, Checkout, etc. Operations management can make sure that business transactions are properly configured based on the most important user operations. See [Monitor Business Transactions](#).

In the **Application Dashboard** click the Top Business Transactions tab to quickly see business transactions sorted by various possible performance issues.
Sometimes the same business transaction has issues in multiple performance areas. Double-click a business transaction listing to open its Business Transaction Dashboard. Look at the Events panel to see if there are any code problems or the Transaction Scorecard for errors and click on them. For example the Events panel can quickly reveal a code deadlock.
Tip: Immediately investigate any business transaction with an error rate over 10% or a red icon in the Health column. A red icon indicates that performance is abnormally slow compared to its baseline.

Monitor Tiers and Nodes

To see all the tiers and nodes (application servers) in a business application do one of the following to open the App Servers List:

- In the left navigation panel click **Servers -> App Servers**.
- In the Application Dashboard click **Server Health**.

There are three tabs in the **App Servers List**: Health, Hardware and Memory (Java). In any tab click the Grid View icon to see a list of nodes.

You can sort the nodes in ascending or descending value by clicking a column header.

When you identify a slow or stalled node, double-click its listing to open its **Node Dashboard**. From the Node Dashboard you can investigate in detail. You can forward the URL of the Node Dashboard to the team that is responsible for maintaining it.

General Node Health

While still in Grid View, in the **App Servers List** click the Health tab. Then click the Health column header to sort the nodes so that the unhealthy nodes (red followed by yellow) are at the top of the list.

If the health status of a node is red or yellow, double-click the node to open its **Node Dashboard**.

Hardware

While still in Grid View, in the **App Servers List** click the Hardware tab.
Sort the nodes by CPU % (avg) in descending order to see where CPU usage may be excessive.

Sort the nodes by Mem % (avg) to identify servers that are running out of RAM.

Double-click any node in which CPU % or Mem % is excessive to open its Node Dashboard.

**Memory (Java)**

While still in Grid View, in the **App Servers List** click the Memory (Java) tab. If you are running Java JVMs in your environment, they are displayed.

Sort the nodes by GC Time Spent in descending order to identify where garbage collection is taking too long and possibly hindering app performance. Sort the nodes by JVM % Heap in descending order to see if the heap is getting too full.

For nodes in which garbage collection time or heap percentage (%) is excessive, double-click the node to open its Node Dashboard. Click the Memory tab to see detailed information about memory usage.
Analyze Incidents

AppDynamics reports all changes in application state as events. Click Events in the left navigation pane to see the list of events for the selected time range.

You can double-click any event in the list to get details about the event. In the details window that opens you can get more information about the event. The type of information depends on the type of event. For example, a health rule violation event produces an event summary with a button that links to the dashboard of the affected entity at the time that the event occurred.

See Filter and Analyze Events for information about viewing events.

Use Policies, Health Rules, and Actions

Policies enable proactive monitoring, allowing you to identify and escalate problems before they become critical. You can configure policies to alert operations staff when any event occurs.

There are default health rules that you can modify. You can create additional health rules based on other critical infrastructure metrics. Then you match health rules violation events to actions to take when these events occur.

Operations may also receive notifications generated by policies related to application performance that have been created by other teams.
You can also configure actions for events that are not health rule violations. See Notification Actions for details about configuring notifications to alert staff about health rule violations and other events that you specify.

Deep Links in Notifications

Notifications sent by email contain deep links to details about the rule that was violated or the event that was generated. This is an example of an alert with a deep link:

![Deep Link Example](image)

Share Deep Links

In addition to deep links in alerts, any time you are observing a dashboard or troubleshooting an issue in AppDynamics, the URL in the browser is a deep link to a place where anyone can get a head start investigating. For example, if you are examining a Node Dashboard for a node that is experiencing problems, the deep link might be:

```
http://demo2.appdynamics.com/controller/#location=APP_NODE_MANAGER&timeRange=last_6_hours.BEFORE_NOW.-1.1355787148826.360&application=4&node=17&memoryViewMode=0
```

If you are examining a transaction snapshot for a stalled request, the deep link might look like this:

```
http://demo2.appdynamics.com/controller/#location=APP_SNAPSHOT_VIEWER&timeRange=last_15_minutes.BEFORE_NOW.-1.1355782673575.15&application=4&rsdTime=Custom_Time_Range.BETWEEN_TIMES.1355787536803.1355785736803.0&requestGUID=5d994c90-a99f-419f-a6b8-6ad6b202ab1
```

When you escalate a problem to other teams, such as developers, email them the deep link. These links are much more succinct and useful for troubleshooting and resolving issues than log files and long descriptions about where to look.
Conversely, when a problem is escalated to you by another team, request the deep link provided by AppDynamics to help you start troubleshooting.

**Suggestions for Customizing AppDynamics**

Organizations can use custom dashboards, policies, and alerts to customize AppDynamics for NOC and Support staff. Customizations can focus on metrics that the organization deems important to track and the values that define good and bad performance.

**Custom Dashboards**

Custom dashboards help you successfully identify problems without overloading you with all the details. Operations management can create custom dashboards for you that include only the key indicators that they want you to monitor. See Create a Custom Dashboard. Here are some examples:

<table>
<thead>
<tr>
<th>Visualize Performance Using Custom Dashboards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Executive Dashboard</strong></td>
</tr>
<tr>
<td><img src="image" alt="Daily Executive Dashboard" /></td>
</tr>
<tr>
<td><strong>Key Performance Indicator Dashboard</strong></td>
</tr>
</tbody>
</table>

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System Operations Dashboard
System Operations
ACME Book Store Application

CPU

CPU Usage

%Busy: 44
%Slept: 15
%Idle: 40

Memory

Memory Usage

Free %: 15
Used %: 84

Disk I/O

Disk Usage

Disk read/sec: write/sec

Network Activity

Network Usage

Network incoming/Outgoing

DevOps Dashboard
DevOps Dashboard
ACME Book Store Application

Calls Per Minute

Active Sessions

Business Transaction ART

E-Com Hosts Dashboard
Policies and Alerts

Operations management can create **policies** that define thresholds for acceptable performance. Policies can automatically **alert** you when performance crosses those thresholds.

**Tip:** Send email alerts generated by health rule violations to the NOC. See **Notification Actions.**

You can click through on the deep link in the email alert, do basic triage, and then escalate the problem to the right team. Include the deep link in the notification so that the next team can quickly start working on it.

If the NOC already uses an alarming system, a more sophisticated approach is to integrate alerts from AppDynamics into that system using custom notifications. See **Custom Actions.**

Learn More

- **Troubleshoot and Resolve**