bmc helix

eBook

Supercharge Operations Management with AIOps

IT operations teams face a growing challenge.

As IT environments grow in scale and complexity, it's not enough for organizations to monitor infrastructure and applications for performance and availability. They must also manage and optimize the business service as a whole to provide the agility, speed, and scalability required by DevOps initiatives, new technologies, lift-and-shift cloud migrations, and cloud-native applications.

To fully leverage AIOps, look beyond monitoring for a holistic management solution.

"Complex, distributed applications that employ containers, on-prem and cloud resources, orchestration tools, and microservices are more challenging to manage. They generate large volumes of operations data, and when performance problems occur, they issue a cascading series of events, making it difficult for operations professionals to pinpoint the cause."*

*451 Research, 'Strong adoption of AI & ML monitoring tools is driven by tech leaders', October 2020

Speed, data volume, and complexity: **A challenging combination**

Simply put, IT organizations are facing a firehose of data — far too much to analyze quickly and then respond in time. Trouble signals are being drowned out by too much noise and typically lack the context necessary to determine the root cause. As a result, organizations experience service degradation, availability issues, prolonged mean-time-to-repair (MTTR), and enhanced risk for missing service level agreements.

To cope with increased data volumes and IT environment complexity, operations teams often acquire IT monitoring tools in a tactical and fragmented way, with less than satisfactory results:

MULTIPLE SINGLE-POINT TOOLS:

Many organizations load up on monitoring tools, which results in higher costs and a lack of integration that complicates rather than improves end-to-end visibility.

MONITORING-ONLY STRATEGY:

Organizations that have modernized their monitoring tools can still be slow to respond to issues because they lack early visibility into anomalies and root causes, and are overwhelmed by noise created by multiple uncorrelated events.

MANUAL ROOT CAUSE ANALYSIS:

Monitoring alone does little to assist in the slow, methodical task of uncovering and resolving the root cause of performance issues, which delays resolution, wastes skilled labor, and increases MTTR.

“**74%** of incidents are detected by customers before IT is aware of them.”*

“Average MTTR per incident is 3 hours and 7 minutes. **72%** of that time is spent identifying the root cause of the problem.”*

“Cloud-native technologies often require users to update their monitoring tools, and the tools that serve cloud native environments often use AI/ML.”**

*Digital Enterprise Journal, September 2019

**451 Research, ‘Strong adoption of AI & ML monitoring tools is driven by tech leaders’, October 2020

How AIOps supercharges operations management

End-to-end monitoring across complex, hybrid environments with containerized microservices is necessary but is not up to the task without AIOps. IT Operations teams must adopt an integrated monitoring, event management, and remediation strategy driven by intelligence, machine learning (ML) and AI-powered data analytics across their entire IT environment.

In addition, they must build AIOps into digital and cloud transformation processes as they aim to maintain the highest visibility, performance, and availability levels possible. To achieve this goal, an effective AIOps strategy must solve for these challenges:

- **UNDETECTED ANOMALIES:**
  Setting manual thresholds to detect anomalous activity can lead to false alarms or overlooked complex multivariate anomalies.

- **EVENT NOISE:**
  As IT environments grow in size and complexity, it becomes increasingly difficult to see through the symptoms of a problem to accurately identify the source.

- **CONTEXT & CORRELATION:**
  Multiple events are often related to a single root cause, requiring IT staff to spend time sifting through these events to drill down to the root cause, a labor-intensive process.

- **INTEROPERABILITY:**
  There are many monitoring tools out there, so you need open integrations and a unified platform that can leverage data from across your environments to obtain intelligent operations management recommendations.

> "By 2022, DevOps teams that leverage AIOps platforms to deploy, monitor and support applications will increase delivery cadence by **20%**."*
>
> *Gartner, 'Augment Decision Making in DevOps Using AI Techniques,' June 2019

Operations teams must deploy machine learning and analytics as part of an AIOps strategy to manage the increasing volume, variety, and velocity of data across an increasingly hybrid, complex, and fast-moving IT landscape.

The building blocks of AIOps

How can you get from monitoring to the full-fledged promise of AI-driven operations management and performance optimization? Your solution should provide these capabilities:

- Service-centric monitoring
- ML-driven anomaly detection
- Advanced log analytics
- Policy-based, automated event management
- AI-driven, service-centric probable cause analysis
- Open integrations with third-party solutions for maximum visibility and context
- Dynamic service models
- Multiple data sources
- Reporting and easy-to-use, customizable dashboards

IT Operations teams must adopt a comprehensive operations management strategy driven by intelligence, ML, and advanced analytics across their entire IT environment.

Look for:

A single monitoring solution that acts as a 'manager of managers,' which consolidates third-party monitoring and event data, to provide a unified view of complex IT infrastructure

Elastic, containerized microservices architecture that enables enterprise scalability, performance, and availability for any on-prem, hybrid, or cloud-based environment

SaaS deployment, which enables rapid onboarding and the ability to manage complex, dynamic workloads

Leading-edge AIOps and machine learning techniques, which trigger events and notifications before thresholds are breached

Advanced analytics capabilities that have the ability to manage and process the ever-increasing volume, variety, and velocity of data from multiple sources

ML-driven anomaly detection

Your solution should be smart enough to learn the vital signs of a healthy system and detect anomalies wherever they occur to...

- Predict and proactively uncover issues before they cause service degradation or interruption
- Recognize univariate and complex multivariate anomalies across configuration items

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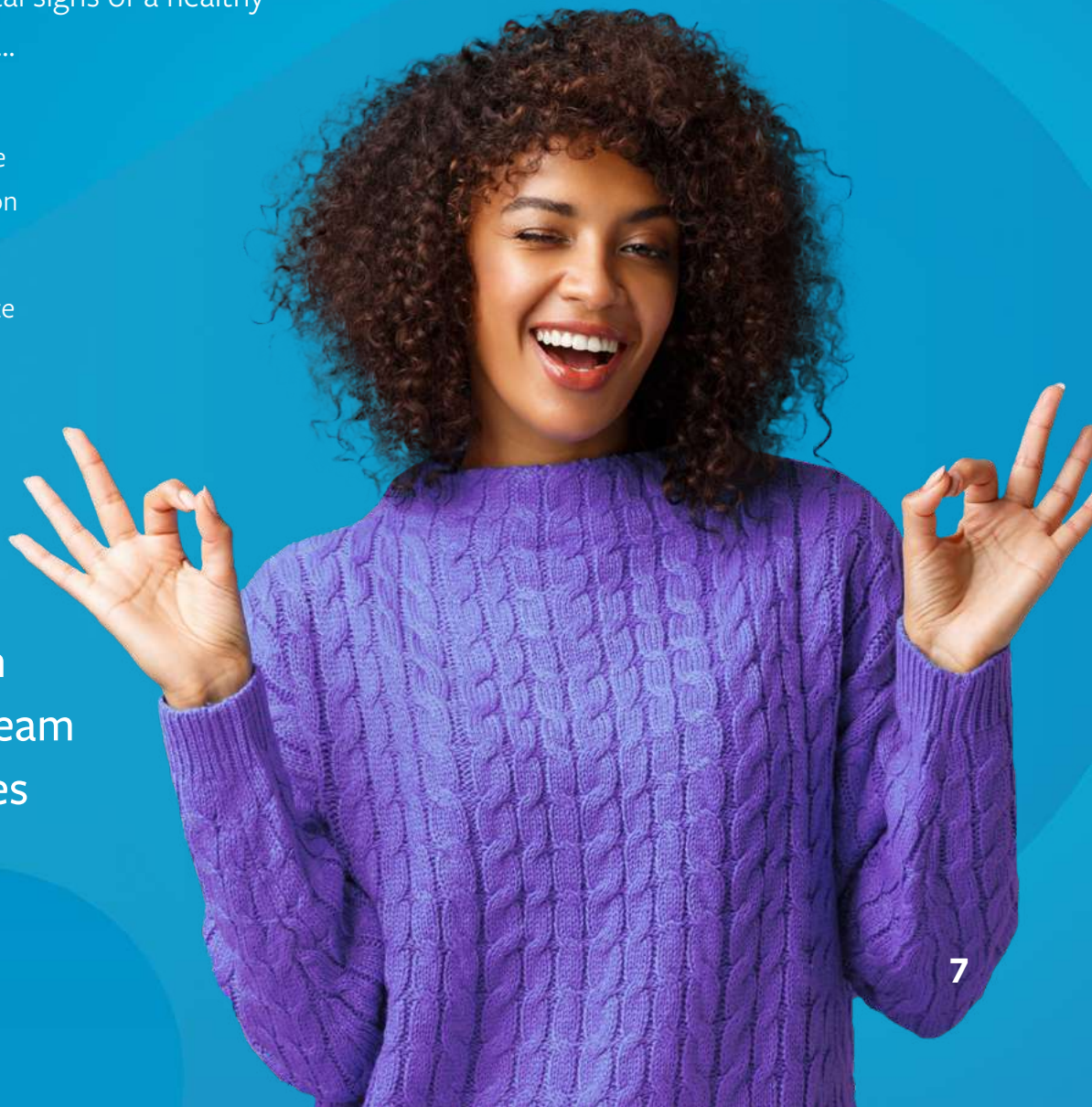
The smarter your anomaly detection becomes, the more proactive your team can be to capture performance issues before they disrupt services.



Policy-based automated event management

Manual rules-based event management is time-consuming and prone to oversights and errors. Your AIOps solution should provide automated event management based on analytics and the data governance policies you've set. This offers your team these benefits:

CONTEXT

Rather than receiving indecipherable error messages and URLs, the event can specify issues and locations in plain language.

EVENT CORRELATION AND NOISE REDUCTION

Your solution should be able to correlate among multiple events to generate a higher-level event, minimizing noise.

AUTOMATION

Policy-based event management can generate a plain-language trouble ticket to a help solve a problem affecting a complex, multi-step business process.

Connect your automated event management solution with probable cause analysis to your service desk to provide context for help desk personnel to increase efficiency and reduce MTTR.

AI-driven, service-centric probable cause analysis

The holy grail of AIOps is to bring AI to bear on very large numbers of events, analyze them, and determine the most likely root cause(s) of a problem.

Here's how AI-driven analytics and automation saves time and resources:

1. The system reviews data collected across all sources and sees through event noise
2. It analyzes events that have come in, including factors such as timing, location, anomalies, services affected, and more.
3. It learns how the infrastructure is configured and the relationships between servers, applications, and data.
4. It provides the IT team a recommendation for the most likely probable cause.
5. In seconds, the IT team can focus its attention on the likeliest solution.

Probable cause analysis provides proactive, automated determination of root cause across business services to cut through the noise and reduce MTTR.

The bad old days

While users are experiencing downtime or performance issues, you're...

- Pulling the team away from its other work
- Investigating the large numbers of events showing up on your dashboard
- Looking into the metrics generating those events
- Referencing a topology view to try to understand dependencies
- Scratching your head
- Moving onto the next event until you ultimately find the one that really matters

Open integration

Open integration is a key capability of AIOps, allowing it to pull data from multiple solutions, including third-party tools, for analysis and decision-making.

- Ingest metric events and typology from a wide range of sources via REST API out of the box.
- Consolidate data and create context-aware analysis.
- Provide a software development kit to support intelligent, open integrations from any third-party source.

Find a “manager of managers” capable of consolidating and analyzing monitoring data no matter the source.

4 types of data for analytics

The AIOps model ingests and consolidates data from all these sources, no matter what monitoring tool was used to detect them.

METRICS

EVENTS

LOGS

TOPOLOGIES

Dynamic service modeling

Maintaining service models can be a time-consuming and resource-intensive process, especially given the rate at which IT changes. Dynamic service modeling helps you avoid physically maintaining a service model Pull discovery data and adding metrics, events, logs, and topology.

Ingest information from aross your environment.

Get AI-driven discovery for all CIs and the relationships between them.

Feed information to an operations management platform for use with probable cause analysis and other capabilities.

The BMC Helix Operations Management advantage

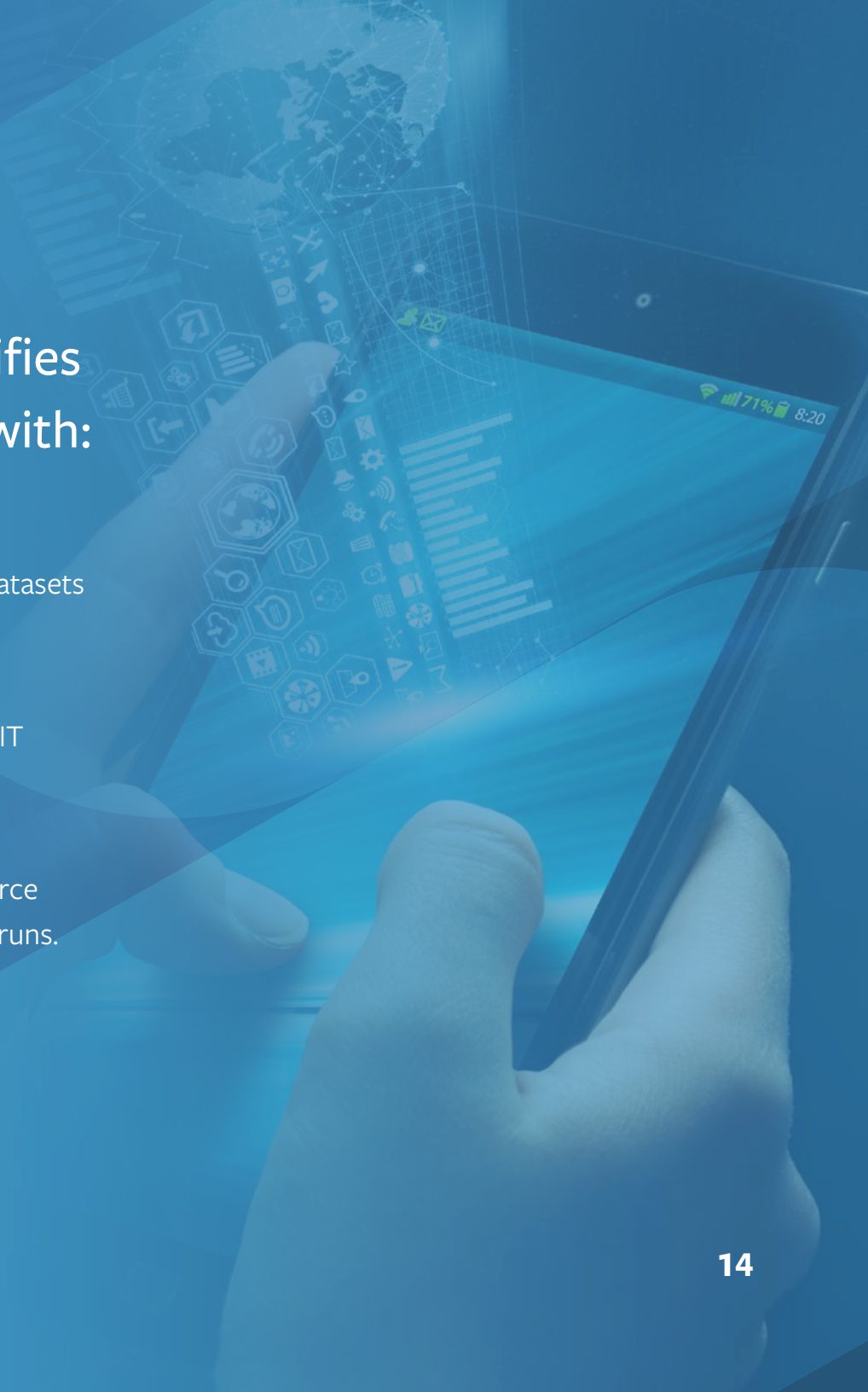
BMC Helix Operations Management uses predictive capabilities to improve the performance and availability of IT services across multi-cloud, hybrid, and on-premises environments proactively.

- **AUTOMATED EVENT NOISE REDUCTION:**
  Use ML and analytics to identify operational issues quickly by reducing event noise up to 90%.
- **INTELLIGENT ANOMALY DETECTION:**
  Use multivariate or univariate anomaly detection to trigger events and notifications based on metrics behaving abnormally.
- **AUTOMATED EVENT MANAGEMENT:**
  Easily create and deploy customized policies to manage and control events and service impacts and perform event analytics.
- **SERVICE-CENTRIC PROBABLE CAUSE ANALYSIS:**
  Reduce MTTR by viewing the most likely sources of a problem and obtain a full, actionable analysis.
- **OPEN INTEGRATIONS:**
  Use out-of-the-box adapters and REST APIs for policy-driven data collection, and ingestion of topologies from third-party solutions.
- **BMC HELIX PLATFORM:**
  Unified, open platform for cross-domain visibility, operability, and AI-driven automated actions and workflows.

Leverage dynamic service models and apply AIOps to enhance anomaly detection and probable-cause analysis and determine service impacts.

The BMC Helix Platform connects operations and service teams and unifies BMC Helix Operations Management with:

- **BMC Helix Discovery:** to generate detailed CI datasets and topologies across complex IT environments.
- **BMC Helix Continuous Optimization:** to align IT resources with business service demands.
- **BMC Helix Cloud Cost:** to optimize cloud resource costs, eliminating wasted spend and budget over-runs.
- **BMC Helix ITSM:** to deliver dramatic improvements in service desk efficiency using intelligence and predictive capabilities.



Leading analysts agree: BMC is a leader

The judgements are in

BMC earns high ranking among Infrastructure and Operations (I&O) solution providers on a consistent basis and across multiple dimensions.

Gartner Magic Quadrant, October, 2020

In Gartner's Magic Quadrant for IT Service Management Tools, BMC was categorized as a leader, with the highest ranking in completeness of vision among the 11 ranked providers thanks to its broad IT operations management portfolio, flexible deployment options, and advanced I&O use case maturity.

EMA Radar Report: AIOps, Q3 2020

Enterprise Management Assoiates (EMA) scored BMC at the top of the charts for Busines Impact and Business Alignment use-case categories in EMA's recent AIOps Radar report. According to the report, BMC "offers a rich variety of automation options that are well evolved, well integrated, and central to its vision of the Autonomous Digital Enterprise."

Find out why BMC ranks so highly

To learn more, download the full analyst reports

- **Gartner Magic Quadrant for ITSM Tools, October 2020**
- **EMA Radar Reports: AIOps, Q3 2020**

Compare BMC Helix Operations Management

CAPABILITY	BMC HELIX OPERATIONS MANAGEMENT
AIOps and machine learning	✓
Anomaly detection (Univariate, Multivariate)	✓
Behavioral learning	✓
Monitoring and event management	✓
External event ingestion	✓
Event noise reduction	✓
Proactive alerts and notifications	✓
Agent-based/agent-less collection	✓
Event analytics including clustering	✓
Elastic scalability	✓
Containerized architecture	✓
External data ingestion	✓
Multi-tenancy	✓
Probable cause analysis	✓

Continue your exploration

Contact us for a detailed demonstration of what BMC Helix Operations Management can do for you.

BMC understands your journey towards the adoption of AIOps

Through BMC Helix Operations Management and complementary products across the BMC portfolio, we can help you achieve the essential benefits of IT operations management.

- **RAPID DEPLOYMENT:**
  Containerized, microservices architecture with SaaS-based deployment enables fast time to value for any complex IT infrastructure
- **REDUCED MTTR:**
  Leading-edge AIOps and machine learning technologies proactively detect and analyze events
- **INCREASED PRODUCTIVITY:**
  Deep insights into complex infrastructures enable Cloud and Operations teams to quickly pinpoint and prevent issues
- **ENHANCED BUSINESS CONTINUITY:**
  Flexible scalability for managing complex, dynamic workloads

About BMC

BMC delivers software, services, and expertise to help more than 10,000 customers, including 92% of the Forbes Global 100, meet escalating digital demands and maximize IT innovation. From mainframe to mobile multi-cloud and beyond, our solutions empower enterprises of every size and industry to run and reinvent their business with efficiency, security, and momentum for the future.

Run and Reinvent

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