



Autonomous Operations

How to Intelligently Automate and
Scale IT Operations at Global Enterprises

IT Ops Needs Intelligent Automation

Digital transformation is critical for any enterprise that wants to win in today's market. It requires meaningful IT investments in new applications, clouds, services, infrastructure and delivery models. These add complexity and scale that compound the already heavy burden on IT Operations, which in turn increases the risk of painful IT disruptions.

Service outages, lost revenue, angry customers and runaway costs put at risk the very technology-enabled innovations meant to keep your enterprise competitive. For IT Operations to transform, it must intelligently automate and scale in order to keep up with a transforming IT reality.

The current generation of automation technologies – based on static rules and largely built by hand – are not a fit for modern, and complex IT environments. It's time for the next generation of automation...

Introducing Autonomous Operations

Powered by advances in machine learning and big data analytics, Autonomous Operations enables enterprises to intelligently automate and scale IT incident management. Autonomous intelligence is replacing manually created rules. AO delivers more effective automation that lowers operational costs, improves service availability and reduces IT risk. It enables Operations to keep up with the rapid pace of IT change. IT Ops stops being a bottleneck to become an enabler of digital transformation.



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“ *Instead of committing our resources to managing the chaos, Autonomous Digital Operations allows us to focus on managing the business.* ”

Robert Duran,
Director of Information Security

IT Operations Is Struggling...

Today's forward-looking enterprises are digitally transforming applications and infrastructure to survive and thrive in a fast-changing world. Meanwhile IT Operations, the critical function that keeps all these new services up and running, remains stuck in the past. The average IT operations center is besieged by the following:



Fragmented Tools

The monolithic IT tools stack is being replaced by a collection of best-of-breed solutions, few of which interoperate, leading to highly siloed data.



Rapid Pace of Change

Trends such as CI/CD, infrastructure-as-code and DevOps have accelerated the pace of change and release cycles to daily, hourly or even continuous.



Fragmented Clouds

Cloud infrastructure is becoming a hybrid mix of multiple public and private clouds that can prove difficult to monitor.



Complex Apps

IT Operations needs to monitor and manage microservices, mobile applications, third party cloud services, and more.



Fragmented Teams

Level 1 responders are too busy fighting fires, escalating too many incidents to Level 2 and Level 3 teams, and struggling with complicated, uncollaborative workflows.



Data Explosion

Speed and complexity have exploded the volume of IT events and incident data that IT Operations has to process.

State of IT Automation

Yesterday's Automation is a Bottleneck

IT infrastructure and software have radically transformed, fragmented and accelerated. However, IT Operations has not kept up. It remains dependent on legacy rules-based automation solutions that were simply not designed for the scale, speed and complexity of modern IT. That's why incident management today remains highly manual, difficult to scale, and ill-equipped to support digital transformation in complex, dynamic and large-scale IT environments.

The fallout is painful...

Legacy automation technologies for IT Ops depend on too much manual effort to succeed:

- ✗ Dependent on professional services to manually build and maintain rules
- ✗ Dependent on human-reviewed data to train the system with rules
- ✗ Dependent on expensive domain experts, such as software developers, to resolve many issues
- ✗ Dependent on customer complaints to identify issues in the first place!



High Costs

Bloated headcount • Inefficient processes • Expensive time sinks
• Disruptive workflows • Tools proliferation • Manual labor



Low Availability

Disruptions & outages • Angry customers • Lost revenue • Missed SLAs
• Damage to brand & reputation • Slow mean-time-to-resolution



High IT Risk

Endangers key business drivers and initiatives such as:
Digital transformation • Cloud migration • Mergers & acquisitions

\$120B

**Total Spent on IT Operations
Center Salaries**

Source: Yankee Group

\$72K

**Average Cost per Minute
for Service Outages**

Source: Digital Enterprise Journal

\$740K

**Average Cost of a Data
Center Outage**

Source: Trace3 Research



**CIOs who will Lose their Jobs
within 5 years due to failure to
Deliver Business Outcomes**

Source: Gartner

Introducing

Autonomous Operations

Autonomous Operations (AO) is a new category of enterprise software, powered by machine learning, that intelligently automates incident management for large and complex enterprise IT environments.

The Future Is Autonomous

Autonomous Operations is the next generation of IT automation. It moves enterprise IT from the legacy and rules-based solutions of the past to a future of fully autonomous operations.

AO eases the burden on IT Operations by combining humans and machines to dramatically improve time to resolution. AO increases service availability while driving operational costs down. Uninterrupted operations allow more time for development of technology-enabled innovations.

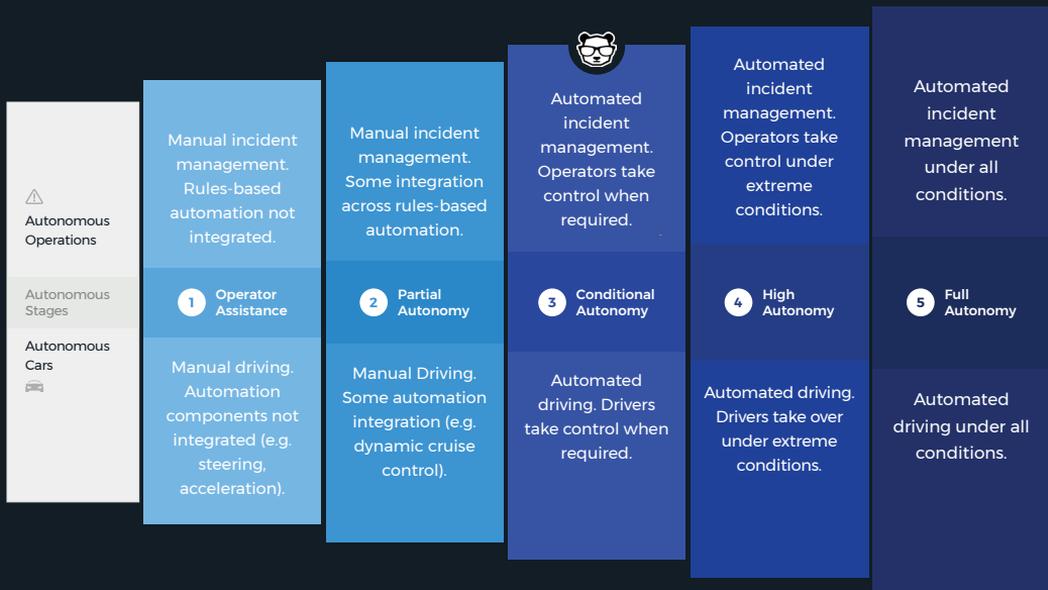
Key Components of Every Autonomous Operations solution:

- **AI / Machine Learning**
- **LØ Autonomous Layer**
- **Data Integration Hub**

Autonomous Operations ultimately enables IT to accelerate digital transformation initiatives by better managing associated risks and complexity.

AO Maturity Model

To explain how Autonomous Operations is evolving, a powerful analogy is the evolution of Autonomous Vehicles. AO's maturity curve will closely mirror the road that autonomous cars have driven.



Today, BigPanda is the first and only AO solution to support “Stage 3” autonomous functionality, where some incident types can be handled autonomously, start to finish. Customers can select which tasks they want BigPanda to intelligently automate and roll out AO at their chosen pace.

Open Box Machine Learning

Intelligent automation logic that is open, flexible and customizable by IT users

The brain of any Autonomous Operations solution is machine learning. Machine learning can quickly make sense of very large, complex and changing data sets without needing to manually create and maintain rules, runbooks or recipes. However, not all flavors of machine learning are created equal.

BigPanda's unique technology is called **Open Box Machine Learning**. "Open Box" refers to BigPanda's ability to create intelligent automation logic that is open, flexible and customized by IT users.

Open Box uniquely provides:



Transparency

End users can inspect and understand the logic created by the machine learning engine



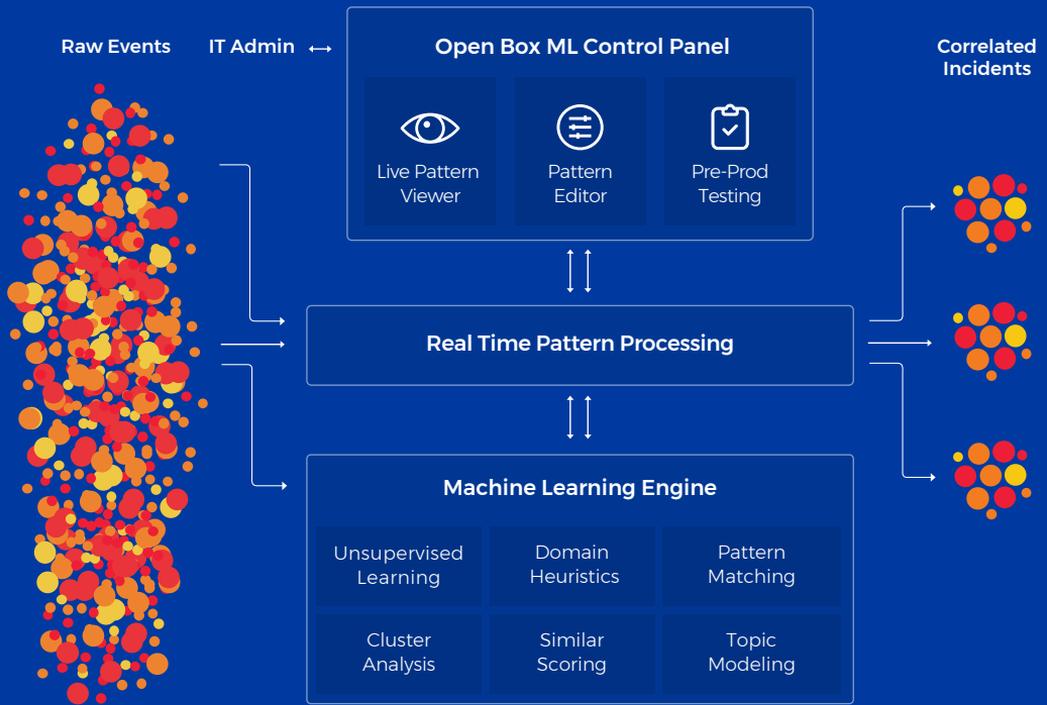
Trust

Results from similar data sets are reliable and deterministic, time after time



Control

Users can modify automation logic to incorporate situational and business knowledge



The software looks for correlation patterns and automatically suggests patterns by analyzing historical outages. It clusters raw events into correlated incidents to identify larger or ongoing issues. Open Box Machine Learning provides the breakthrough that dramatically accelerates autonomous decision making. For Level-1 operators, it can reduce the alert “noise” they suffer by up to 90 percent.

Key Solution Components

LØ Autonomous Layer

LØ is the software layer that powers AO's autonomous first response to IT incidents.

Level-Zero, or **LØ** for short, is a revolutionary new component common to all Autonomous Operations solutions. What is it? If machine learning is the head of AO, then **LØ** is its heart.

LØ is the software layer that powers AO's autonomous first response to IT incidents. **LØ** acts as the intelligent assistant to Level-1 operators that analyzes new incidents and addresses routine tasks that would otherwise fall to L1 teams. **LØ** is the first product in IT Operations Management that has been purpose-built to help L1 staff who are on the front line of incident management.

Once trained by Open Box Machine Learning, **LØ** can handle early steps in the incident management lifecycle autonomously – such as incident detection and prioritization. For some incident types, **LØ** can handle all incident management steps autonomously. Incidents that **LØ** can't resolve are escalated to L1 operators for resolution. **LØ** can also be configured to bypass L1 teams and escalate certain incident types directly to L2 or L3 teams. BigPanda's **LØ** approach is unique in that its powerful configurability allows you to adopt autonomous functions at your organization's chosen pace.

Think of **LØ** like an autonomous car. The more the car can drive itself, the more brain power the driver is able to devote to other productive tasks. **LØ's** fully autonomous capabilities allow all levels of the organization to focus on more high-value work – such as the strategic technology innovations that help your enterprise stay competitive.

LØ Autonomous Incident Management



Open Integration Hub

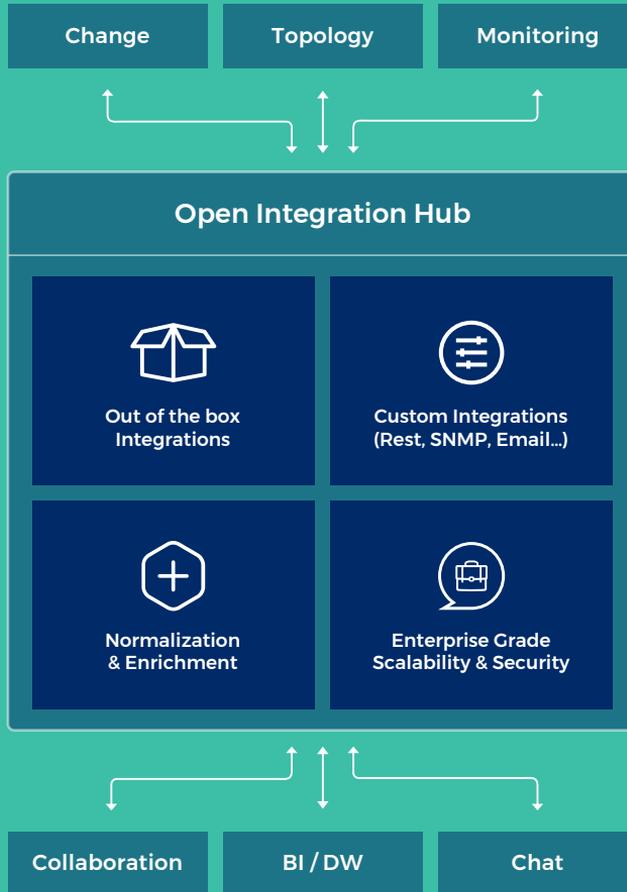
Integration with all 3rd party tools & datasets protects existing & future investments.

In an Autonomous Operations solution, the Integration Hub is the layer through which all third-party tools & data sets in the operations center integrate. Typically it handles all six types of integration: monitoring tools, topology, changes, remediation, collaboration, and reporting/data warehousing. AO Integration Hubs work with what you already have, thereby protecting your existing investments and minimizing disruptions.

BigPanda's **Open Integration Hub** easily interoperates with the broadest range of IT tools and data sets across all six categories of tools. This open approach delivers unparalleled time to value within minutes.

Open Integration Hub provides data synergy as well as data enrichment. First, it merges IT event data with diverse data from fragmented tools and silos. Then, it is able to unlock powerful insights as unified intelligence more valuable than the sum of its parts.

What's more, Open Integration Hub makes your operations center more dynamic & future-proof. Your teams can quickly and seamlessly adapt to changes such as new clouds, tools, topology, processes and more.



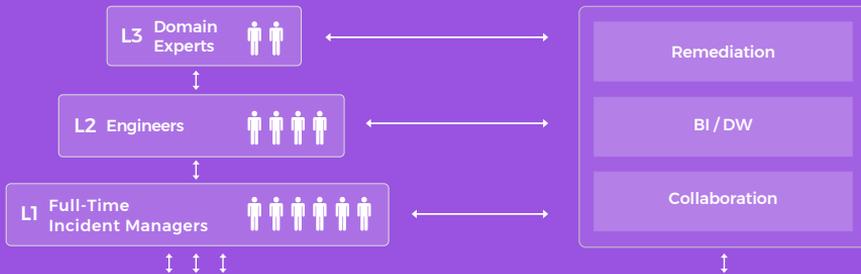
Operations Console

A central interface for real-time incident management across IT Ops teams

In an Autonomous Operations solution, the Operations Console is the interface for your Ops team to manage IT incidents. It centralizes incident management for all L1 operators, L2 practitioners, and L3 engineers with workflow support, collaboration features and a historical record of alerts and incidents.

BigPanda's **Operations Console** has been purpose-built for IT operations teams in dynamic, complex & large-scale environments. It streamlines and accelerates any manual work that cannot be automated by the LØ layer to help boost individual productivity even more. It provides centralized visibility across fragmented teams, clouds, and technology silos. It also unifies searching of historical data across all these sources, with unlimited data retention. No polling or refresh is ever required; the Operations Console is always real-time, always up to date.

Finally, BigPanda provides powerful dashboards and analytics for both real-time visualization and historical analysis & reporting. Users can unlock insights to aid incident investigation, problem management and business intelligence. Views can be personalized by roles, teams, clouds, apps and so on.



BigPanda's Solution

BigPanda Autonomous Operations Platform

BigPanda offers the first Autonomous Operations Platform on the market.

It correlates operational data, automates the incident management lifecycle, and streamlines any manual processes.

BigPanda AO Platform offers superior time-to-value as an enterprise-class cloud solution because it's easy to deploy, use and manage. It is secure, reliable and highly scalable – delivering low total cost of ownership and measurable results within weeks.



Reduce Operating Costs



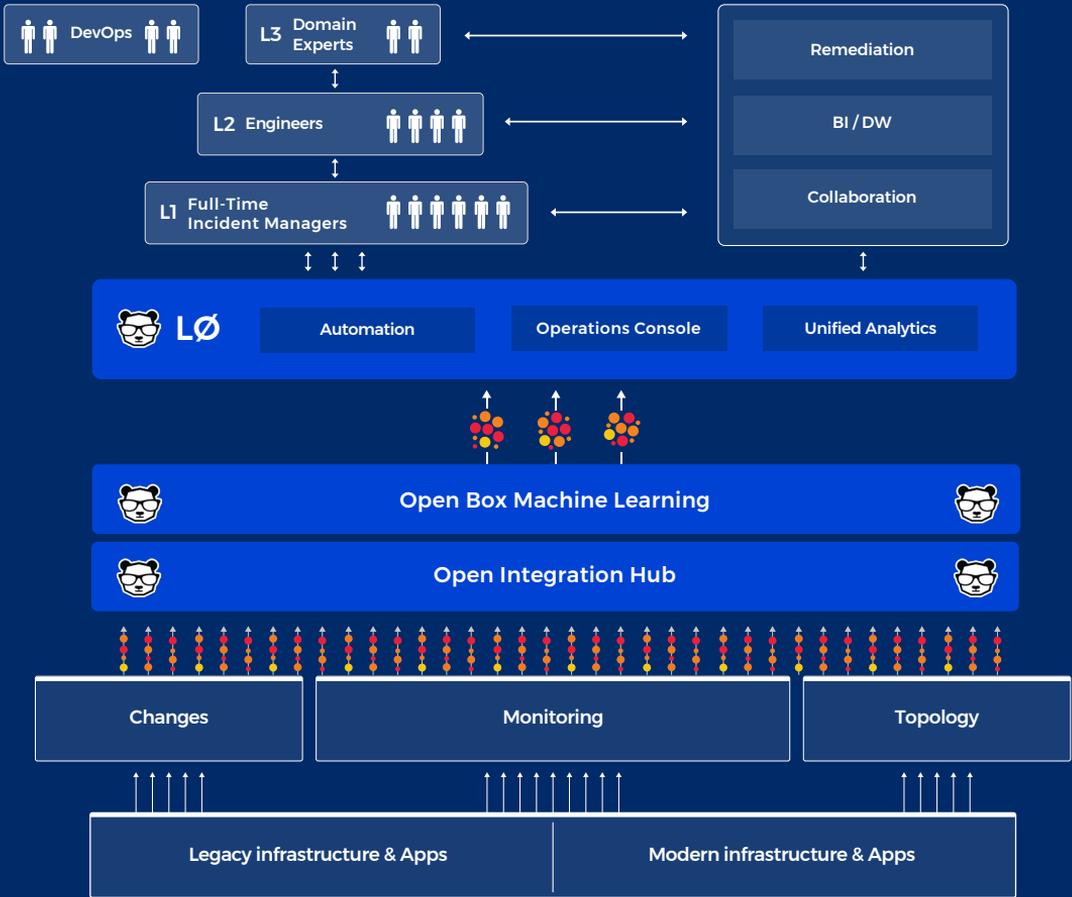
Improve Service Availability



Reduce IT Risk

Key Business Initiatives Supported by Autonomous Digital Operations:

1. Digital Transformation
2. Ops Modernization
3. Cloud Migration
4. Improved Service Availability
5. Cost Control
6. Legacy ECA Replacement
7. Improved Operational Visibility
8. Mergers & Acquisitions



Benefits of AO

Hear What These Enterprises are Saying About AO



“ *With the BigPanda Platform, we perform incident management in an autonomous way. Using Unified Analytics, we make informed decisions to avoid future issues and improve overall performance.* ”

Sam Pereira,
Director of Technical Integration



“ *We needed a platform that scales and allows for growth. We did not want the burden of infrastructure and maintenance costs.* ”

Kevin Johnson,
VP Cloud & Application Operations



“ *The BigPanda Open Box Machine Learning suggests correlation patterns much faster than we could do on our own. We can review suggested patterns and see the projected results.* ”

Brian Kendall,
VP Service Assurance

About BigPanda

BigPanda Inc. enables large enterprises to automate and scale IT Operations to meet the complex demands of digital transformation. The company is the first provider of an Autonomous Operations platform that intelligently automates IT incident management. Customers such as Workday, TiVo and Turner Broadcasting rely on Big Panda to reduce operating costs, improve service availability, and reduce IT risk. BigPanda AO platform delivers superior time-to-value by correlating operational data, automating the incident management lifecycle, and streamlining manual processes. Founded in 2012, BigPanda is backed by top-tier investors including Sequoia Capital, Mayfield and Battery Ventures.

Visit **www.bigpanda.io**
for more information

