

AIOps

- *Rajesh Shirke*

What is AIOps

- ❑ Originally called Algorithmic IT Operations, now Artificial Intelligence for IT Operations
- ❑ Convergence of AI and ITOps
- ❑ Impact both Enterprise data center and Cloud infra management
- ❑ AIOps platforms enable the concurrent use of multiple data sources, data collection methods, analytical (real-time and deep) and presentation technologies

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Why AIOps

- Infra generates huge amount of data (3 Vs – Volume, Velocity and Variety)
- Data Sources – Logs, Metrics, Wire, API, Social-media-derived sentiment, Geospatial data
- Vendor-agnostic data ingestion
- New tools for constantly changing IT landscape

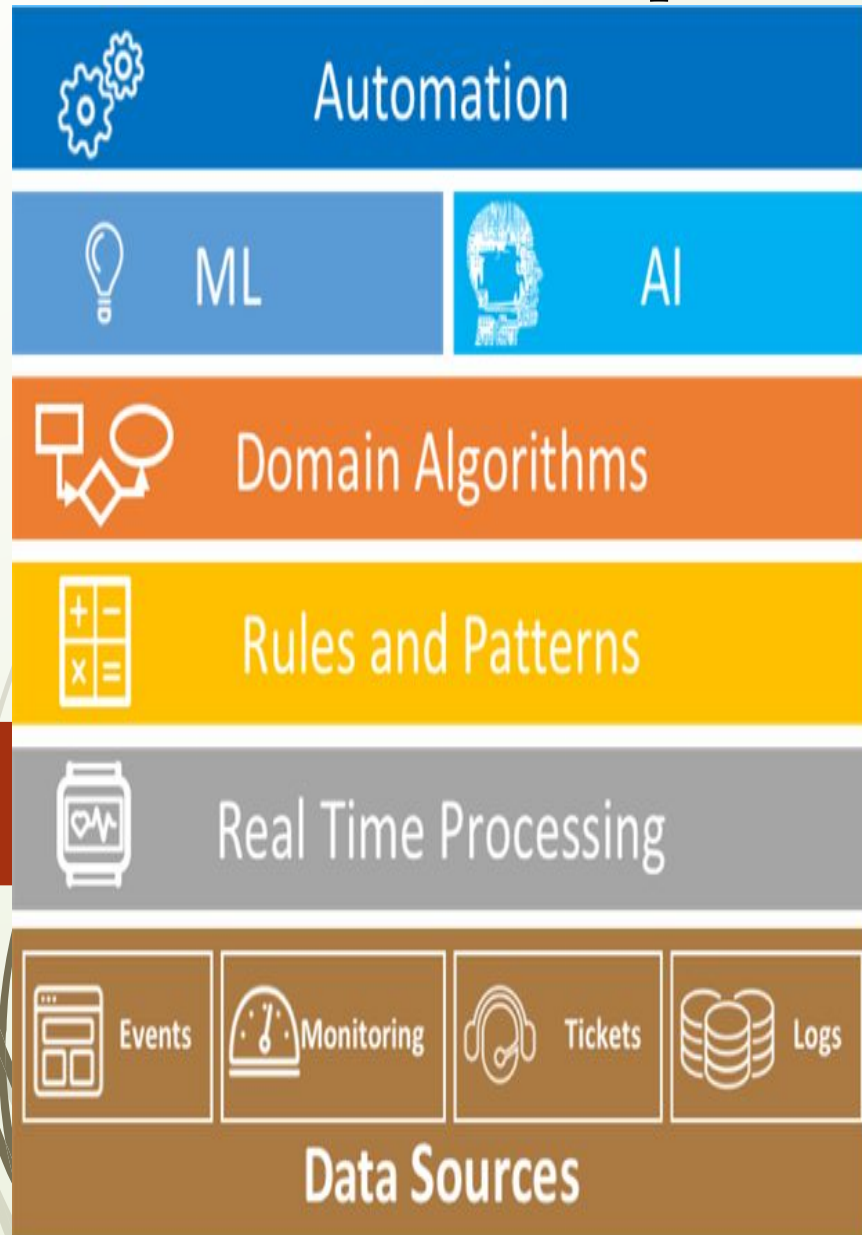
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Why AIOps

- Performance monitoring - automate remediation for known issues, but unknown issue
- Automated root cause analysis and business impact assessment
- Positioning it at the intersection of monitoring, service desk, and automation
- By 2021, only 15% of businesses will have holistic monitoring, that will put USD 255 billion invested in Cloud technology at risk

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The Elements of AIOps



Automation - uses machine learning and/or AI outcome to automatically create and apply a response for identified issues

Artificial intelligence - adapt to the new and unknown in an environment

Machine learning - auto alter or create new algorithms

Domain algorithms - intelligently interpret and apply the rules and patterns to eliminate noise, correlate unstructured data, establish baselines, and identifying probable cause

Rule application and pattern recognition - discover context while uncovering regularities and normalities

A modern **big data** platform permits real-time processing
Examples - Hadoop 2.0, Elastic Stack, and some Apache technologies

Data sources, from siloed tools and IT disciplines

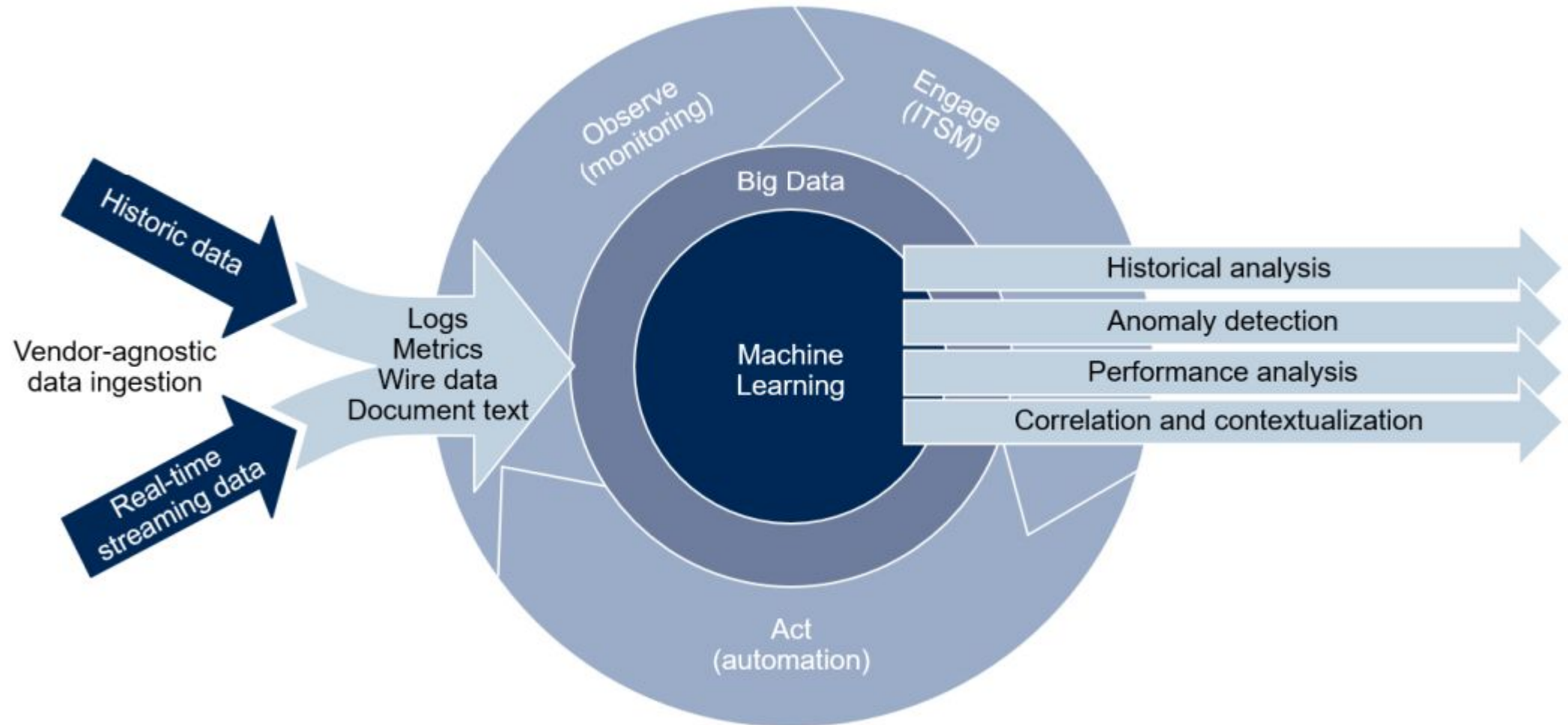
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How Does It Work

- Ingesting data from multiple sources agnostic to source or vendor
- Enabling data analytics at two points
 - Real-time analysis at the point of ingestion
 - Historical analysis of stored data
- Providing access to and storing the data
- Topology - context, events and their up and downstream dependencies using graph and bottleneck analysis to provides insight
- Using machine learning, initiate an action or next step based on the result of analysis

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AIOps Platform Enabling Continuous ITOM



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Vendors

- Some of the vendors offers AIOps platform or wide range of AIOps capabilities, Solutions/tools
- Stackstate, Broadcom (CA), ScienceLogic, Moogsoft etc.
- Vendors are developing strategies to use machine learning, the primary technology within AIOps to analyze data challenges
- Vendors differ in their data-ingest and out-of-the-box use cases made available with minimal configuration

Use Cases of AIOps

- Based on two major categories – data management and analytical outcomes
- Historical and streaming data management
- Automated pattern discovery and predication
- Anomaly Detection
- Root cause determination
- Topology, upstream/downstream dependencies

Use Cases of AIOps contd...

- Capacity planning
- Resource Utilization
- Storage Management
- Prescriptive advice
- Threat Detection and Analysis

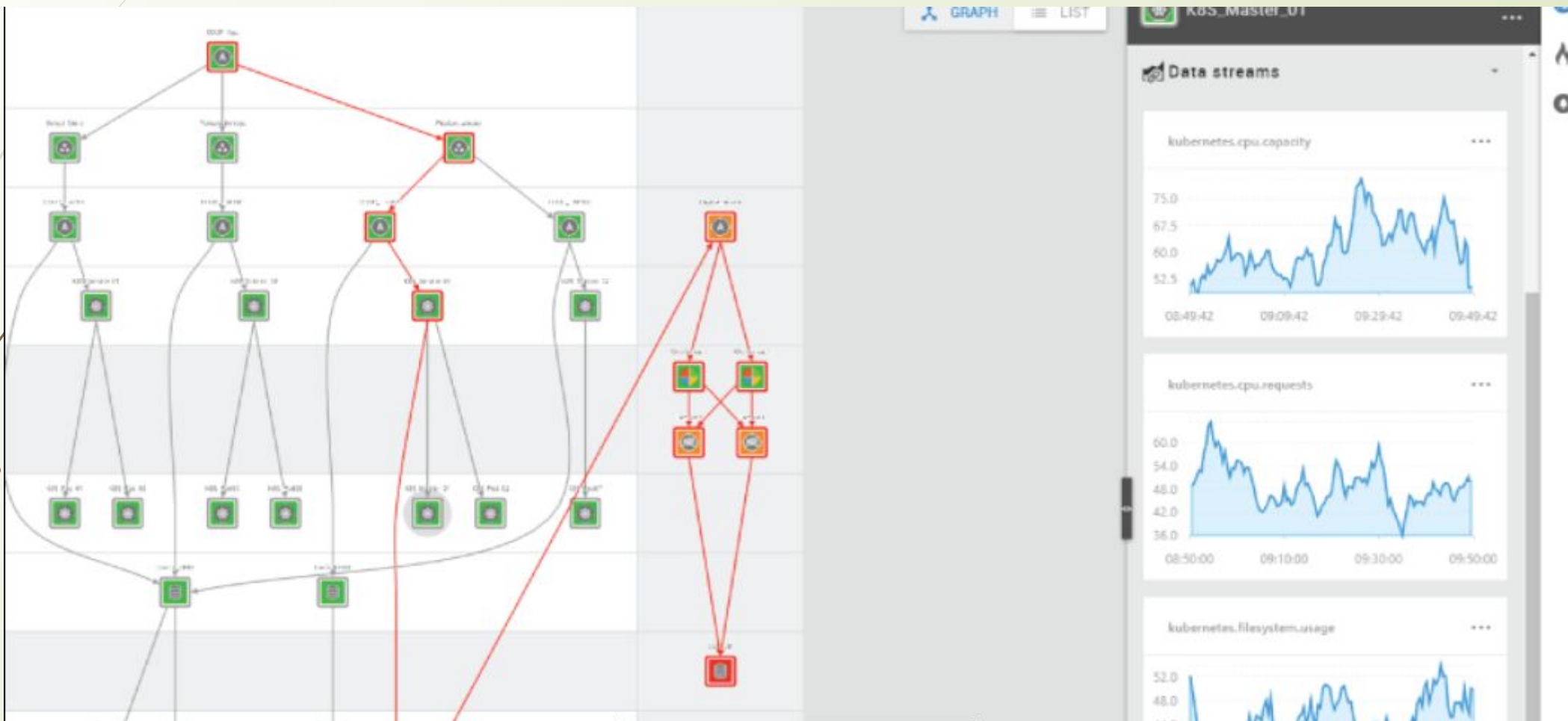
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Visibility - Topology



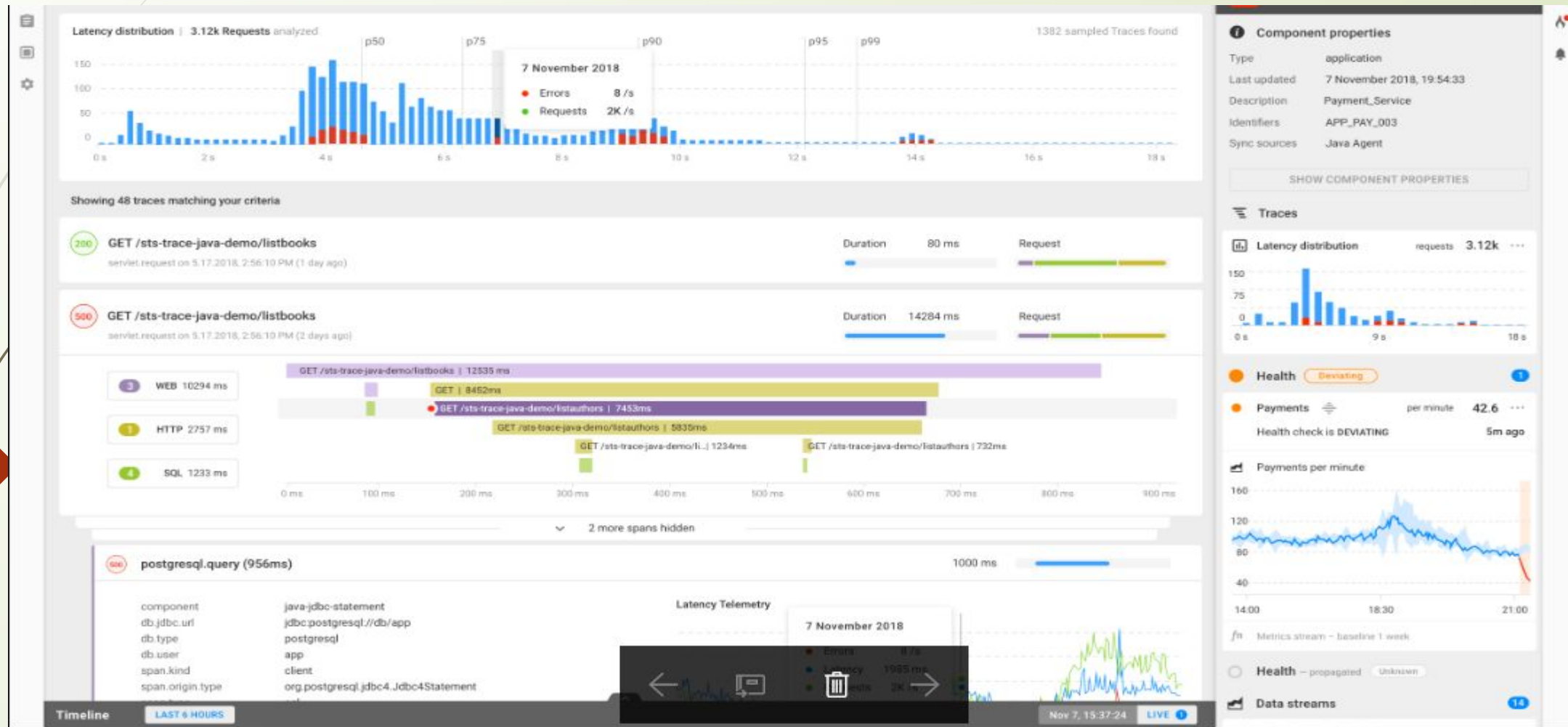
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Infra Monitoring



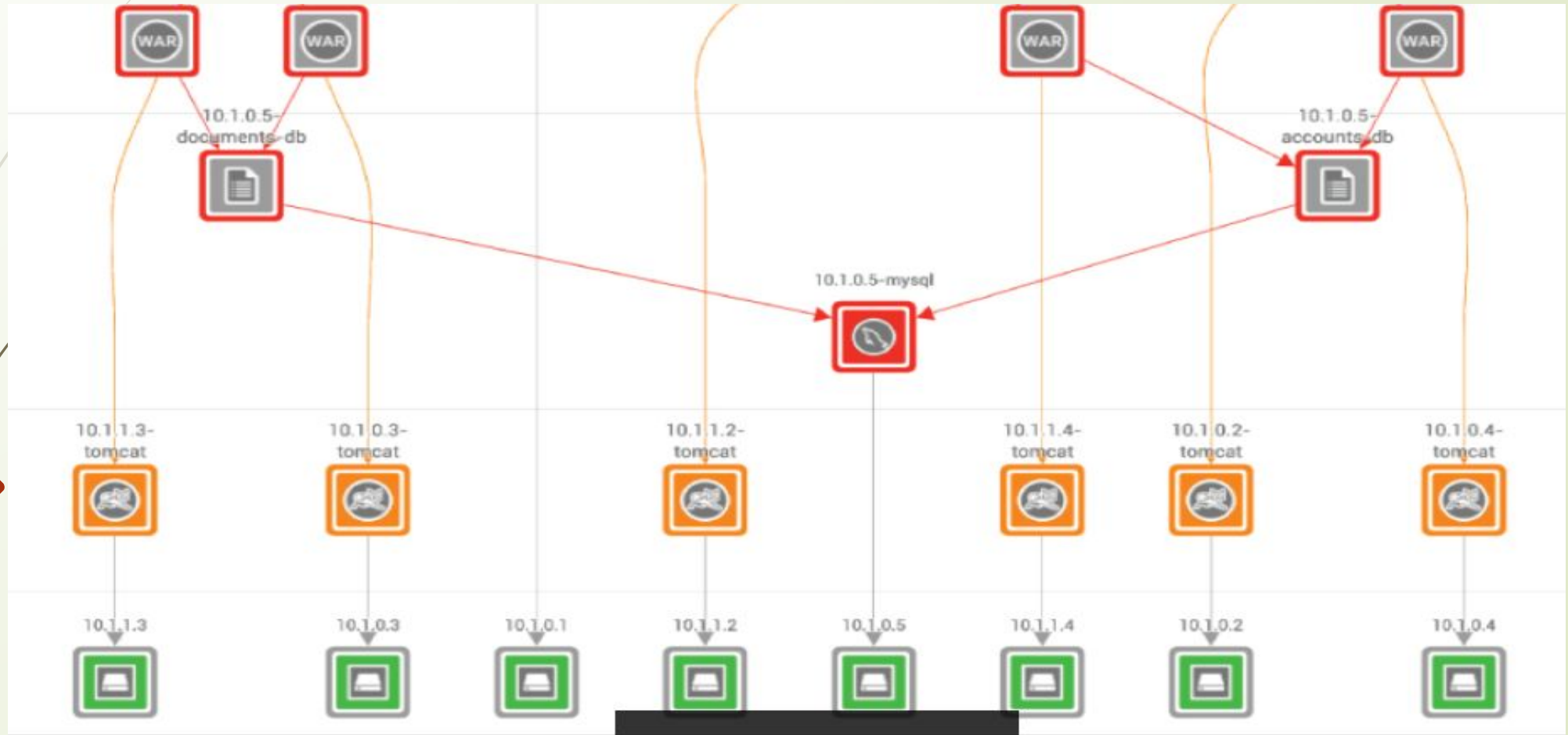
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App Performance Monitoring



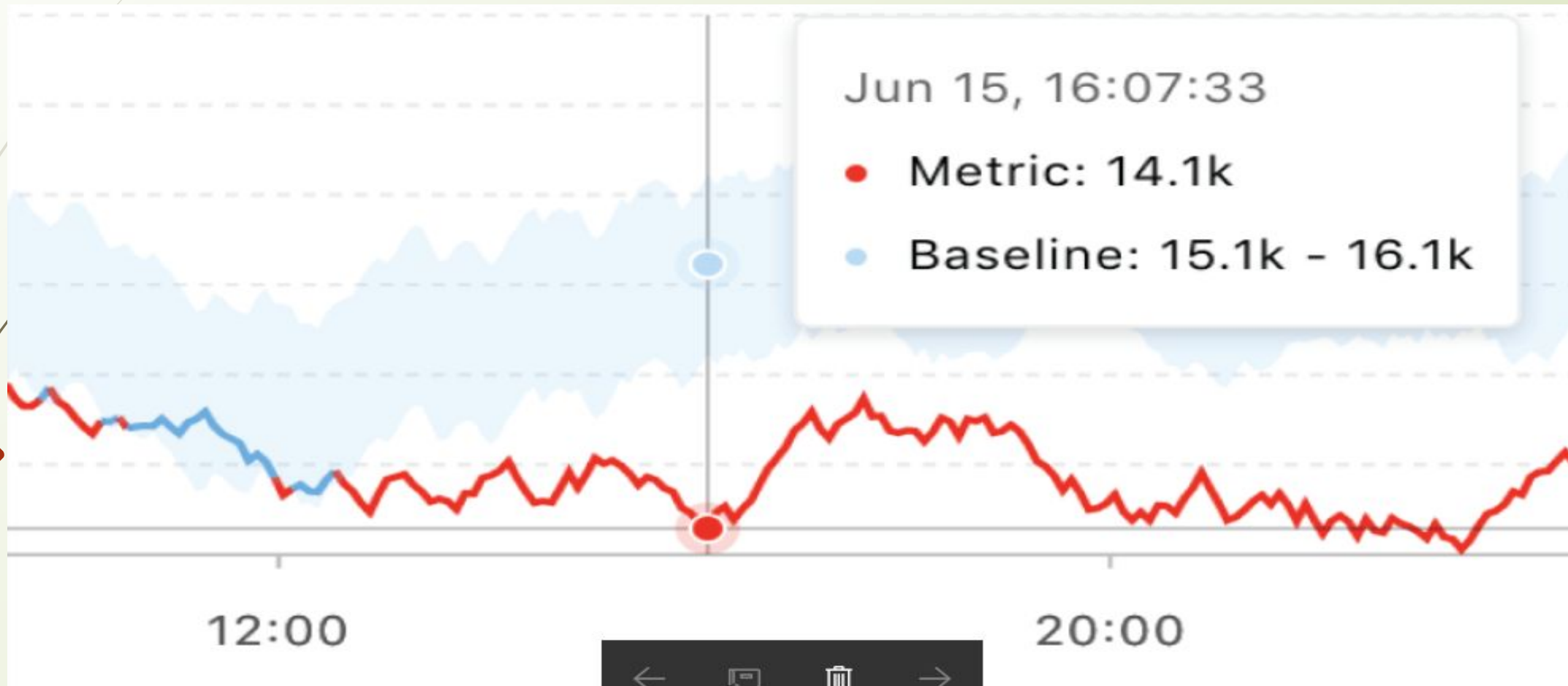
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Intelligence - Root Cause Analysis



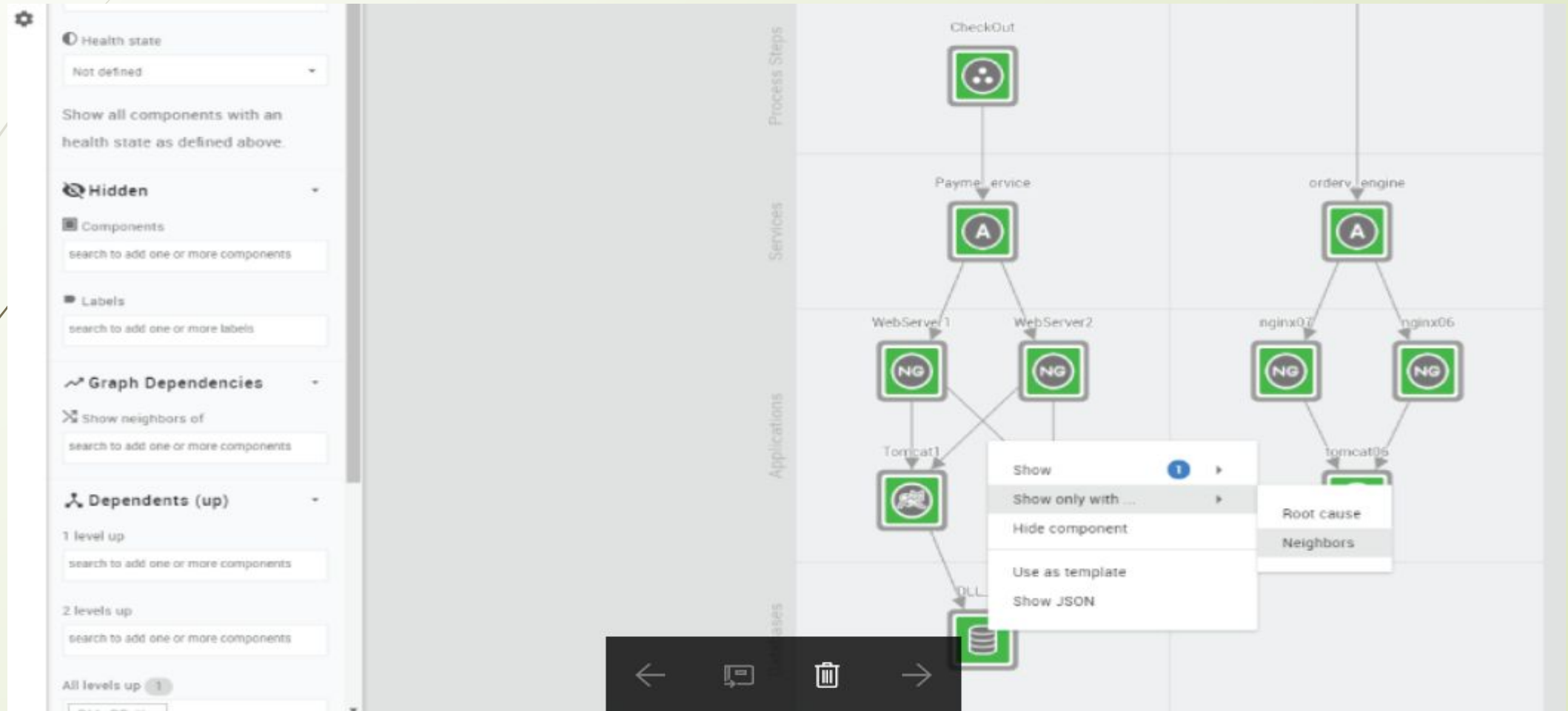
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Analytics – Anomaly detection



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Impact Analysis



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