

Powerful Insights with Every Click

FixStream™

Industry's First Visual
Artificial Intelligence
Platform To Predict
Business Application Issues
Across Hybrid IT



FixStream
Powerful Insights with Every Click.

Out-of-the-Box AIOps Platform to Predict Business Application Issues across Hybrid IT

Out-of-the-box discovery and correlation of business processes and transactions with infrastructure.

Preserves speed of digital transformation and breaks down the barriers of communication between IT operations and business owners.

Many enterprises are accelerating their digital transformation and increasing their dependency on critical business applications, thus requiring the utmost focus on performance and availability. To these companies, their applications are as indispensable as the electricity that keeps the lights on. The business impact of an outage or poor performance could be dire – service outages could cost a company \$72k per minute (Digital Enterprise Journal - 2017).

Guaranteeing the uptime and performance of these business processes can be challenging, since instances are deployed across distributed environments. These solutions also use a very fragmented set of applications services, and are connected via a complex infrastructure of network, compute, storage, virtualization, and container orchestration systems.

At the same time, enterprises are rushing to hybrid cloud seeking both business agility and security, increasing its adoption rate 3x in the last year, from 19 percent to 57 percent (Forbes).

The combination of a complex, distributed environment and the migration to a hybrid cloud will require IT and business operations to cooperate and gain visibility into the end-to-end process, from business transactions all the way to the underlying infrastructure. According to DEJ, the number of processed metrics, events and alerts has increased by 88 percent since last year, while the number of devices has increased by 57 percent.

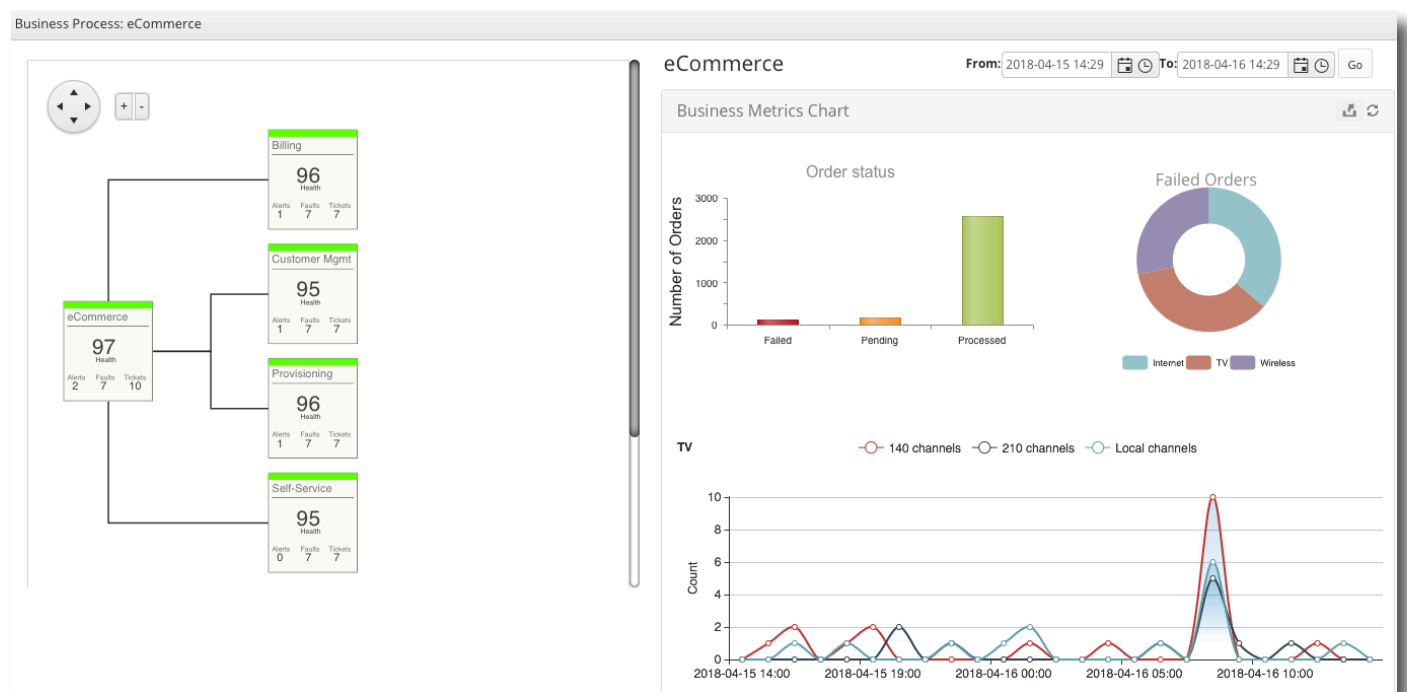
Today's domain-centric tools don't correlate business transactions with application services and infrastructure events, making troubleshooting in a hybrid cloud environment increasingly complex and costly.

FixStream facilitates digital transformation by automating the discovery and mapping of critical business processes to the underlying application process flows, hosts, backend databases and infrastructure entities such as switches, routers and storage arrays.

The FixStream Solution

FixStream is an industry recognized AIOps platform that automates the discovery and mapping of critical processes to the underlying application and infrastructure entities. By doing so, it enables IT Operations to analyze mission critical business processes, reduce MTTR, and predict occurrence of issues across any portion of their hybrid IT stack.

The FixStream platform is extensible for all COTS and custom enterprise applications and business processes. In this document we are going to focus on an E-commerce application to explain FixStream capabilities and business value propositions.



FixStream Capabilities

Let's imagine that the customer E-commerce instance is deployed across hybrid infrastructure and is interacting with enterprise services for tax calculation that are hosted on premise in the customer data center.

The number of pending orders increased beyond the expected threshold during a specific time period because of the system failure while doing credit check. The root cause upon investigation was a CPU starvation issue in the VM's in the customer premise where applications doing credit check were deployed.

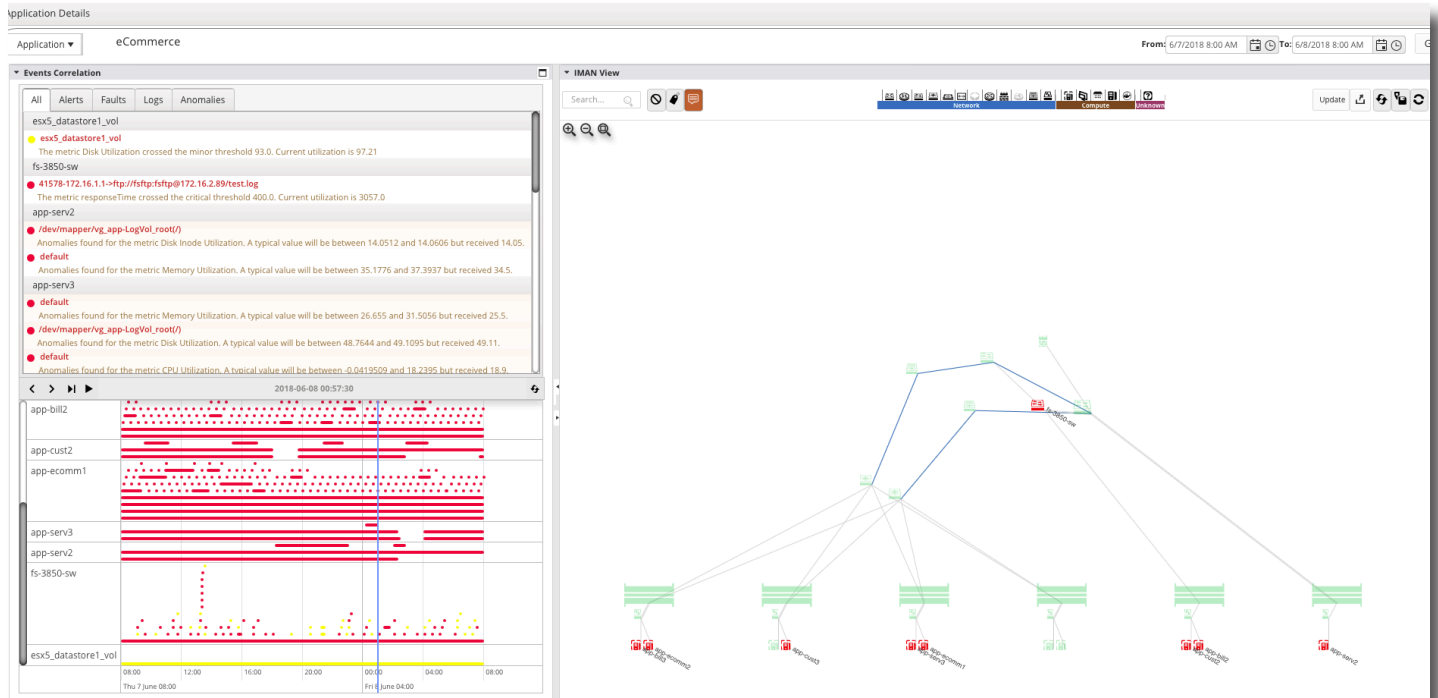
How long would it have taken an IT organization to determine the root cause? How many people across all the domains would have been involved?

Another example of performance issue is where the transactions are slow and response time exceeded more than 3000ms. The cause could have been related to the application, work process, an infrastructure link, or operating system, and so on. These entities can be correlated, visualized and monitored on a single dashboard using FixStream, and the necessary team can be called on for resolution.

FixStream automates identification of the root cause and pin points the issue visually in real-time, reducing the time to detect the root cause from hours to minutes.

The dashboard widget for E-commerce business process will show the business metrics for all product types. System errors in these cases include performance and health issues in compute, storage, network, application server and DB log files etc. The analysis of the business metrics is done in time series to quickly pin points to the exact window where there are system failures.

The system will then navigate the user to the event correlation window in context with the E-commerce application flow for the selected time frame and show the sequence of events in time-series graph across the server performance alerts, service alerts, log events, network faults, network performance alerts etc. across hybrid cloud and pin points to the pattern that creates the incident.



While Click on Alerts:

Overview	Impact	Additional Information	Notes	Chart
Event ID	c1b5fcae-668c-49c1-85a9-46f3e33ca526:FIXSTREAM:affa5922-00ec-41a4-9530-0438b9776fc5:US:2e046765-3e95-400c-99a3-f476a8a2ca60:esx5_datastore1_vol:null:servermetrics:diskMetrics:diskUtil:esx5_datastore1_vol:1526912400000			
Source Event ID	diskMetrics			
Severity	minor			
Host Name	esx5_datastore1_vol More Info.			
IP Address				
Event Name	diskUtil			
Description	The metric Disk Utilization crossed the minor threshold 93.0. Current utilization is 97.21			
Count	2585			
First Occurred	2018-05-21 07:20			
Last Occurred	2018-06-08 15:40			
Clear Time Stamp	0			
Probable Cause	Threshold is crossed for the metric Disk Utilization.			
Event Type	threshold			
Event Category	TCA_Event			
Fault Code				
Trap OID				
Source Type	Device			
Source Name	TCA			
Meridian Received Time Stamp	2018-06-08 15:40			

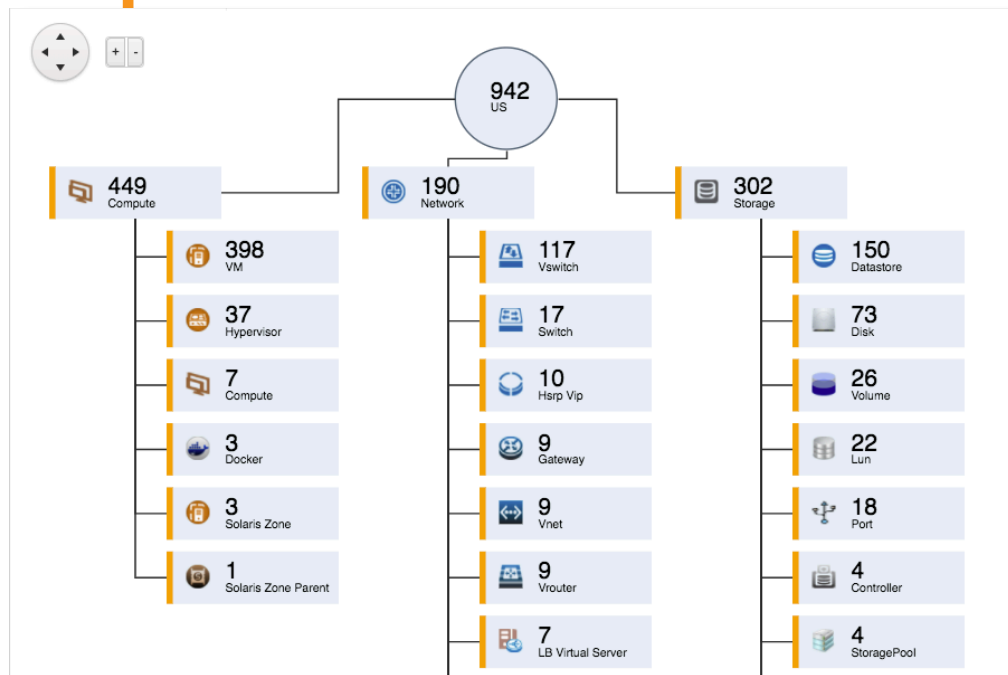
This helps operations team to quickly identify root cause of problems impacting the health of E-commerce business process flow, and reduces MTTR from hours to minutes.

How Does FixStream Work?

To allow IT operations teams to automate the process of getting to the root cause of business application issues that are spanning multiple IT domains, FixStream performs the following functions:

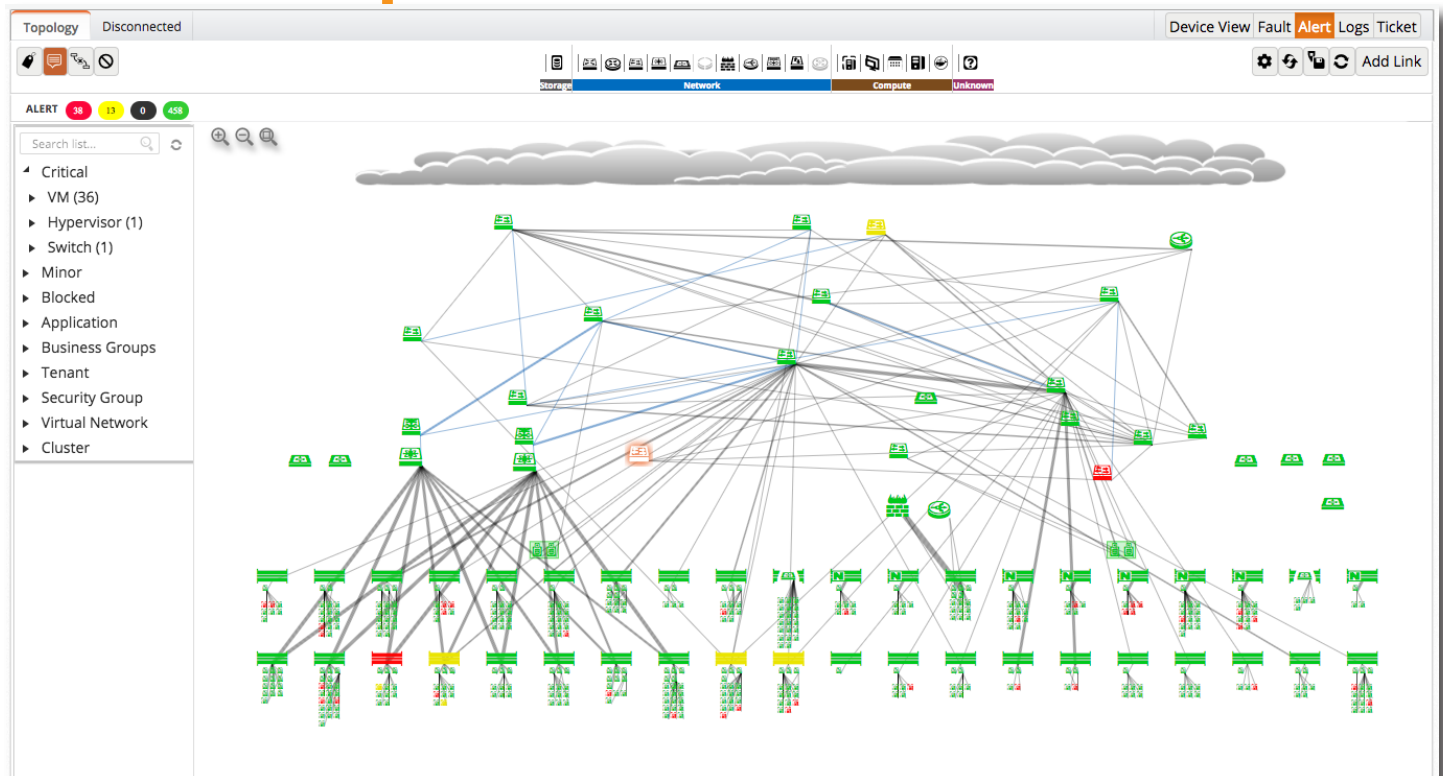
1. Auto-Discovery

FixStream smart discovery is agentless. Just with two user inputs – read-only user account credentials (we call it “service account”) and IP address range, FixStream discovery scans through each IP and auto discovers physical and virtual compute, storage and network entities including configuration data, interface and links and services running in them.



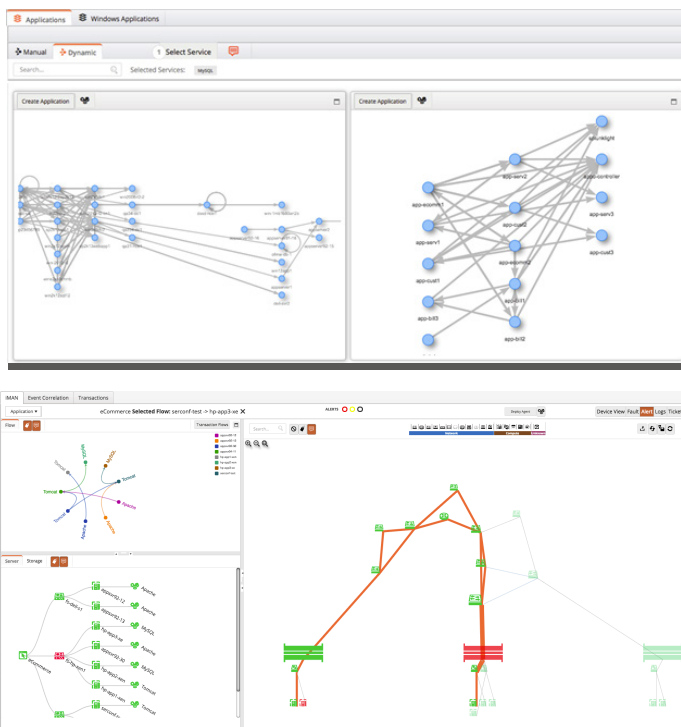
2. Topology Mapping

FixStream auto-discovery delivers the end to end topology of hybrid environment out-of-box which shows connections between network, storage, compute entities across hypervisors, VMs, VNFs, physical server, network and storage entities.

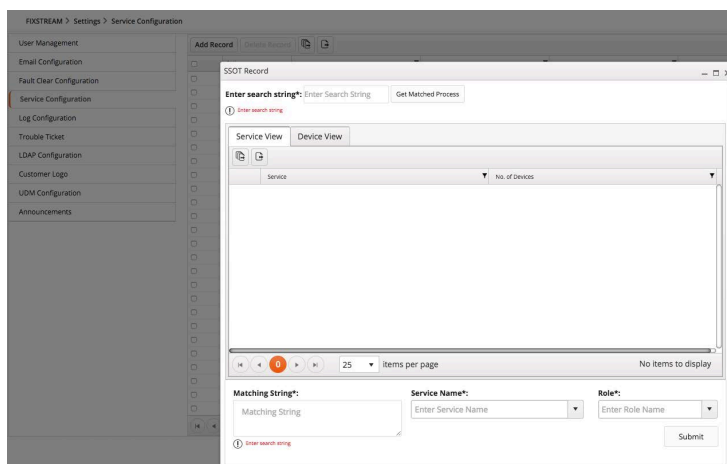


3. Application Auto-Discovery and Dependency Mapping

FixStream auto-discovers the logical groups of interconnected service flows which represent critical applications such as E-commerce and custom Java applications. The group entities are then automatically associated with the underlying physical and virtual compute, storage and network entities to build the application dependency maps, which becomes the foundation for operational use cases.

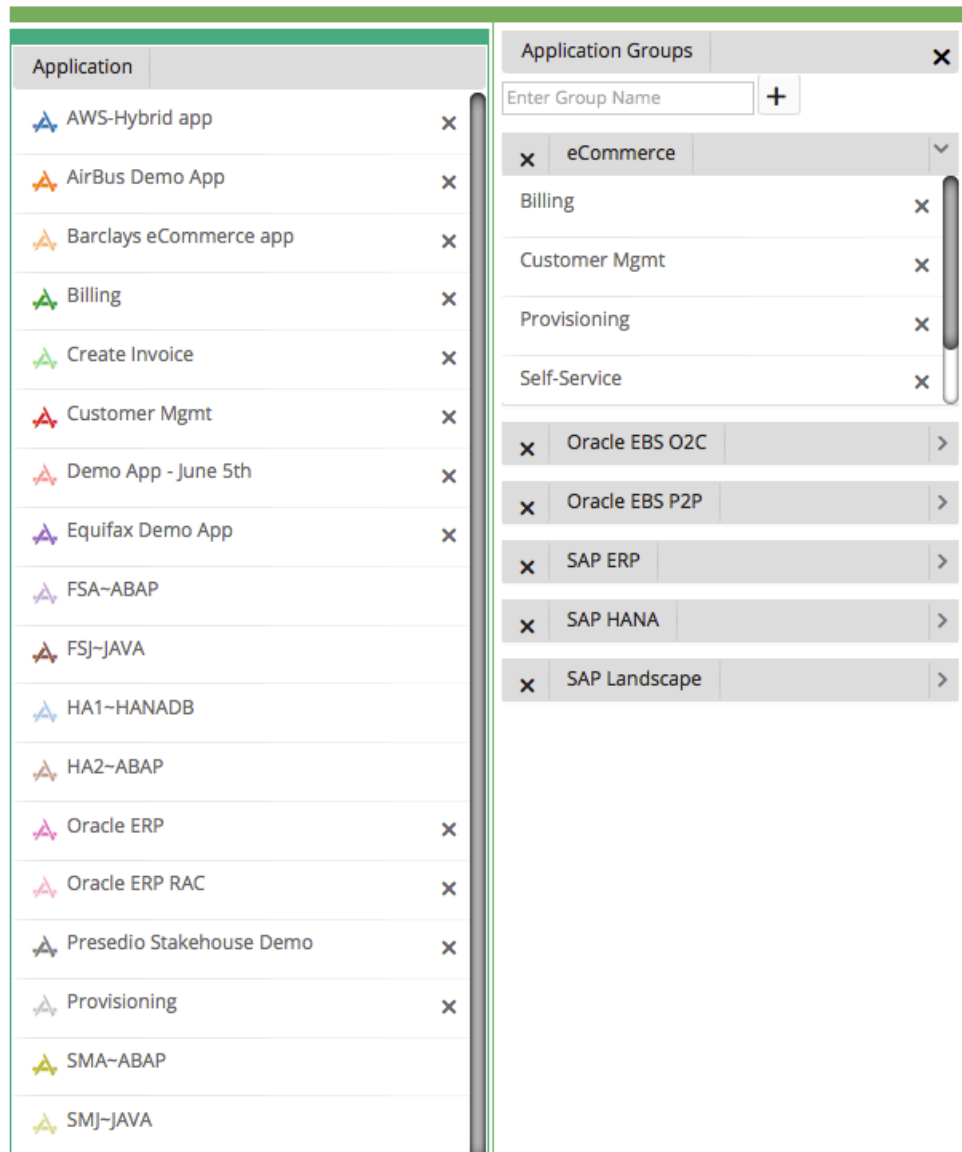


For custom applications, the application services can be added in as below. FixStream will then search and group these services for the custom application and show the service flows and infrastructure mapping.



4. Business Process Hierarchy Mapping

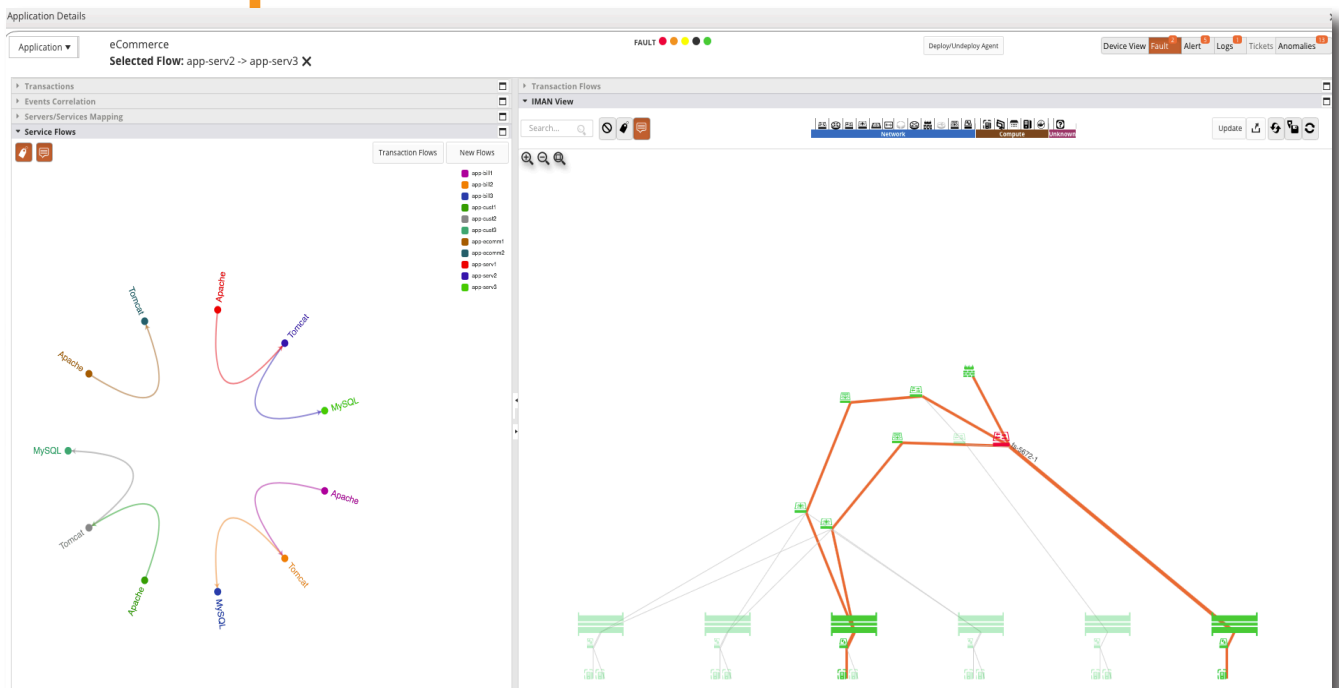
FixStream platform provides an intuitive drag and drop UI interface for users to create the business process hierarchy. For example - E-commerce business processes can be quickly created by grouping billing, customer management, provisioning and self-service. The application dependency map is auto computed for the business process once the grouping is done by the user.



Application	Application Groups
AWS-Hybrid app	Application Groups
AirBus Demo App	Enter Group Name +
Barclays eCommerce app	eCommerce
Billing	Billing
Create Invoice	Customer Mgmt
Customer Mgmt	Provisioning
Demo App - June 5th	Self-Service
Equifax Demo App	Oracle EBS O2C
FSA-ABAP	Oracle EBS P2P
FSJ-JAVA	SAP ERP
HA1-HANADB	SAP HANA
HA2-ABAP	SAP Landscape
Oracle ERP	
Oracle ERP RAC	
Presedio Stakehouse Demo	
Provisioning	
SMA-ABAP	
SMJ-JAVA	

5. Operational Analytics and Event Correlation

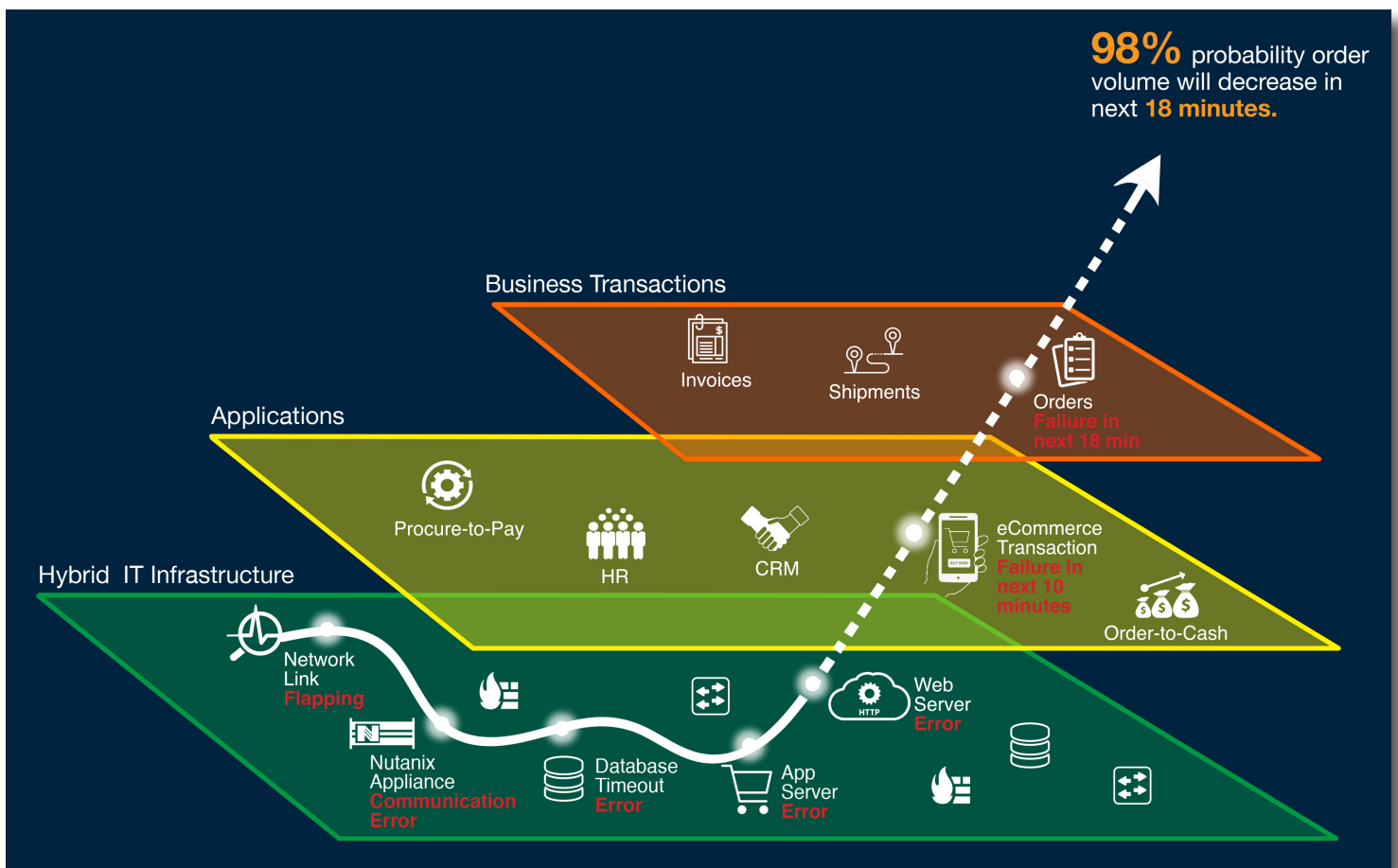
Operational data such as server performance metrics (CPU, memory, IO, disk), network performance (bandwidth, interface I/O, CPU, memory), storage (IOPS, latency, throughput etc.), log events, network faults thru SNMP and other alerts and metrics are ingested to FixStream from various sources using its open API ingestion layer. The events are stored in time-series and correlated and analyzed via machine learning algorithms for patterns and anomalies for root cause analysis.



Faults Alerts Logs Tickets Anomalies												
Save Changes												
Drag a column header and drop it here to group by that column												
	Ack...	Severity ↓	Hostname ↓	Type ↓	IP Address ↓	Event Na... ↓	Count ↓	First Occu... ↓	Last Occu... ↓	Affected ... ↓	Affected ... ↓	Trap OID ↓
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	cieLinkDown	1	2018-06-08 03:0	2018-06-08 03:0	Ethernet1/5	1.3.6.1.2.1.31.1.	1.3.6.1.4.1.9.9.2
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	linkDown	1	2018-06-08 03:0	2018-06-08 03:0	436224000	1.3.6.1.2.1.2.2.1.	1.3.6.1.6.3.1.1.5
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	ccmCLIRunningt	18	2018-06-01 03:0	2018-06-08 03:0	172.16.1.22	default	1.3.6.1.4.1.9.9.4
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	authenticationF	24	2018-05-31 23:1	2018-06-05 22:4	172.16.1.22	1.3.6.1.4.1.9.2.1.	1.3.6.1.6.3.1.1.5
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	fcNameServerEr	2	2018-06-04 18:5	2018-06-04 18:5	20:00:00:25:b5:(1.3.6.1.4.1.9.9.2	1.3.6.1.4.1.9.9.2
▶	<input type="checkbox"/>	●	fs-5672-1	Network	172.16.1.22	fcNameServerEr	2	2018-06-04 18:5	2018-06-04 18:5	20:00:00:25:b5:(1.3.6.1.4.1.9.9.2	1.3.6.1.4.1.9.9.2

6. Machine Learning

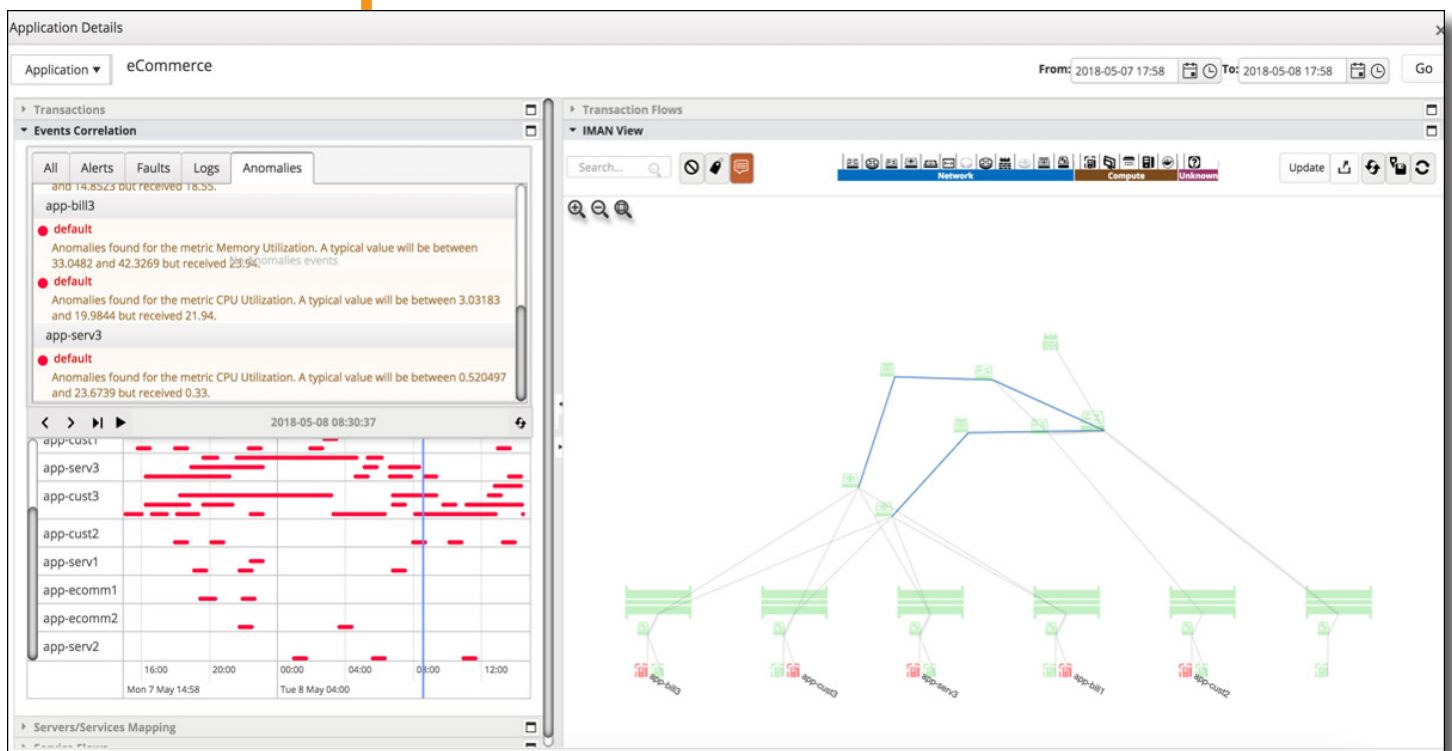
FixStream quickly predicts business application issues across an enterprise's entire hybrid IT stack. With its Machine Learning (ML) algorithms and advanced multi-layer correlation from business transactions to application services and infrastructure, FixStream can rapidly identify business impacting issues in minutes instead of hours. The FixStream AIOps platform can also detect patterns to predict and prevent future business outages, modernizing IT operations management while increasing revenues, customer satisfaction, and business agility.



FixStream ML capabilities include:

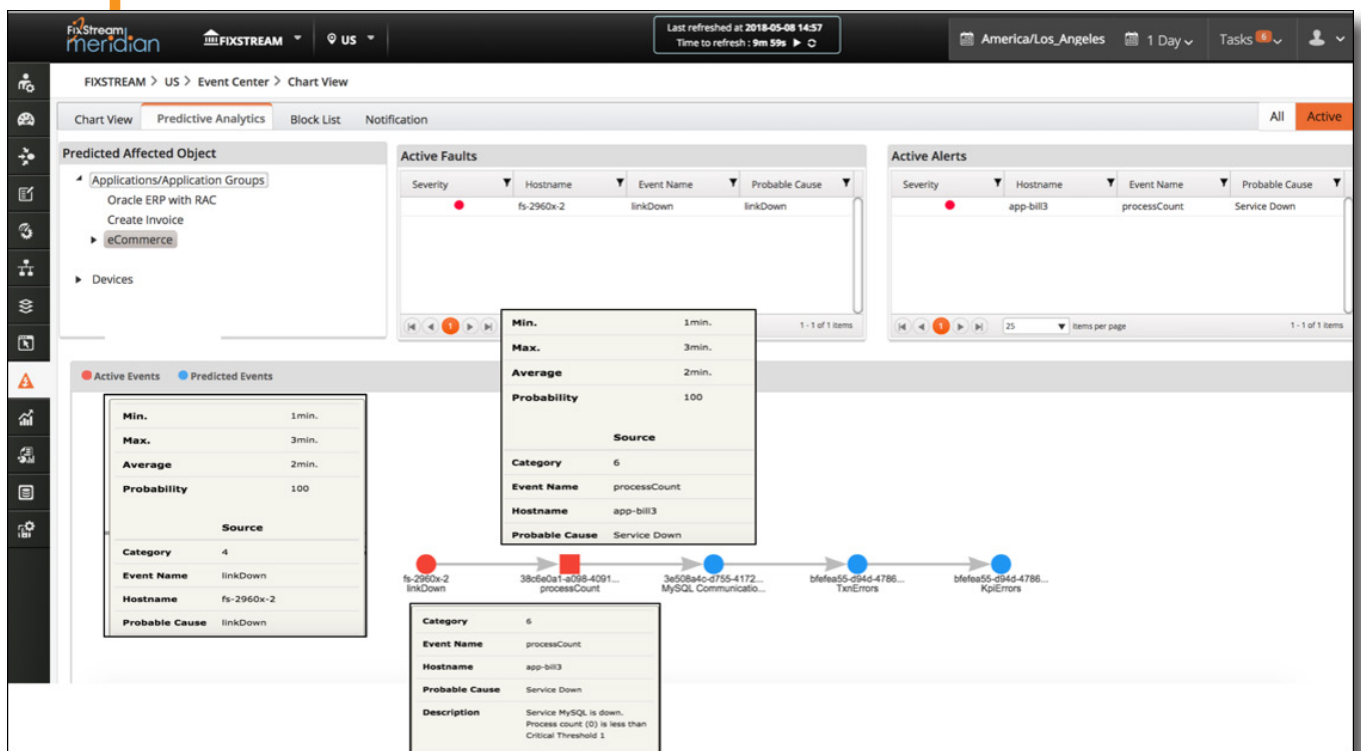
- **Dynamic thresholding and multivariate anomaly detection –**

IT teams can identify a sequence or group of anomaly events for transaction, application and infrastructure entities that may impact a business application. For example, you can detect an unplanned event such as DDOS attack and better plan for critical business events such as black Friday.



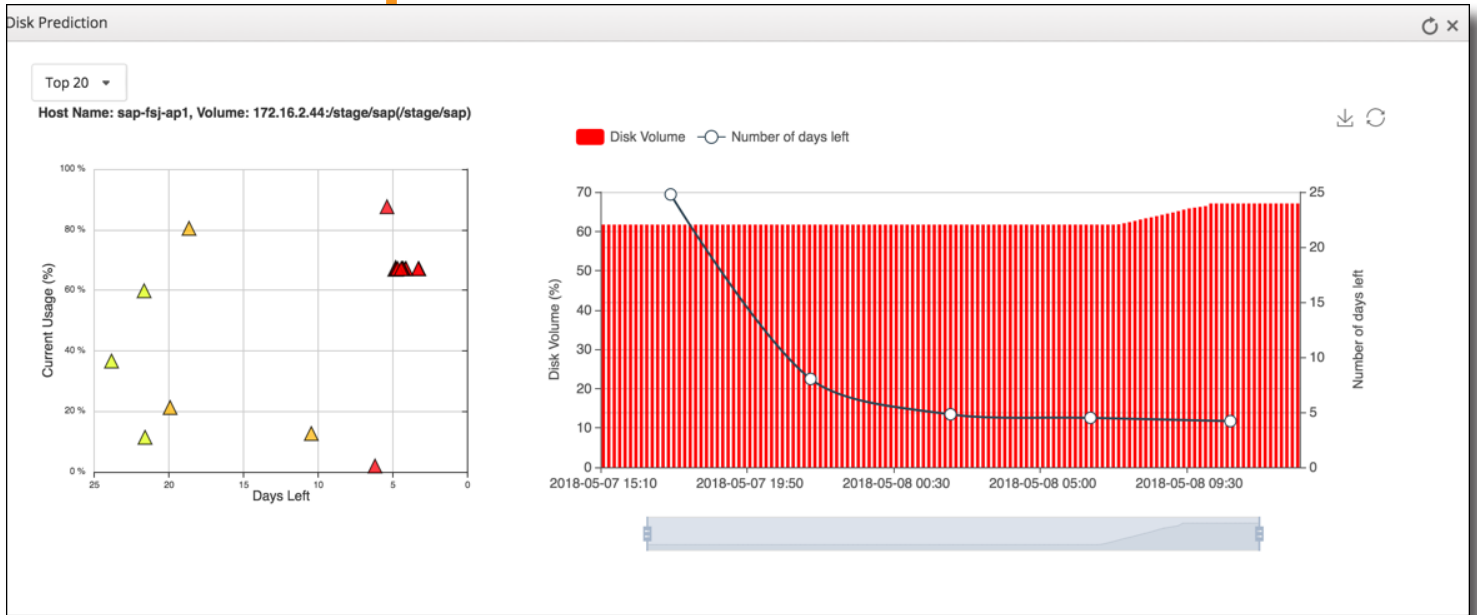
• Sequential Pattern Analysis for Incident Prediction –

IT teams can now identify and visualize in seconds the sequence of correlated events that have impacted a specific application or business process and identify patterns with probabilities to predict future incidents. For example, you can predict that transactions such as billing will stop working after one hour due to a detected event such as network bandwidth and interface utilization alert. By doing so, it will give enough time to help the business take proactive action to stop the incident from happening.



- **Disk/Network Bandwidth Predictive Analytics –**

By analyzing the historic trend of utilization of an infrastructure resource and by predicting when the infrastructure entity will run out of capacity, it allows the IT operations team to proactively plan to add more capacity before it negatively impacts the business.



7. Dashboard

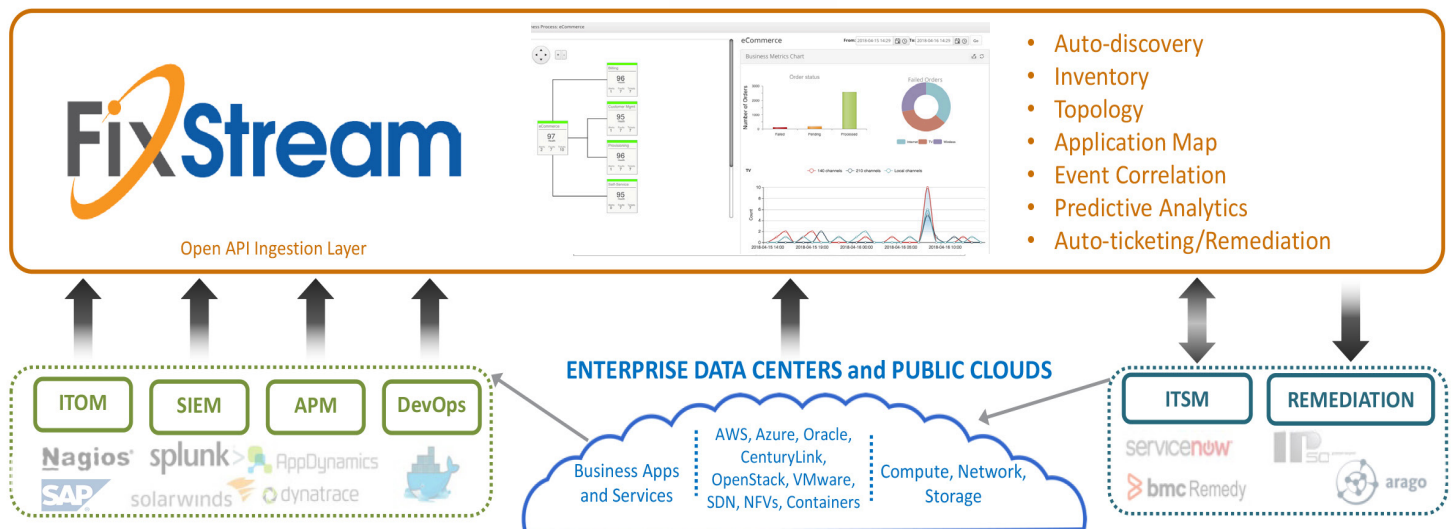
Dashboards are personalized views keeping the users' needs in mind. There are two categories of dashboards FixStream platform provides – business and operations. Business dashboards are tailored for CIOs and VP of business Ops to get insights into business process health and associated infrastructure health whereas operations dashboard widgets provide deep visibility into infrastructure.



Which Applications and Database Services Does FixStream Support?

MS SQL Server, MySQL, Weblogic, Microsoft Active Directory, Tomcat, Oracle Databases with RAC, Multi-Node Oracle EBS (Concurrent Processing, WebLogic and HTTP Server), IIS, Redis, Zookeeper, Kafka, Consul, SAP NetWeaver & Solution Manager, Hadoop, MongoDB, PostgreSQL, Apache, Cassandra, Couchbase, and other custom Java applications.

FixStream Enhances Your Existing IT Investment



FixStream’s connector ecosystem preserves your investment in IT operations and service management tools and provides end-to-end correlation with detailed visualization and analytics over application-to-infrastructure topology maps.



Advanced IT
Analytics Leader

Resources



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The FixStream AIOps platform has been commercially deployed at enterprises such as Airbus, BT, FirstAdvantage, and SPXFlow. Check the [resource page](#) for case studies and additional educational material.

The FixStream AIOps platform has also been recognized by major industry firms. In 2017, Gartner named FixStream a [Cool Vendor](#), Enterprise Management Associates named FixStream the Leader in Advanced IT Analytics, while Red Herring bestowed the company with both the [Global Top 100](#) and [North America Top 100 Awards](#), recognizing it as one of the globe's most exciting and innovative private technology companies.

FixStream is also included in the August 2017 Gartner Market Guide for AIOps Platforms.

Below are the opinions from leading AI analysts:

"FixStream's approach to infrastructure management is unique in that it addresses the user experience holistically – from the application to the infrastructure that supports it. The application of AI technologies to preemptively address user impacting issues before the user sees them is innovative, and combining such capabilities with an end-to-end management approach means that FixStream is likely to predict more faults before they can occur than other infrastructure management tools."

Mike Jude

Research Manager, Big Data Analytics, Stratecast - Frost & Sullivan

"EMA named FixStream a leader in Advanced IT Analytics after careful evaluation of its unique capabilities for mapping service interdependencies to business-driven objectives, breaking down the barriers of communication between IT and business operations."

Dennis Drogseth

Vice President, Enterprise Management Associates

"FixStream provides a powerful analytics platform that delivers the industry's first end-to-end view of transaction flows correlated with applications and infrastructure in hybrid IT environments. FixStream can be deployed in a few hours thanks to its out-of-the-box discovery of applications and delivers instant, tangible value to business and IT operations."

Bojan Simic

Founder and Chief Analyst, Digital Enterprise Journal

*Data provided by Digital Enterprise Journal (DEJ), 2017

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