Are you exploiting analytics to search and manage big data technologies

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Rapid growth of data from next generation technologies can be supported seamlessly on System z

System z scaling model and security to manage and optimize both

- Business Transactions
- Quality of Service
- Command & Control
- Facts and data “source of truth”
- System z

- Mobile and Social
- Dynamic
- Interactions and Collaboration
- Insight, trends, analytics
Analytics for System z addresses predict, search and optimize requirements on impact from new technology

• **Much greater amount of critical IT operational data** (SMF, log, journal) than distributed-only environments.
  - Focus on problem determination and time to resolution while placing premium on availability of services and applications.

• By 2016, **20% of Global 2000 enterprises will have IT operations analytics** architecture in place, up from < 1% today, looking to integrate across their enterprise to reduce outages (Gartner).

• **90% of the Fortune 1000 companies are running z** and have ‘Systems of Record’ dependencies for transactional processing and data serving applications.
Analytics strategy is now mission critical and impact bottom line results across all industries and IT

**Industries**

- Banking
  - Increase account profitability

- Insurance
  - Retain policy holders with better service & marketing

- Retail
  - Understand sales patterns

- Telecommunications
  - Reduce churn with custom retention offers

**Operations**

- Industrial
  - Predict maintenance issues before occur

- Retail
  - Improve store performance with P&L reports

- Telecommunications
  - Understand & manage network traffic

- Insurance
  - Streamline claims process

- Government
  - Reduce fraud and waste
Organizations using analytics have been shown to outperform competition and improve business results

More organizations are using analytics to create a competitive advantage

And leaders are outperforming their competitors in key financial measures

- **1.6x** Revenue growth
- **2.0x** EBITDA growth (pre-tax net income growth)
- **2.5x** Stock price appreciation

Source: Outperforming in a data-rich, hyper-connected world, IBM Center for Applied Insights study conducted in cooperation with the Economist Intelligence Unit and the IBM Institute of Business Value. 2012

Source: The New Intelligent Enterprise, a joint MIT Sloan Management Review and IBM Institute of Business Value analytics research partnership. Copyright © Massachusetts Institute of Technology 2011
IBM focused on managing end-to-end analytics for Big Data and applications across all platforms

**Business value**

- **Plan and optimize**
- **Faster problem detection and resolution**
- **Failure Risk Estimation and Avoidance**
- **Insight & Care**

**Breadth of Analytics**

**Predict**
- Predict anomalies based on events & logs
  - OMEGAMON & NetView with IBM zAware
  - SmartCloud Analytics - Predictive Insights

**Search**
- Relate Log-file search with alerts and metrics
  - SmartCloud Analytics - Log Analysis

**Optimize**
- Track applications & provide options on how to improve performance
  - Capacity Management Analytics (CMA)
Handle increased mobile workloads on z with improved data analytics for find and fix problems faster.

Performance Data

**Predict**

Avoid Outages and service degradation through early detection of abnormalities

Improve insight though the analytical discover of metric relationships and trends

Reduce root cause analysis by reducing time to isolate faulty components in complex infrastructure

Unstructured Data

**Search**

Identify problems quicker with insight to large unstructured repositories

Isolate problems quicker by bringing relevant unstructured data into problem investigations

Repair problems quicker with the right details quickly to hand.

[ibm.com/it-operations-analytics](http://ibm.com/it-operations-analytics)
Search for and rapidly analyze unstructured data to assist in problem identification, isolation and repair

SmartCloud Analytics – Log Analysis (System z)

- Faster Problem Identification and Isolation
  - Search and indexing of logs and data
  - Cross domain analysis

- Faster Problem Repair
  - Linking expert knowledge to log error/warning messages

- Improved Service Availability and Maintainability
  - Provide users with advanced insights into custom applications
Simplify and accelerate diagnostics and analysis of problems, and resolve before outage occurs.

SmartCloud Analytics – Log Analysis (System z)

Unified Views
- Data in context of problem being investigated
- Includes all relevant data and information
- Provide timeline and history analysis

- Logs
- Metrics
- Events
- Support Information
z/OS Log Analysis Insight Pack next step in IBM value add for zEnterprise performance and availability management

- Matching problem information across multiple logs
- Included in SmartCloud Analytics – Log Analysis

- Log Analytics
  - z/OS Insight Packs

- OMEGAMON
  - System and sub-system performance monitoring

- NetView
  - System/Network management and automation

Log Consolidation
Message Annotation
Global Search
Expert Advice
Unified Views
Client Testimonials


IBM SmartCloud Analytics - Log Analysis is a one stop shop to get a view of all logs generated by various applications and to correlate them to find the root cause of the problem quickly. We find this ability very exciting as it allows us to gain insights on the log files and predict roadblocks in advance. We also like the open architecture of the platform to integrate additional application logs into our problem resolution processes.

per Persistent Systems

IBM SmartCloud Analytics - Log Analysis is a Game Changer for us, we can now analyze our log files faster for better customer insights and intelligence.

per Barclays Bank

SmartCloud Analytics Log Analysis for customer insight & intelligence

SmartCloud Analytics to Reduce IT Problem Determination to Minutes

SmartCloud Analytics to Pinpoint App issues
Handle more complex workloads with increasing metrics for early prediction of problems

- New next-generation **behavioural learning** and predictive analytic solution.
- Discovers how IT and Network infrastructure related from **holistic viewpoint**.
- Maximizes **early detection** of problems manifest in performance and monitoring data before service or business is disrupted (**enabling prevention**)
Predictive Insights

Proactive and self-learning Performance and BSM intelligence from IBM

- Real-time analytics for detecting and avoiding service disruption.
- Uses advanced Watson analytic multivariate and univariate algorithms.
- Correlates metric across multiple domains and heterogeneous data sources.

- Leverages IBM Big Data & Smart Planet technology
- Embeds InfoSphere Streams, IBM’s unique streaming analytic engine
- Enables ultra-high scalability commodity server computing clusters and large algorithm sizes to maximize machine intelligence value
- Quickly integrate to any monitoring source
- Works in non-IBM environments, as well as integrating tightly with the IBM suite.
Predictive Insights (PI) Analytics reports on events and anomalies that could cause future problems

Using SmartCloud Analytics – Predictive Insights

- Operations teams can now focus more on prevention!
- Predictive Insights can consume data from distributed and mainframe systems
Telecommunications

Domain: Network Core
- Performance metrics from IP/MPLS serving triple play services. Source: non-IBM monitor
- 80,000 health metrics

Objective
- Detect abnormal behaviour
- Avoid outages, reduce duration and provide fast diagnosis of root cause

Results
- Detected 100% of major incidents, including silent failures
- Caught abnormal behaviour, such as DoS attacks, unscheduled maintenance, and failure of customer premise backups

ROI: > $250K
- Savings calculated from outage avoidance, reduction and fast root cause analysis

“Detected 100% of major incidents, including silent failures”

“Caught a DoS attack propagated through their network”

“Caught abnormal behaviour, including the failure of backup systems at a client”
Predictive Analysis with IBM zAware – Log Analytics on System z using Anomaly Detection

- Save money by ensuring z/OS availability (decrease time to perform problem determination and lower Mean time to Repair)
- Problem isolation and management (NetView/OMEGAMON) and event visibility (OMNIbus)
Optimize Big Data and applications to create knowledge for easier business and IT planning

Capacity Management Analytics (CMA) solution

- Analytics, monitoring and management across Big Data on System z environment including CICS, DB2, IMS, WAS

- Insights into operations with TDSz, SPSS and Cognos

- Focuses on data related to System and Workload Characteristics, Performance and Trending

- Provides recommendation to optimize Systems and Workloads based on Predictions and Forecasting

IDC forecast projected worldwide big data technology and services market will grow at 31.7% CAGR - 21.1% services and 53.4% storage.

Capacity Management Analytics supports key customer requirements for improved business agility

- **System/Workload Characteristics, Performance and Trending**
  - What’s driving demand?
  - Capacity constraints causing bottlenecks and what’s being impacted
  - Anomalies occurred that impacted resource usage and/or performance

- **System/Workload Optimization, Prediction and Forecasting**
  - Available capacity to move workloads / applications to alleviate bottlenecks
  - Balance resource usage across servers/LPARs/VMs and defer capacity upgrade
  - Enough available capacity to add new workloads/applications to current environment
IBM Capacity Management Analytics provides cost effective, optimal use of zEnterprise capacity

**A single, integrated cost effective solution**

- System Management:
  - Problem Identification & Resolution
  - Capacity Forecasting & Monitoring

**Manage the complete time horizons**

- Historical reporting of past performance
- Forecasting future requirements
- Rite-time optimal decision making

**Jumpstart your time to value & ease implementation.**

- Built on IBM’s easy of use analytics
- Includes prepackaged, interactive reports
  - Optional services and education
Dashboard & report capabilities provide executives, managers, capacity & performance specialists with custom views
IBM Capacity Management Analytics: Predictive Analytics, Capacity Forecasting & Real-time Scoring

- Predictive analytics helps organizations use data to make better decisions
  - Draw reliable, data-driven conclusions about current conditions and future events.
- Requirements forecasted to ensure sufficient capacity available when business needs it.
- Real-time scoring of transactions performed enabling comparison to forecast.
IBM System z analytics improving ability to reduce risks by adding capability over time

- Operators and subject matter experts overwhelmed with volumes of data to be manually processed
- Enhance current tools with analytics for more efficiency and productivity
- Add additional analysis capability over time

Gain insight into entire end-to-end workload

CMA - Capacity Management Analytics
Learn more about Analytics on z at Pulse 2014

- System z track: Over 40 sessions
  - Customer, Analyst and Business Partner Sessions
- Meet the Experts
- Demos and Hands on Labs

2014 IBM zEnterprise Technology Summit

Build a stronger business with the latest innovations in mainframe technology

New technology is stretching IT budgets in many directions, forcing IT to find better ways of meeting business demands in increasingly complex data centers. With enterprise technology from IBM, you can continue to advance and close the gaps between where you are and where you want to be. Attend the IBM zEnterprise Technology Summit and you'll come away with plenty of valuable information that will help you continue your own trek to the summit.

We'll show you how the unique capabilities of zEnterprise solutions fit into an enterprise private cloud, how integrated analytics can support better decision-making and new choices for delivering services faster and with more flexibility.

At the full-day zEnterprise Technology Summit, you'll learn from real-world scenarios, live demonstrations and in-depth presentations. We'll discuss many "out of the box" benefits in the zEnterprise portfolio of products, with practical tips, best practices and guidance on major topics of concern to IT professionals, as well as developing long-term strategies for implementing what you learn in this seminar.
Additional links for more information

Developerworks –
Cloud computing
http://www.ibm.com/developerworks/cloud/

Log Analysis
https://www.ibm.com/developerworks/community/groups/service/html/communityview?communityUuid=876cf3b6-6b03-4227-a7d8-4391d0948f79

Predictive Insights

Capacity Management
website has not been created yet.
Thank You

Learn more:

http://www-01.ibm.com/software/os/systemz/itsm/