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The Forrester Wave™: Data Center Automation, Q2 2008

by Evelyn Hubbert
for IT Infrastructure & Operations Professionals



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HP Is The Unified Data Center Automation Front-Runner; BladeLogic And BMC Follow Close Behind

by **Evelyn Hubbert**

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EXECUTIVE SUMMARY

Data center automation (DCA) solutions allow IT organizations to automate a variety of workflows that support configuration and change management processes across IT infrastructure. In Forrester's 80-criteria evaluation of DCA vendors, we found that HP leads the pack because of its breadth of solution in a very competitive DCA market. BladeLogic is in hot pursuit, but with a less compelling suite approach to manage an entire server, network, application, and storage environment. BMC has a well-rounded offering with a very strong process automation flow thanks to its recent acquisition of RealOps and the integration of that solution into the BMC DCA offering. IBM has significantly improved its DCA solution with the integration of additional workflows and discovery and mapping capabilities. CA, with the introduction of its product and the combination of discovery solutions, is well positioned to satisfy customer needs. Novell and mValent are both great alternatives in DCA, each representing a strong standalone DCA solution.

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Forrester conducted product evaluations in January 2008 and interviewed seven vendor and user companies: BladeLogic, BMC, CA, HP, IBM, mValent, and Novell. We also interviewed 14 enterprise IT organizations that served as references for these DCA offerings.

Related Research Documents

["Data Center Automation Defined"](#)

February 26, 2008

["Next-Generation Data Centers"](#)

August 23, 2007

["The Future Of Data Center Automation"](#)

February 3, 2006

EVERY DATA CENTER NEEDS AUTOMATION

Even with IT budgets largely flat, end users and lines of business rely on computing resources and services to get their jobs done.¹ To best meet these rising demands, IT will increasingly operate like a service provider, with the goal of providing better and faster services to its client while continually reducing cost and improving efficiency. In a perfect world, the resources would actually manage themselves, but in reality, IT departments must spend a significant amount of time provisioning and deploying resources to meet the demands of their business. A key component of overall IT costs and meeting service levels is the amount of labor spent on maintaining and continuously improving the IT environment. The major pain points in data centers today are:

- **Understanding what resources are available.** Most IT organizations keep information about their configuration items in a variety of different formats and locations, resulting in inadequate tracking of configuration-related information. This lack of knowledge makes it difficult to understand the impact of changes made to components in the IT organization and leaves some important changes unrecognized.
- **Facing the challenges of change.** IT's ability to introduce new services, provision and configure operating systems, redeploy servers, keep servers up-to-date, and potentially refresh servers are cost- and labor-intensive challenges IT faces today.
- **Reducing cost and labor.** As organizations maintain or even shrink their IT budgets, pressure increases from one budget cycle to the next for IT to reduce costs by cutting manual time and effort but still deliver the same customer satisfaction.
- **Following processes.** Following processes with well-defined inputs and outputs is unfortunately still an issue in many reactive IT organizations.

DCA Helps Automate IT Systems Management Process Across Technology Domains

Data center automation is a major contributor in the ongoing battle to drive down costs through increased automation. Forrester defines data center automation as:

A combination of methods that enable hardware, software, and processes to work together to streamline IT operations. It automates highly manual processes, which assists both the IT operations and IT service management teams in delivering services from design to operations and maintenance.²

Data Center Automation Suites Contain Four Functional Areas

Today's data center automation solutions provide IT with the functionality to automatically deploy, provision, change, and configure IT system resources. Early DCA tools automated a set of IT operations within specific technology domains, but the next-generation DCA tools span technology domains and incorporate four key functional areas:

- **Comprehensive discovery.** With dependency mapping capabilities and configuration item reporting capabilities, new DCA solutions incorporate comprehensive discovery that can automate the identification of and relationships between IT resources such as servers, applications, networks, storage, and databases.
- **Configuration and change management.** Once IT assets are discovered, the change and configuration management function combines the processes of collecting the configuration information and ensuring the recording of changes to configurations.
- **IT process orchestration.** This is a set of workflows and automation scripts that facilitates IT operations to automate routine, labor-intensive, and error-prone tasks, leveraging systems, applications, and tools across silos in the operations environment, including trouble ticketing, fault management, performance monitoring, management of the virtual environment, and more.
- **Change control.** Changes in IT mean that IT must implement automated preventive, detective, and corrective controls to eliminate exposure and reduce risk by enforcing change and/or configuration policies supporting regulatory pressures or internal audit pressures. Additionally, IT must control exposures to security threats and the continuous identification and validation of changes to ensure the configurations remain in a known and trusted state, which helps to identify and eliminate risks.

Point Solutions For Data Center Automation

One fairly new brand of configuration management tools is designed specifically to manage changes to a specific domain area, such as application infrastructure and the virtual environment; these are excellent point solutions. We evaluated two such vendors, mValent and Novell. There are a variety of other tools that focus on the network space, database space, and storage space. Many of these solutions can be integrated with other IT management solutions, such as HP/Opware, IBM, or BMC.

DATA CENTER AUTOMATION EVALUATION OVERVIEW

To assess the state of the data center automation market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top DCA vendors.

Evaluation Criteria Focus On Solution Components, Integration, And Architecture

After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against approximately 80 criteria, which we grouped into three high-level buckets:

- **Current offering.** To assess the strength of the vendors' suites, we evaluated each offering against a variety of criteria: discovery of the environment, change and configuration management, application configuration, IT process automation, compliance and change control, architecture details, integrations with ITSM and IT operation management solutions, partnerships and resources for support, and pre- and post-sales support across the world.

- **Strategy.** We considered how well each vendor's plans for solution enhancement position it to meet future demands for service automation, and furthermore, the credibility of its vision.
- **Market presence.** To establish a vendor's market presence, we combined information about each vendor's customer base, revenues, and adoption rate.

Evaluated Vendors Offer A Comprehensive Suite Of Data Center Automation Tools

Forrester included seven vendors in the assessment from November 2007 to March 2008: BladeLogic, BMC, CA, HP, IBM, mValent, and Novell. Each of these vendors has (see Figure 1):

- **A comprehensive suite of DCA technology.** The vendors have generally available capabilities in three of the following four categories: discovery of configuration items; change and configuration management capability for server, applications, and networks; IT process automation; and compliance and change control.
- **Significant revenue.** The vendors all have a minimum of \$10 million in revenue specific to DCA.
- **Client interest.** We have received at least 10 client inquiries on each vendor in a six-month period.

DATA CENTER AUTOMATION HAS MATURED INTO SERVICE AUTOMATION

The evaluation uncovered a market in which (see Figure 2):

- **HP software and BladeLogic lead the pack.**³ With the acquisition of Opsware, HP's DCA solution continues to grow its leadership position, while BladeLogic adds functionality to its product to fight for the top position. HP holds the advantage due to the breadth of its solution. The speed of integration of Opsware into the broader HP solution portfolio is a unique differentiator. HP has superior integration among its HP Server Automation, Network Automation, and Storage Essential software products — all surrounded with the Operations Orchestration and Service Automation Reporter software. BladeLogic's automation software does an excellent job of managing the entire life cycle of servers in the data center. Its solution portfolio addresses virtualization management, application release management, and compliance assurance.
- **BMC is taking steps to gain visibility.** BMC's DCA solution set is a variety of acquired and homegrown solutions put together for the purpose of automating a service. With its recent acquisition of RealOps, BMC provides vendors with the capability of automating any process in the IT infrastructure. Additionally, BMC acquired Emprisa, a change and configuration management solution for the network space. The IT process automation and network change and configuration management solutions, together with the already-existing BMC

Configuration Automation for Servers — which BMC received in its Marimba acquisition — provide a good alternative to HP. As of March 17, 2008, BMC has signed a definitive agreement to purchase BladeLogic. We will describe the combination of solutions in an upcoming report, as these details were not available at publishing time for this report.

- **IBM is right on the DCA path as well.** IBM's data center automation solution is mostly driven by its Tivoli Provisioning Manager (TPM), with a new release in January 2008. TPM can manage virtualization technologies, SAN- and NAS-based storage resources, and network devices acting as routers, switches, firewalls, and load balancers. The key strength of TPM is that it allows for the creation of automation packages to perform tasks that can be used again later. It integrates well with the discovery and mapping solution of the IBM Tivoli solution and uses configuration information stored in the Tivoli Change and Configuration Management Database (CCMDB).
- **CA is just getting started.** Recently, CA introduced its Data Center Automation Manager, which is part of its dynamic and virtual systems management solution and is directed at the automation of the data center. DCA capabilities include change and configuration management, discovery and asset management, provisioning, patching, and workload automation. With these solutions along with integration into CA's CMDB, CA put itself among the roster of key DCA vendors. The solution has just been introduced in December 2007 and will continue to gain functionality in future releases as the vendor receives input from its customers and has to respond to the competitive alternatives to stay in the race.
- **mValent is an excellent alternative for a specific subject area.** mValent is a client server application that provides configuration management for the application layer. The solution excels at the automation of application configuration files from application development to deployment. mValent Integrity allows for synchronization of development environments with deployment environments, providing a more efficient way of moving applications from development into production.
- **Novell ZENworks products are growing into a DCA suite.** Novell ZENworks Orchestrator, which is the brain behind Novell's multiple ZENworks data center management automation products, handles resource management, job management, dynamic provisioning, policy management, accounting and auditing, and real-time availability in the virtualized environment. Its recent acquisition of PlateSpin adds to the Novell⁴ portfolio of virtualization management offerings. PlateSpin PowerConvert is a workload optimization solution, PowerRecon is an analysis and capacity planning solution that examines an IT environment to determine the best way to integrate virtualization, and PlateSpin Forge is a disaster recovery solution.

This evaluation of the data center automation market is intended to be a starting point only. Readers are encouraged to view detailed product evaluations and adapt the criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool.

Figure 1 Evaluated Vendors: Product Information And Selection Criteria

| Vendor | Product evaluated | Product version evaluated |
|------------|---|---------------------------|
| BladeLogic | Application Release Manager | 7.4.2 |
| | Operations Manager | 7.4.2 |
| | Orchestration Manager | 7.4.2 |
| | Virtualization Manager | 7.4.2 |
| BMC | BMC Configuration Automation for Servers | 7.2 |
| | BMC Configuration Automation for Networks | 4.1.24 |
| | BMC Run Book Automation | 2.6 |
| CA | CA AutoSys | r11 |
| | CA CMDB | r11.1 |
| | CA Data Center Automation Manager | r11.1 |
| | CA Service Desk | r11.2 |
| HP | HP Network Automation software | 7.1 |
| | HP Operations Orchestration software | 7.0 |
| | HP Service Automation Reporter software | 7.0 |
| | HP Service Automation Visualizer software | 7.0 |
| | HP Server Automation software | 7.0 |
| | HP Storage Essentials software | 6.0 |
| IBM | CCMDB | 7.1 |
| | TADDM | 7.1 |
| | TPM | 5.1.1 |
| mValent | mValent Integrity | 5.0 |
| Novell | ZENworks Asset Management | 10 |
| | ZENworks Configuration Management | 10 |
| | ZENworks High Performance Computing | 1.1 |
| | ZENworks Orchestrator | 1.1 |
| | ZENworks Patch Management | 10 |
| | ZENworks Virtual Machine Management | 1.1 |

Vendor selection criteria

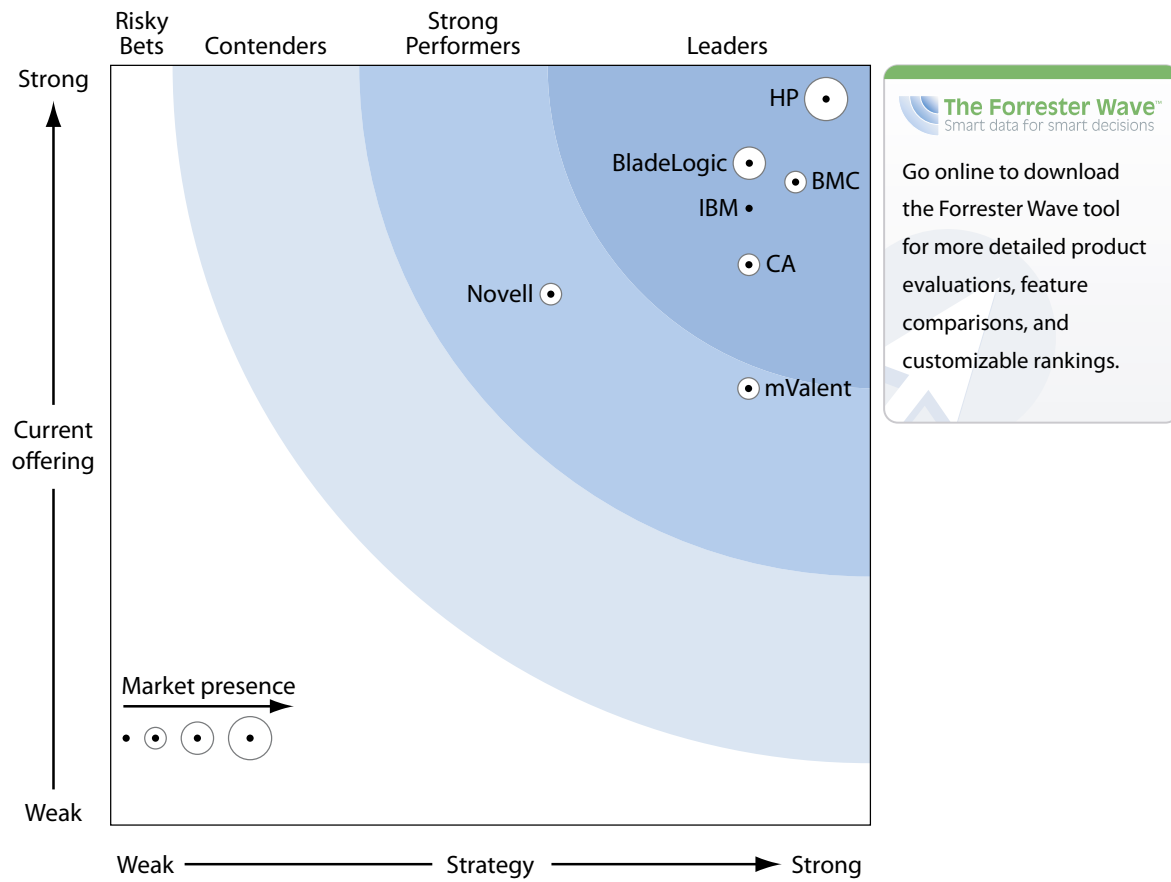
A comprehensive suite of DCA technology. The vendors have generally available capabilities in three of the following four categories: discovery of configuration items; change and configuration management capability for server, applications, and networks; IT process automation; and compliance and change control.

Significant revenue. The vendors all have a minimum of \$10 million in revenue specific to DCA.

Client interest. We have received at least 10 client inquiries on each vendor in a six-month period.

Source: Forrester Research, Inc.

Figure 2 Forrester Wave™: Data Center Automation, Q2 '08



Source: Forrester Research, Inc.

Figure 2 Forrester Wave™: Data Center Automation, Q2 '08 (Cont.)

| | Forrester's Weighting | BladeLogic | BMC | CA | HP | IBM | mValent | Novell |
|-------------------|-----------------------|------------|------|------|------|------|---------|--------|
| CURRENT OFFERING | 50% | 4.35 | 4.23 | 3.69 | 4.80 | 4.05 | 2.88 | 3.50 |
| Solution | 70% | 4.35 | 4.16 | 3.60 | 4.76 | 4.06 | 2.87 | 3.46 |
| Architecture | 20% | 4.08 | 4.31 | 3.66 | 5.00 | 3.66 | 3.10 | 3.42 |
| Support | 10% | 4.90 | 4.55 | 4.40 | 4.65 | 4.80 | 2.45 | 3.90 |
| STRATEGY | 50% | 4.20 | 4.50 | 4.20 | 4.70 | 4.20 | 4.20 | 2.90 |
| Product direction | 100% | 4.20 | 4.50 | 4.20 | 4.70 | 4.20 | 4.20 | 2.90 |
| MARKET PRESENCE | 0% | 3.90 | 2.50 | 2.90 | 4.40 | 0.90 | 2.30 | 2.80 |
| Product cost | 0% | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| Financials | 100% | 3.90 | 2.50 | 3.30 | 4.40 | 0.90 | 2.30 | 2.80 |

All scores are based on a scale of 0 (weak) to 5 (strong).

Source: Forrester Research, Inc.

VENDOR PROFILES

Leaders: HP, BladeLogic, BMC, IBM, CA

- **HP.** HP's Data Center Automation Center solution portfolio began as a leading network and server provisioning solution. Today, after the integration of Opsware into HP, it focuses on visualization technology, operation orchestration, network automation, server automation, storage automation, reporting, and community setup, with which you can receive security updates and policy checks. HP Data Center Automation Center offers the best integration to automate the manual practices used today in a data center. The speed of integration of the DCA solution with the rest of HP software pieces such as the UCMDB makes this solution set a more unified suite. HP's DCA multimaster/satellite architecture is one of the strong points of the solution as it allows for scalability and replication.
- **BladeLogic.** BladeLogic was founded by industry veterans with a background in managing complex, globally distributed data centers. The vendor's product can efficiently provision, configure, and manage sophisticated data center environments. Its strong cross-platform GUI and flexible command-line interface enables the provisioning of Unix, Linux, and Windows servers and connected applications. It allows for policy-based changes and manages the change management process from testing to production with a centralized platform.
- **BMC.** A veteran in IT management, BMC has really started to push its DCA solution since its acquisition of RealOps, a vendor that specialized in IT process automation. BMC approaches the DCA space with an excellent IT process automation solution that is used to automate a

variety of workflows inside the data center. This approach is very suitable for organizations that want to implement a variety of automations across provisioning, patching, remediation, drift control, and configuration tracking in a complex environment. Its recent acquisition of Emprisa expands the solution to the networks. However, more work on integration is still to be done. The news that BMC has acquired BladeLogic requires some rationalization of the server provisioning tools, but the combination will certainly make BMC an even stronger vendor in the service automation space.

- **IBM.** The three main components of IBM's DCA solution are Tivoli Provisioning Manager (TPM), Tivoli Application Dependency Discovery Manager (TADDM), and the Tivoli Change and Configuration Management Database. These solutions are well integrated to discover the configuration item and make changes to the CI via an established workflow, while updating the configuration information in the CCMDB. TPM orchestrates complex provisioning tasks through workflows. The integration of the Tivoli Configuration Manager (TCM) allows for the deployment of software packages and changes to configuration settings. IBM has a solution with a very good IT process automation capability and strong compliance and change control features.
- **CA.** CA's DCA solutions are still evolving. The first release of its Data Center Automation Manager is still missing integrations, rollback capabilities, and prescreening capabilities. Its integration with CA's change management solutions plus job scheduling tools is good, but at this point it's not a solution set you would select by itself. For shops that use other CA products like Clarity, Unicenter Software Delivery, Unicenter Service Desk, and CMDB however, it's worth sacrificing DCA bells and whistles for the sake of integrated change management from inception through support.

Strong Performers: mValent Novell

- **mValent.** For managing configurations and automating migrations and workflow processes on application servers, mValent is the right choice. Among its best features are practice templates that include definitions and specifications designed for the application server platform, automatic verification, and application server replication.
- **Novell.** Novell is certainly new to the data center automation space but not to managing server life cycles. The roots of ZENworks come from a portion of Intel's LANDesk Manager, which Novell licensed from Intel. ZENworks is a suite of nine products that includes patch management and server management. The key DCA product, ZENworks Orchestrator, is for managing — or orchestrating — both the physical and virtual parts of the data center. Novell's strength lies in simplifying the administration and balancing the resources of the virtualized computing environment. Its recent acquisition of PlateSpin confirms its path and vision; hopefully integration details will be available soon.

SUPPLEMENTAL MATERIAL

Online Resource

The online version of Figure 2 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings.

Data Sources Used In This Forrester Wave

Forrester used a combination of two data sources to assess the strengths and weaknesses of each solution:

- **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.
- **Customer reference calls.** To validate product and vendor qualifications, Forrester also conducted reference calls with two of each vendor's current customers.

The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave document — and then score the vendors based on a clearly defined scale. These default weightings are intended only as a starting point, and readers are encouraged to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve.

ENDNOTES

- ¹ Global purchases of IT goods and services — which equal IT vendors' revenues — will equal \$1.7 trillion in 2008, growing by 6% after a 12% increase in 2007. A declining US dollar boosted 2007 growth rates and will do so in 2008 as well; measured in euros, global IT purchases growth will be 4%. See the February 11, 2008, "[Global IT 2008 Market Outlook](#)" report.
- ² Operating a data center not only requires the daily assistance of people who have deployed a variety of tools, but it also calls for a variety of processes and best practices to ensure smooth data center operations. While IT budgets are largely flat, end users and lines of business reliant on computing resources and services to get jobs done are making more demands. To best meet these rising demands, IT should act like a service provider with the continuous goal of providing better and faster services to its clients while reducing costs and improving efficiency. See the February 26, 2008, "[Data Center Automation Defined](#)" report.
- ³ On March 17, 2008, BMC announced plans to acquire BladeLogic for \$800 million. In this report, we evaluated BMC and BladeLogic separately, as our evaluation period for each vendor was complete and the acquisition was not closed at the time.
- ⁴ On March 31, 2008, Novell announced plans to acquire PlateSpin. In this report, we evaluated only Novell, as our evaluation period for the vendor was complete and the acquisition was not closed at the time.

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