



Full Life-Cycle Configuration Management

In BMC Alignability for Service Desk Express (SDE)

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INTRODUCTION

In the United States, an increasing number of small- to medium-sized organizations have adopted the ITIL framework for IT Service Management. In a poll RightStar conducted during a recent Configuration Management Database (CMDB) webinar, approximately 65% of respondents confirmed that ITIL has been identified and at least partially embraced within their organizations as a framework for service management. But although ITIL tells IT departments what they should be doing in general terms, it doesn't provide much in the way of specific instructions. IT organizations face two major challenges: the capture of asset and configuration management information and the preservation of data accuracy. ITIL guidance states that discovery technology is a requirement for verifiable configuration management data. But what about assets that cannot be identified over the network, such as items in inventory or printers? And even if IT can identify their existing infrastructure components, it can be difficult to establish and maintain accurate relationship and responsibility information for the individual assets.

The ITIL framework also requires that our assets or configuration items (CIs) be under the control of the change management process. IT establishes a CI baseline record for comparison to a future state. Eventual reports should show that current CI records represent the historical CI baseline record plus any records of authorized changes to that CI. If not, then it indicates that unauthorized changes are occurring within the infrastructure. Unauthorized or poorly managed changes can be costly to an organization and are a major risk factor to effective IT service management.

In this whitepaper, we will provide guidelines for good configuration and change management practices based on both ITIL and the real-world experience of hundreds of SDE customers.

ITIL OVERVIEW

1. IT SERVICE ASSET AND CONFIGURATION MANAGEMENT

In order for an IT organization to be fully efficient and effective, it must manage its service-related assets well. The full lifecycle of an asset should be managed from the point of acquisition through disposal. The value of effective IT service asset and configuration management (ITSACM) to the business is recognized by the optimization of performance for systems and components and by the mitigation of risks caused by poor management, which could lead to service outages and failed audits. Good ITSACM is also critical to compliance in terms of accurate accounting and record keeping as well as for reporting who has access to data in sensitive or secure systems.

2. CHANGE MANAGEMENT

In ITIL terms, Change Management is the core of the Service Transition phase of the Service Management lifecycle. Regardless of an organization's familiarity with or adoption of ITIL as a governing framework, change management is recognized as an important process for managing modifications to the infrastructure. Change Management minimizes disruptions to IT services and reduces overall risk for the organization. The Change Management process is scalable to the size of the organization and the complexity of the change. Guidelines dictate that requests for change should be evaluated and assessed, appropriate approvals should be granted prior to the start of work, and implementation should be conducted according to established protocols.

In the Service Transition phase of the Service Management lifecycle, Change and Configuration Management are very closely connected. Change Management relies upon an accurate configuration management system (CMS) for effective risk impact analysis; it is important to understand CI relationships when evaluating how a change to a component will affect other related components, systems and services. Likewise, Configuration Management requires that all CIs be under the control of Change Management. This provides an accurate comparison between a baseline and the current state of a CI.

3. TECHNOLOGY CONSIDERATIONS

The ITIL framework provides guidance for IT Service Management technology or toolsets, identifying core requirements and options. The necessary modules include:

- A self-help or self-service interface
- A workflow or process engine
- An integrated configuration management system (CMS)
- Automated discovery technology
- Remote control capabilities
- Reporting

Additionally, specific recommendations are provided for the Configuration Management System (CMS), which may be made up of one or more federated data sources or Configuration Management Databases (CMDBs). ITIL advice states that the CMS should support:

- Categorization of different types of CIs
- Establishment and maintenance of relationships between CIs
- Ability to easily update status of CIs
- Integration to automated discovery tool(s), change management, problem management and incident management records
- Flexible reporting capabilities to facilitate impact analysis of related CIs

BMC ALIGNABILITY FOR SERVICE DESK EXPRESS

BMC Alignability for Service Desk Express (SDE) enables organizations to capture and manage the complete state of their assets, from beginning to end. Built around ITIL good practices, Alignability for SDE is a web-based solution that is scalable and easy to implement. BMC's suite of products integrates configuration management with change management, incident management, problem management, purchasing, and reporting. SDE's built-in Business Rules engine provides a graphical interface for automating process workflows including notifications, approvals and dynamic on-screen guidance. By providing IT departments with access to configuration information, the Service Desk will resolve support requests faster, Purchasing will make informed buying decisions, and Facilities will be able to better manage the infrastructure. The following sections examine the configuration management features of Alignability for SDE and its suite of product options in more detail.

1. PROCESS DEFINITION: ALIGNABILITY PROCESS MODEL (APM)

IT organizations face increasing pressure to maintain IT infrastructure for the business while reducing costs and improving the quality of services provided. Staff members spend much of their time firefighting, dealing with day-to-day operations, and have little time to spend on process documentation or review.

ITIL provides a strong basis for IT service management improvement in theory, but does not offer specific guidelines that take tool-specific resources and capabilities into consideration. BMC Alignability for Service Desk Express gives service providers practical, detailed, and accessible procedure flows and work instructions to ensure system and process adoption. APM bridges the gap between ITIL theory and a supporting service management application.

In addition to the accessible, web-based documentation, APM provides an implementation methodology as well as a fully tailored interface with workflow rules and SDE form modifications enabled out-of-the-box. Process consultants assist IT organizations through training, process awareness and data gathering workshops to guarantee an ITIL-compliant system as well as staff members who are prepared to use it.

2. CONTROL: CHANGE MANAGEMENT

One of the most important considerations for managing CIs is to ensure that they are under the control of the change management process. The current state of any CI should reflect the recorded baseline plus any approved changes recorded for and made to that CI. Additionally, requirements for new CIs are most often identified during the handling of requests for change.

If a Service Desk analyst or other IT staff member receives a request for fulfillment of a new service, this request should be logged as a request for a change to the IT infrastructure. It may be a standard change, such as a new hire request, which is low risk, has a prescribed workflow and does not require an additional approval process.

If it is a non-standard or “normal” change, then appropriate risk analysis and assessment should be assigned to and conducted by technical subject matter experts. Once assessments are collected, approvals should be gathered from the proper business and IT management levels. These requests for change, assessments and approvals should be reviewed during regular Change Advisory Board (CAB) meetings, normally scheduled weekly. Once the CAB gives the go-ahead, work orders can be assigned to the technicians who will design, build, test and implement the change within the next available maintenance window.

Emergency changes should follow the same workflow as normal changes. Since emergency changes are designated for updates that fix a production outage or problem with significant business impact, however, timeframes are condensed. If practical, an emergency CAB meeting is called outside of the normal weekly schedule and dispensation may need to be granted by the business for the work to be done outside of regularly scheduled and agreed-upon maintenance windows. It may alternately be necessary for a technician to implement an emergency change with the approval of the service owner before the request is generated. Key here is that the guidelines are well-documented and that individuals are held responsible for following the process.

3. REQUEST: PURCHASING

According to ITIL’s outline of change documentation, change request records often trigger purchase requests. In order to affect a particular change, it may be necessary for IT to procure or purchase additional resources or components. Once a purchase request is triggered and linked to a change request record, the purchase request process may in turn have its own approval assignments and workflows outside of the Change Management process.

SDE provides a Purchasing module, which allows for the creation and linking of purchase requests to standard or normal changes. Standard changes, which are pre-authorized and do not require approval by the change advisory board, may be handled as part of the normal Incident Management process. Therefore, there is a link from Incident records directly to Purchase Request records. Normal changes, which are not pre-authorized, must go through the full process of Change Management. For normal changes, Purchase Requests are linked to tasks or Work Orders associated to the Change Request record.

Multiple Purchase Requests may be created for and linked to a Work Order or Incident record. It may be necessary, for example, to separate Purchase Requests by supplier. Or it may be desirable to separate requests by type; for example, to have separate requests for software and hardware, especially if different individuals are required to provide approvals for these different types of CIs.

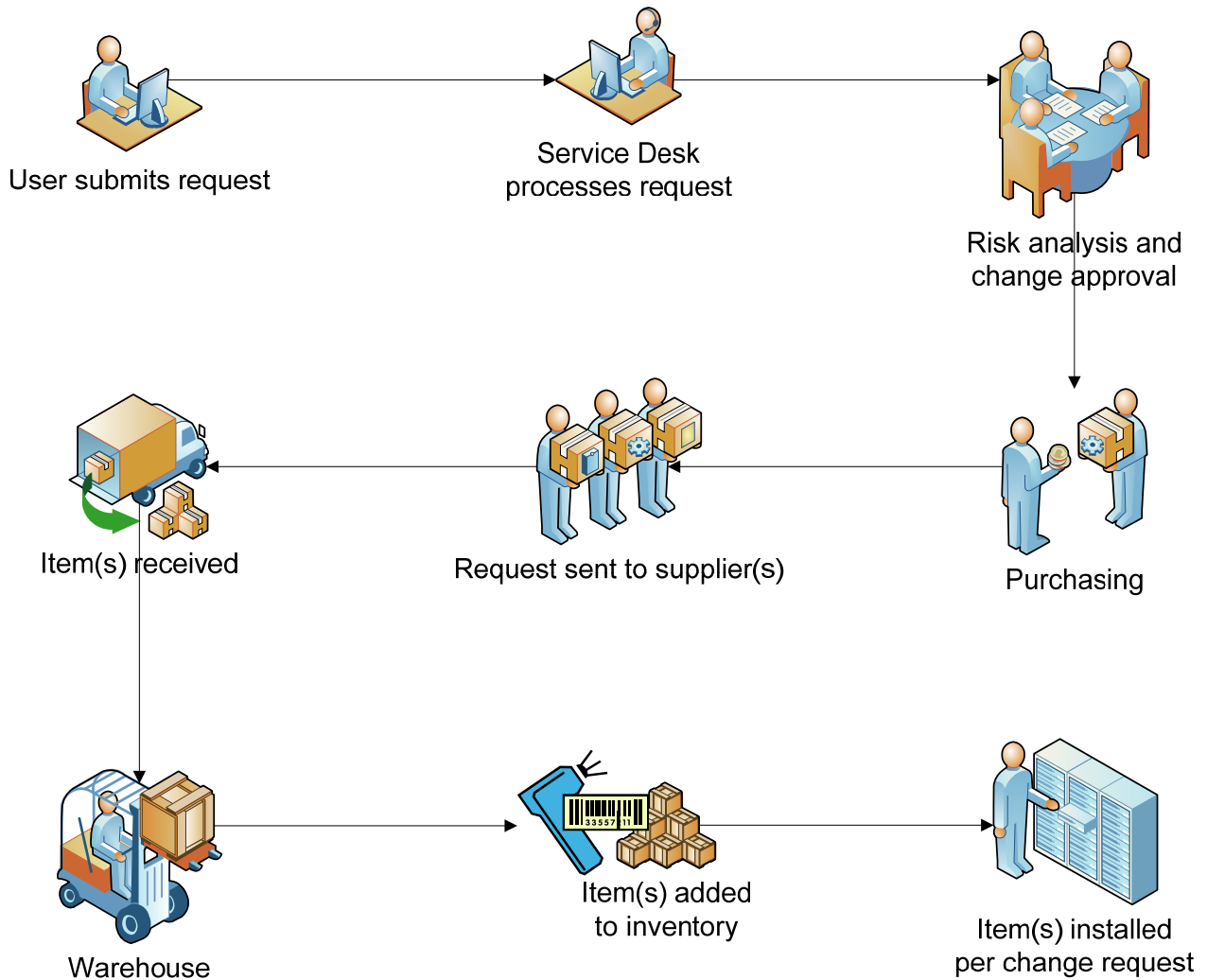
When Purchase Requests are created for the fulfillment of a change, the submitter has the ability to select the particular configuration type and the quantity. The configuration type may have a standard list price and associated supplier. Adjustments can be made to reflect the quantity ordered, discounts or updated unit pricing. As items are added to the Purchase Request, the Total Cost will automatically update to reflect the cost of all items plus any tax or shipping amounts.

Once the request is ready for approval, the submitter should take action on the record, which will trigger the appropriate workflow process. Depending on the organization, the dollar amount and the type of equipment ordered, there may be a single or multiple-step approval process. As each level of approval action is registered on the purchase request, notifications and requests for review can be sent to the next level of authority. If a purchase is rejected or denied, a notification should be sent back to the submitter.

When the status of the purchase request, based on the actions taken, reflects that the purchase is approved and the order is ready to send to the supplier, a purchase order can be generated through the Print Preview button available on the Purchase Request form. This purchase order structure, a Crystal Report, can be modified as necessary by the SDE administrator or reports development staff member to reflect the needs of the organization to include organization logos and other purchase order requirements.

Ideally CI information is captured before the component is installed in the organization's infrastructure. Therefore when the purchase request is fulfilled, it is important to capture the receipt of equipment for tracking and purchase reconciliation. When handling large purchases, manual data entry would be time consuming and susceptible to human error. In order to complete the purchasing process and to receive incoming IT assets more efficiently and accurately, it is recommended that an automated barcode scanning process be employed.

FIGURE 1: CI REQUISITION & INSTALLATION



4. DATA ENTRY: BARCODE SCANNING WITH MAGICWAND

MagicWand is a barcode solution integrated with IT service asset data and managed using SDE's configuration management capabilities. MagicWand provides access to data from the following modules:

- Buildings and Rooms
- Configuration Items
- Clients
- Staff
- Actions
- Suppliers
- Configuration Types

MagicWand complements auto-discovery software tools, which can identify inventory items, but cannot always locate them.

To be effective, a CMDB must be accurate. Barcode scanning provides a low-cost, highly reliable method of ensuring database integrity, especially among mobile assets and assets that are not easily discoverable. MagicWand, developed by RightStar Systems and designed specifically for use with SDE, is a software module designed for mobile computing PDAs or barcode readers to more accurately track computers, equipment, furniture, and other resources.

Using SDE's CMDB, MagicWand downloads configuration, location, and client data into a Palm OS- or Pocket PC-based barcode scanner. Scanners are typically deployed in the warehouse for the receipt of purchased equipment and for desktop support for audits and location verification.

When the user receives, transfers, or verifies assets, they scan the applicable asset barcode and physically enter or scan the location information. Then configuration, location, and client data are uploaded to store and synchronize with the SDE CMDB for automatic inventory and asset reconciliation.

The mobile barcode scanners communicate through wireless local area networks (WLAN) or cradles connected to a company's LAN. At the press of a button, updates will synchronize with the SDE CMDB.

MagicWand provides the following applications:

- **Asset Verification** "One Button Audit" – A simple scan of the asset tag reveals model description, asset tag, serial number, building, room, and client assigned. Any of these attributes can be changed based on the user's permissions which are managed in SDE.
- **Asset Tracking** Records movement of configuration items from one location and/or client to another. It also provides an audit trail of all actions associated with a configuration item throughout its lifecycle including:
 - Installation
 - Reallocation / movement
 - Repair
 - Uninstall / excess
- **Receiving** Captures information for large quantities of equipment upon receipt, quickly and easily:
 - Part number and description, asset tag, and serial numbers
 - Supplier
 - Packing slip, purchase order, and invoice numbers
 - Warranty information

5. CMDB: ASSET AND CONFIGURATION MANAGEMENT MODULES

The configuration management modules in SDE are designed to be integrated with each step in the asset lifecycle, from initial identification and purchase through support to eventual disposal. The modules following the following hierarchy:

Levels	Module	Definition
Level 1	CI Categories	Allows you to group configuration items according to category; for example, office supplies or computer hardware.
Level 2	CI Types (Part #'s)	Allows you to track different products used in a company's inventory.
Level 3	Configuration Items	Contains specific information about actual items that make up an organization's equipment inventory. Configuration item information links to several other configuration windows to access different information related to configuration items.

For example, a laptop may be entered as follows:

Level 1 Category ID – LAPTOP

Level 2 Part # – LATITUDE D620

Level 3 Item Asset Tag – ERIU8S

Arguably, the most critical description or identifier is Part Number. It is the part number record in the Types module that gives the item definition and determines the properties of the individual items. Items of a particular type conform to rules for asset tag, serial number and version number tracking. For forecasting, trend analysis and licensing, it is important to understand the quantity and location of items by part number or type.

At the item level, relationships are established and extend across the service management lifecycle. IT managers will be able to easily identify the supported clients who are using an item, the incidents and problems that were registered for that item and any changes made to the item.

6. AUTOMATION: CONFIGURATION MANAGEMENT AND DISCOVERY

ITIL advises that, in order to be able to populate and verify data in the CMDB, automated configuration discovery tools are required. BMC offers a number of options including Configuration Discovery Express (CDE) and Configuration Manager Express (CME).

CDE provides automated agent-less discovery of CIs across the infrastructure. This includes the capture of software version information, which is critical for maintaining accurate licensing reports. The data gathered by CDE includes processor type, amount of RAM, hard drive size, hard drive available space, software installed on the PC, environmental information, and other attributes.

CME also provides discovery capabilities, but is an agent-based solution. It can identify CI information and relationships, and provides an automated, policy-based means of managing CI applications and patches. CME can ensure compliance and adherence to IT governance policies by actively preventing shifts from approved configurations.

If more hands-on management or repair of a CI is required, SDE has remote control capabilities via the Bomgar Enterprise Remote Support option. allows a service desk analyst to launch a secure, remote support session directly from an incident record and immediately begin diagnosing and resolving a problem—increasing first call resolution rates, shortening call times, and eliminating onsite visits. All session data is maintained and auditable within SDE.

7. FEDERATION: INTEGRATION ENGINE

In order to gain the greatest value, automated discovery tools should be integrated as part of a service knowledge management system with other process and services data. The audited information generated by these tools provides great value to the entire IT organization. It can be viewed by a service desk analyst using SDE for incident diagnosis and resolution. Managers can access the data to assess item failure rates, to plan for upgrade projects and to verify software license compliance.

The Integration Engine component is included with SDE, which provides all SDE administrators the capability to import and export data from the system on a scheduled, event-based or ad-hoc basis. It allows for seamless integration with BMC's products and provides an extensive generic integration capability via a number of configurable connector types including ODBC, SNMP, LDAP/ADSI, Text/CSV and XML. The Web Services connector also offers dynamic and configurable machine-to-machine interaction over the Internet, allowing programmatic access to critical support information.

8. SUPPORT: SUPPLIERS, SERVICE CONTRACTS AND PREVENTATIVE MAINTENANCE

At times, CIs may require repair or support beyond what the IT organization can reasonably provide. It is therefore often necessary for IT to contract with third-party suppliers to provide services. SDE's CI structure includes a Supplier module and an associated Service Contracts module in order to track this information. Supplier contacts and contract parameters are linked via the Supplier and Service Contract modules to the CI records. For any given CI, IT technical management teams have quick access to the necessary supplier escalation procedures. The inclusion and linking of these modules within SDE also facilitates reporting to reveal, for example, whether there is a particular supplier whose components tend to have a higher failure rate or when service contracts may need to be renewed.

SDE also includes a preventative maintenance module for the scheduling of regular maintenance actions for individual CIs or for CIs by type. When scheduled, a Work Order will be assigned to the appropriate technician or group, and the CI record(s) will automatically be associated to the Work Order so that the maintenance action will be included as part of the item's service history.

CONCLUSION

BMC SDE is an easy to use, easy to implement solution for full life-cycle IT service asset and configuration management. The complete line of service management software and add-on capabilities – APM, MagicWand, discovery tools and remote control capabilities – provide flexible workflow solutions to help you manage your IT infrastructure and investments. The solutions give you more options, more control, and ultimately, the optimum performance for your organization. To find out more, please visit our web site at <http://www.rightstarsystems.com>.

ABOUT BMC SOFTWARE

Business thrives when IT runs smarter, faster and stronger. That's why the most demanding IT organizations in the world rely on BMC Software across both distributed and mainframe environments. Recognized as the leader in Business Service Management, BMC provides a comprehensive and unified platform that helps IT organizations cut cost, reduce risk and drive business profit. For the four fiscal quarters ended March 31, 2010, BMC revenue was approximately \$1.91 billion. www.bmc.com

ABOUT RIGHTSTAR

RightStar Systems is a leading provider of ITIL-based service management solutions for upper-middle market firms and government agencies. As an Elite BMC Software Solution Partner, RightStar develops its own add-on modules and provides consulting, design, and implementation services for BMC Service Support, Service Assurance, and Service Automation products. RightStar also conducts onsite ITIL assessments and provides strategic recommendations for delivering services to the business more efficiently. www.rightstar.com