

BMC EXHIBIT 2017  
ServiceNow v. BMC  
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# ServiceNow Discovery

## Benefits

- Rapidly Gather Inventories and Map Dependencies**  
 Discover computers and other IP-enabled devices using a secure agentless architecture, and then automatically match discovered devices with existing CIs, assign CI relationships, and map dependencies in the CMDB.
- Automate Service Processes**  
 Integrated mapping of hardware, software, and relationships facilitates quicker service restoration from incidents, more effective root cause analysis and proactive problem resolution, lower-risk change execution, and better-informed business decisions
- Extend to Discover Any Device and Custom Application**  
 Create custom probes and sensors for any IP-enabled device, identify custom applications and their dependencies, customize CMDB fields, tables, and relationship descriptions, and federate with other data sources through integrations.

### The IT Challenge

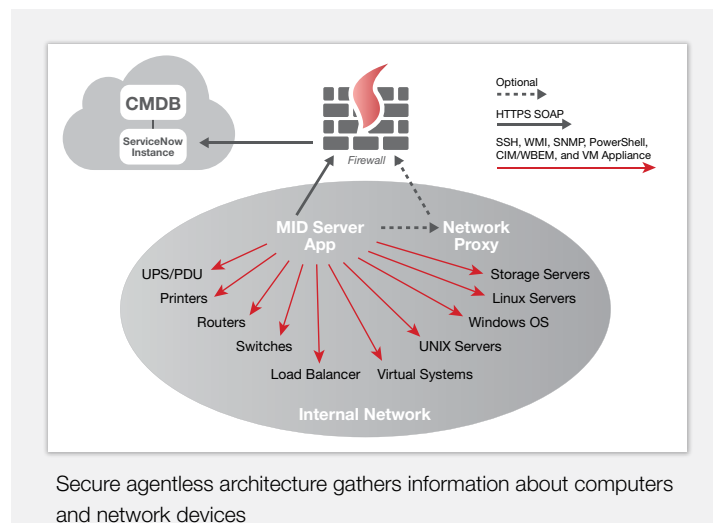
IT organizations rely on the Configuration Management Database (CMDB) to manage infrastructure changes and aid in diagnosis of problems – but many CMDBs struggle to remain current and do not contain the right type of information to drive processes effectively. As a result, IT staff cannot determine which business services are affected by changes, failures, or performance issues – nor can they easily determine root cause when a business service experiences problems.

Without a repeatable and reliable method to find and identify devices and applications in an enterprise IT infrastructure, it is impossible to capture and maintain an accurate and up-to-date inventory with which to map relationships and dependencies. This poses a significant risk to service stability and can lead to financial waste such as paying unnecessary hardware maintenance and incurring software compliance penalties.

### The ServiceNow Solution

ServiceNow® Discovery uses a secure agentless architecture to probe computers and other IP-enabled devices connected to an organization's network for configuration details to keep the ServiceNow Configuration Management Database (CMDB) current – a critical step to automating service management. On computers, Discovery identifies the applications that are running and maps dependencies, such as an application on one server that uses a database on another server. This mapping information facilitates quicker service restoration from incidents, more effective root cause analysis and proactive problem resolution, lower-risk change execution, and better-informed business decisions.

Discovery runs on an on-demand or scheduled basis to help ensure the accuracy of the configuration item (CI) data underpinning all ServiceNow IT service automation applications across the enterprise. For example, ServiceNow Asset Management uses inventory information from Discovery to better manage hardware lifecycles and software license compliance. Custom probes and sensors can be created to explore any IP-enabled device and custom applications can be discovered using Application Profile Discovery (APD). ServiceNow also easily integrates with third-party applications and data sources to collect additional information.



## Secure Agentless Architecture

ServiceNow Discovery is agentless - it does not require any permanent software to be installed on any computer or device to be discovered. A lightweight Java application called Management, Instrumentation, and Discovery (MID) Server runs as a Windows service or UNIX daemon on standard hardware, including virtual machines, already in a customer environment to facilitate communications. Multiple MID Servers, capable of handling thousands of devices each, can be deployed in different network segments to provide virtually unlimited scalability. The MID Server's job during the discovery process is to execute probes and return results back to an associated ServiceNow instance for processing; it does not retain any information. MID Servers communicate by querying their associated instance for probes to run, and post the results of probes they've completed back to the instance. Within the instance, sensors process data collected by the probes. The MID Server starts all communications using HTTPS - which means communication is secure, and all communications are initiated inside the enterprise's firewall. No special firewall rules or VPNs are required. Configuration of IP ranges, credentials, and schedules are all handled in ServiceNow. Credentials are stored using 3DES encryption. Once entered, ServiceNow has no way of ever displaying them again. Once at the MID Server, the standard encryption capabilities of SSH and WMI are used.

## Probes, Sensors, and Dependency Mapping

The MID Server uses several techniques to probe computers and IP-enabled devices without using agents. For example, it uses SSH to connect to a Unix or Linux computer, and runs standard commands to gather information. Similarly, it uses the Simple Network Management Protocol (SNMP) to gather

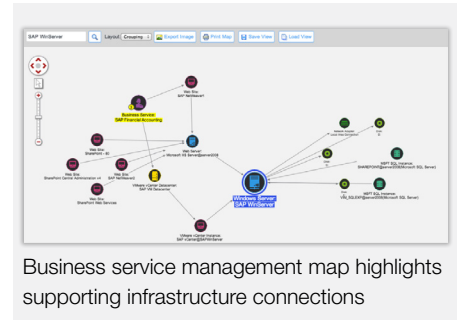
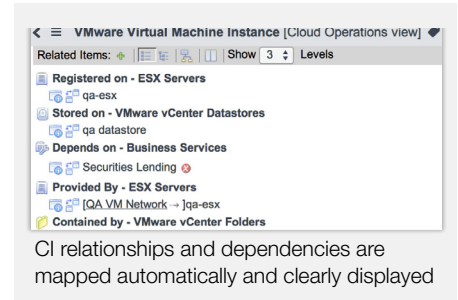
information from a network switch or a printer. Information is securely sent back to an associated ServiceNow instance for processing by the probe's matching sensors. Discovery automatically maps hierarchical dependencies and assigns the appropriate relationship type between configuration items (CIs) that it finds. Application dependency mapping (ADM) creates upstream and downstream relationships between interdependent applications by identifying which devices are communicating with one another, which TCP ports they are communicating on, and which processes are running on these devices. All this information is used to automatically keep the ServiceNow CMDB up-to-date. Discovery employs identifiers to search the CMDB for CIs that match devices discovered in the network. These identifiers can be configured to instruct Discovery to take certain actions when device matches are made - or not made - to maintain data integrity.

## Customization and Integrations

Custom probes and sensors can be created to explore any IP-enabled device. Application Profile Discovery (APD) enables ServiceNow Discovery to identify custom applications or applications that contain multiple processes and determine their dependencies. Data model fields, tables, and relationship descriptions can be customized in the CMDB to meet specific needs. ServiceNow also integrates with many third-party applications and data sources to collect additional information.

## Asset Management and Software License Compliance

ServiceNow Asset Management uses information gathered by Discovery to help manage hardware inventory and software license compliance for application servers, databases, desktop/server applications, and more.



## Discover, Map and Monitor Business Services with ServiceNow ServiceWatch

ServiceNow ServiceWatch complements Discovery with a top-down approach to discovering and mapping the relationships between data center components that comprise specific business services, providing insights into how services are delivered and how they are performing. Dashboards track the health of business services in real time, correlate service issues with infrastructure events, and configure metrics to alert based on business impact.

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