

Cisco Process Orchestrator Adapter for Cisco UCS Manager: Automate Enterprise IT Workflows



Cisco Unified Computing System and Cisco UCS Manager

The Cisco Unified Computing System™ (UCS) is an integrated, stateless system comprising server, network, and storage-access resources that are entirely managed through the centralized, embedded Cisco® UCS Manager.

Cisco UCS Manager provides a unified, programmable interface to dynamically provision all physical and logical computing and network elements within the Cisco Unified Computing System. Cisco UCS Manager service profiles allow users to define hardware and software configurations and allocate resources through an open API. This flexible, operationally scalable system simplifies deployment of enterprise-class applications and services running in hypervisor, virtualized, and cloud-based environments.

Using service profiles and templates, administrators can centrally control multiple chassis and thousands of virtual machines and perform tasks in minutes that used to require days or weeks. Cisco UCS Manager provides flexible role- and policy-based management, and it facilitates processes based on Information Technology Infrastructure Library (ITIL®) concepts.

Cisco Process Orchestrator

Cisco Process Orchestrator software combines decision-based event processing with operational best practices to deliver the intelligence necessary to automate IT operations processes. With this run book automation (RBA) platform in place, IT can reduce the cost of data center operations and allocate resources to support business initiatives rather than perform repetitive system maintenance and time-intensive prioritization. The orchestrator supports automation across multiple domains and standardizes best practices for service delivery and operational support - contributing to reduced operating costs and downtime, as well as improved quality of service.

Cisco Process Orchestrator introduces and links the concept of application, system, and tool awareness to the domain of service orchestration and RBA. This is accomplished through the following capabilities.

- Intelligent adapters: Adapters can be configured without changing process flows. This capability reduces total cost of ownership (TCO), as compared to scripts and other integration tools. The adapter model allows users to maintain existing process flows. This model also provides full support for email notification and assignment, and integration with existing third-party service support or management platforms.

- Automation packs: These packs provide preconfigured content based on process orchestration best practices across the application, system, and tool stack. Users can quickly capture and rationalize their own practices. The comprehensive drag-and-drop workflow creation environment allows users to build sequences of operations in a logical flow. Logic connectors can be used for parallel sequential processing, while loops, completed status blocks, and conditionals (If, Then, and Else) are accessed through the drag-and-drop interface. These capabilities make it possible to capture domain-specific prioritization, as well as diagnostic steps and procedures.
- Automation summary: The summary provides a mechanism for governance and quality checks through configurable histories of all the events and process flows. The summary also aligns with the built-in operations, administration, and expert views for stakeholders who are managing activities, processes, and tasks.

Solution: Cisco Process Orchestrator Adapter for Cisco UCS Manager

The Cisco Process Orchestrator platform includes intelligent adapters and automation packs, which promote what Forrester Research calls “application, system and tool awareness.” The adapter for the Cisco UCS Manager allows the orchestrator to align the application and infrastructure layers to automate end-to-end operational best practices. It can interoperate with third-party service and configuration management tools from VMware and other vendors. This interoperability empowers organizations to construct and monitor services that require cross-department collaboration and vendor system integration, and to automate their delivery across the entire IT infrastructure and enterprise applications such as SAP.

Integrate Tools and Orchestrate Change and Compliance

The adapter allows Cisco Process Orchestrator to integrate Cisco UCS management and event execution activities into an end-to-end process chain that spans all IT tools and silos. This capability reinforces IT best practices, provides smooth integration across multiple data center management tools, and offers unified visibility and control (Figure 1).

The adapter for Cisco UCS Manager gives IT administrators the ability to integrate Cisco UCS operations and maintenance processes into their enterprise-wide computing infrastructure. By defining and managing Cisco UCS Manager functions and collecting Cisco UCS environmental statistics businesses can automate many routine Cisco UCS tasks and incorporate them into a single pane-of-glass for process management system. The adapter supplies out-of-the box management capabilities for managing Cisco UCS targets, configuration backups, services profiles, process execution and fault triggers, power management, network connections, firmware management, as well as the collection of network and chassis, and other environmental information. And, since Cisco UCS Manager offers a rich XML API, administrators can use the adapter to make direct XML calls to the Cisco UCS Manager, delivering complete access to Cisco UCS Manager commands.

Application Awareness

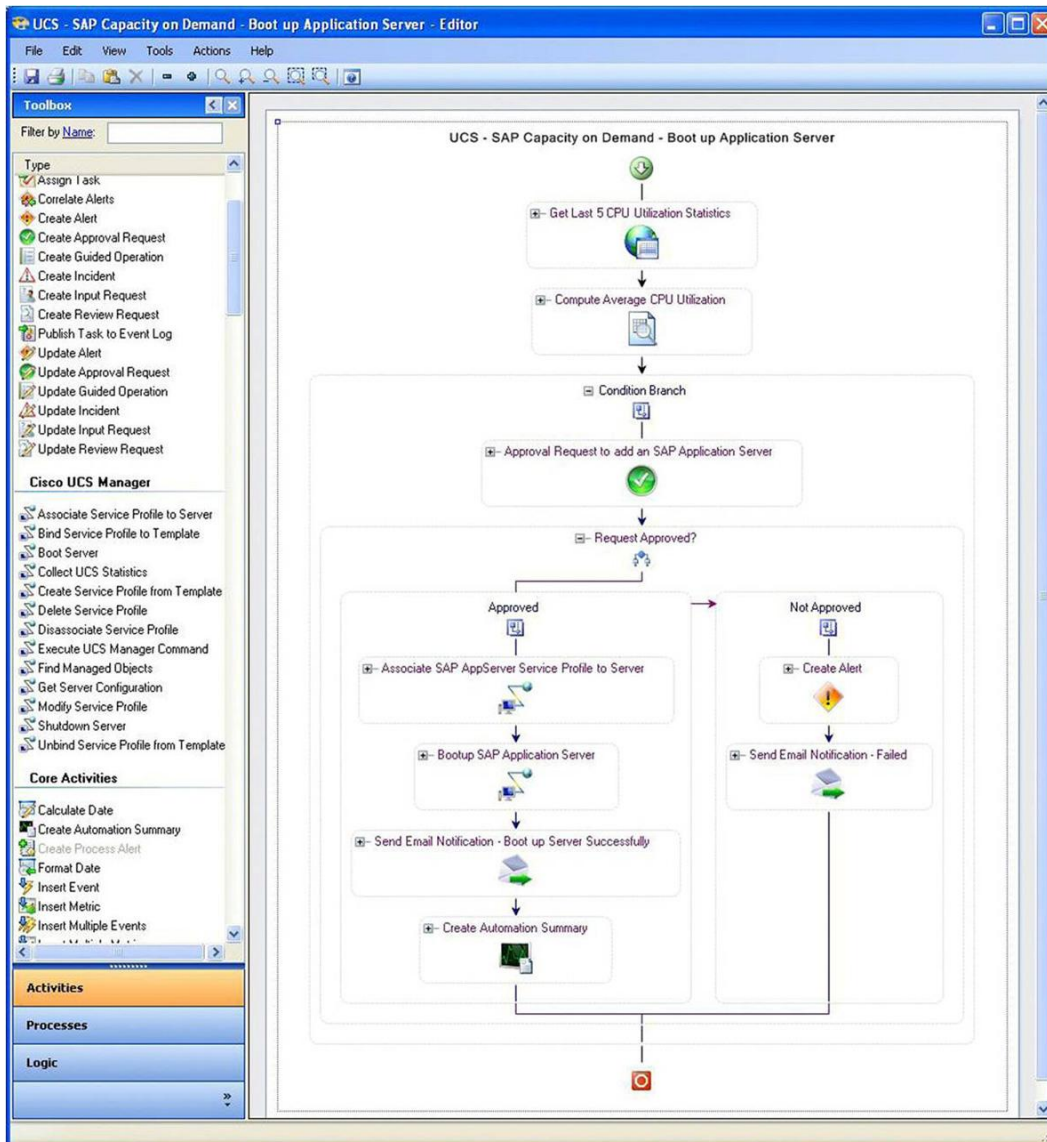
Automation packs can also contain content that is application aware. For instance, the automation pack for SAP can be used in conjunction with the adapter for Cisco UCS Manager to automate corrective actions based on best practices for remediation at the infrastructure domain level.

Create and Manage Cisco UCS Service Profiles

The adapter streamlines the orchestration process for Cisco UCS, providing IT administrators with highly specific configuration, coordination and automation of Cisco UCS profiles from within the orchestrator. These actions can be added to data center-wide process workflows to enable IT operations staff to orchestrate and automate just-in-time deployment of workloads based on the Cisco Unified Computing System. Adapter users can make the following changes to Cisco UCS profiles:

- Create UCS service profile from template
- Define/Modify/Delete UCS service profiles
- Associate/Disassociate UCS service profiles to/from a server
- Bind/Unbind UCS service profiles to/from templates

Figure 1. View of Cisco Process Orchestrator Workflow, Showing On-Demand Cisco UCS Application Resource Capacity



Schedule and Automate Routine Cisco UCS Maintenance Tasks

The adapter for Cisco UCS Manager allows administrators to define and add automation to many routine tasks that would otherwise have to be manually run and tracked. Through the adapter, users can schedule configuration backups, initiate component discovery to facilitate patch and firmware management. As part of the adapter's extensive Cisco UCS service profile support, administrators can manage target connections and add a level of security management to Cisco's just-in-time provisioning platform. These automated management features free up administration resources for other high value projects.

Automate Fault Monitoring and Incident Response

The orchestrator can collect, log, and correlate Cisco UCS data with events from the application and infrastructure layer. Orchestrator triggers can be defined to deliver trouble tickets and automate commonly repeated alert diagnostics and incident resolution workflows for Cisco UCS faults. This type of automation can empower frontline operations and reduce escalations, thereby improving Mean Time to Repair (MTTR) metrics and quality of service for all IT processes.

Initiate and Execute Direct XML Commands

Cisco UCS Manager provides a rich set of capabilities that can be called from the adapter with Cisco UCS Manager Command. Administrators can use the Command function to define detailed step-by-step process flows that can then be automated using the orchestration engine. The full range of UCS functionality managed from the orchestrator allows operations administrators to integrate the UCS platform into their operations management infrastructure creating a single point of control for all processes and procedures for policies, roles, responsibilities and best practices.

Automate Power Management

The orchestrator can power up and power down individual blade servers and virtual machine instances for greater control and specific energy management. These power management triggers can be added to enterprise-wide workflows, including initiatives of the Cisco Smart Grid Tech Group. Administrators gain the ability to directly respond to energy usage mandates by running physical and virtual server instances only when they are needed. Powered-down hosts can be put in maintenance mode to shift workload to other hosts in the same resource pool.

Collect Cisco Unified Computing System Environmental and Usage Information

Cisco Process Orchestrator collects and logs asset information and power consumption statistics from the Cisco Unified Computing System. This information can be aggregated with other system information to give administrators a view of the entire IT resource environment and provide them with a complete picture of their service delivery computing environment. This detailed data can then be imported into business intelligence and reporting tools to perform predictive analysis that supports performance improvement.

Adapter Business Benefits

Cisco Unified Computing System delivers an integrated hardware, network and storage virtualization platform allowing customers to gain immediate data center operational efficiencies. These savings are realized through rapid deployment of just-in-time server resources while still improving utilization metrics. Cisco Process Orchestrator is designed to be the foundation on which to standardize, unify, and automate best practices for IT infrastructure processes used in heterogeneous data center environments.

By integrating Cisco UCS into the data center using Cisco Process Orchestrator's automated process management system, companies can free up high-value human and capital resources for business innovation projects that allow IT to align more closely with business strategies and initiatives.

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