

HP Cloud Service Automation

Software Version: 2.01

Concepts Guide

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Welcome to HP Cloud Service Automation

This guide contains general information about the Cloud Service Automation solution, introducing important concepts that you need to understand how the solution works. This guide provides you with several entry points into the solution:

- ["Understanding HP Cloud Service Automation" \(on page 9\)](#) introduces cloud services and describes solution function through an overview of the service lifecycle.
- ["HP CSA Solution Components" \(on page 14\)](#) provides a functional analysis of system components, including core components shipped with the HP Cloud Service Automation Foundation and integrated components that HP has validated as part of the solution.
- ["HP Cloud Service Automation User Roles " \(on page 20\)](#) User Roles describes how IT professionals maintain and administer the cloud solution within your installation and provides a simple job description for each user role.

The guide also contains these additional sections ["For More Information " \(on page 28\)](#) and "Glossary".

Revision History

Document Release Date	Description of Major Changes
April 2011 (HP CSA 2.00)	First edition
August 2011 (HP CSA 2.01)	Updated for new function and features.

Understanding HP Cloud Service Automation

Tech Talk

HP Cloud Service Automation (HP CSA) is a unique platform that orchestrates the deployment of infrastructure compute resources and complex multi-tier application architectures. HP CSA integrates and leverages the strengths of several HP data center management and automation products, adding resource allocation management, service offering design, and a customer portal to create a comprehensive service automation solution.

Services are designed with a visual palette. Then the service designs are referenced in offerings presented to subscribers through a customer catalog. Subscriptions are instantiated and processed through a structured lifecycle, with pre-defined integration mechanisms to invoke external processes. A provider console serves to administer the system, configuring offerings, resources, and viewing service instances for the HP CSA domain.

HP Cloud Service Automation (HP CSA) automates the deployment of infrastructure and applications across your organization. HP supports a hybrid cloud environment—in other words, you can integrate both on-premise and public cloud resources into your business plan. For instance, you can purchase compute services, such as Microsoft® Hyper-V server resources, from an external provider. While tapping into the public cloud, you still have the flexibility and safety of launching mission-critical applications, such as payroll or financial applications, from behind your company firewall.

The takeaway is this: in a cloud-computing environment it doesn't matter where a service is located. What does matter is that the cloud can deliver an application-based focus to complete the task at hand. So, you might purchase an inventory service through the cloud—the inventory application could run on an Oracle WebLogic application server, or it could run natively on a Windows or Linux machine. The key is the timely delivery of services, not platform choice or the location of service components.

Multi-level Service Offerings

Because application-based service delivery is priority one, HP CSA features a straightforward, catalog-based ordering system. Customers order (*subscribe*) to services using the HP Service Request Catalog, a subscription-based ordering system providing a variety of selectable *service offerings*. For example, a customer could request a Linux-based service using VMware vCenter Server as a compute provider with application management through HP Application Deployment Manager (ADM).

The figure below shows sample service offerings in the service catalog. The kinds of service offerings that HP CSA provides can vary in complexity depending on the needs of your organization. When decisions need to be made, the *Service Publisher*—an expert who administers cloud services—determines what kind of services should be available to customers and how much they should cost. Here are a few possibilities ranging from simple infrastructure provisioning to full application and platform delivery:

- *Compute-as-a-Service*—keep it simple: This type of service offering consists of a single virtual machine (VM) image with a predetermined (or static) set of choices, such as how many CPUs to provision. This type of service offering may be most useful in a one-off, “test bed” environment.

Concepts Guide

Understanding HP Cloud Service Automation

- *Infrastructure-as-Service*—build it out: This type of service offering provides customers with the ability to order a set of infrastructure organized into named server groups or tiers. Instead of ordering a single VM, the customer can order a much more complex configuration.
- *Application/Platform-as-a-Service*—full provisioning: This type of service offering enables customers to order a compound application/platform layered on a dynamic infrastructure. The Linux-based service previously mentioned is an example of this type of service.

The screenshot displays a 'Services' catalog interface. At the top, it says 'Viewing 1-4 of 4 Results'. Below this, there are four service cards, each featuring a blue gear icon with a cloud inside and a 3D pyramid of red and grey blocks. The first card is highlighted in blue and is titled 'Linux on vCenter with ADM' with 'ADM' below it. A tooltip box points to this card, containing the text: 'Linux cloud service running on Vcenter using the HP Application Deployment Manager (ADM) application service provider.' The other three cards are 'Linux on vCenter' (Simple compute), 'Linux on vCenter with Sitescope' (SiteScope), and 'Linux on vCenter with uCMDB' (uCMDB).

The Service Lifecycle

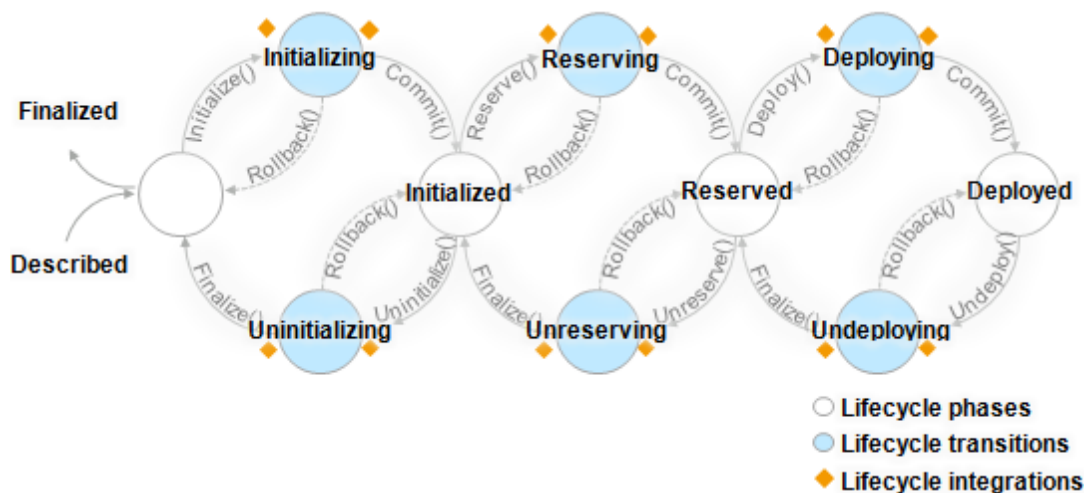
When a customer selects one of the service offerings available in the service catalog, a larger process kicks into gear. This process—called the *service lifecycle*—is the heart of the HP CSA solution: a state-based, multi-level structure that orchestrates each phase of resource allocation and service delivery. Let's begin with how services are defined. In HP CSA, the *service definition* is done interactively by the *Service Designer*—an architect who collaborates with the *Service Publisher* to make cloud services available to customers. The Service Designer determines the

building blocks (or elements) in each service design flow and the extent to which these elements are customizable through the service catalog.

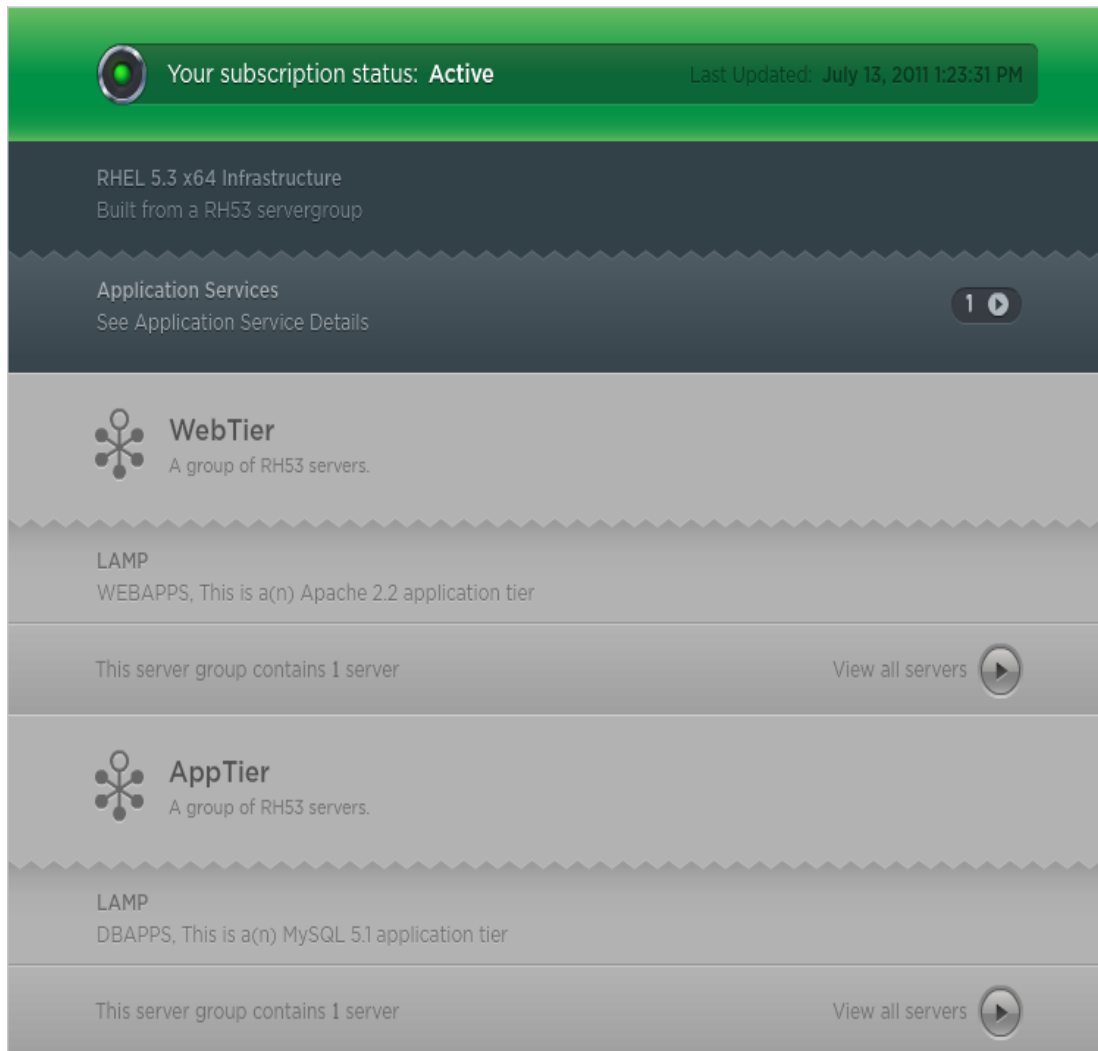
- *For compute infrastructure*—the Service Designer specifies server deployment elements: for example, the number of CPU cores, a specific amount of memory, or the size of the boot disk. Or, based on the needs of the organization, end-user choices can be specified at subscription; for example, the number of CPUs or the amount of disk space for each infrastructure component.
- *For platform deployment*—the Service Designer specifies options such as clustering or high-availability on top of the basic platform construct. In addition, the Service Designer can describe database technology, whether the platform configuration will be internal or Internet-facing, and scalability options.
- *For applications and business processes*—the Service Designer presents subscribers with a fully enabled application-based delivery system. This may include Service Level Agreements (SLAs) around availability, performance, or capacity, as well as options such as backup, encryption, or other policies relevant to deployment. This type of service delivery provides the full benefit of HP CSA's rich feature set.

To make this kind of precise service definition possible, HP CSA coordinates infrastructure provisioning and application-based delivery through *lifecycle phases*, as shown in the figure below. Once a service is designed, associated with an offering, and published into the HP Service Request Catalog, a service definition document is produced each time the offering is requested. The service lifecycle begins when the CSA Controller receives the service definition document and decomposes it into individual *service elements*. In the *Initializing* phase, each of those elements is instantiated in the resource database and relationships between the elements are established. In the *Reserving* phase, external providers and resources for deployment are identified for those elements that require them, and the service model is updated to reflect those targets. As the service moves to the *Deploying* phase, external service providers are contacted, deployments are initiated, and successful deployment is confirmed.

For the termination of a service, the phases are identical, and the process is reversed. From the *Deployed* phase, HP CSA terminates or *un-deploys* the service, confirming that all of the service resources are released. Then, after updating the available resources in the HP CSA Controller, the service element records are finalized in the HP CSA Database.



The customer has a window into the service lifecycle through status completion messages reported in the service catalog. The figure below shows an active subscription request; the customer has the option to modify or to cancel the subscription, which causes the lifecycle process runs in reverse to free allocated resources for other uses.



Integrated Lifecycle Actions

Lifecycle actions describe external integrations with HP CSA. Discrete, well-bounded elements of the service model can be passed into the lifecycle action, or the entire model can be implemented, depending upon what is appropriate for the integration. The lifecycle action parses the service model for context to execute the integration. Lifecycle actions are associated with specific service elements, so they are processed by the CSA Controller at the same time as those elements. There are eighteen pre-determined integration points, which are structured around the *lifecycle transitions*, as shown in the ["HP CSA Component Diagram" \(on page 18\)](#). For each transition, a lifecycle action can be configured to execute before, during, or after the transition. Lifecycle actions are available for both the deploy sequence and the un-deploy sequence:

1. The HP CSA Controller initiates a service lifecycle action when the associated service element is processed through the integration phase.
2. The HP CSA Controller extracts the necessary part of the service model (or the entire service model) to make the service definition document available to the lifecycle action flow.
3. The HP CSA Controller invokes the HP Operations Orchestration flow associated with this lifecycle action, using configured values for error handling, timeouts, and concurrency; while passing in the appropriate part (or fragment) of service definition document.
4. The lifecycle action parses the service definition fragment for context, and executes the appropriate actions with external service provider systems.

The HP CSA lifecycle with its functional richness and openness to integration takes place as an automated process hidden from the end user. From the customer's standpoint, ordering a service is a simple push-button affair; application-based services simply appear out of the cloud. However, as shown in the Component Diagram, the instantiation processes beneath the surface are highly sophisticated. The next chapter delves into workings of HP CSA, describing the software components that make the solution hum. The chapter also provides a component-level overview, showing how management software works with key service providers to create an integrated solution.

Service Actions

A *Service Action* is a special type of Lifecycle Action that can be created to execute integrations on demand from the Service Catalog portal. Like a Lifecycle Action, it is associated with a specific service element. It executes on demand, rather than when a service element is processed through a lifecycle phase by the lifecycle engine.

To create a Service Action, the execution phase is left blank and a parameter is configured to make the action Public, which publishes it in the Service Catalog portal.

Service Actions can be presented through the Service Catalog for servers and server groups only. In the Catalog, the Actions menu allows the user to select and execute the action. The user subscription cannot be altered until the action completes. The action must be discrete and self-contained; no user parameters can be passed into it.

Understanding HP CSA: Concepts Summary

- HP CSA is a hybrid cloud solution—in other words, you can integrate both on-premise and public cloud resources.
- As part of its service lifecycle, HP CSA delivers a range of services from simple compute services to complex application and business process services.
- The HP CSA service lifecycle defines lifecycle phases programmatically, so that a service moves from uninitialized to deployed, or conversely from deployed to uninitialized.
- Lifecycle actions integrate the service lifecycle with external processes according to the needs of your organization.

HP CSA Solution Components

Tech Talk

HP CSA is functionally defined by three types of components that deliver key service elements.

Service Subscriber components represent an entry point into the system for end-users and administrators, including all aspects of capturing and meeting customer demand for cloud subscription services:

- Customer subscription through the HP Service Request Catalog
- Publication of service offerings, resource management, and administrative tasks through the HP CSA Provider Console

Service Delivery components sustain the service lifecycle, representing all aspects of assembling and managing automated services. This layer contains the HP CSA Controller software, which interacts with the HP CSA Database and HP Operations Orchestration to execute lifecycle actions by means of HP OO flows. Graphical service design also takes place within HP OO Studio.

Service Provider components furnish the building blocks (resources) that comprise a service. These can be a combination of application, configuration management, monitoring, and compute providers, which can access Infrastructure as a Service (IaaS) provided through in-house resource management or a public-facing cloud.

HP CSA combines several sophisticated HP datacenter management products into its automated solution delivery engine. The logic to execute complex lifecycle actions is provided in a core set of software, available only with HP CSA. This software—the HP CSA Controller—works with other solution components to orchestrate the timely delivery of cloud services to customers.

When you purchase an HP CSA license, you obtain a set of software called the HP CSA Foundation, which includes the HP CSA Controller, the HP CSA Database, and the HP Universal CMDB. Then, you add integrated solution components and various service providers (such as compute, application, and monitor providers) to assemble the resources required for service delivery. The tables below list the HP CSA solution products. For specific information about supported software versions and platforms, see the HP Cloud Service Automation Solution Support Matrix.

HP CSA Foundation Components	
Name	Description
HP CSA Installer	Installs HP CSA solution files.
HP Service Request Catalog	Provides subscription services for customers, featuring a selectable set of service offerings.
HP CSA Provider Console	Delivers the design capability required to prepare service offerings for publication in the service catalog, and to manage service offerings. Additionally, contains an administrator interface to manage the HP CSA solution, and resource-management capability

HP CSA Foundation Components	
	for the HP CSA Database.
HP CSA Controller	Contains the HP CSA lifecycle engine, plus customized flows and sample templates for the service lifecycle.
HP CSA Database	Stores resource, composite and lifecycle state information.
HP Universal CMDB	Maintains accurate, up-to-date information regarding the relationships between infrastructure, applications, and cloud services.

HP CSA Integrated Solution Components	
Name	Description
HP Operations Orchestration (HP OO) (Required)	Coordinates communication between the integrated products and managed devices. Customized HP OO flows are essential to implementing the HP CSA solution lifecycle (see HP CSA Controller above).
HP Server Automation (HP SA) with optional ADM content	Deploys operating systems and policies to managed devices. Optionally, controls application deployment processes through Application Deployment Manager (ADM).
HP SiteScope	Monitors servers, storage, and other managed devices.

HP CSA Compute Providers	
Name	Description
HP Cloud System Matrix <ul style="list-style-type: none"> • HP Insight Software with HP Insight Orchestration (HP IO) • HP BladeSystem 	Provides a converged infrastructure platform for private cloud deployments, including HP IO software for interactive service design, and HP BladeSystem for blade architecture.
Datacenter Virtualization Software <ul style="list-style-type: none"> • VMware vCenter Server • vSphere 	Provides visualization management services with virtualized platform and infrastructure.

HP CSA Component Description

HP CSA Foundation software works with integrated software products to instantiate the lifecycle process. For simplicity, the interaction between them can be presented as three types of

components: Service Subscriber, Service Delivery, and Service Provider, as shown in the "[HP CSA Component Diagram](#)" (on page 18).

Service Interfaces

The top of the component diagram shows two interfaces that provide important information for the HP CSA lifecycle engine.

- The HP Service Request Catalog features a simple graphical interface for customers to subscribe or unsubscribe to cloud services (called *service offerings*).
- The HP CSA Provider Console presents a graphical interface to prepare services for subscriber consumption. The Service Publisher (user role) uses the HP CSA Provider Console to publish service offerings into the service catalog and to view information about subscription requests (called *service instances*). In addition, the HP CSA Provider Console contains an interface for administrative functions, such as managing cloud resources and administering system settings.

Service Delivery

The second level of the diagram shows the service delivery process. The driving force behind this process is a tightly coupled interaction between the HP Operations Orchestration (HP OO), the HP CSA Controller, and the HP CSA Database.

- HP OO Studio provides a way to graphically design the components of a service offering. When this process is complete, the Service Designer (user role) places the service offering designs in a folder where they can be accessed by the Service Publisher.
- HP OO Central interacts with the HP CSA Controller to achieve the automated processing that forms the heart of the service delivery process.
 - From the HP Service Request Catalog, the subscription request goes to the Master Service Flow in HP OO Central, which determines whether the service instance should be created, modified, or terminated.
 - The Master Service Flow activates the HP CSA Controller, which communicates with HP OO Central to manage lifecycle processing through content use (OO flows) and design instantiation.
 - Lifecycle actions launch task-specific flows, such as cloning a VM, deploying a SiteScope monitor, or accessing stored HP Universal CMDB configurations.
- As an ongoing part of service delivery, the HP CSA Controller communicates with the HP CSA Database. The database stores artifacts used in the lifecycle process such as lifecycle objects, provider essentials (such as URLs and credentials), and lifecycle actions. The database also maintains records of service instances and associated lifecycle states.

Service Providers

The third level of the component diagram shows the service providers essential to the lifecycle process. When the HP CSA Controller instructs HP OO Central to perform a lifecycle action, the system can tap the resources of one of several underlying service providers. HP CSA provides sample service design flows illustrating the use of specific providers; however, cloud implementations are not limited to using these providers.

Application Providers—HP Application Deployment Manager (HP ADM) is the provider of choice for handling the deployment and configuration of applications on the target platform. HP ADM is part of HP Server Automation software.

Runtime Configuration Management Providers—HP Universal CMDB stores and tracks infrastructure configurations required at runtime, such as configuration for server groups and the relationship between individual server configurations.

Monitoring Providers—HP SiteScope provides monitoring of resources and infrastructure.

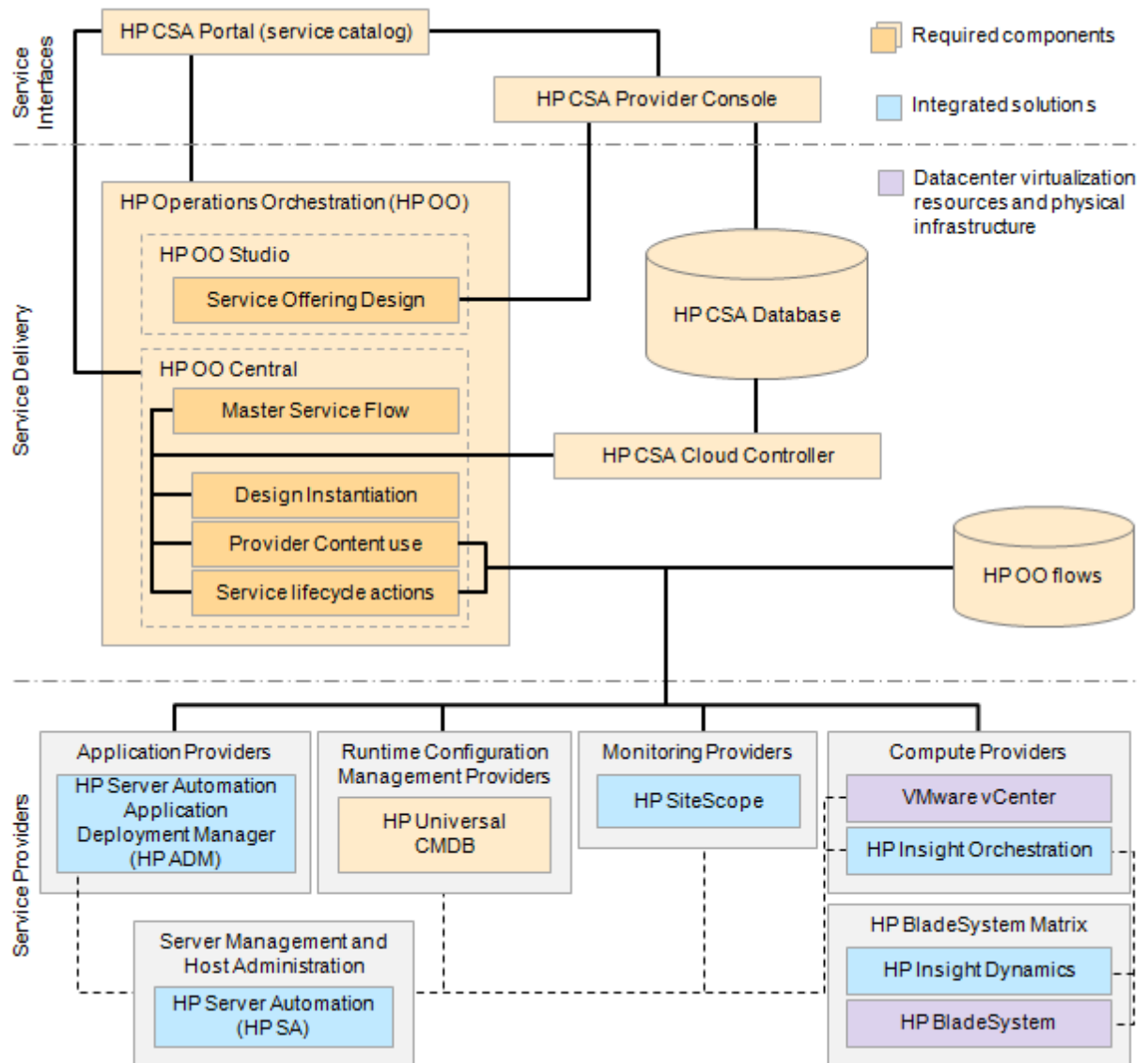
Compute Providers—VMware vCenter and HP Insight Orchestration handle the provisioning of compute resources within the system.

- VMware vCenter provides virtualization management services, coordinating with vSphere for virtualized platform and infrastructure support.
- HP Insight Orchestration (part the HP Insight Dynamics suite) is an integrated part of HP Cloud System Matrix solution, providing automated provisioning for blade servers.

In addition to these providers, HP Server Automation adds server management and host administration capability. Other providers communicate with HP Server Automation to obtain server and platform configuration data used in the infrastructure provisioning process.

Many program interactions take place between components to achieve an automated delivery system. However, the delivery of HP CSA cloud services depends equally on people in your organization who accomplish mission-critical tasks. The next chapter contains information about user roles—describing the people who maintain the process.

HP CSA Component Diagram



Understanding HP CSA: Components Summary

- HP CSA Foundation components include the HP CSA Controller, which works with HP Operations Orchestration and the HP CSA Database to drive the lifecycle engine.
- User input into the system is captured through these graphical interfaces, which are also part of the HP CSA Foundation license:
 - HP Service Request Catalog, a catalog for the service subscriber
 - The HP CSA Provider Console, an interface to publish services to the catalog, and to administer resources and to manage the HP CSA solution.
 - HP Operation Orchestration (HP OO) Studio for service design.
- The following service providers integrate with HP CSA:
 - Application Providers: HP SA Application Deployment Management (HP ADM)
 - Runtime Configuration Management Providers: HP Universal CMDB (part of the HP CSA Foundation)
 - Monitoring Providers: HP SiteScope
 - Compute Providers: VMware vCenter and HP Insight Orchestration (part of HP Cloud System Matrixsolution)
- HP Server Automation (HP SA) provides server management and host administration for other service providers in the solution.

HP Cloud Service Automation User Roles

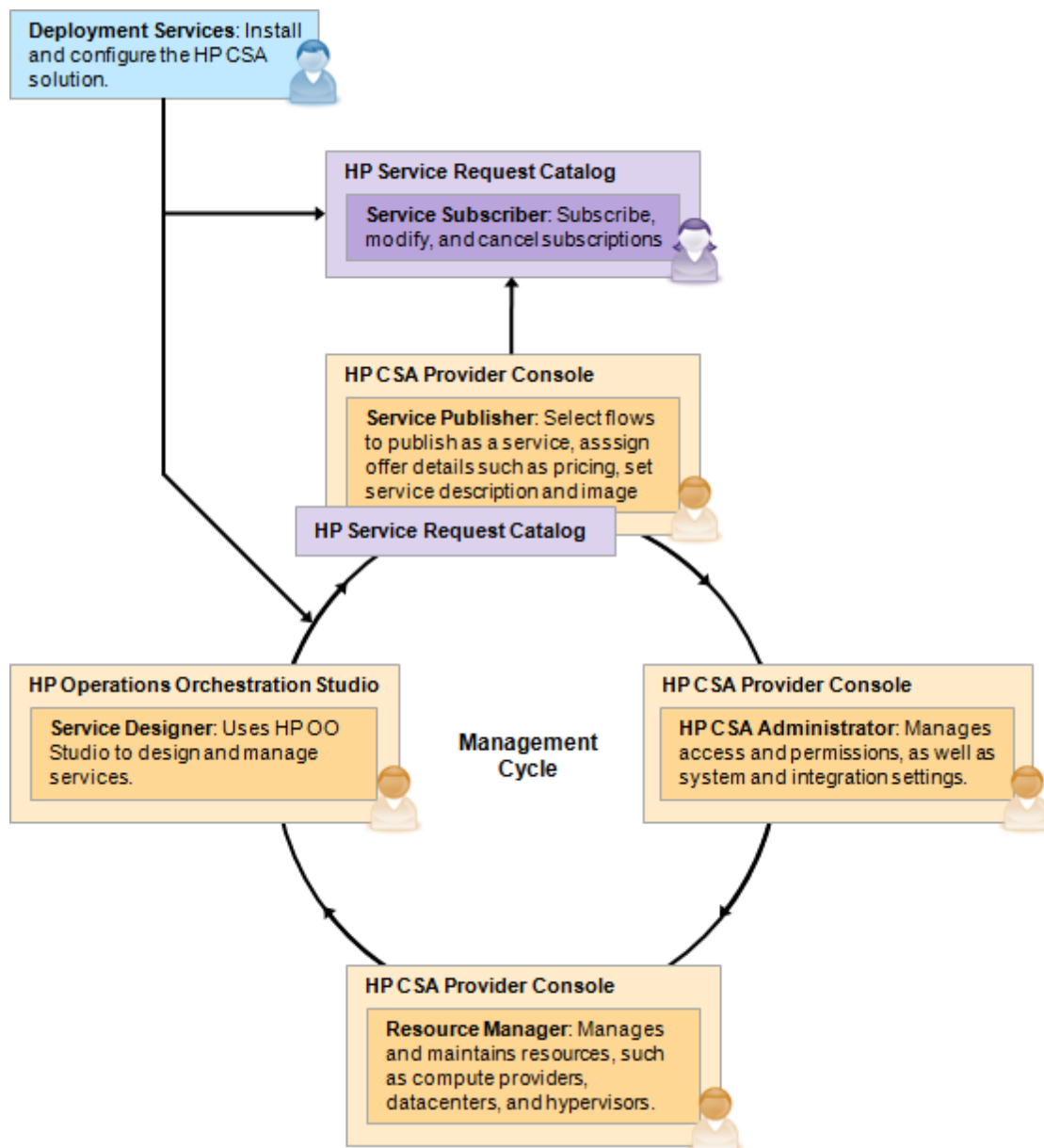
Tech Talk

Personas or *user roles* describe task-based scenarios for the deployment and maintenance of the HP CSA solution. Installation/configuration is performed by the HP Professional Services Organization (PSO) in collaboration with on-site personnel. Other user roles are assigned within your organization as necessary, including administration of the HP CSA solution, resource management, service design, and service publication. The end-user role (called the *Subscriber*) requires subscribing to or canceling services interactively through the CSA Portal.

Note that the user roles in this chapter do not include ALL use cases for component products. Products such as the HP Universal CMDB or HP Server Automation have their own maintenance and administration requirements that are outside the scope of this document. These requirements should be carefully considered during the planning phase for HP CSA deployment.

HP CSA has a complex, automated service lifecycle requiring installation and maintenance of important software and infrastructure components; however, in many ways, successful implementation of HP CSA depends upon people—expert designers and administrators within your organization who work in partnership with HP.

The diagram below shows HP CSA user roles, with emphasis on the roles for end-use, resource management, administration, service design and delivery, and deployment. Note that the core process or management cycle requires skilled IT professionals to maintain the lifecycle engine. Depending on the needs of your organization, these roles may be separate or shared—for example, in some cases the HP CSA Administrator and Resource Manager may be the same individual, or the roles of the Service Designer and the Service Publisher could be combined.




Service Subscriber


The primary and highest-level user role is the *Service Subscriber* or end-user. The Subscriber is your customer—the person who selects (subscribes to) one of the cloud service offerings in the HP Service Request Catalog. As previously mentioned, each service offering can be anywhere on the spectrum from simple infrastructure provisioning for a single VM to complex application and business-services requiring an SLA. Subscription is a straightforward step-by-step process, allowing the user to specify subscription options as shown below.

After a subscription has been fulfilled, the Subscriber can view configuration details about compute infrastructure or application support. The Subscriber can also cancel or modify the service. When a customer subscribes to a service offering, the lifecycle process activates and provisioning begins. The customer is notified by email as each stage of the subscription process completes.

Managed Simple Compute



Linux with uCMBD

 **Item Options**

- Number of CPUs
- Amount of Memory (MB)
- Number of Servers

Service Publisher

The Service Publisher plays a key role in managing the service lifecycle by *publishing* service offerings to the HP Service Request Catalog. The Service Publisher uses the Service Offering tab in the HP CSA Provider Console for the following tasks:

- Browse available library entries
- Create (or publish) service offerings in the service catalog
- Modify service offerings

The graphic below shows a service offering specifying Compute as the category for the service.

The screenshot shows the 'Service Offer Creation Wizard' interface. It features a sidebar with a 'Properties' tab. The main content area is titled 'Properties' and includes a descriptive paragraph: 'A service offering is an HP CSA service design (created in HP Operations Orchestration) that is made available to a service catalog with additional information such as pricing, category and description.' Below this, a red asterisk indicates '* Required fields'. The form is divided into several sections: 'Service Template' with a 'Template:' dropdown and a 'Browse...' button; 'Basic Information' with 'Name:', 'Category:', and 'Description:' text boxes; 'Price Information' with a 'Price:' text box containing '\$0.00' and a 'USD' dropdown; and 'Miscellaneous Information' with 'Offer URL:', 'Image URL:', and 'Image Preview:' text boxes. Each URL field has a help icon. At the bottom, there are navigation buttons: '< Back', 'Next >', 'Create', 'Cancel', and 'Help'.

Administrator

Administrative processes for HP CSA are handled from the Control Panel in the HP CSA Provider Console. The Control Panel assists administrators with tasks such as the following:

- Specify system settings, such as the repository where images are stored for display in the service catalog.
- View parameters for the HP CSA Database, such as the database type (MySQL, Microsoft SQL Server, or Oracle).
- Set up access to remote servers that are provisioned by HP CSA, including Virtual Network Computing (VNC) connectivity settings, Windows Remote Desktop, and SSH web terminal settings.
- View integration settings for HP Operations Orchestration, including connectivity settings for the HP OO Central server.

HP CSA facilitates important administrative tasks through the First Time Startup Wizard, which should only be run after all HP CSA installation and configuration is complete. The Startup Wizard provides a step-by-step way to configure database and HP Operations Orchestration settings. You see this wizard when you first access the HP CSA Provider Console, as shown below.

hp First Time Setup Wizard

Database ✓

↓

HP Operations Orchestration

↓

Congratulations

Database

Specify the database settings to be used by CSA then click 'Validate Settings'. 'Temporary Data Storage' run the database population script to create the red step.

*** Required fields**

Database Type: MySQL

Database Name: * csa ?
e.g. csa

Database Hostname: * localhost ?
e.g. mydbserver.hp.com

Database Port: * [] ?

Database Username: * root ?

Database Password: * *****

Validate Settings

Resource Manager

In HP CSA, *service providers* are defined as types of virtual infrastructure used to provision cloud services. An administrator in your organization called the Resource Manager uses the Provider Management tab in the HP CSA Provider Console to populate the HP CSA Database, as shown below. This database is used to maintain provider, compute and lifecycle state information. By accessing it, the Resource Manager administers service providers in predefined categories, such as the following:

- Application management platforms
- Compute or virtual infrastructure resources
- Runtime Configuration Management
- Monitoring

Service Designer

Proper service design and maintenance is essential to the delivery of cloud services. The Service Designer is a skilled architect who uses HP OO Studio to graphically design the components of a service offering, which produces a Service Definition Document (an XML artifact that describes the service).

When the design process is complete, the Service Designer places the flow that defines the service offering into a designated location in the HP OO Studio library. Now this service definition is accessible to the Service Publisher, who works closely with the Service Designer to make the service offering available to Subscribers.

As part of the design process, the Service Designer decides how much detail to expose in the service options and at what level to expose those choices. In addition, the Service Designer classifies service providers into categories, such those shown in the table below.

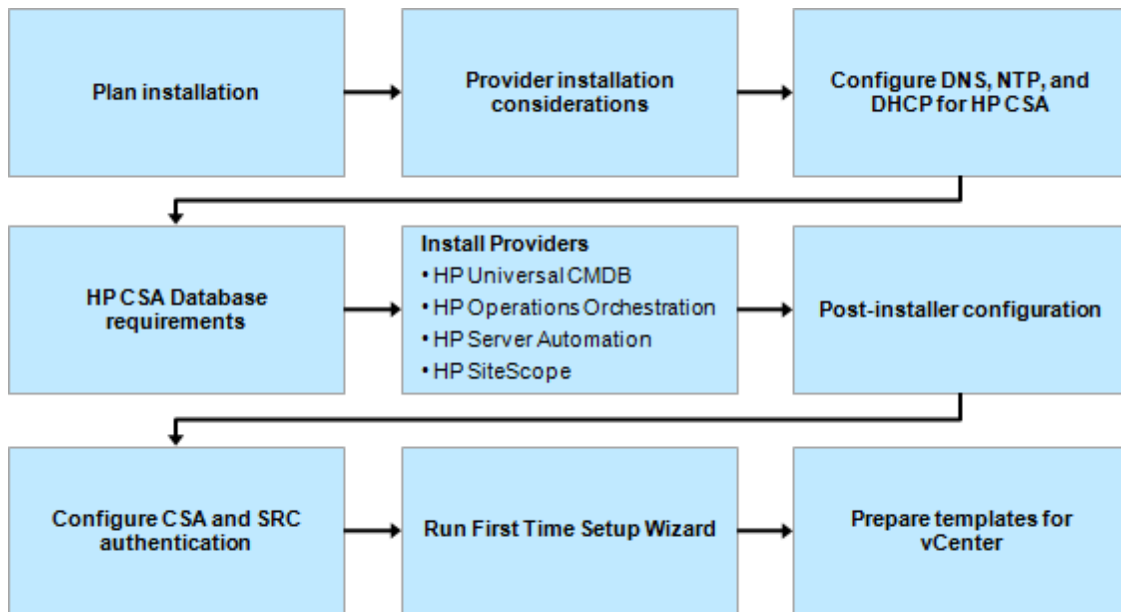
Service Provider class	Description
Application	Application management platforms that offer application deployment and configuration services
Compliance	Organizational or regulatory compliance providers
Compute	Management platforms that offer centralized control over virtual infrastructure resources

Service Provider class	Description
Configuration Management	Providers that offer runtime configuration management services
Information	Information management providers such as records archiving and retention
Infrastructure	Converged infrastructure providers
Monitoring	Providers that offer monitoring services.
Network	Network management providers
Other	Miscellaneous providers
Security	Security services such as intrusion detection, role enforcement, etc.
Service Assurance	Service level agreement (SLA) providers
Service Management	Service management providers for incident, change, etc.
Service Usage	Usage tracking providers.
Storage	Storage providers.
User-Defined (Customized)	User-defined categories created using Manual Entry mode.

HP Deployment Services

HP CSA deployment services are provided by the HP Professional Services Organization. Deployment activities must be closely coordinated with on-site personnel, including set up for basic network and storage function, and server installation for the HP CSA foundation and its component products.

The diagram below shows the sequence of installation activities for the HP CSA Solution. For more information about HP Professional Services or to plan for HP CSA deployment, contact your HP representative. For installation and configuration procedures for HP CSA, refer to the *HP Cloud Services Automation Configuration Guide*



Understanding HP CSA: User Role Summary

- The HP Deployment Services engineer, an HP Professional Services representative, works with on-site personnel to install and configure the HP CSA solution, including integrated products.
- The HP CSA management cycle requires the following user roles to be defined in your data center:
 - Service Designer—uses HP Operations Orchestration to create and administer service design flows.
 - Service Publisher—selects flows to publish as service offerings; assigns details to service offering such as pricing, description and image.
 - Administrator—manages system settings, such as permissions, and settings for integrated solutions products.
 - Resource Manager—manages resources for service providers.
- HP CSA user roles culminate with delivery to the Subscriber—the customer who selects service offerings from the service catalog or cancels subscriptions.

For More Information

The following publications are available on the HP Software Product Manuals website (<http://support.openview.hp.com/selfsolve/manual>). This site requires an HP Passport sign-in. Some documentation additionally requires an active HP Support Agreement ID (SAID) for HP Cloud Service Automation.

HP Cloud Service Automation Solution and Software Support Matrix	Provides a support matrix for HP CSA.
HP Cloud Service Automation Release Notes	This document - Important pre-installation information.
HP Cloud Service Automation What's New in HP CSA 2.01?	Provides a list of enhancements for the latest version of HP CSA.
HP Cloud Service Automation Concepts Guide	An overview of the HP CSA solution (this document).
HP Cloud Service Automation Configuration Guide	Detailed solution deployment instructions.
HP Cloud Service Automation Provider Help	How to design and publish services for the cloud, how to manage the resources for deploying those services, and how to administer HP CSA.
HP Cloud Service Automation Troubleshooting Guide	Suggested solutions for solving problems with setup, configuration, customization and use of HP CSA.
HP Cloud Service Automation Service Design Guide	Detailed information about designing services.
HP Cloud Service Automation Documentation List	Lists all current documentation and white papers available with each release.
HP Cloud Service Automation Open Source and Third-Party Software License Agreements	A list of open source licenses used in HP CSA.

Glossary

A

Administrator

In HP CSA, a user role that includes managing access and permissions to the HP CSA solution, as well as other solution-specific administrative tasks. See also user roles, Resource Manager, Service Designer, and Service Publisher.

B

BladeSystem Matrix

See HP BladeSystem Matrix.

C

Callouts

Exit points in an HP CSA service flow (created using HP Operations Orchestration) that trigger the invocation of external systems or processes. The timing for callouts is defined as part of the Lifecycle actions. See Lifecycle and Lifecycle actions.

Cloud Computing

A model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (for example, networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. National Institute of Standards and Technology, Information Technology Laboratory
<http://www.nist.gov/itl/>

Compute Providers

In HP CSA, virtual infrastructure management platforms that offer centralized control over all the virtual infrastructure resources underneath. Compute providers contain datacenters, which contain the hypervisors that host the virtual machines. See also general providers, datacenters, and hypervisors.

Controller

See HP CSA Controller.

CSA

See HP Cloud Service Automation.

D

Database

See HP CSA Resource Allocation Database.

E

Elements

See Service Elements.

F

First-Time Startup Wizard

A wizard used to do preliminary database and HP Operations Orchestration configuration after solution installation and configuration is complete. See also HP CSA Resource Management Database and HP Operations Orchestration (HP OO).

Flow

See HP Operations Orchestration flow.

Foundation components

See HP CSA Foundation.

Fulfilled status

In the HP Service Request Catalog, notification that the product or subscription is available according to the subscription agreement.

G**General providers**

In HP CSA, service providers that can be used for an application management platforms that offer application deployment and configuration services. See also compute providers, resources, and resource groups.

H**HP Application Deployment Manager (HP ADM)**

An optional component of HP Server Automation used to manage the deployment of software applications. See also HP Server Automation (HP SA).

HP BladeSystem Matrix

An integrated HP CSA component that provides a converged infrastructure platform for private cloud deployments, including HP Insight Orchestration (HP IO) software for interactive service design, and HP BladeSystem for blade architecture.

HP Cloud Service Automation (HP CSA)

A unique platform that orchestrates the deployment of infrastructure compute resources and complex multi-tier application architectures. HP CSA integrates and leverages the strengths of several HP data center management and automation products, adding resource

allocation management, service offering design, and a customer portal to create a comprehensive service automation solution.

HP CSA

See HP Cloud Service Automation.

HP CSA Controller

An HP CSA core component, which provides program function necessary to execute complex lifecycle tasks and to orchestrate the timely delivery of cloud services to customers. The HP CSA Controller is available only with the HP CSA solution. It contains the HP CSA lifecycle engine, plus customized flows and sample templates for the service lifecycle.

HP CSA Foundation

A set of integrated software components that are required for the HP CSA Solution, including (but not limited to) the HP CSA Controller, HP Service Request Catalog, and the HP Universal CMDB.

HP CSA Provider Console

Core software delivered with the HP CSA Foundation, which provides the design capability required to prepare service offerings for publication in the service catalog, and to manage service offerings. Additionally, contains an administrator interface to manage the HP CSA solution, and resource-management capability for the HP CSA database. See also service provider.

HP CSA Resource Allocation Database

Core software delivered with the HP CSA Foundation, which stores resource, composite and lifecycle state information, including resource allocation for datacenters, hypervisors and general providers.

HP Deployment Services

The HP service professionals who install and deploy the HP CSA solution and are part of the HP Professional Services Organization (PSO).

HP Insight Orchestration (HP IO)

A component of HP BladeSystem Matrix that provides rapid provisioning and repurposing of infrastructure services from shared resource pools using a self-service portal. HP Insight Orchestration is delivered as an HP CSA integrated component within HP BladeSystem Matrix. See also HP BladeSystem Matrix.

HP Operation Orchestration (HP OO)

A core software product that coordinates communication between integrated products and managed devices. Customized HP OO flows are essential to implementing the HP CSA solution lifecycle. See also HP Operations Orchestration Studio and HP Operations Orchestration Central.

HP Operation Orchestration flow

A set of linked actions that automate customer-specific IT tasks within an HP CSA automated service. Operations Orchestration flows are created, modified, and saved using HP Operations Orchestration Studio, the workflow designer embedded in Insight Orchestration. See also HP Operations Orchestration.

HP Operations Orchestration Central (HP OO Central)

The manager within HP Operations Orchestration that executes the flows and also provides an administrative interface to manage users and flows. In addition, HP OO Central also provides dashboard and reporting capabilities for ROI and execution metrics for flows.

HP Operations Orchestration Studio (HP OO Studio)

A tool within HP Operations Orchestration that provides flow authoring and flow deployment capabilities by means of a drag-and-drop graphical user interface. HP OO Studio is used by the HP CSA Service Designer to create, manage, and share customized flows, which are later published as service offerings. See also service offerings and Service Publisher.

HP Server Automation (HP SA)

An integrated HP CSA component that deploys operating systems and policies to managed devices. Optionally, controls application deployment processes through Application Deployment Manager (ADM). See also Application Deployment Manager (ADM).

HP Service Request Catalog

Core software delivered with the HP CSA Foundation, which provides subscription services for customers, featuring a selectable set of service offerings.

HP SiteScope

An integrated HP CSA component that monitors servers, storage, and other managed devices.

HP Universal CMDB (uCMDB)

A core software product delivered with the HP CSA Foundation that maintains accurate, up-to-date information regarding the relationships between infrastructure, applications, and cloud services.

hybrid cloud

A cloud infrastructure that is a composition of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary

technology enabling data and application portability (for example, cloud bursting for load-balancing between clouds). National Institute of Standards and Technology, Information Technology Laboratory <http://www.nist.gov/itl/>

I

Insight Orchestration (IO)

See HP Insight Orchestration (HP IO).

L

Lifecycle

In HP CSA, the automated process to activate a service instance as defined by specific programmatic states: (1) Described > Initializing > Initialized > Reserving > Reserved > Deploying > Deployed; or conversely (2) Deployed > Un-deploying > Reserved > Un-Reserving > Initialized > Un-initializing > Described.

Lifecycle actions

In HP CSA, actions to invoke external systems during lifecycle processing used to customize HP CSA service delivery. Lifecycle actions are triggered by callouts in the service definition document. See also callouts and service definition document.

M

Management Cycle

Core management and administrative processes within HP CSA, which are done by datacenter personnel to maintain the service lifecycle, including administration, resource management, service design, and service publication. See also Administrator, Resource Manager, Service Designer, and Service Publisher.

O

Operations Orchestration (OO)

See HP Operations Orchestration (HP OO).

P

Portal

See HP Service Request Catalog.

Private Cloud

A cloud infrastructure operated solely for an organization. It may be managed by the organization or a third party, and may exist at your site or another location. National Institute of Standards and Technology, Information Technology Laboratory <http://www.nist.gov/itl/>

Professional Services

See HP Deployment Services.

Provider Console

See HP CSA Provider Console.

Public Cloud

The cloud infrastructure made available to the general public or a large industry group and owned by an organization selling cloud services. National Institute of Standards and Technology, Information Technology Laboratory <http://www.nist.gov/itl/>

R

Resource Allocation Database

See HP CSA Resource Allocation Database.

Resource Groups

Logical constructs under Compute Providers. Resource Groups contain the

Resources that host the virtual machines.

Resource Manager

In HP CSA, a user role that includes managing and maintaining solution resources, such as compute, monitoring and configuration management providers. See also user roles, Administrator, Service Designer, and Service Publisher.

Resources

Virtual machine management platforms running on a physical server. Resources can run multiple virtual machines simultaneously, allowing the sharing of the physical resources of the underlying server.

S**Server Automation (SA)**

See HP Server Automation (HP SA).

Service

A configuration of IT resources and software that provides a customer with a single, automated point of delivery for a complex computing task.

Service definition document

An XML document that provides details about the infrastructure that is required to realize a service offering. The Service Definition document selectively exposes elements that can be chosen during the subscription process. See also Subscription, Service Designer, and Service Elements.

Service Delivery Layer

An architecturally designated layer of the HP CSA solution, which represents the service lifecycle processes, including all aspects of assembling and managing automated services and binding resources to appropriate service

instances. This layer contains the HP CSA Controller software, which interacts with the HP CSA Resource Allocation Database and HP Operations Orchestration (HP OO) to execute lifecycle actions by means of HP OO flows. Graphical service design also takes place in this layer within HP OO Studio. See also lifecycle actions, Service Subscription Layer and Service Provider Layer, and HP Operations Orchestration (HP OO).

Service design

An HP Operations Orchestration (HP OO) flow that describes the elements and attributes of a service. The service design process results in a service definition document, which contains elements describing the service. See also HP Operations Orchestration, service definition document, and service elements.

Service Designer

In HP CSA, a user role that includes using HP Operations Orchestration (HP OO) to design and manage flows to be provided to the Service Publisher, and ultimately (after publication) to subscribers as service offerings. See also HP Operations Orchestration (HP OO), user roles, Administrator, Resource Manager, and Service Publisher.

Service elements

Building blocks that make up a service offering, which can additionally be presented as options or choices in the service catalog. For example, a service element could specify what infrastructure is reserved and provisioned, what applications are installed, or which integrations with external systems are necessary. See also service offering.

Service instance

A particular instantiation of a service offering that has been ordered from the service catalog. See also service offering and HP Service Request Catalog.

Service offering

An HP CSA service design (created in HP Operations Orchestration) that is made available to a service catalog with additional information such as pricing, category and description.

Service Provider

An entity that provides services to other entities. In HP CSA, Service Providers can be Application Providers (such as HP Application Deployment Manager, Runtime Configuration Management Providers (such as HP Universal CMDB), Monitoring Providers (such as HP SiteScope), or Compute Providers (such as VMware vCenter or HP Insight Orchestration).

Service Provider Layer

An architecturally designated layer of the HP CSA solution, which contains the building blocks (resources) that comprise a service. These can be a combination of compute, storage, and network resources, or existing Infrastructure as a Service (IaaS) provided by HP resources (such as BladeSystem Matrix), or a public-facing cloud. See also Service Subscription Layer and Service Delivery Layer.

Service Publisher

In HP CSA, a user role that includes selecting flows to be published as service offerings and associated publication details (such as pricing, service description, and service image). The output of the Service Publisher's work appears in the HP Service Request Catalog. See also HP Service Request

Catalog, user roles, Administrator, Resource Manager, and Service Designer.

Service Subscriber

In HP CSA, an end-user or IT customer who subscribes or cancels a subscription using the HP Service Request Catalog. See also HP Service Request Catalog.

Service Subscriber Layer

An architecturally designated layer of the HP CSA solution, which represents an entry point into the system for end users and administrators, including all aspects of capturing and meeting customer demand for cloud subscription services. See also Service Delivery Layer and Service Provider Layer.

SiteScope

See HP SiteScope.

Subscription

An agreement to provide a service or a product to consumers using HP CSA. The HP CSA Portal shows the services that are offered on a subscription basis. Customers can use the HP CSA Portal interface to choose an item, make a request, and confirm the details of the subscription. See also HP CSA Portal.

U**uCMDB**

See HP Universal CMDB.

User roles

Designated job descriptions (or personas), which are done by datacenter personnel (as opposed to automated processing). Of these, installation/configuration is performed by the HP Professional Services Organization (PSO) in collaboration with on-site personnel. Other user roles are

assigned within the IT organization as necessary, including administration of the HP CSA solution, resource management, service design, and service publication. The end-user role (called the subscriber) requires subscribing or cancelling services interactively through the HP CSA Portal. See also Administrator, Resource Manager, Service Designer, Service Publisher, and Service Subscriber.

