Cloud Service Automation

Software Version: 4.80

For Microsoft Windows and Linux operating systems

Concepts Guide

Document Release Date: January 2017

Software Release Date: January 2017

Hewlett Packard Enterprise

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

Trademark Notices

Adobe™ is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

The OpenStack® Word Mark and the Square O Design, together or apart, are trademarks or registered trademarks marks of OpenStack Foundation, in the United States and other countries and are used with the OpenStack Foundation's permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

RED HAT READY™ Logo and RED HAT CERTIFIED PARTNER™ Logo are trademarks of Red Hat, Inc.

This product includes an interface of the 'zlib' general purpose compression library, which is Copyright © 1995-2002 Jean-loup Gailly and Mark Adler.

Documentation Updates

To check for recent updates or to verify that you are using the most recent edition of a document, go to: https://softwaresupport.hpe.com/.

This site requires that you register for an HP Passport and to sign in. To register for an HP Passport ID, click **Register** on the HPE Software Support site or click **Create an Account** on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HPE sales representative for details.

Support

Visit the HPE Software Support site at: https://softwaresupport.hpe.com/.

Most of the support areas require that you register as an HP Passport user and to sign in. Many also require a support contract. To register for an HP Passport ID, click **Register** on the HPE Support site or click **Create an Account** on the HP Passport login page.

To find more information about access levels, go to: https://softwaresupport.hpe.com/web/softwaresupport/access-levels.

HPE Software Solutions Now accesses the HPSW Solution and Integration Portal website. This site enables you to explore HPE Product Solutions to meet your business needs, includes a full list of Integrations between HPE Products, as well as a listing of ITIL Processes. The URL for this website is https://softwaresupport.hpe.com/km/KM01702731.

Contents

Concepts overview 4
CSA Organizations 7
Roles 8
Provider Organization Roles 8
Consumer Organization Roles 9
Functions 11
Access Control 17
Resource Providers 18
Components 19
Service Designs 20
Topology design 20
Sequenced design 20
Subscriber options 21
Service Offerings 22
Customize service offerings 22
Catalogs 23
Service Instances 24
Send documentation feedback 25

Concepts overview

This document describes conceptual information for the HPE Cloud Service Automation (CSA) key terminology, significant functionality, and important processes. CSA is a unique platform that orchestrates the deployment of computer and infrastructure resources, and complex multi-tier application architectures. CSA integrates and leverages the strengths of several datacenter management and automation products, adding resource management, service offerings, service design, and a customer portal to create a comprehensive service automation solution.

The CSA subscription, service design, and resource utilization capabilities address three key challenges:

- The CSA Marketplace Portal provides a customer interface for requesting new cloud services and for monitoring and managing existing services, with subscription pricing to meet your business requirements.
- The CSA graphical service design and content portability tools simplify developing, leveraging, and sharing an array of service offerings that can be tailored to your customers' needs.
- The CSA lifecycle framework and resource utilization features ease the complexity of mapping your cloud fulfillment infrastructure into reusable, automated resource offerings for on-time and on-budget delivery.

"CSA Organizations". An organization in CSA determines a member's entry point into the cloud system and associates its members with services and resources.

" Roles" on page 8. Based on your role, specific areas of the Cloud Service Management Console are available to you.

"Access Control" on page 17. You can add or remove directory service groups or organization units to a role by associating the organization unit's distinguished name to the desired role.

"Resource Providers" on page 18. Resource providers are management platforms that offer centralized control over the infrastructure and resources used in a cloud computing environment.

"Components" on page 19. Components are elements of service design, sequenced or topological.

"Service Designs" on page 20. To provide on-demand, automated service delivery, you create, configure, and modify service designs, which are the recipes for automating the cloud, and which are comprised of reusable service components. Service components and their relationships in a service design define the framework for creating the service.

"Service Offerings" on page 22. Service offerings encapsulate all the information consumers need to select the most appropriate services. Each service offering references a service design, which defines the service options and components of the service.

"Service Instances" on page 24. Service instances encapsulate all the details of the deployed service and its components.

The following concepts are described in the *Cloud Service Automation Configuration Guide*:

- **OO** . OO (OO) is a process engine whose flows are executed by CSA. OO must be integrated with CSA. The flows that can be executed within CSA are imported automatically when an action is created.
- **Cloud Service Management Console**. The Cloud Service Management Console dashboard is made up of predefined tiles that launch predefined pages.
- **Common CSA Tasks**. Common tasks include launching the Cloud Service Management Console and Marketplace Portal, starting, stopping, or restarting CSA and the Marketplace Portal, encrypting a CSA password, and uninstalling CSA.
- **Marketplace Portal** . Configure the Marketplace Portal to enable/disable global search, configure the Showback Report tile, encrypt a Marketplace Portal password, and configure security warning messages.
- **User Administration**. User administration includes tasks such as allowing non-administrator users to start and stop CSA services and changing the out-of-the-box users.
- **Configure IPv6**. Configure CSA to support IPv6 (both dual-stack and IPv6-only).
- **Common Access Card**. Common access cards are used for user authentication and allow users to log in to CSA using a Personal Identity Verification card.
- **Single Sign-On**. You can enable or disable single sign-on that is included with CSA. You can configure single sign-on for the Cloud Service Management Console and Marketplace Portal with almost any single sign-on solution. A specific solution for CA SiteMinder is also provided.
- **Database Administration**. Database administration includes tasks such as configuring the CSA reporting database user if you did not configure it during installation, updating CSA database system or users and passwords, importing large archives, purging service subscriptions, installing the CSA database schema, and configuring CSA to mitigate frequently dropped database connections.
- **OO Manual Configuration for Designs**. You can configure OO manually for topology and sequential designs without using the Cloud Content Capsule Installer.

See the following guides for more information about CSA:

- Supported components and versions: *Cloud Service Automation System and Software Support Matrix*
- Installation: *Cloud Service Automation Installation Guide*
- Configuration: *Cloud Service Automation Configuration Guide*
- Configuring CSA in a clustered environment: *Cloud Service Automation Cluster Configuration Guide Using a Load Balancer*
- Sample service designs and resource offerings: *CSA/Codar Content at a Glance Guide*
- Complete list of documentation, see the *Cloud Service Automation Documentation Library*.

CSA Organizations

An organization in CSA determines the entry point of a member into the cloud system and associates its members with services and resources.

An organization typically represents a business entity, such as a company, business unit, department, or group. CSA queries the identity management system of the organization to determine the members and groups of the organization and uses this information to authenticate and authorize CSA users and their actions.

CSA defines one provider organization for every CSA instance. You can assign provider organization roles to control access to administrative functions. Using the Cloud Service Management Console, members of the provider organization can create one or more consumer organizations, manage configured organizations, and manage resources and services (such as designing, offering, and publishing resources and services for consumption).

The organizations, resources, and services that can be managed are determined by the role assigned to the members of the provider organization. For example, the CSA Administrator manages all organizations, resources, and services, while the Consumer Service administrator manages only the organizations. The consumer organizations use the Marketplace Portal to subscribe to or consume the resources and services set up by the provider organization. There may be multiple consumer organizations configured; however, each consumer or subscriber sees only the information for the consumer organization of which he or she is a member. CSA uses consumer organizations and catalogs, along with identity management system data, to map service offerings to the appropriate subscribers.

Roles

Roles represent the people responsible for performing particular tasks in the CSA workflow.

Provider Organization Roles

Provider organization roles authorize members to perform specific tasks, access specific parts of the Cloud Service Management Console, and are typically configured by the administrator.

Administrator

	The Administrator has access to all functionality in the Cloud Service Management Console.

Consumer Service Administrator

	The Consumer Service Administrator configures and manages consumer organizations.

Content Manager

	The Content Manager has access to the Content Store to search for and download content offerings from HPE Live Network.

Resource Supply Manager

	The Resource Supply Manager creates and manages cloud resources, such as resource providers and resource pools.

Service Business Manager

	The Service Business Manager creates and manages service offerings and service catalogs and troubleshoots issues with provisioning or de-provisioning services.

Service Designer

	The Service Designer designs, implements, and maintains service designs (also referred to as blueprints), component palettes, component types, component templates, and resource offerings.

Service Operations Manager

	The Service Operations Manager views and manages subscriptions and service instances and troubleshoots any issues with provisioning or de-provisioning services.

Workflow Author

Workflow Author	The Workflow Author accesses the Web Studio Designer to view and create OO flows.

Consumer Organization Roles

The Marketplace Portal supports the following roles:

Consumer Organization Administrator

	The Consumer Organization Administrator can do the following: • Create, edit, and delete catalogs for your organization. • Manage service offerings in your organization's catalogs. • Manage access control, approval policies, and categories for catalogs in your organization. • Manage user's subscriptions in your organization by performing actions on a subscription *on behalf of* the original subscriber. • Use HPE IT Business Analytics to measure and optimize the cost, risk, quality, and value of IT services and processes.

Service Consumer

	The service consumer can subscribe to service offerings, manage service subscriptions, and perform actions on service instances.

Functions

Use the initial dashboard view to navigate to the area of the Cloud Service Management Console where you can complete your tasks.

To navigate to and from views in CSA:

- Click **Cloud Service Automation** in the title bar to return to the dashboard.
- Click the grid icon in the title bar to directly launch a certain application from My Applications in the Cloud Service Management Console. The list of applications will be customized, based on your role and permission.

Depending on your role, the following functional areas are available to you:

Functional Area	Role	Major Tasks
Administration	 **Administrator**  **Consumer Service Administrator**  **Consumer Organization Administrator**	• Customize an organization • Customize the Marketplace Portal • Customize widgets for the Marketplace Portal • Configure LDAP for an organization • Configure membership to predefined roles • Configure the mail server used to send email notifications and some email source settings • Configure operational settings for your organization • View the catalogs associated with an organization

Functional Area	Role	Major Tasks
Providers	 **Administrator**  **Resource Supply Manager**	• View, create, or edit a provider • Associate or dissociate providers with an environment • View or edit properties of a provider • Associate or dissociate resource offerings with a provider • Associate or dissociate environments with a provider • Manage custom provider properties • Manage provider types • Manage environments • Manage resource pools

Functional Area	Role	Major Tasks
Service Design	 **Administrator**  **Service Designer**	**Sequenced Designs** View, create, edit, copy, import, export, or delete: • Components • Component palettes • Resource offerings • Service designs **Topology Designs** View, edit, copy, import, export, publish, test or delete: • Service designs • Components • Palettes

Functional Area	Role	Major Tasks
Offerings	 **Administrator**  **Service Business Manager**	• Create service offerings • Modify service offerings • Import service offerings • Export service offerings • View or delete service offerings • Configure options for service offerings • Configure pricing for service offerings • Associate documents and screenshots with service offerings • Create new versions of service offerings • Publish and unpublish service offerings

Functional Area	Role	Major Tasks
Catalog	 **Administrator**  **Service Business Manager**	• Customize a catalog • Configure who can access a catalog • Add or edit an approval policy • Create, edit, or delete categories • View service offerings by category, publish or unpublish service offerings to a category, or edit the approval process or policy for a service offering • View or select an environment for a catalog

Functional Area	Role	Major Tasks
Operations	 **Administrator**  **Service Operations Manager**	• View user subscriptions for an organization • View subscriptions for a user • Transfer subscriptions • Cancel subscriptions • View topology for a subscription • View providers for a subscription

Functional Area	Role	Major Tasks
Content Store	 **Administrator**  **Content Manager**	• Search for content capsules from HPE Live Network • Install an existing capsule • Install a capsule from a file • Update a capsule

Functional Area	Role	Major Tasks
Cloud Analytics	 **Administrator**  **Resource Supply Manager**  **Service Business Manager**	If integration is configured, a place to view scorecards and dashboards so that Resource Supply Managers and Service Business Managers have insight into how to measure and optimize the cost, risk, quality and value of IT services and processes. • Integrate with HPE IT Business Analytics • Launch a report that

Functional Area	Role	Major Tasks
		measures the cost and usage of resource providers in CSA • Launch a report that measures the revenue, cost, and profit margin for business services in CSA • View a showback report for an organization or for a consumer user

Functional Area	Role	Major Tasks
Workflow Designer	 Administrator **Workflow Author**	• Integrate with OO Designer

Functional Area	Role	Major Tasks
Cloud Optimizer	 **Administrator**  **Service Business Manager**  **Service Designer**	• Integrate with Cloud Optimizer

Functional Area	Role	Major Tasks
Settings	 **Administrator**	• Configure Content Store Settings

Functional Area	Role	Major Tasks
Marketplace	 **Consumer Service Administrator**  **Service Consumer**	The Marketplace Portal is a self-service web interface that retrieves service offerings for IT applications from the CSA server and displays them in an intuitive view.

Functional Area	Role	Major Tasks
Custom	 **Administrator**  **Consumer Service Administrator**  **Resource Supply Manager**  **Service Business Manager**  **Service Designer**  **Service Operations Manager**	Optional area for accessing customized content. If enabled, displays content that is customized for this instance of the Cloud Service Management Console (for information on how to enable this area, see the *Cloud Service Automation Configuration Guide*.

Access Control

You can add or remove directory service groups or organization units to a role by associating the distinguished name of the organization unit to the desired role. The authenticated users, who are members of a group or organization unit that is assigned to a role, can perform specific tasks, and can access specific areas of the Cloud Service Management Console. You can assign group or distinguished name of the organization unit to more than one role.

Resource Providers

Resource providers are management platforms that offer centralized control over the infrastructure and resources used in a cloud computing environment. For example, a provider such as infrastructure orchestration can deploy virtual machines, while a provider such as SiteScope monitors applications. A provider corresponds to the specific instance of an application that CSA can integrate with to help instantiate service designs. For example, to enable service designs that target Matrix Operating Environment, you must first define and create a provider (with a provider type of Matrix Operating Environment) in the Cloud Service Management Console. During this provider definition, you specify details such as user credentials and the URL for your Matrix Operating Environment service access point.

Components

Components are elements of service design. Only topology components are displayed in the Components tab. Sequenced components are not associated with providers or provider types. From the Components tab, you can view the topology components associated with a specific provider instance and manage the topological components.

Service Designs

Create, configure, and modify service designs to provide on-demand, automated service delivery. Service designs are the recipes for automating the cloud, and include reusable service components. Service components and their relationships in a service design define the framework for creating the service.

Service designs also provide a structure for options that consumers can select when ordering a service. You can re-use designs for multiple service offerings, with each service offering customized to meet the needs of different consumer organizations and groups. You can also leverage service designs shipped with CSA as well as exporting and importing designs between CSA systems.

You can create topology and sequenced designs.

Topology design

Topology designs specify components, relationships, and properties. In contrast to sequenced designs, which more explicitly define the provisioning order and the sequence of actions that will run, topology designs are declarative in nature and do not include explicit actions or sequencing. The provisioning sequence is inferred by the relationships that exist between components in a topology design.

Use topology designs for Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) deployments that are enabled using Chef, Puppet, Server Automation, and OO flow-based components.

Sequenced design

Sequenced designs specify directed execution of the service component lifecycle and provide mechanisms for controlling resource selection as each component is deployed. When creating sequenced designs, associate one or more resource offerings on a service component to constrain provider selection. This association or link ensures that the resource offering will be provisioned when the service component is deployed. You can also associate resource offerings with component templates.

Use sequenced designs for complex services and services that rely on runbook automation, such as integrations with legacy data center systems. Create a sequenced design as a directed component

hierarchy to define lifecycle execution. Sequenced designs use components to group multiple automation providers within a single entity, and they permit explicit specification of lifecycle actions.

Subscriber options

Subscriber options enable you to expose service design options in the Offerings area. Subscriber options are sets of options for a service design. The options sets are made available in the Offerings area. You can refine subscriber options by setting pricing for options, hiding options, and setting values for option properties. The subscriber options are then available to subscribers.

Service Offerings

Service offerings provide the information consumers need to select the most appropriate services. Each service offering references a service design, which defines the service options and components of the service. You can tailor service offerings for each consumer group with details such as customized terms and conditions, option visibility, and pricing. Create a service offering from a sequenced or topology service design. When you are ready to expose the design to subscribers, publish the service offering in a catalog in the Marketplace Portal. You can create an offering from a sequenced or topology design. Pricing is configured on a service offering and supports initial, recurring, and option-specific pricing. You can choose to show or hide the initial or recurring price details to a subscriber or an approver in the Marketplace Portal. You can also attach documents to a standard service offering (such as service level agreements, terms, and conditions) and screenshots, which are images and captions that provide the user with a visual representation of the offering in the Marketplace Portal.

Customize service offerings

You can customize service offerings for different target groups. You can base customized service offerings on the same service design using different attributes for each group. You publish a customized service offering in a catalog that is visible to its target group.

You can configure the following service offering attributes:

- Offering name, description, image, and tags
- Option visibility for offerings based on sequenced designs
- Subscription pricing
- Attached documents such as service level agreements or terms and conditions
- Associated screenshots or other images
- Multiple versions per service offering

You link each service offering to its target group by publishing the service offering in a catalog for that group. CSA uses catalogs to constrain the service offerings displayed for each user. The Marketplace Portal only displays offerings published in catalogs associated with one of the user groups. Pricing details can be hidden from the subscriber or approver in the Marketplace Portal if configured in the service offering.

CSA manages catalog access through group memberships as configured in the organization's identity management system. CSA does not directly manage the creation or maintenance of individual users or organizational groups. You specify an identity management system for each CSA organization you create. You then configure the groups that can access the organization user interface. You also configure catalog access for specific groups within an CSA organization. Each organization group memberships must exist or be created in its identity management system. Often, existing groups naturally correspond to CSA access control needs. Sometimes you will need to create new groups for specific needs.

Catalogs

Catalogs map service offerings to specific groups within a consumer organization. Publishing a service offering in a catalog makes the offering visible in the Marketplace Portal to the groups associated with the catalog. You can configure each catalog as visible to specific groups within the organization associated with the catalog, and you can also specify the default approval process and the available approval policies for each catalog. In addition, you can publish a service offering in multiple catalogs to make it visible to more than one set of consumers.

You can start by configuring the automatically created, default catalog (Global Shared Catalog), or you can manually create a new catalog and associate it with an organization. Multiple catalogs can be associated with the same organization, and any changes made to the Global Shared Catalog will be visible in the Marketplace Portal of every organization.

Service Instances

Use the Operations area of the Cloud Service Management Console to view and manage subscriptions and service instances for all consumer organizations. A subscription originates with a subscription request, which is a request for delivery of cloud services that is initiated by the subscriber (end user) using a service catalog in the Marketplace Portal. After a subscription request is approved, a service instance is created. CSA constructs service instance artifacts during service deployment and updates service instances during service management. Service instances provide all details of the deployed service and its components; for example, provisioned IP details for a network segment component. CSA bases service instances on the service design configured for the service offering, and on consumer demand.

Send documentation feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Concepts Guide (Cloud Service Automation 4.80)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to clouddocs@hpe.com.

We appreciate your feedback!