Cisco Elastic Services Controller 1.1 Release Notes

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These release notes provide an overview of Cisco Elastic Services Controller (ESC) 1.1 and describes some of its features and the limitations in this release.

Contents

These release notes contain the following sections:

Introduction

ESC is a Virtual Network Functions Manager (VNFM), which performs life cycle management of Virtual Network Functions (VNFs).

ESC provides agentless and multi vendor VNF management by provisioning virtual services, and monitoring their health and load. ESC provides the flexibility to define monitoring rules, and associates actions to be triggered based on the outcome of these rules. As a VNFM, in addition to the typical life cycle management operations, ESC also supports healing and scaling in (and) scaling out functions. It also supports automatic VM recovery when a VM fails. ESC fully integrates with Cisco and other third party applications.

- As part of the Cisco Orchestration Suite, ESC is packaged with Cisco Network Service Orchestrator(NSO), and available within Cisco Solutions such as Virtually Managed Services (vMS) and CiscoCloud Services (CCS).
- As a standalone product, ESC is available as a Virtual Network Function Manager bundled with several Cisco VNFs such as VPN, vRouter and many others.

Note The following browsers are supported:

- Google Chrome 44.x or higher
- Mozilla Firefox 40.x or higher

Installation Scenarios

Elastic Services Controller (ESC) and its managed VNFs are deployed as virtual machine running within a Virtual Infrastructure Manager (VIM). OpenStack is the currently supported VIM.
For more details, see the Installation Scenarios chapter in the *Cisco Elastic Service Controller Install Guide*.

Supported Features

For more information on these features, see *Cisco Elastic Services Controller User Guide*.

Deploying VNFs without Service Registration

Cisco Elastic Services Controller Release 1.1 allows you to deploy VNFs without service registration. However, you must have the necessary resources before you deploy VNFs.

VNFs can be deployed without service registration in the following ways:

- Creating Images and Flavors through ESC—Images and flavors can be created through ESC by referring to image.xml and flavor.xml. These images can be used in multiple VNF deployments and can be added or deleted through ESC
- Pre-existing Images and Flavors in OpenStack—Images and flavors exist independently in OpenStack. VNFs can be deployed using images and flavors in OpenStack. These images and flavors can be used in multiple VNF deployments.

For more details, see the *Cisco Elastic Services Controller Registration and Deployment Attributes*.

Images and Flavor Support

Cisco Elastic Services Controller Release 1.1 supports creation of images and flavors independent of the service registration process. This allows you to create images and flavors separately. These images and flavors can be used in multiple VNF deployments.

Deployment Update

Cisco Elastic Services Controller Release 1.1 provides support to add or delete a vm_group, add or delete an ephemeral network in a vm_group, and add or delete an interface in a vm_group during deployment. For more details, see the **Deploying Virtual Network Functions** chapter in the *Cisco Elastic Services Controller User Guide*.

OpenStack Version Support

Cisco Elastic Services Controller Release 1.1 supports the following OpenStack versions:

- Juno on Redhat/RHEL (7.0/7.1)
- Icehouse on Redhat/RHEL (7.0/7.1)
- Icehouse on Canonical/Ubuntu (14.0.1)

High Availability (HA)

Cisco Elastic Services Controller Release 1.1 allows you to deploy high availability with database replication. The database replication is enabled by Distributed Replicated Block Device (DRBD).

DRBD is used as the replication tool to keep the ESC database synchronized, therefore there is no requirement of an external storage.

For more details, see the **High Availability** chapter in the *Cisco Elastic Service Controller Install Guide*.

ESC Portal

In Cisco Elastic Services Controller Release 1.1, the ESC portal is enhanced to support provisioning for registration and deployment.

- To register VNFs, choose **Resources > Registration**.
- To deploy VNFs, choose **Deployments**.

The drag and drop feature allows you to grab an existing registration datamodel and to re-use it by dragging the file to the drop off area.

Note The **Register** or **Deploy** button will be disabled until the xml file is identified. Only xml files are accepted.

The drag and drop feature executes a REST call as of now and does not execute NETCONF calls. If you want to delete the registration created through the drag and drop feature then you must do it from either the ESC Portal or directly through REST call. If you use both REST and NETCONF calls then it will cause ESC to get out of sync with the registrations.

For more details, see the ESC Portal chapter in the *Cisco Elastic Services Controller User Guide.*

Network Enhancement

Cisco Elastic Services Controller Release 1.1 supports creation of both a tenant network and a provider network.

- Tenant Network—A tenant network is created for a single network and all its instances. It is isolated from the other tenants.
- Provider Network—A provider network is created by the administrator. The attributes are mapped to the physical underlying network or a segment. The following attributes define a provider network:
  - network_type
  - physical_network
  - segmentation_id

ESC also supports Ephemeral networks which are short-lived tenant networks purposely created during unified deployment and exists only till the lifetime of that deployment. For more details, see *Cisco Elastic Services Controller User Guide.*

Cisco Elastic Services Controller Release 1.1 also supports SR-IOV pass-through interfaces. However, OpenStack should be configured to support SR-IOV pass-through interfaces. ESC introduces new *provider_network* type and *interface* type attributes to support SR-IOV.

Logging framework

Cisco Elastic Services Controller Release 1.1 supports a logging framework to log all the ESC events throughout the VNF life cycle. These log files can be found at /var/log/esc/. The log messages can be easily parsed and filtered by log analysis tools.

ESC logs can also be forwarded to an rsyslog server for further analysis and log management.

Limitations

The following section lists the limitations in Cisco Elastic Services Controller Release 1.1:

ESC Interface Limitations

- **ESC Portal**
  - ESC 1.1 release, ESC Portal offers read only view of tenants, networks managed by ESC.
  - ESC 1.1 does not support XML validation. Therefore, you must make sure you use valid registration and deployment XML files.
  - Supports only one user.
  - ESC log view retrieves the last 5 MB (around 16000 lines) of the log file.
  - Https communication is currently supported by a pre-installed self-signed certificate. One of a side effect is that the browser will ask the end-user for confirmation before proceeding with the Insight Portal.
  - In https mode, if the URL protocol type returned by OpenStack is not Https, the access to the VNF Console may be disabled when using Https secure communication. For security reasons, the Portal will not accept to establish a non-secure communications while running Https.
- **NETCONF API:**
  - NB client should not switch between ESC NETCONF and REST API interfaces, as there is no synchronization between them.
  - When a SERVICE_UPDATE configuration fails, changes in min or max VMs causes a scale in or scale out. ESC cannot roll back the number of min or max VMs in the configuration due to the errors caused in the OpenStack, In this case CDB (an ESC DB) would be out of synchronization.
  - There is limited support to mix multiple operations in configurations; only tenant or a service registration operations can be mixed. There is no possibility of mixing a network, subnet or deployment operations. If there is a need of multiple operations, they have to be done using multiple configurations.
  - Tenants, service registration and deployments are the only object types where ESC supports multiple entries during creation or deletion.

Note In ESC Release 1.1, while crating or deleting tenants and subnets, you cannot combine data types of tenants or subnets in the same NETCONF payload.

  - If the ConfD notifications are blocked (that is, its stops processing both the notifications and the subscriptions), restart the ConfD process.

- **REST API:**

  Share Network and Subnet Creation:

  – When a tenant's attempt to create a network fails, the tenant gets deleted and leaves a chance for an internal leaking Network State Machine (NSM) objects.

Note The leaking Network State Machine (NSM) objects cannot be cleaned.

  – If the tenant and the network are deleted, there are chances for a leaking Subnet internal state machine objects, caused due to a failed subnet creation.

Tip To overcome these limitations re-create the tenant object and delete the objects again.

ESC Infrastructure Limitations

- **High Availability (HA)**:

  – Upon a HA failover, all the in-flight requests will be lost or suspended. Northbound client needs to request for a rollback and then try deploying the ESC.

Note The NB client can simply leverage request timeout (or) retry to handle this situation**.**

  – If you deploy ESC HA using OpenStack Cinder, the cinder volume is used for the coordination between the Primary and Standby instances.

  – There may be an instance where the Primary is suspended by OpenStack command and the switch over is triggered, but the Cinder volume is not attached to the new Primary instance. This is not a valid use case for ESC HA.

  – Manual reboot of the ESC MASTER VM triggers two consecutive reboots:

    •Keepalived is switching its state to BACKUP but our internal state still maintains the current status to Primary, the state transition triggers another reboot**.**

Feature Limitations

- **VM Affinity and Anti-Affinity:**

  – ESC supports VM placement to a specific host within the default nova zone by using <*host*> tag or to a specific zone by using <*zone*> tag. The combination of <*host*> and <*zone*> tag is not supported.

  – The target VM group as the reference of affinity or anti-affinity rule must have non-zero value of scaling tag <*min_active*>.

  – The total number of VMs following the same anti-affinity rule should not be greater than the number of host. This is not a valid use case.

  – For adding or deleting a vm_group, ESC does not support the <*type*> tag to be changed from affinity to anti-affinity.

- **Deployment Update:**

  ESC 1.1 provides support to add or delete a vm_group, add or delete an ephemeral network in a vm_group, and add or delete an interface in a vm_group during deployment.

  For ESC Datamodel updates

  - ESC does not support the properties of an existing vm_group to be updated.
  - ESC does not support the image, the flavor, kpi and the rules section of a vm_group to be updated.
  - ESC does not support blank names for resource names (that is, vm_group, network, subnet or Interface)
  - In ESC 1.1, the ephemeral networks or subnets can only be added or deleted. ESC does not support updating the properties of an existing network or subnet.

  For ESC Interfaces

  - In ESC 1.1, the interface can only be added or deleted. ESC does not support updating the properties of an existing interface.
  - ESC does not support adding or deleting interfaces through the ESC portal.
  - ESC supports adding or deleting interfaces from a vm_group only through NETCONF APIs. \
  - ESC does not support Day-0 configuration of interfaces added during service update.
  - In case of recovery, for Day-0 configuration, all the interfaces with Network Interface Card IDs will be configured.
- **High Availability:**

  Common Limitations for ESC HA

  - The HA failover will take around two minutes and the ESC service will not be available during the switchover time.
  - When the switchover is triggered during inflight transactions, all the incomplete inflight transactions will be dropped. The requests should be re-sent by NB client if it does not receive any response from ESC.

For complete list of ESC HA limitations, see *Cisco Elastic Service Controller Install Guide*.

Cisco Elastic Services Controller Bugs

For a complete list of known and resolved bugs and enhancements for this release, use the Cisco Bug Search tool.

Resolved Bugs

Table 1 lists the key issues resolved in the Cisco Elastic Services Controller 1.1 release:

Table 1 Resolved Bugs in Cisco Elastic Services Controller 1.1

Bug ID	Description
CSCuu39649	All VNFs lost after ASR reload (netwok outage). Services don't recover
CSCuu18436	After bulk deployment, while checking the logs, ESC Portal shows signs of latency

Open Bugs

Table 1 lists the open issues in the Cisco Elastic Services Controller 1.1 release.

Table 2 Open Bugs in Cisco Elastic Services Controller 1.1

Bug ID	Description
CSCut96394	When OpenStack is unreachable netconf doesn't have immediate failure
CSCus39325	ESC Database Size Grows 1MB / 25 VMs deployed
CSCus39317	Tomcat is slowly leaking memory
CSCuv91011	500/internal server error if click System/Log via ESC Portal
CSCuv72706	ESC Portal does not validate the input.xml files
CSCuv88201	ESC run out of thread with 1000 tenant creation/deletion
CSCuv87967	<host_placement> logic currently does not allow a <zone> - Exception
CSCuv90105	Anti-Affinity policy for VMGroup must fail if compute hosts not equal to VMs

Cisco Bug Search Tool

Bug Search Tool (BST), the online successor to Bug Toolkit, is designed to improve our customers' effectiveness in network risk management and device troubleshooting.
BST allows partners and customers to search for software bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. The service has provision to filter bugs based on credentials to provide external and internal bug views for the search input.

To use the BST to search for a specific bug or to search for all bugs in a release:

Step 1 Go to http://tools.cisco.com/bugsearch.

Step 2 At the Log In screen, enter your registered Cisco.com username and password; then, click **Log In**. The Bug Search page opens.

Note If you do not have a Cisco.com username and password, you can register for them at http://tools.cisco.com/RPF/register/register.do.

Step 3 To search for a specific bug, enter the bug ID in the Search For field and press Return.

Step 4 To search for bugs in the current release:

a. In the Search For field, enter a keyword and press Return. (Leave the other fields empty.)

b. When the search results are displayed, use the filter tools to find the types of bugs you are looking for. You can search for bugs by modified date, status, severity, and so forth

Tip To export the results to a spreadsheet, click the Export All to Spreadsheet link.

See Bug Search Tools & Resources on Cisco.com. For more details on the tool overview and functionalities, check out the help page, located at http://www.cisco.com/web/applicat/cbsshelp/help.html

Related Documentation

The following documents are available for ESC 1.1:

- Cisco Elastic Service Controller 1.1 User Guide
- Cisco Elastic Service Controller 1.1 Install Guide
- Cisco Elastic Service Controller 1.1 REST API Guide
- Cisco Elastic Service Controller 1.1 NETCONF API Guide

You can access the documents at:
http://www.cisco.com/c/en/us/support/cloud-systems-management/elastic-services-controller-esc/tsd-products-support-series-home.html

Accessibility Features in Cisco ESC 1.1

For a list of accessibility features in Cisco ESC 1.1, see the Voluntary Product Accessibility Template (VPAT) on the Cisco website, or contact accessibility@cisco.com.

All product documents are accessible except for images, graphics, and some charts. If you would like to receive the product documentation in audio format, braille, or large print, contact accessibility@cisco.com.