



Release Notes for Cisco Modeling Labs Corporate Edition

Version 1.1

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What's New?

Platform Reference Model VMs

Supported Images

The current CML 1.1 release supports the following reference images:

Image	Bundled (Yes / No)
NEW IOSv - 15.5(3)M image	Yes
NEW IOSvL2 - 15.2.(4.0.63)E image	Yes
NEW IOSXRv - 5.3.1 CCO demo image	Yes
NEW CSR1000v - 3.16 XE-based demo image	Yes
NEW Ubuntu 14.04.2LTS Cloud-init	Yes
NEW Unmanaged Switch	Yes
NEW NX-OSv 7.2.0 (ZD 120) <u>Experimental Image</u>	No. Available on CML FileExchange
NEW ASAv 9.4.1	No. Available on CML FileExchange

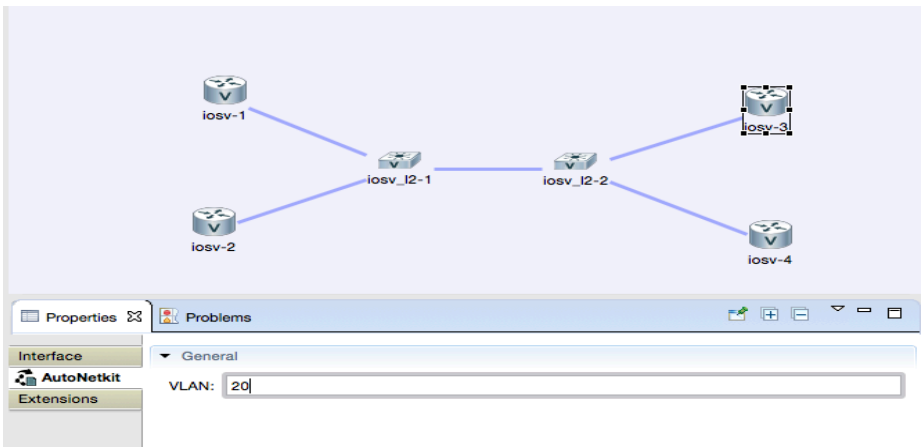
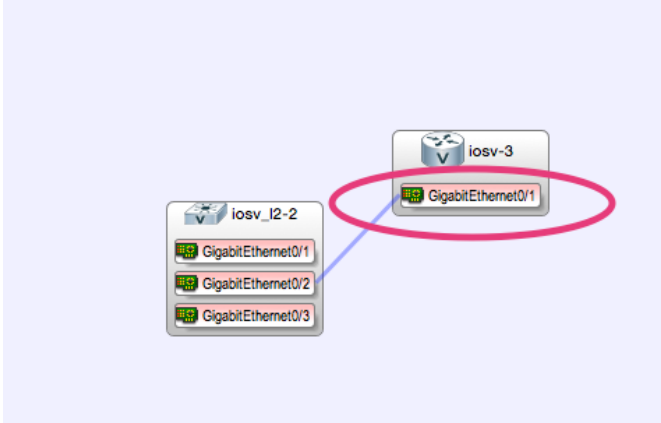
Virtual Machine Memory Requirement

Image	Memory Requirement (MB)
NEW IOSv - 15.5(3)M image	512
NEW IOSvL2 - 15.2.(4.0.63)E image	768
NEW IOSXRv - 5.3.1 CCO demo image	3072
NEW CSR1000v - 3.16 XE-based demo image	3072
NEW Ubuntu 14.04.2LTS Cloud-init	2048Mb
NEW NX-OSv 7.2.0 (ZD 120) – <u>Experimental Image</u>	3072
NEW ASAv 9.4.1	2048

New Features

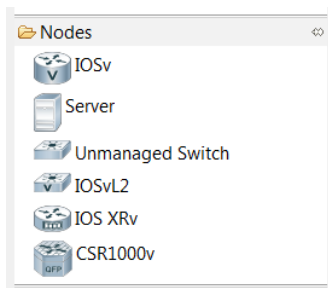
- **IOSvL2 15.2.(4.0.63)E** - A new IOSv-based Layer 2 switch virtual machine image is now available and bundled with CML. The IOSvL2 image is considered a full virtual machine and therefore counts against the Cisco node count limit. If you do not wish to use the IOSvL2 virtual machine, the 'unmanaged switch' icon is an alternative Layer 2 switch element. The IOSvL2 image supports the following capabilities:
 - Layer 2 switch forwarding (auto-configured)
 - Switchport (auto- configured)
 - 802.1q trunk, 802.1q VLANS (auto- configured)
 - Spanning Tree (auto- configured)
 - Port-Channel
 - 802.1x pass-through
 - Port-ACLs
 - Dynamic ARP Inspection
 - DHCP Snooping
 - IP device tracking
 - Switched Virtual Interfaces
 - Layer-3 forwarding over SVIs
 - Routing protocol support
 - Vlan Access Maps (VACLs / access control lists for vlans)
 - ACL functionality for both layer2 and layer3 protocol packets
 - Dynamic Trunking Protocol support
 - Switchport protected mode
 - Port mirroring (SPAN) is **NOT supported**
 - Private VLANS are **NOT supported**
- **IOSvL2 ANK Configuration Support / VLAN Support** – CML now supports the IOSvL2 image. You can use the **Build Initial Configurations** tool to create the basic configuration required to configure the IOSvL2 instance type. By default, interfaces from routers or servers connected to the IOSvL2 instance will be placed into **VLAN 2**. Multiple IOSvL2 instances can be connected to each other, with .1Q Trunk port configuration being applied.

Users can select the router/server, select its interface from the Node Editor view and then set the VLAN value in the Interface Properties/AutoNetkit field.



In the example shown, the interface GI0/1 on IOSV-3 is placed into VLAN 20. The configuration that will be built for IOSv_I2-2 places the interface GI 0/2 on IOSv_I2-2 into VLAN20. Configuration Extraction support is also provided for the IOSvL2 instance type.

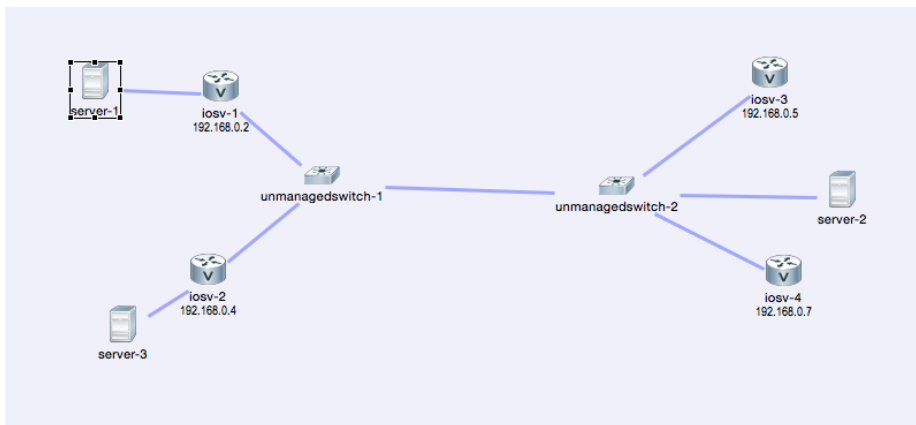
- **ASAv 9.4.1** – CML now supports Adaptive Security Appliance virtual machine (ASA1000v). Note that in order to run the ASAv VM, the CPU of your server must support SSE3 flags. Intel CPUs are included in this support.
 - **ASAv** goes through a double-boot before becoming active. This is normal and expected.
 - **ASAv Basic Configuration Support.** You can use the **Build Initial Configurations** tool to create the basic configuration required to configure the ASAv. Configuration Extraction support is also provided for the ASAv instance type.
- **Unmanaged Switch replaces the Multipoint Connector** - The multipoint connector has been retired and replaced by the new **Unmanaged Switch** subtype.



The unmanaged switch operates in the same manner as the multipoint connector in that multiple devices connected to the same unmanaged switch operate as if they were all in the same layer-3 broadcast domain. When the **Build Initial Configurations** tool is used, devices connected to the unmanaged switch are placed in the same subnet.

A maximum of 15 interfaces can be connected to a single unmanaged switch instance. However, you are able to connect multiple unmanaged switch instances to each other to enable larger numbers of devices to be connected to, what appears to be, a single broadcast domain.

In the following diagram, two unmanaged switch instances are connected, such that the devices on the right-hand side of the diagram are in the same broadcast domain and layer-3 subnet as those on the left-hand side of the diagram.



If you have existing .virl files that have a multipoint connector present, when you open the file in CML 1.1, the multipoint connectors appear with 'problem' markers as per the following example.

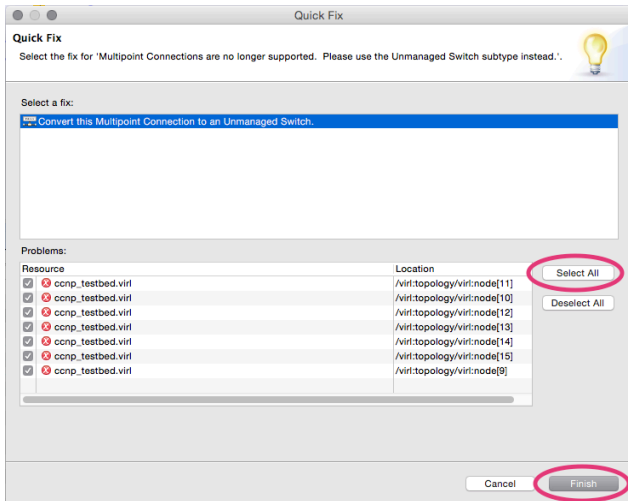
The network diagram shows a central core of routers: two CSR1000v-1 and two CSR1000v-2. These are connected to several IOS-XRv-1 and IOS-XRv-2 routers. Multiple point-to-point connections (yellow bars) link these routers to various IOSv-1, IOSv-2, and IOSv-3 virtual switches, which are in turn connected to physical servers (server-1, server-2). The 'Problems' view below lists 7 errors:

Description	Resource	Path	Location	Type
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...
Multipoint Connections are no longer supported. Please use the Unmanag...	ccnp_testbed...	/My Topologies	/virl:topology/...	Topology Pro...

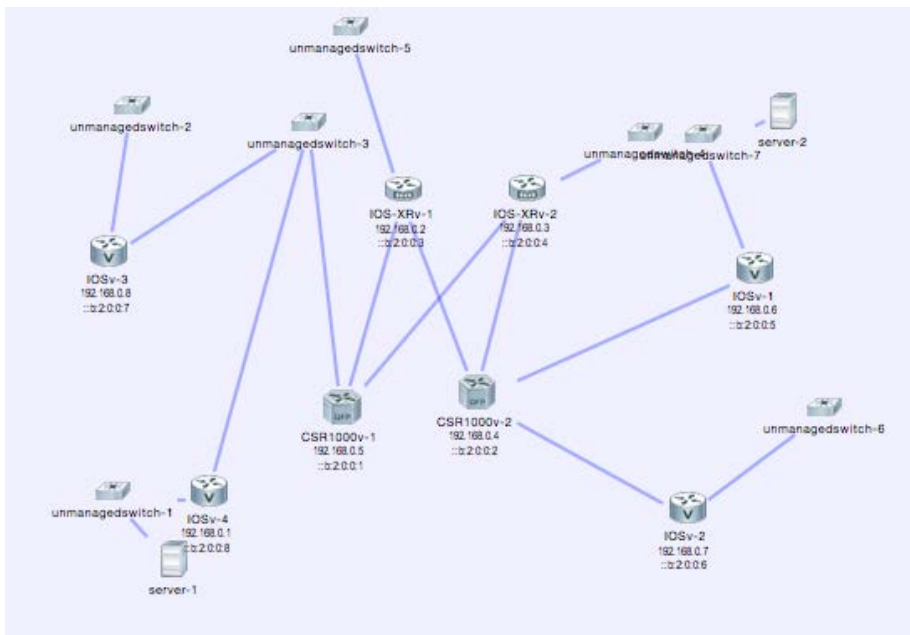
The **Problems** view lists the errors as per the example above. In order to be able to launch your simulation, you need to convert the Multipoint connector to an unmanaged switch. This is done by right clicking one of the error reports and selecting **Quick Fix** from the drop-down menu. On the **Quick Fix** dialog box, you can then select all of the 'problems' to be fixed and click **Finish** to update your topology file.

The screenshot shows the 'Problems' view with a context menu open over one of the error entries. The menu options are:

- Go to
- Copy (⌘C)
- Delete (⌘X)
- Select All (⌘A)
- Show In
- Quick Fix (⌘1)**
- Properties (⌘I)



Your topology will now be updated to use Unmanaged Switches instead of the older Multipoint connector.



- Interface State Control (Link down/Link up)** When a simulation is running, you can change the state of the network interface (down/up). **Note:** this does not change the state of the interface on the virtual machine but rather changes the state of the underlying communications infrastructure. In order to change the interface state, using a web browser, connect to 'http://<ip address of your CML server>' and log in to the **User Workspace Management** interface using the username and password (such as guest/guest) under which you started your simulation. In the **Overview** page, select the active session.

Sessions

Request to stop all

Sessions of project test

Request to stop selected

<input type="checkbox"/>	Session	User	Project	Status	Expires	Options
<input type="checkbox"/>	My_Topologies@3-node_triangle-18N9wJ	test	test	ACTIVE	never	▼

The Interfaces table is displayed and you can select **Update Admin State** from the **Options** column.

Interfaces

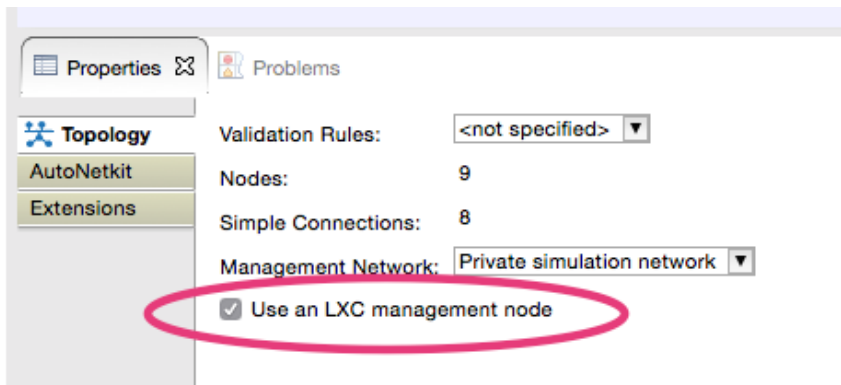
Node	Interface name	Interface up	Network subtype	Network name	IP Addresses	Options
iosv-1	GigabitEthernet0/0	True	PROJECT MGMT	test	10.255.0.6 / 16	▼
iosv-1	GigabitEthernet0/1	True	SIMPLE	iosv-1-to-iosv-2	unassigned	▼
iosv-1	GigabitEthernet0/2	True	SIMPLE	iosv-1-to-iosv-3	unassigned	▼
iosv-2	GigabitEthernet0/0	True	PROJECT MGMT	test	10.255.0.3 / 16	▼

Update admin state
Create capture

You are asked to confirm that you wish to change the interface state before the action is performed.

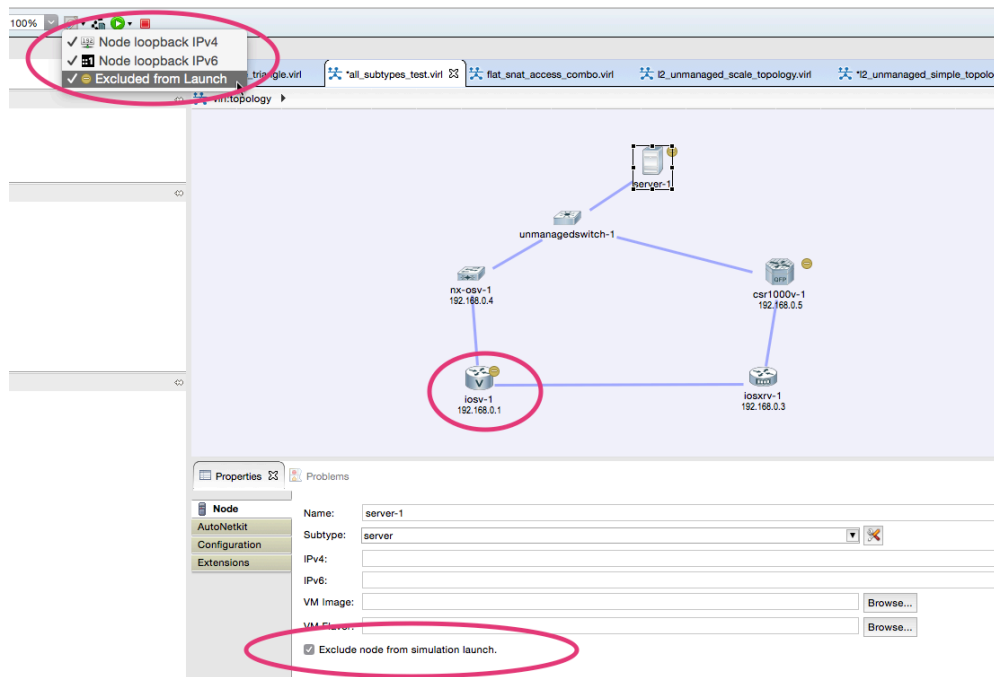
Note: The state of the interface is NOT captured when a configuration extraction is performed, since this is gathering the state of the virtual machines, not the underlying communications infrastructure.

- **MPLS LDP Support** - Users are now able to explicitly enable LDP on a per-node basis using the AutoNetkit MPLS LDP attribute. Setting this value and running the **Build Initial configurations** tool results in LDP being enabled on all interfaces connecting to another router running MPLS LDP.
- **IPv6 Auto Configuration for Linux Servers** - Linux servers are now automatically configured with IPv6 addresses and route entries when the IPv6 address family is enabled.
- **LXC Jumphost Functionality** - The Linux container is now the default 'jumphost' - providing a lightweight Linux server which provides a common access point into your simulation as well as providing the gateway for SSH access to your virtual machines.

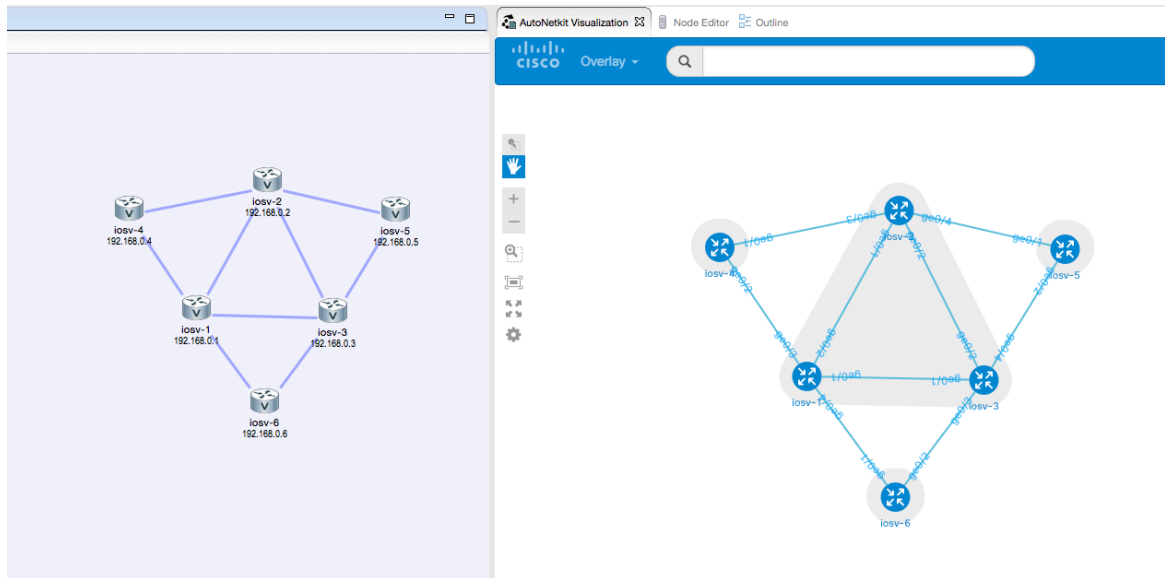


If you wish to use a full-blown Linux Virtual Machine instead of the Linux container, deselect the field shown above. A Linux VM will be spun up when the simulation is started **and** the Management network is set to **Shared Flat Network** or **Private Project Network**.

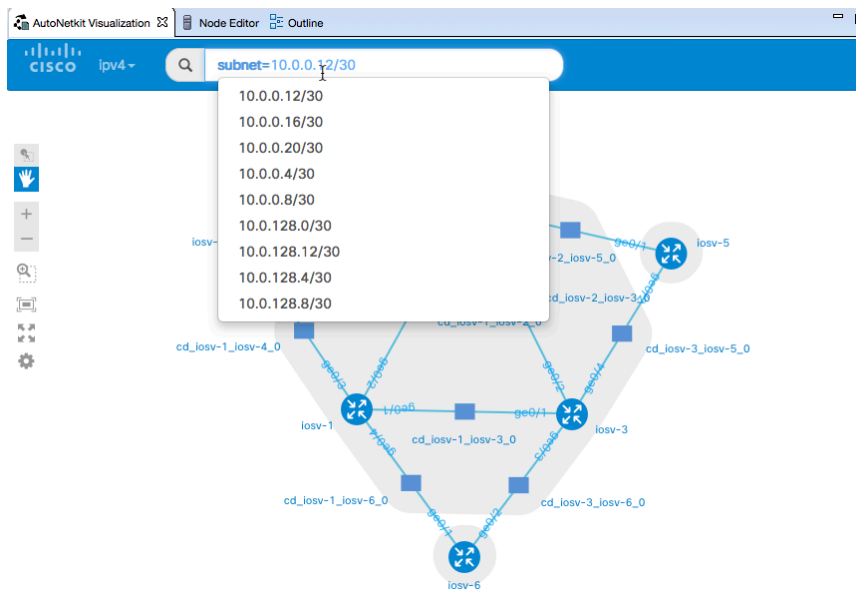
- **Exclude from Launch markers** - users are able to mark a node so that it is excluded from the simulation launch. This means that the selected node(s) will not be started when the rest of the simulation is launched. Excluded nodes can be launched later if required. The new functionality provided means that **excluded** nodes are marked with a small icon indicating that the node will not be started at launch. The icon display is controlled by the **Show Topology Labels** button on the toolbar.



- **Microsoft Visio VSDX Import Support** - The CML client GUI now offers Microsoft Visio .VSDX file import functionality. Care is required with this function. The import functionality is designed to work with the Cisco Network symbol templates and will not guarantee successful import from any other symbol template type. The purpose of the import functionality is to convert a .vsdx topology file that contains Cisco Symbol types and point to point links into a topology diagram. Elements such as textual labels may not be converted during the import process.
- **SVG Export Support** - The CML client GUI now offers SVG (Scaled Vector Graphic) export capability. Using this functionality, you can convert a CML .virl file into a SVG diagram. This then can be imported into other diagramming tools such as Microsoft Visio.
- **Topology Visualization Engine Upgrade** - The NeXT-UI visualization engine has been upgraded providing an updated look and feel to the AutoNetkit visualization diagrams as shown.



- Visualization Search and Query** - The new Search field in the AutoNetKit visualization view enables the user to create text-based queries in order to filter elements. The query scope is based on the view selected (for example, **phy**, **layer2**, **igp**, etc.) The query engine will provide the user with a list of valid options based on the topology as per the following example.

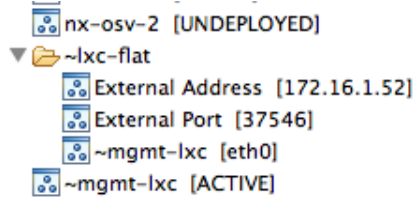


- Default node types in Palette view** - The nodes Palette view now offers you the choice of IOSv, IOSvL2, Server and Unmanaged Switch types as standard. You no longer need to retrieve subtypes from the CML server when you start the CML client GUI. However, the function **File -> Preferences -> Node Subtypes -> Fetch from Server** is still required to show the XRv and CSR1000v demo images or if you have added further new subtypes to your CML server.
- Linux Container as Jumphost** - When designing your topology, the CML client GUI now offers a new option under the **Properties -> Topology -> Management Network** drop-down list. If you

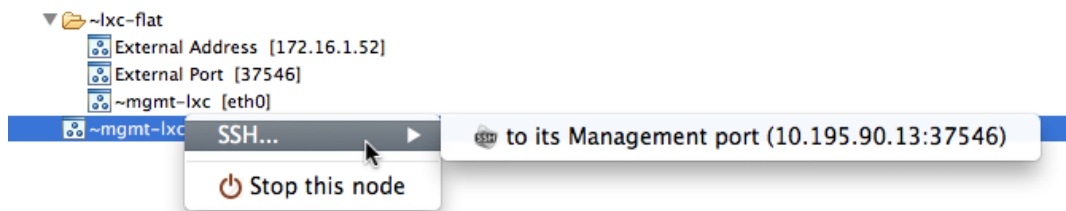
choose this option, instead of creating a full Linux Server VM to provide a central access point into your topology, a per-simulation LXC is created. The LXC is automatically connected into the OOB management network to which all VMs in your simulation are connected, enabling you to connect into each VM via its management Ethernet port, removing the need to use the Console port connection method.

The LXC is operational while your simulation is active and terminates when your simulation is stopped. The LXC uses a significantly smaller memory footprint than the Linux Server VM.

The LXC automatically gets an IP address on the FLAT network.



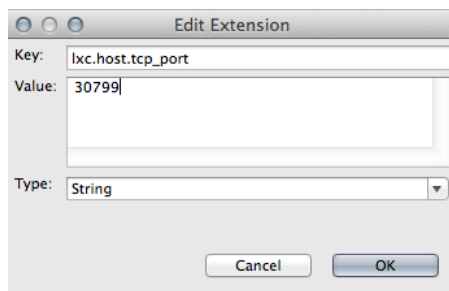
It is accessed via SSH ONLY (no telnet support) and can be accessed via a right-click.



The LXC can also be accessed directly using an external SSH client using the External IP address shown or it can be reached via your CML server using the External Port value displayed (ssh <virl username>@<virl server ip> -p <External Port>), for example 'ssh -p 37546 guest@10.195.90.1'.

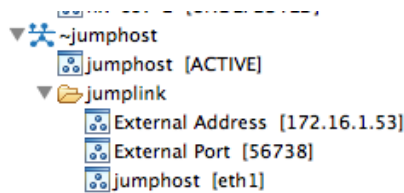
Note: The password to access the LXC is set to your CML username, for example the default username 'guest' has the password 'guest'.

- **Static Port Assignment to the Linux Container** - By default, if the option is selected, the CML system will assign random port to SSH port access to the LXC. You can statically define this by setting an extension on your topology. Open your topology and select the **Properties** tab. In the **Properties** tab, click **Extensions** and click the + symbol. Create a **Key** called 'lxc.host.tcp_port' with the **Value:** <port number> as shown.



As a result when the LXC is started, it is bound to the TCP port that you specified.

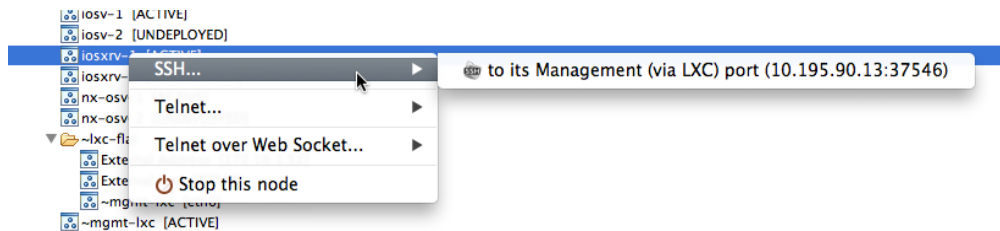
- **Jumphost (Linux VM) SSH Port Access** - When designing your topology, a Linux server VM is launched if you have the Properties -> Topology -> Management Network drop-down- list set to either **Shared Flat Network** or **Private Project Network**. The Linux server VM is now reachable using an external SSH client using the External IP address shown or it can be reached via your CML server using the External Port value displayed (ssh <cml username>@<cml server ip> -p <External Port>).



In this example, 'ssh -p 56738 guest@10.195.90.1'.

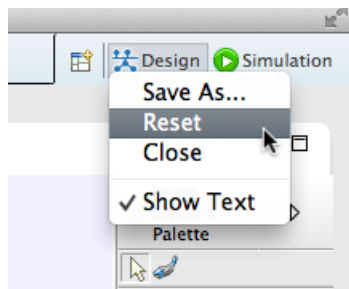
Note: The password to access the Jumphost is set to your CML username, for example the default username 'guest' has the password 'guest'.

- **Node SSH Access** - If you have enabled the LXC (described previously), you now have the ability to start a SSH session which will connect into the node via the LXC. This access method makes use of SSH to the LXC then telnet from the LXC to the nodes running inside the simulation. This does not use the console port of the nodes and is a) more reliable and b) faster to use.



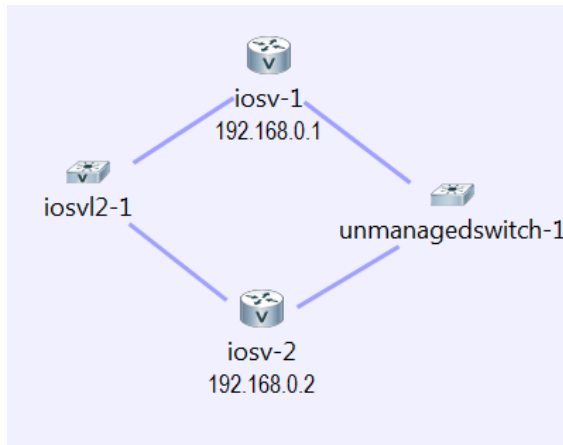
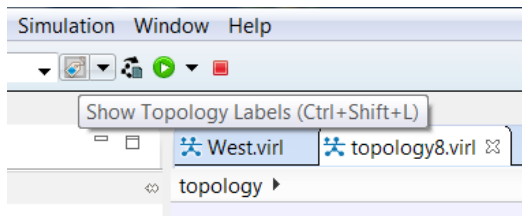
The example above shows an active simulation with the **Private Simulation Network** option selected. The IOSXRv instance now offers the SSH connection method.

- **Perform Simulation Actions on Multiple Nodes** - You can now select multiple nodes from the **Simulation** view and perform numerous operations on the selected. This means that you can open connections to node, stop and start nodes through a single action.



- **Simulation Expiry function** - The **Launch Simulation** tool on the CML client GUI toolbar now offers a drop-down menu option to start a simulation and to start a simulation with a specified expiry time. The timer value is displayed in the Simulation perspective when a simulation is running. A pop-up message will appear 10 minutes before the expiration time, reminding the user that the simulation is due to shut down. At the expiry time, the simulation will be terminated with a message reported in the console log. **Note:** the time reported in the console log is that of the CML server and does not take into account the CML client GUI's local time.
- **Linux Server Snapshot Support** - In a simulation with a Linux server present, you are now able to take a snapshot of the server's disk content. To do this, log in as a user (not as uwmadmin) into the **User Workspace Management** interface. Select your running simulation on the **Overview** page (under sessions). You will now see a list of active VMs. Select your Linux server and under the **Options** drop-down menu, click **Create Snapshot**. This creates a new user-specific disk image which can then be selected from the **Image** list in the CML client GUI for use in other simulation sessions.
- **UWM Project and User Export and Import Functionality** - This feature enables you to take projects and users from one version of CML and import them into future versions. Log in to the **User Workspace Management** interface as 'uwmadmin' and choose **Projects**. You can then export the current project and users settings either as TSV or JSON format. The import function will read in the TSV or JSON formatted content. You are able to make changes manually in the file and import.
- **Multi-IGP Support in AutoNetkit** - You can now specify the IGP to be configured by AutoNetkit on a per-node basis. You are able to set the IGP at the topology-level but then override this on a per-node basis by setting the IGP under the node's AutoNetkit -> IGP properties. This enables you to set EIGRP on all nodes within one AS, OSPF on all nodes in another AS. **Note:** Automatic redistribution of routes from one IGP to another is not offered.
- **SNAT Gateway IP Address Reported in the UWM** - The **Connectivity** tab in the **User Workspace Management** interface now reports the Internal and External IP addresses used for L3 SNAT connections, making it easier to identify the default gateway IP address that you should be using. For VMs inside of the simulation, the network SNAT gateway IP is the default gateway address that should be used for external connectivity.
- **Static IP Address Operations** - Users are able to specify a static IP address which can be applied to either the VM's management interface or to an interface connected to a Flat network connector. The user must have **admin** set as a **role** under their user profile in the **User Workspace Management** interface. In the CML client GUI, to set a static IP address on the management interface, select the node. In the **Properties** view, choose **Extensions** and click the + symbol. The **Key** field must be set to 'static_ip', the **Value** field is then set with your required IPv4 address (no subnet mask is required). When the simulation is spun up, the IP address specified will be applied to the management interface. In the CML client GUI, to set a static IP address on the Flat interface design your network and add an L2 External (Flat) object to the design. Create a connection from your node to the L2 External (Flat) object. Select the L2 External (Flat) object. In the **Properties** view, choose **Extensions** and click the + symbol. The **Key** field must be set to 'static_ip', the **Value** field is then set with your required IPv4 address (no subnet mask is required). When the simulation is spun up, the IP address specified will be applied to the interface of the node connected to the L2 External (Flat) object.

- **L2TPv3 External Connectivity** - Using a combination of the L2 External (Flat) network object, IOSv instances and the External Router object, AutoNetkit is able to configure an L2TPv3 tunnel, allowing you to connect simulations to remote devices in a transparent manner.
- **Large MTU Support** - You are now able to pass packets up to 9100 bytes in size across link with no fragmentation.
- **IPv4/IPv6 Node Display on Canvas** - A new **Show Topology Labels** tool is available in the CML client GUI, next to the **Build Initial Configurations** tool. When enabled, IPv4 or IPv6 loopback addresses configured either manually or by AutoNetkit will be displayed on the topology diagram.



- **Parallel Link Support in AutoNetkit** - AutoNetkit will now create appropriate IP addressing, IGP and BGP configurations taking into account the presence of parallel links.
- **Partial Configuration Scrape/ Improved Configuration Extract Function** - When a configuration extraction process encounters problems with a particular node, instead of aborting the extraction process, the failing node is identified and reported. The extraction process will continue and will return the collected configurations to you.
- **Full VM Renaming Capability** - Users are now able to set the host name of their CML VM to one of their own choice via the hostname field in the settings.ini file. This should be done at installation time.
- **Password Change Support** - You can now set the passwords used within the CML system by setting values in the setting.ini file for 'uwmadmin_password', 'password' (used by Openstack) and 'mysql_password'. **Note:** The password must be set using only alphanumeric characters.
- **Server Statistics Report** - A new **Statistics** page on the **User Workspace Management** interface provides information on the simulations being run on your server.

- **Partial Simulation Start Function** - Users can now select nodes and mark them to be excluded from the simulation start with the introduction of a new field in the Node Properties view in the CML client GUI.
- **Custom Configuration Block** - Users can now paste valid configuration content into specific blocks of the configuration. This allows you to add additional configuration lines alongside those created by AutoNetkit.
- **GRE Tunnel Support** - Users can now create configurations for v4/v6 GRE Tunnels. Ideal for connecting to external devices or other simulations.
- **IPv6 Address Controls in AutoNetkit** - User can now modify and assign v6 address pools used for infrastructure, loopbacks, and VRF pools.
- **Static IP Address Assignment when Using FLAT Connectors** – A 'static_ip' extension can be applied to FLAT connectors to set the v4 addresses which will be used on a VM.
- **New 'Jump page Menu** – A new CML server landing page is now available at <your CML VM server ip address>.
- **OpenStack Horizon Interface Enabled by Default** – An OpenStack Horizon interface is now available. However, it is a read-only interface and as such you cannot make any updates via this interface. It only works for the **uwmadmin** user.
- **New Connectivity Option in the User Workspace Management Interface** - This is for external IP address information reporting and management, allowing managers to allocate a fixed IP address for the jumphost of a project.
- **Jumphost can be accessed using your CML username and password (for example, guest/guest.)**
- **Jumphost can be allocated to a fixed IP address.**
- **VNC service is enabled by default.**

Changes

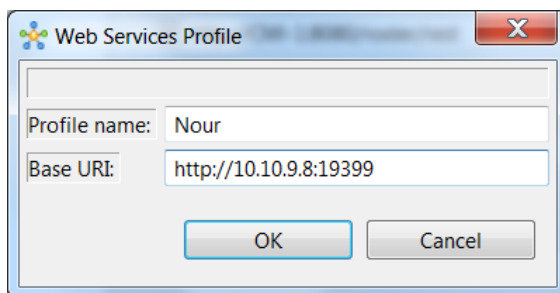
New: The VM now requires 5 network interfaces:

- **eth0** - used for accessing the CML VM
- **eth1** - used for FLAT networking - map to 'Flat'
- **eth2** - used for 2nd FLAT networking interface - map to 'Flat1'
- **eth3** - used for SNAT networking as per previous release - map to 'SNAT'
- **eth4** - used by OpenStack - map to 'INT'

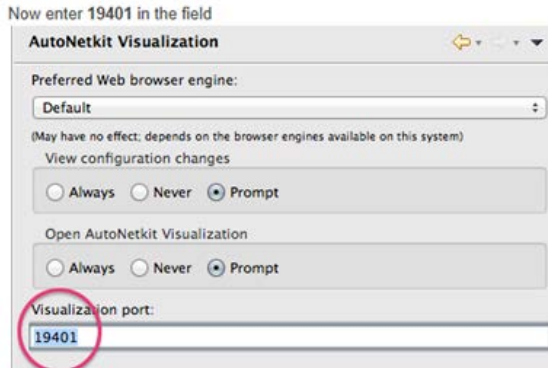
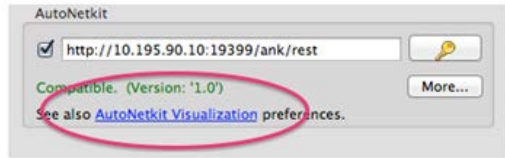
Caution: You need to make specific changes in your ESXi host to support these networks. Two new port-groups must be created called 'Flat1' and 'INT'. If you deploy the OVA before creating these new port-groups then ESXi will map the VIRT interfaces eth2 and eth5 to 'VM Network' and this has been shown to cause instability once CML is started.

- **Communication ports (web services) between client and server have changed** in order to avoid clashes with other software:
 - CML web services port was 8080; it is now 19399.
 - CML User Workspace Management port was 808; it is now 19400.
 - ANK web visualization port was 8000; it is now 19401.

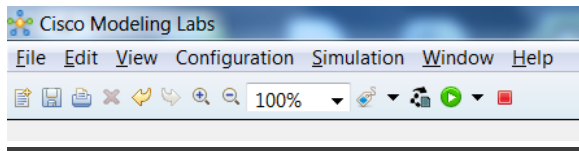
These are the new default ports as you install/upgrade the client. You can update these manually by using the CML client GUI, if required.



Note: The AutoNetkit visualization port must be set to port 19401. Under **File -> Preferences -> Web Services -> AutoNetkit Visualization** update the **Visualization port** field as shown.

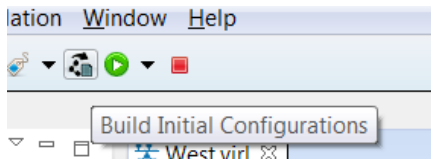


- **CML Client GUI New Toolbar and Menu Layout** - The toolbar and menu layout has been simplified and improved.



The intent has been to provide users with the key functions directly on the toolbar, moving less-frequently used functionality to the menu bar.

- **New AutoNetkit Tool** - A new high-definition icon has been introduced with the tooltip **Build Initial Configurations**.



- **VMWare ESXi 5.1/5.5**

Your ESXi server must have Intel CPUs with VT-X support. AMD processors will not work. Confirm what kind of CPU you have before attempting your CML installation.

Your ESXi server must have these minimum patch levels listed in order to run.

- ESXi 5.1U2 (Build 1483097)
- ESXi 5.5U1 (Build 1623387)

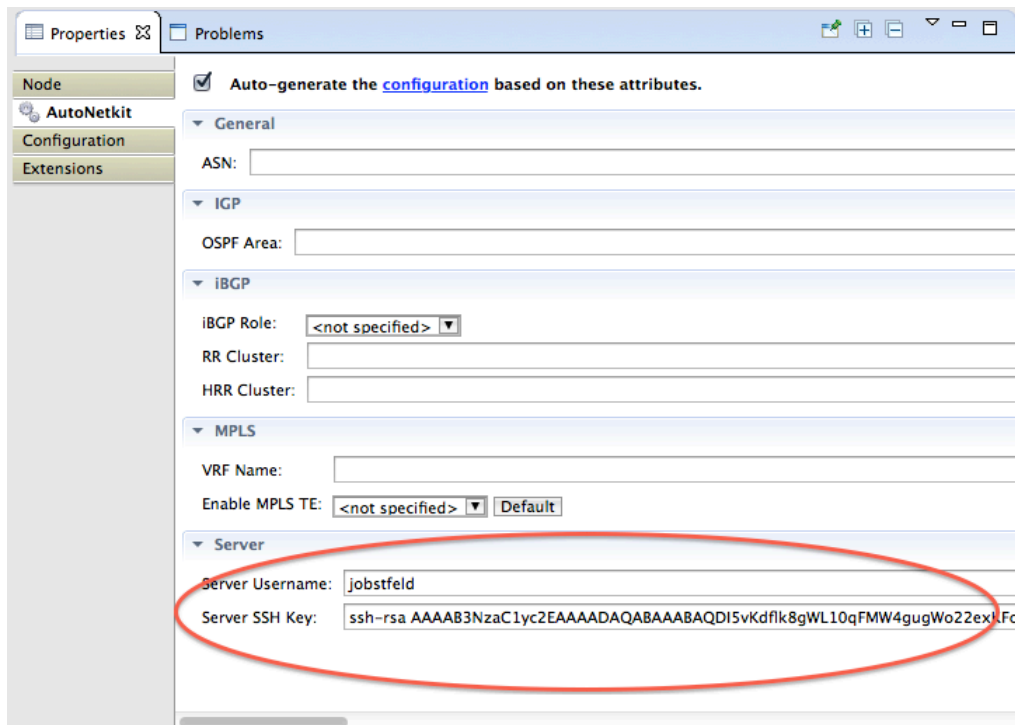
- ESXi 6.0 (Build 2494585)

Verify that you are using vSphere Client v5.5 Update 2 (Build 1993072) or a later before deploying CML. Failure to use the minimum version will result in a failed deployment that will create an error of nested virtualization not supported.

Note: VMWare ESXi 5.0 is no longer supported.

- **Unmanaged Switch Replaces the Multipoint Connector** - The multipoint connector has been retired and replaced by the new unmanaged switch subtype. See the **New Features** section for a full description.
- **Ubuntu Linux Server**
- **The Ubuntu Host uses Cloud-init for Configuration** - AutoNetkit is required to be run in order to build the base configuration.

In the CML client GUI, you can set a Server username and can pass in an optional SSH public key as shown:



For serial and telnet access via out-of-band interfaces, use the defined username plus the password 'cisco'. ANK provides a default user 'cisco' with password 'cisco' in addition to a user-defined username and key. If you are using ANK then you can log in as '**ssh cisco@<ip address of Ubuntu server>**' - it takes time to log in so be patient.

Only if you need external access to a .1q Vlan (OOB network or External data-plane) on the interface in the Ubuntu VM, install Vlan support

```
sudo apt-get install vlan
```

Then load the 8021q module into the kernel.

```
sudo modprobe 8021q
```

Here is a set of example entries added to the /etc/network/interfaces file that enable Vlan10 on eth1:

```
auto eth1
auto vlan10
iface vlan10 inet static
address 172.16.1.10
netmask 255.255.255.0
network 172.16.1.0
broadcast 172.16.1.255
gateway 172.16.1.2
vlan_raw_device eth1
```

The configuration above enables the **eth1** interface and then configures **Vlan10**.

Caveats

IOSv 15.5(3)M - running image memory footprint increases to 330Mb from ~320Mb.

- **Symptom: IOSv 15.5(23)M - On boot-up the following message may be observed.**

%SYS-3-CPUHOG: Task is running for (1997)msecs, more than (2000)msecs (0/0),process = TTY Background.

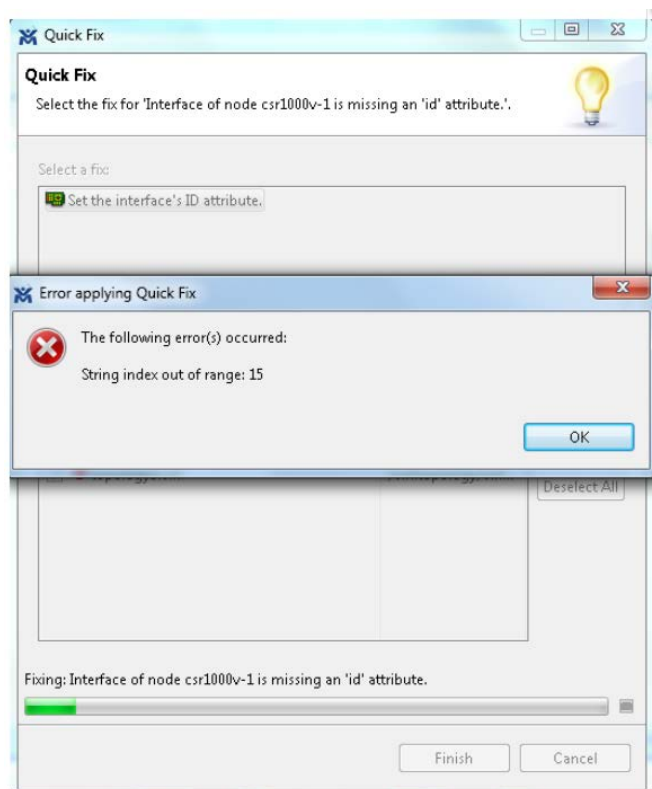
-Traceback= 114ECF8z 130425z 15E20Ez 15DF30z 15DD3Dz 157D75z 158A2Bz 1589BFz 159B67z 153672z 3C9740Az 3C868CEz 3C89BEFz 5125F91z 491D86Cz 492E540z - Process "Crypto CA", CPU hog, PC 0x00157D2C

- **Synopsis:** This issue is cosmetic and can be ignored.

Solution: Can be ignored.

Symptom: Quick Fix failing with a String index out of range: error. (VIRLDEV-958)

Synopsis: For a node interface with a missing ID attribute <not specified>, selecting **Quick Fix** in the Problems tab to fix the problem returns a String index out of range: error.



Solution: None currently. As a workaround, go back and specify the interface name for the node.

- **Symptom:** Loss of Cisco IOSvL2 packets when using PAgP protocol. (VIRLDEV-1578)

Synopsis: Cisco IOSvL2 packets are getting lost during channel forming negotiations when using the PAgP protocol. The number of packets received does not match the number of packets sent.

Solution: None Currently.
- **Symptom:** Uppercase and special characters are not supported for use in the settings.ini file when updating the hostname and uwmadmin/OpenStack/MySQL passwords. (VIRLDEV-1785)

Synopsis: When uppercase and special characters are used in the settings.ini file for updating the hostname and uwmadmin/OpenStack/MySQL passwords, a connection error occurs.

Solution: Do not use Upper Case or Special Characters.
- **Symptom:** ISO install returns a black screen when the second option (install virl directly) is selected. (VIRLDEV-1812)

Synopsis: When doing an ISO install on the UCS B-series, choosing the option **install virl directly** returns a black screen that persists and you cannot move forward with the install.

Solution: None currently. As a workaround choose the first option.
- **Symptom:** Performing Group to Site/Ungroup Site actions multiple times throws a NullPointerException.

Synopsis: When the actions Group to Site and Ungroup Site are performed multiple times in the Cisco Modeling Labs client GUI, a NullPointerException is thrown in the log file.

Solution: None currently.
- **Symptom:** SIGKILL error returned when trying to stop a simulation. (VIRLDEV-1961)

Synopsis: Occasionally, a SIGKILL error is returned when attempting to stop a simulation. This happens due to inadequate system resources.

Solution: Wait a short time and stop the simulation again. Additional system resources are also recommended.
- **Symptom:** (OperationalError) database is locked None None: error is returned. (VIRLDEV-2212)

Synopsis: This error is returned when there inadequate system resources to run the simulation.

Solution: Restart the simulation. Additional system resources are also recommended.

- **Symptom: AutoNetkit: Custom configuration lines are not applied to IOSvL2 instances.** (VIRLDEV-2214)

Synopsis: When a custom configuration string is applied to an IOSvL2 node and the .virl file is passed to AutoNetkit for processing, the configuration line is not inserted into the configuration. This happens due to inadequate system resources.

Solution: Retry the configuration update again. Additional system resources are also recommended.

- **Symptom: AutoNetkit: ASN displayed twice.** (VIRLDEV-2257)

Synopsis: In AutoNetkit visualization, the tooltip displays ASN information twice.

Solution: None currently.

- **Symptom: Title in the tab shows "null" while attaching a server to its VNC.** (VIRLDEV-2258)

Synopsis: When you attach a server to its VNC, the title in the tab of the resulting VNC console shows “null: VNC Console”.

Solution: None currently.

- **Symptom: Launching a simulation with a time limit dialog ignores the second digit if the maximum limit is exceeded.** (VIRLDEV-2259)

Synopsis: When the **Launch simulation (with time limit)** option is selected and a double digit time limit is provided that exceeds the maximum time limit, the second digit disappears and the time limit get updated to a single digit in the dialog.

Solution: None currently.

- **Symptom: CSR1000v 3.16: Error %Error opening tftp://255.255.255.255/csr1000v-1-config (Timed out) thrown during boot up.** (VIRLDEV-2264)

```
%Error opening tftp://10.255.0.2/csr1000v-1-config (Timed out)
%Error opening tftp://255.255.255.255/csr1000v-1-config (Timed out)
^
```

Synopsis: This error message is related to the default service configuration option of Cisco IOS, which attempts to access the service configuration files from the tftp server.

Solution: Log in to the CSR1000v image, go to enable and then config mode and enter the following command: **no service config**

```
csr1000v-1(config)#no service config
csr1000v-1(config)#
```

- **Symptom: No valid host nova error returned.** (VIRLDEV-2273)

Synopsis: Intermittently, when launching a simulation, a no valid host nova errors and maximum attempts reached neutron errors are returned.

Solution: Restart the simulation. Additional system resources are also recommended.

- **Symptom: Cannot connect to CSR1000v console.** (VIRLDEV-2329)

Synopsis: When attempting to connect to a CSR1000v console, the connection times out. Occasionally when a connection is established, no prompt is returned in the console. This primarily affects topologies with a large number of CSR1000v nodes and is due to lack of available resources on the server at the time.

Solution: Additional system resources are recommended.

- **Symptom: The .virl file includes node subtypes that do not appear in the Cisco Modeling Labs client GUI that is installed.**

Synopsis: When a node subtype that is not listed in the GUI appears in a topology, for example, using an IOS XRv router when the IOS XRv image is not installed, when you launch the simulation, the launch will fail because it does not recognize the node subtype. This can happen when someone shared a .virl file with you and it includes node subtypes that you do not currently have set up in the client GUI.

Solution: Verify with your system administrator that the Cisco Modeling Labs server you are connected to supports the node subtypes you need. If so, download the node subtypes to the client GUI by doing the following:

Choose **File > Preferences > Node Subtypes** from the client UI and click **Fetch from Server**.

CML 1.0/1.0.1 Resolved Issues

The following list of CML 1.0 and CML 1.0.1 defects are resolved in this version of CML1.1:

- **Symptom:** A topology diagram with more than one link between a pair of nodes results in an error stating “Internal Server Error”.
- **Symptom:** A topology contains two nodes. When AutoNetkit is used, the nodes are not visible in the network visualization.
- **Symptom:** Resetting Interface Properties fields for IPv4/IPv6/Subnet Mask results in an error.
- **Symptom:** AutoNetkit does not support IPv6 addressing for MPLS VPNs
- **Symptom:** The multipoint connection icon does not retain its position when placed on the canvas or geographical map. Instead, it repositions itself automatically, even when specific coordinates are defined in the geographical map Input Geographical Location dialog box.
Note: The multipoint connection has been replaced with the unmanaged switch.
- **Symptom:** Modifying the settings.ini file during or after the installation is complete can have adverse effects and leave the server in a non-recoverable state, requiring a reinstallation of the entire OVA.
- **Symptom:** Extract configuration takes too long and fails.
- **Symptom:** AutoNetkit will not create configurations for parallel links.
- **Symptom:** AutoNetkit does not support IPv6 addressing for MPLS VPNs.