**Certified Application Installation And Configuration Guide**

Cisco ACI Orchestration (1.1.0)

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# **Overview**

Cisco Application Policy Infrastructure Controller (APIC) centrally manages the Cisco ACI Fabric.  Cisco ACI Fabric includes Nexus 9000 Series switches run in the leaf/spine fabric mode.  Cisco APIC has the knowledge of data center fabric switches, servers/VMs and applications consuming these fabric resources.  This rich information on network, server, and application is discovered through RESTful interfaces supported by Cisco APIC to populate ServiceNow CMDB.

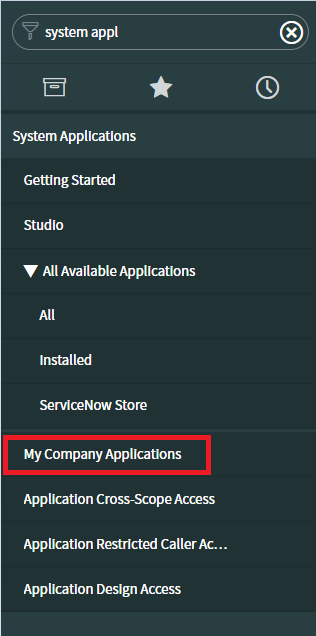
# **Application Dependencies**

* The application uses the Cisco ACI application. Users must install the Cisco ACI application before installing the Cisco ACI Orchestration application.
* The application uses the 'Orchestration' plugin in the ServiceNow instance. Without this plugin, activity packs cannot be used for component creation.

# **Configuration Instructions**

## **Install Application**

* Prerequisite for installing the application
  + Users must install the Cisco ACI application.
  + User must have Orchestration plugin installed on the instance
* Steps to install Cisco ACI Orchestration from store
  + Users with the System administrator(admin) role can install the application from ServiceNow Store.
  + Go to <https://store.servicenow.com>
  + Search for the Cisco ACI Orchestration application on the search tab.
  + Click on the Cisco ACI Orchestration Application.
  + Click on the “Get” button and enter the HI credentials of your vendor instance.
  + Once it is added successfully then open the vendor instance and Navigate to Applications > All Available Applications > All. (for New York, Orlando, and Paris).
  + Find the application using the filter criteria and search bar.
  + Next to the application listing, click Install.



* Click the “Not Installed” tab. A list of applications available for installation is displayed.
* Locate the Cisco ACI Orchestration application, select it, and click Install.

## **Upgrade Application**

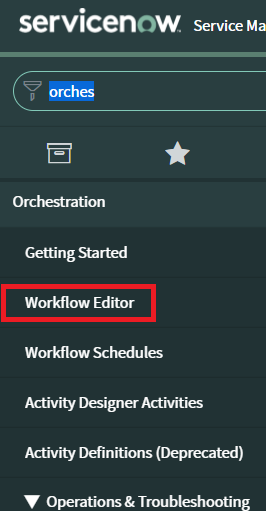
* Steps to upgrade application from the store
* Log in to the instance Navigate to **System Applications** > **All Available Applications** > **All**.
* Find the application with the filter criteria and search bar.
* Next to the application listing, select the version to install.
* Click **Update**.

## **Cisco ACI Workflow**

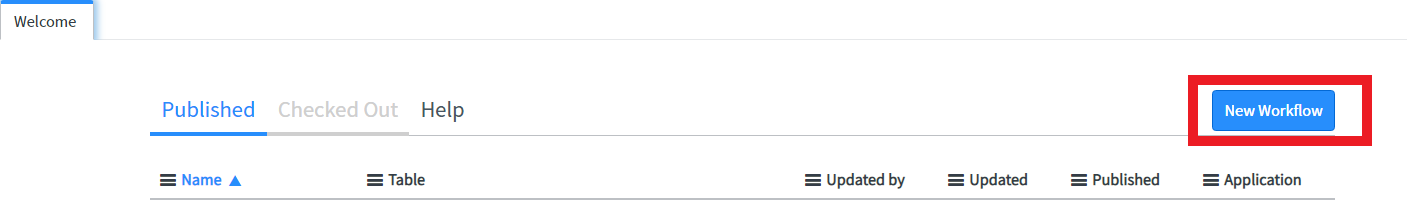
* Prerequisite to create a workflow:
  + The user needs to assign the following roles as per user requirement.

|  |  |
| --- | --- |
| **User Role Title** | **Description** |
| Activity creator [activity\_creator] | Creates and edits custom workflow activities, reuses custom activity data, and manages activity packs downloaded from the ServiceNow Store. |
| Web service administrator [web\_service\_admin] | Accesses and uses REST and SOAP messages in the Orchestration activity designer. Creates and edits custom activities that use the REST web service and SOAP web service templates. |
| Workflow administrator [workflow\_admin] | Creates, edits, publishes and deletes graphical workflows. |
| Workflow creator [workflow\_creator] | Creates new graphical workflows. |
| Workflow publisher [workflow\_publisher] | Publishes graphical workflows. |
| admin | The administrator role. This role has special access to all system features, functions, and data because administrators can override ACL rules and pass all role checks. Consider these implications when using admin overrides on ACLs. If you have sensitive information, such as HR records, that you need to protect, you must create a custom admin role for that area and train a person authorized to see those records to act as the administrator. |

* Steps to create workflow
  + Navigate to workflow editor

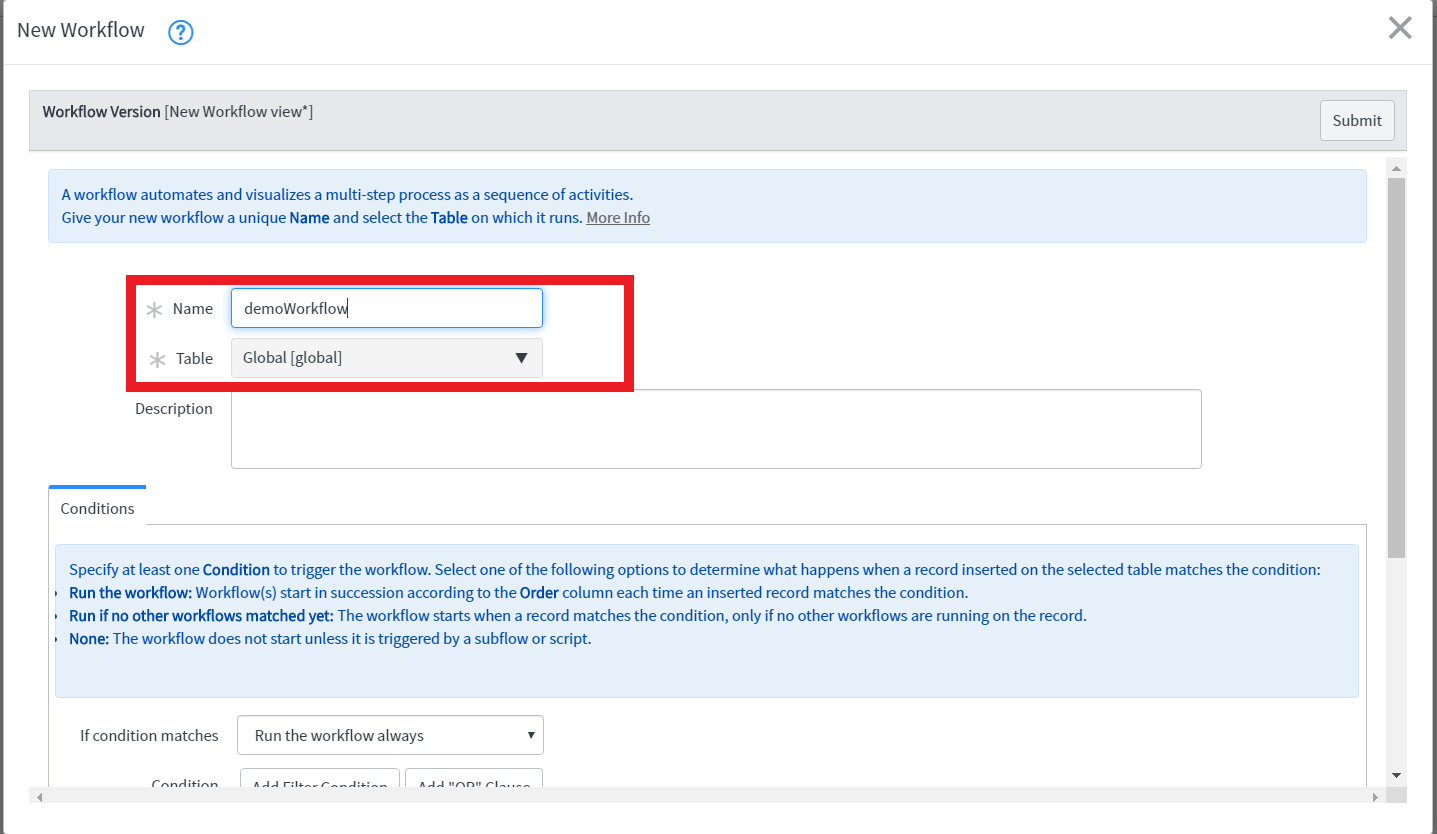
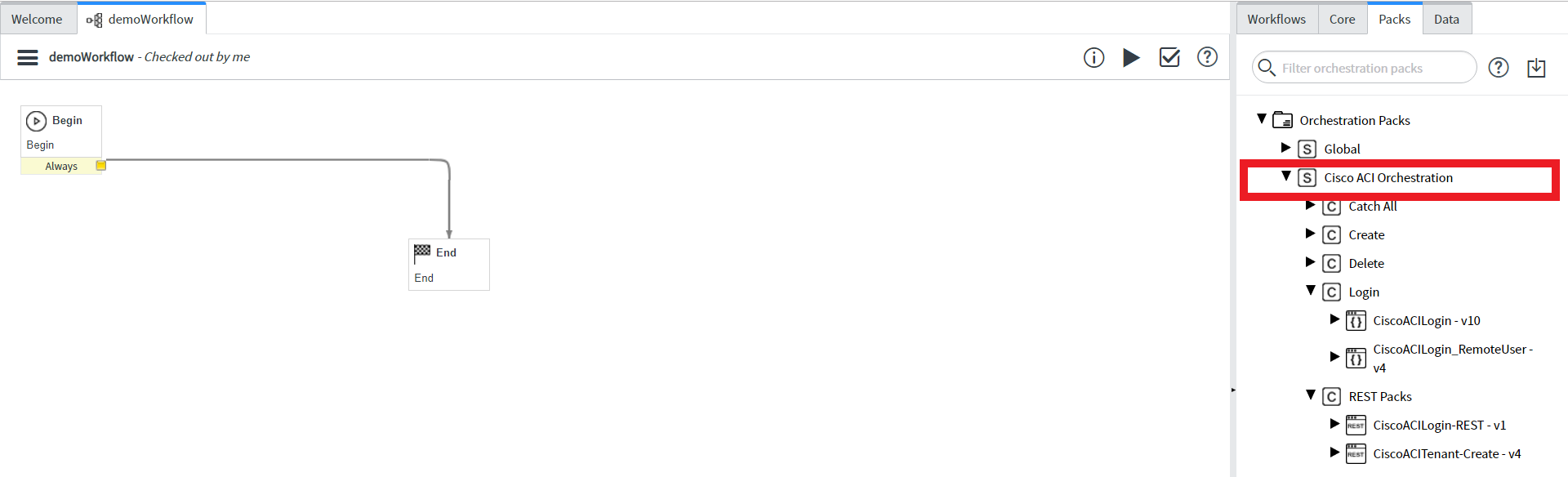


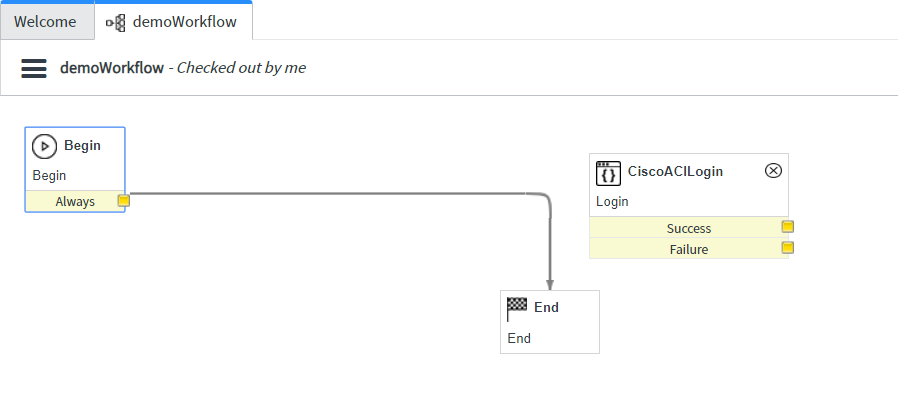
* + Click on “New Workflow” button to create a new workflow



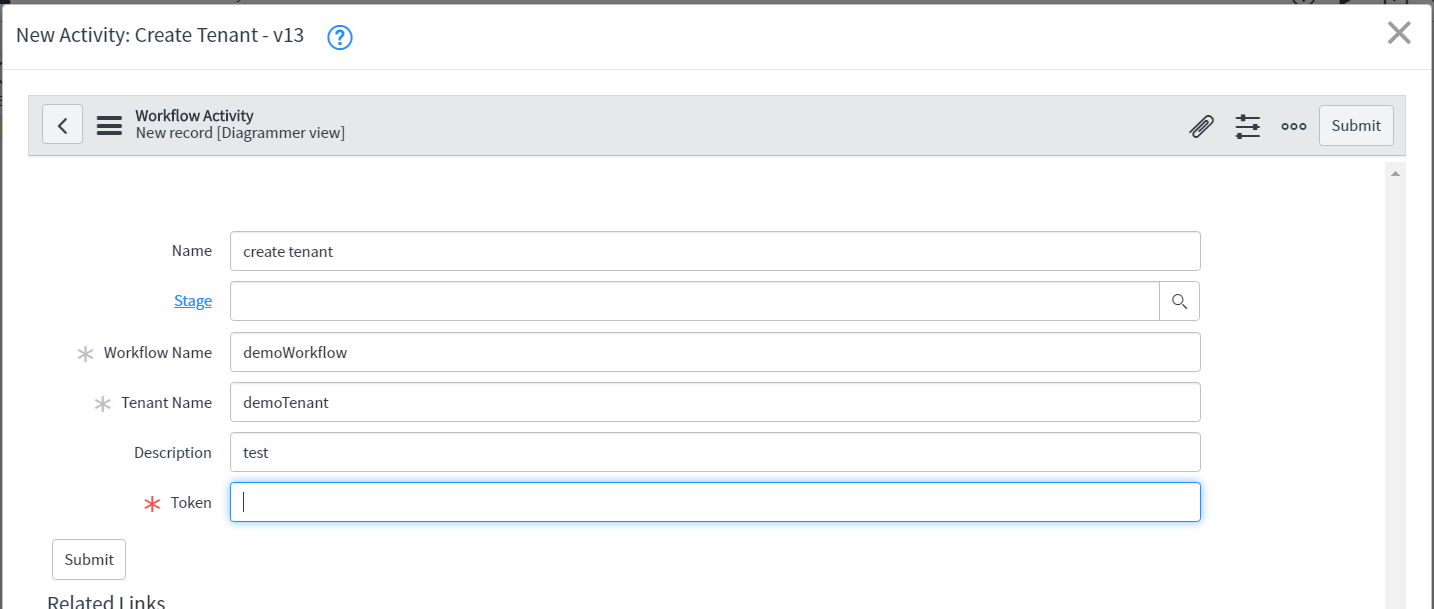
* + Give workflow name and select table as Global and click submit.

Note:- Workflow packs which we defined are not executing on particular tables therefore the user needs to select “Global” as a table. To select “Global” user must need admin role

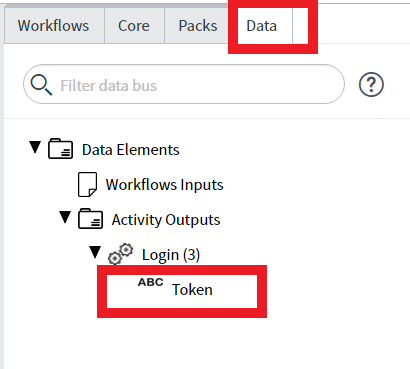
* + After creating a new workflow you have to add activities to the created workflow. Activities you can find in the Packs tab. In the ‘packs’ tab, you can find Cisco ACI Orchestration under Orchestration Packs. Make sure you first add CiscoACILogin activity.
  + To add an activity in the workflow just drag and drop that activity into the canvas. Then put valid values in the fields and submit it. Here I have given CiscoACILogin activity name as login.



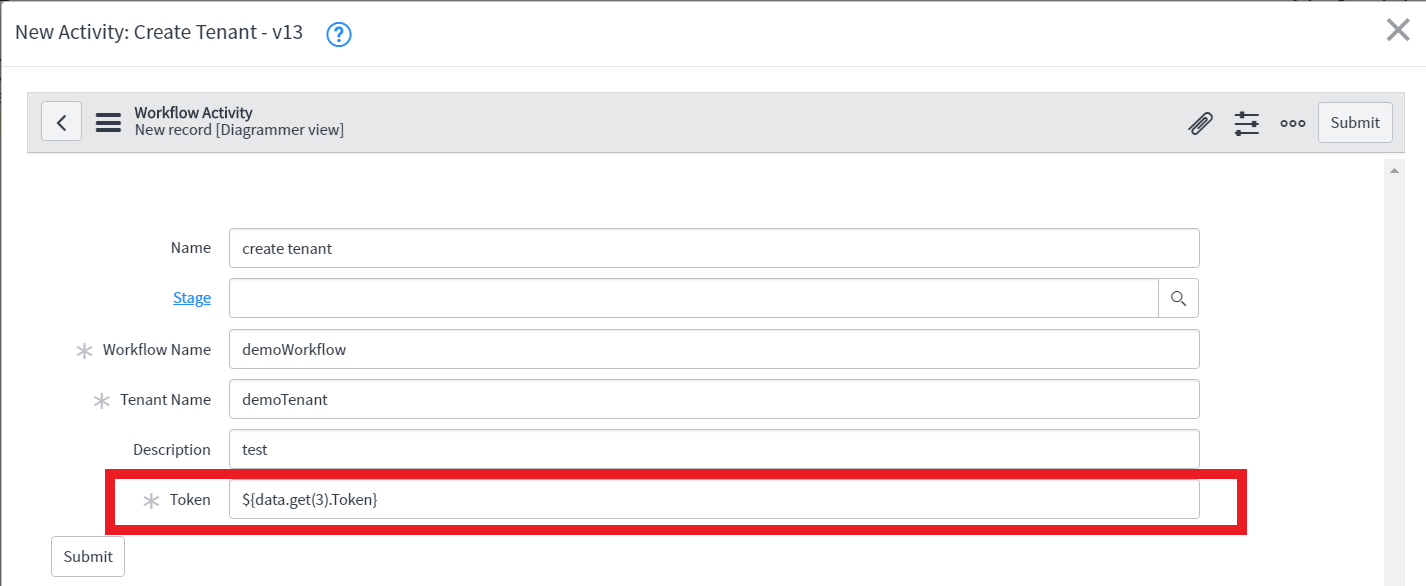
* + After that, you can add other activities. Here you can see we are adding Create Tenant Activity.



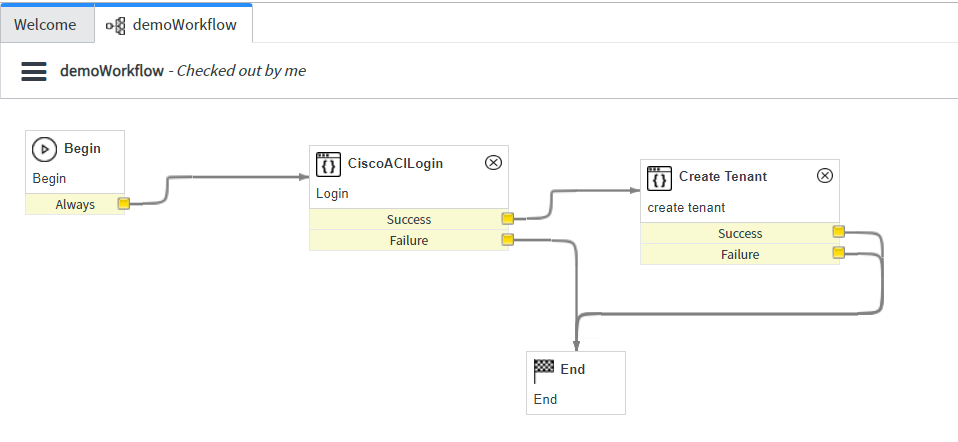
* + After adding values to all the mandatory fields add Token value that is in the output of Login Activity. You can find it in the Data tab.



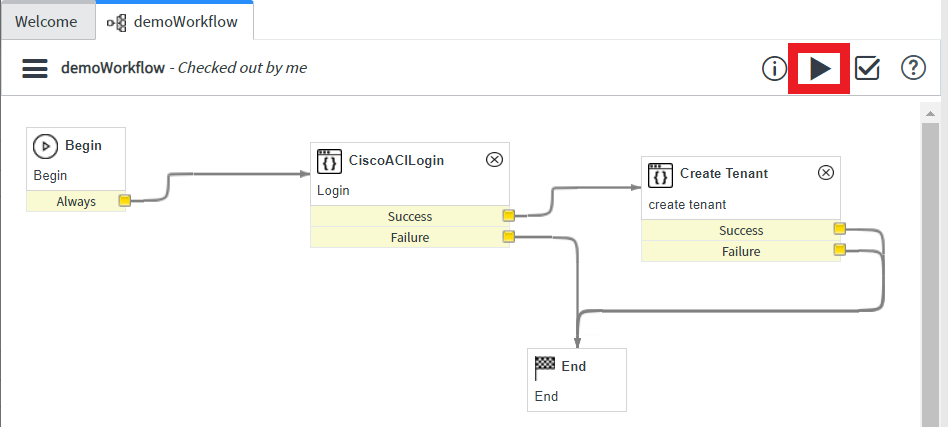
* + You have to drag and drop this Token data value to Create Tenant's Token field.



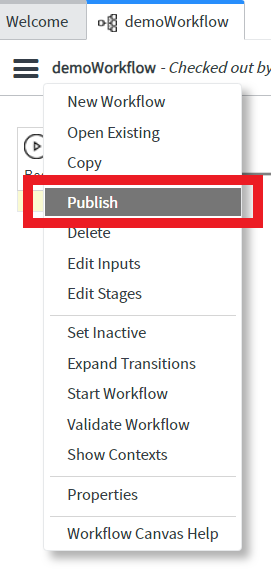
* + After Submitting values of Create Tenant, link the activities between Begin and End. And as shown below.



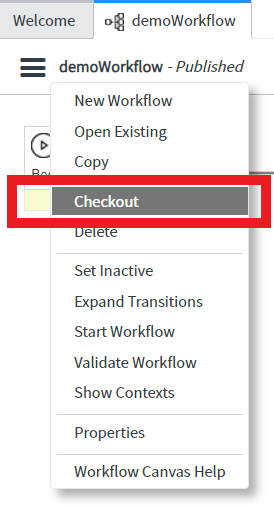
* + After that you can directly run the workflow or you can first publish the workflow and then you can run.



* + If you want to publish workflow just simply click on publish.



* + You can't change the published workflow. If you want to change the published workflow you must have to first checkout it and after that, you can make changes.



* + After the checkout workflow you can again publish it.

# **External systems connection**

If your application contains integration components, please clearly outlined them here and provide integration user creation instructions:

* Connectivity to APIC should be present

# **Testing the configuration**

Make sure the following are accessible to successfully discover the APIC.

* Service Now instance is accessible from the MID Server.
* Cisco APIC is accessible from the MID Server.
* Cisco APIC REST APIs are allowed from the MID Server.
* Also, check if the mid server is behind a firewall then add proxy support in the config file of mid server. Please add the following proxy setting values in the config file.

<!-- These parameters specify a proxy server the MID server will use BOTH for contacting

your Service-now instance AND for downloading upgrades. -->

<parameter name="mid.proxy.use\_proxy" value="true"/>

<parameter name="mid.proxy.host" value="APP-Proxy.woolworths.com.au"/>

<parameter name="mid.proxy.port" value="80"/>

<!-- Set these parameters ONLY if your proxy requires a user name and password. -->

<!--

<parameter name="mid.proxy.username" value=""/>

<parameter name="mid.proxy.password" value="" encrypt="true"/>

-->

# **Support and Troubleshooting**

## **Support**

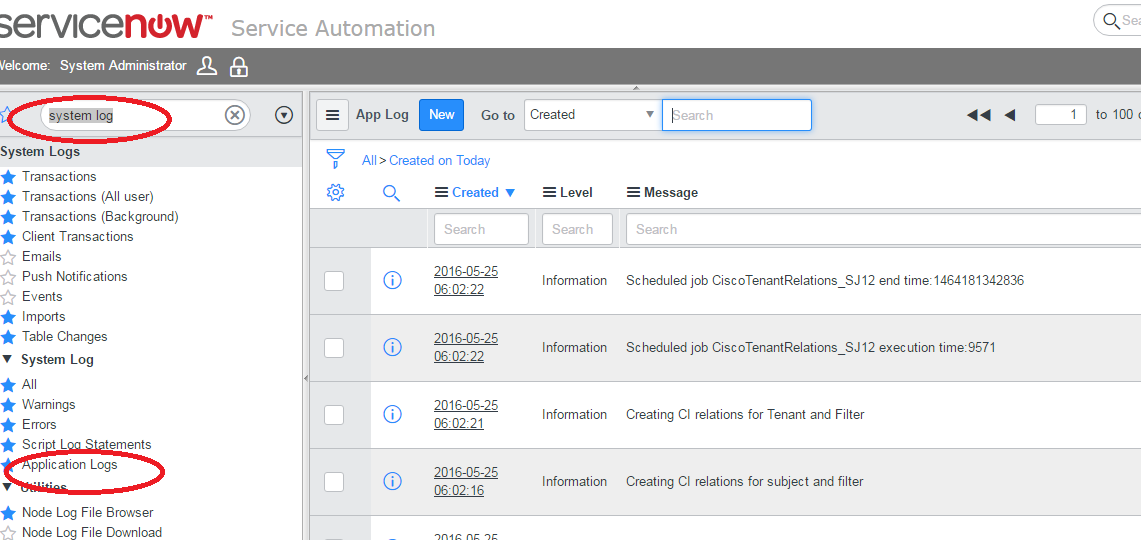
* World wide support phone numbers:<https://www.cisco.com/c/en/us/support/web/tsd-cisco-worldwide-contacts.html#telephone>
* Cisco Support Community:<https://supportforums.cisco.com/>

## **Troubleshooting**

### **ServiceNow Logs:**

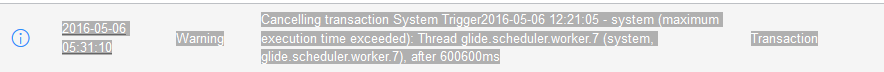
The scripts use gs.error () and gs.info () methods to print errors and information messages respectively.

The **“Application Logs”** under **“Diagnostics”** will contain all the logs for the application.



Critical error messages are listed as Error and debug statements are listed as Information.

Few failures generated by ServiceNow like maximum execution time exceeded are listed in “Warnings” under “System logs”. An example is shown below

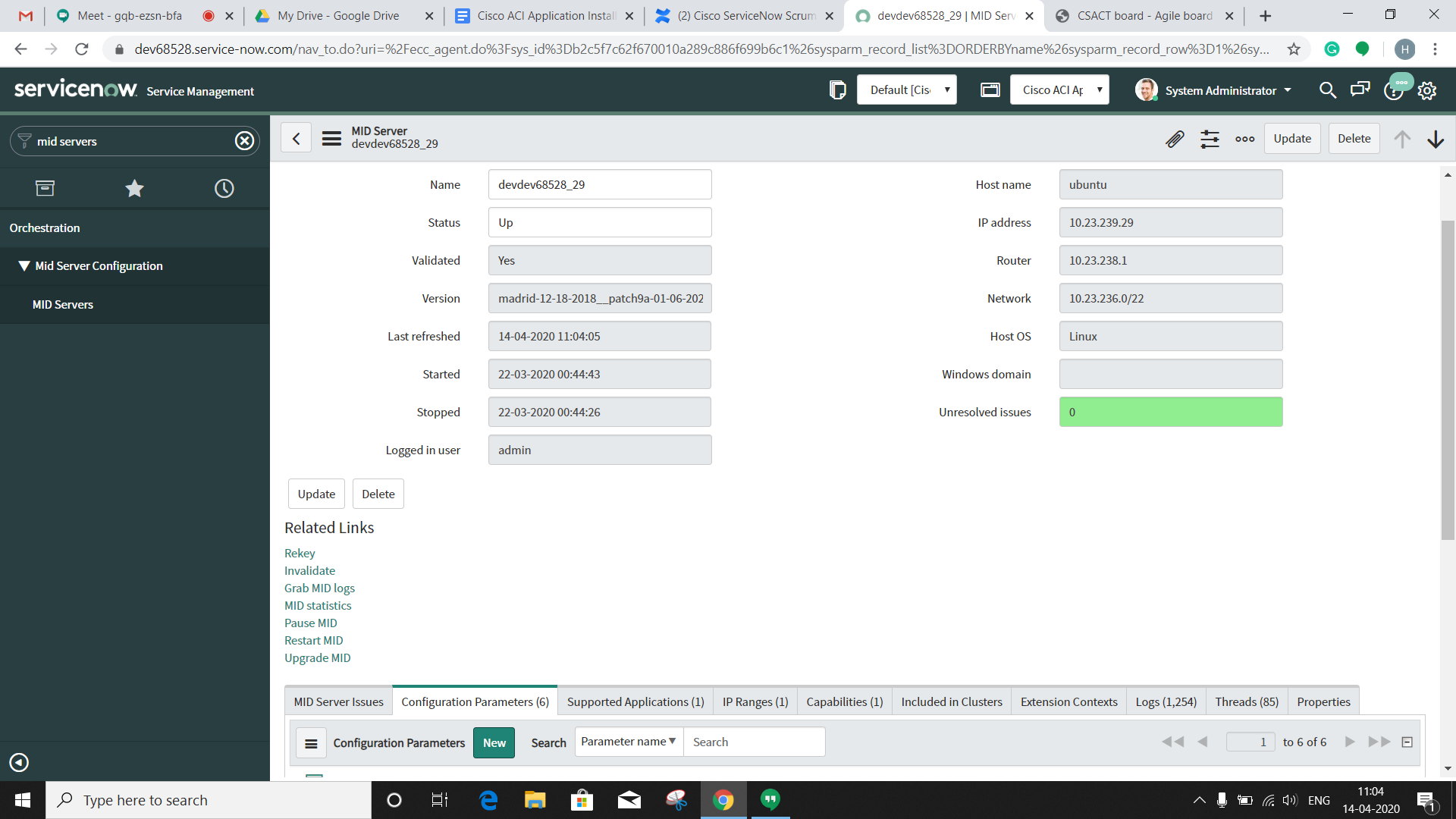


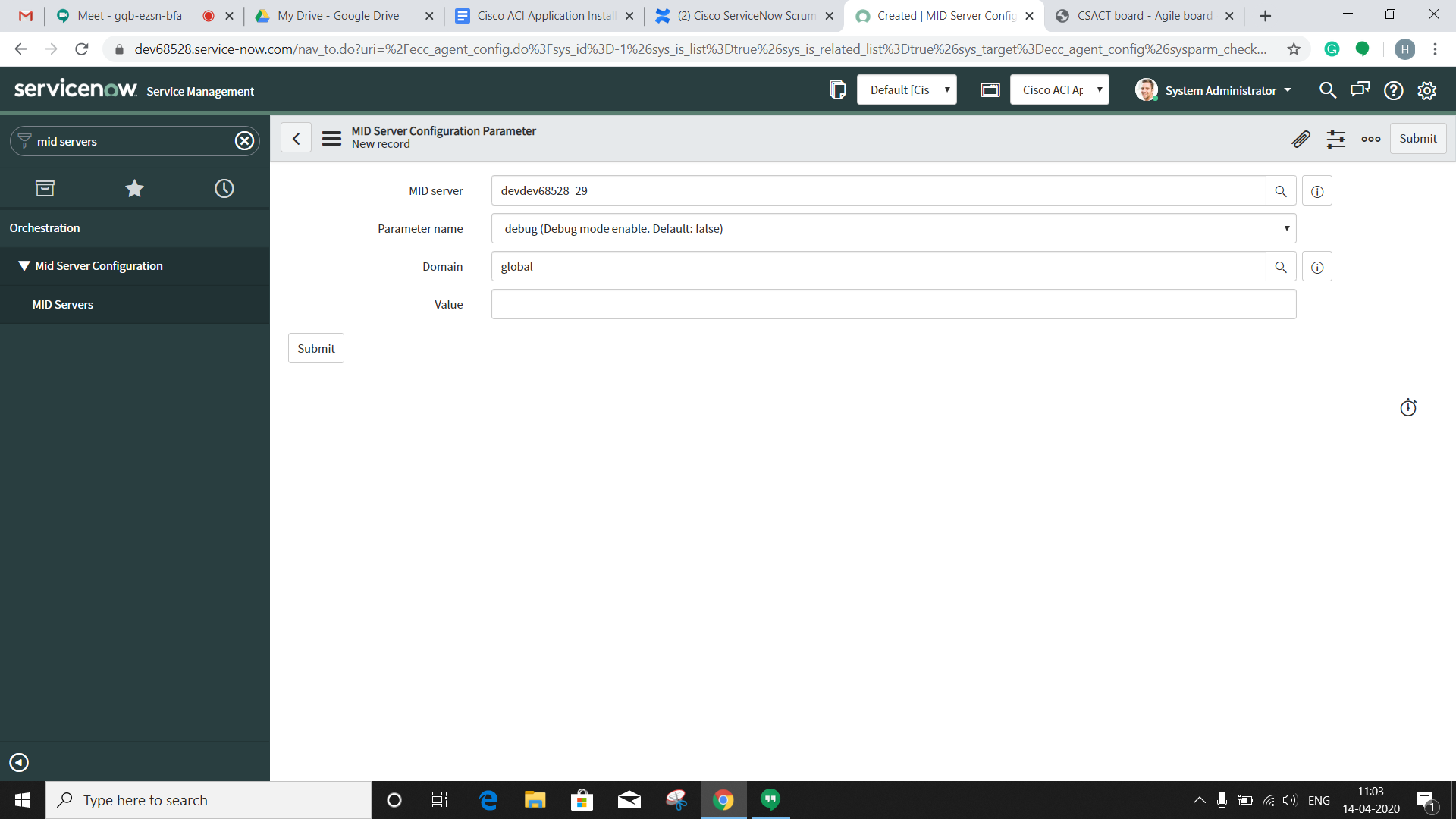
### **Mid Server Logs**

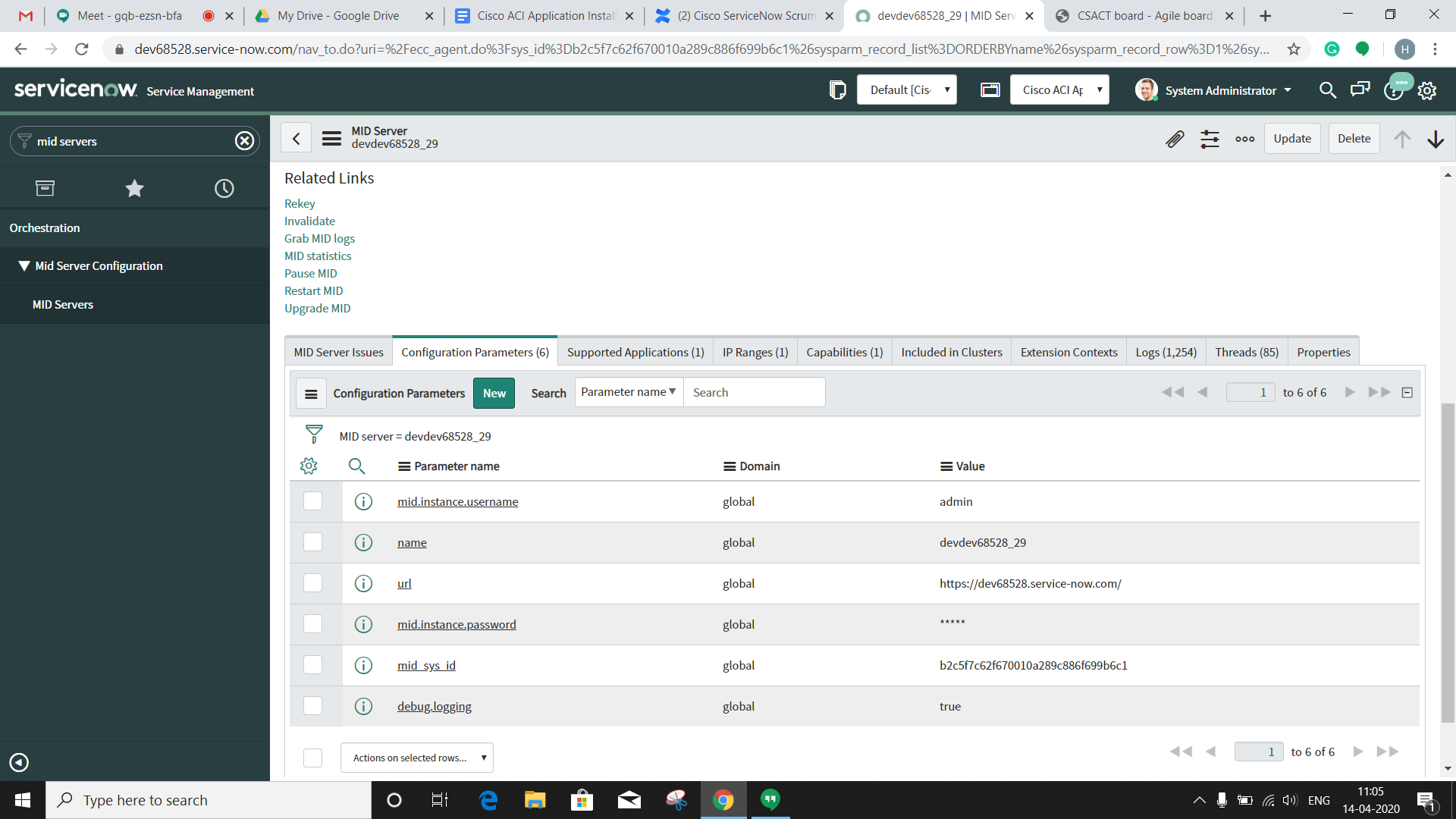
The error logs are populated in the file “../logs/agent0.log”.

To turn the debug logs on do the following:

* + Navigate to ‘Servers’ under ‘Mid Server’ from navigator.
  + Open record of mid server for which you want to turn debug logs on.
  + Navigate to the configuration parameter tab.
  + Click on new.
  + Enter parameter name - ‘debug,logging’.
  + Enter value - ‘true’.
  + Click on submit.







Restart mid server after assigning the role if any role related issue is coming in mid server logs.

### **Diagnosi**s

All the application logs are also available under Diagnosis.

* + - * Go to **“Application Logs”** under “Diagnostics” from the “Cisco ACI Application” menu for all script logs
      * Go to **“Process Monitor”** under “Diagnostics” from the “Cisco ACI Application” menu for all Health and Faults pull status and discovery status.
      * Go to **“EEC Queue requests”** under “Diagnostics” from the “Cisco ACI Application” menu for all ECC Queue information.

### **Known Limitations**

* + Users should avoid creating a tenant having “\_” in the Tenant name.

### **FAQs**

1. How to install the MID server?

Ans – Refer the following link for installation

https://docs.servicenow.com/bundle/paris-servicenow-platform/page/product/mid-server/concept/mid-server-installation.html

1. How to add a proxy in the MID server config file?

Ans – Add proxy parameters in the agent/config.xml file.

For example

<!-- These parameters specify a proxy server the MID server will use BOTH for contacting your Service-now instance AND for downloading upgrades. -->

<parameter name="mid.proxy.use\_proxy" value="true"/>

<parameter name="mid.proxy.host" value="APP-Proxy.woolworths.com.au"/>

<parameter name="mid.proxy.port" value="80"/>

<!-- Set these parameters ONLY if your proxy requires a user name and password. -->

<!--

<parameter name="mid.proxy.username" value=""/>

<parameter name="mid.proxy.password" value="" encrypt="true"/>

-->

The details of these parameters are explained in the following link.

<https://docs.servicenow.com/bundle/paris-servicenow-platform/page/product/mid-server/reference/mid-server-parameters.html>

1. How to check APIC reachability from the MID server?

Ans – The reachability can be tested using the “curl” command.

For example - To retrieve a web page

$ curl <APIC URL>

To download via a proxy server

$ curl -x <proxy url> <APIC URL>

1. How to check ServiceNow reachability?

Ans – The ServiceNow reachability can be tested using the ping command.

For Example – ping <servicenow instance url>

1. How to configure the ACI application?

Ans – To configure the ACI application user will need the following prerequisite credentials from Cisco

* ACI IP
* Username
* Password
* MID server must be Up and running
* MID users must have “mid\_server”, “CiscoACIInventoryManagementAdmin” and “itil” roles.

Once the user has all this information he needs to navigate to Cisco ACI Application -> Configuration -> APICs and create a new configuration.

1. Which access roles does the user need to run the ACI application?

Ans – User must need the following access

Need user id and password for ServiceNow instance

ServiceNow instance users must have “mid\_server”, “CiscoACIInventoryManagementAdmin” and “itil” roles.

1. How to change the user role?

Ans – User needs to navigate to Organization -> Users. Find the correct user ID and click on that record. Press the “Edit” button next to the Roles tab. Select “CiscoACIInventoryManagementAdmin”, “mid\_server” and “itil” from the list and press the save button.

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