Lab Guide

Service Mapping Best Practices & Troubleshooting

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Default Login / Password: Knowledge17

admin / Knowledge17

itil / Knowledge17

employee / Knowledge17

Lab Instance Powered by:



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Lab Goal

Lab 1.1 Create a new business service

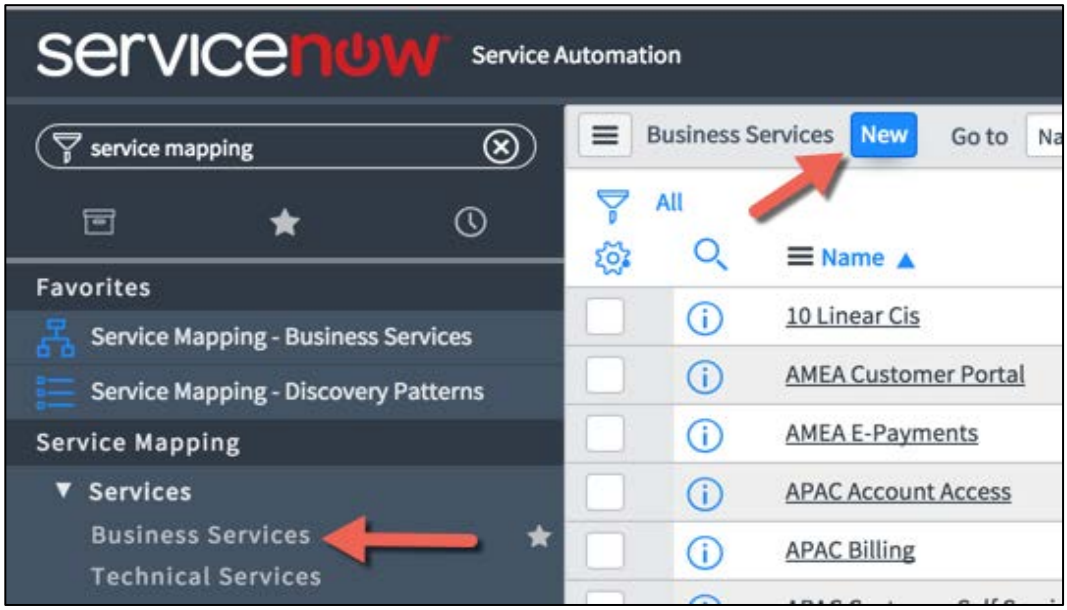
This lab explains how to start and troubleshoot the service mapping process. The lab contains the following sections:

- Lab 1.1 Creating a new business service
- Lab 1.2 Troubleshooting the common failures

Lab 1.1: Create a New Business Service

Navigate and start the service mapping process

1. **Navigate to Service Mapping** in the navigator search.
2. Click **Business Services**.
3. Click **New**.

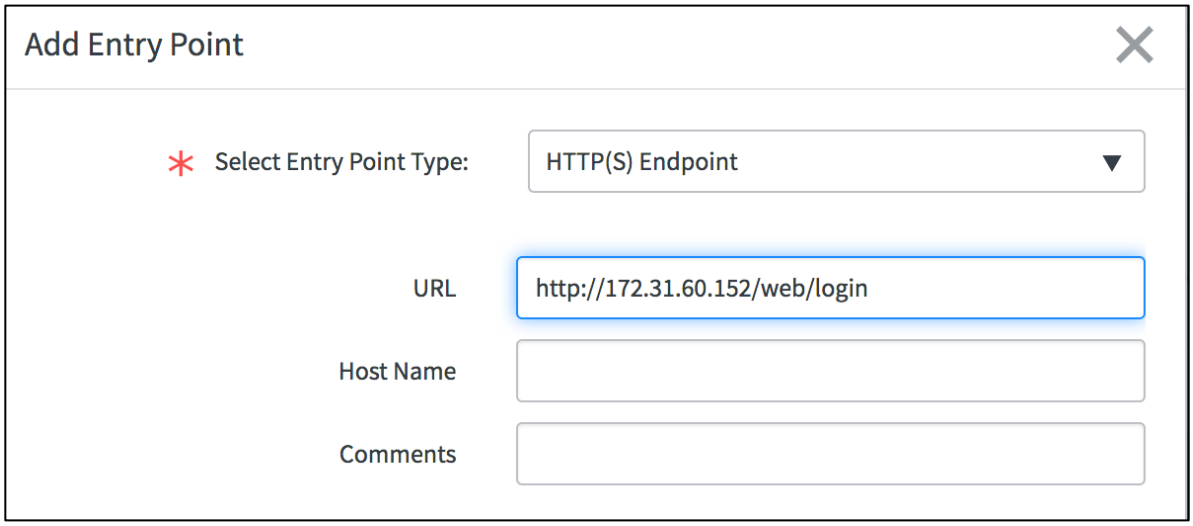


4. Enter the following details:

   Business Service Name: **1_K17**
   Note: (Leave all other fields set to their defaults.)

5. In the **Entry Point** section at the bottom of the page click **New**.

6. Add the URL as **http://XXX.XXX.XXX.XXX/moodle/my** - leave Entry Point Type as **HTTP(S)**.



7. Click **Submit** button.

8. Click **View map button** in the upper-right part of the Business Service screen.



9. Watch the progress of the discovery. A blue progress bar appears at the top of the map indicating a discovery is in progress.



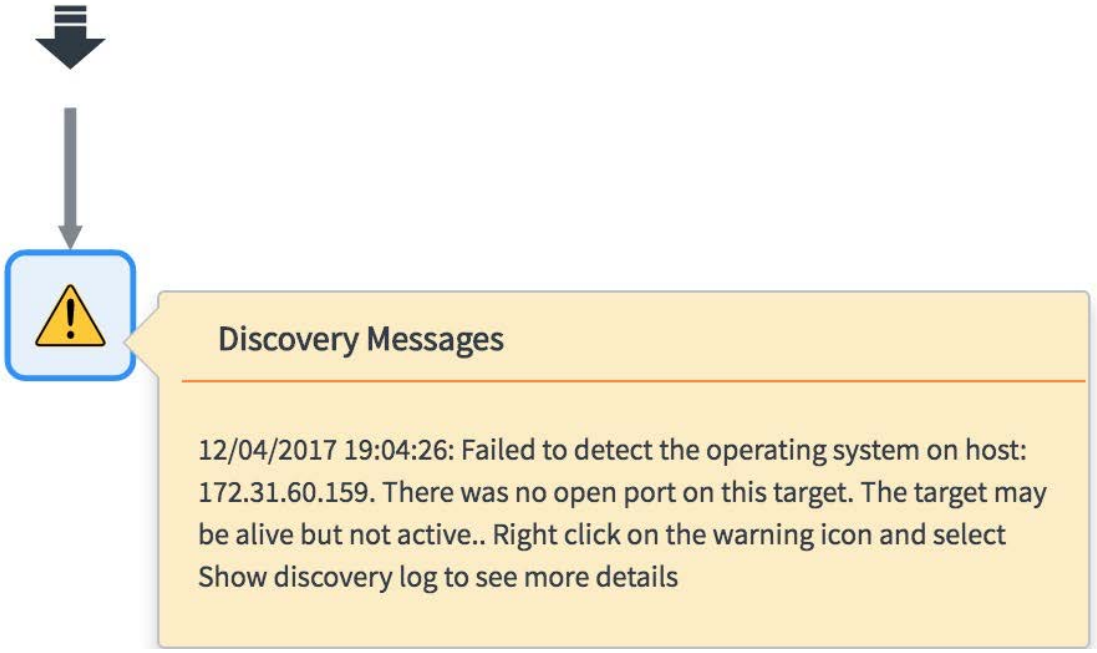
10. Mapping is complete when the **Discovery Done** message appears at the top of the screen.



Lab 1.2.1 Troubleshooting the common failures

1. Discovery **failed** with the following error message:

"*Failed to detect the operating system on host: XXX.XXX.XXX.XXX. There was no open port on this target. The target may be alive but not active. Right-click on the warning icon and select Show discovery log to see more details*."



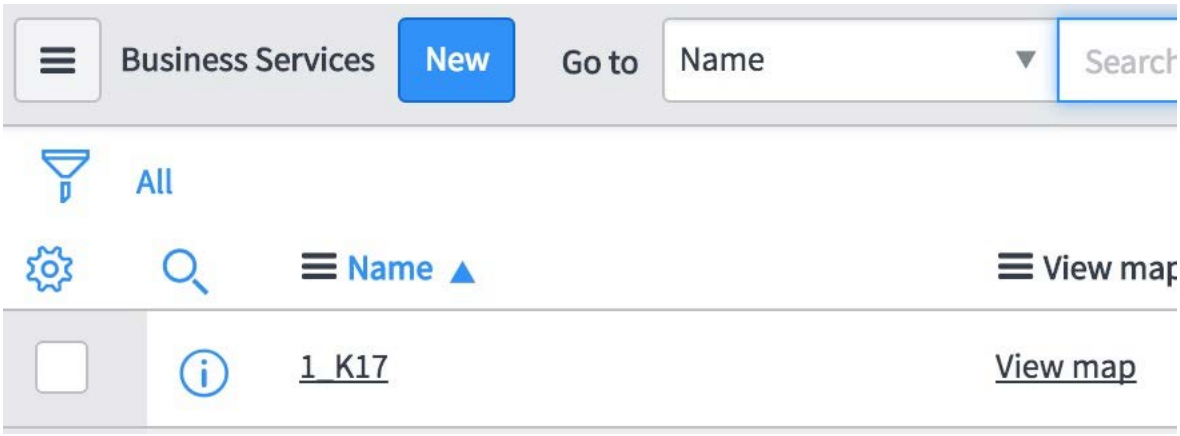
2. Quick quiz question: What could possibly go wrong?

3. Possible causes of a failure?

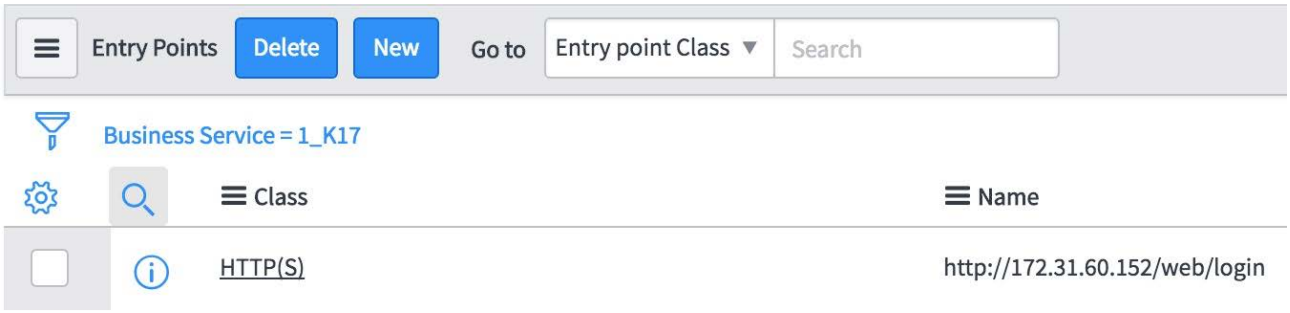
   - Firewall blocking port 80?
   - The target machine is down?
   - Wrong Entry Point URL IP address?
   - Something else?

   In this lab, the answer is a wrong Entry Point URL IP address.

4. Entry point IP address correction; Navigate to **Service Mapping** in the navigator search. Click **Business Services**; then click on **1_K17 link**.



5. Click on **HTTP(S)** In the Business Service form.

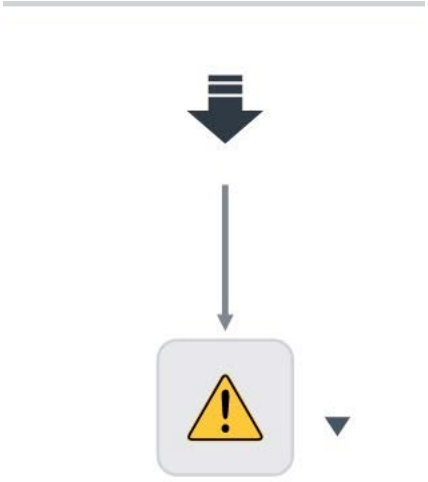


Lab 1.2.1 Add Management IP

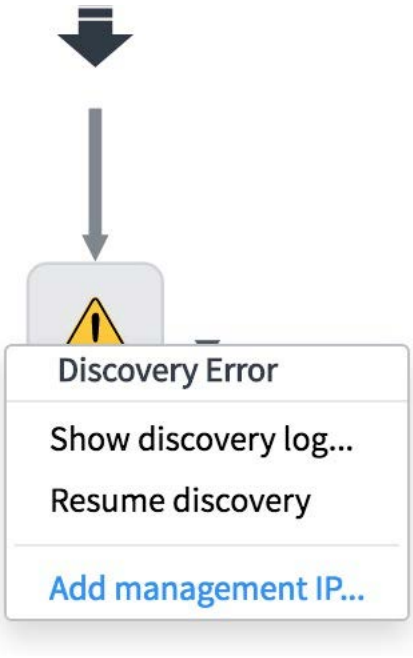
This lab explains the common use case where a mapping process requires the primary management IP for device which is usually required for Load Balancers.

6. In the Entry Point form delete the previous URL and add another URL as **http://XXX.XXX.XXX.XXX/web/login** - leave Entry Point Type as **HTTP(S)**.
7. Click on **Submit** button.
8. Discovery failed with the following message:

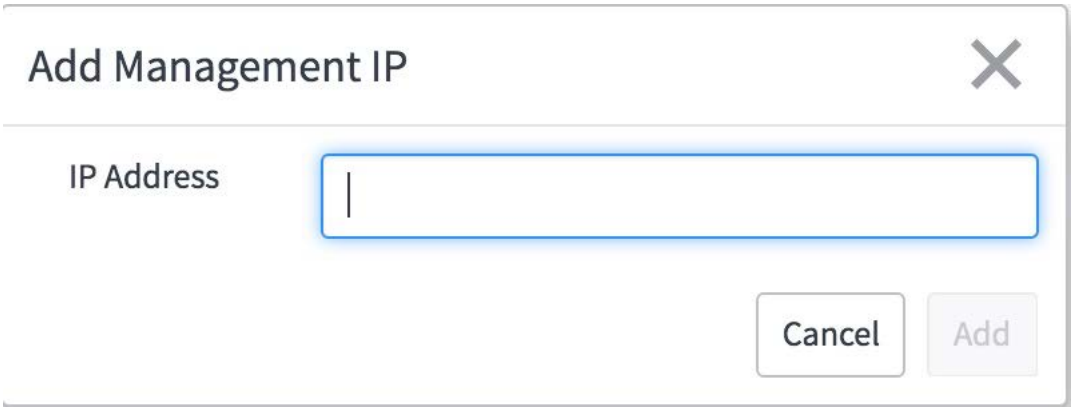
   "*Failed to detect the operating system on host: XXX.XXXXXX.XXX, XXX.XXXXXX.XXX is not a reachable host. Right-click on the warning icon and select Show discovery log to see more details*"



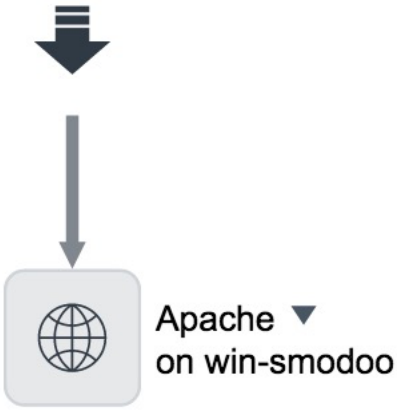
9. Right-click on Icon and click on **Add management IP**.



10. In **Add Management IP** form add XXX.XXX.XXX.XXX and click on **Add** button.



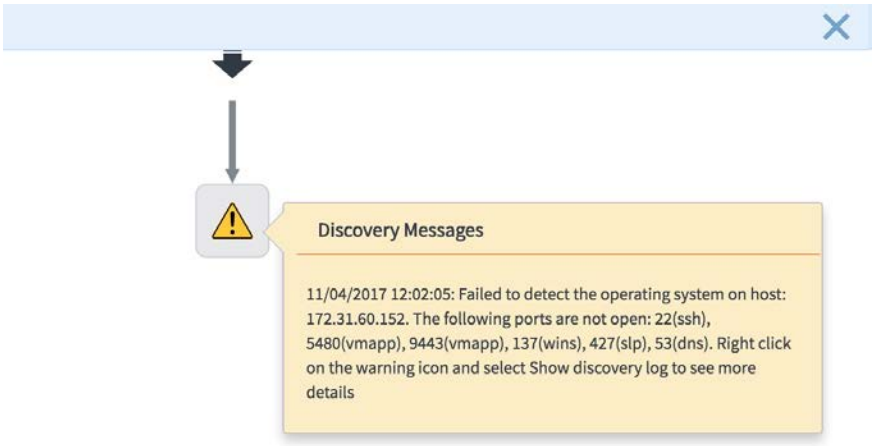
11. Review mapping results; Mapping is complete when the **Discovery Done** message appears at the top of the screen and discovered Apache appears on the map.



Lab 1.2 Appendix - Troubleshoot a possible mapping failure

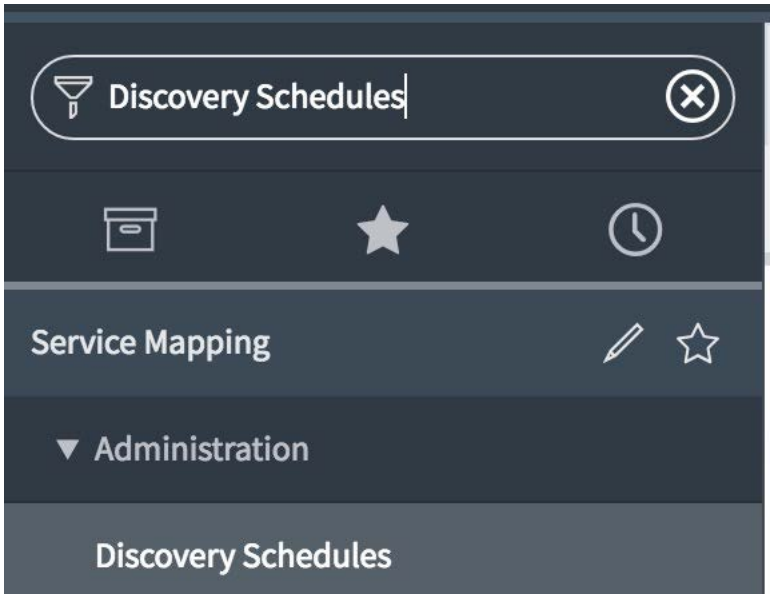
1. This may not happen in your instance but in some rare cases, the mapping process could fail with the following error message:

"Failed to detect the operating system on host: XXX.XXX.XXX.XXX. The following ports are not open: 22(ssh), 5480(vmapp), 9443(vmapp), 137(wins), 427(slp),53(dns)….

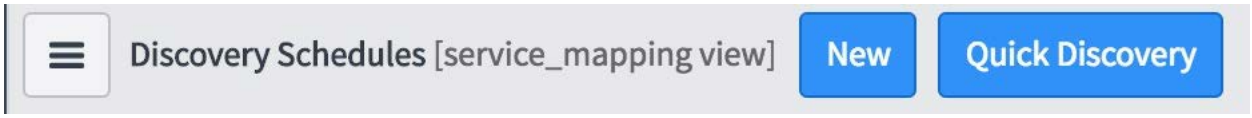


This is likely to be an issue with the “WMI Collector” being stopped on the MID Server host. This can be fixed by running a horizontal discovery against the target IP.

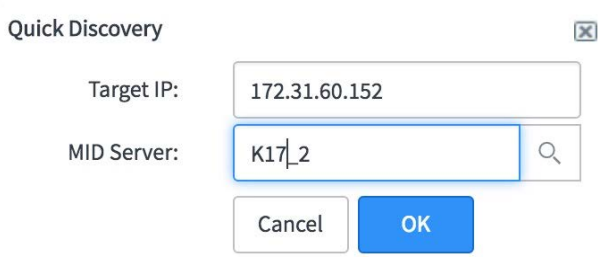
1. Navigate to **Discovery Schedules** in the navigator search. Click **Discovery Schedules**.



2. Click on **Quick Discovery** button.



3. Add the target IP address and select the MID server, click **OK** button.



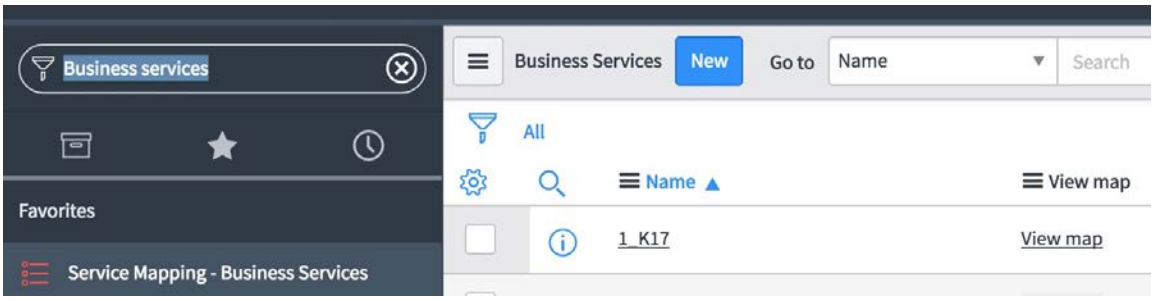
4. Click on discovery number to see the target machine discovery status.



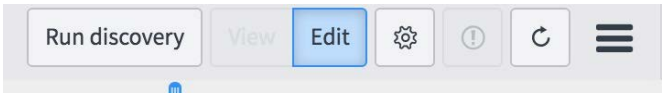
5. Wait until discovery status changes to Completed



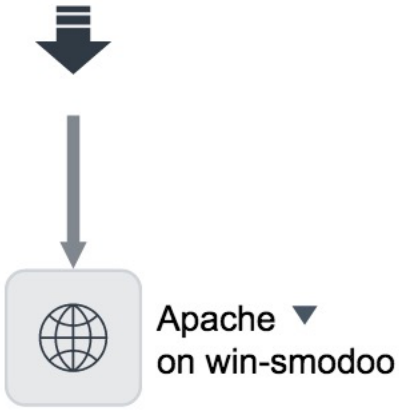
6. Navigate back to **Business Services** and click on **View map** for **1_K17**.



7. Click on **Run Discovery** button.



8. Review mapping results; Mapping is complete when the **Discovery Done** message appears at the top of the screen and discovered Apache appears on the map.



Lab Goal

Lab 1.1 Create a new business service

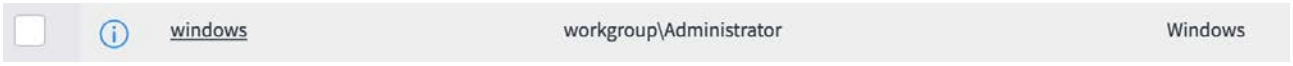
This lab explains how to troubleshoot a possible credentials problem.

- Lab 2.1: Destroy existing credentials
- Lab 2.2: Analyze the problem
- Lab 2.3: Fix and test credentials

Lab 2.1 Destroy existing credentials

This lab simulates an authentication issue that affects the mapping process.

1. Navigate to **Service Mapping > Credentials**.
2. Click **on Windows type** credentials.



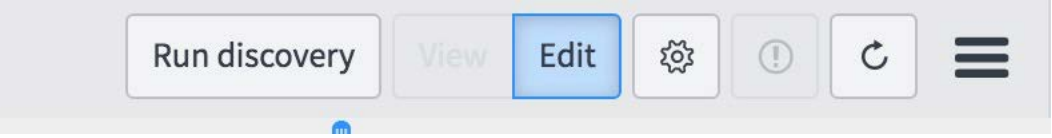
3. Delete password and type "**abracadabra**" in the Password textbox.



4. Click on **Update** button.
5. Navigate to **Service Mapping > Business Service > 1_k17;** Click **View map**.



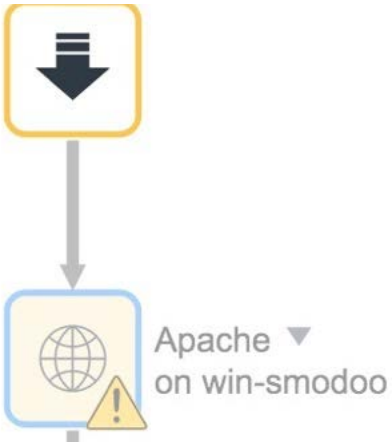
6. Click on **Run Discovery** button.



Lab 2.3: Analyze the problem

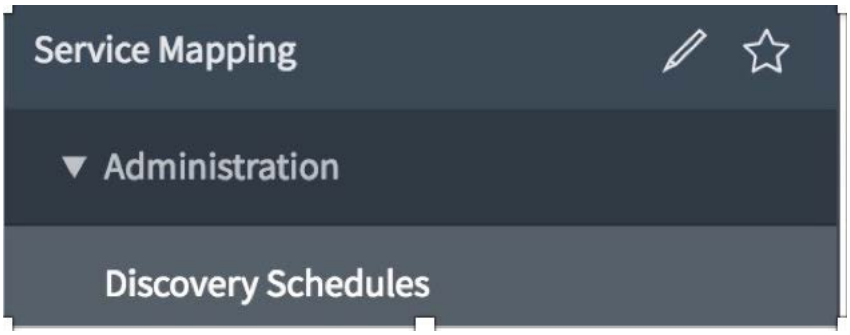
1. Discovery failure with the following error message:

   "Windows authentication failed on host XXX.XXX.XXX.XXX Access is denied. (Exception from HRESULT: 0x80070005 (E_ACCESSDENIED))."

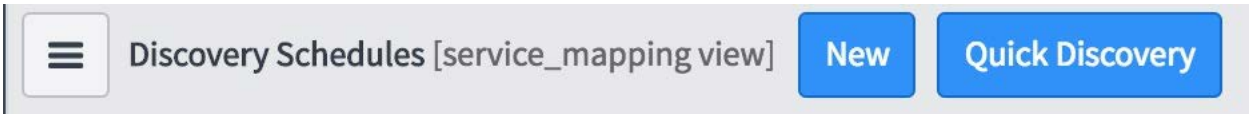


2. We have a "Windows Authentication" error – but it would be useful to know what credentials were tried. We can find out by running a "Quick Discovery" against the IP address for the host.

3. Navigate to **Discovery Schedules** in the navigator search. Click **Discovery Schedules**.



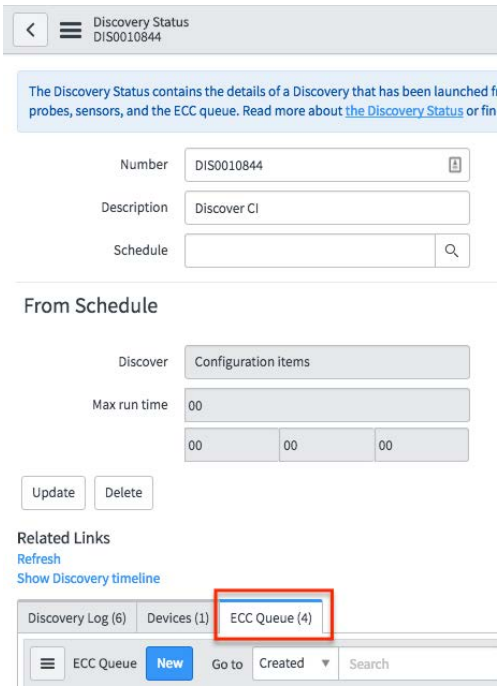
4. Click on **Quick Discovery** button.



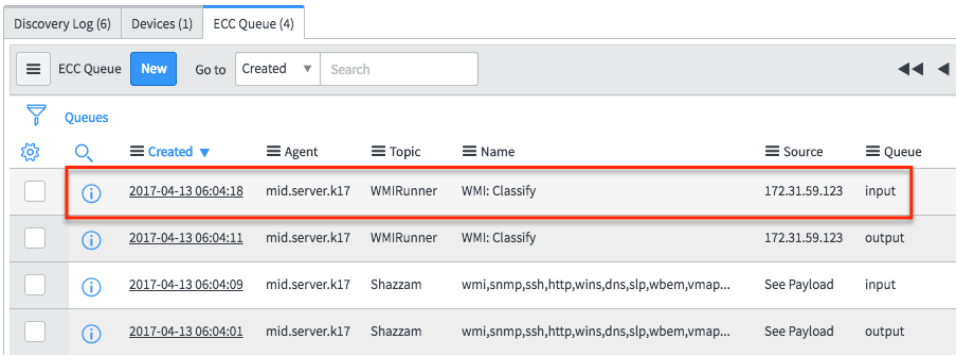
5. Wait until discovery status changes to Completed.

Number ▲	Created	Description	Schedule	Discover	State	Started	Completed	Updated	Duration
DIS0010844	2017-04-13 06:04:01	Discover CI		Configuration items	Completed	2	2	2017-04-13 06:04:33	21 Seconds

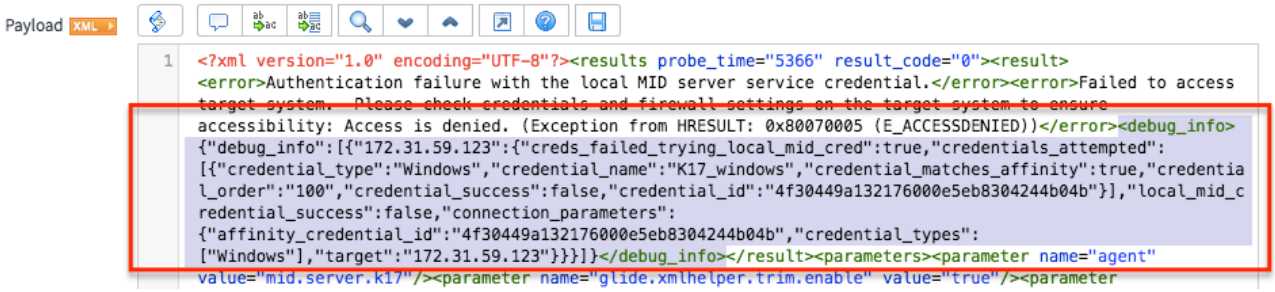
6. Click into the Discovery Status record and click on the “tab” for the ECC queue.



7. Click on the **WMI: Classify - Input** record.



8. The **debug_info** tag contains information about the credentials that were tried.

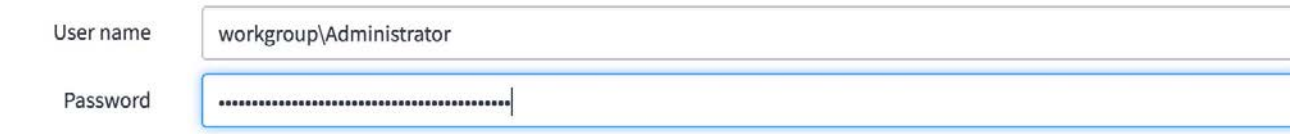


Lab 2.3: Fix and test credentials

1. Navigate to **Service Mapping > Credentials** and click **on Windows type** credentials.

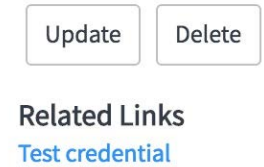


2. Enter the **1G00dDemo** password.

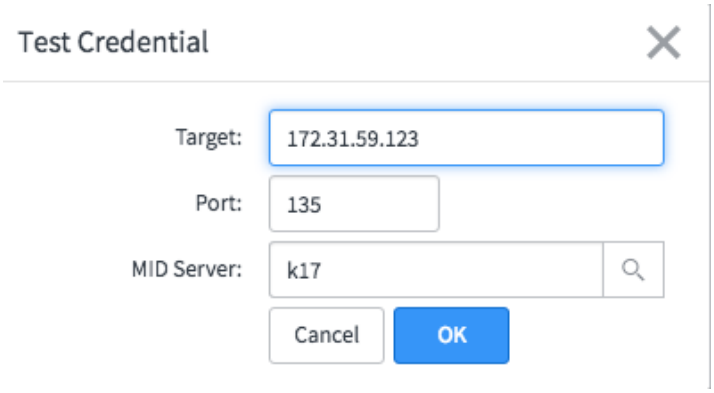


3. Click on **Save**.

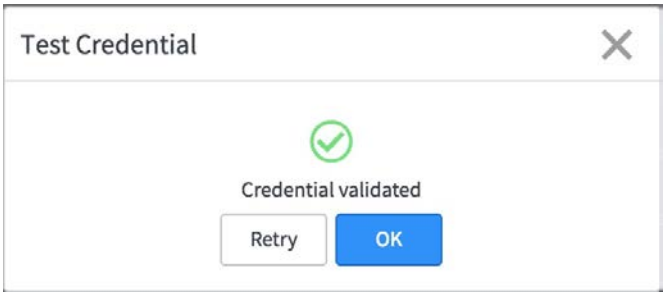
4. Click on Test credentials link.



5. Fill the **Test credentials** fields with IP; select mid server; click **OK** button.

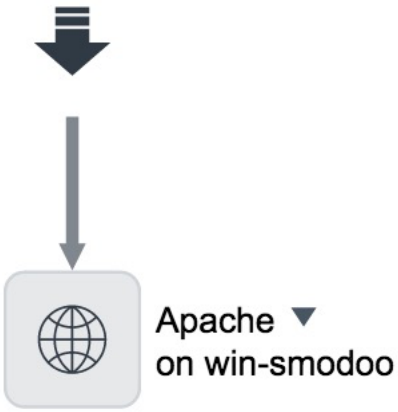


6. Validate credentials.



7. Navigate back to **Business Services** and click on **View map** for **1_K17**.
8. Click on **Run Discovery** button.

9. Review mapping results; Mapping is complete when the **Discovery Done** message appears at the top of the screen and discovered Apache appears on the map.



Lab Goal

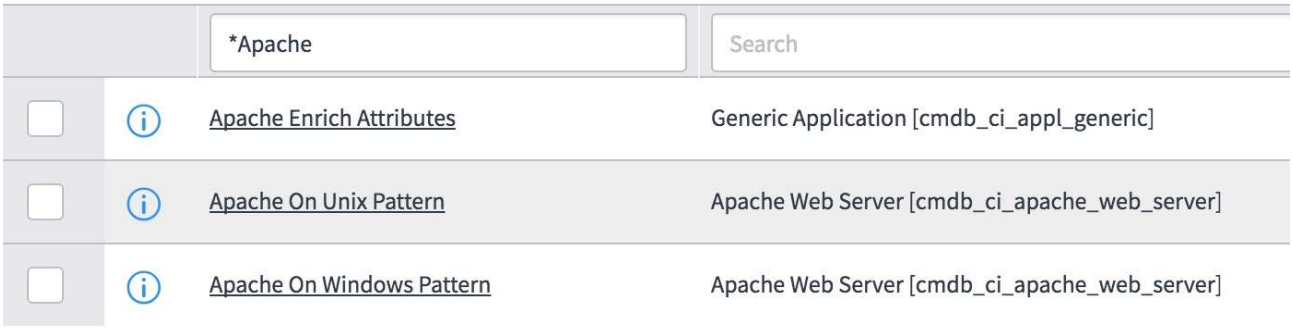
Lab 1.1 Create a new business service

This lab explains how to parse different types of files.

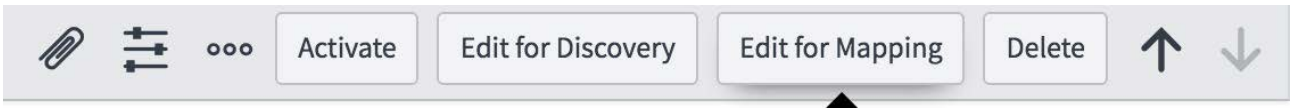
- Lab 3.1: Delimiter text parsing
- Lab 3.2: Oracle file parsing

Lab 3.1: Delimiter text parsing

1. Navigate to **Service Mapping > Discovery Patterns**.
2. Perform a search ***Apache**.
3. Click on **Apache on Windows**.



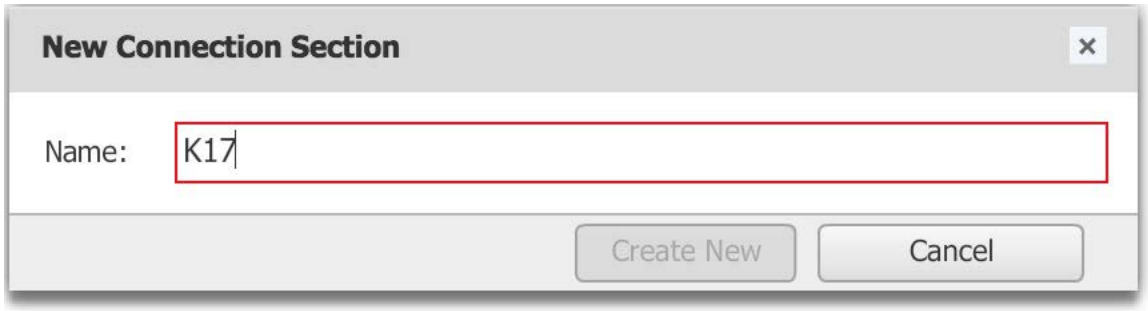
4. Click on **Edit for Mapping** button.



5. Click on "**+**"to create a new connectivity section.



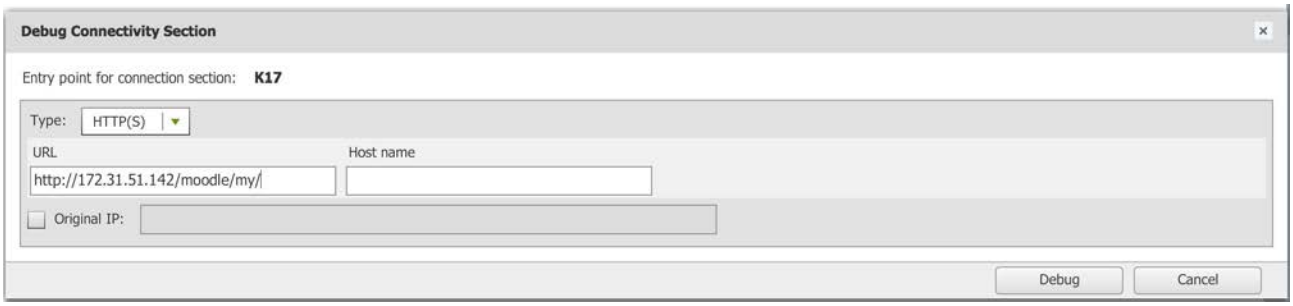
6. Add name **K17** and click on **Create New**.



7. Click on **Debug** button.

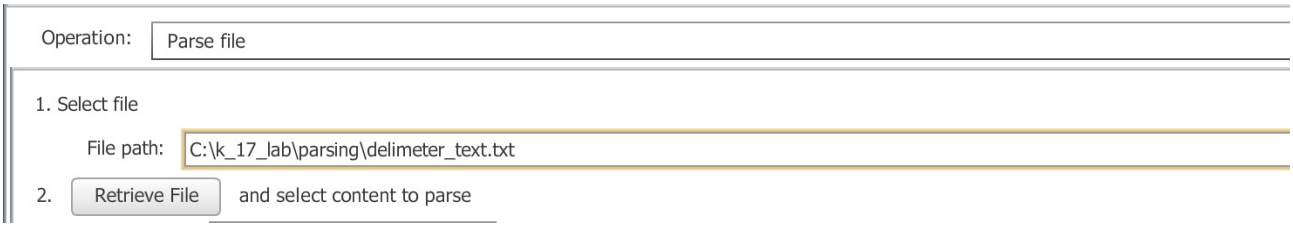


8. Add http://XXX.XXX.XXX.XXX/moodle/my/ and click on **Debug** button.



9. Choose **Parse file** operation; Add **C:\k_17_lab\parsing\delimeter_text.txt** to File path.

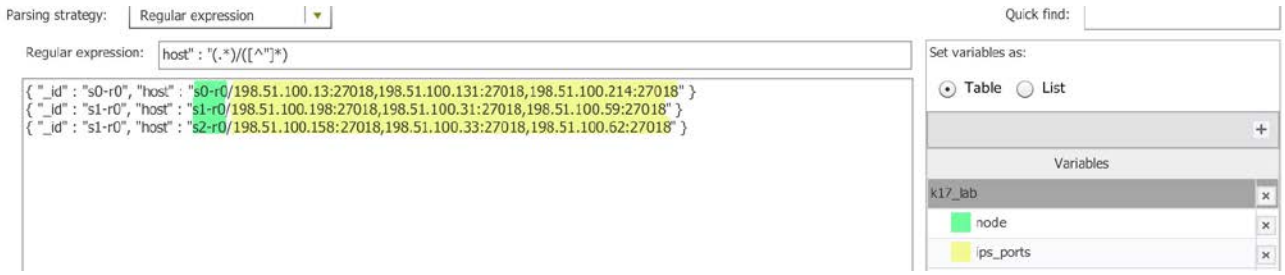
10. Click on **Retrieve File** button.



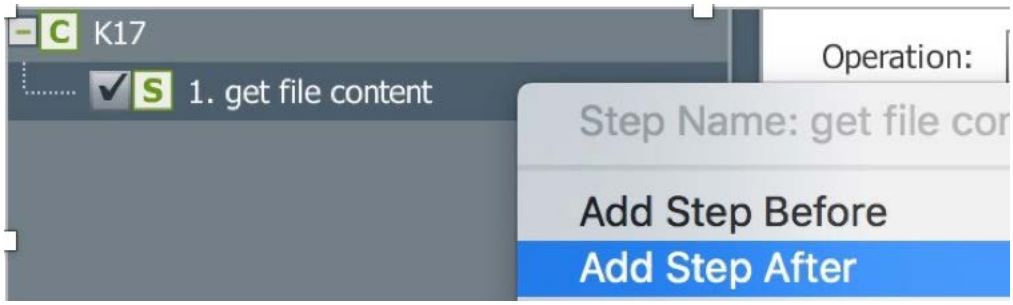
11. Select **Regular Expression** as a Parsing Strategy.

    Add the following regular expression **host" : "(.*)/([^"]*)**

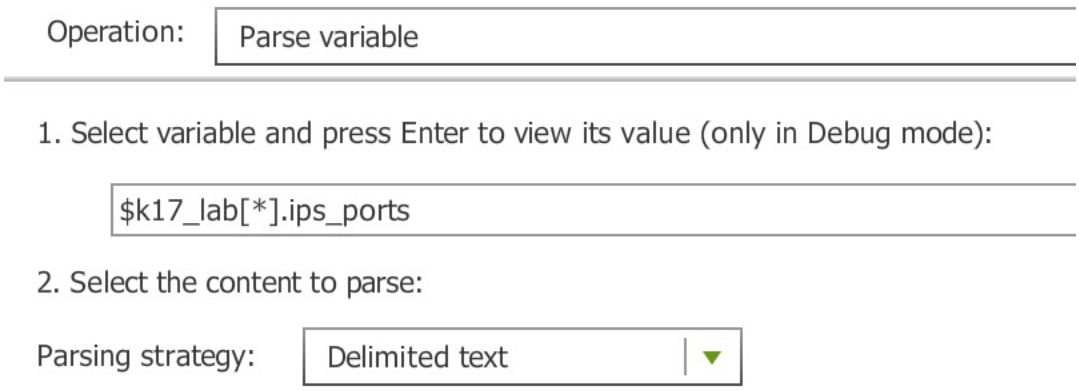
    Create the table **k17_lab** and the colums **names node** and **ips_ports**



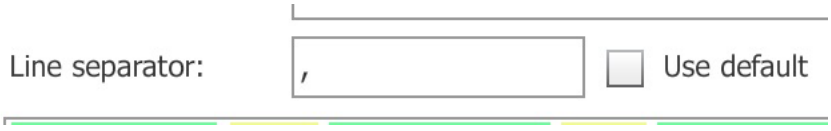
12. Right-click on step name and click on **Add Step After**.



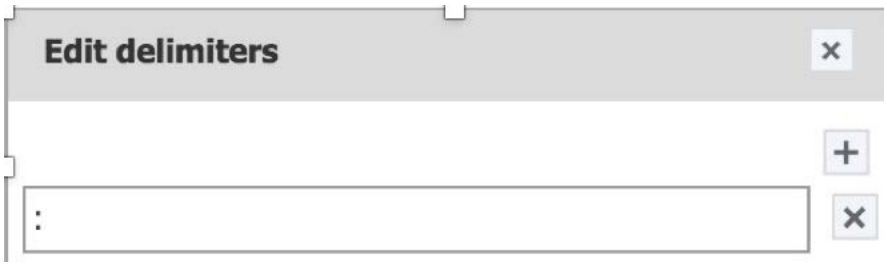
13. Choose **Parse Variable** operation; Add **$k17_lab[*].ips_ports;** Select **Delimeter text** as a parsing strategy.



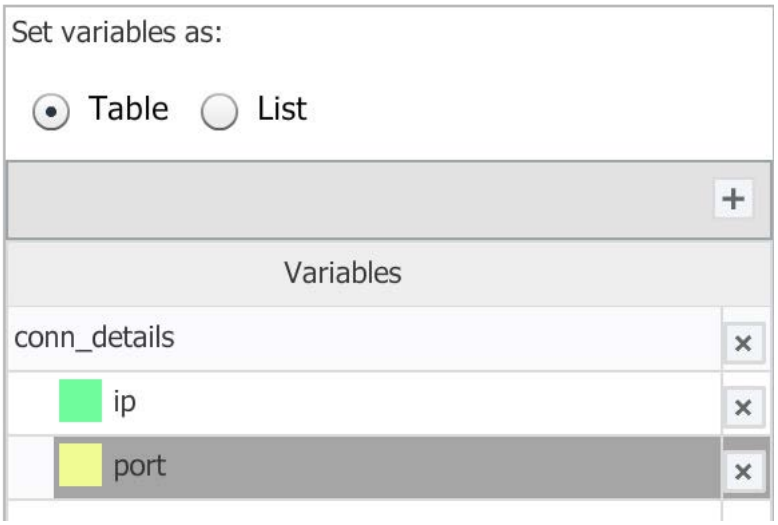
Unselect **Use default** for the **Line separator** and add "**,**" (comma)



Add "**:**" (colon) to delimiters



14. Create table named **conn_details**, **ip** and **ports** names for the table columns.



15. Set **1** and **2** in the following manner **1,2** in the **Positions** textbox; click **Enter**.



16. Test the results; The output text should be colored in the following way:

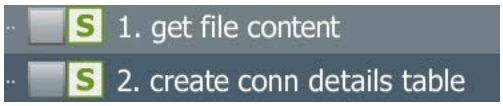
198.51.100.13:27018,198.51.100.131:27018,198.51.100.214:27018
198.51.100.198:27018,198.51.100.31:27018,198.51.100.59:27018
198.51.100.158:27018,198.51.100.33:27018,198.51.100.62:27018

17. Click on **Test** button to review results.

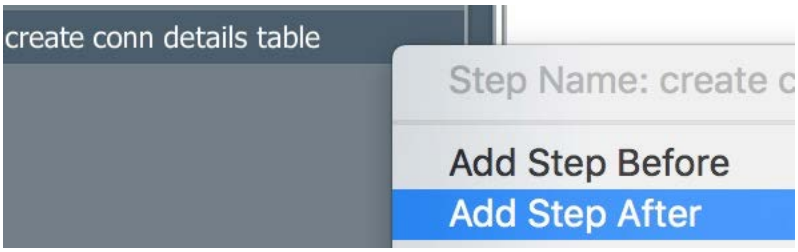
conn_details - Table Attributes

ip	port
198.51.100.13	27018
198.51.100.131	27018
198.51.100.214	27018
198.51.100.198	27018
198.51.100.31	27018
198.51.100.59	27018
198.51.100.158	27018
198.51.100.33	27018
198.51.100.62	27018

18. Rename step name to **create conn details table**.



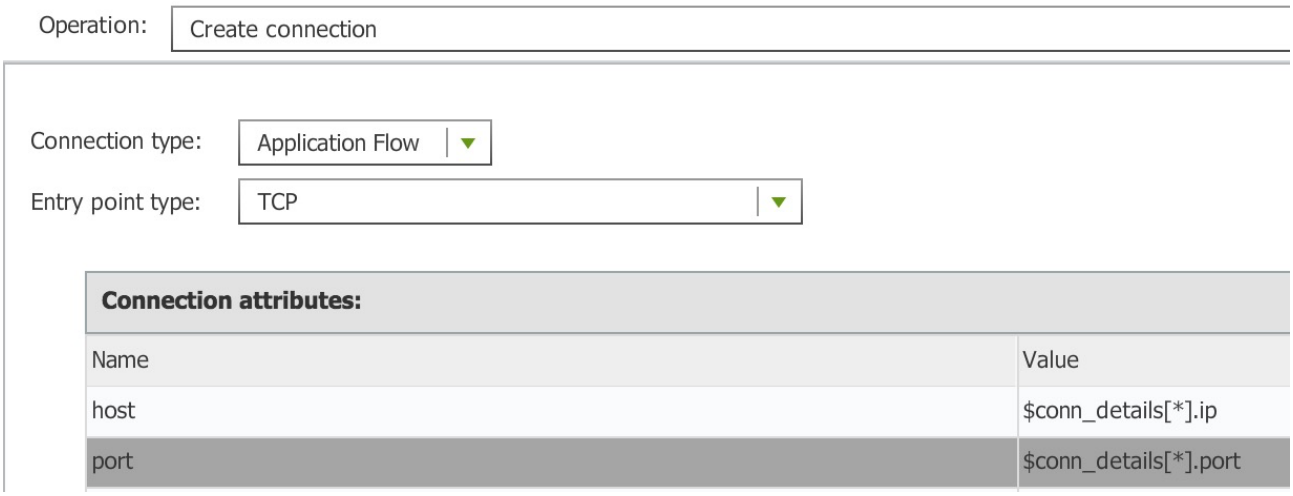
19. Right-click on a step name and click on **Add Step After**.



20. Choose **Create connection** operation; **Application Flow** for Connectivity type; **TCP** for Entry Point Type.

    host $conn_details[*].ip

    port $conn_details[*].port



21. Rename step name to **Create connection** .

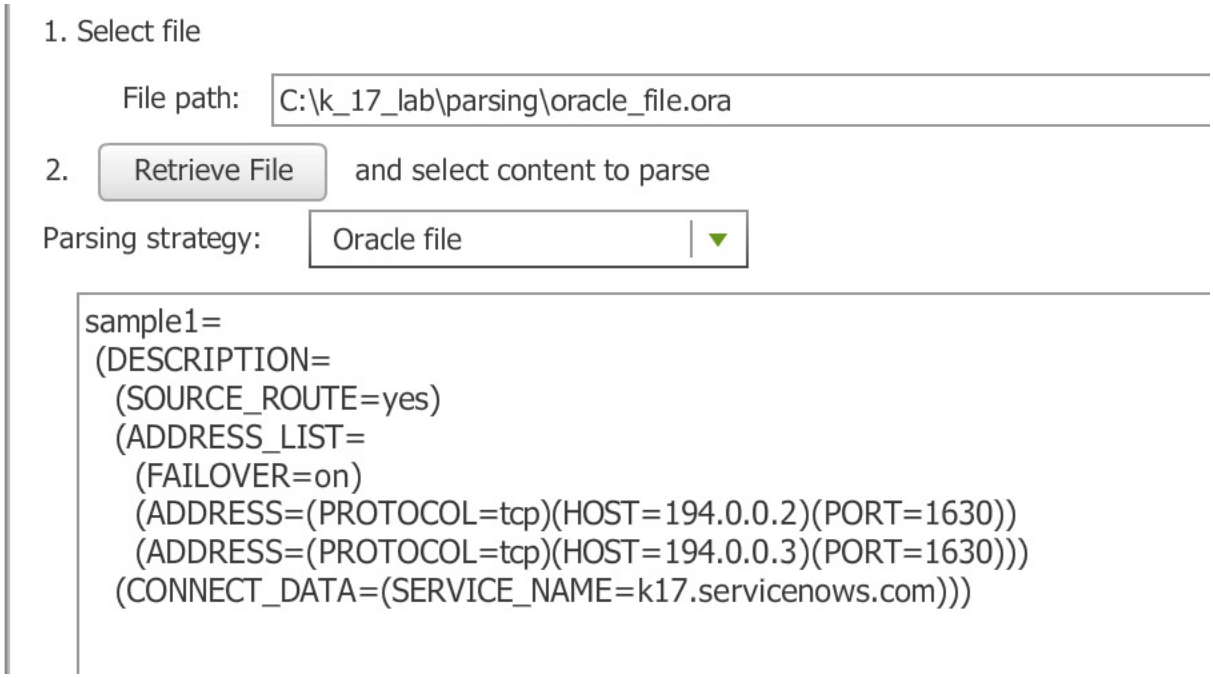


Lab 3.2 – Oracle file parsing

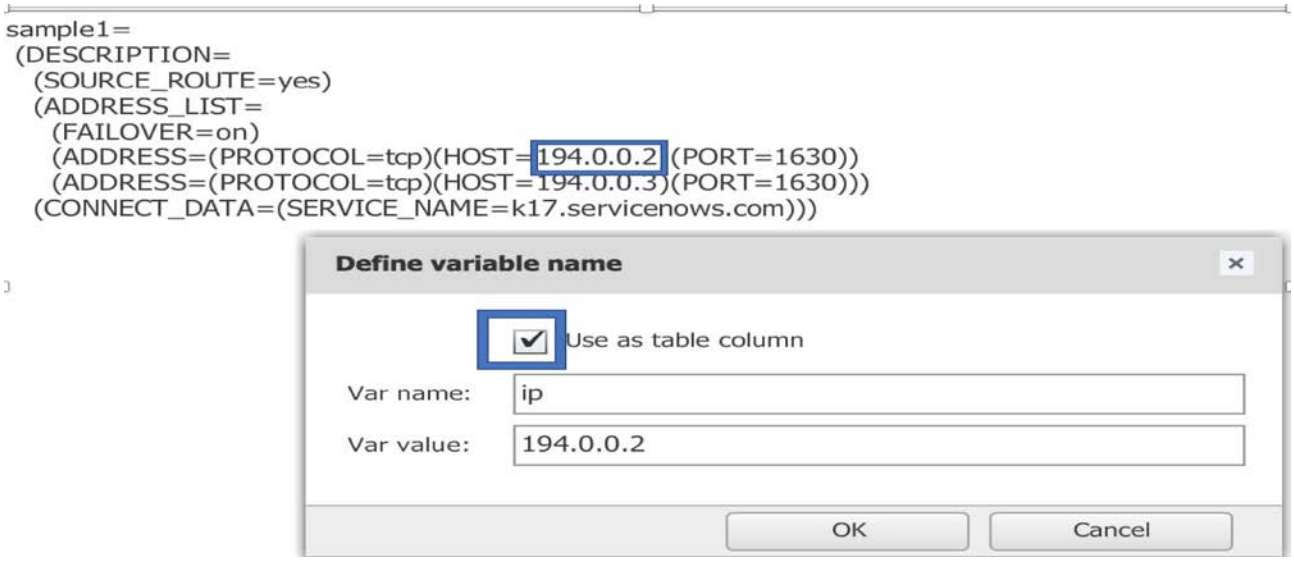
This lab shows how to parse Oracle file by using Oracle file parsing strategy. This parsing strategy work for all Oracle files and replaces the need for complex regular expressions.

1. Right-click on **Create connection** step name from a previous lab and click on **Add Step After**.
2. Choose **Parse file** operation; Add **C:\k_17_lab\parsing\oracle_file.ora** to File path.

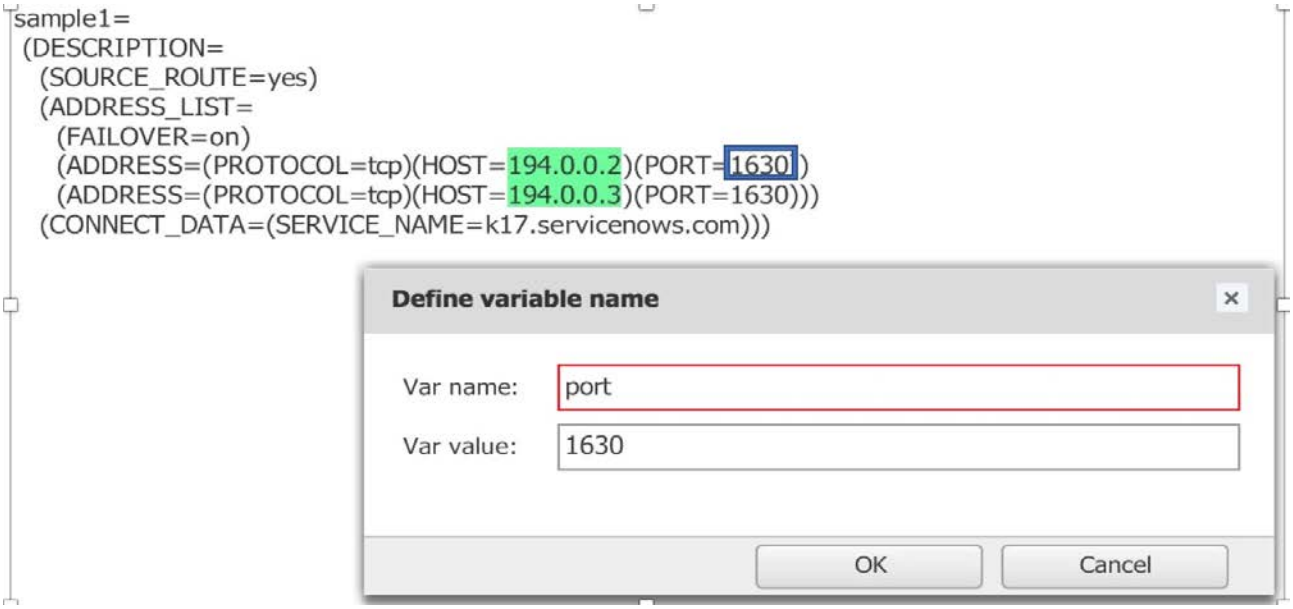
And click on **Retrieve File** button and **Oracle File** as a Parsing strategy.



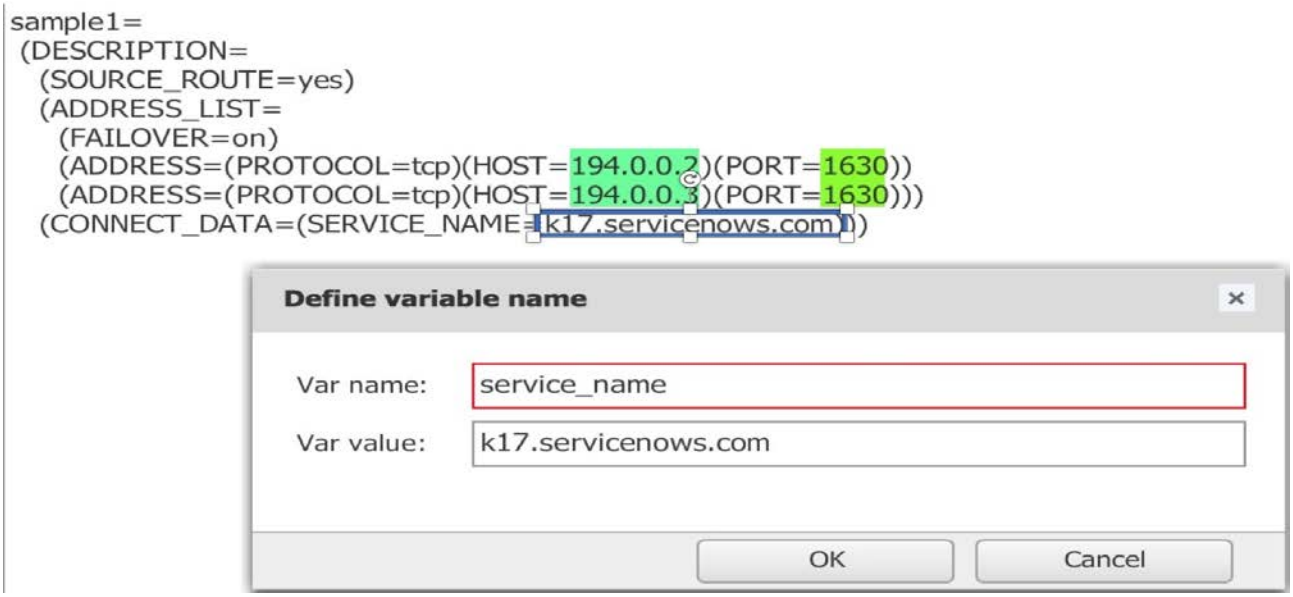
3. Select IP address **194.0.0.2**; select **Use a table column** check box; **ip** for the variable name; click **OK** button.



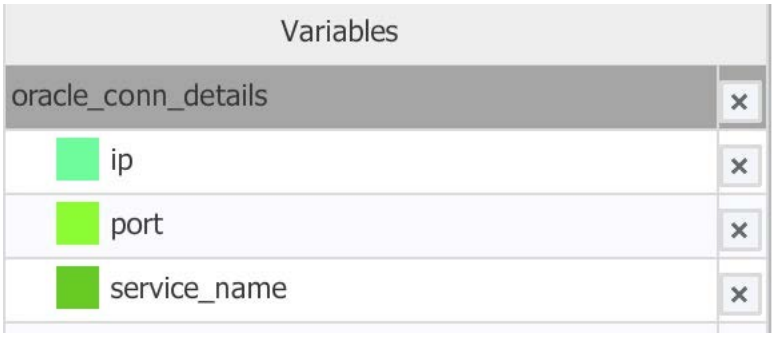
4. Select port **1630; port** for the variable name; click **OK** button.



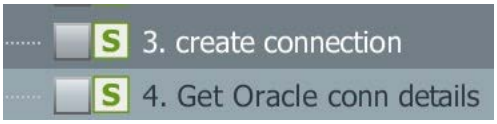
5. Select SERVICE_NAME; **service_name** for the variable name; click **OK** button.



6. Rename the table to **oracle_conn_details**.



7. Rename step from _Untitled step to **Get Oracle service conn details**.



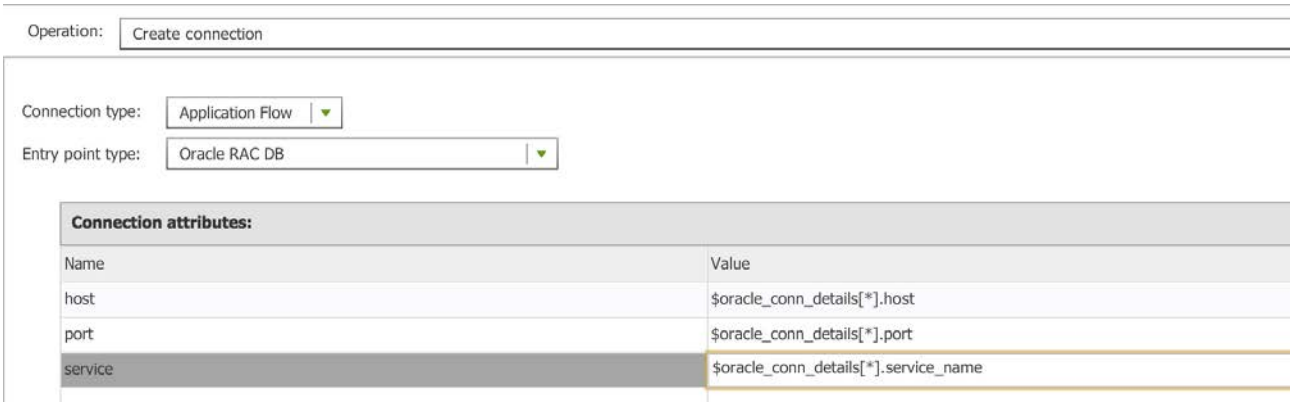
8. Add **Step After;** Choose **Create connection** operation; **Application Flow** for Connectivity type;

   Oracle RAC DB for Entry Point Type; Add the connectivity details

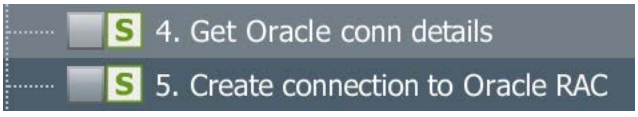
   host $oracle_conn_details[*].host

   port $oracle_conn_details[*].port

   service $oracle_conn_details[*].service_name



9. Rename step to **Create connection to Oracle RAC**.



Lab Goal

Lab 4.1 Different Parsing Strategies

This lab explains how to create the libraries and use them in another pattern.

- Lab 4.1: Create libraries
- Lab 4.2: Use library in a pattern
- Lab 4.3: Edit and Save library

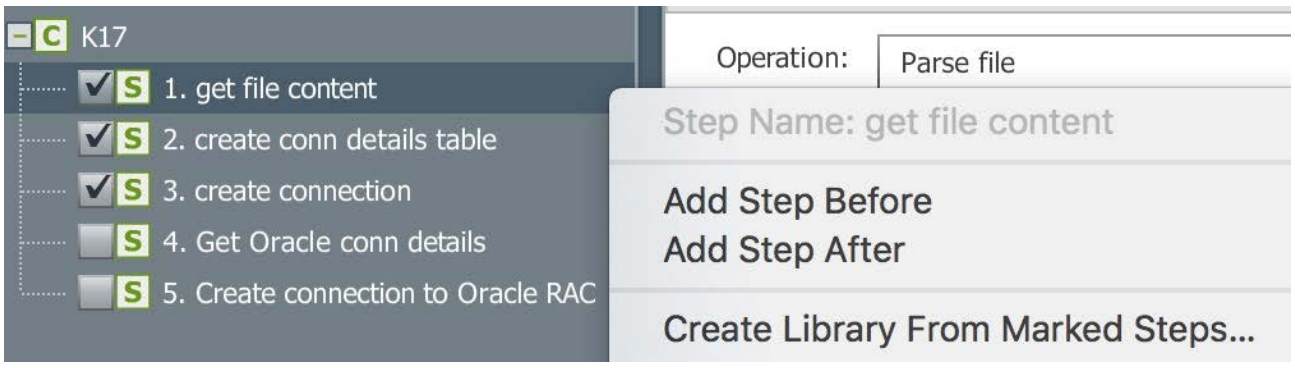
Lab 4.1 – Create libraries

This lab explains how to create a generic library.

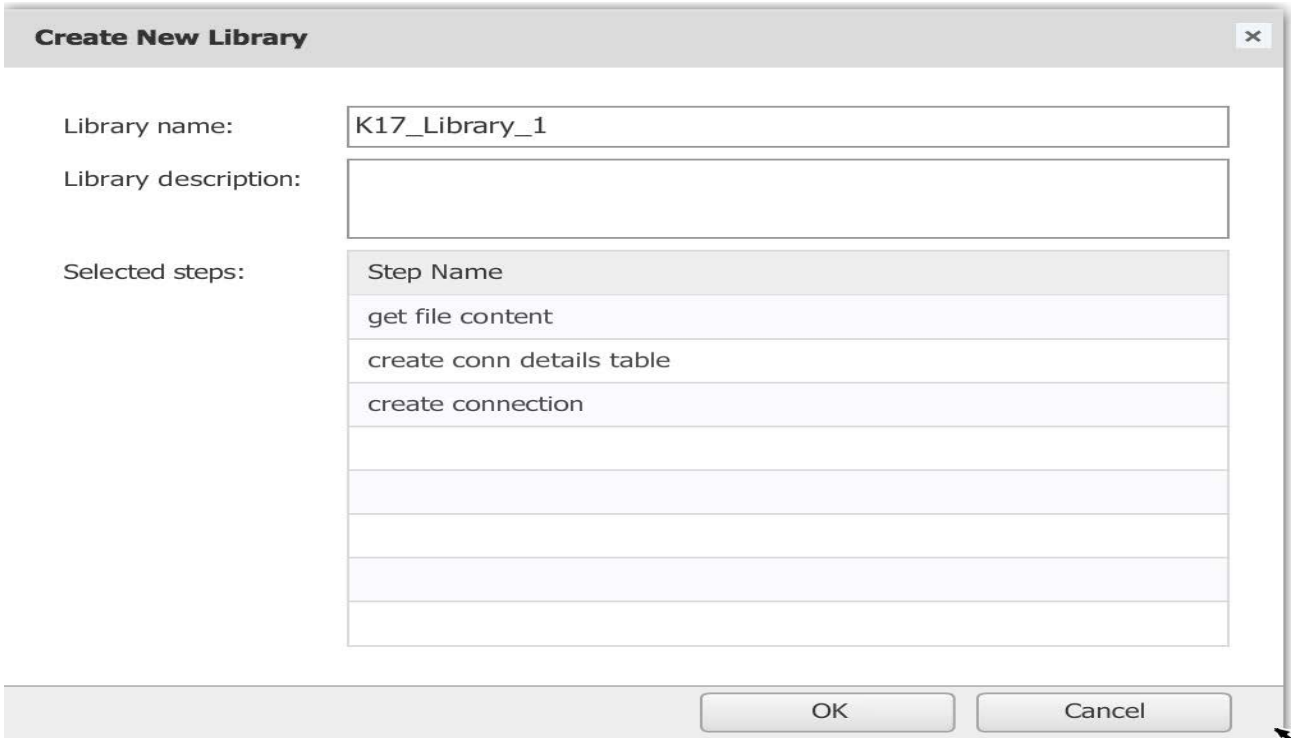
1. Select checkboxes of the first three steps.



2. Right-click on one of the selected steps and click on **Create Library on Marked Steps**.



3. Add library name **K17_Library_1**, click **OK**.



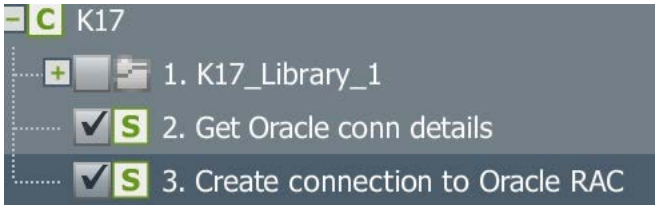
4. Verify new library created.



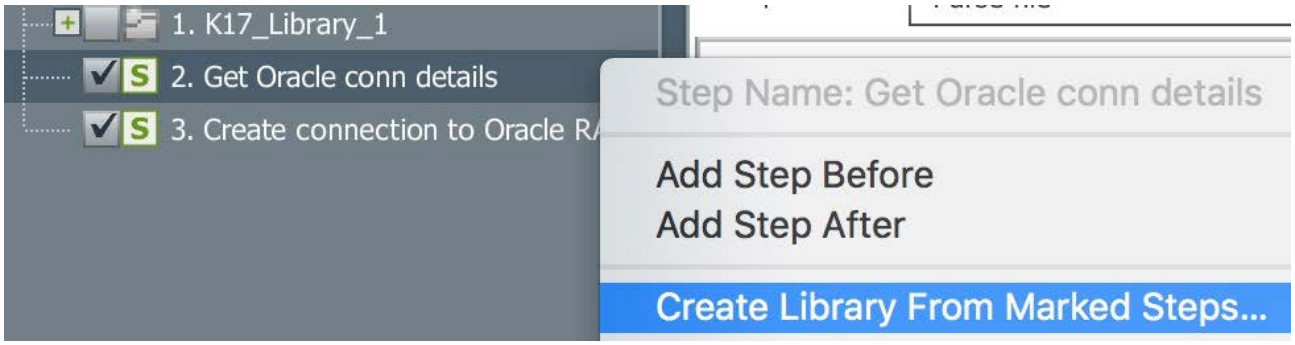
5. Rename **Untitled_Step_** step to **K17_Library_1**.



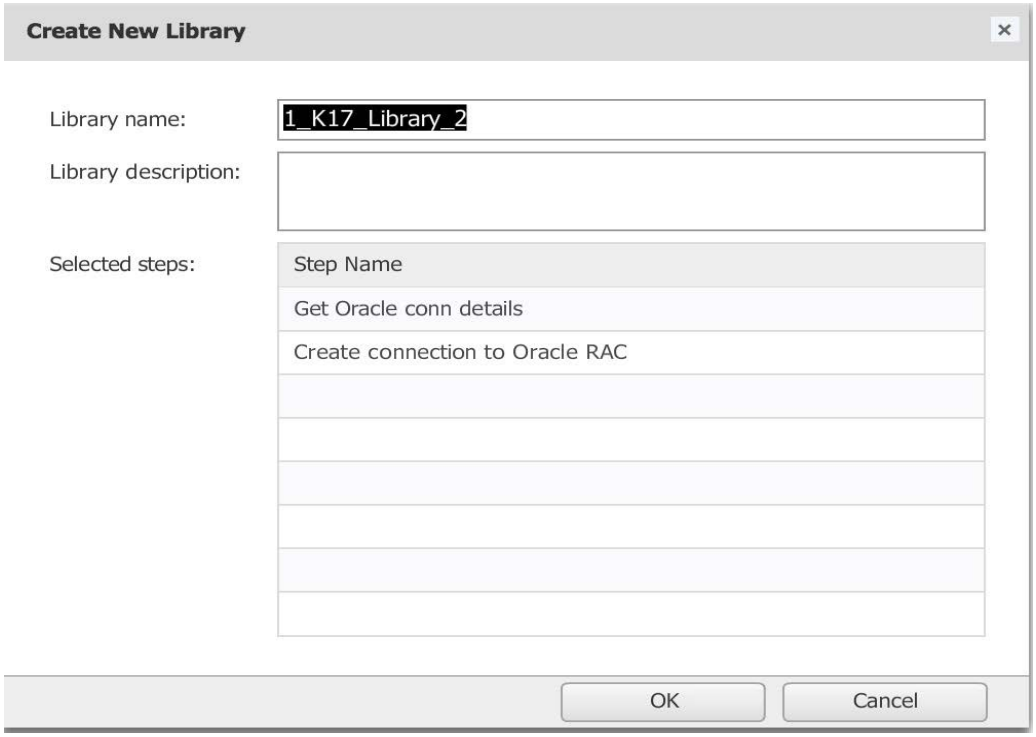
6. Select checkboxes of the last two steps.



7. Right-click on one of the selected steps and click on **Create Library on Marked Steps**.



8. Add library name **K17_Library_2** and click **OK**.



9. Rename **Untitled_Step_** step to **K17_Library_2**.

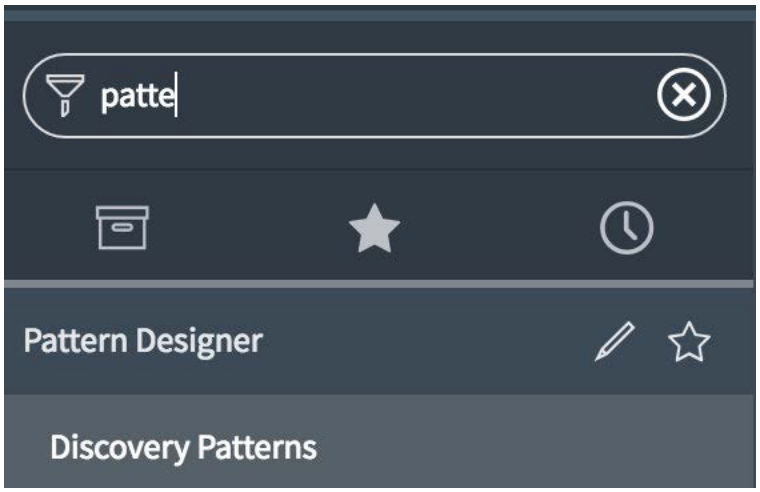


10. Click **Save**.



Lab 4.2 – Use libraries in the patterns

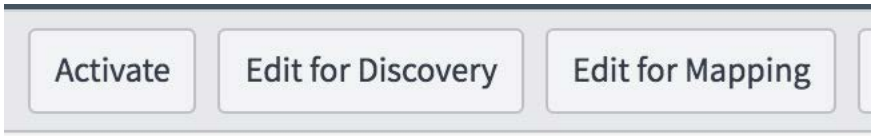
1. Navigate to **Discovery Patterns**.



2. Click on **.Net** pattern.



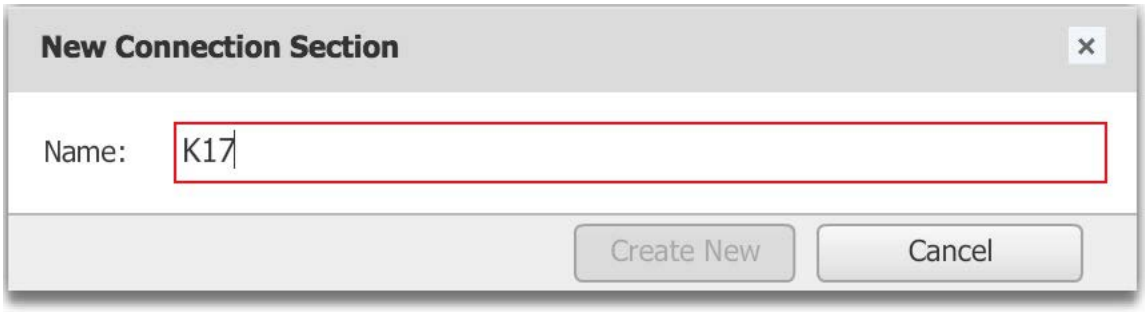
3. Click on **Edit for Mapping**.



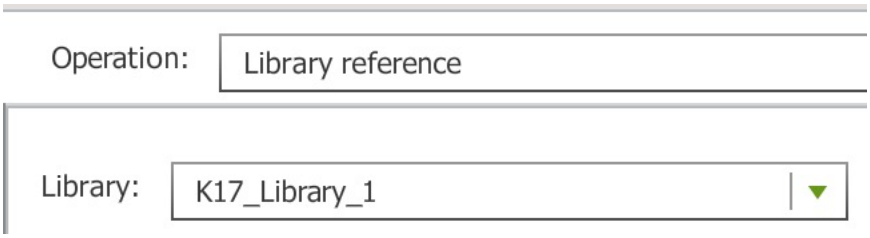
4. Click on "**+**"to create a new connectivity section.



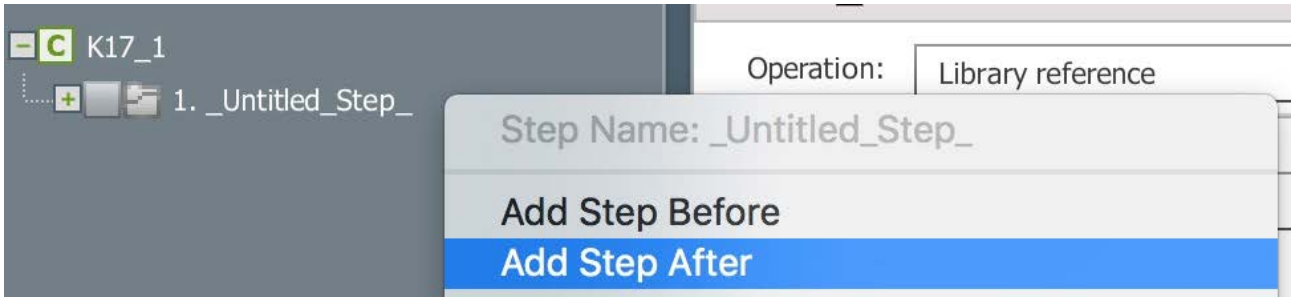
5. Add name **K17** and click on **Create New**.



6. Choose **Library Reference** operation; select **K17_Library_1** from list of libraries.



7. Right-click on step and click on **Add Step After**.



8. Choose **Library Reference** operation; select **K17_Library_2** from list of libraries.

9. Verify you see two generic libraries added to your pattern.



10. Click **Save**.



11. Click **Activate**.

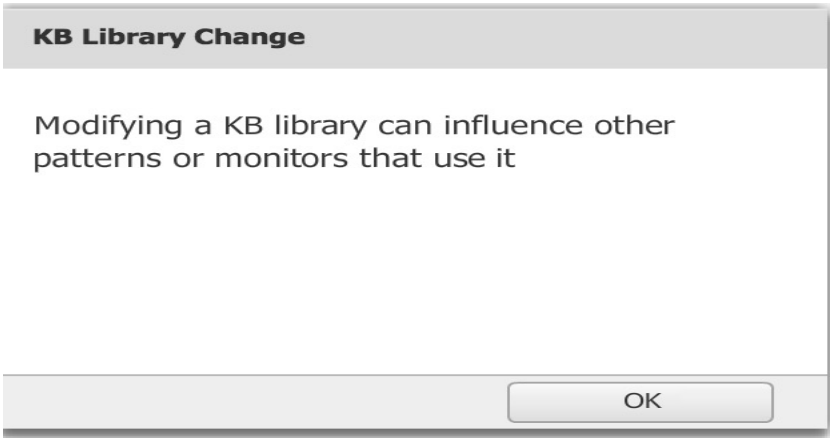


Lab 4.3 – Edit library and save

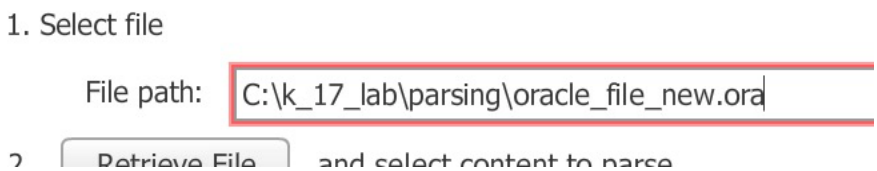
1. Click on "+" to Extent **K17_Library_2**.



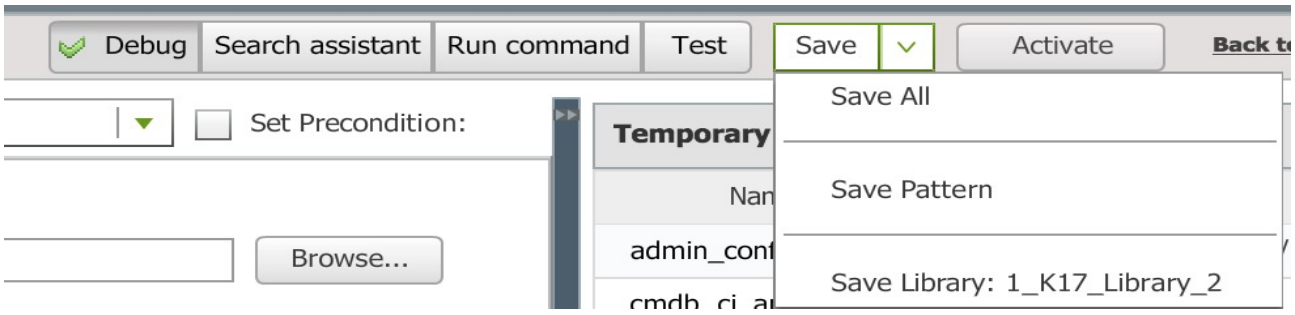
2. A new message will appear, click **OK**.



3. Change file path from **C:\k_17_lab\parsing\oracle_file_new.ora** to **C:\k_17_lab\parsing\oracle_file_new.ora**.



4. Click on Save **Library K17_Library_2 to** save a library.



Lab Goal

Lab 5.1 Sync and Rollback

This lab explains how to sync the patterns with MID server and how to rollback to previous pattern versions.

The lab contains the following sections:

- Lab 5.1 Sync with MID
- Lab 5.2 Rollback / Change pattern version

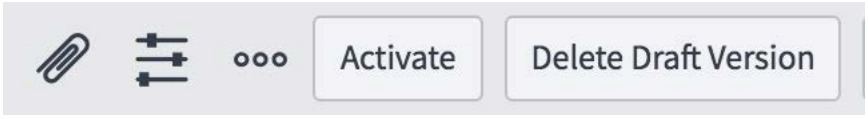
Lab 5.1 – Synchronize with MID servers

This lab explains how push manually a pattern changes to the MID servers.

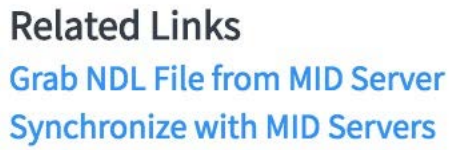
1. Navigate to **Discovery patterns;** find **Apache** using name; click on **Apache on Windows Pattern**.



2. Click **Activate**.



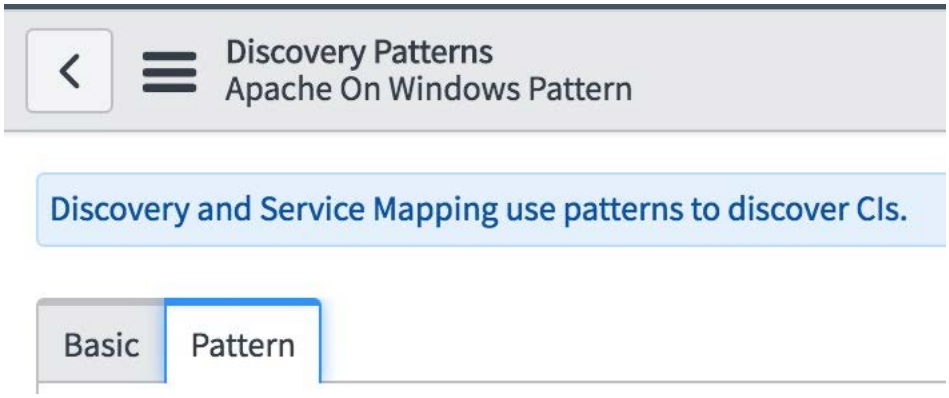
3. Click on **Synchronize with MID Servers** link.



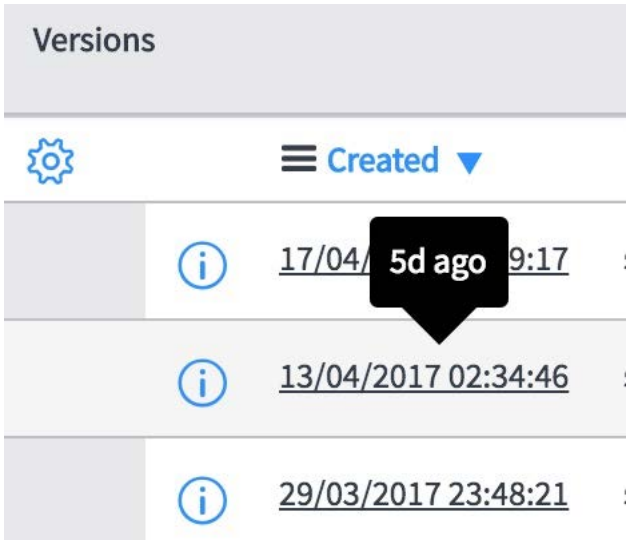
Lab 5.2 – Rollback / Change pattern version

This lab explains how to rollback to previous pattern version.

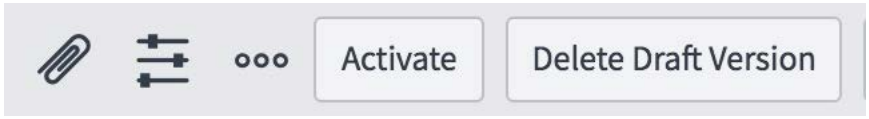
1. Click on **Pattern** tab.



2. Choose one of the previous pattern versions and click the link.



3. Click **Activate**.



Lab Goal

Lab 6.1 Applicative credentials / query DB

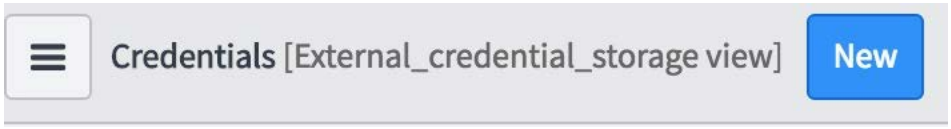
The lab contains the following sections:

- Lab 6.1 Add applicative credentials
- Lab 6.2 Use applicative credentials to send command to database

Lab 6.1 – Add applicative credentials

This lab explains how to add an applicative credentials and bind them to a specific CI.

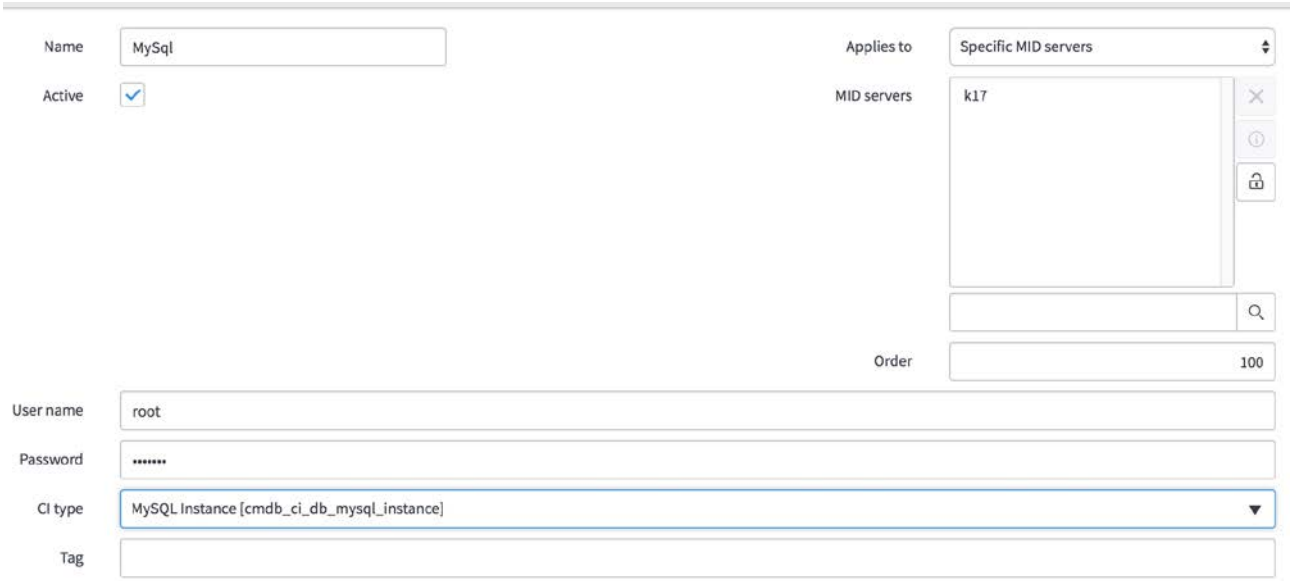
1. Navigate to **Service Mapping > Credentials**.
2. **C**lick on **New** button.



3. Click on **Applicative Credentials** link.



4. Add **MySql** to Name**;** Mid server**: K17;** User name**: root;** Password**: bitnami;** **CI Type: MySql Instance[cmdb_ci_db_mysql_instance]**.

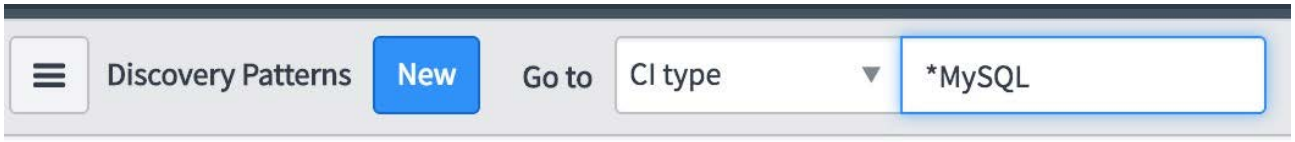


5. **Save; Submit**.

Lab 6.2 Use applicative credentials to send command to database

This lab explains how to retrieve version using DB administrative account.

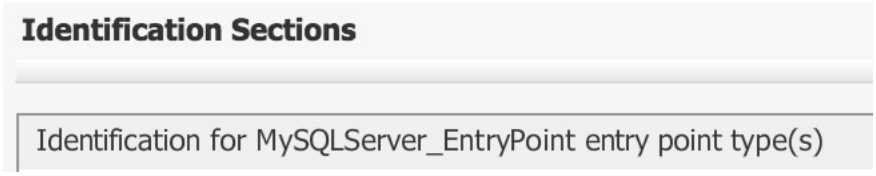
1. Navigate to **Discovery patterns;**
2. Search **MySql instance** by **CI Type**.



3. Click on **My Sql server on Windows and Linux Pattern**



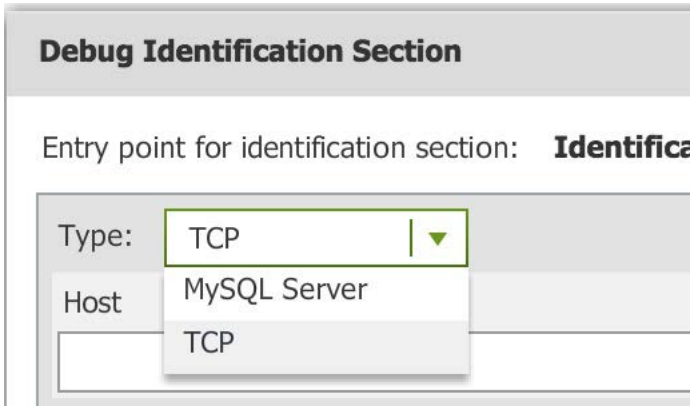
4. Click **Edit for Mapping**.
5. Click on **Identification for MySQLServer_EntryPoint entry point type(s)**.



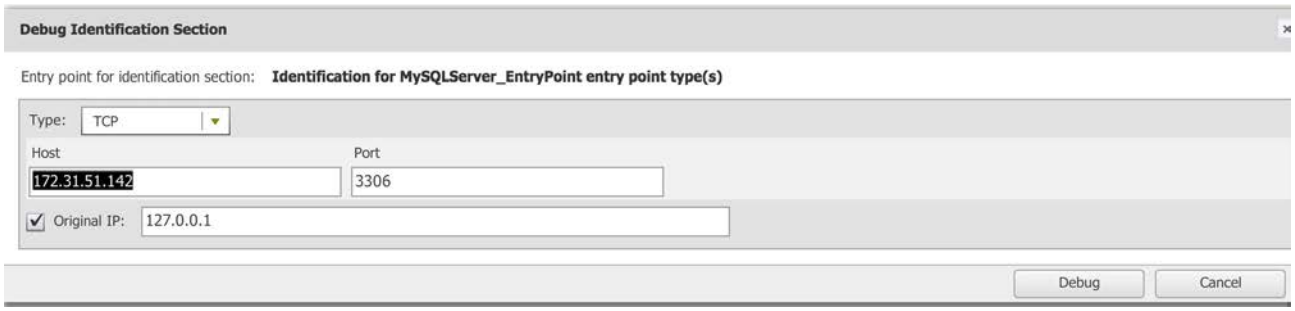
6. Click **Debug**.



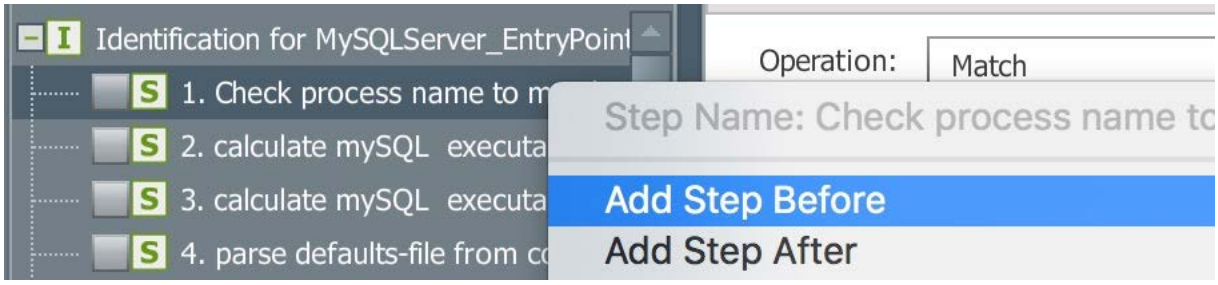
7. Change type to **TCP**.



8. Add IP address **XXX.XXX.XXX.XXX;** port **3306; Original IP: 127.0.0.1**.



9. Select first step and click on **Add Step Before**.



10. Choose **Parse command output** operation.

11. Add to **Command** text box**:**
    C:\Users\Administrator\Downloads\i\moodle-3.2.2-0\mysql\bin\mysql -u $$username$$ -p $$password$$ --version



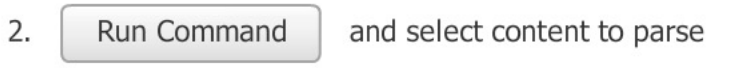
12. Click **Advanced**.



13. Find **MySql instance** Credentials CI Type:



14. Click on **Run Command** button.



15. See the output result **C:\Users\Administrator\Downloads\i\moodle-3.2.2-0\mysql\bin\mysql Ver 14.14 Distrib 5.6.35, for Win32 (AMD64)** .

