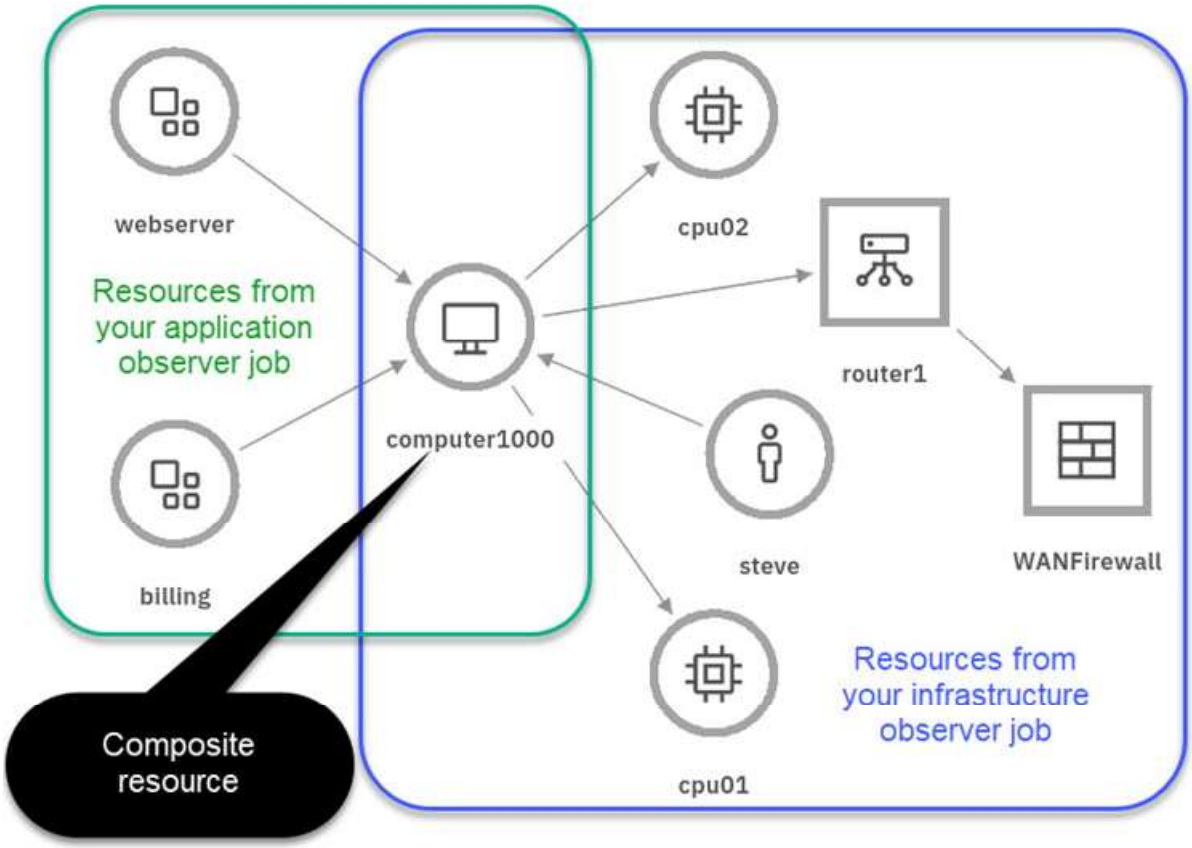
Section 6. Merging topologies

You start this section by loading two different topologies with the file observer: one that contains a small application and another that contains a small infrastructure set. Both topologies contain a resource named **computer1000**. After you load the topologies, you merge them together with a merge rule and view the result. When you are finished, your merged topology will look like the following example.



__ 1. Create and run a file observer job to discover an example application.

__ a. Return to the WebGUI user interface.

__ b. Click **Administration > Observer Jobs** at the top of the page.

__ c. Click **Add a new job**.

__ d. Click **Configure** on the File observer tile.

__ e. Enter `MyApplicationJob` as the Unique ID.

__ f. Enter `application.txt` as the File Name.

__ g. Click **Save** at the bottom of the page. This action saves and runs the job.

__ 2. View the topology you discovered with the MyApplicationJob observer job.

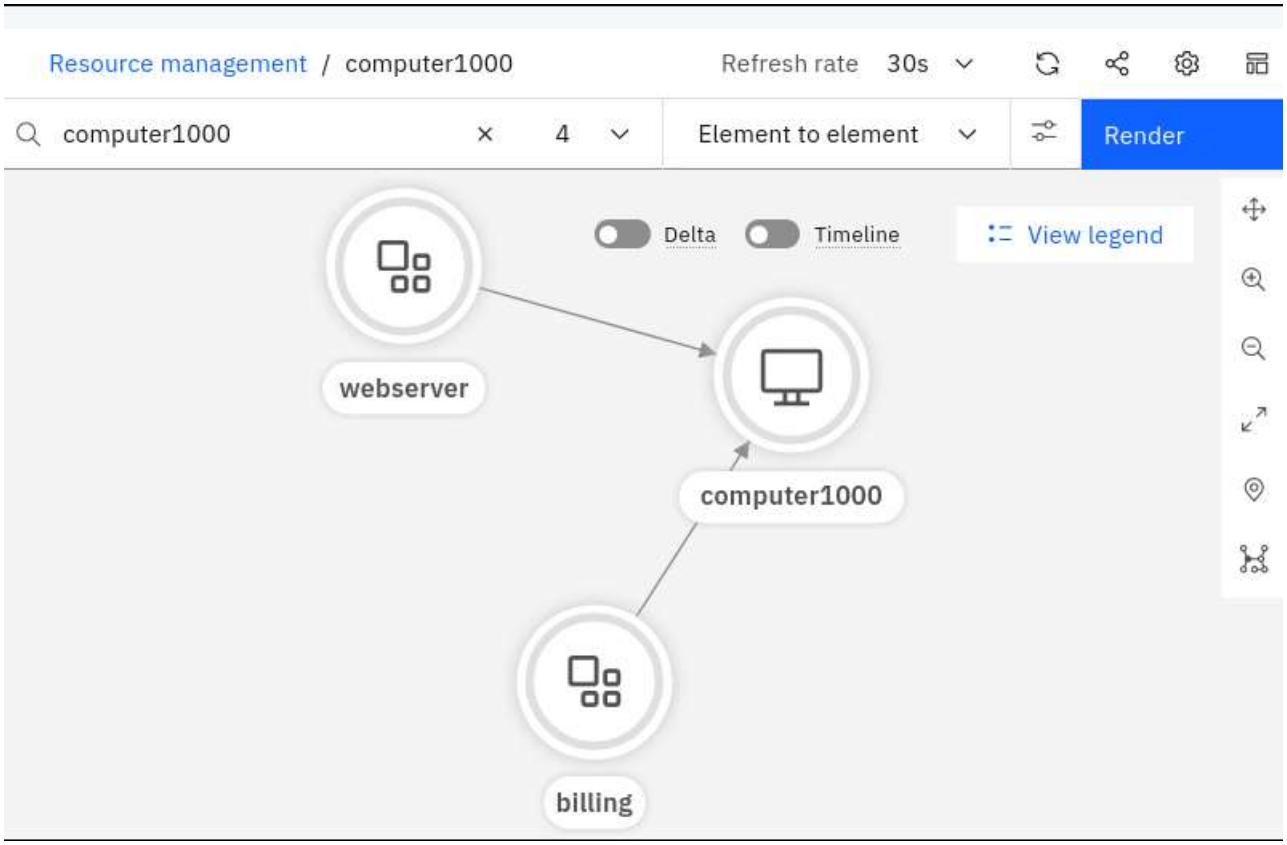
__ a. Click **Incident > Topology Viewer** at the top of the page.

__ b. Enter `computer1000` in the search box.

__ c. Notice there is only one search result. Click **computer1000** in the search results.

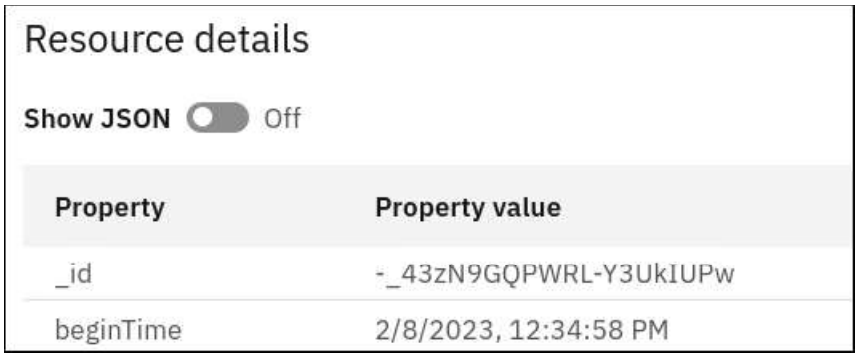
__ d. Increase the number of hops to **4** and click **Render**.

__ e. Notice that there are three resources in this topology: a web server application, a billing application, and a computer named **computer1000** where both applications are running.



__ f. Right-click **computer1000** and select **Resource details**. This action opens a pop-up window.

__ g. Notice the value of the **_id** property. This value is unique to the resource and was automatically generated when the resource was discovered. Your value will be different than this example.



__ h. Scroll to the bottom of the resource details page. Notice the **Observer job name**. The **Observer job name** indicates which observer job was used to discover this resource.

__ i. Close the Resource details pop-up window.

__ 3. Create and run another file observer job to discover an example infrastructure topology.

__ a. Click **Administration > Observer Jobs** at the top of the page, or click the **OBSERVER JOBS** tab.

__ b. Click **Add a new job**.

__ c. Click **Configure** on the File observer tile.

__ d. Enter `MyInfrastructureJob` as the Unique ID.

__ e. Enter `infrastructure.txt` as the File Name.

__ f. Click **Save** at the bottom of the page.

__ 4. View the topology you discovered with the MyInfrastructureJob observer job.

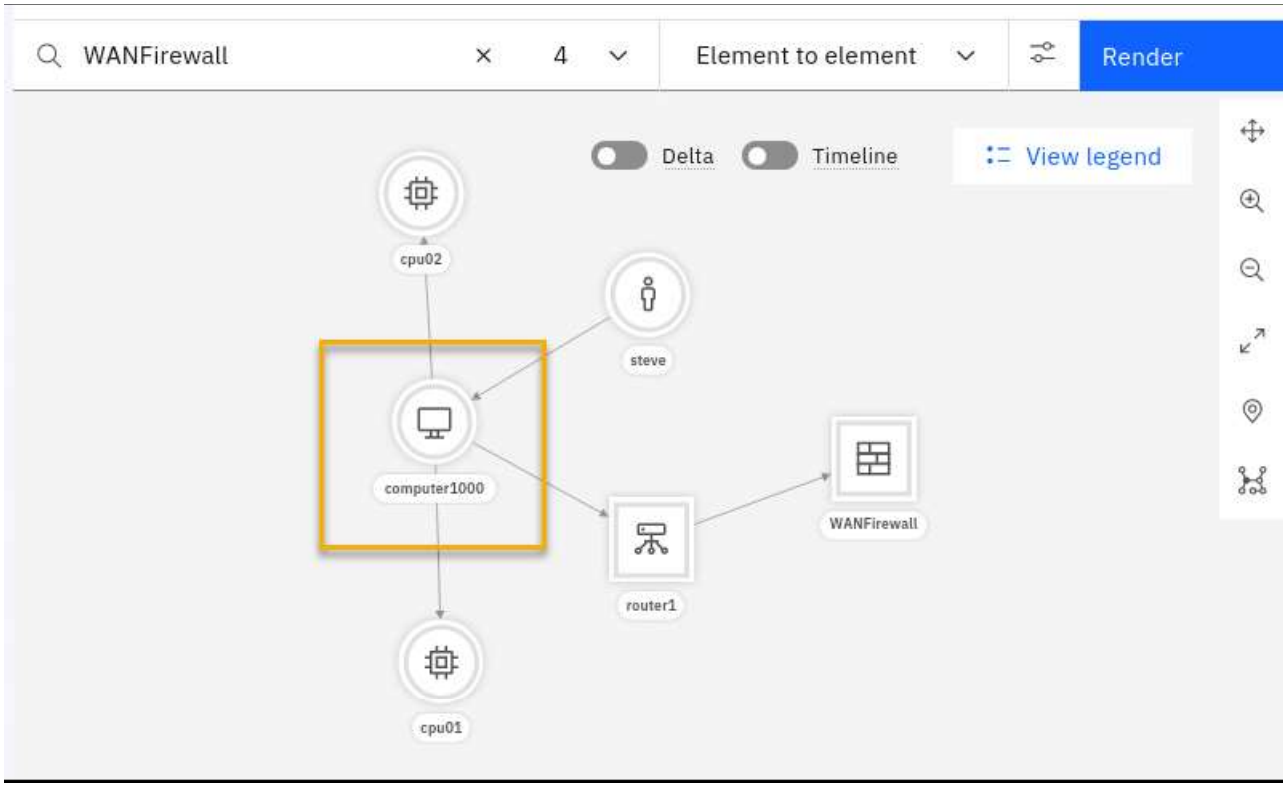
__ a. Click **Incident > Topology Viewer** at the top of the page, or click the **TOPOLOGY VIEWER** tab.

__ b. Enter `WANFirewall` in the search box.

__ c. Click **WANFirewall** in the search results.

__ d. Increase the number of hops to **4** and click **Render**.

__ e. Notice that there are six resources in this topology, including a resource named **computer1000**. This computer1000 resource is the same computer that you discovered with your MyApplicationJob observer job, however, this topology does not include the web server or billing applications. You goal in this exercise is to combine the topologies that came from two different observer jobs into a single, merged topology.



__ f. Right-click **computer1000** and select **Resource details**.

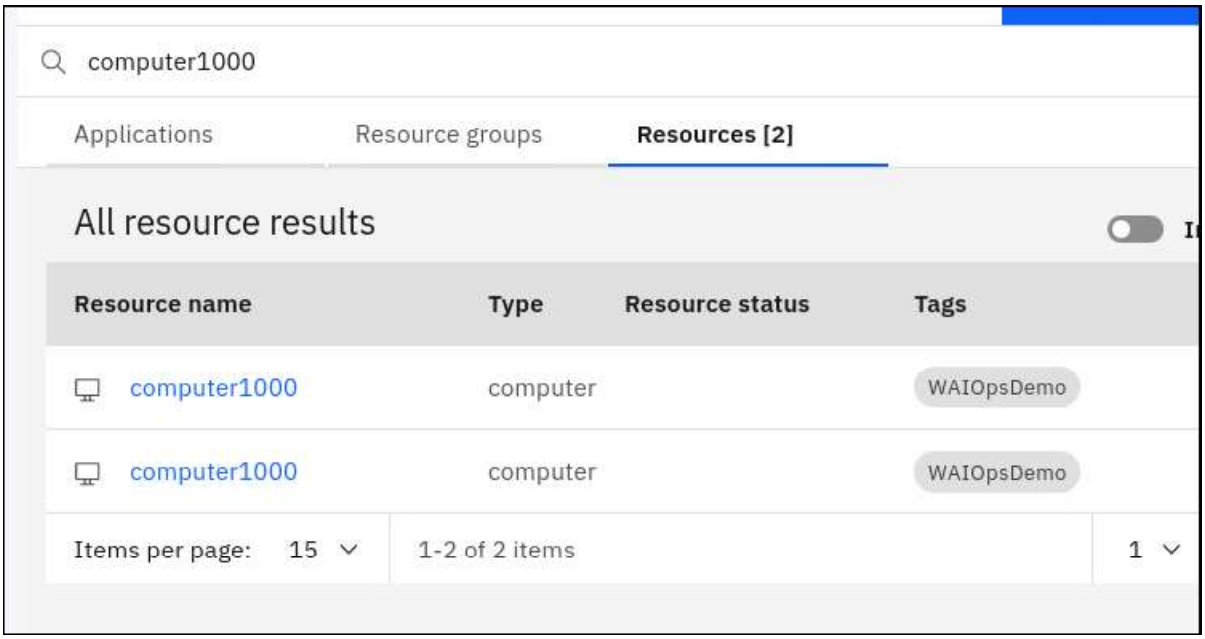
__ g. Notice the value of the **_id** property. This value is different than the resource named computer1000 in your application topology that you viewed earlier. Your value will be different than this example.

__ h. Scroll to the bottom of the resource details page. Notice the **Observer job name**. This is different than computer1000 in your application topology that you viewed earlier, which came from a different observer job.

This resource was discovered in two different topologies. Although the properties of computer1000 are different in the two topologies, the name is the same.

__ i. Close the Resource details pop-up window.

__ 5. Search again for `computer1000`. Notice that there are now two matches. After you combine your two topologies, only one match will be in the search result.



__ 6. Create a merge rule to combine the application and infrastructure topologies.

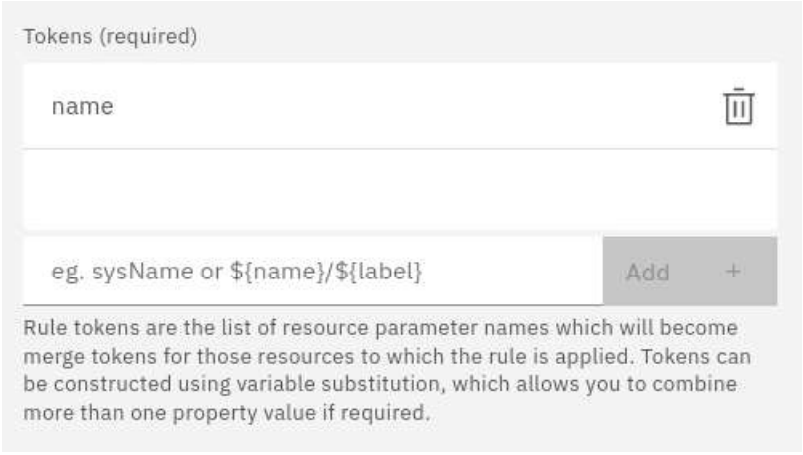
__ a. Click **Administration > Rules** at the top of the page.

__ b. Click **New**.

__ c. Enter `MyAppInfraMergeRule` as the rule name.

__ d. Select **Enabled** as the status.

__ e. Add `name` as the only token. This means that any resources that have the same value in their `name` property will be merged. In this example, each of your topologies contain a resource with the name computer1000. If we use the `name` property as our match token, the merge rule will combine the two topologies and computer1000 will seamlessly appear in both.

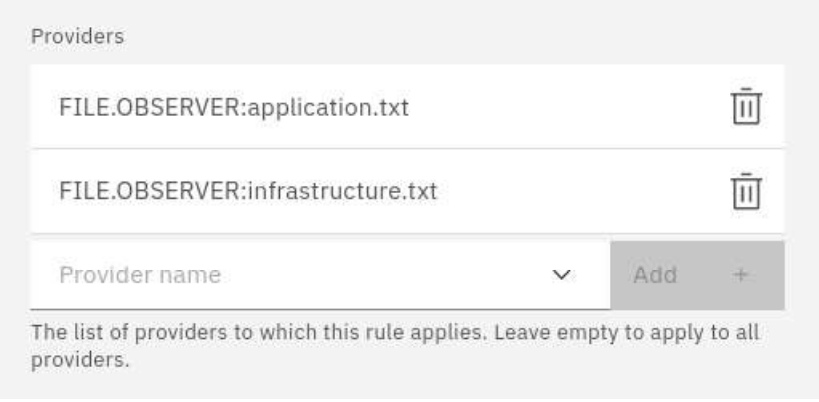


__ f. Expand the **Conditions** heading. This action reveals more options.

__ g. Leave the **Observers** section empty.

__ h. Add the following observer jobs in the **Providers** section. This configuration restricts the merge rule to only the resources that were discovered in these two specific observer jobs. If you leave all conditions empty, the merge rule will combine all resources with the same name across all observer jobs.

- FILE.OBSERVER:application.txt
- FILE.OBSERVER:infrastructure.txt

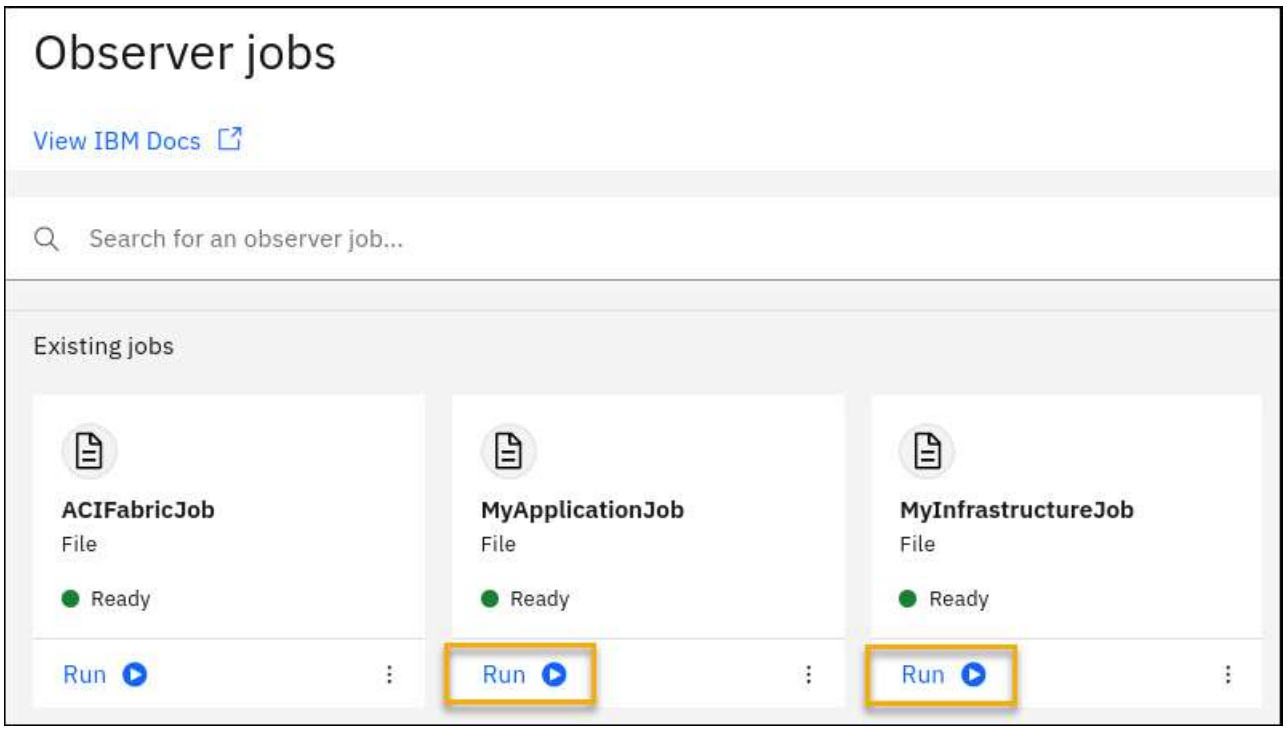


__ i. Click **Save** at the bottom of the page.

__ 7. The merge rule is applied the next time the jobs are run. Run your two file observer jobs again.

__ a. Click **Administration > Observer Jobs** at the top of the page, or click the **OBSERVER JOBS** tab.

__ b. Click **Run** on the **MyApplicationJob** and **MyInfrastructureJob** tiles.



__ 8. View the details of the computer1000 resource again to observe how its properties have changed.

__ a. Click **Incident > Topology Viewer** at the top of the page, or click the **TOPOLOGY VIEWER** tab.

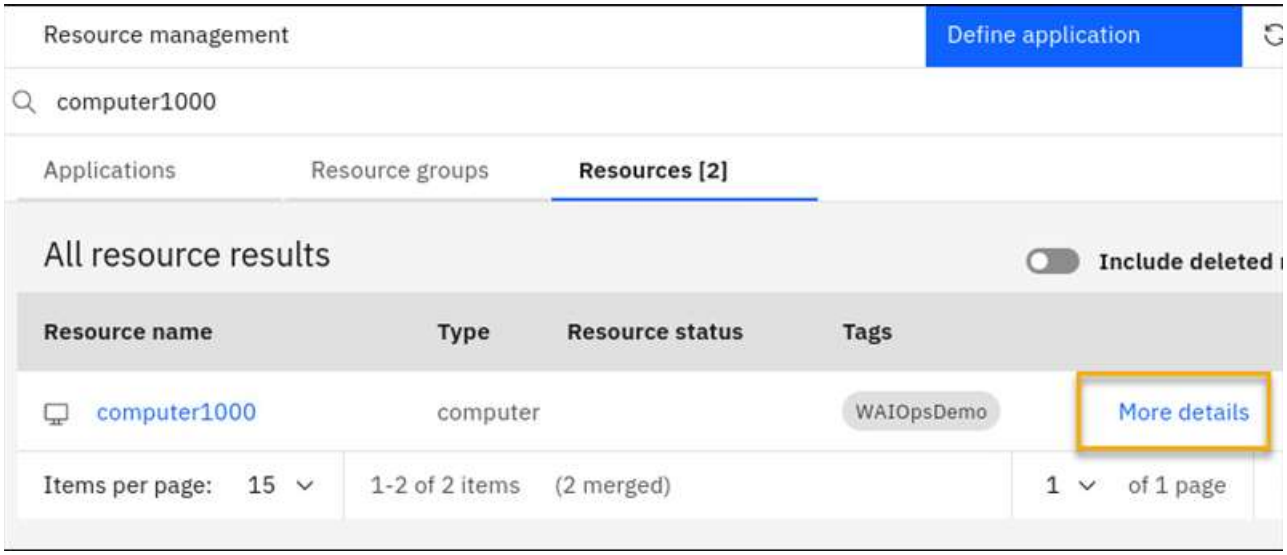
__ b. Enter `computer1000` in the search box.

__ c. Notice that there is now only one search result for computer1000. This is because your merge rule combined the resources named computer1000 in each of your topologies into a single composite resource.

Troubleshooting

If you still have two computer1000 resources, go back and run your observer jobs again.

__ d. View the details of the computer1000 resource. Click **More details** on the right of the search results.



__ e. View the list of properties and notice the following values of the composite computer1000 resource.

- At the top of the list, the property **_compositeId** is present and has a value, because this is now a composite resource.
- The property **_compositeOfIds** has a value, which is the combination of the original **_id** properties from each instance of computer1000.
- At the bottom of the list, the **Data origin** property references both of your observer jobs, because computer1000 was found in both jobs.

__ f. Close the Resource details pop-up window.

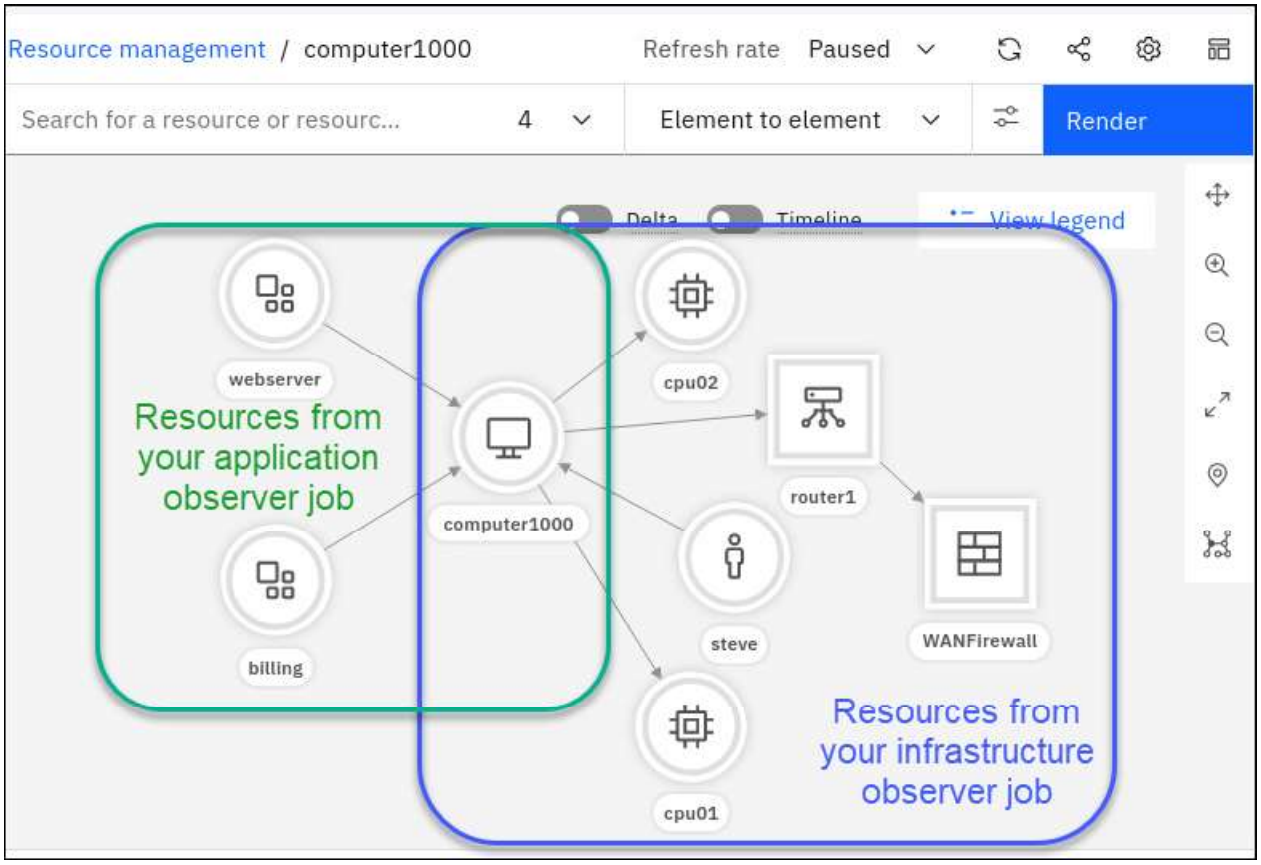
__ 9. View the combined topology.

__ a. Click the **computer1000** resource in the search results.

__ b. Increase the number of hops to **4** and click **Render**.

__ c. Verify that you now see eight resources in your topology. Your application and infrastructure topologies have been merged together, with computer1000 as the link between the two.

Now your users can see the full picture of this topology. Users can also understand more about the relationships between the resources. For example, you and Event Manager can now see deeper into a chain of dependencies: that the web server runs on computer1000 and computer1000 contains two CPUs.



__ d. Close any WebGUI tabs that are still open.

__ 10. To prepare for the next exercise, delete all events in Event Manager.

__ a. Return to the terminal window.

__ b. Change to the target directory.

```
cd /home/netcool/ClassFiles/TopologyTest
```

__ c. Run the following command to delete all events in Event Manager.

```
./delete_all_events.sh
```

Example output:

```
############################################################
#  Deleting ALL events from Event Manager.                 #
#  You can safely ignore any "Failed to find tar" warnings.  #
############################################################
Warning: Failed to find tar in the following directories : /bin /usr/bin
(91 rows affected)

###################################
#  Finished Deleting ALL events.  #
###################################
```

Note

You can ignore any warning messages about a failure to find tar.

Summary

In this exercise, you:

- Used the file observer to load topology data
- Created three types of group templates: exact, tag based, and dynamic
- Added a topology right-click tool to launch a topology map from an event
- Used the topology dashboard
- Created a merge rule to combine topologies from different observers

End of exercise