

Step One: Determine the desired **IP Ranges** and **IP Addresses** to include on your network:



...make sure they are reachable by the MID Server.

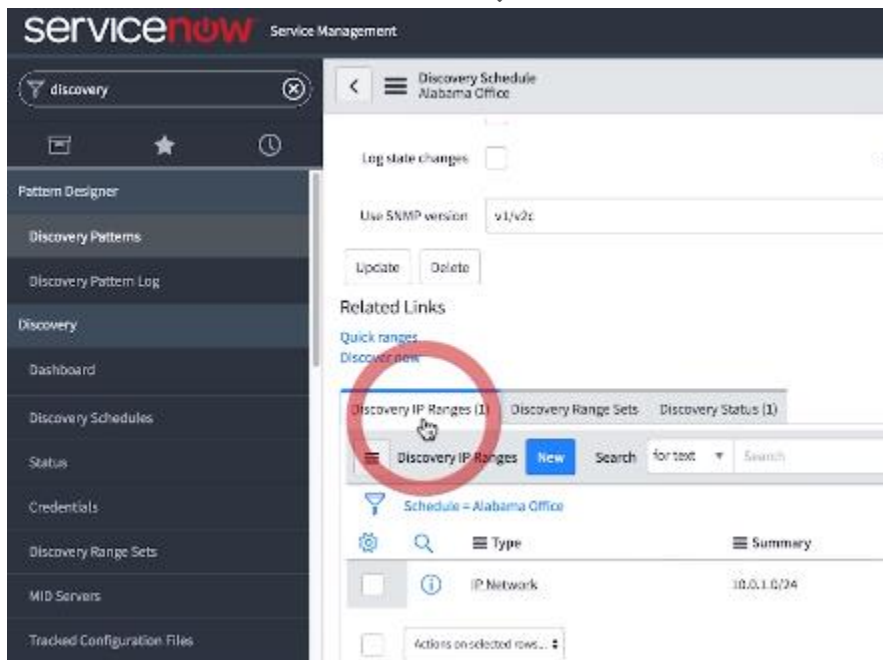
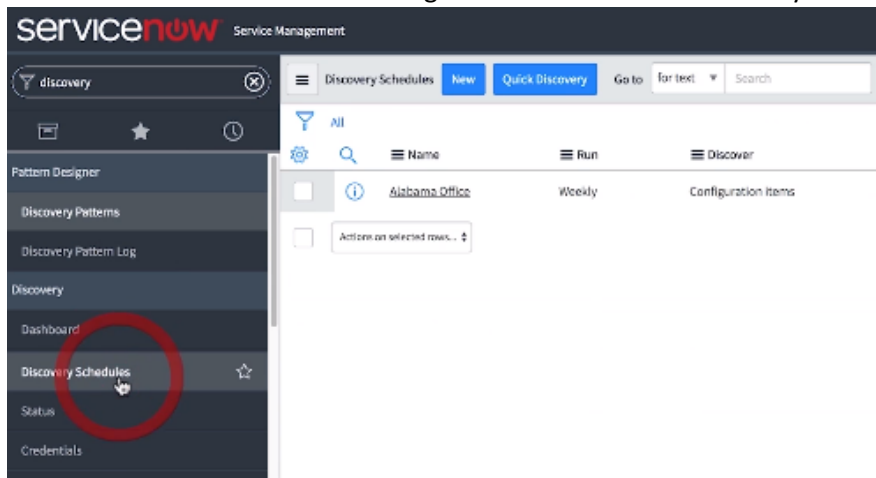
The MID Server IP Range Auto Assignment Feature helps tremendously in helping us determine the ranges of our network.

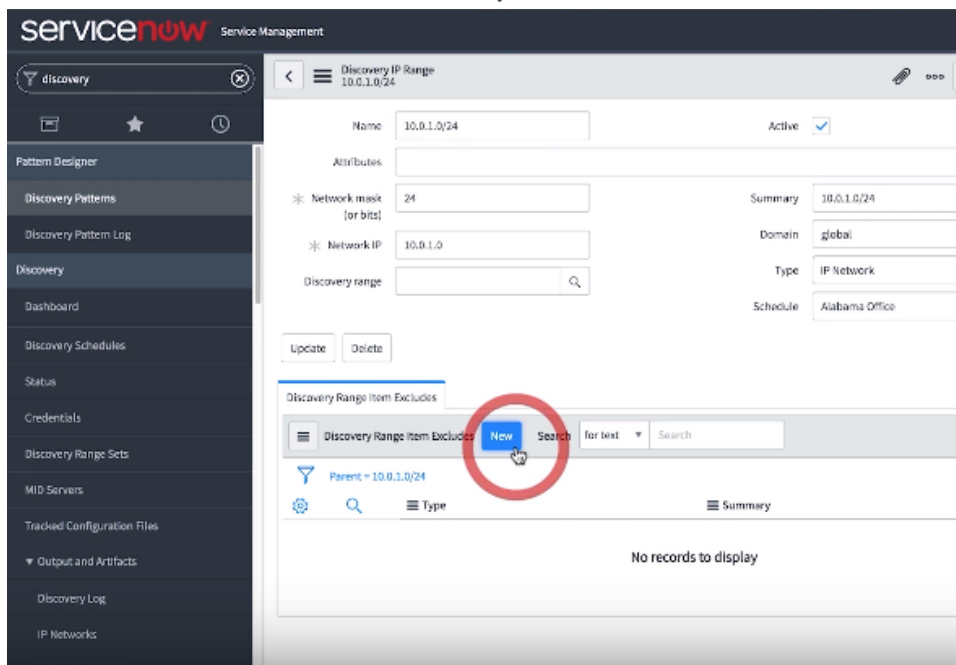
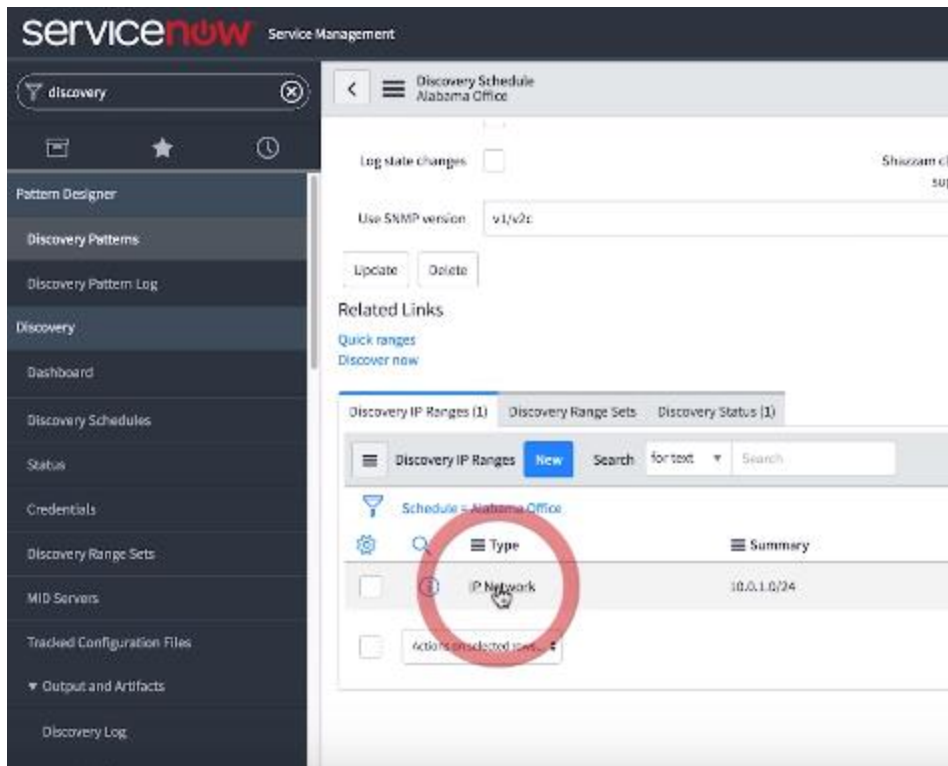
It's good practice to group our IP Ranges into **Range Sets**:



...Discovery will not scan anything outside of the range.

You can also define the desired ranges to exclude via the Discovery Schedules





vice**now** Service Management

very

☆

🕒

Signer

Patterns

Pattern Log

< ☰

Discovery Range Item Exclude

New record

🔒

Type

IP Address Range

* Starting IP

Parent

10.0.1.0/24

🔍

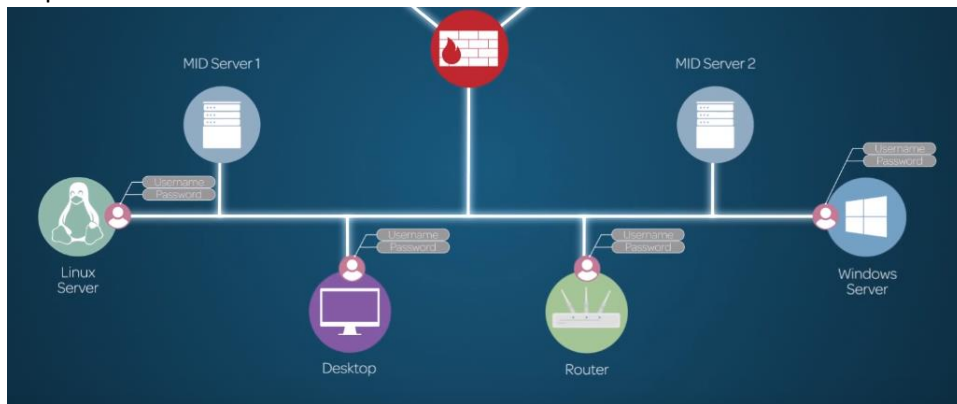
📄

* Ending IP

Summary

Submit

Step Two: Obtain the List of Credentials of the desired Devices to Discover within the Network:



...the MID Server uses the login credentials to query these devices... otherwise, they won't be discovered.

Step Three: Select Discovery Targets (make sure MID Server is installed at this point):

***Note:**

Role required: *admin* or *discovery_admin*

IT Operations Management Guided Setup > Discovery

0%

0 / 3 Tasks completed

- Select Discovery Targets
- Add Credentials
- Auto-Create Schedules

Discovery

Discovery finds computers and other devices connected to an enterprise's network and populates the CMDB with such things as hardware attributes, software data, active business services, and the relationships between these configuration items. Complete the activities in this category to create the credentials Discovery needs to gain access to a computer or network device and to create the schedule that determines when Discovery runs and what MID Server it uses.

Select Discovery Targets [Add Notes](#)

Last visited 3h ago by System Administrator

Mark as Complete **Configure**

Specify which devices and application types to include or exclude as Discovery populates the CMDB.

Specify the device types, application types, and software from each category to include/exclude:

Discovery Configuration Console

Populate the CMDB with the Discovery data you want to collect. You can specify which devices and application types to ignore and create a filter to include or exclude specific UNIX and Windows software. When you select a configuration item to exclude from the CMDB, the instance disables the related probe or classifier that scans that CI. This action does not deactivate the probe or classifier for general use across the system. [More Info](#)

Devices

- Network Devices ☒
- Storage Devices ☒
- Unix Servers & Computers ☒
- Windows Servers & Computers ☒

Applications

- Automation ☒
- Databases ☒
- Web & Application Servers ☒

Software Filter

Unix Windows

Enabled: ☒ Mode: Include Exclude

Enter a new key to filter on ... [New Key](#)

Help

Select CIs to discover

By default, Discovery finds all the information on your network that is specified in probes and patterns. Use the controls in this console to prevent Discovery from finding data that your organization does not need. You can control these aspects of Discovery:

- The discovery of entire CI types, such as Windows servers.
- The discovery of specific CI details, such as OS information on Windows servers.
- The discovery of software packages containing keyword terms that you add, such as Hotfix or Security Update.


The console is divided into these sections:

- Devices: network devices such as printers, storage devices such as storage switches, and Unix and Windows computers.
- Applications: automation applications such as Puppet, databases such as MSSQL, and web servers such as Tomcat.

[Mark as Complete](#)

[Back to Guided Setup](#)

Step Four: Add Credentials:

 **Discovery**

Discovery finds computers and other devices connected to an enterprise's network and populates the CMDB with such things as hardware attributes, software data, active business services, and the relationships between these configuration items. Complete the activities in this category to create the credentials Discovery needs to gain access to a computer or network device and to create the schedule that determines when Discovery runs and what MID Server it uses.

Select Discovery Targets [Add Notes](#)

Completed just now by System Administrator

Mark as Incomplete

Configure

Specify which devices and application types to include or exclude as Discovery populates the CMDB.

Add Credentials [Add Notes](#)

Last visited 4m ago by System Administrator



Mark as Complete


Configure

Configure the credentials that the MID Server needs to communicate with external systems.





Service Management











 Credentials **New**

Go to

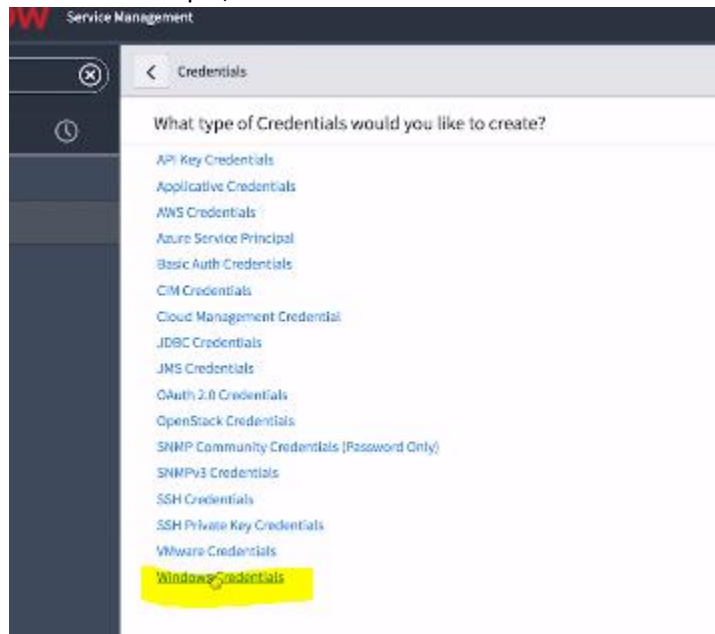
Order 

 All

|  |  |  Name |  User name |  Type |
|---|---|--|---|--|
| <input type="checkbox"/> |  | Credential | administrator | Windows |
| <input type="checkbox"/> |  | SNMP | | SNMP Community (password only) |

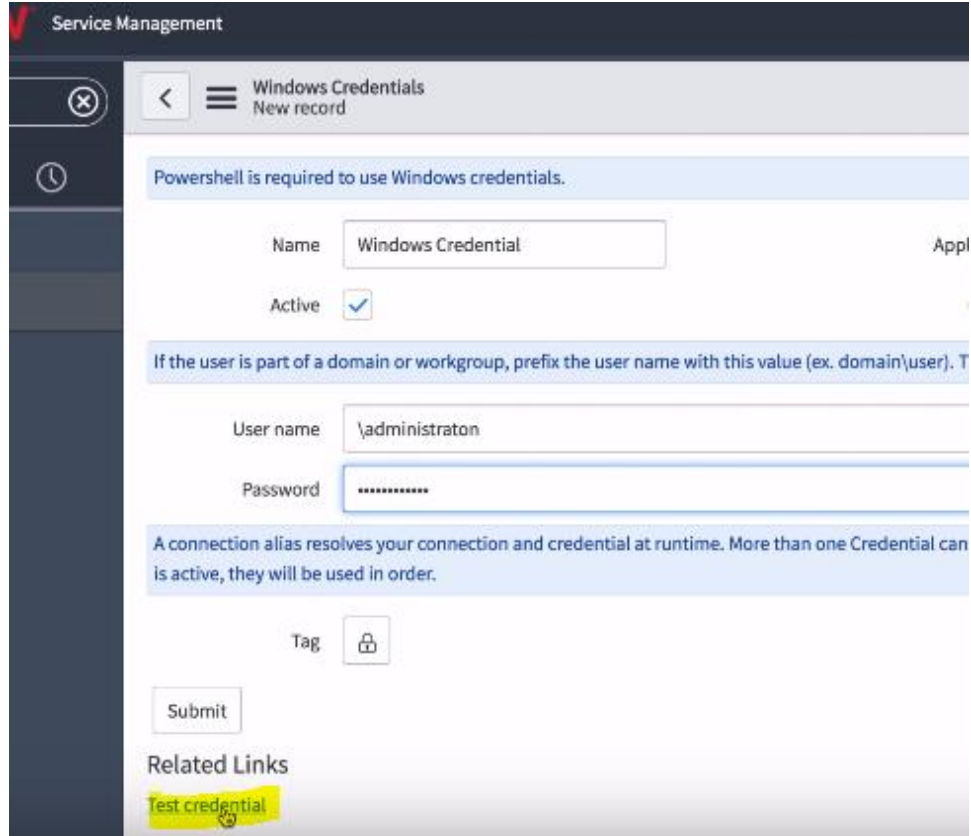
☐ Actions on selected rows... 

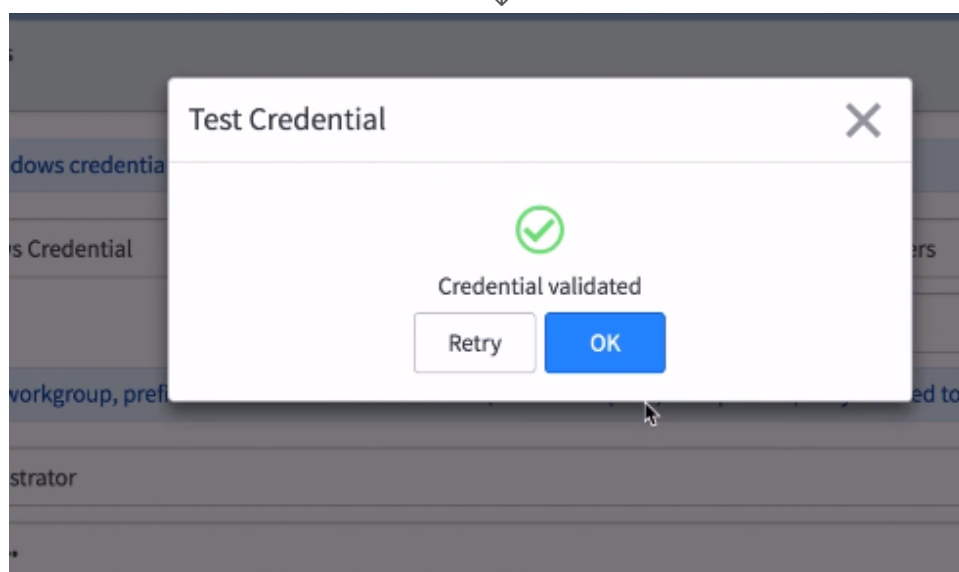
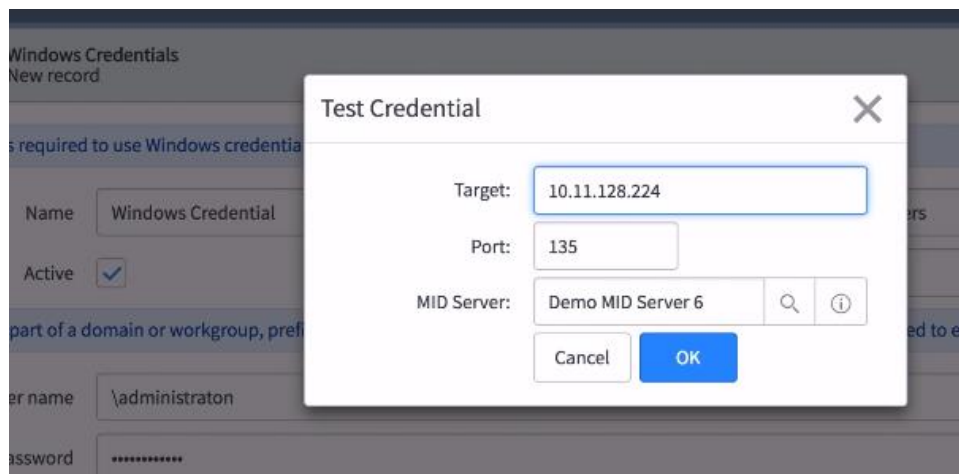
...for this example, it's a Windows credential:



...for Windows Discovery, the credentials should be a domain user with local admin privileges to the desired targets of Discovery.

Often, we use a single service account to make management easier. It can be valid across several servers in a Windows environment. Now let's test it:





...now we mark this step as Complete.

Step Five: Auto-Create a Schedule for Discovery:

***Note:** this is only possible if you already used the Auto-Assign MID Server IP Ranges:

The screenshot shows the 'IT Operations Management Guided Setup' window. On the left, a green circle indicates '100%' completion with the status 'Completed' and an 'Edit' button. The main section is titled 'MID Server' and describes its role in facilitating communication between ServiceNow instances and external applications. On the right, a list of tasks shows '5 / 5 Tasks completed'. The tasks are: 'Create MID User', 'Download & Install MID', 'Validate MID', 'Add SNMP Credentials', and 'Auto Assign MID Server IP Ranges'. The last task is highlighted in yellow.

...otherwise, you will need to configure a schedule manually.

To Auto-Create a Schedule, select Configure:

The screenshot shows the 'Discovery' configuration page. It includes a search icon and the title 'Discovery'. Below the title, a paragraph explains that Discovery finds computers and other devices connected to an enterprise's network and populates the CMDB with such things as hardware attributes, software data, active business services, and the relationships between these configuration items. The page is divided into three main sections: 'Select Discovery Targets', 'Add Credentials', and 'Auto-Create Schedules'. Each section has a 'Mark as Incomplete' button and a 'Configure' button. The 'Auto-Create Schedules' section is highlighted in yellow, and its 'Configure' button is also highlighted.

...select the window in which you want the desired Schedule to execute. You can select the time options is applicable.

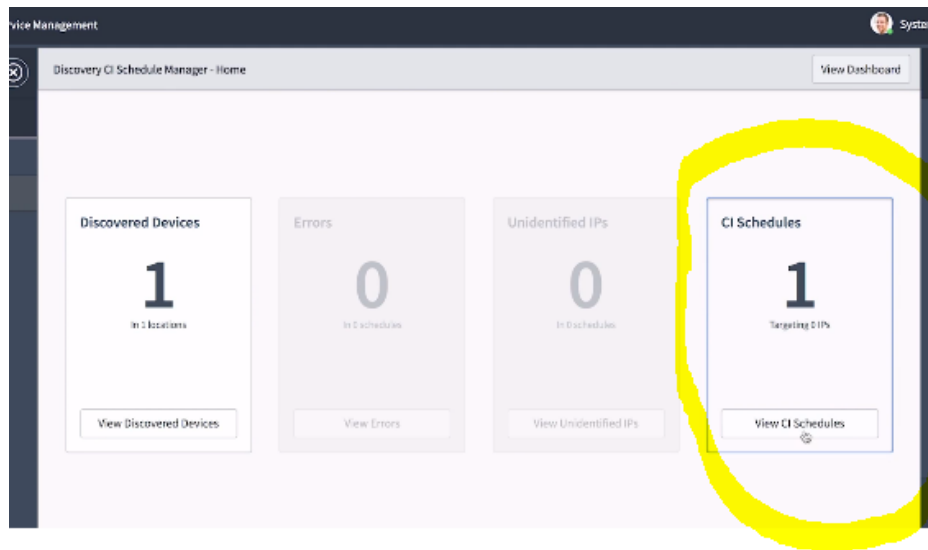
The screenshot shows a web interface for configuring a discovery schedule. At the top, a blue informational box states: "After completing MID Server IP Range Auto-Assignment, determine when you want Discovery to run on the IP ranges that the MID Server(s) can reach. Discovery Window - select when you want discovery to run." Below this, there are two main sections: "DISCOVERY WINDOW" and "FREQUENCY". In the "DISCOVERY WINDOW" section, a "Select Window" dropdown menu is open, showing three options: "Anytime", "Weekend", and "Daily Off-Peak". The "Anytime" option is currently selected. In the "FREQUENCY" section, the "Window" dropdown is set to "Daily", and the "Start time" is configured as "13 : 23". A blue "Create Schedule" button is located at the bottom right of the form.

Let's say we want to schedule it every Sunday night at 09:00 pm:

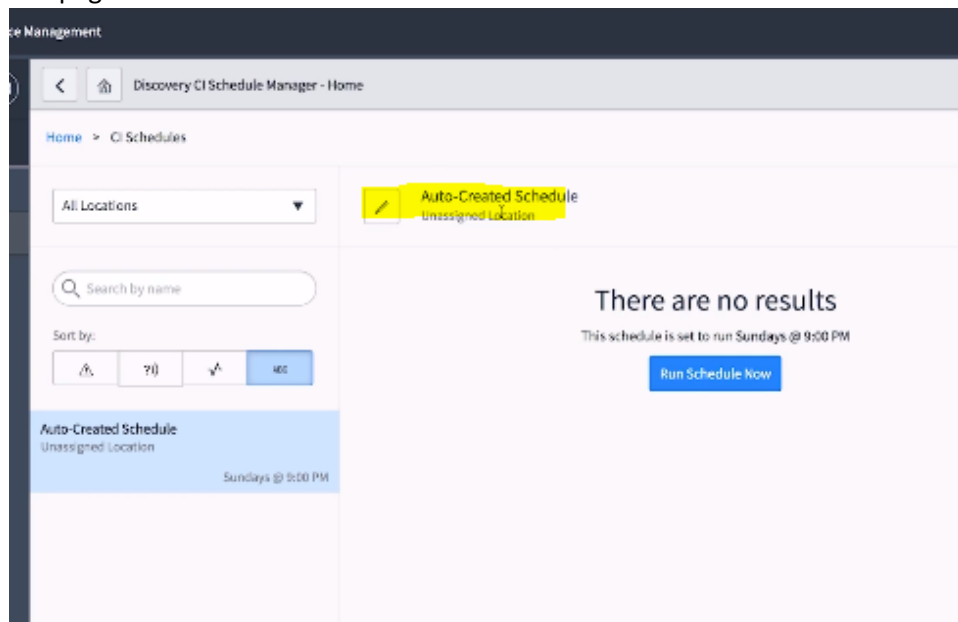
This screenshot shows the same configuration interface as the previous one, but with the "FREQUENCY" section highlighted by a yellow oval. In this section, the "Window" dropdown is set to "Weekly", the "Day" dropdown is set to "Sunday", and the "Start time" is configured as "21 : 00". The "DISCOVERY WINDOW" section remains unchanged with "Anytime" selected. The blue "Create Schedule" button is still visible at the bottom right.

...select Create Schedule.

Now we see that the CI Schedule Manager opens:



...we can also see the Schedule we just created. If we want to edit the schedule, we can access it here on this page:



Device | ServiceNow | Auto-Created Schedule | Details

Secure | https://newsupportv6.service-now.com/discovery_schedule.do?sys_id=965f33cf13becb00ac3f3d7ed144b0c4

Discovery Schedule
Auto-Created Schedule

Select a discovery type from the Discover list and configure its attributes to create a discovery schedule.

Name: Auto-Created Schedule

Discover: Configuration Items

MID Server selection method: Auto Select Mid Server

Advanced

↓

Device | ServiceNow | Auto-Created Schedule | Details

Secure | https://newsupportv6.service-now.com/discovery_schedule.do?sys_id=965f33cf13becb00ac3f3d7ed144b0c4

Discovery Schedule
Auto-Created Schedule

Advanced

Include alive: ☐

Log state changes: ☐

Use SNMP version: v1/v2c

Update Delete

Related Links

[Quick ranges](#)

[Discover now](#)

Discovery IP Ranges (77) | Discovery Range Sets | Discovery Status

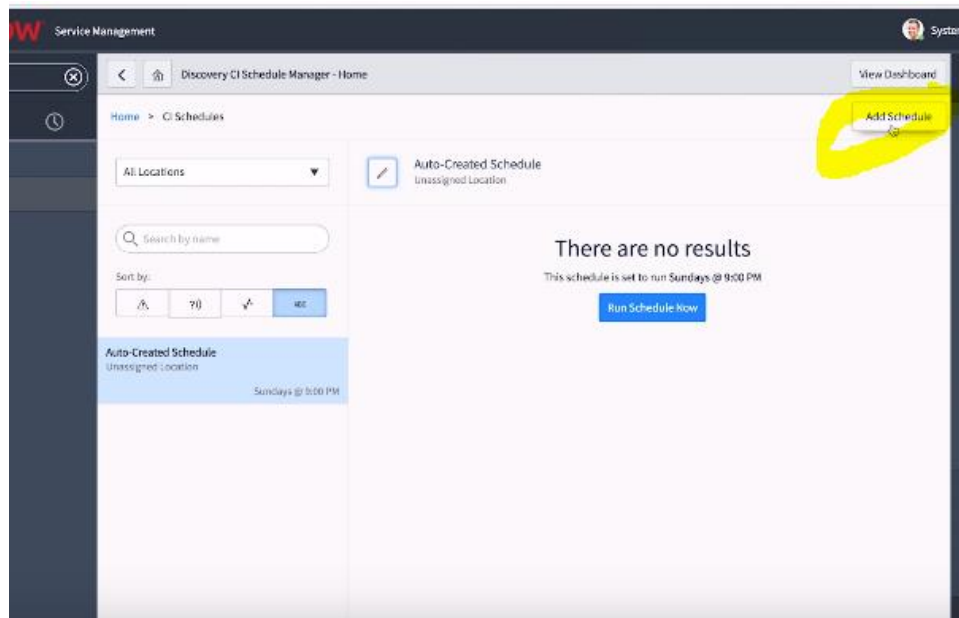
Discovery IP Ranges | Now | Search | for text | Search

Schedule = Auto-Created Schedule

| | Type | Summary |
|--------------------------|------------|-----------------|
| <input type="checkbox"/> | IP Network | 10.196.128.0/24 |
| <input type="checkbox"/> | IP Network | 10.196.129.0/24 |
| <input type="checkbox"/> | IP Network | 10.196.130.0/24 |

...we see how much of a time saver it is; all the Discovery IP Ranges are automatically configured!

If we wish to create a Schedule manually:



...since we configured our MID Server with Discovery and IP Ranges were assigned, we let Discovery Auto-Select the MID automatically:

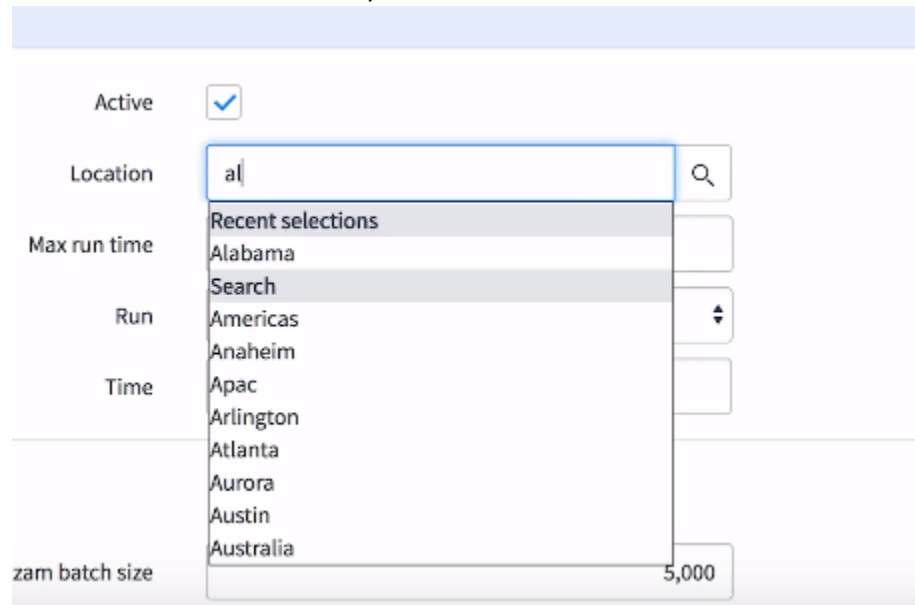
Secure | https://nowsupporttv6.service-now.com/discovery_schedule.do?sys_id=-1

< ≡ Discovery Schedule
New record

Select a discovery type from the Discover list and configure its attributes to create a discovery schedule.

| | |
|-----------------------------|--|
| Name | <input type="text" value="Alabama Office"/> |
| Discover | <input type="text" value="Configuration items"/> |
| MID Server selection method | <input type="text" value="Specific MID Server"/> |
| * MID server | <input type="text" value=""/> <input type="button" value="Q"/> |

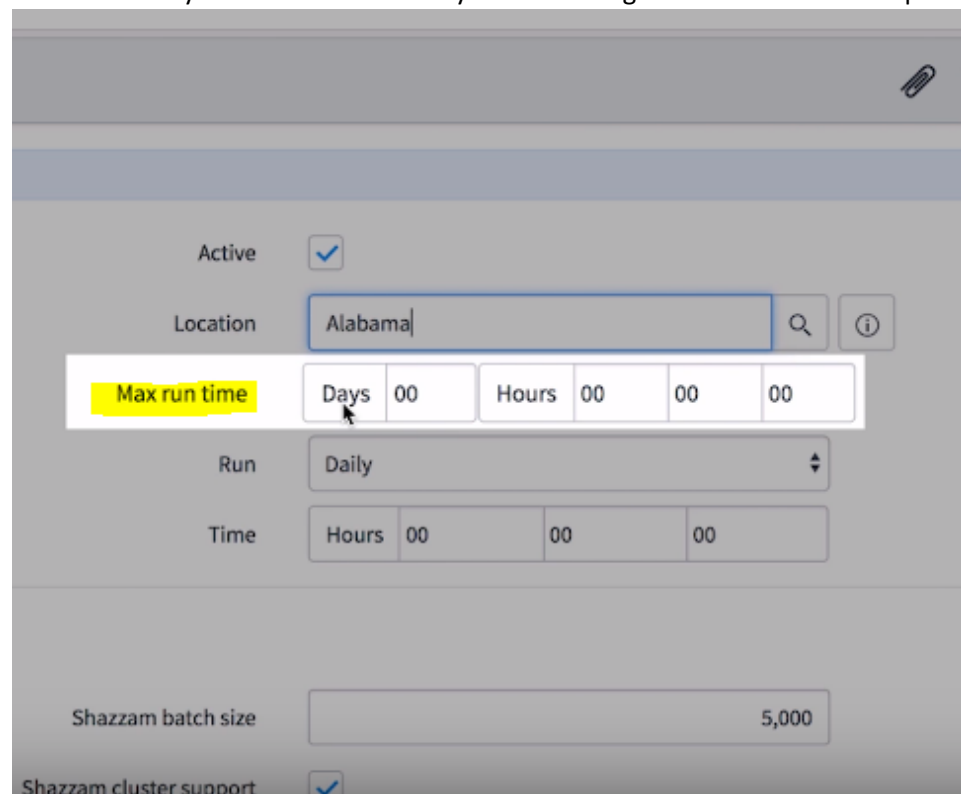
...we can enter a name for the location in the Schedule, which will also populate the location field in the CMDB on all CI's discovered by the Schedule:



The screenshot shows a configuration form with the following fields and values:

- Active: ☒
- Location: A text input field containing "al" with a search icon to its right. A dropdown menu is open below it, showing "Recent selections" and a list of locations: Alabama, Search, Americas, Anaheim, Apac, Arlington, Atlanta, Aurora, Austin, and Australia.
- Max run time: A text input field.
- Run: A dropdown menu.
- Time: A text input field.
- zam batch size: A text input field containing "5,000".

We can put a limit on how long a Discovery can run... we may leave it at zero (unlimited amount of time) in order to fully conduct the Discovery however long it needs until it is completely done:



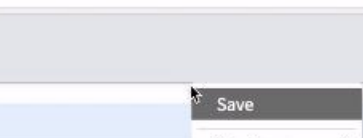
The screenshot shows the same configuration form as above, but with the "Max run time" field highlighted in yellow. The field is a time picker with the following values:

- Days: 00
- Hours: 00
- Minutes: 00
- Seconds: 00

Other fields and values are the same as in the previous screenshot:

- Active: ☒
- Location: A text input field containing "Alabama" with a search icon and an information icon to its right.
- Run: A dropdown menu set to "Daily".
- Time: A text input field containing "Hours 00 00 00".
- Shazzam batch size: A text input field containing "5,000".
- Shazzam cluster support: ☒

...next, right-click on the header and save:



The screenshot shows the 'New' dialog box with the 'New' button highlighted. A context menu is open over the 'New' button, displaying the following options: 'Save', 'Configure', 'Export', 'Create Favorite', 'Copy URL', 'Copy sys_id', and 'Reload form'. The 'Save' option is currently selected.

Next, click on **Quick Ranges** to add the IP Range we want:

Advanced

Include alive ☐

Log state changes ☐

Use SNMP version v1/v2c

Update Delete

Related Links

Quick ranges

Discover now

Discovery IP Ranges Discovery Range Sets Discovery Status

Discovery Status New Go to Number Search

Quick Ranges

Enter comma-separated IP address ranges, IP networks, or individual IPs describing the ranges you would like to add. For example:

10.0.1.0/24,10.0.2.1-10.0.2.15,10.0.3.176,10.0.3.222

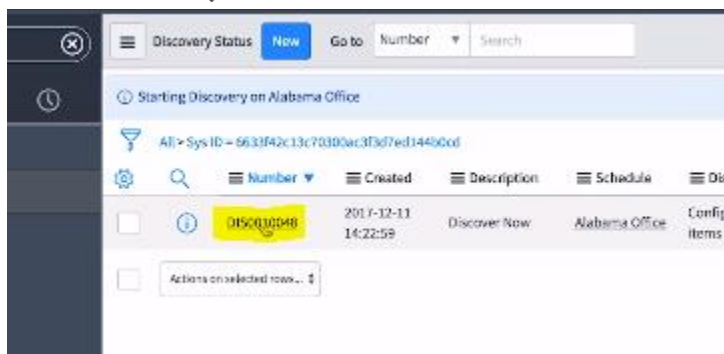
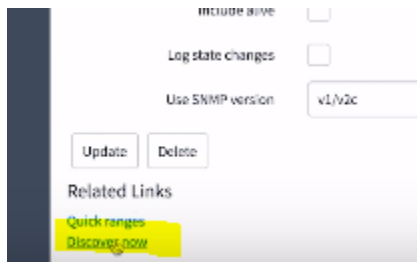
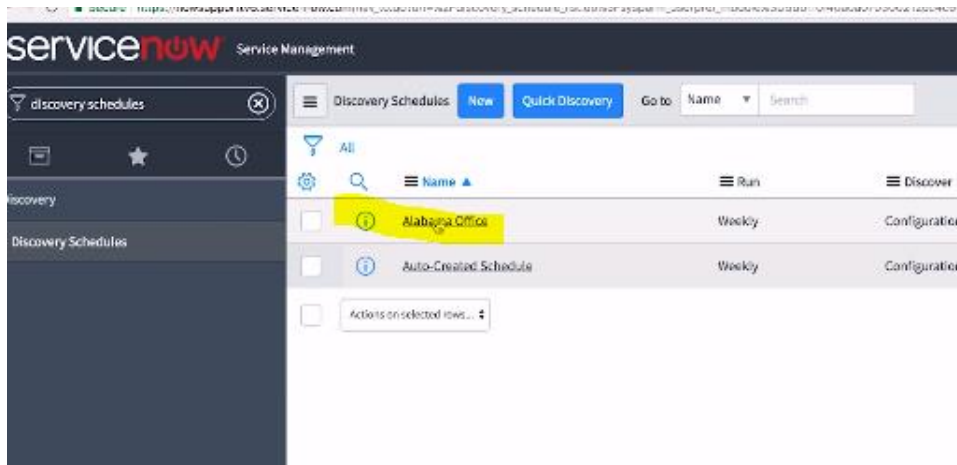
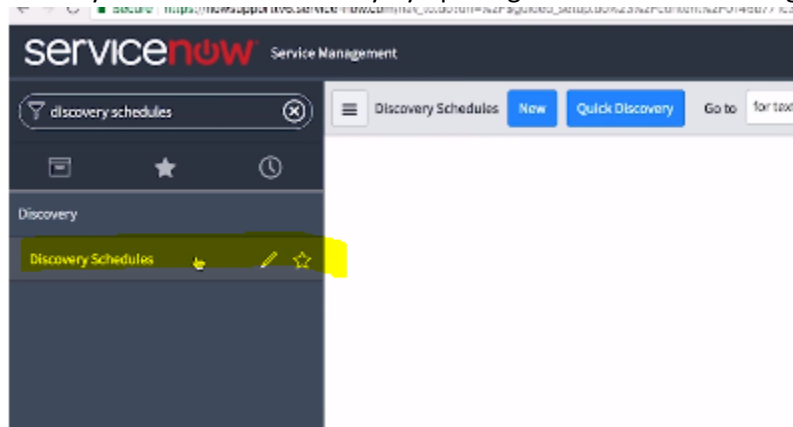
Specifies an IP network with valid IP addresses between 10.0.1.1 and 10.0.1.254 inclusive, an IP address range from 10.0.2.1 to 10.0.2.15 inclusive, and the two individual IP addresses 10.0.3.176 and 10.0.3.222. Any entries you make that cannot be interpreted will simply be ignored.

10.0.1.0/24

Make Ranges Cancel

...mark as Complete.

You may now test the Discovery by opening Schedule and selecting Discover Now :



UpdateDelete

↓

Related Links

[Refresh](#)
[Show Discovery timeline](#)
[Cancel Discovery](#)

Discovery Log (1)DevicesECC Queue

Discovery LogNewGo toCreated▼Search

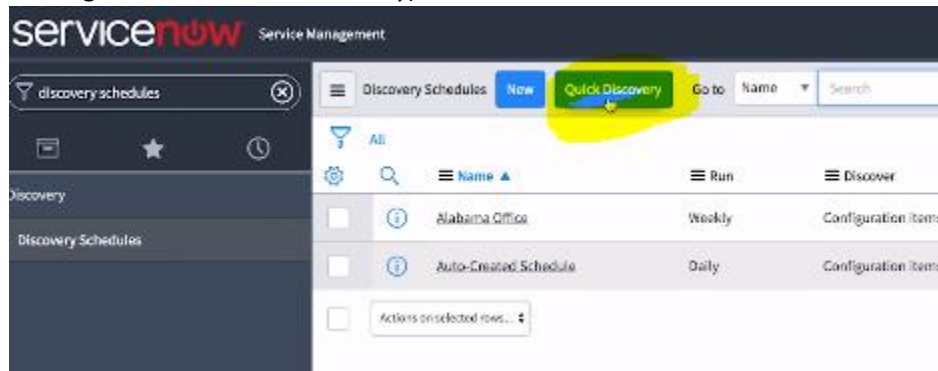
Discovery Log

Created▼LevelShort Message

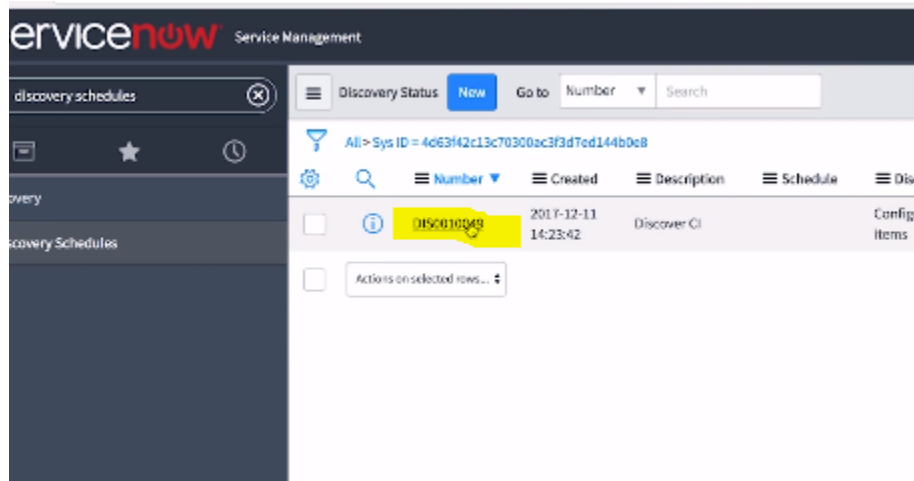
2017-12-11 14:22:59InformationDiscovery started

... ***Note:** you may also click on Refresh to see the most current status.

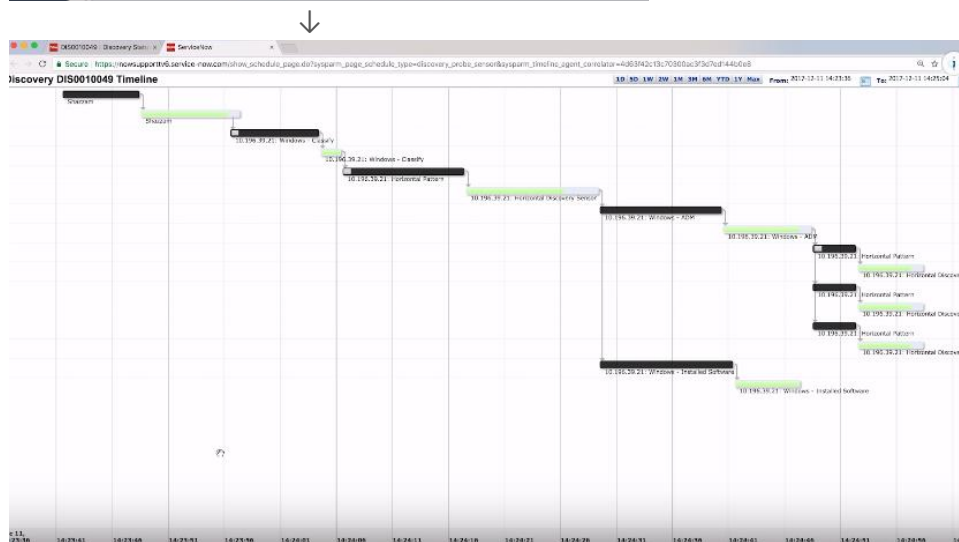
Quick Discovery allows you to discover a new device you just added to your network (as opposed to waiting for a scheduled Discovery):



When we open the **Discovery Status** record...



...we can access the **Discovery Timeline**:



...here we can see the different phases of discovery, as well as their lengths of time.

What happens in each phase of Discovery?

(1) **Port Scanning:**



Discovery launches a **Shazzam** probe to scan the defined IP address(es) and identifies responsive (active) IP's and defined IP Port states.

For example, Windows Server:

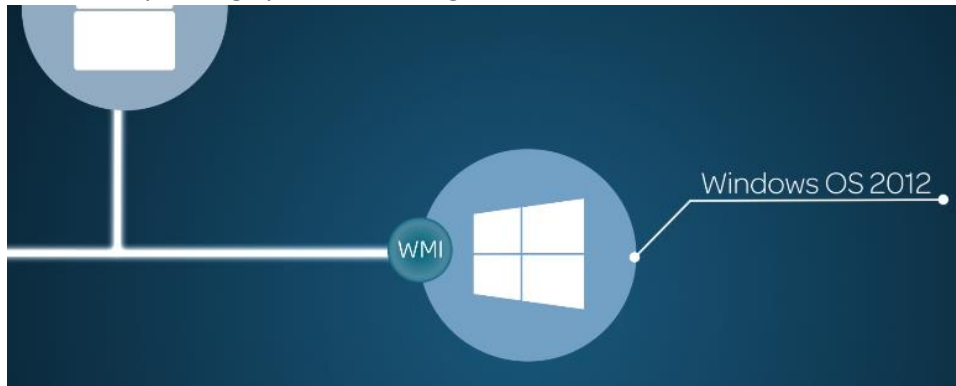


The probe finds an active IP that responds on port 135. So Discovery will assume it's a Windows device and launch the Windows Classification probe.

(2) Classification:

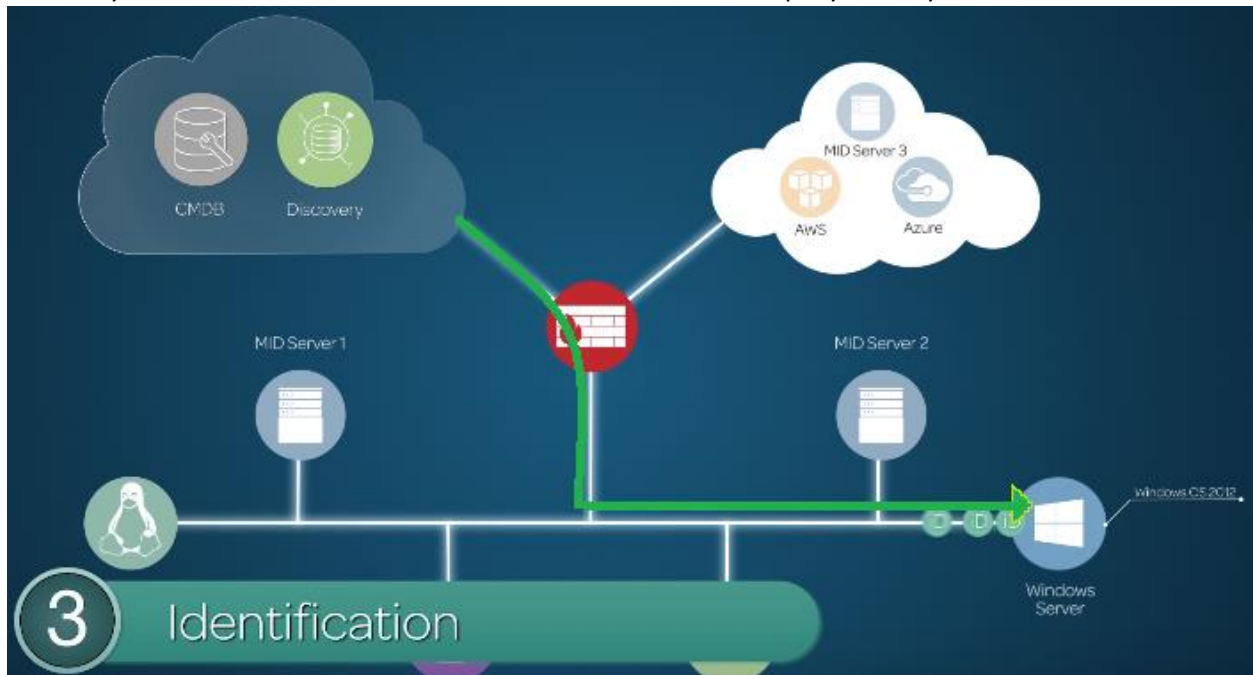
Discovery continue to send probes to find the device type under each IP Address.

In our Windows Server example, Discovery sends the **WMI** probe, which is used to determine which Windows Operating System is running on the device:

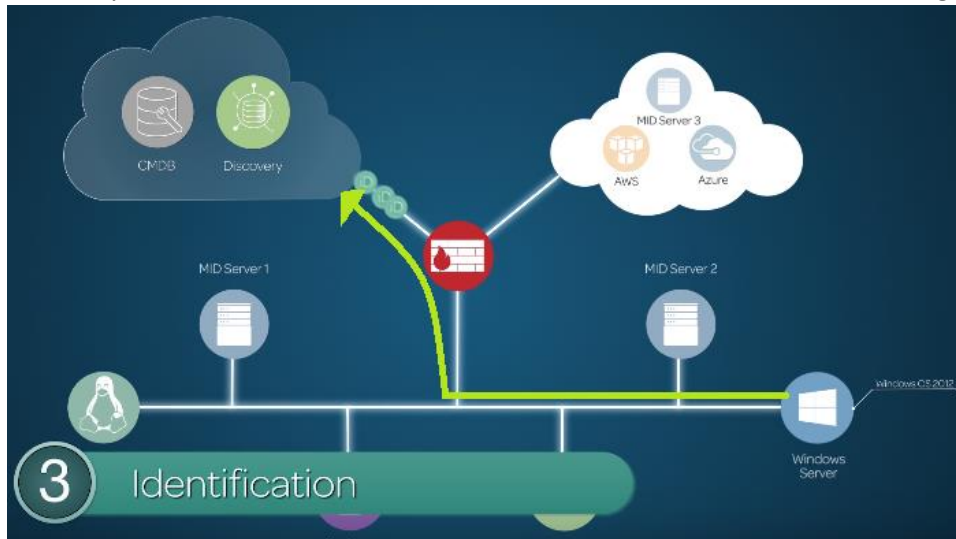


(3) Identification:

Discovery collects additional information about the device to uniquely identify it:



Discovery then uses CI Identification Rules to check the CMDB for the matching CI:

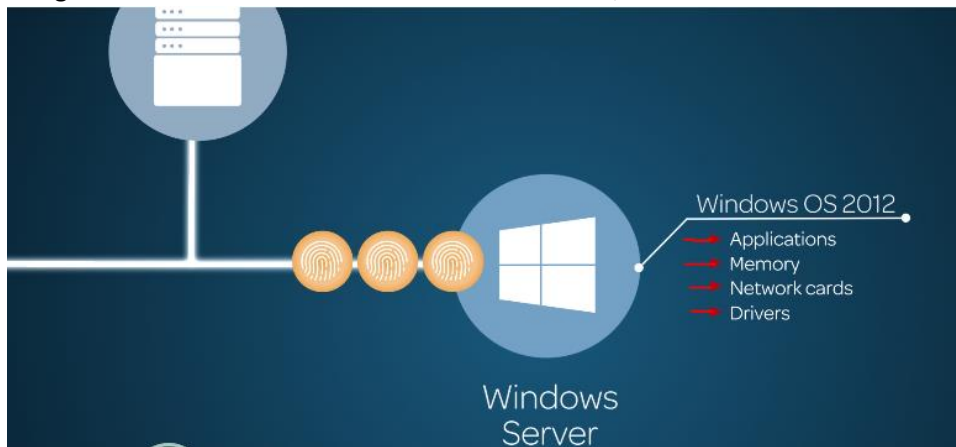


If a matching CI is found, it is updated.

If a matching CI is not found, a new CI is created.

(4) Exploration:

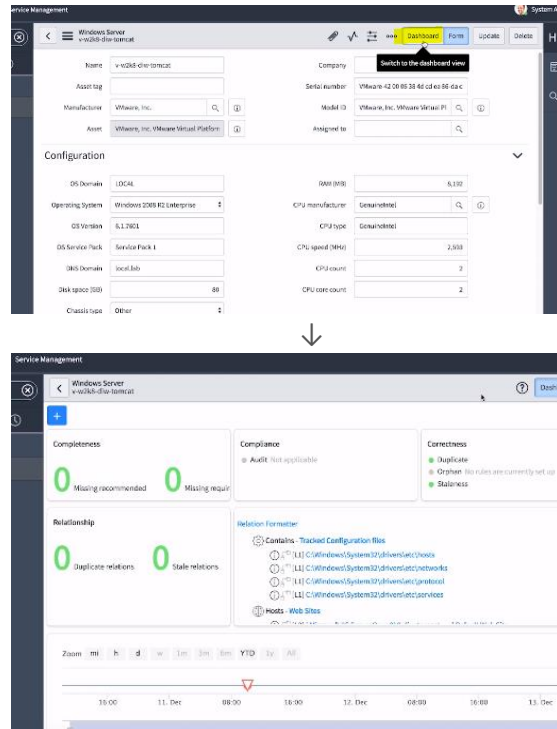
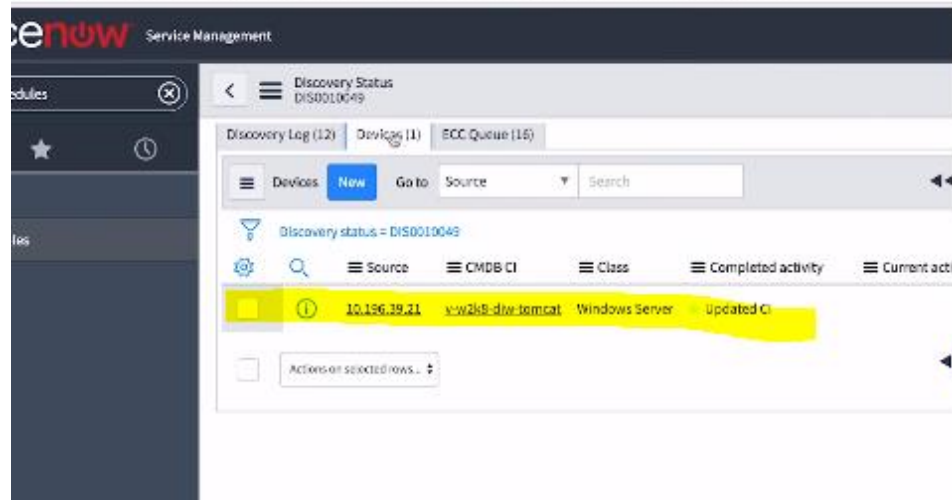
We gather additional information about the device, such as:



...the newly gathered information is sent via Discovery to the CMDB, which will be updated:



url = https://nowsupportv6.service-now.com/nav_to.do?uri=%2Fdiscover_page.do%3Fsys_id%3D4d69442c19c70360ac3f3d7ed144b0e8



We can also go to the Discovery Dashboard to see the current status of all Discovery activity:

The screenshot displays the ServiceNow Discovery Dashboard. The left sidebar contains navigation links: Cloud Management, Cloud Service Design, Price Discovery, Pattern Designer, Discovery Patterns, Discovery Pattern Log, Discovery (highlighted), CI Schedule Manager, Dashboard (highlighted), Discovery Schedules, Status, Credentials, Discovery Range Sets, and MID Servers. The main content area features a 'Make your life easier, create a dashboard!' notification, an 'Add content' button, and a 'Discovery Dashboard' title. Below this is a table titled 'Active Discovery Status' with columns: Number, Created, Description, Schedule, Discover, State, Started, Completed, Updated, and Duration. The table lists two active discovery jobs. At the bottom, there are three summary cards: 'Newly Discovered Devices (Last 7 Days)', 'Total Discovered Devices (Last 30 Days)', and 'Unrefreshed Devices (Beyond Last 30 Days)'.

| Number | Created | Description | Schedule | Discover | State | Started | Completed | Updated | Duration |
|------------|---------------------|--------------|-----------------------|---------------------|--------|---------|-----------|---------------------|----------|
| DIS0010058 | 2017-12-11 14:22:59 | Discover Now | Alabama Office | Configuration Items | Active | 36 | 33 | 2017-12-11 14:26:10 | |
| DIS0010027 | 2017-12-10 15:24:08 | Scheduled | Auto-Created Schedule | Configuration Items | Active | 687 | 643 | 2017-12-10 16:21:49 | |