CA UIM Best Practice Series
Custom App Infrastructure Discovery and Monitoring Configuration

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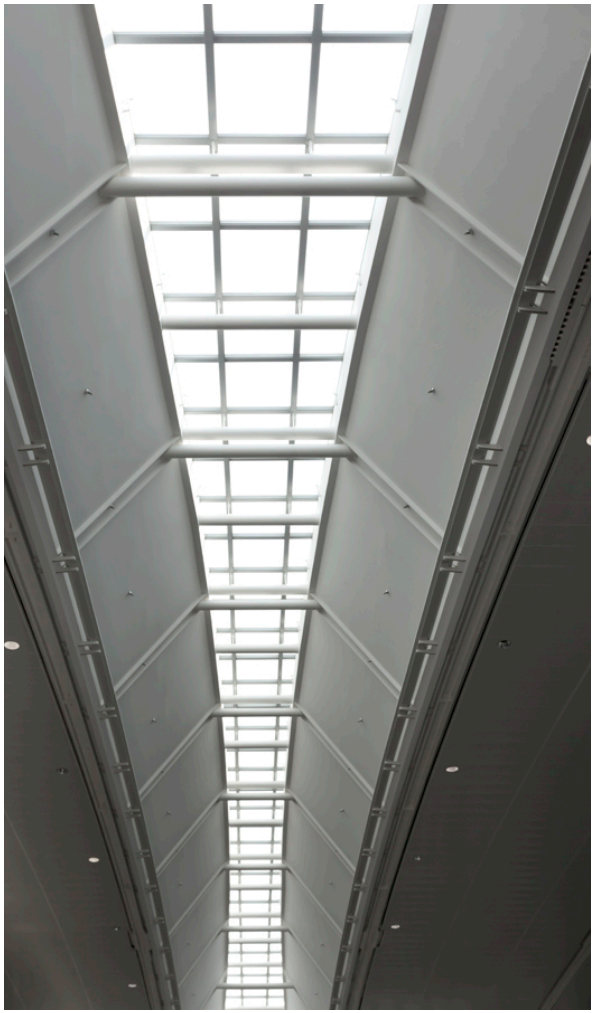
Custom Application Discovery

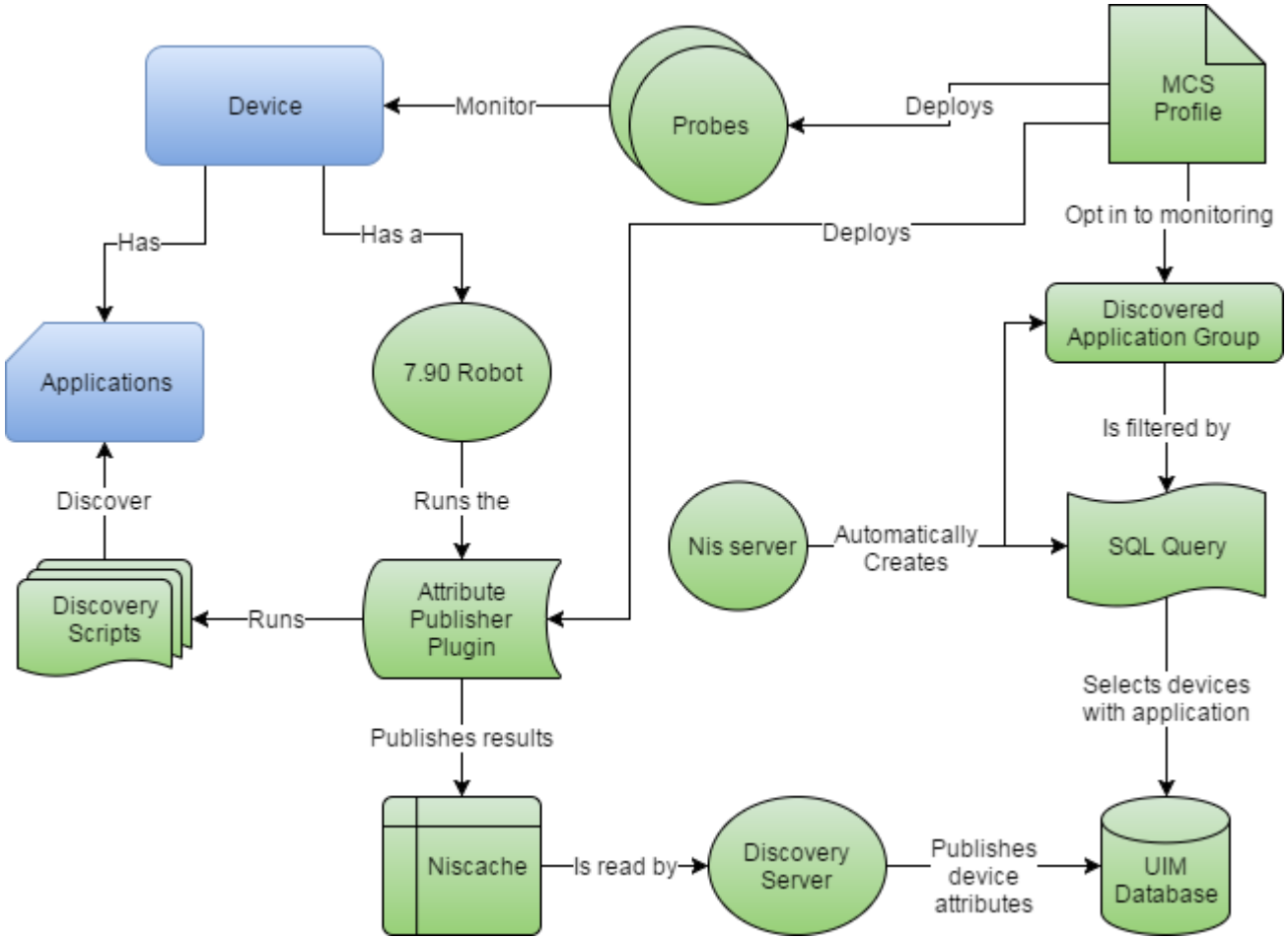
After this course, you will be able to:

- Understand Application Discovery architecture
- Describe technical details of the Application Discovery feature
- Create custom Application Discovery scripts and group based on published attributes
- Troubleshoot MCS and the Attribute Publisher Plugin as it relates to Custom Application Discovery



Application Discovery
Architecture

- High level overview



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Application Discovery

- General Troubleshooting
  - Problem: Devices fail to show up in Application Groups
    - Check your interval in the Application Discovery Scripts profile
      - Default is 1 day; it is customizable
    - Check to ensure the application process is started
      - Only running applications are discovered; if checking for processes specifically
    - Check that all necessary packages are deployed to the device
      - Robot 7.90+, Attribute Publisher Plugin, Application Discovery Scripts
    - Security check, make sure you haven't modified package manually or on file edit, it will make the security check invalid
- Documentation Links
  - Using Application Discovery
  - Custom Application Discovery Scripts

Workflow Use Case: Docker and Kubernetes

- Problem: As a customer you have both Docker and Kubernetes installed and running somewhere in your environment, you need to be able to detect and monitor those applications.
- Solution: Create Custom Application Discovery Scripts, Custom Groups with customized monitoring.
- After this use case, you will be able to:
  - Create a custom application discovery script
  - Deploy that script via a UIM package
  - Create groups based on published attributes
  - Monitor via MCS from Custom Groups
  - View Results in CABI

1. Creating a Script

Tech Notes:

- You can write in any language that your robot supports
- Recommend using Batch and Shell for multi platform coverage
- Needs to echo key=value pairs to stdout, these are the attributes that will be used to identify Applications

Structure of script:
If condition and echo out results of desired meta tag:

```
UserPropMV.myscript.Name=Apn
```

Keys are published as properties that you can filter on to create and manage groups in USM. If a script echoes out more than one value for the same key, then it becomes a multivalue property. So, if a script echoes out:

```
echo Name=Apn
echo Name=Apache
```

The plug-in publishes the property as one multi-value property:

```
UserPropMV.myscript.Name=Apn,Apache
```

Review the Examples

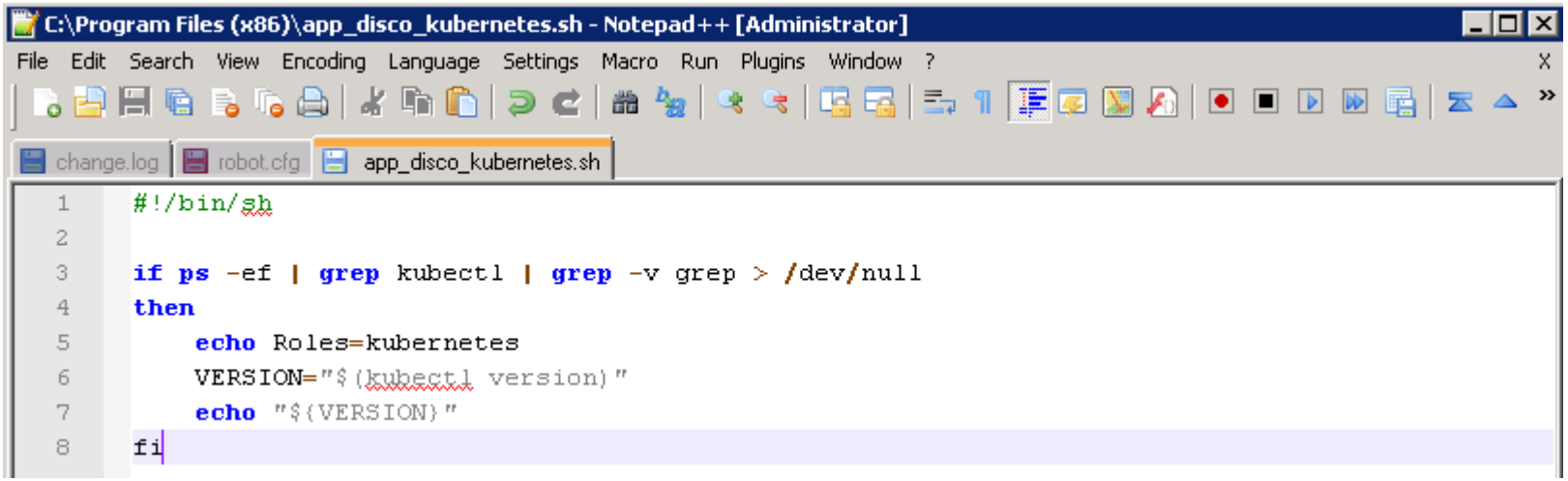
Batch Script Example

The batch script example shows how you can use a script to discover systems that are based on whether a system is a 32-bit or 64-bit system.

```
@echo OFF
reg Query "HKLM\Hardware\Description\System\CentralProcessor\0" | find /i "x86" > NUL && set sys_arch=32BIT
if %sys_arch%==32BIT echo Sys_arch=32bit
if %sys_arch%==64BIT echo Sys_arch=64bit
```

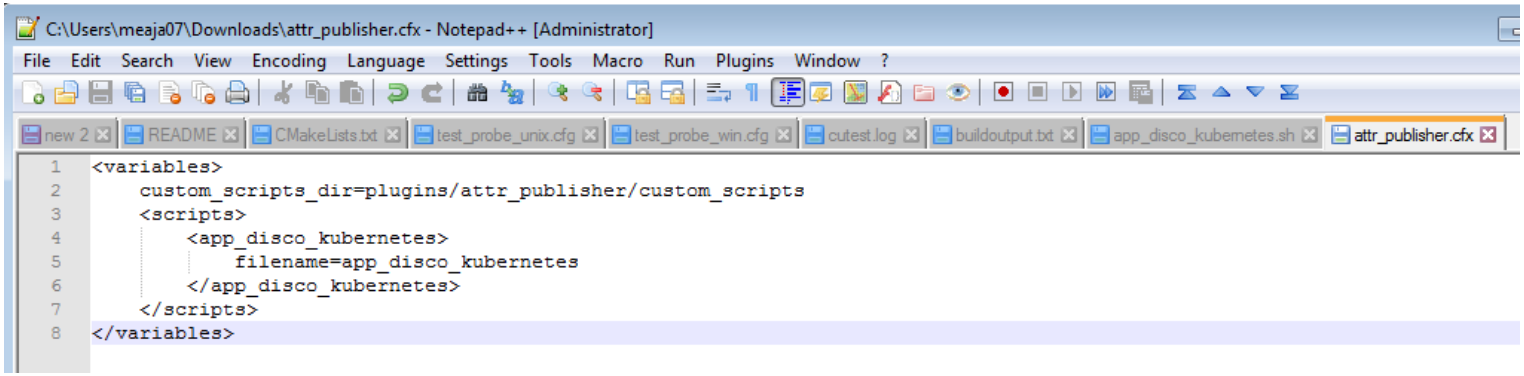
3. Creating a Script

- Example Script for Kubernetes
  - Evaluating the process, setting application flag “Roles=kubernetes”
  - Retrieving version; echo “$ {VERSION} “



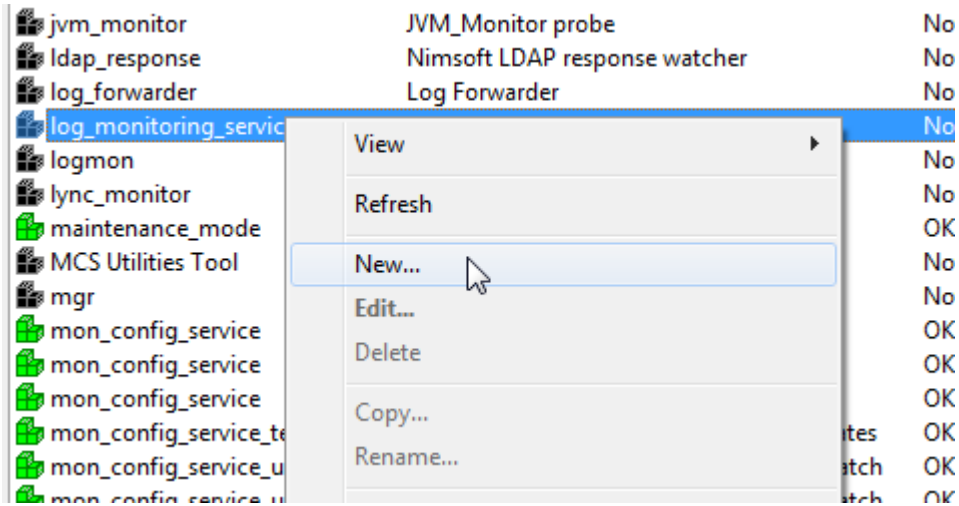
2. Creating an attribute publisher .cfx file

- Use this .cfx as a template
  - Change Filename to reflect your new filename
  - Change XML section that wraps filename to your new filename
  - If using Batch and Shell, file extension not required



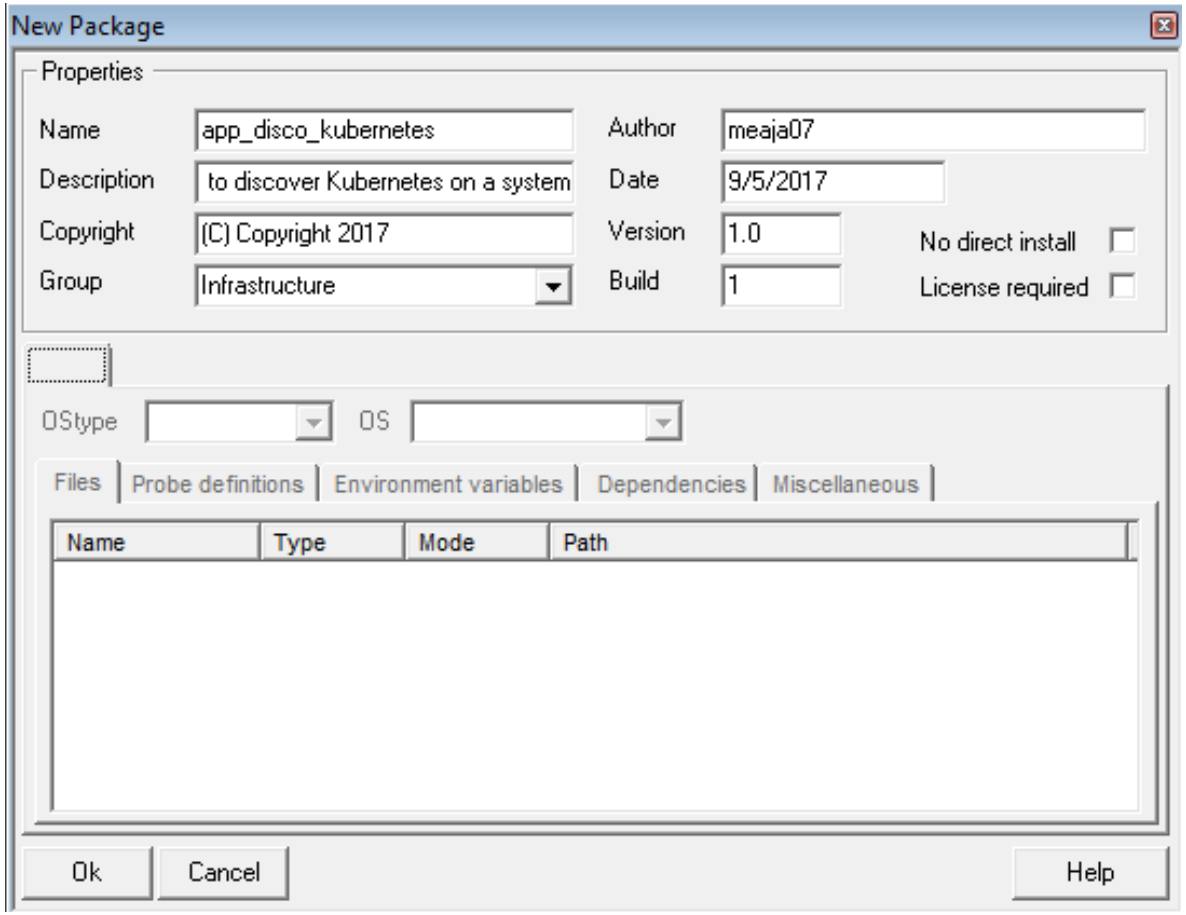
3. Creating a Package

- Using Infrastructure Manager
  - Go to the Archive where you will deploy scripts from, right click and Click New…



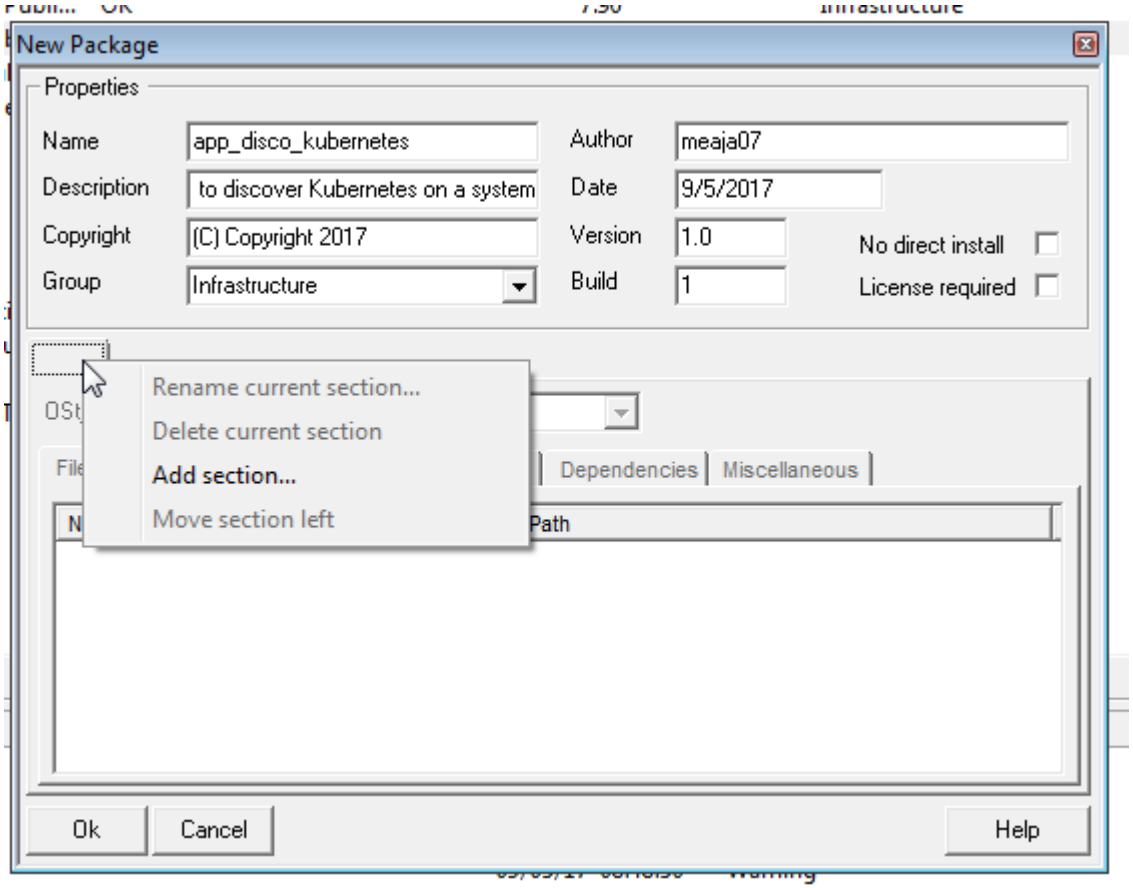
3. Creating a Package (Cont.)

- Fill in the Name, Description, and Group of the archive folder for the Script



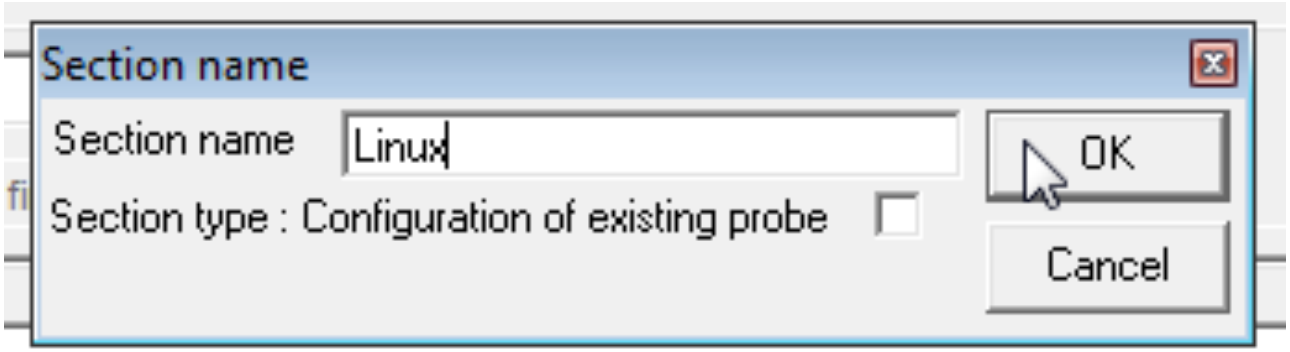
3. Creating a Package (Cont.)

- Right click the tab, and select Add Section…



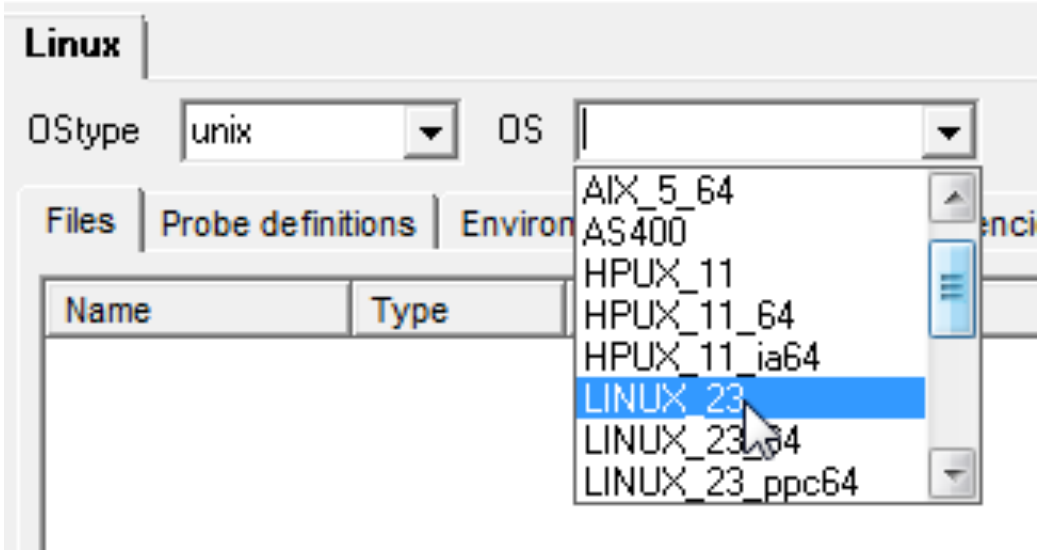
3. Creating a Package (Cont.)

- Give the section a Name, and click OK.
  - Recommend OS or OS Type



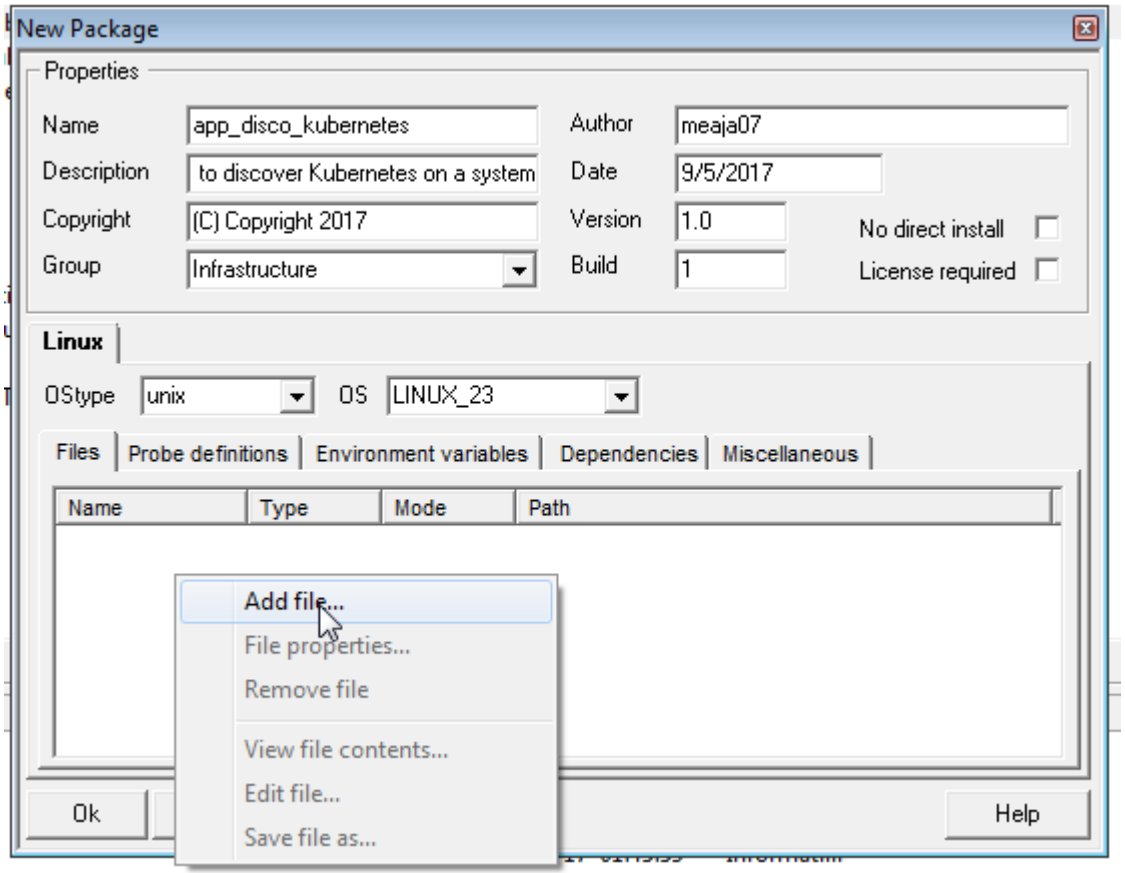
3. Creating a Package (Cont.)

- Change the Ostype and OS to fit the current section
  - This information defines the OS on which the Section will be deployed
  - If you select just OSType, it will attempt to install on all operating systems for that specific OSType



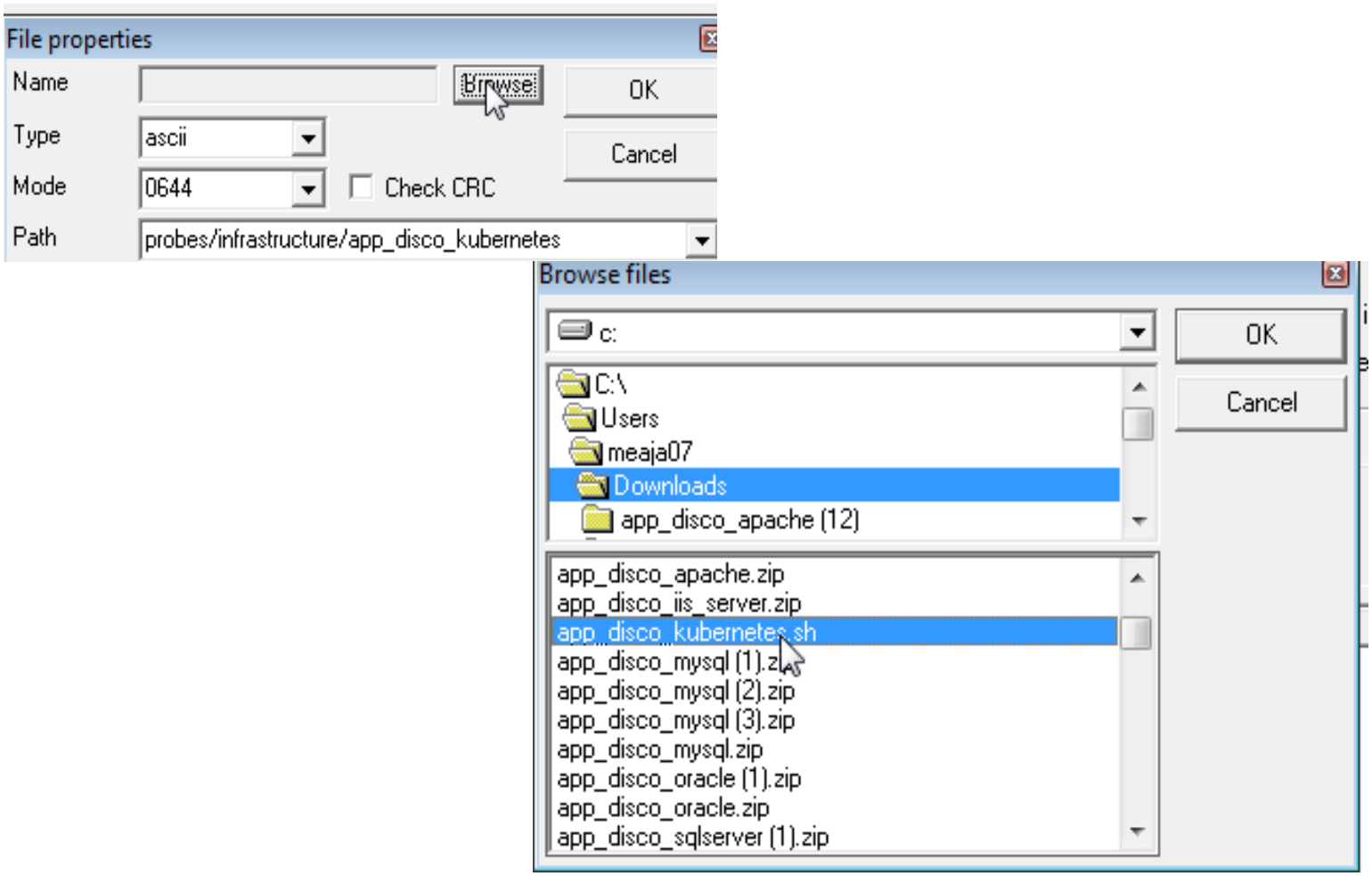
3. Creating a Package (Cont.)

- Right Click in the empty space and click Add file…



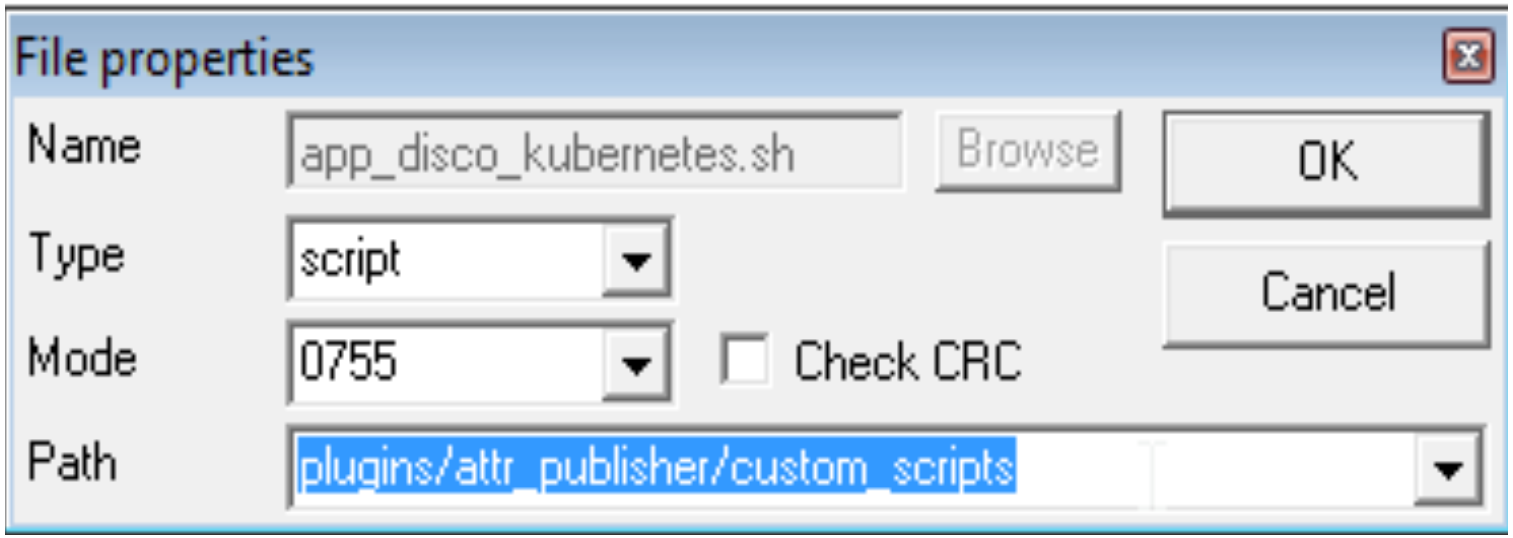
3. Creating a Package (Cont.)

- Browse to the location of the script file on disk, and select the file



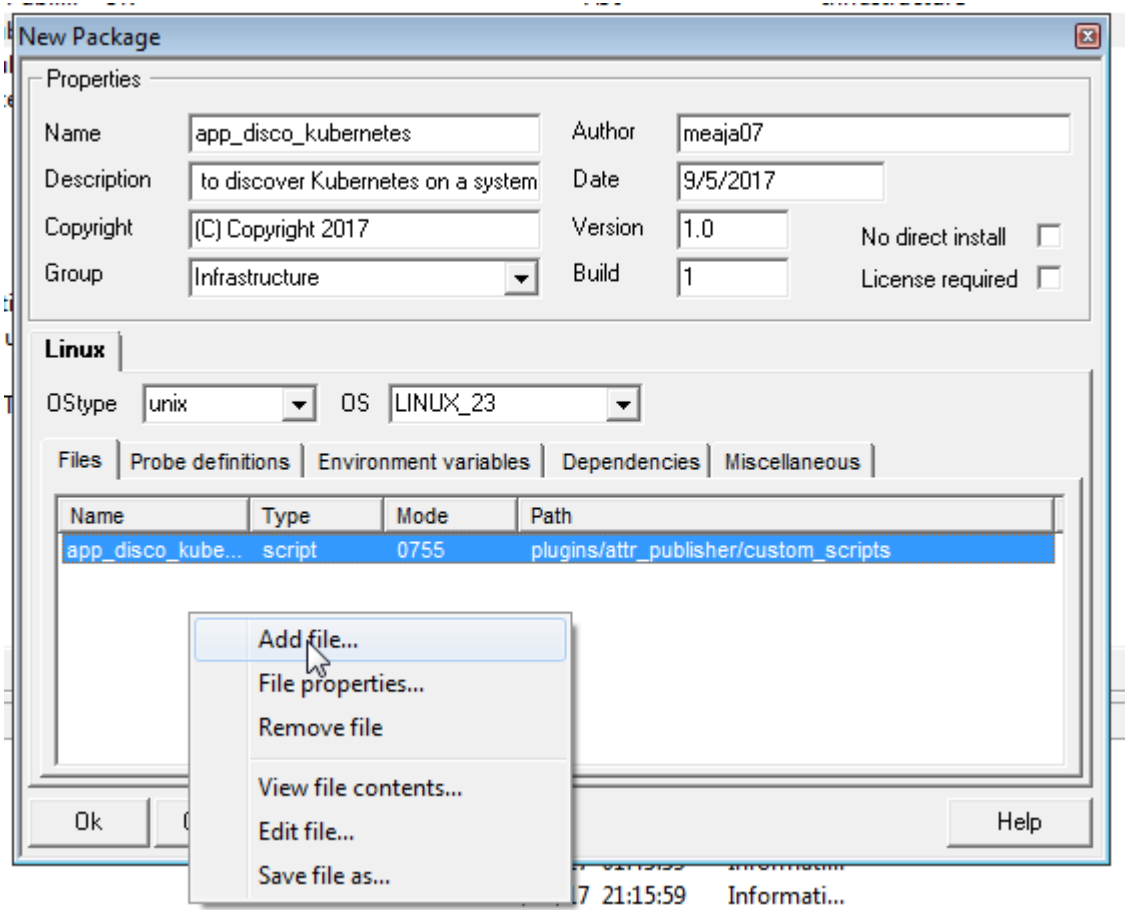
3. Creating a Package (Cont.)

- Update the Path, then Click OK.
  - By default Scripts are located in NIM_INSTALL_DIR/plugins/attr_publisher/custom_scripts/
  - NIM_INSTALL_DIR is implied



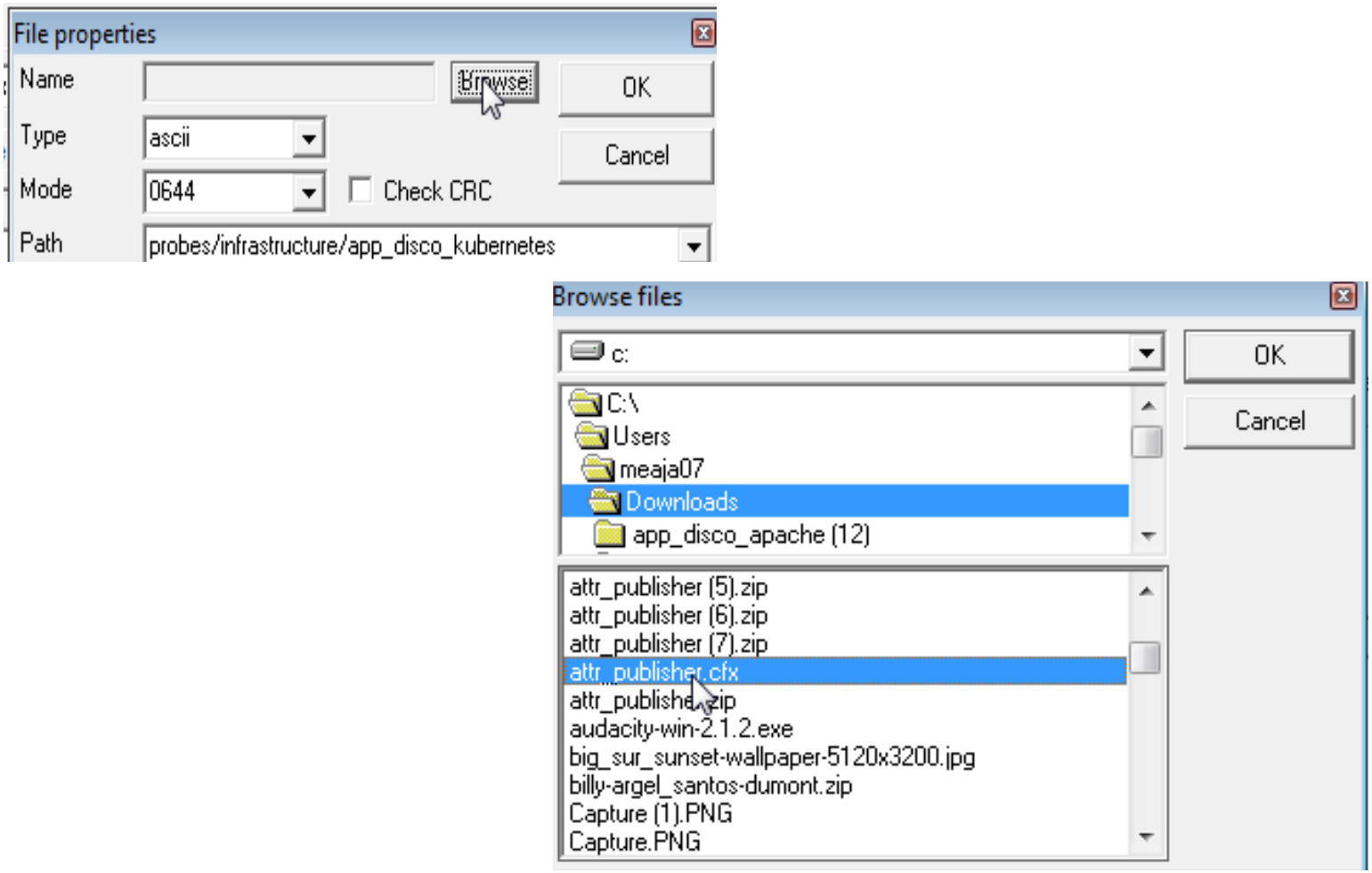
3. Creating a Package (Cont.)

- Right Click in the empty space and click Add file…



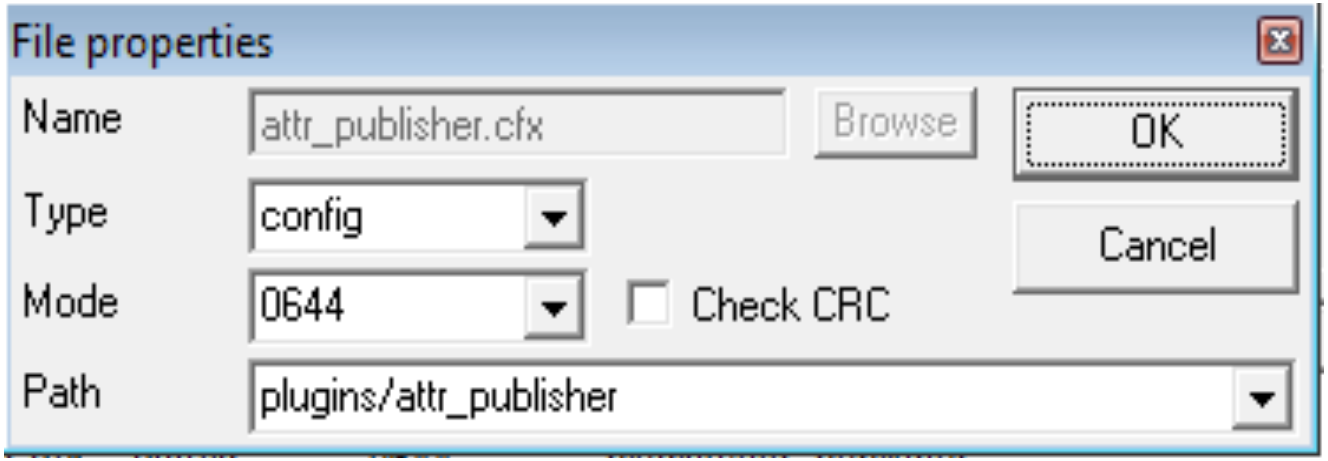
3. Creating a Package (Cont.)

- Browse to your newly created *.cfx file



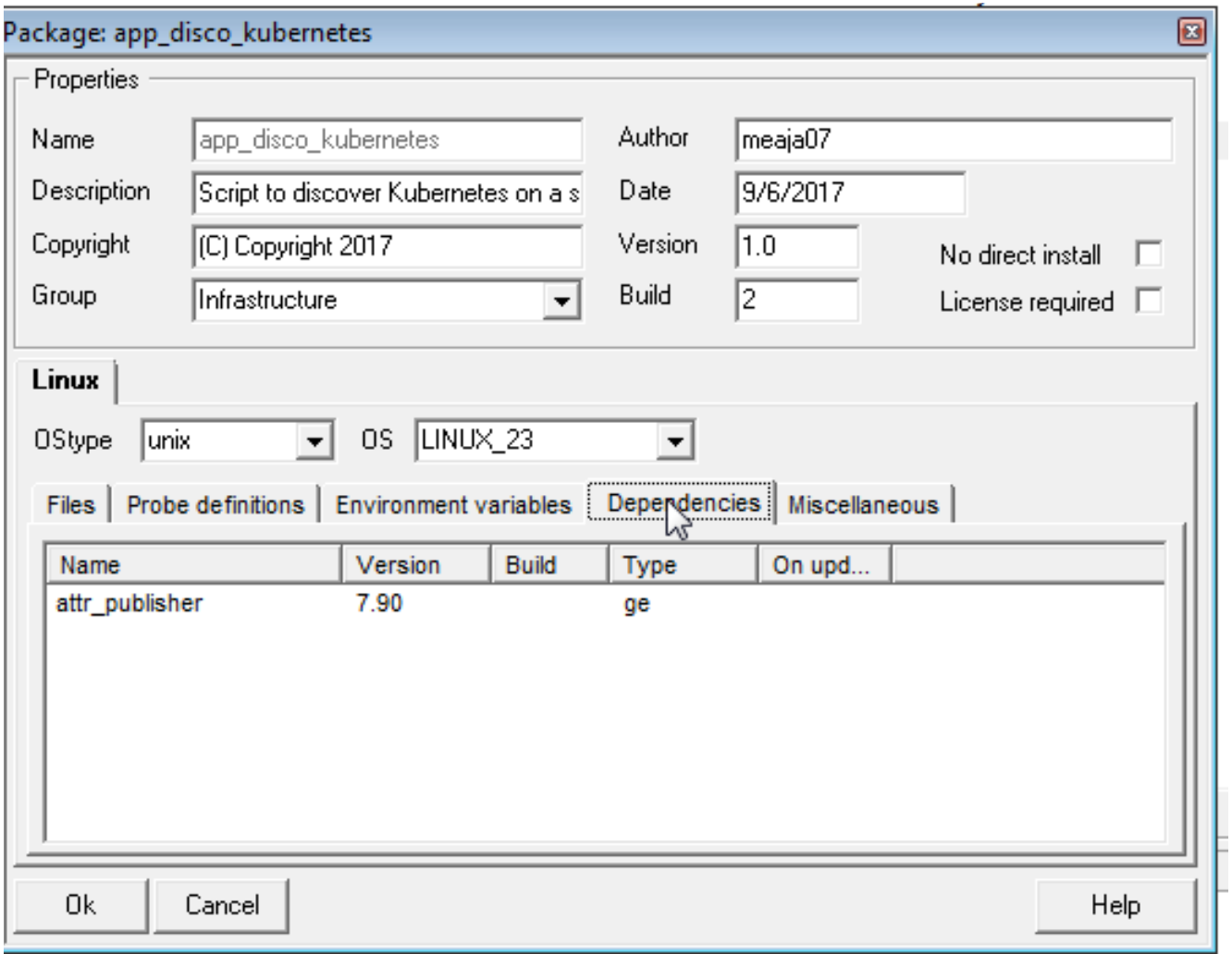
3. Creating a Package (Cont.)

- Change the path, and Click OK.
  - This path is to the attr_publisher directory and Not the scripts directory
  - The default is “ plugins/attr_publisher “ and is ok to insert



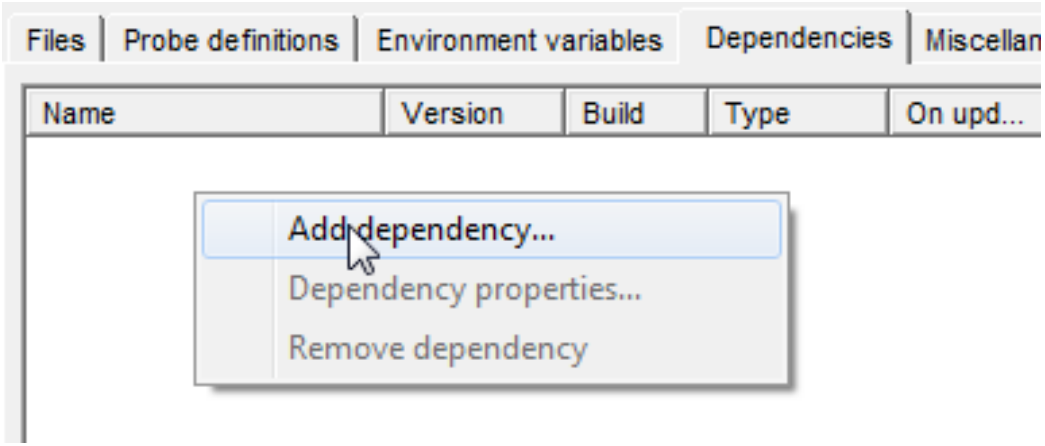
3. Creating a Package (Cont.)

- Click on the Dependencies tab



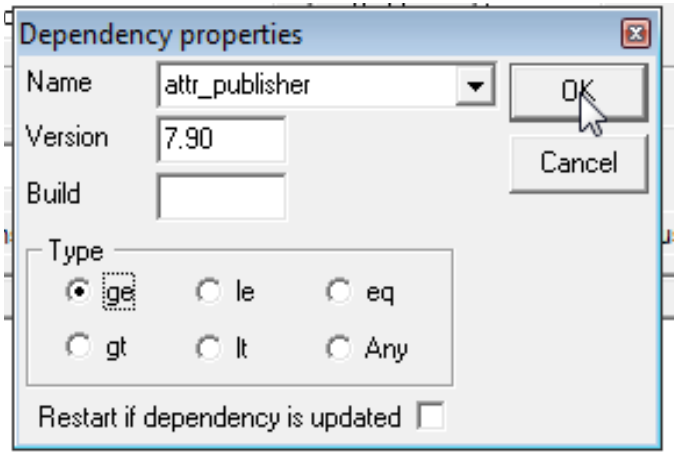
3. Creating a Package (Cont.)

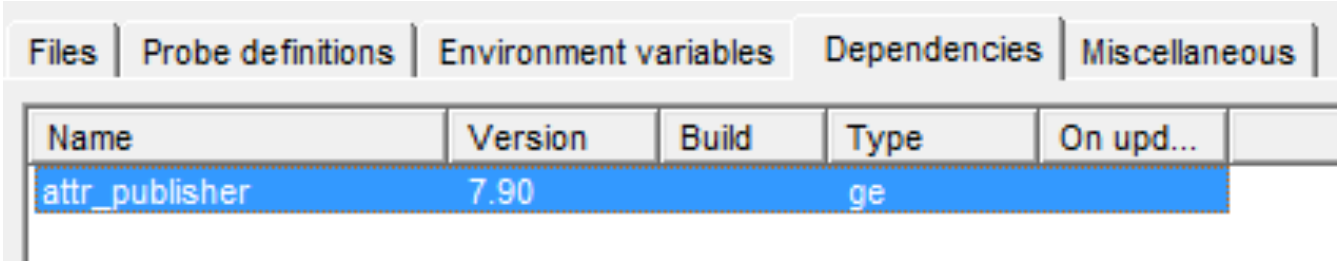
- Right click, and click Add Dependency…



3. Creating a Package (Cont.)

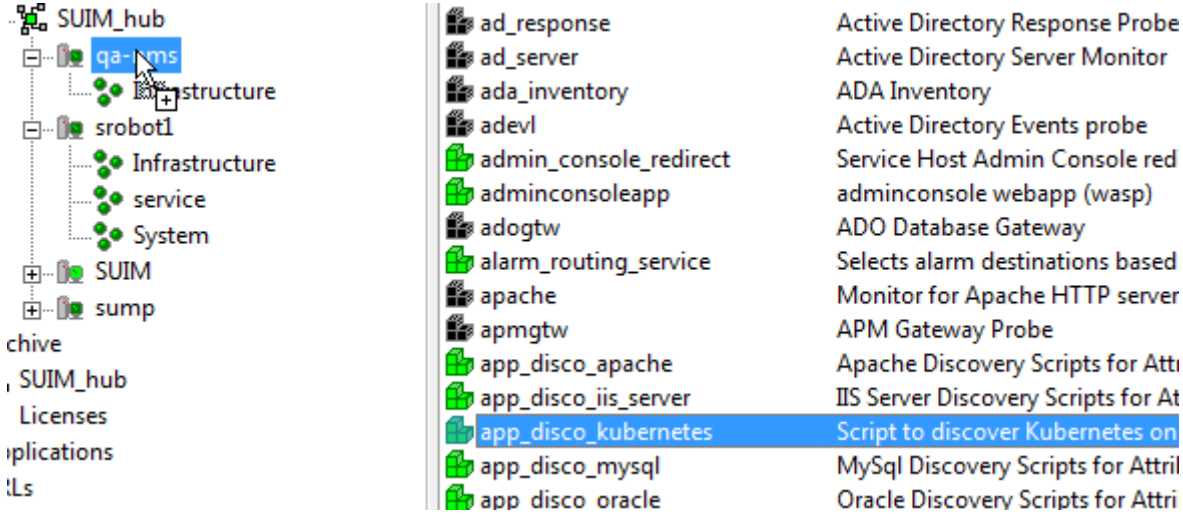
- Add a dependency on attribute publisher (attr_publisher) with your minimum plugin version.
  - As of 8.5.1 the version is 7.90
- **IMPORTANT!** Scripts will not be verified otherwise.





4a. Script Package One-Time Deployment

- Simple method for testing or known one-time deployments
  - Not preferred method for complex or long-time deployments
- Click and drag to a robot, or use other deployment methods
  - (i.e.) Deploy to a hub, to deploy to all robots on that hub



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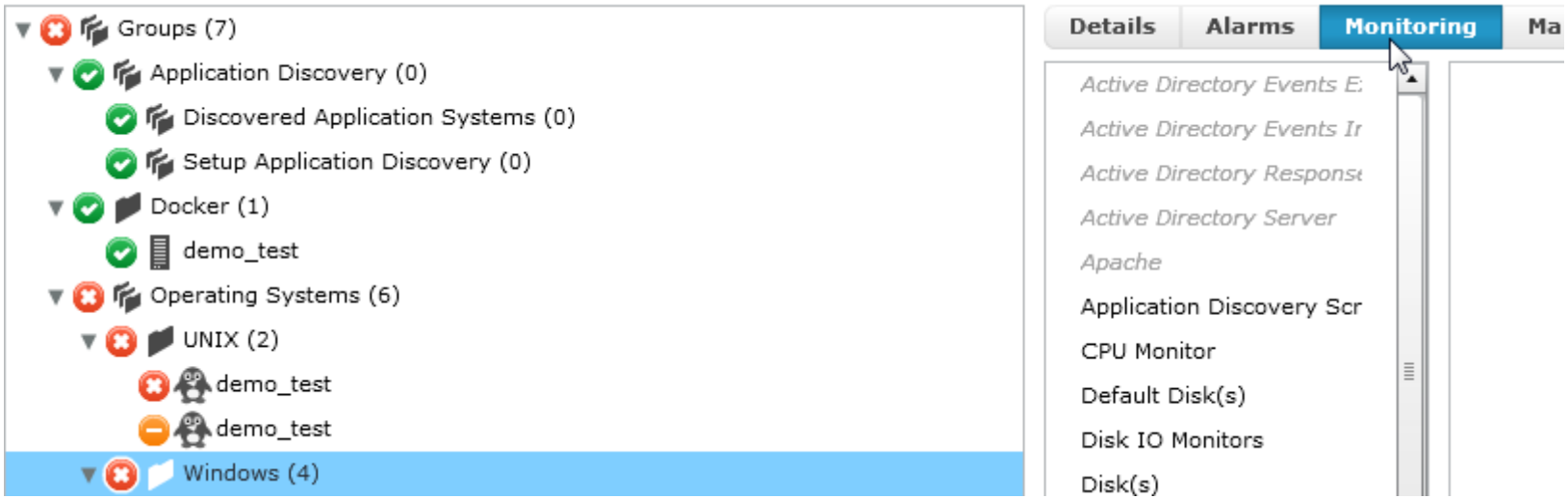
4b. Script Package MCS Deployment

- Recommended Method for dynamic deployments
- Create or Choose a group that contains devices that have robots (minimum version 7.90) on which you wish to run app discovery.
  - Using existing “Setup Application Discovery” , Operating Systems or other custom Groups

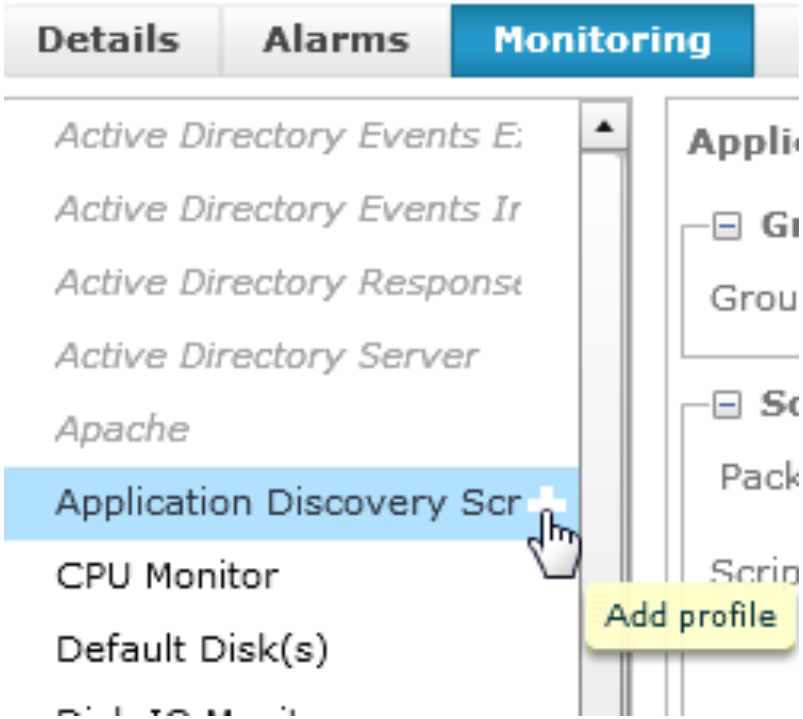
4b. Script Package MCS Deployment

- Go To the Monitoring Tab



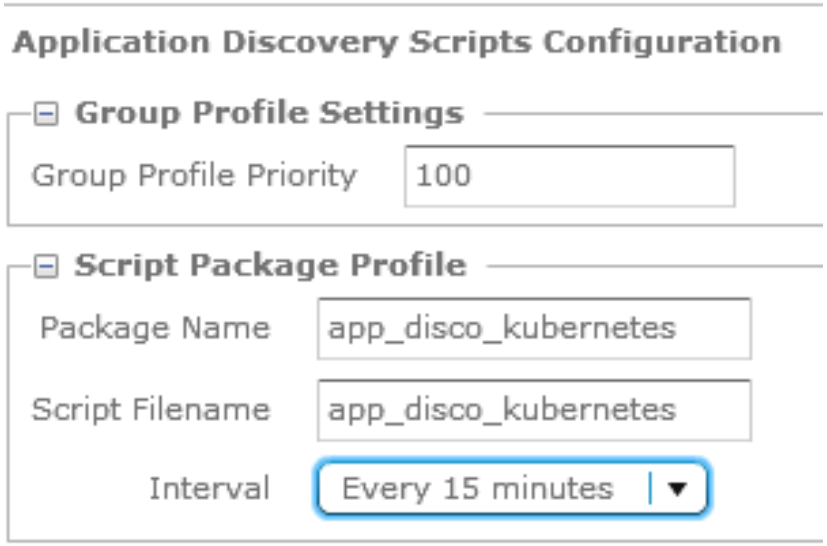
4b. Script Package MCS Deployment

- Click the Add Profile button for the Application Discovery Script template



4b. Script Package MCS Deployment

- Fill in the profile to match the package name and script name you are deploying to the system
- You can leave off the file extension if it's a bash or shell script



4b. Script Package MCS Deployment

- Create the profile.

- The script will now be run on all 7.90+ robots in the group.
- Additional systems that are added to the group will automatically deploy and run the Custom Script specified in the profile.

5. Create A Group

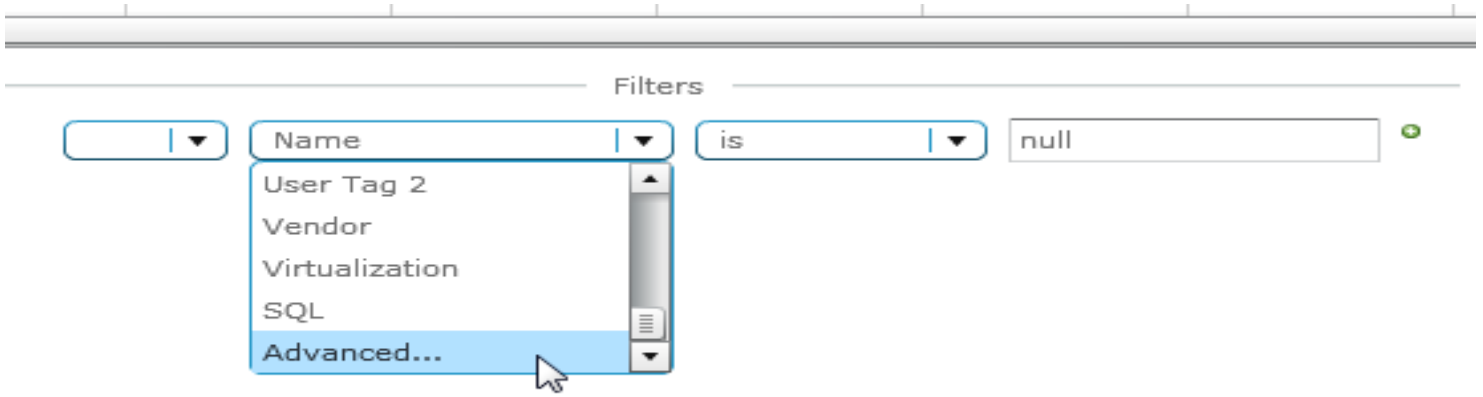
- There are two methods for creating groups for Custom Application Discovery scripts
  - Method 1: Using advanced attributes
    - In order to use this method, the attribute publisher must have published at least one attribute with the name you are intending to group on.
      - (e.g.) if you are publishing the attribute “app_disco_docker” at least one system with that attribute must be discovered before grouping with this method.
  - Method 2: SQL Criteria: Advanced users can define SQL criteria to search for custom attributes they care about.
    - select distinct cs.cs_id from CM_COMPUTER_SYSTEM cs join CM_COMPUTER_SYSTEM_ATTR a on a.cs_id=cs.cs_id where a.cs_attr_key like 'UserProp%.Roles' and a.cs_attr_value=’**YOURATTRIBUTENAME**'

Create a group : Method 1

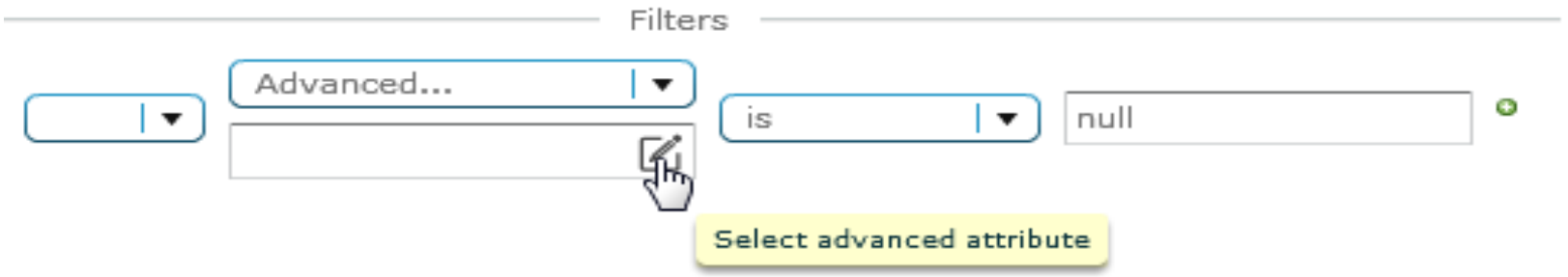
- Login to UMP, navigate to groups, create a new group

5. Create a group : Method 1

- Go to the Filters, and navigate to Advanced… on the Drop Down.

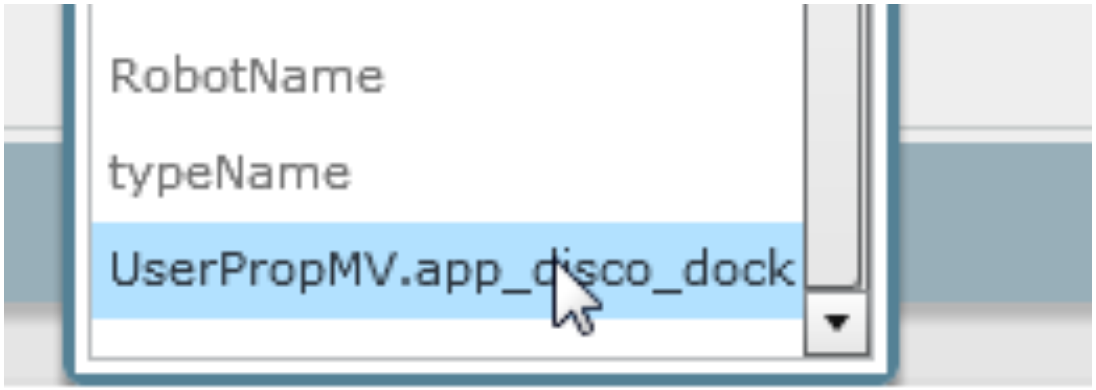


- Click the Edit button to select an advanced attribute.



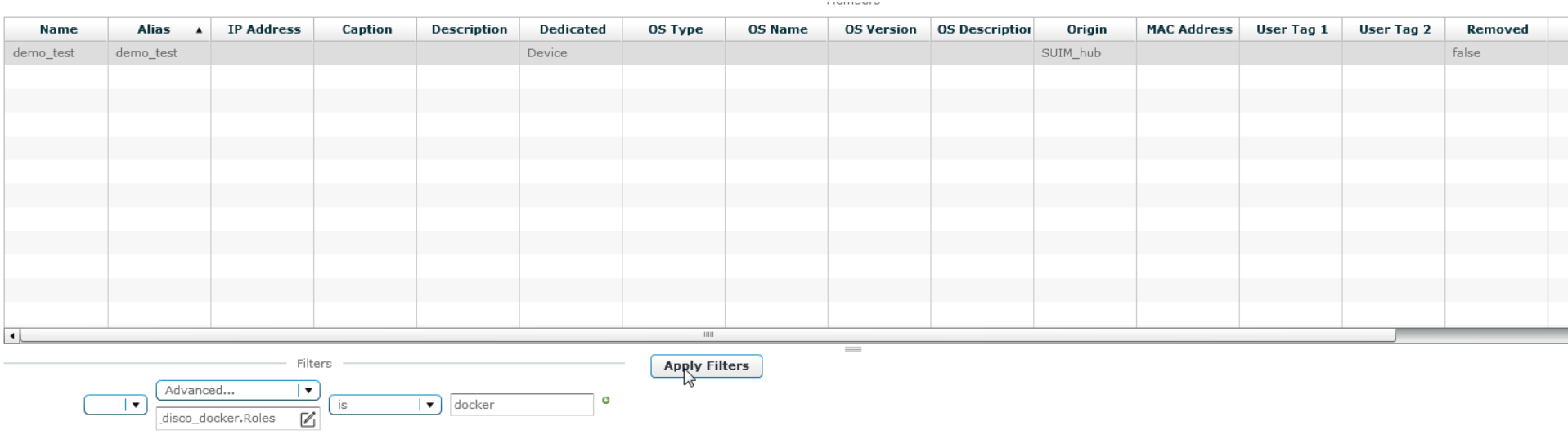
5. Create a group : Method 1

- Choose the User Property you wish to use
  - If you don't see the property, no systems currently have that propety
    - May need to troubleshoot



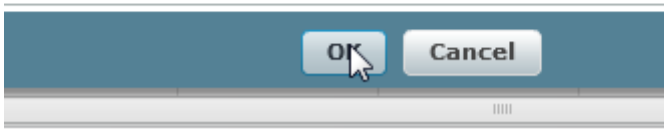
5. Create a group : Method 1

- Click Apply Filters. You should now see devices that match criteria

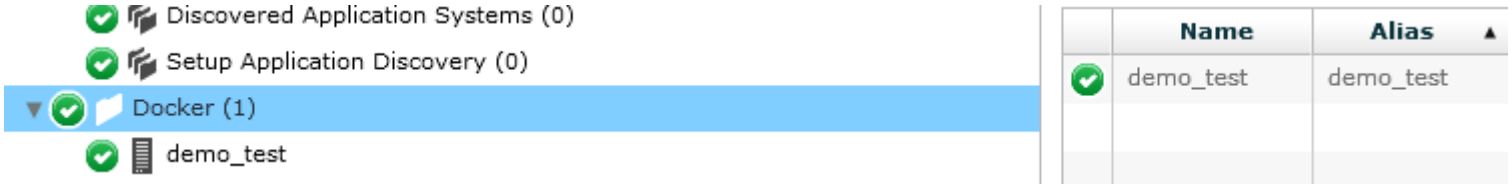


5. Create a group : Method 1

- Click OK to create the Group.

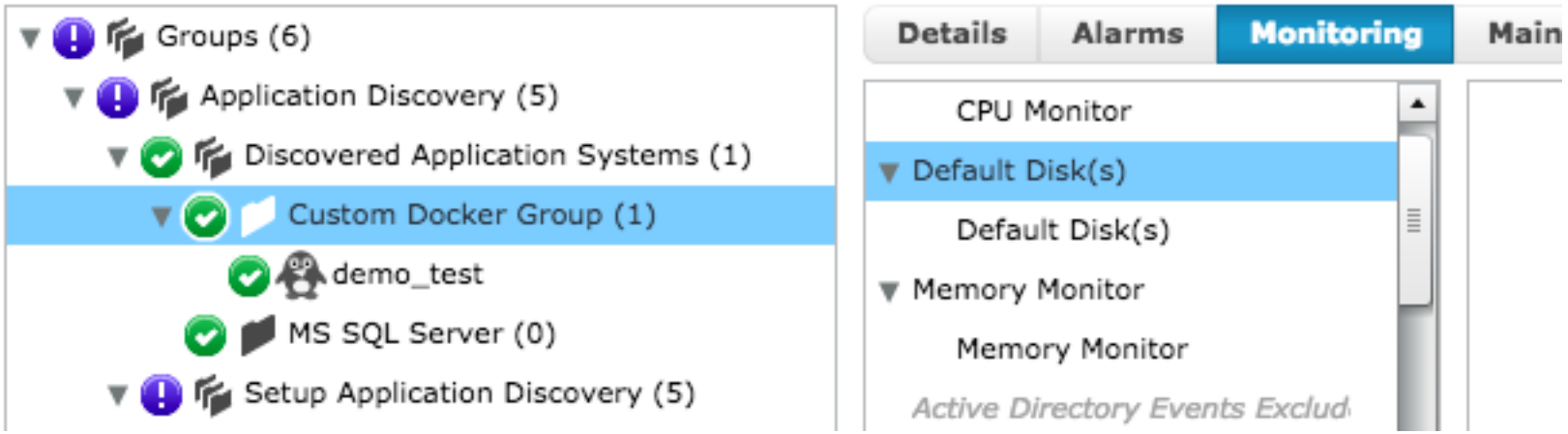


- The new group appears with associated devices



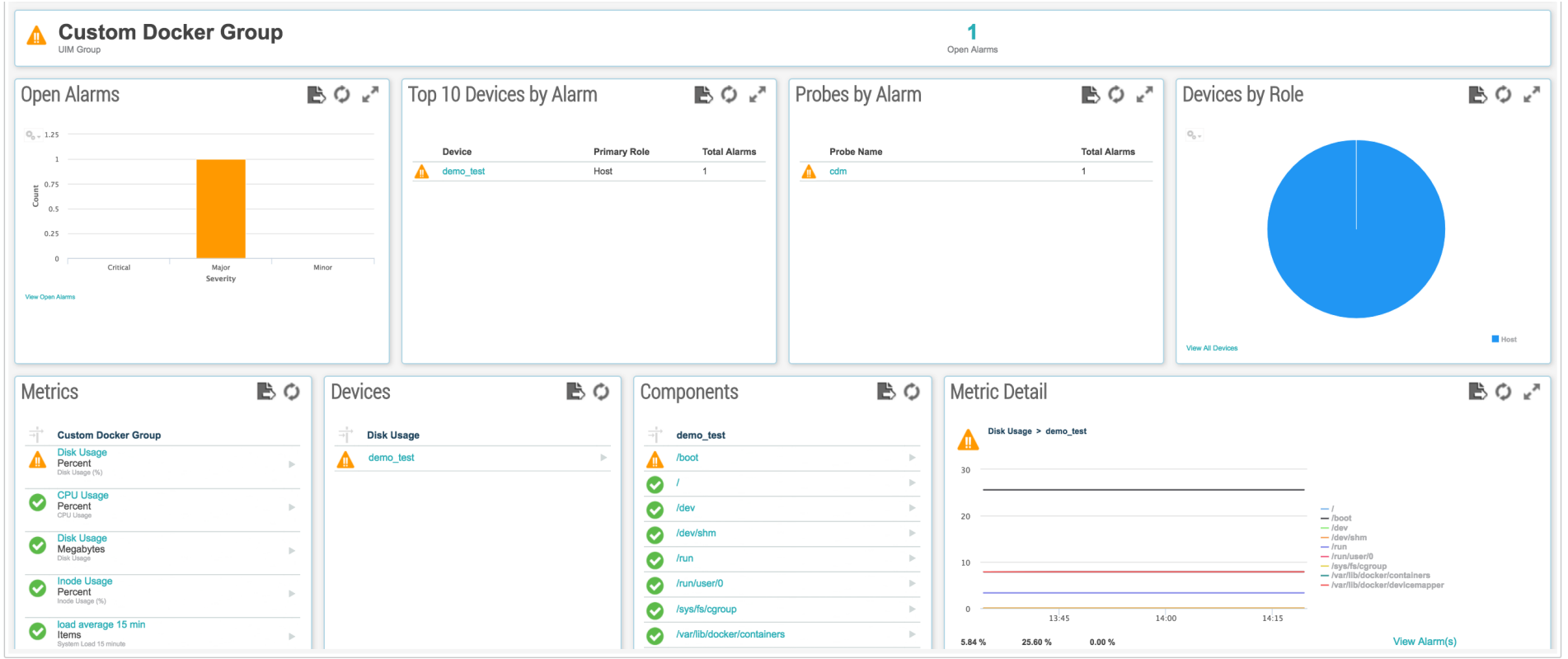
Monitoring using MCS

- Method 1: Using current application probes (Docker)
  - Use Docker Probe and other templates for monitoring
- Method 2: Create your own (Kubernetes)
  - Use other templates (Memory, CPU, Processes, Disk, etc)



Viewing Custom Application Groups

- CABI automatic groups



Things To Note

- When using the monitoring tab (as in steps 4b) to deploy a custom script profile, all 7.90+ systems that are added to the group will automatically be included in application discovery for that profile.
- MSPs can utilize custom scripts as a streamlined way to provide customized application discovery to their customers.
- Application Discovery, despite the name, is not limited only to applications – it can be used to group systems by any local attribute publishable by a script.
- Grace Period: Enables you to keep a device in a App group for specified amount of time, if App is no longer discovered after the grace period the attribute will be removed and device will be removed from group.

Application Discovery
Attribute Publisher Troubleshooting

- Log Location for Plugins
  - Nimsoft/robot/controller_ext.log
    - Log level will be the same as controller log level
- Configuration Location
  - Nimsoft/plugins/attr_publisher/attr_publisher.cfg
    - Note: Config files should **not** be modified on disk. They are securely protected files. Configuration modifications should be made through MCS.
- Scripts Default Location
  - Nimsoft/plugins/attr_publisher/custom_scripts/script_name.ext
    - Note: Script files should **not** be modified on disk. They are securely protected files. Script modifications should be made by creating and deploying a custom package.

Thank You

- What topics do you want us to cover? Send ideas to
  - Umair.khan@ca.com