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# Configuring Puppet Labs Enterprise with ScienceLogic

ScienceLogic Version 7.2.2

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# Chapter

# 1

## Introduction

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### Overview

This document is designed to help administrators configure and integrate ScienceLogic EM7 management system and Puppet Labs products.

Puppet is a server automation toolset that is designed to manage the configuration of Unix-like and Microsoft Windows systems. It is composed of a declarative language for expressing system configuration, a client and server for distributing it, and a library for realizing the configuration.

Puppet is available in both open source and commercial licensed versions. The current implementation was designed and tested with only the commercial version of Puppet. Puppet is comprised of a number of different offerings commercially available by Puppet Labs. ScienceLogic integrates with the following Puppet Labs products:

- 1.) PuppetDB – Data warehouse for Puppet
- 2.) Puppet Dashboard – Web console

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### Who Should Read This Document

ScienceLogic system administrators who want to add Cisco Unified Communications Manager CDR Logs should read this manual. This manual might also be helpful for EM7 users who want to understand how CDR log file processing works.

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## Prerequisites

- Requires administrative access to Puppet Enterprise server (tested with version 2.7.0)
  - Root access required
  - MySQL Database access required
- Requires administrative access to PuppetDB server (tested with version 1.0.4)
  - Only if installed on a different system from the Puppet Enterprise server
  - Root access required
- Requires ScienceLogic EM7 7.2.2.0 or better

## Configure Net-SNMP on Puppet Server

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### Overview

In order to allow the ScienceLogic EM7 Collector to monitor any Puppet server (PuppetDB, Puppet Dashboard, Puppet Master) Net-SNMP must be installed and configured. Although this step is not required, it allows users to gain a much more complete management experience.

By default the Puppet Enterprise system works with most major Linux distributions. This example describes installing Net-SNMP on the recommended CentOS 5, 64bit Linux distribution.

The following steps require that you have root access to the PuppetDB or Puppet Dashboard system.

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### Configuration

First, make sure the server has network access to the internet and can properly resolve DNS queries. Once validated, run the package installed for the following Net-SNMP packages.

```
yum install net-snmp.x86_64 net-snmp-libs.x86_64 net-snmp-utils.x86_64
```

When prompted select yes to install all the packages. After completing the installation we need to edit the default Net-SNMP configuration file. The below example provides SNMPv1 and SNMPv2 support using the default community string of “public” and “private”. Change any of the highlighted items below to comply with your network security standards. Note: the sysobjectid will match the ScienceLogic device class ID so the proper device class icon and description will be aligned during discovery.

```
rocommunity public
rwcommunity private

syslocation "My Location"
syscontact "My name"
sysdescr "Puppet Master"

sysobjectid 1.3.6.1.4.1.19567.999.999.1

authtrapenable 2
trapcommunity public
informsink 192.168.1.10
trapsink 192.168.1.10 public
defaultMonitors yes
linkUpDownNotifications yes

load 10.0 8.0 6.0
disk / 50%
includeAllDisks 10%
```

Next, we will need to edit the snmpd start script to add proper run levels.

```
vi /etc/init.d/snmpd
```

Change the line "chkconfig" to read:

```
# chkconfig: 2345 50 50
```

Next, let's register the changes with chkconfig so that Net-SNMP is started at boot time:

```
chkconfig snmpd --del
chkconfig snmpd --add
```

Finally, we need to restart the Net-SNMP process, in order to load our new configuration changes.

```
service snmpd restart
```

Once restarted, we can test SNMPD by performing a simple walk on the command line shell.

```
snmpwalk -v2c -c public localhost
```

# Chapter

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## Configure Puppet API and Database

### Overview

In this chapter we will configure the PuppetDB API, and the Puppet Dashboard MySQL database. Depending on the environment, PuppetDB may or may not be installed as part of the entire Puppet infrastructure. If PuppetDB is not part of the infrastructure, then skip the PuppetDB section.

Puppet Console uses a MySQL database to store information about Puppet jobs. At the time this Power-Pack was created PuppetDB did not have statistics available about Puppet runs. The initial design was to integrate with PuppetDB, however as the PuppetDB API is still under feature development, some of the functionality was not available through the API.

### Configuring the PuppetDB REST-API

To configure the PuppetDB REST-API to allow communication from external IP addresses, login into the PuppetDB server as root.

Edit the following file:

```
vi /etc/puppetlabs/puppetdb/conf.d/jetty.ini
```

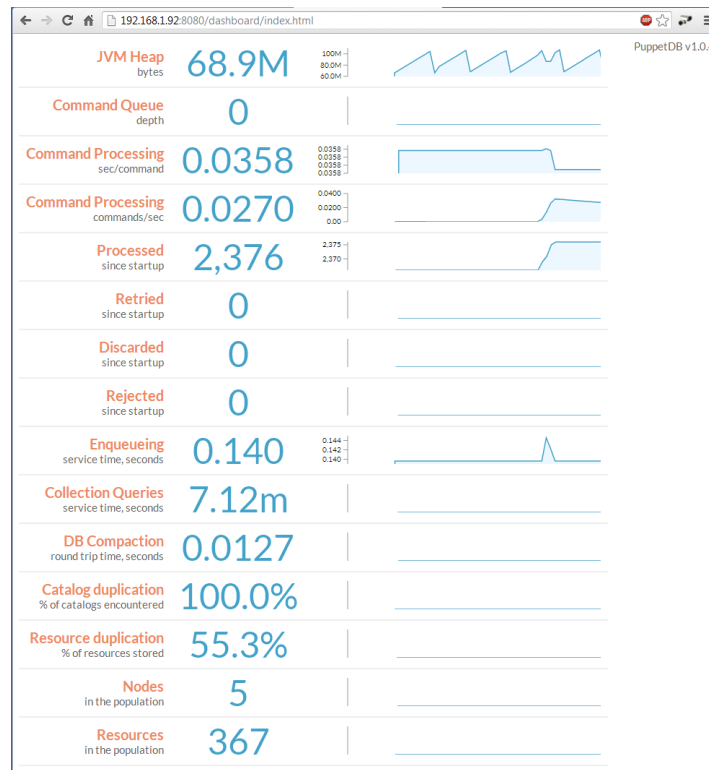
Set the following lines to read as follows:

```
host = 0.0.0.0
ssl-host = 0.0.0.0
```

Next, reboot the server to restart all Puppet processes. Once the server is back up, navigate to the PuppetDB performance dashboard in your web browser. Use the following URL replacing the IP addresses with the PuppetDB IP address:

<http://192.168.1.92:8080/dashboard/index.html>

If the configuration was successful, you will be able to view a dashboard similar to the following. Although this dashboard is not the REST-API, it uses the REST-API to fetch performance metrics.



Once complete, PuppetDB can now be integrated into ScienceLogic.

## Configuring the Puppet Dashboard MySQL Server

To configure the Puppet Dashboard MySQL server to allow communication from external IP addresses, login into the Puppet server as root.

First, we need to retrieve the MySQL root password that was auto generated with Puppet was installed. If the MySQL root password has been changed, please contact the system administrator.

The default password is located in the following file:

`/etc/puppetlabs/installer/database_info.install`

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Issue the following command to locate the actual password:

```
cat /etc/puppetlabs/installer/database_info.install | grep -i  
q_puppet_enterpriseconsole_database_password
```

Or look for the line with the entry “q\_puppet\_enterpriseconsole\_database\_password”. The result should look something similar to the following:

```
q_puppet_enterpriseconsole_database_password=8l8WObAwOXIQsGMZjeIz
```

Next, login into MySQL using the root account, and then paste or type the password when prompted.

```
mysql -h localhost -u root -p
```

Once logged in to the database as root, issue the following commands. Note that this example uses the account name of “em7admin” and password of “em7p@ssw0rd”. You can change these to meet the security requirements of the environment. The username and password you select must be recorded and used in the ScienceLogic credential.

```
CREATE USER 'em7admin' IDENTIFIED BY 'em7p@ssw0rd';  
GRANT SELECT,PROCESS,SHOW DATABASES ON *.* to 'em7admin'@'%';
```

Once complete, flush the privileges in the MySQL database.

```
FLUSH PRIVILEGES;
```

Exit the MySQL client by typing exit.

Once complete, we are ready to install the Power-Pack, edit credentials, and perform discovery.



# Chapter 4

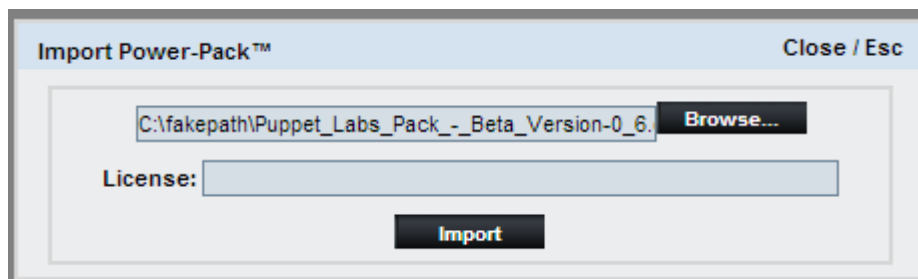
## Power-Pack, Credentials, and Discovery

### Installing the Power-Pack

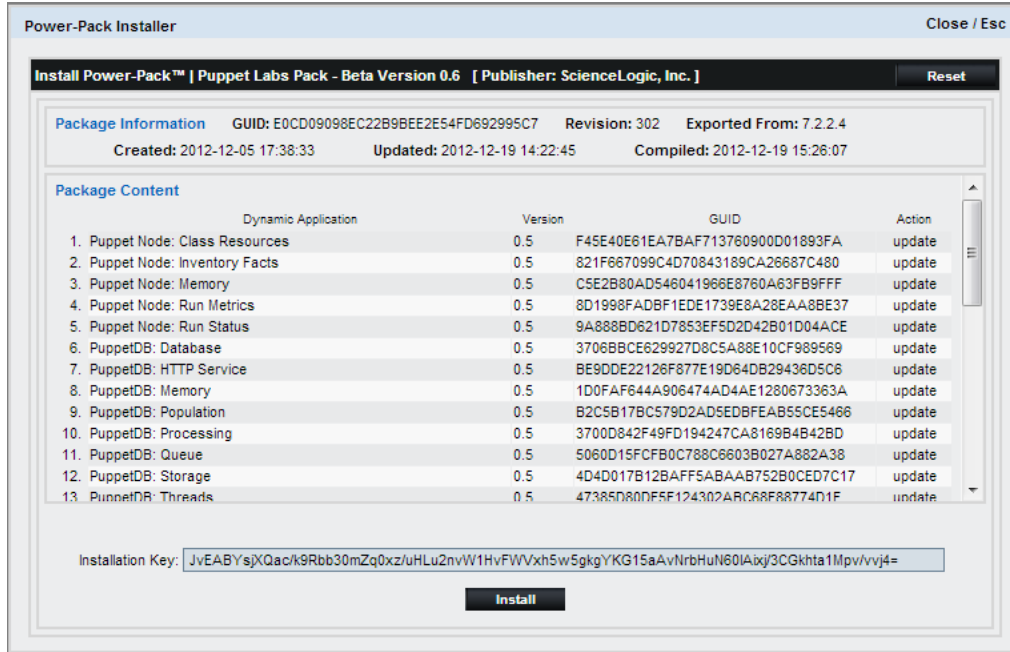
Obtain the latest copy of the Puppet Labs Pack.

Login to your ScienceLogic system as an administrator, and then select the "System" tab, Click the "Manage / Power-Packs" on the left navigation bar to open the Power-Pack Manager.

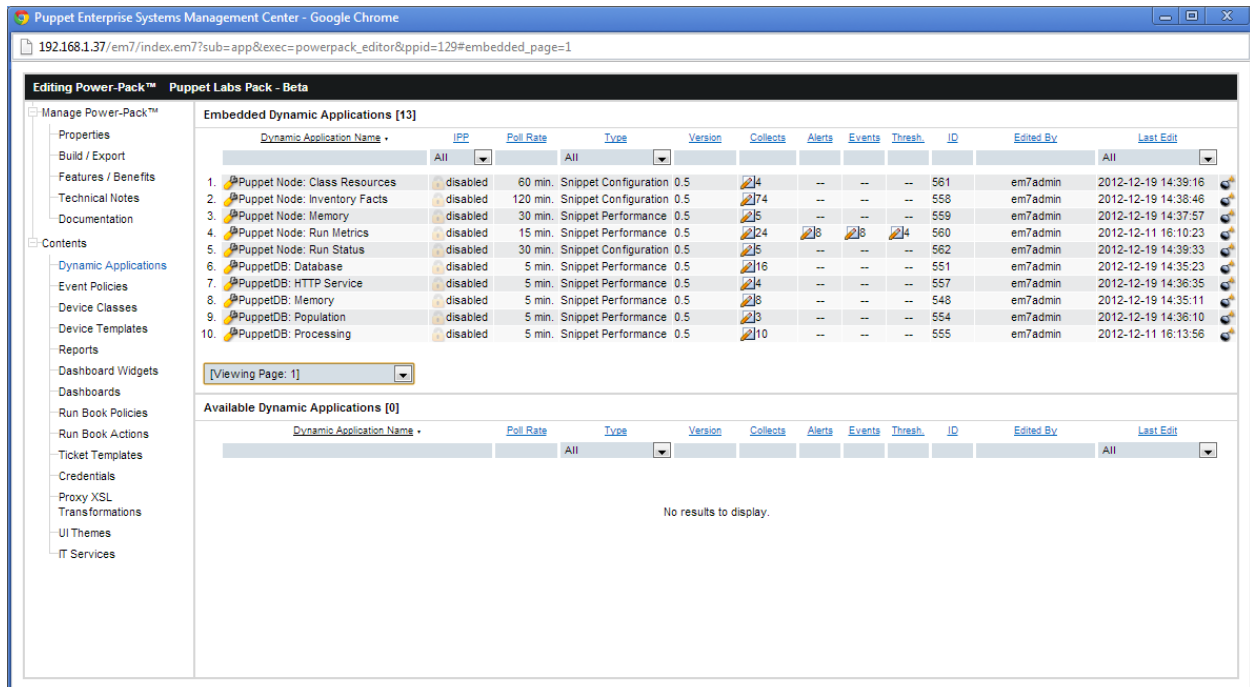
Next, select the Actions button, then "Import Power-Pack". Browse for the Power-Pack file, and then select the Import button.



Select the Install button to install the powerpack.



Once installation is complete, locate the power pack in the Power-Pack Manager interface. Click the yellow wrench edit icon to view the content of the power pack.



Important to note is that there are two different types of Dynamic Applications. Dynamic Applications with the "Puppet Node" naming convention are designed to be aligned with devices that are Puppet Node devices. In this case data is retrieved from either the PuppetDB or Puppet Dashboard MySQL database then

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aligned with a corresponding device in ScienceLogic management system. A device can be as simple as a pingable, or a fully managed server. The key is that the IP address of the ScienceLogic device must match the IP address of the Puppet Node device.

The other type of Dynamic Application is specifically designed for the PuppetDB server. These applications use the naming convention of “PuppetDB” and should be aligned directly to the PuppetDB device in ScienceLogic. These applications provide global PuppetDB metrics and configuration, but not data necessarily specific to Puppet nodes.

## Configuring Credentials

The Puppet Labs Power Pack comes complete with two different credentials, one for the PuppetDB REST-API and one for the Puppet Dashboard MySQL server.

Navigate to the Credential Management tool in the ScienceLogic administration portal. Locate the credential called “Puppet Master”, and then select the “yellow icon” to edit the credential.

This credential is for the Puppet Dashboard MySQL server. Enter the IP address of the Puppet Dashboard system, as well as the username and password. Select save to save changes.

The screenshot shows the 'Credential Editor [36]' window with the title bar 'Close / Esc'. The main content area is titled 'Edit Basic/Snippet Credential #36' and includes 'New' and 'Reset' buttons. Under the 'Basic Settings' section, the 'Credential Name' is 'Puppet Master'. Below this, there are three input fields: 'Hostname/IP' with the value '192.168.1.92', 'Port' with the value '3306', and 'Timeout(ms)' with the value '5000'. At the bottom, there are two input fields: 'Username' with the value 'em7admin' and 'Password' with masked characters '.....'. A red rectangular box highlights the 'Hostname/IP', 'Port', 'Username', and 'Password' fields. At the bottom of the form are 'Save' and 'Save As' buttons.

Next, locate the credential called “PuppeDB”, and then select the “yellow icon” to edit the credential. This credential is for the PuppetDB Rest-API. Enter the IP address of the PuppetDB server. Select save to save changes.

Credential Editor [35] Close / Esc

**Edit Basic/Snippet Credential #35** New Reset

**Basic Settings**

Credential Name  
PuppetDB

Hostname/IP Port Timeout(ms)

192.168.1.92 8080 20000

Username Password

Save Save As

Once complete, you can discover the Puppet servers and manually align the Dynamic Applications.

## Discovering Puppet Servers

Using standard methods for SNMP discovery create a new discovery session using the SNMP credential that matches the Net-SNMP community string on the Puppet server. Once discovery completes, the device will be the "Puppet Labs" device class, as seen below.

Device Name: centos5-64bit-92\_node  
IP Address / ID: 192.168.1.92 | 8  
Class: Puppet Labs  
Organization: System  
Collection Mode: Active  
Description: Puppet Master

Managed Type: Physical Device  
Category: Servers  
Sub-Class: PuppetDB  
Uptime: 2 days, 21:15:28  
Collection Time: 2012-12-11 13:20:00  
Group / Collector: CUG | em7-serv

**Configuration Report | Puppet Node: Inventory Facts**

Snap-Shot Date [2012-12-11 13:20:00]

**Environment**

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| *Environment      | production                                             |
| *Hostname         | centos5-64bit-92                                       |
| *System Type      | Virtual                                                |
| *Product Name     | VMware Virtual Platform                                |
| *Serial Number    | VMware-56 4d c5 12 e8 7e b1 5d-a6 37 25 10 68 2f c8 b6 |
| *Time Zone        | CST                                                    |
| *System Unique ID | 007f0100                                               |
| *System Uptime    | 2 days                                                 |
| *Virtual Manager  | vmware                                                 |

**Operating System**

| Operating System | Operating System Release | OS Family |
|------------------|--------------------------|-----------|
| 1. CentOS        | 5.8                      | RedHat    |

**Network (eth0)**

| IP Address      | MAC Address       | Netmask       | Network     |
|-----------------|-------------------|---------------|-------------|
| 1. 192.168.1.92 | 00:0C:29:2F:C8:B6 | 255.255.255.0 | 192.168.1.0 |

**Memory**

| Memory Size | Memory Free | Memory Total | Swap Free | Swap Size |
|-------------|-------------|--------------|-----------|-----------|
| 1. 1.96 GB  | 569.06 MB   | 1.96 GB      | 3.62 GB   | 3.91 GB   |

**Puppet Version**

| Client Version                      | Puppet Enterprise Version | Puppet Master Version            |
|-------------------------------------|---------------------------|----------------------------------|
| 1. 2.7.19 (Puppet Enterprise 2.7.0) | 2.7.0                     | 2.7.19 (Puppet Enterprise 2.7.0) |

**Puppet Features**

| Is Puppet Agent | Is Puppet CA | Is Puppet Console | Is Puppet Enterprise | Is Puppet Master |
|-----------------|--------------|-------------------|----------------------|------------------|
| 1. true         | true         | true              | true                 | true             |

Puppet Agent

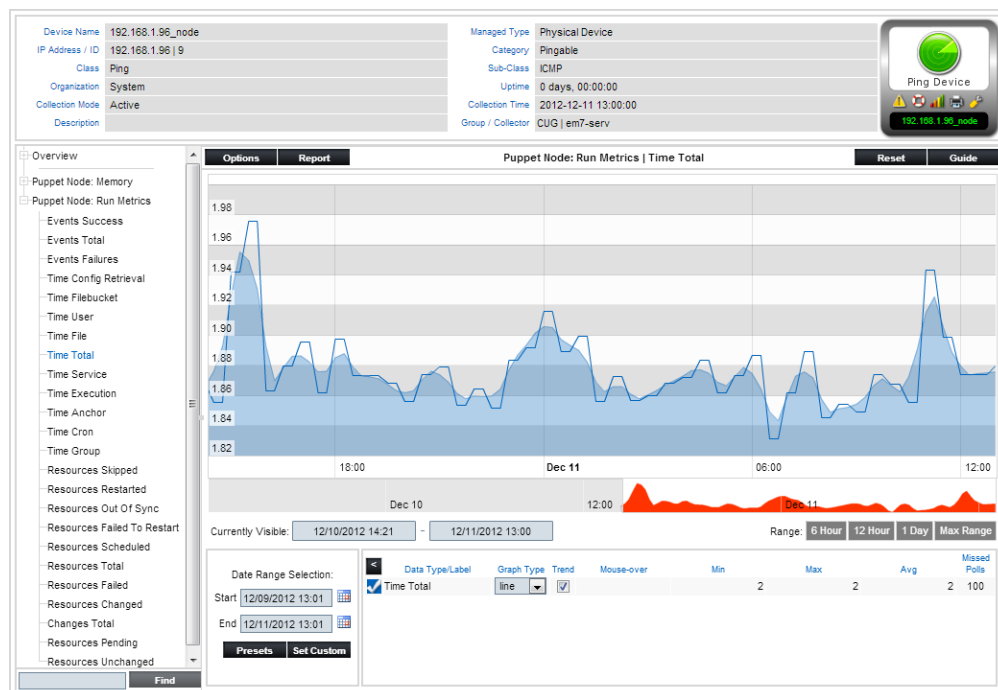
## Application Alignment

Due to an issue in the 7.2.2 release, automated application alignment through discovery is not possible for unregistered TCP. As a result manual application alignment is needed to begin collection of PuppetDB and Puppet Node application data.

For PuppetDB Applications, go to the device Collections tab, select Actions, then select Add. Filter the list by typing “Puppet” into the field then select any or all “PuppetDB” applications. Select the PuppetDB or Puppet Master credential (depending on the application type) then select Save. Note, that in most deployments Puppet servers also run the Puppet agent, as a result all Puppet applications can generally be aligned for a PuppetDB system.

For all other nodes, including standard Linux system, only align “Puppet Node” applications, using the PuppetDB or Puppet Master Credential. To align these applications through discovery, select the Puppet Node Device Template in the Auto Discovery editor.

Puppet Node applications can be aligned to any device where the IP address matches the IP address in EM7. The below example shows a Pingable device class that is also managed by the PuppetDB system.





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