PSAM 4.2 Nagios configuration

1. Overview

PrivateServer appliances can be monitored remotely.

Currently, a set of Nagios commands is provided to check the reachability, health and resource usage of PrivateServer appliances.

2. Nagios commands for PrivateServer appliances

Remotely monitoring PrivateServer appliances is best done with the PrivateServer-specific Nagios commands. This section describes how to add these commands to your monitoring host, how to enable them on the appliance and the meaning of their outputs.

2.1. Configuring the monitoring host for PrivateServer monitoring

On the monitoring host, the configuration of Nagios has to be modified. This is a simple process in a few steps:

1. define PrivateServer-specific commands
2. list PrivateServer appliances on your network
3. verify the configuration
4. restart Nagios

2.1.1. Defining PrivateServer-specific commands

Download `privateserver.commands.cfg` and save it to your monitoring host as:

- `/etc/nagios/objects/privateserver.commands.cfg`
- `/usr/local/nagios/etc/objects/privateserver.commands.cfg` (if Nagios was installed from source code)

> The file can be saved anywhere, but the suggested locations will put it next to other Nagios configuration files.

Include privateserver.commands.cfg from nagios.cfg with a line like the following:

```
# replace with the full path to your privateserver.commands.cfg
cfg_file=/etc/nagios/objects/privateserver.commands.cfg
```

2.1.2. Listing PrivateServer appliances on your network

Download `privateserver.host.cfg.template`. For each of your appliances:

1. make a copy of the template as *`appliance hostname`*`.cfg`, under the `/etc/nagios/objects` directory (or `/usr/local/nagios/etc/objects`, if Nagios was installed from source code)
2. open *`appliance hostname`*`.cfg` in an editor and:
    a. replace all occurrences of `localhost.localdomain` with the hostname of the appliance
    b. replace all occurrences of `127.0.0.1` with the IP address (recommended) or the hostname of the appliance
    c. save
3. include *`appliance hostname`*`.cfg` from another configuration file (e.g. `/etc/nagios/nagios.cfg`) with a line like the following:

    ```
    # replace with the full path to the configuration file
    cfg_file=/etc/nagios/objects/host1.privateserver.test.cfg
    ```

Configuration files created from the template require the following definitions to be already present in your Nagios configuration:

- `linux-server` host definition
- `generic-service` service definition

All of the above definitions are present in the default Nagios configuration, but they may be absent in your installation of Nagios

2.1.3. Verifying the Nagios configuration

Run the following command:

```
nagios -v /etc/nagios/nagios.cfg

# if you installed Nagios from source code, you might need to run this instead:
/usr/local/nagios/bin/nagios -v /etc/nagios.cfg
```

Review the output, and correct any errors reported by Nagios. **Nagios only reports the first error it finds**, so you will need to verify the configuration after every change, until it reports no errors.

2.1.4. Restarting Nagios

Always verify the configuration before starting or restarting Nagios

Run the following command:

```
/etc/init.d/nagios restart
```

Nagios will restart with the new configuration. The changes should be immediately visible in the web interface.

2.2. Configuring the appliance for Nagios monitoring

For remote monitoring to work, the appliance must be reachable from the monitoring host. Additionally, most commands need a specific appliance service to be assigned to the network interface used for management (for each command, it will be documented whether this is the case, and which service affects it). The service assignment UI can be found in the web console, under Server Configuration Applications.

2.3. Reachability checks

The commands in this category check for the reachability of the appliance's administration interfaces.

2.3.1. `check_privateserver_ping`

Checks whether the PrivateServer appliance responds to ping requests. For more information, see the documentation for the Nagios `check_ping` plugin.

This command sends 5 ping requests.

This command can fail with 100% packet loss if ICMP pings are blocked between the monitoring host and the appliance.

2.3.1.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	The appliance is alive
Unknown macro: 'bgcolor'	Average RTT is larger than 3 seconds, or packet loss is 80% or more
Unknown macro: 'bgcolor'	Average RTT is larger than 5 seconds, or packet loss is 100%

2.3.1.2. Output

A typical, healthy output is similar to:

```
PING OK - Packet loss = 0%, RTA = 33.22 ms
```

2.4. Service health checks

The commands in this category check whether the appliance's services, internal or external, are up and working correctly.

2.4.1. `check_privateserver_sip`

Performs a test call on the PrivateServer appliance to ensure that the SIP service can handle calls correctly. Requires the **`nrpe`** service to be enabled on the management network interface.

2.4.1.1. Status

Status	Meaning

Unknown macro: 'bgcolor'	The SIP service is up and running normally, and can currently handle calls correctly.
Unknown macro: 'bgcolor'	Both participants to the test call completed the call succesfully, but the call was hung up immediately. This can mean the SIP service is responding too slowly, or that the appliance is low on resources. See the output for more information.
Unknown macro: 'bgcolor'	One or both participants to the test call encountered an error. See the output for more information.

2.4.1.2. Output

If the status is **CRITICAL**, the output contains the exit code of both participants to the test call. At least one will be non-zero, indicating an error. ...

2.4.2. `check_privateserver_web_console`

Checks that the web-based administration interface of the PrivateServer appliance is reachable and running correctly. Requires the **`http`** service to be enabled on the management network interface.

2.4.2.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	The web console is reachable and appears to be running correctly.
Unknown macro: 'bgcolor'	• Web console reported a client error (HTTP status in the 400 range) • HTTPS certificate is about to expire
Unknown macro: 'bgcolor'	• Fatal error connecting to the web console • I/O error during the request • Syntax error in the response • Web console reported a server error (HTTP status in the 500 range) • Invalid or expired HTTPS certificate

2.4.3. `check_privateserver_ssh_console`

Checks that the PrivateServer appliance is reachable through SSH. Requires the **`ssh`** service to be enabled on the management network interface.

2.4.3.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	The SSH server is reachable and appears to be running correctly.
Unknown macro: 'bgcolor'	Should never happen.
Unknown macro: 'bgcolor'	Fatal error connecting to the SSH server, or malformed response from the SSH server.

2.4.4. `check_privateserver_db_status`

Checks that the database service on the PrivateServer appliance is running correctly. Requires the **`nrpe`** service to be enabled on the management network interface.

2.4.4.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	The database is up and running correctly.

Unknown macro: 'bgcolor'	Non-fatal error connecting to the server, or no server status available.
Unknown macro: 'bgcolor'	Fatal error connecting to the server, or error querying server status.

2.4.5. `check_privateserver_db_data`

Checks that the database service on the PrivateServer appliance is responding to queries. Requires the **`nrpe`** service to be enabled on the management network interface.

2.4.5.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	The database is up and running correctly and responding to simple queries.
Unknown macro: 'bgcolor'	Non-fatal error connecting to the server.
Unknown macro: 'bgcolor'	Fatal error connecting to the server, or error executing the query.

2.5. Resource usage checks

The commands in this category monitor the usage of the appliance's finite resources (CPU, memory, etc.).

2.5.1. `check_privateserver_cpu`

Checks the CPU usage on the PrivateServer appliance. Requires the **`nrpe`** service to be enabled on the management network interface.

2.5.1.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	CPU usage normal.
Unknown macro: 'bgcolor'	CPU usage between 90% and 95%.
Unknown macro: 'bgcolor'	CPU usage 95% or above.

2.5.2. `check_privateserver_memory`

Checks the user and swap memory usage on the PrivateServer appliance. User memory is calculated as total memory usage minus buffers and cache. Requires the **`nrpe`** service to be enabled on the management network interface.

2.5.2.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	Memory usage normal.
Unknown macro: 'bgcolor'	User memory or swap usage between 90% and 95%.
Unknown macro: 'bgcolor'	User memory or swap usage above 95%.

2.5.3. `check_privateserver_disk`

Checks the disk space usage on the PrivateServer appliance. Requires the **`nrpe`** service to be enabled on the management network interface.

2.5.3.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	Free disk space normal.
Unknown macro: 'bgcolor'	Free disk space is 5% or less on any filesystem.
Unknown macro: 'bgcolor'	Free disk space is 0% on any filesystem.

2.5.4. `check_privateserver_bandwidth`

Checks the network bandwidth usage on the PrivateServer appliance. Requires the **`nrpe`** service to be enabled on the management network interface.

2.5.4.1. Status

Status	Meaning
Unknown macro: 'bgcolor'	Network bandwidth usage normal.
Unknown macro: 'bgcolor'	Network bandwidth usage between 20 Mb/s and 100 Mb/s on any network interface.
Unknown macro: 'bgcolor'	Network bandwidth usage above 100 Mb/s on any network interface.

3. Appendix: Attachments

File	Modified
File privateserver.commands.cfg	Jul 04, 2012 by 8a8082b26875437b0168754523f80005
File privateserver.host.cfg.template	Jul 04, 2012 by 8a8082b26875437b0168754523f80005

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