Docker FP Install on Linux

Thursday, May 23, 2016
12:51 AM

Overview:
The CA APM Docker FP monitors the performance and health of running Docker containers and reports statistics to the APM EM server. This FP can able to discover all Servers under docker swarm and it lists the available Docker container in the Docker Server and each Docker container. Container ID, memory, CPU, NET I/O, uptime, image name, command, and other information are gathered. Docker monitor leverages the Docker Stats API to retrieve and monitor Docker Servers.

Resources:
> https://docs.docker.com/engine/admin/configuring/
> https://docs.docker.com/engine/reference/api/docker_remote_api/

Download:
> ftp://ftpca.ca.com/APM%20FP%20Docker/

Prerequisite:
1. JAVA 1.7+

Best Practices:
- When install the Docker agent for first time use no security to verify everything is working and then make sure certs are valid.
- Verify the Docker server has is open to access.
- Verify the ports used are open.
- Verify firewalls are not blocking communication

Prerequisite: Docker
1. Obtain Security keys and certificates
2. Edit /etc/default/docker
   a. DOCKER_OPTS="-H tcp://0.0.0.:2375 -H unix:///var/run/docker.sock"
   b. Add appropriate security and setup certificates
   c. -d --tlsverify --tlscacert=ca.pem --tlscert=server-cert.pem --tlskey=server-key.pem -H=0.0.0.0:2376
   d. If -H Unix is not set you may not be able to start a Docker image.
3. Restart the Docker service

Install Steps:
1. Download Docker and un-tar to <> which creates a directory called apmFPdocker
2. Copy <apmFPdocker>/em/docker.typeviewers.xml to MOM or Standalone EM <em root>/ext/xmltv
3. Restart EM
4. Get security keys and certificates
5. Edit <apmFPdocker>/config/docker.properties
   a. docker.hostname= <ip of docker host>
   b. docker.port=<port you set in docker file, default 2375>

    c.   apm.apihost=<IP of Epagent running rest>
        i.   Required if using the EP Agent rather than connecting EM
    d. apm.apiport=<Epagent HTTP server port, default 8080>
        i.   Required if using the EP agent rather than connection to EM directly
    e. docker.ca.key=<CA Key file name>
    f.   docker.client.key=<client key file name>
    g. docker.client.certificate=<certificate file name>

6. Edit ./bin/dockerAgentCtrl.sh and change the default EM configuration or pass from command line
    a. Min Java Heap = 16
    b. Max Java heap = 256
    c. DEFEM = 192.168.1.187
    d. DEFPORT = 5001
    e. Agent Process Name = Docker
    f.   Agent Name = DockerMonitor
    g. JRE=/opt/ca/jre/bin

7. Start the Docker agent in <apmFPdocker>/bin
        sudo ./dockerAgentCtrl.sh start
        sudo ./dockerAgentCtrl.sh status
        sudo ./dockerAgentCtrl.sh stop
        sudo ./dockerAgentCtrl.sh help
        sudo ./dockerAgentCtrl.sh start <memory start> <mem max> <EM IP> <EM Port> <Process Name> <Agent Name> <JRE>

8. Review the log file <apmFPdocker>/logs
9. Connect to APM WebView and select Introscope

Docker FP in WebView:
Type View: List of Containers In Docker Server

		Overview	General	Traces	Errors	Search	Metric Count	Differential Analysis

Last Update Time: 12 Apr 2016 09:20:52 AM EDT   Host Name: Docker102   Kernel Version: 4.2.0-27-generic   Total CPU: 2

Container Details

		Container Name	Image Name	CPU Utilization (%)	Memory Utilization (%) ▼	Errors Sent	Packets Dropped
☐	»	/loving_newton	ubuntu	0.062	0.132	0	0
☐	»	/tiny_almeida	apm102	0.0	0.094	0	0
☐	»	/agitated_allen	ubuntu	0.0	0.0	0	0
☐	»	/agitated_bohr	ubuntu	0.0	0.0	0	0
☐	»	/agitated_booth	ubuntu	0.0	0.0	0	0

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Type View: Docker Container:

Container Name: /loving_newton

Docker ID: 2603f4e2c51621274910338ab1a7a43123033e7a22044264b38eef86d208d802

Image Name: ubuntu

Startup Command: sleep 1000

Memory Usage (in MB): 5

Current Status: Up 8 minutes

CPU Utilization (%)

Memory Utilization (%)

Dropped Packets

Errors

Bytes Sent/Received

Packets Sent/Received

Investigator Metrics:

- /agitated_allen
  - Bytes Received
  - Bytes Sent
  - CPU % (rounded)
  - CPU % (string)
  - Command
  - Created (rounded)
  - Created (string)
  - Dropped Packets during Receive
  - Dropped Packets during Sent
  - Errors Received
  - Errors Sent
  - Id
  - Image
  - Memory % (rounded)
  - Memory % (string)
  - Memory (in MB)
  - Names
  - Packets Received
  - Packets Sent
  - Status