



Interoute **VDC**

API Programming Challenges for PyCon UK 2014

Interoute Virtual Data Centre

Document webpage: [https://github.com/
Interoute/python-rules-the-cloud](https://github.com/Interoute/python-rules-the-cloud)

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The idea of the following challenges is to stimulate your programming creativity. You are welcome to follow the Challenges as given or mix them up a bit and add some variations...

Challenge 1: Virtual State

Using the `check-vm-state.py` program as a guide, what other useful state information can you extract and display from the Virtual Data Centre API?

`check-vm-state.py`: <https://github.com/Interoute/python-rules-the-cloud/blob/master/check-vm-state.py>

Use the *VDC API command reference* to see the all the commands available to you: <http://cloudstore.interoute.com/main/knowledge-centre/library/api-command-reference>

Challenge 2: Unconventional Representations

Write a Python program to convert network (and/or other) configuration data from the VDC API into abstract art; a poetic form such as a sonnet, haiku or limerick; or a MIDI file which can be played back musically.

The following is a simple program to extract network information, `networks_get_by_zone.py`: https://github.com/Interoute/python-rules-the-cloud/blob/master/networks_get_by_zone.py

Here is a more complicated program which draws a network tree diagram, and creates an output file which can be processed by the Python-based network analysis tool, `nwdiag`, `networks_member_listing.py`: https://github.com/Interoute/python-rules-the-cloud/blob/master/networks_member_listing.py



(For nwdiag, see <http://blockdiag.com/en/nwdiag> .)

Challenge 3: Widget

Create a dashboard widget which shows graphically the CPU activity of the virtual machines in a Virtual Data Centre. Check the value 'cpused' that is returned by the `listVirtualMachines` command.

You could use this program as a starting point: `widget-check-vm-state.py`: <https://github.com/Interoute/python-rules-the-cloud/blob/master/widget-check-vm-state.py>

Challenge 4: Buttons

So you've got yourself a 16-core CPU, 64 Gigabyte RAM virtual machine with 8 terabytes of disk space... very nice, but we think there's something missing... it's obvious what you need are PHYSICAL ON/OFF BUTTONS to turn your virtual machine on and off!

We can allow you the use of USB-connected buttons but we would prefer a DIY approach using Raspberry Pi GPIO or a similar device.

Here is one that we made earlier...

