

最基本的 Ryu 程式了。目前沒有控管任何事件，像是一個空殼

```
pinyu@pinyu-virtual-machine:~/lab8$ ryu-manager l2.py
loading app l2.py
instantiating app l2.py of L2Switch
```

Hub 設備的方式

```
pinyu@pinyu-virtual-machine:~/lab8$ ryu-manager l2.py
loading app l2.py
Traceback (most recent call last):
  File "/usr/local/bin/ryu-manager", line 11, in <module>
    load_entry_point('ryu==4.34', 'console_scripts', 'ryu-manager')()
  File "/usr/local/lib/python2.7/dist-packages/ryu/cmd/manager.py", line 98, in main
    app_mgr.load_apps(app_lists)
  File "/usr/local/lib/python2.7/dist-packages/ryu/base/app_manager.py", line 415,
in load_apps
    cls = self.load_app(app_cls_name)
  File "/usr/local/lib/python2.7/dist-packages/ryu/base/app_manager.py", line 392,
in load_app
    mod = utils.import_module(name)
  File "/usr/local/lib/python2.7/dist-packages/ryu/utils.py", line 99, in import_module
    return _import_module_file(modname)
  File "/usr/local/lib/python2.7/dist-packages/ryu/utils.py", line 88, in _import_module_file
    return load_source(modname, abspath)
  File "/usr/local/lib/python2.7/dist-packages/ryu/utils.py", line 39, in load_source
    return imp.load_source(name, pathname)
  File "/home/pinyu/lab8/l2.py", line 3, in <module>
    class L2Switch(app_manager.RyuApp):
  File "/home/pinyu/lab8/l2.py", line 4, in L2Switch
    OFP_VERSIONS = [ofproto_v1_0.OFP_VERSION]
NameError: name 'ofproto_v1_0' is not defined
pinyu@pinyu-virtual-machine:~/lab8$ vi l2.py
pinyu@pinyu-virtual-machine:~/lab8$ vi l2.py
pinyu@pinyu-virtual-machine:~/lab8$ vi l2.py
pinyu@pinyu-virtual-machine:~/lab8$ ryu-manager l2.py
loading app l2.py
loading app ryu.controller.ofp_handler
instantiating app l2.py of L2Switch
instantiating app ryu.controller.ofp_handler of OFPHandler
```

[完整程式碼]

```
from ryu.base import app_manager
from ryu.controller import ofp_event
from ryu.controller.handler import MAIN_DISPATCHER, set_ev_cls
from ryu.ofproto import ofproto_v1_0

class L2Switch(app_manager.RyuApp):
    OFP_VERSIONS = [ofproto_v1_0.OFP_VERSION]

    def __init__(self, *args, **kwargs):
        super(L2Switch, self).__init__(*args, **kwargs)

    @set_ev_cls(ofp_event.EventOFPacketIn, MAIN_DISPATCHER)
    def packet_in_handler(self, ev):
```

```
msg = ev.msg
dp = msg.datapath # Switch
ofp = dp.ofproto
ofp_parser = dp.ofproto_parser

actions = [ofp_parser.OFPActionOutput(ofp.OFPP_FLOOD)]
out =
ofp_parser.OFPPacketOut(datapath=dp,buffer_id=msg.buffer_id,in_port=m
sg.in_port,actions=actions)
dp.send_msg(out)
```