NAME
ovn-controller – Open Virtual Network local controller

SYNOPSIS
ovn-controller [options] [ovs-database]

DESCRIPTION
ovn-controller is the local controller daemon for OVN, the Open Virtual Network. It connects up to the OVN Southbound database (see ovn-sb(5)) over the OVSDB protocol, and down to the Open vSwitch database (see ovn-vswitchd.conf.db(5)) over the OVSDB protocol and to ovn-vswitchd(8) via OpenFlow. Each hypervisor and software gateway in an OVN deployment runs its own independent copy of ovn-controller; thus, ovn-controller’s downward connections are machine-local and do not run over a physical network.

CONFIGURATION
ovn-controller retrieves most of its configuration information from the local Open vSwitch’s ovsdb-server instance. The default location is db.sock in the local Open vSwitch’s "run" directory. It may be overridden by specifying the ovs-database argument in one of the following forms:

- **ssl**:ip:port
  The specified SSL port on the host at the given ip, which must be expressed as an IP address (not a DNS name) in IPv4 or IPv6 address format. If ip is an IPv6 address, then wrap ip with square brackets, e.g.: ssl::[:1]:6640. The --private-key, --certificate and either of --ca-cert or --bootstrap-ca-cert options are mandatory when this form is used.

- **tcp**:ip:port
  Connect to the given TCP port on ip, where ip can be IPv4 or IPv6 address. If ip is an IPv6 address, then wrap ip with square brackets, e.g.: tcp::[:1]:6640.

- **unix**:file
  On POSIX, connect to the Unix domain server socket named file.
  On Windows, connect to a localhost TCP port whose value is written in file.

ovn-controller assumes it gets configuration information from the following keys in the Open_vSwitch table of the local OVS instance:

- **external_ids:system-id**
  The chassis name to use in the Chassis table.

- **external_ids:ovn-bridge**
  The integration bridge to which logical ports are attached. The default is br-int. If this bridge does not exist when ovn-controller starts, it will be created automatically with the default configuration suggested in ovn-architecture(7).

- **external_ids:ovn-remote**
  The OVN database that this system should connect to for its configuration.
  Currently, ovn-controller does not support changing this setting mid-run. If the value needs to change, the daemon must be restarted. (This behavior should be improved.)

- **external_ids:ovn-encap-type**
  The encapsulation type that a chassis should use to connect to this node. Multiple encapsulation types may be specified with a comma-separated list. Each listed encapsulation type will be paired with ovn-encap-ip.
  Supported tunnel types for connecting hypervisors are geneve and stt. Gateways may use geneve, vxlan, or stt.
  Due to the limited amount of metadata in vxlan, the capabilities and performance of connected gateways will be reduced versus other tunnel formats.
external_ids:ovn-encap-ip
The IP address that a chassis should use to connect to this node using encapsulation types specified by external_ids:ovn-encap-type.

external_ids:ovn-bridge-mappings
A list of key-value pairs that map a physical network name to a local ovs bridge that provides connectivity to that network. An example value mapping two physical network names to two ovs bridges would be: physnet1:br-eth0,physnet2:br-eth1.

OPEN VSWITCH DATABASE USAGE
ovn-controller uses a number of external-ids keys in the Open vSwitch database to keep track of ports and interfaces. For proper operation, users should not change or clear these keys:

external_ids:ovn-chassis-id in the Port table
The presence of this key identifies a tunnel port within the integration bridge as one created by ovn-controller to reach a remote chassis. Its value is the chassis ID of the remote chassis.

external-ids:ovn-localnet-port in the Port table
The presence of this key identifies a patch port as one created by ovn-controller to connect the integration bridge and another bridge to implement a localnet logical port. Its value is the name of the physical network that the port implements. See external_ids:ovn-bridge-mappings, above, for more information.

Each localnet logical port is implemented as a pair of patch ports, one in the integration bridge, one in a different bridge, with the same external-ids:ovn-localnet-port value.

external-ids:ovn-logical-patch-port in the Port table
This key identifies a patch port as one created by ovn-controller to implement an OVN logical patch port within the integration bridge. Its value is the name of the OVN logical patch port that it implements.

RUNTIME MANAGEMENT COMMANDS
ovs-appctl can send commands to a running ovn-controller process. The currently supported commands are described below.

exit
Causes ovn-controller to gracefully terminate.

ct-zone-list
Lists each local logical port and its connection tracking zone.