Cluster

Description

Cluster is designed for synchronizing of the settings between ICS servers. You can change settings from every server which are in the cluster.

Cluster settings can be classified in two types: local and general. Local settings are duplicated for all servers in the cluster, but are applied and displayed only on the server where were made. General settings are duplicated and applied for all servers in the cluster.

Attention: providers and local networks settings are local for every server, that is why for every network in the cluster must be named differently.

Setup

Before the setup, all servers should be combined in the one L2-network. It is recommended to use isolated network interface, because in this network service cluster data will be transmitted.

Cluster activation can be performed from the ICS recovery shell: Server management – Cluster.

First, turn on the clustering module on each server (“Turn on clustering”). Then choose main server, to which all others will connect. In this case “main server” doesn’t mean that he has higher priority. All servers in cluster are equal, it is only for making easier the initial setup. Connect to the cluster (“Connect to cluster”) on all servers (except “main”).

ICS will ask you whether you want to create a settings backup.

Then it will ask you for an IP-address of any server of cluster. Enter the address of your «main» server.

After connection each server will obtain actual list of cluster nodes and synchronize database.

Attention: when server will be connecting to cluster, all its settings will be erased and replaced to general cluster settings. That is why we recommend to perform cluster setup first, and only then to make changes to all the other settings.

Attention: after creation of a cluster during network setup you cannot change interface address which is used for cluster connection.

You can check cluster status in web-interface: Network – Cluster – Nodes.

In this list you can see the information about all nodes in the cluster, where “IP” is an ip-address of

the node, and “Nuid” is the unique id of the node.

Note: database version must be equal for all nodes.

In case of desync you should initiate forced synchronization: Network – Cluster – Synchronize. Then all nodes will be synchronized with the node which has the newest database version.

Note: If you unwrap backup on one server, then the database version on this server will change to the old one and cluster synchronization will break and force synchronization will be needed. After that all data from backup will be erased.

CARP setup

CARP (Common Address Redundancy Protocol) is a network protocol, which allows multiple hosts on the same local area network to share a set of IP addresses.

Using CARP, servers are combined in virtual group (VHID), which obtains virtual IP-address (Virtual IP), and CARP protocol apply a virtual mac-address to it. Virtual IP-address should be specified as default gateway on LAN workstations. Within the group one of servers become “the main one” (MASTER), and all others are marked as “backup” (BACKUP). Each server can be in several groups simultaneously. In case that the master server will fail, the new master will be chosen from the backup servers, it would accept virtual IP-address and will proceed to answer to client’s requests. CARP’s design requires all members of a virtual group to be physically placed in one subnetwork.

For activate CARP in your local network, you can mark the checkbox “Use CARP” in LAN settings in the “Providers and networks” module.

Virtual IP is an IP-адрес of the virtual group. The address must be unique and must belong to the same network, that is assigned to the LAN.

VHID (Virtual Host ID) is an id you use for combine several servers in one virtual group (pick any number from 1 to 254). Within one server on different interfaces different VHIDs must be assigned for prevention of mac-address duplicating.

Virtual mac-address is automatically formed and is the variation of 00:00:5e:00:XX, where XX is the VHID, written in hexadecimal (for example, if VHID=1 then mac-address will be 00:00:5e:00:01, if VHID=254 then mac-address will be 00:00:5e:00:FE).

Password is used for server authentication in the virtual group. On every server the same password should be set up.

Advertisement base and Advertisement skew are parameters that help determine, how often does server send CARP-messages. Advertisement base is measured in seconds and defines interval between advertisements of CARP-messages. Advertisement skew is measured in 1/256 of a second, this interval is added to the common interval of advertisements and is used for make distribution of CARP-messages a little bit slower than on the other servers.

Using this parameters, you can define which server will be the master in a virtual group. For example:

there are two servers – A (VHID 1) and B (VHID 1). We need server A to be the master by default. Then we have to make the following settings:

server A: Advertisement base = 1 Advertisement skew = 100 server B: Advertisement base = 1 Advertisement skew = 200

Server A will send CARP-messages faster, so it will become a master.