

The Z5 client requires multiple steps:

Step 1:

DNS resolution. The DNS name for "zdial.champvrs.com" must be resolved, as well as "lb.mcs.csdvrs.com", "mcs1.mcs.csdvrs.com", "mcs2.mcs.csdvrs.com", and "mcs.csdvrs.com".

This requires UDP & TCP destination port 53 [DNS] to be allowed through the customer's DNS servers and/or firewall to reach the ZVRS nameservers:

208.94.16.61/208.94.16.62/208.94.16.90
208.95.32.61/208.95.32.62/208.95.32.90

UDP and TCP source ports are ephemeral, and dependent on the operating system upon which Z5 is running.

Step 2:

The Z5 clients require an initial authentication step to allow the Z5 client to select one of the phone numbers to use if a customer has more than one Z5 in their customer profile. This requires HTTPS access to the ZDial server.

This requires TCP destination port 443 [HTTPS] to 208.94.16.114/208.95.32.114

TCP source ports are ephemeral, and dependent on the operating system upon which Z5 is running.

Step 3:

After the above step, everything is based on Mirial's SDK technology. All address book and SIP communication occur through the Mirial Carrier Server (MCS).

This requires TCP destination port 443 [HTTPS] to 208.94.16.21/208.95.32.21

The MCS server is queried using HTTPS to obtain a license for the Z5 SIP stack to function, and to pull down the address-book of the phone.

TCP source ports are ephemeral, and dependent on the operating system upon which Z5 is running.

Step 4:

The Z5 authenticates to the MCS server using SIP. This is a TCP connection to port 5060 on the MCS server.

This requires TCP destination port 5060 [SIP] to 208.94.16.21/208.95.32.21

TCP source ports are ephemeral, and dependent on the operating system upon which Z5 is running.

Step 5:

During a phone-call, UDP ports for RTP are opened to the MCS server.

This requires UDP destination ports 10000-65535

UDP source ports in use are client configurable, and group configurable on the MCS. The exact port range varies.

Here is a more formalized list of ports and IP addresses that need to be permitted:

Naming

outbound 53 udp 208.94.16.61
outbound 53 udp 208.94.16.62
outbound 53 udp 208.94.16.90
outbound 53 udp 208.95.32.61
outbound 53 udp 208.95.32.62
outbound 53 udp 208.95.32.90

outbound 53 tcp 208.94.16.61
outbound 53 tcp 208.94.16.62
outbound 53 tcp 208.94.16.90
outbound 53 tcp 208.95.32.61
outbound 53 tcp 208.95.32.62
outbound 53 tcp 208.95.32.90

ZDial

outbound 443 tcp 208.94.16.114
outbound 443 tcp 208.95.32.114

MCS license and address-book

outbound 443 tcp 208.94.16.21
outbound 443 tcp 208.95.32.21

SIP

outbound 5060 tcp 208.94.16.21
outbound 5060 tcp 208.95.32.21

RTP (all media is proxied through the MCS)

outbound 10000-65535 udp 208.94.16.21
outbound 10000-65535 udp 208.95.32.21