CMVC: How to cope with dynamic IP addresses

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ABSTRACT

This technical report describes two alternatives on how to cope with dynamic IP addresses when using CMVC clients.

ITIRC KEYWORDS

CMVC

dynamic IP addresses

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INTRODUCTION

This technical report describes two alternatives on how to cope with dynamic IP addresses when using the CMVC clients:

What the problem is

What are some alternatives

How to get the tools for the alternatives

AUTHORS: QUESTIONS TO BE ANSWERED, THINGS STILL TO DO:

Does Sam's tool work also for TeamConnection?

If so, then we should change the title of the TR to include TC.

If so, then David's tool should have remarks saying what to do for using TC (such as "teamcd report" instead of "Report").

If so, then finally, we may need to use another title: "CMVC and TeamConnection: How to cope with dynamic IP addresses" and add a section about the authentication features in TC to avoid this problem.

DESCRIPTION OF THE PROBLEM WHEN USING DYNAMIC IP ADDRESSES WITH CMVC

The method used by CMVC to authenticate users is by means of a unique set of the following three values, which is called an entry in the hostlist.

The CMVC user id, such as "build"

The system login id, such as "rivera"

The host name, such as "oem-ppc1.raleigh.ibm.com"

The specific host name must have a static IP address in the TCP/IP network, such as "9.37.199.97".

The traditional way to add a hostlist entry is by specifying the hostname, however, if you specify an IP address, then the CMVC server will resolve the IP address to a hostname and puts the hostname in the database.

However, in some organizations, the IP addresses are not statically assigned to host names; instead, when you access the network, you are given an IP address that is dynamically generated which last only the duration of your session, and there are no host names assigned to this temporary IP address.

The problem when using CMVC in a network that uses IP address that are dynamicaly assigned is that due to the lack of a host name, the user cannot interact with CMVC because the user cannot provide all the values needed in the authentication method of CMVC.

SOME SOLUTIONS TO THIS PROBLEM

The following alternatives rely that at least one host in the network has a static IP address and a host name associated with it. The CMVC client and the tools described here are installed in that host, and that host will interact directly with CMVC.

Using a socket router see “Using a socket router (srouter)” on page 5.

Using see “Adding dynamically-generated hostnames to CMVC hostlist” on page 7.

USING A SOCKET ROUTER (SROUTER)

This alternative uses a simple socket rerouter (called srouter) which routes all requests from the CMVC clients that use a dynamically assigned IP address to a host that has both the CMVC client and a static IP address.

The application is fully multi-threaded and the overhead appears to be negligible.

So far only for OS/2

So far, the srouter code is only available for OS/2.

SETUP OF SOCKET ROUTER (SROUTER)

1. Get the srouter.exe code, see “How to obtain the tools” on page 9 for details.
2. Things to do in the host that has a static IP address:
   a. Place the srouter.exe code in this host.
   b. Enter the following command:
      start srouter -password anystring
3. Things to do in the host that has an IP address that is assigned dynamically:
   a. Place the srouter.exe code in this host.
   b. Change the CMVC family to be:
      cmvcFamilyName@hostWithStaticIPaddress
      For example, if the real CMVC family is located in "octo@carcps21.raleigh.ibm.com@1300" and if srouter is running in the host that has a static IP address "tcos2.raleigh.ibm.com", then the CMVC family that you have to use in this host (with the IP address that is assigned dynamically) will be:
      octo@tcos2.raleigh.ibm.com
   c. Ensure that your user name matches the one you use at work.

      system login or USER? or CMVC_BECOME?

   d. Enter the following command before you invoke the CMVC client:
      srouter -logon -password anystring

The password will default to the value of TELNET.PASSWORD.ID or PASSWD.

Once you have been validated, this host can be used until either you invoke:

```
srouter  -logoff
srouter  -logon
```

ADDING DYNAMICALLY-GENERATED HOSTNAMES TO CMVC HOSTLIST

One solution to the problem of dynamic IP addressing is to create a host list entry for the newly acquired IP address. The following utilities can be used to automate this process.

addhostl

This utility simply figures out the new IP hostname and passes it along to "sethostl" (see next item). For systems which do not create a hostname as well as a dynamically allocated IP address, "addhostl" could easily be modified to pass the IP address instead of the hostname.

sethostl This utility performs two functions:

1. It removes old addresses that were previously added by this utility. This is necessary to minimize the number of unused hostlist entries currently in the CMVC or TeamConnection database.

   For this step to be possible, the dynamic hostnames must exhibit some pattern that distinguishes them from permanent hostnames. Once this pattern is identified, the function "matchDynamicAddress" should be modified to return 1 whenever it matches this pattern.

2. It adds the hostname passed to it to the CMVC or TeamConnection database.

SETUP OF THE UTILITIES

To set up the utilities, you must have access to a machine which has a permanent hostlist entry in CMVC (TeamConnection).

Also, you must get the tools, see “How to obtain the tools” on page 9 for details.

Configuration of sethostl

This is where sethostl will be placed, giving it the authority to make the change to the database. The machine must have an rexec daemon running for which you have a username/password combination.

You should modify two things in sethostl for your system:

The variable cmvcUserID should be set to your user ID on CMVC.

The procedure matchDynamicAddress must be modified to match the pattern of your dynamic addresses but not those permanent hostnames which might have hostlist entries in CMVC (TC). The procedure by default matches the TCPDial-style dynamic hostnames.

Configuration of addhostl

Place addhostl on the machine which gets its hostname dynamically.

Then you should do the following:

Modify the variable permHost to be the name of the machine where you placed sethostl.

To allow rexec to pass the command to sethostl without intervention, the username/password combination must be known to addhostl. This can be done in one of two ways:

- The username and password can be specified with the command line options -l and -p respectively.
- The NETRC file can have an entry for the permanent machine. See the TCP/IP documentation for how to set up NETRC.

HOW TO OBTAIN THE TOOLS

The tools described in this technical report can be downloaded as follows:

From the IBM intranet (only for IBM employees).

From the Internet (open to everyone).

IBM INTRANET

Web Home Page

You can access the CMVC Service/Development Home Page at:
http://keithp.raleigh.ibm.com/~cmvcsupt

From the index at the top of the page, select the section "Dynamic IP Addresses tools".

FTP

You can download the code from our internal FTP site, by doing:

1. ftp keithp.raleigh.ibm.com
2. login as 'anonymous' and for password give your email address.
3. cd pub/cmvc/tr-tools
4. binary
5. get <filename>
6. quit

For some tools, you may need to select the sub-directory inside tr-tools that corresponds to the desired operating system.

INTERNET

Web Home Page

Not available.

FTP

You can download the code from our external FTP site, by doing:

1. ftp ftp.software.ibm.com
2. login as 'anonymous' and for password give your email address.
3. cd ps/products/cmvc/tr-tools
4. binary
5. get <filename>
6. quit

For some tools, you may need to select the sub-directory inside tr-tools that corresponds to the desired operating system.

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