

# Configuring and Adding a MISER Workstation

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This is a procedure to add an Alpha workstation to a MISER system. This workstation is to serve purely as an operator station, not to independently talk to RTUs, run printers, etc.

Here is a summary of the steps to add a workstation.

- I. Tell the existing system about the new workstation:
  - A. **Add a new DECnet address and alias to the NCP (DECnet) database on each existing host and workstation.**
  - B. **Add a new TCP/IP address and alias to the UCX (TCP/IP) database on each existing host and workstation.**
  - C. **Add entries to CONFIG.DAT to tell “ “ “ “ “ about the new node’s role in the MISER system. Reboot the existing system to implement the CONFIG.DAT change.**
- II. Add the MISER startup files to each existing host and workstation for the new workstation:
  - A. **SITE\$COM:CONFIGURE\_<ws>.COM**
  - B. **SITE\$DATA:START\_<ws>.DAT**
- III. Make an image copy of an existing workstation’s system disk, to the disk intended for the new workstation.
- IV. Install the disk in the new workstation, then change the identity and addresses of the new workstation.
- V. Connect the new workstation to the MISER network, and fire it up!

## Example: Adding workstation UNJVS9 to the UNJ system.

### I. Tell the existing system about the new workstation.

#### A. Add a new DECnet address and alias to the NCP (DECnet) database on each existing host and workstation.

1. Select a DECnet address: In a DECterm on an existing workstation, enter:

```
UNJVS8$ TOOLS
UNJVS8$ NCP SHOW KNOWN NODES

Executor node = 1.847 (UNJVS8)

State                = on
Identification       = DECnet for OpenVMS AXP V6.2
Active links         = 2

Node   State Active Delay Circuit  Next node           Links
-----
1.840 (UNJMVA)                EWA-0              1.6
...
1.856 (UNJSRD)                EWA-0              1.6
```

We will use DECnet address 1.857.

2. Add the new node to the NCP (DECnet) databases on the existing nodes: In a DECterm enter:

```
UNJVS8$ TOOLS
UNJVS8$ NET_CMD NCP DEFINE NODE 1.857 NAME UNJVS9
UNJVS8$ NET_CMD NCP SET NODE 1.857 NAME UNJVS9
```

#### B. Add a new TCP/IP address and alias to the UCX (TCP/IP) database on each existing host and workstation.

1. Select a TCP/IP address.

```
UNJVS8$ UCX SHOW HOST

LOCAL database

Host address  Host name
-----
127.0.0.1    LOCALHOST, localhost
192.0.12.1   unjmva, UNJMVA, unjmva.unj.gov, UNJMVA.UNJ.GOV
...
192.0.12.25  unjvs8, UNJVS8, unjvs8.unj.gov, UNJVS8.UNJ.GOV
```

We will use TCP/IP address 192.0.12.26.

2. Add the new node to the TCP/IP database on each existing node.

- a. Execute a command to add to the current databases. Check the results.

```

UNJVS8$ NET_CMD UCX SET HOST "unjvs9"-
_UNJVS8$/ADDRESS=192.0.12.26-
_UNJVS8$/ALIAS="UNJVS9, unjvs9.unj.gov, UNJVS9.UNJ.GOV"
UNJVS8$
UNJVS8$ NET_CMD UCX SHOW HOST UNJVS9
*****
Node           -      UNJMVA           *
*****
192.0.12.26   unjvs9, UNJVS9, unjvs9.unj.gov, UNJVS9.UNJ.GOV
...

```

- b. In order to make the change survive the next running of HSQPARAMS on each node, edit the file SITE\$DATA:UCX\_HOSTS\_UNJ.DAT.

```

UNJVS8$ SET DEF SITE$DATA:
UNJVS8$ EDIT UCX_HOSTS_UNJ.DAT

```

The original version of this file looks like the following:

```

! (UNJ system) UCX_HOSTS.DAT file
!      Workstations
UNJMVA=0.12.1   ! for IP address for node UNJMVA
UNJMV B=0.12.2 ! for IP address for node UNJMV B
...
UNJR010=0.12.60      ! for IP address for node UNJR10
...

```

Add this entry:

```

UNJVS9=0.12.26 ! Workstation UNJVS9

```

Then do Ctrl-Z to write the new file and exit the editor.

- c. Distribute the new file to all the existing workstations.

```

UNJVS8$ NET_DIST UCX_HOSTS_UNJ.DAT

```

**C. Add entries to CONFIG.DAT to tell each existing host and workstation about the new node's role in the MISER system. Reboot the existing system to implement the CONFIG.DAT change.**

1. Modify the setup file CONFIG.DAT. The new workstation will just be an operator station, so it will maintain Points, Graphics and Alarm databases in its own memory and on disk. If it were a more complicated workstation, it could also maintain the NCC database in order to talk to RTUs, the CALC and ALG databases to run VCL locally, and Alarm printer or Spool printer databases to run its own local MISER printers. As it is, though, we are adding only four entries to CONFIG.DAT.

```
UNJVS8$ SET DEF SITE$DATA:
UNJVS8$ EDIT CONFIG.DAT
```

...and make the following entries.

- a. Entry in the \$NETWORK section

```
! Workstation node definition
!<node type> <node label> <Apn:> <node id>
!
!           < 12 chars >
!
!...
STATION,      Wrkstatn #9,      0,      UNJVS9
```

- b. Entries in the \$DATABASE section—these are the databases that will be maintained “live” on UNJVS9.

```
!
! data base entries to be included in VS9
!
UNJVS9, POINTS, ALL
UNJVS9, VIEW, ALL
UNJVS9, ALARM, ALL
```

When these entries are completed, do Ctrl-Z to write changes.

2. Distribute the new CONFIG.DAT.

Enter in a DECterm:

```
UNJVS8$ NET_DIST SITE$DATA:CONFIG.DAT
```

3. Reboot all the MISER host and workstation nodes, making sure MISER is down on ALL of them at once.
  - a. Stop the MISER software on all nodes.

```
UNJVS8$ NET_CMD STOP_MISER
```

- b. Reboot all the hosts and workstations, starting with UNJMVA.

4. Once the system is fully restarted, check for the new workstation in USR on each node. USR should now include the entry:

```
...
Node-UNJVS9      Wrkstatn #9      Down
...
```

II. Add MISER startup files to each existing host and workstation for the new workstation: **SITE\$COM:CONFIGURE <ws>.COM** and **SITE\$DATA:START <ws>.DAT**.

For this example, UNJVS9 is going to have exactly the same functionality as UNJVS8, so we can copy UNJVS8's startup files.

- A. **SITE\$COM:CONFIGURE\_UNJVS9.COM will set up MISER logical names on the new workstation. If this were a more complicated workstation, this file might also set up a terminal server, RTUs, and printers or other peripherals.**

```
UNJVS8$ SET DEF SITE$COM:
UNJVS8$ COPY/LOG
  _From: CONFIGURE_UNJVS8.COM
  _To: CONFIGURE_UNJVS9.COM
%COPY-S-COPIED, $SITE:[COMMAND]CONFIGURE_UNJVS8.COM;1
  copied to $SITE:[COMMAND]CONFIGURE_UNJVS9.COM;1
UNJVS8$
UNJVS8$ NET_DIST CONFIGURE_UNJVS9.COM
...
```

- B. **SITE\$DATA:START\_UNJVS9.DAT will instruct MISER on the new node which of the MISER processes to start, at what priority to run them, startup delay for each, etc.**

```
UNJVS8$ SET DEF SITE$DATA:
UNJVS8$ COPY/LOG START_UNJVS8.DAT START_UNJVS9.DAT
%COPY-S-COPIED, $SITE:[DATA]START_UNJVS8.DAT;1 copied
  to $SITE:[DATA]START_UNJVS9.DAT;1
UNJVS8$
UNJVS8$ NET_DIST START_UNJVS9.DAT
...
```

III. Make an image copy of an existing workstation's system disk, to the disk intended for the new workstation.

Please see the document: Making a Disk to Disk Image Backup on an Alpha.

IV. Install the disk in the new workstation, then change the identity and addresses of the new workstation.

- A. Boot up the new workstation WITHOUT connecting it to the network. You will need an Ethernet terminator, because some models of Alphastation cannot complete the following operations with the Ethernet port open. A 10BT Ethernet terminator has pins 1 and 3 connected, and pins 2 and 6 connected.
- B. Run HSQPARAMS to change the node name, DECnet address and IP address of the new workstation. Remember to stop MISER first.

```
UNJVS8$ TOOLS
```

```

UNJVS8$ STOP_MISER
MISER successfully stopped with WATCH.
Removing W_DOG
UNJVS8$
UNJVS8$ HSQPARAMS

```

**This command file is used to set up a new system. It establishes various quotas, sets up needed accounts, etc. which are required for the proper operation of MISERnet. The system will need to be re-booted after it is all done in order for the changes to take effect.**

```

1) Exit
2) Update only - SYSGEN, UAF changes
3) Update UAF
4) Change node name also

Enter your choice [1] 4

<Some messages>

Do you want to delete all current nodes in the NCP database
and start over ? [N]

What do you want your DECnet nodename to be?           [UNJVS8]: UNJVS9
What do you want your DECnet address to be?           [1.849]: 1.857
What do you want to operate as a router?              [NO (nonrouting)]:

<More messages>

Do you want to reconfigure DECnet? [Y]

<Messages>

%AUTOGEN-W-INCFILES, Problems were detected while processing the include file.

Review the error messages in SYS$SYSTEM:AGEN$PARAMS.REPORT immediately.
<Don't worry about this one.>

<Messages about how you may want to purge various files and review the
information in various other files. Don't bother.>

Remember to stop MISER
Do you want to configure TCPIP ? [N] y

Do you want to delete TCP/IP database and start over? [N] Y

                        TCP/IP Network Configuration Procedure

                This procedure helps you define the parameters required
                to run DIGITAL TCP/IP Services for OpenVMS on this system.

<Some rather alarming messages about Internet devices still active on your
system and how you have to stop associated processes. Don't worry, we will be
rebooting anyway.>

                        Creating SYS$COMMON:[SYSEXE]UCX$PROXY.DAT

Do you want to grant world read access to non-privileged users? [N] y

```

```

SYS$COMMON:[SYSEXE]UCX$PROXY.DAT Protection set to W:RE
Creating SYS$COMMON:[SYSEXE]UCX$CONFIGURATION.DAT

INTERMACE Configuration

    The Ethernet device(s) on your system are: _EWA0: Not Configured

Start of configuration questions for Internet interface WE0.
WE0 is the Ethernet device _EWA0:
WE0 has not been configured

* Do you want to reconfigure WE0 [YES] ?
Enter unqualified host name:    unjvs9
Enter Internet address: 192.0.12.26
Enter Internet network mask for unjvs9 [255.255.255.0]:
Enter broadcast mask for unjvs9 [192.0.12.255]:

    The following parameters will be used to define the
    Internet interface WE0:

                Host name:            unjvs9
                Internet address:    192.0.12.26
                Network mask:        255.255.255.0
                Broadcast mask:      192.0.12.255

* Is the above correct [YES] ?

    End of configuration questions for Internet interface WE0

<Some messages about what it is doing>

DOMAIN Configuration

Enter Internet domain: unj.gov

    Local host "unjvs9" address 192.0.12.26
    of domain "unj.gov"

Setting host "unjmva" with address 192.0.12.1
Setting host "unjmva" with address 192.0.12.2
...
Setting host "unjvs9" with address 192.0.12.26
...
Setting host "unjrl10" with address 192.0.12.160

UNJVS8$
UNJVS8$ run mnet$exe:ucxconfig
Replacing unjvs8 with unjvs9
Replacing UNJVS8 with UNJVS9
UNJVS8$

```

C. Reboot the computer.

```

UNJVS8$ TOOLS
UNJVS8$ SHUTDOWN
<Press Return 5 times, then respond Y to the prompt "Automatic Restart?">

```

...Now the node is officially UNJVS9.

- D. On some MISER 6.06 systems, it is now necessary to redo the setup of the TCP/IP interface.

```

UNJVS9$ @SYS$MANAGER:UCX$CONFIG
          TCP/IP Network Configuration Procedure

<Introductory messages>

          DIGITAL TCP/IP Services for OpenVMS Configuration Menu

          Configuration options:

              1 - Core environment
              2 - Client components
              3 - Server components
              4 - Optional components

              5 - Shutdown DIGITAL TCP/IP Services for OpenVMS
              6 - Startup DIGITAL TCP/IP Services for OpenVMS
              7 - Run tests

              A - Configure options 1 - 3
              [E] - Exit configuration procedure

Enter configuration option: 1

          DIGITAL TCP/IP Services for OpenVMS Core Environment Configuration Menu

          Configuration options:

              1 - BIND Resolver
              2 - Domain
              3 - Routing
              4 - Interfaces
              5 - Time Zone

              A - Configure options 1 - 5
              [E] - Exit menu

Enter configuration option: 4

INTERFACE Configuration

          The Ethernet device(s) on your system are: _EWA0:

          Start of configuration questions for Internet interface WE0.
          WE0 is the Ethernet device _EWA0:

Interface: WE0
IP_Addr: 192.0.12.25  NETWRK: 255.255.255.0  BRDCST: 192.0.12.255
C_Addr:                C_NETWRK:                C_BRDCST:

          Flags:
          Receive buffer:                0

* Do you want to reconfigure WE0 [YES] ?
Enter unqualified host name [unjvs8]: unjvs9

          Host unjvs9 exists in the database.

Enter Internet address [192.0.12.26] :

```

```
Enter Internet network mask for unjvs9 [255.255.255.0]:
Enter broadcast mask for unjvs9 [192.0.12.255]:

    The following parameters will be used to define the
    Internet interface WE0:

        Host name:          unjvs9.unj.gov
        Internet address:   192.0.12.26
        Network mask:       255.255.255.0
        Broadcast mask:     192.0.12.255

* Is the above correct [YES] ?

    End of configuration questions for Internet interface WE0

    DIGITAL TCP/IP Services for OpenVMS Core Environment Configuration Menu

    Configuration options:

        1 - BIND Resolver
        2 - Domain
        3 - Routing
        4 - Interfaces
        5 - Time Zone

        A - Configure options 1 - 5
        [E] - Exit menu

Enter configuration option:

    DIGITAL TCP/IP Services for OpenVMS Configuration Menu

    Configuration options:

        1 - Core environment
        2 - Client components
        3 - Server components
        4 - Optional components

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        6 - Startup DIGITAL TCP/IP Services for OpenVMS
        7 - Run tests

        A - Configure options 1 - 3
        [E] - Exit configuration procedure

Enter configuration option:

UNJVS9$
```

E. Reboot the computer again.

F. Check the computer:

1. The DECterm prompt should say UNJVS9\$.
2. WATCH SHOW ALL should show all MISER processes running (or at least starting).

3. SET HOST UNJVS9 should result in a login prompt, and you should be able to log in. Now log back out.
4. UCX SHOW INTERFACE should show WE0 as 192.0.12.26
5. TELNET UNJVS9 should result in a login prompt, and you should be able to log in. Now log back out.
6. USR should show UNJVS9 UP, and everything else DOWN or Unavailable, since UNJVS9 is still isolated on the network.
7. XVIEW should work for SYSTEM and for non-privileged users. MISER commands should work.

V. Connect the new workstation to the MISER network, and fire it up!

A. Connect the Ethernet.

B. Enter the commands

```
UNJVS9$ TOOLS
UNJVS9$ NETMON
```

The new workstation should see the rest of the system on the Network Monitor (Press Ctrl-Z to escape the monitor). Once all the MISER processes are running, UNJVS9 should function fully as a workstation.

C. Finito!