DECservers - demonstration and update

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Timetable

09:30 - 10:00	**Registration**
10:00	**Start**
11:00 - 11:15	**Break**
12:30 - 13:30	**Lunch**
14:30 - 14:45	**Break**
16:00ish	**Finish**

Note: alarm procedures, toilets, coffee, food etc.

Agenda

- Digital Networks products update
- Typical uses of terminal servers
- How terminal servers work
- Terminal server configuration and management
- VMS load host software
- PC load host software
- Discussion

Seminar style

We won't necessarily be able to answer all of your questions, so please be prepared to contribute and share your knowledge.

Digital Networks products update

- **DECserver current product range (900TM, 90M, 716/732 etc.)**
- **Management software (DNAS, Access Server Manager / Loader and clearVISN Web Suite)**

- **DEChub 90 / MultiSwitch 900 series products**

- **Stackable products**
- **MultiLayer products**

Demonstration hardware

- **MultiChassis 900:**
  - **DECrepeater 90TS**
  - **DECserver 900TM (with flash card)**
  - **DECserver 90TL**
  - **DECserver 90M (with flash memory)**
- **DECserver 732 (stand-alone unit)**

- **OpenVMS Alpha V7.3 load host**
- **Windows 2000 load host**

Why DECservers?

- **Serial devices can be widely distributed and accessed via network (LAN or [with care] WAN)**
- **Offloads interrupt handling from systems**
- **Difficult to incorporate many serial I/O lines into systems**
- **May still need direct I/O for real-time systems**

DECserver basics

- **Originally designed for LAN use.**
- **Don't need to have TCP/IP protocols. LAT, MOP & Remote Console traditionally provides all you need to connect serial devices to VMS systems.**
- **Extra functionality is provided by TCP/IP protocol family (BOOTP, TFTP, SLIP, PPP etc.). This allows the use of DECservers in a predominantly IP environment.**

Typical uses for DECservers

- **Providing terminal access to systems**
- **Connecting serial printers and other devices**
- **Connecting modems (e.g.: DSNlink, PPP)**
- **Connecting console ports (e.g.: GS series machines bundled with ConsoleWorks)**

How DECservers work

- **Protocols (LAT, TCP/IP etc. – not DECnet)**
- **Firmware images and FlashRAM**
- **Configuration data and NVRAM**
- **Load hosts**

Management of DECservers

- **Server and physical port configuration**
- **Firmware load mechanisms (load hosts)**
- **Firmware update process (FlashRAM)**
- **‘Host’ system and virtual port configuration**

Installation and Configuration

- **Hardware (DECserver and network)**
- **DNAS software for VMS / UNIX / Wintel**
- **clearVISN Access Server Manager / Loader for Wintel systems**
- **TSM (now freeware) for VMS systems**

DECserver initial setup

- **Need MAC address. Write address of DECserver 900TM on front of module!**
- **Configure load host with DECserver information**
- **Port 1 is ‘console port’, so look at messages during power-up and boot sequence.**
- **Set prompt & server name (privileged operations)**
- **Set server LAT announcement service (priv.)**

VMS load host (1)

- **DECnet IV – need pseudo node entry and service enabled on circuit**
- **DECnet V / Plus – need MOP client entry and MOP enabled**
- **LANCP allows MOP without DECnet**
- **Install DNAS software etc.**
- **Install TSM (see Freeware CD)**

VMS load host (2)

- **Add DECserver to TSM database**
- **Old (DS90-TL etc.) databases (DSVCONFIG.DAT) can be converted to DNAS style command procedures (use DSVCONFIG_CONVERT.COM)**
- **Load images are MNENG1 / WWENG1 / WWENG2 etc. referred to by MOM$LOAD (DECnet IV) or MOP$LOAD (DECnet V / Plus)**

PC (Wintel) load host (1)

- **Install DNAS Access Server Manager and Access Server Loader software**
- **Configure relevant databases (Access Server Manager needs DECserver to have an accessible TCP/IP address, MNENG1 [DECserver 90TL] not there by default)**
- **Can port existing TSM command files**

PC (Wintel) load host (2)

- **Alternative for new DECservers (DECserver 716 & 732) is to use clearVISN Web Suite to integrate with existing Digital Networks management platform**

- **Needs clearVISN Web Suite V3.1-3 (or later)**

LAT setup

- **Configure physical port on DECserver (change port <n> access local etc.)**
- **Offer LAT service(s) from system(s) (modify LAT$SYSTARTUP.COM on VMS)**
- **Connect <LAT_service_name> from DECserver**
- **Other features (menus, preferred and dedicated services etc.)**

Telnet setup

- **Configure physical port on DECserver (change port <n> access local etc.)**
- **Configure TCP/IP address and mask on DECserver (DHCP disabled, or static)**
- **TELNET <TCP/IP address> to target system (or <hostname> if DECserver is a DNS client)**
- **Other features (menus, preferred and dedicated services etc.)**

"Reverse LAT" setup

- **Configure physical port on DECserver (change port <n> access remote etc.)**
- **Offer LAT service (mapped to physical port) from DECserver**
- **SET HOST /LAT <LAT_service_name> from VMS system**

"Reverse Telnet" setup

- **Configure physical port on DECserver (change port <n> access remote etc.)**
- **Configure TCP/IP address on DECserver (DHCP disabled or static)**
- **Configure TELNET LISTENER on DECserver port (TCP/IP port number maps to physical port)**
- **TELNET <TCP/IP address> / PORT=<TCP/IP port number> from VMS system**

LAT printing setup from VMS (1)

- **Configure physical port on DECserver (change port <n> access remote etc.)**
- **Offer LAT service from DECserver if required**
- **Create LAT port on VMS system**
- **Set LAT port characteristics**
- **Create queue on VMS system (/PROCESSOR=LATSYM)**
- **Spool LAT device**
- **Start queue**

LAT printing setup from VMS (2)

```
> change server name xd900tm
> change server prompt "xd900tm > "
> change port 8 access remote
> logout port 8

$ create port lta101:
$ set port lta101: /application /port=port_8/node=xd900tm
$ copy tt: lta101:
$ initialize/queue/processor=latsym/on=lta101:/nostart –
     /device=terminal xd900tm_port8_print
$ set device lta101: /spooled=(xd900tm_port8_print, -
    sys$sysdevice:)
$ start/queue xd900tm_port8_print
```

TCP/IP printing setup from VMS (1)

- **Configure physical port on DECserver (change port <n> access remote etc.)**
- **Configure TCP/IP address on DECserver (DHCP disabled or static)**
- **Configure TELNET LISTENER on DECserver port (TCP/IP port number maps to physical port)**
- **Enable TELNETSYM client service on VMS system (TCPIP$CONFIG.COM)**

TCP/IP printing setup from VMS (2)

- **Set up TELNETSYM logical names to control behaviour (see TCP/IP documentation for details):**
  - **TCPIP$TELNETSYM_RAW_TCP**
  - **TCPIP$TELNETSYM_SUPPRESS_FORMFEEDS**
  - **TCPIP$TELNETSYM_STREAMS**
  - **etc.**
  - **Note: UCX$TELNETSYM… are equivalent**

- **Create queue on VMS system (/PROCESSOR=TCPIP$TELNETSYM)**
- **Start queue**

TCP/IP printing setup from VMS (3)


```
> change internet address 10.255.255.101 mask 255.255.0.0
> change port 7 access remote
> change port 7 input flow control disabled
> logout port 7
> change telnet listener 2007 port 7 enable
> change telnet listener 2007 connection enable

$ telnet 10.255.255.101 /port=2007
$ initialize/queue/processor=tcpip$telnetsym –
    /on=“10.255.255.101:2007”/nostart –
    /device=terminal xd900tm_port7_print
$ start/queue xd900tm_port7_print
```

Firmware updates

- **Ensure that everything is powered through a UPS**
- **Put new firmware image in place on load host (MNENG1, WWENG2 etc.) and save previous load image**
- **Restart the DECserver ensuring that it loads from the network**
- **For DECservers with FlashRAM then first test the new load image, then when it's proven in your environment restart the DECserver and reload the FlashRAM with the new firmware image**

clearVISN V3 Web Suite features

- **Web server based provides:**
  - **Consistent management view across several Browser based management clients**
  - **Stand-alone (portable) configuration tools.**
- **New module support (DECserver 716 / 732 etc.)**
- **New channel types on backplane (Fast Ethernet, Full Duplex)**
- **Does not support older hardware:**
  - **DEChub 90**
  - **MultiSwitch 600 family**

clearVISN Web Suite - Installation

- **Only need to install server components**
- **Per server licensing**
- **Server runs on Windows 98 / NT4 / 2000, UNIXes etc.**
- **Server components require Web Server (PWS, IIS, Apache etc.)**
- **Clients use Web Browser with Java VM**

Finally...

- **Use TSM on VMS load hosts – it's free and makes life a lot easier to reconfigure DECservers**
- **Use LAT printing / terminal access if possible**
- **Use TCPIP$TELNETSYM for TCP/IP printing, avoid LPR/LPD if possible**

Question and Answers

Q & A

The End

Thank you for coming and we hope that you've found it interesting and useful.

How to contact us

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