Bull DPX/20
TPAD–HPAD

Pocket Guide

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Overview

It enables an asynchronous terminal user to connect to a remote host application, over a LAN or a WAN and to communicate with it as a network virtual terminal, by means of packet exchanges.

Underlaying networks can be:

- LAN networks

- WAN X25 networks, including support of PVCs (Permanent Virtual Circuits)

- WAN networks accessed thru a LAN/WAN Gateway (SPAG Y/13 Profile)

**TPAD–HPAD** architecture consists of two main functional entities:

- the **HPAD** module (Host Packet Assembly Disassembly), implemented in the Remote Host system accessed by the terminal (also called **server side**).

- the **TPAD** module (Terminal Packet Assembly Disassembly), implemented in the machine supporting the terminal connection (also called **client side**).

HPAD provides an access to a **service** from:

- a remote asynchronous terminal via a TPAD

- a remote application via a TPAD

- a remote terminal via a public or private PAD (asynchronous or videotex terminal)

- a remote application via a public or private PAD

The **service** is identified by a HPAD server configuration and corresponds to an application (**login application** or **user application**). It includes security control and connection parameters.

Example:
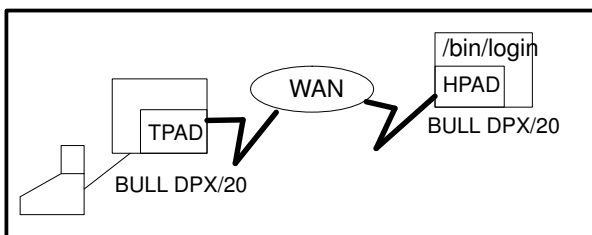
Installing and Configuring

Both installation and configuration tasks are performed with **SMIT.** *Help–on–line* are available in all the TPAD–HPAD menus.

- ## Installation

  TPAD–HPAD is installed by using **SMIT**, over an AIX Version 4.1.4 or higher and OSI stack low layers.

- ## Configuration

  Once the physical link is ready (FDDI, X25 line, TR, Ethernet), the communication board properly configured, generated and loaded, and the OSI stack running, the administrator may configure TPAD–HPAD:

  On server side:

  – Activate the '**HPAD Server Configuration**' SMiT menu (FastPath: **smit padsrv_wan** or **smit padsrv_lan**) to define the options and profile of the configuration of the server.

  – Activate the '**TPAD–HPAD Start/Stop**' menu to start the HPAD server daemon.

  On client side:

  – Activate the '**TPAD Client Configuration**' SMiT menu (FastPath: **smit padclt**) and select '**Addressing a PAD server site** on WAN with TPAD' (for a WAN).

Note: The data the administrator must give are:
on server side: configuration name / local WAN or LAN board addresses
on client side: PAD server name / local and remote WAN or LAN addresses / TSEL (transport selector)

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Running TPAD–HPAD

tpad Command Syntax

Once TPAD–HPAD configured and **hpad** server
daemon or equivalent server running on the
remote machine, the **tpad** command can be run:

```
tpad [-!] [-t] [-n] [-8] [-uucp]
[-d<debugmask>][-f cfile]
[-s NSEL][-p profile][address]
```

If **tpad** is invoked without arguments, it enters
command mode, indicated by its prompt (tpad>).
If it is invoked with the address argument, it
performs a connection request with this
argument.

Once a connection has been opened, **tpad**
enters an input mode. It accepts and executes
the **tpad interactive commands**. Main of them
are listed below. The **help** interactive command
is particularly useful to get information on
commands, profiles and parameters.

Main TPAD Interactive Commands

bye   (alias **end**)
                Quits the **tpad** command.

capture *[filename]* (alias **to**)
                Starts and stops the redirection of the
                standard output in *filename*. Without
                any argument, the command
                stops the redirection.

from *file*   (alias **send**)
                Takes content of *file* as standard
                entry.

help *[help–subject]* (alias **h** or **?**)
                gives information on commands,
                profiles and parameters.

ker *address*
                Accesses Kermit File Transer.

open *[<fac_req_block>] <address>*
[<call_usr_data>] or *[***open***] <address>*
<open_options>
                Connects a local terminal to a remote
                machine.

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par?   Shows local PAD parameter values.

rpar?   Shows remote PAD parameter
values.

rset?   Sets and reads PAD profile
              parameters of remote host.

send   A synonym for **from**.

set   *par_i:val_i[,par_j:val_j, ...]*
              Sets *par_i* parameter to *val_i* value.

set? *par_i:val_i[,par_j:val_j, ...]*
              Sets and displays local PAD profile
              parameters.

stat   Displays communication status.

strsync *string* (alias **wait**)
              Waits for receiving string.
              Wildcards * and **?** are allowed.

to   Synonym for **capture**.

sharp Comment.

<address>
              allows a DTE–C to specify the called
              address for connection.

While connected to a remote host, **tpad
command mode** may be entered by typing the
tpad escape characters sequence (initially: ^P).
When in command mode, the normal terminal
editing conventions are available.

TPAD–HPAD over PVC

Support of PVCs

A solution is proposed by **BULL** to work on a WAN through **PVC** via the application **TPAD–HPAD**. The only restrictions in **PVC** using are due to the fact that there is no more notion of connection / disconnection:

– By definition of a PVC, only one **tpad** session is possible on a PVC at a given time.

– The '**tpad**' invocation is the same as over SVC links except: the Facility and Call User Data options, and the –s<NSEL> option.

Configuration of TPAD–HPAD over PVC

The configuration process is the same as for a link through SVC except on the following points:

Board & OSI configuration:

– a **PVC** (and not a SVC) must be configured on the line of the X25 communication board chosen for the link ('**smit x25d**').

– a **PVC** must also be defined in the **OSI stack configuration** ('**smit ConfOSIPVC**'), with a PVC name. Each PVC name must be known by the other machine.

TPAD–HPAD configuration:

– The **SMIT** menus specific to **PVC** must be used. (FastPath; '**smit padsrv_pvc**' and '**smit padclt_pvc**').

Note: The data the administrator must give are: **on client side**: PAD server name / PVC name, **on server side**: configuration name / PVC name.

TPAD–HPAD via a Gateway

A special profile, the **SPAG Y/13** profile, is used for PAD connections via a Gateway, i.e through the link: LAN (on client side) and WAN (on server side). On the **local site**, where tpad will be run, the SMIT menus specific to the use of a LAN/WAN Gateway must be used: FastPath: '**smit padclt_LW**').

The steps of the configuration process are:

- On the **local site**:
    - Run the SMIT menus:
        - **. Add a PAD server site on LAN**
        - **. Addressing a PAD server site on WAN via a LAN/WAN gateway**

- On the **gateway**:
    - Run the SMIT menus:
        - **. Add a HPAD server configuration on LAN**
        - **. Start HPAD server daemon**

- On the **remote site**:
    - Run the SMIT menus:
        - **. Add a HPAD server configuration on WAN**
        - **. Start HPAD server daemon**

Note: The data the administrator must give are: **on client side**: PAD server name / local and remote LAN addresses / LAN/WAN PAD server site name / name of the gateway / remote WAN address, **on gateway** and **remote site**: configuration name / local WAN or LAN board addresses.

PAD Printing

PAD Printing enables remote printing facility by using PAD over WAN. From the user point of view, there is no difference between a PAD printer and a local printer.

The **PAD printer** is connected via a standard product (software and hardware), X3–X28–X29 compliant, called a **PAD concentrator**.

Printer configuration in **TPAD–HPAD** means to define a PAD printer name including addressing parameters to access this PAD printer, and a PAD profile. So it consists in configuring the printer spool and configuring the network:

Configuration

- Activate the '**Add a Print queue**' SMIT menu (FastPath:**smit mkpq**), with 'pad' as the attachment type.

- Activate the '**TPAD Client Configuration**' SMiT menu (FastPath: **smit padclt**) and select '**Addressing a PAD server site on WAN –with TPAD**'.

- Check the **X3 parameters** on **PAD concentrator**: par6=0, par7=5, par12=1.

Note: The data the administrator must give are: data stream type/ printer type and model / queue name / hostname,
PAD server name / local and remote WAN addresses.

hostname defined in 'Add a Print Queue' and *PAD server name* defined in 'Add a PAD server site on WAN' must be identical.

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Automatic Sessions

This is a specific **BULL PAD feature**.

It enables the user to specify the name of a script file to be executed during the **'tpad'** activation phase by mean of the *'–f cfile'* option of the **tpad** command. It can contain a script of commands making automatic the connection to a remote host and the user login entry. In this script file, the **'strsync'** command enables to synchronize the **login** phase requests with the automatic entries of user identification parameters (name, password, etc.).

The user can automate the execution of this script on each TPAD activation by including it in his *$HOME/.padrc* file.

Example of automatic login session:

Extract from *$HOME/.padrc*:

```
# Interruption processing
set 7:21
# connection to remote 'MACH1'
MACH1
^p# waiting for the prompt of the Login
^pwait *ogin*
^P# entry of the user logname 'boby'
boby
^p# synchronization with the password
^pwait *assw*
jupiter
^p# synchronization with the prompt  'boby'
^pwait *boby
# shell launched on MACH1:
cat /etc/passwd
.....
```

Kermit through TPAD–HPAD

KERMIT is a protocol for **reliable file transfer** between computers over the ordinary serial telecommunication lines that are used to connect terminals to computers. A KERMIT program must be running on each end of the communication line. Both KERMIT programs exchange messages according to the KERMIT protocol.

TPAD–HPAD allows the access to the **KERMIT file transfer** in a transparent mode over a connection through a LAN or a WAN: It is activated by the **ker** command of the local **TPAD**.

KERMIT runs in server mode ('**server**' KERMIT command) on the **remote system** (**hpad** side).

On the **local system** (**tpad** side), **KERMIT** may be run:

- in interactive mode, by the '**ker**' command, (which is the default mode), with a *.kermrc* file restricted to the set entries,

- in program mode with a *.kermrc* file including logging and file transfer commands.

Note: The profile to be used (defined in '**TPAD client configuration**') is `124`. `/bin/login` must be defined in the '**HPAD server configuration**' as the *program* to be run.

Related Documentation

TPAD–HPAD Ref. Manual 86 A2 65WE 04.
OSI Services Manual 86 A2 05 AP.