OpenEdition (UNIX System Services) Support


This chapter includes these sections:

• Cisco IOS for S/390 Support
  Describes changes required in the MVS OpenEdition (UNIX System Services) configuration member to support Cisco IOS for S/390 OpenEdition sockets.

• Common Inet Support
  Describes changes required in the MVS OpenEdition configuration member to support more than one AF_INET physical file system.

• Startup Configuration
  Describes changes required in the STEPLIB DD statement in order to execute T010PFS.

• APPCFGxx Configuration for OpenEdition (UNIX System Services) Support
  Describes changes that may be needed in the Cisco IOS for S/390 configuration member for upgrades to Cisco IOS for S/390 5.2 from a previous release of Cisco IOS for S/390.

Cisco IOS for S/390 Support

To use Cisco IOS for S/390 OpenEdition (UNIX System Services) sockets, you must edit the configuration member for OpenEdition MVS, BPXPRMxx, in the MVS/ESA system configuration data set, SYS1.PARMLIB.

For detailed information regarding the OpenEdition MVS PARMLIB member, read the IBM document MVS/ESA: Planning Open Edition MVS, BPXB2 MO4/5 SC23-3015-01/02. The format of this member changes in version 5.2.2 of OpenEdition.

You can configure your OpenEdition support either by using the Cisco IOS for S/390 stack alone, or by configuring it to use common Inet support (more than one physical file system).
Using the Cisco IOS for S/390 Stack Alone

This section describes statements you must change in BPXPRMxx to use only the Cisco IOS for S/390 stack.

FILESYSTYPE

To identify the Cisco IOS for S/390 Physical File System (PFS) to OpenEdition MVS, change or add the FILESYSTYPE statement in BPXPRMxx:

```
FILESYSTYPE TYPE (filesysname) ENTRYPOINT (T010PFS)
[PARM (SYSID (xxxx))]
```

Syntax Description

TYPE(filesysname) Specifies the name of the PFS. This name can be configured and can be from 1 to 8 characters. Specify this name on the NETWORK statement (read NETWORK Statement).

ENTRYPOINT(T010PFS) Specifies the load module entry point for initialization; use T010PFS.

PARM(SYSID(xxxx)) Specifies the subsystem ID of Cisco IOS for S/390 (xxxx). Default: ACSS

NETWORK Statement

To assign socket domains or address families to the Cisco IOS for S/390 PFS, you must change or add the NETWORK statement in BPXPRMxx.

```
NETWORK TYPE(filesysname)
  DOMAINNAME(AF_INET)
  DOMAINNUMBER(domain_num)
  MAXSOCKETS(num_sockets)
```

Syntax Description

TYPE(filesysname) PFS name, which must match the TYPE operand used on the FILESYSTYPE statement that defined the PFS (see FILESYSTYPE, above).

DOMAINNAME(AF_INET) Specifies the domain or address family.

DOMAINNUMBER (domain_num) Specifies the numeric value of the domain passed by programs that call socket(). Use the value 2, as certain name resolution functions will not work if DOMAINNUMBER(2) is not defined.

- DOMAINNUMBER(2) specifies the AF_INET.

MAXSOCKETS(num_sockets) Specifies the maximum number of currently active sockets supported.
Common Inet Support

This section describes the changes required in BPXPRMxx to support more than one AF_INET PFS.

**Caution** There are performance considerations when using common Inet support; therefore, it is not recommended.

For more information on common Inet support, read the IBM document *MVS/ESA: Planning Open Edition MVS, BPXB2 MO4/5 SC23-3015-01/02*.

**FILESYSTYPE Statement**

To use common Inet support, add the following statement to BPXPRMxx:

```
FILESYSTYPE TYPE(filesysname) ENTRYPOINT(BPXTCINT)
```

**Syntax Description**

- **TYPE(filesysname)** Specifies the name of the PFS. This name can be configured and can be from 1 to 8 characters long. For common Inet support, set this to CINET.

- **ENTRYPOINT(BPXTCINT)** Specifies the load module entry point for initialization.

**SUBFILESYSTYPE Statement**

To use common Inet support, add the following statement to BPXPRMxx for each PFS you want to use:

```
SUBFILESYSTYPE NAME(TCPPFS1) TYPE(CINET) ENTRYPOINT(T010PFS)
[PARM(SY Sid (xxxx))]
```

**Syntax Description**

- **NAME(TCPPFS)** Specifies the name of the PFS.

- **TYPE(CINET)** Specifies to use common Inet support. TYPE names must match on all FILESYSTYPE and SUBFILESYSTYPE statements.

- **ENTRYPOINT(T010PFS)** Specifies the load module entry point for initialization. You must use T010PFS.

- **PARM(SY Sid (xxxx))** Specifies the subsystem ID (xxxx).
NETWORK Statement
The following NETWORK statement is for common Inet support only.

- DOMAINNAME(AF_INET)
- DOMAINNUMBER(2)
- MAXSOCKETS(4096)
- NETWORK TYPE(CINET)
- INADDRANYPORT(4096)
- INADDRANYCOUNT(512)

Syntax Description

- DOMAINNAME(AF_INET): Specifies the domain, or address family.
- DOMAINNUMBER(2): Specifies the domain, or address family.
- MAXSOCKETS(4096): Specifies the maximum number of currently active sockets that are supported.
- NETWORKTYPE(CINET): Specifies common Inet support.
- INADDRANYPORT(4096): Specifies the starting port number for a range of ports that an application can use.
  
  You must also specify PORTUSE in your TCP and UDP statements in the APPCFGxx PARM member (Default: 1:4095).
- INADDRANYCOUNT(512): Specifies the number of ports to reserve.
  
  You must also specify PORTASGN in your TCP and UDP statements in the APPCFGxx PARM member (Default: 4096:65535).

Startup Configuration

OpenEdition (UNIX System Services) must be configured to execute program T010PFS at startup. To do this, add the PFSLOAD data set to the STEPLIB DD statement in the OMVS cataloged procedure. Read the section Cisco IOS for S/390 Support for details on configuring OpenEdition.

When Cisco IOS for S/390 has successfully connected to OpenEdition, the T01OE004I message displays:

```
T01OE004I  Connection To OpenEdition Established - Provider ppppppppp
```

**Note** A cross-memory connection has been established between the APP task group and the OpenEdition address space to support Socket API functions. The name of the Cisco IOS for S/390 PFS provider in the OpenEdition address space is ppppppppp.
APPxCFGxx Configuration for OpenEdition (UNIX System Services) Support

The Cisco IOS for S/390 configuration member, APPxCFGxx, may also need to be modified if you are trying to upgrade to Cisco IOS for S/390 5.2 from a previous release of Cisco IOS for S/390 for OpenEdition.

You must consider changes to the TCP statement in your APPxCFGxx PARM member of the PARM data set. Read Cisco IOS for S/390 C/Socket Programmer’s Reference for more information.

Host Name/Address Resolution

If you will be using Cisco IOS for S/390 OpenEdition sockets, the method used to resolve host names and addresses is different than that used for the Cisco IOS for S/390 socket API. OpenEdition MVS Version 1.2 uses the LE/370 Version 1.3 and 1.4 runtime libraries to perform certain socket related functions such as gethostbyname(), and getprotobyname(). The LE/370 runtime library (RTL) reads specific MVS data sets to map services to names and to obtain domain name resolution configuration information.

The LE/370 Version 1.5 runtime library uses members in the /etc directory under OMVS to perform these functions. This is similar to UNIX configurations.

Read Cisco IOS for S/390 C/Socket Programmer’s Reference for a complete description of the method and the data set members you will need to perform these socket functions.