

# How do I generate and load debug information for the z/TPF debugger?

## How do I generate debug information (compile options) for the z/TPF debugger?

Debug information is created when C/C++ segments are built with the `-g2` option (which is defaulted to on) and when ASM segments are built with `ASMFLAGS_ABCD := ADATA` (which is defaulted to off and ABCD is the 4 char BSO name). The debug information is built into both CSOs and BSOs.

**How do I load debug information for the z/TPF debugger?** When using ZTPLD or ZOLDR, first ensure the file system is available on TPF. Then issue the command without the NODEBUG option and a copy of the debug information will be loaded to the file system (Module ABCD has debug info loaded to `/tpfdbgelf/ab/abcd`). The name of the debug information file will be the timestamp of the loaded module (Module ABCD may have the file name `/tpfdbgelf/ab/abcd/20050404211242`). For more information see ZTPLD or ZOLDR in z/TPF Operations.

**Can I use FTP to load the debug information?** Use FTP to load the debug information to the file system by changing to the respective module directory (may need to create it) and putting (binary mode) the file by the module name (For ABCD.so the file name is `/tpfdbgelf/ab/abcd/ABCD`). If a debug information file by the name of the timestamp can not be found, then the 4 character module name will be used if available.

This example shows both debug information files by the timestamp and module name.

```
AAES0008I 00 ==> zfile ls /tpfdbgelf/qd/qdbn/*
CSMP0097I 13.52.38 CPU-B SS-BSS SSU-HPN IS-01
FILE0001I 13.52.38 START OF DISPLAY FROM ls /tpfdbgelf/qd/qdbn/*
/tpfdbgelf/qd/qdbn/QDBN
/tpfdbgelf/qd/qdbn/20050404112446
END OF DISPLAY+
```

# How do I generate and load debug information for the z/TPF debugger?

How can I tell if the correct debug information is loaded?

**1. Get the core address of the module.**

```
AAES0008I 00 ==> zdpat qdbn
CSMP0097I 13.24.56 CPU-B SS-BSS SSU-HPN IS-01
DPAT0103I 13.24.56 BEGIN DISPLAY OF FILE COPY FOR PROGRAM BASE 4
```

```
PROGRAM      QDBN
VERSION
```

```
LINKAGE TYPE  CSOE
BASE PAT SLOT 0A3A7B40
FILE ADDRESS  0000000030100935
CORE ADDRESS  0000000380744000
```

**2. Display the core address of the module plus the offset to the iftch\_timestamp.**

```
AAES0008I 00 ==> zdcor 380744148.8
CSMP0097I 13.25.14 CPU-B SS-BSS SSU-HPN IS-01
DCOR0010I 13.25.14 BEGIN DISPLAY
0000000380744148- 0000123C 5956FEAA          .....
END OF DISPLAY - ZEROED LINES NOT DISPLAYED+
```

**3. Convert the time stamp from hex to decimal.**

```
20050406211242
```

**4. Display the contents of the correct directory.**

```
AAES0008I 00 ==> zfile ls /tpfdbgelf/qd/qdbn/*
CSMP0097I 12.34.04 CPU-B SS-BSS SSU-HPN IS-01
FILE0001I 12.34.04 START OF DISPLAY FROM ls /tpfdbgelf/qd/qdbn/*
/tpfdbgelf/qd/qdbn/20050404112446
END OF DISPLAY+
```

**5. Since there is no debug information file by the name of our timestamp, then debug information is not loaded for this particular module.**