

# TPF HMC Operating System Messages Interface

## Overview

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# Topics

- General Overview
- Configuring TPF to use the HMC
- Fallbacks - manual and automatic
- Using the HMC as a message server
- References.



# General Overview

- Support Element (SE) and Hardware Management Console (HMC) are shipped with zSeries 900 processors.
- HMC software is a graphical interface that allows you to control your processor.
- Operating Systems Messages application allows you to receive messages from the Operating System and send commands to the Operating System. Icon on HMC desktop.



# General Overview *(continued)*

- HMC Operating System messages interface has been implemented on the other major IBM operating systems - z/OS, z/VM, and LINUX.
- Operating Systems Messages support, APAR PJ28622, which allows TPF to run with the system Prime CRAS (PRC) on the SE/HMC, will be available by end-of-year 2002.





Views



Groups



Exceptions



Active Tasks



Console Actions



Task List



Books

CPC Recovery



Hardware Messages



Help



Operating System Messages



Single Object Operations



Start



Stop



Reset Normal



PSW Restart



Reset Clear



Load

CPC Images Work Area



P001153F  
CF1



P001153F  
CF2



P001153F  
CF3



P001153F  
MVSESA2  
(MVSESA2:MVSESA2)



P001153F  
TPF1



P001153F  
TPF2



P001153F  
TPF3



P001153F  
TPF4



P001153F  
TPF5



P001153F  
TPF6



P001153F  
TPF7



P001153F  
TPF8



P001153F  
TPF9



P001153F  
VM1  
(TPFVM1)



P001153F  
XA1  
(TPFXA1)



Operating System Messages

Message Text

P001153F:TPF8

```

00000860- 00000000 00000000 071D2000 00000000 .....
00000880- 1F897000 00000000 00000000 00000000 .i..... -
00000B20- 00000000 00000000 BE73D0E8 3F0F1990 .....Y....
00000B30- EB5D0060 00000000 00000000 00006560 .).-....-
00000B40- 000F0000 00000000 00126290 00126470 ..... -
00000B50- 001268C8 00126B68 00000000 00000000 ...H....
00000BB0- 00000000 00000000 00000000 0096012C .....o..
00000BC0- 0096012C 00000000 00000000 00000000 .o..... -
00000BF0- 05030704 06050000 00000000 01000000 .....
00000C00- 01000200 00000000 00000000 00000000 .....
00000C10- 0000000F 00000FFF 0000FFFF 00001000 ..... -
00000C20- 00002000 00047F97 040CC000 800653C6 .....p....F
00000C30- 040AC000 00FFFFFF 1FF72FFF 000071FF .....7.....
00000CC0- 0012AB80 0012AAD0 00900000 0840C000 ..... -
00000CD0- 00A00000 00E00000 00E00000 20000000 .....
00000CE0- 08400000 21400000 00000000 00000000 . . . .
00000CF0- 00020000 00640000 00000000 E3D7C6F4 .....TPF4 -
00000D00- 4BF14040 F1F60000 00000000 00000000 .1 16..
00000F80- 50F00F9C 58F00F94 07FF50F0 0F9C58F0 &0...0.m ..&0...0
00000F90- 0F9807FF 0003F140 0003F170 00000000 .q....1 ..1.... -
00000FF0- 00000000 00000000 00000000 000002FC .....

```

END OF DISPLAY - ZEROED LINES NOT DISPLAYED+

Respond...

Send Command...

Delete...

Help



Message Text

```

00000860- 00000000 00000000 071D2000 00000000 .....
00000880- 1F897000 00000000 00000000 00000000 .i.....
00000B20- 00000000 00000000 BE73D0E8 3F0F1990 .....Y....
00000B30- EB5D0060 00000000 00000000 00006560 .).-.....
00000B40- 000F0000 00000000 00126290 00126470 .....
00000B50- 00126E...
00000BB0- 000000...
00000BC0- 009601...
00000BF0- 050307...
00000C00- 010002...
00000C10- 000000...
00000C20- 000020...
00000C30- 040ACC...
00000CC0- 0012AE...
00000CD0- 00A000...
00000CE0- 08400000 21400000 00000000 00000000 . . . . .
00000CF0- 00020000 00640000 00000000 E3D7C6F4 .....TPF4 _
00000D00- 4BF14040 F1F60000 00000000 00000000 .1 16..
00000F80- 50F00F9C 58F00F94 07FF50F0 0F9C58F0 &0...0.m ..&0...0
00000F90- 0F9807FF 0003F140 0003F170 00000000 .q....1 ..1.....
00000FF0- 00000000 00000000 00000000 000002FC .....

```

END OF DISPLAY - ZEROED LINES NOT DISPLAYED+

**Send a message**

Priority Message

Message to send

ZDSYS



# General Overview *(continued)*

- Designed to be used on systems configured with 3215 (non-native) console support
- PRC (on line 01) will either be on 3215 console or on HMC
- System can send messages to HMC immediately from IPL, or can manually fall back to the HMC from the 3215
- Upon HMC failure, TPF will automatically fall back to 3215 connection (or to CRAS set if no 3215 console is available).

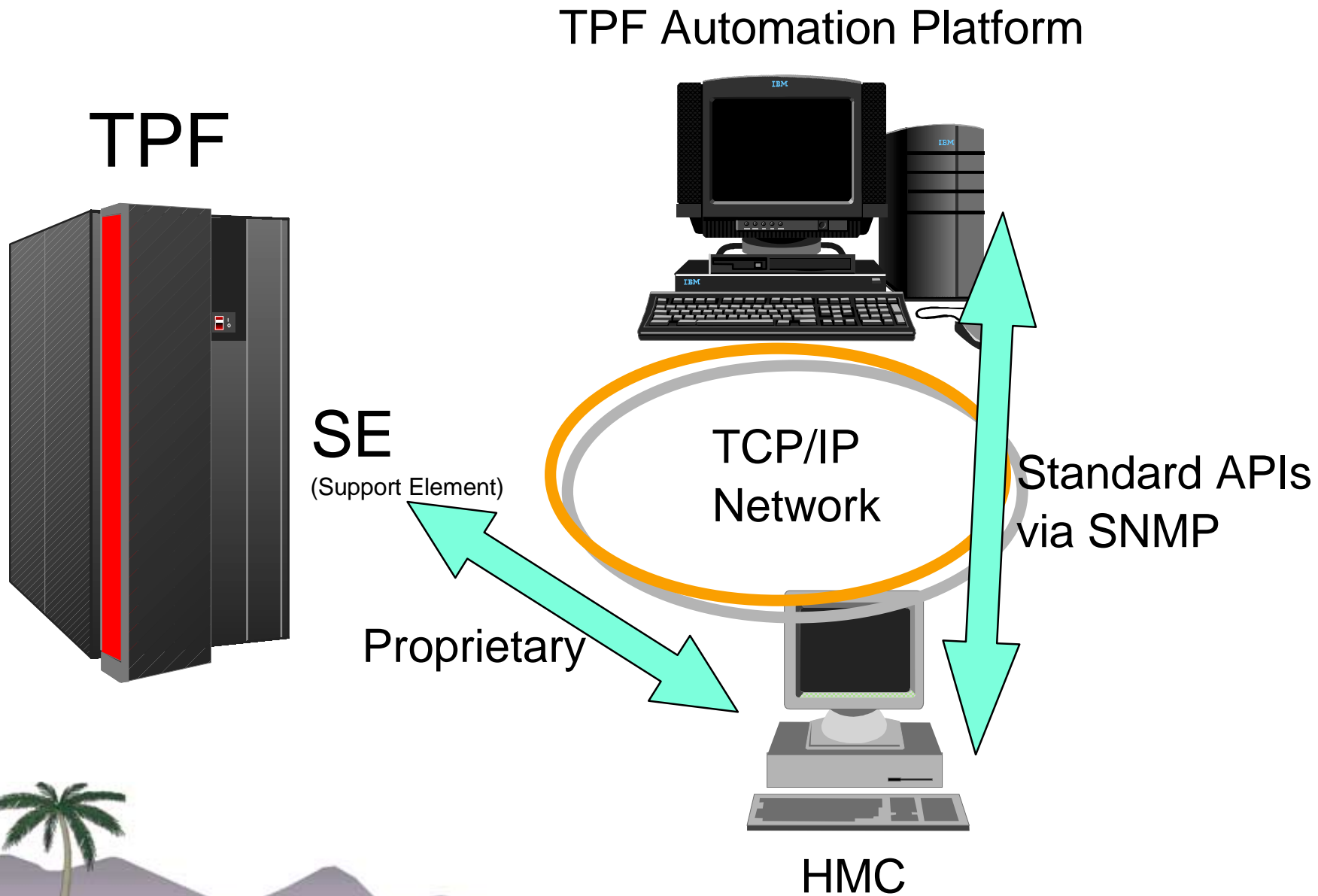


# General Overview *(continued)*

- Using published APIs, connect your automation platform to the SE/HMC - become a message server for your platform.
- APIs communicate via SNMP and are described in SB10-7030, *zSeries 900 Application Programming Interfaces*
- Document link is:  
<http://publibz.boulder.ibm.com/epubs/pdf/b1070300.pdf>



# A Typical HMC Network



# Configuring TPF to Use the HMC

- New parameter added to the SIP CRASTB macro. It is a keyword parameter, named HMC, with a default value of NO.
- Code HMC=YES to configure your TPF system to immediately use the HMC as the PRC at IPL time.
- Parameter can only be set to YES if system has also been configured for 3215 (non-native) console support.



# Configuring TPF to Use the HMC

## *(continued)*

- If CRASTB HMC = YES, then 3215-type hardware is not necessary to be mounted to TPF to IPL. TPF will immediately write to the HMC without attempting to mount 3215 console.
- 3215 Console Genned, but no unique 3215 Console Hardware required.



# Configuring TPF to Use the HMC

## Example

CRASTB	PRCRS=(56,56,1F,56,56,56),	X
	ROCRS=(010002,1052,B,	X
	010002,1052,C,	X
	010002,1052,D,	X
	010002,1052,E,	X
	010002,1052,Z,	X
	010002,1052,0),	X
	ALTPC=(1F,1F,56,1F,1F,1F),	X
	NCONSL=NO,	X
	HMC=YES,	X
	CTKC32LC=NO	



# Fallbacks - Manual and Automatic

- Code designed to allow fallback between the 3215 console and the HMC using the ZACRS command.
- With APAR PJ28622 installed, manual fallback from 3215 to HMC allowed, regardless of CRASTB HMC parameter setting.
- Allows for migration comfort level with the APAR. Uncomfortable? Manually fall back to 3215.



# Fallbacks - Manual and Automatic *(continued)*

- Manual fallback between the HMC and a CRAS set using the ZACRS command.
- If HMC fails, auto fallback to primary 3215 console. If unable to mount, fall back to alternate 3215 console. If unable to mount, TPF searches CRAS table.
- In effect, HMC introduces a third level of fallback protection provided that 3215 consoles are actually mounted.



# Fallbacks - Manual and Automatic *(continued)*

- Command to manually fall back from the 3215 console to the HMC:

```
ZACRS FBK PRC 010000 TYPE-HMC CPUID-x
```

- Command to manually fall back from the HMC to the primary 3215 console:

```
ZACRS FBK PRC 010000 TYPE-CON CPUID-x
```

- Validate option (OPT-VAL) can be used on either command first to validate the path to the console.



# Fallbacks - Manual and Automatic *(continued)*

- When replacing the PRC from a line other than line 01 back to the HMC, the recommended scenario is the following two commands:

```
ZACRS FBK PRC 010000 TYPE-HMC CPUID-x OPT-VAL  
ZACRS REP PRC 010000 TYPE-HMC CPUID-x
```

- The "TYPE" on the two commands must agree, otherwise the second command will not process and the system will give an error message.



# Using the HMC As a Message Server

- Either the SE or the HMC can be configured, but SE is recommended because of fewer hops to the mainframe this way.
- Even when using the SE/HMC as a message server, "Operating Systems Messages" GUI can be used simultaneously. If a LAN outage occurs, GUI can still be used to access TPF.



# Using the HMC As a Message Server *(continued)*

- Easy setup on the SE/HMC: Chapter 6 of *zSeries 900 Application Programming Interfaces* describes how to configure the setup.
- Basically, two configuration steps: Configure SE/HMC for SNMP, and configure SE/HMC for Console APIs. This involves using two configuration panels, with a total setup time under 10 minutes.



# Reference

- Upcoming TPF Technical Newsletter article
- HMC chapter in the future update to the Migration Guide
- SB10-7030, *zSeries 900 Application Programming Interfaces.*

