



International Technical Support Organization

## System z Update – 2007

### STP Implementation Experience (1)

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# Redbooks Workshop

IBM ITSO - International Technical Support Organization

IBM System z Hw Update

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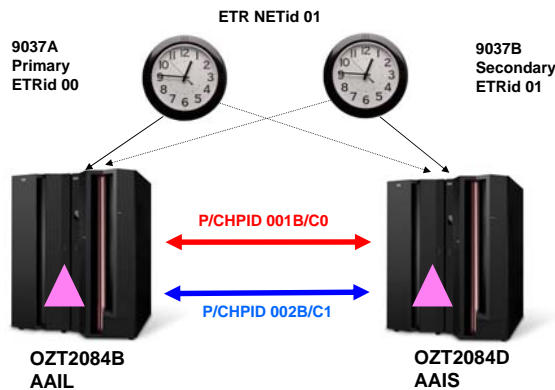
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## STP testing configuration



### D ETR before migration to STP

```

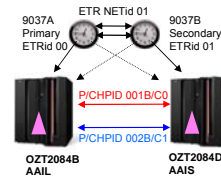
RESPONSE=AAIL
IEA282I 14.16.46 TIMING STATUS 149
SYNCHRONIZATION MODE = ETR
CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                OPERATIONAL
ENABLED                    ENABLED
ETR NET ID=01              ETR NET ID=01
ETR PORT=03                ETR PORT=03
ETR ID=00                  ETR ID=01

```

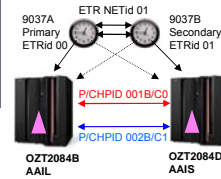
```

RESPONSE=AAIS
IEA282I 14.17.18 TIMING STATUS 826
SYNCHRONIZATION MODE = ETR
CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                OPERATIONAL
ENABLED                    ENABLED
ETR NET ID=01              ETR NET ID=01
ETR PORT=02                ETR PORT=02
ETR ID=01                  ETR ID=00

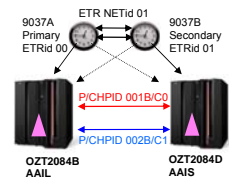
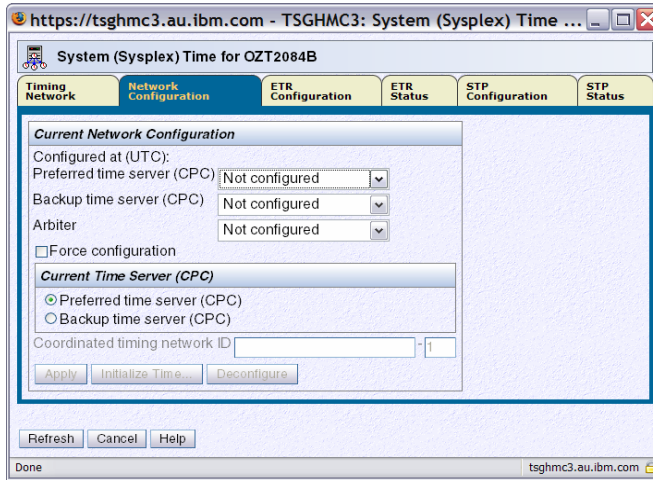
```



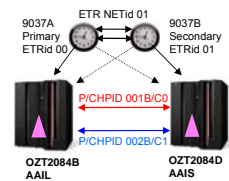
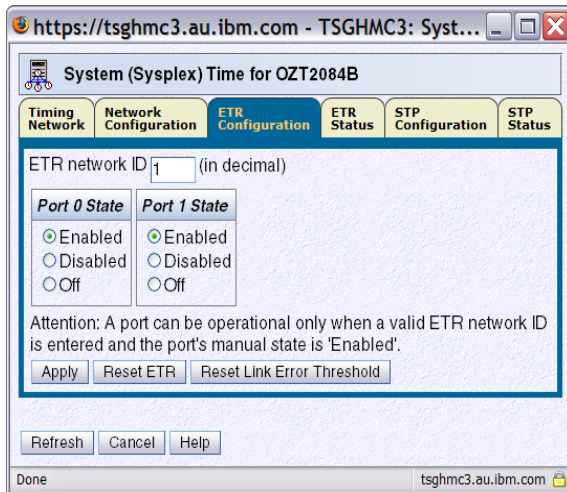
### Timing Network panel before migration to STP



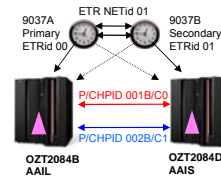
### Network Configuration panel before migration to STP



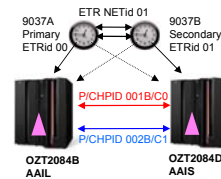
### ETR Configuration panel before migration to STP



### ETR status panel before migration to STP



### STP Configuration panel before migration to STP



### STP status panel before migration to STP

System (Sysplex) Time for OZT2084B

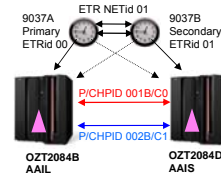
Timing state: Synchronized  
 Usable clock source: Yes  
 Timing mode: ETR (External Time Reference)  
 Maximum timing stratum level: 3  
 Active STP version: 1  
 Maximum STP version: 1

**System Information**

Local STP Link Identifier(s)	Remote Directly Attached System Type-Model-MFG-Plant-Sequence-Tag	System Name	Stratum	Active STP Version	Maximum STP Version

**Local Uninitialized STP Links**

Local STP Link Identifier	STP Link Type	Uninitialized Reason Code	Detail Code
001B	Coupling-peer	Initialization is not complete	
002B	Coupling-peer	Initialization is not complete	
02B0	Coupling-peer	Offline	
04B0	Coupling-peer	Offline	



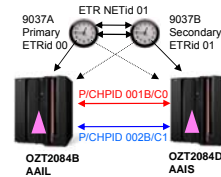
### Migrating to a mixed CTN

System (Sysplex) Time for OZT2084B

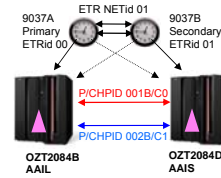
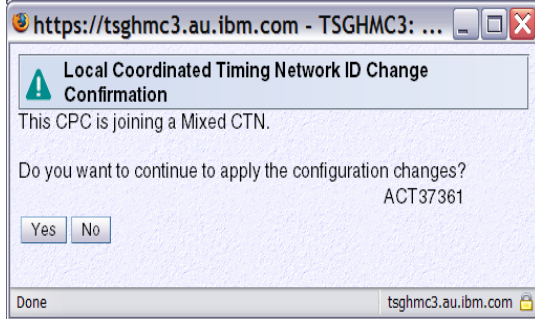
Coordinated timing network ID: ISCTEST

Apply Save STP Debug Data

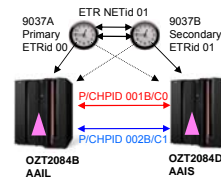
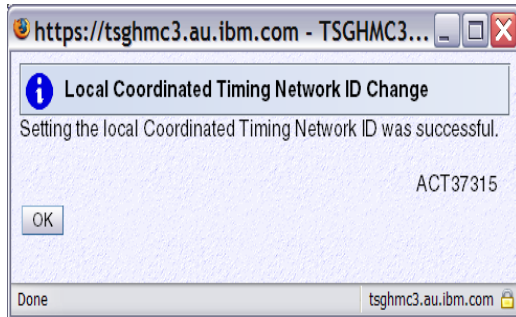
Refresh Cancel Help



### Migrating to a mixed CTN – confirmation panel



### Migrating to a mixed CTN – result panel



### STP status panel after migrating to a mixed CTN

System (Sysplex) Time for OZT2084B

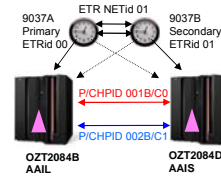
Timing state: Synchronized  
 Usable clock source: Yes  
 Timing mode: ETR (External Time Reference)  
 Stratum level: 1  
 Maximum timing stratum level: 3  
 Active STP version: 1  
 Maximum STP version: 1

**System Information**

Local STP Link Identifier(s)	Type	Model	MFG	Plant	Sequence	Tag	Name	Level	Version	Version
001B	Coupling-peer									
002B	Coupling-peer									
02B0	Coupling-peer									
04B0	Coupling-peer									

**Local Uninitialized STP Links**

Local STP Link Identifier	STP Link Type	Uninitialized Reason Code	Detail Code
001B	Coupling-peer	Outgoing ESP command reject	Configuration error
002B	Coupling-peer	Outgoing ESP command reject	Configuration error
02B0	Coupling-peer	Offline	
04B0	Coupling-peer	Offline	



### Network configuration panel after migrating to a mixed CTN

System (Sysplex) Time for OZT2084B

**Current Network Configuration**

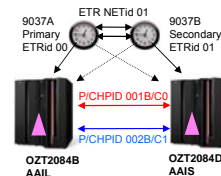
Configured at (UTC):  
 Preferred time server (CPC): Not configured  
 Backup time server (CPC): Not configured  
 Arbiter: Not configured  
 Force configuration

**Current Time Server (CPC)**

Preferred time server (CPC)  
 Backup time server (CPC)

Coordinated timing network ID: [SCSTEST]

Buttons: Apply, Initialize Time..., Deconfigure





### STP status panel after migrating to a mixed CTN

https://tsghmc3.au.ibm.com - TSGHMC3: System (Sysplex) Time for OZT2084...

System (Sysplex) Time for OZT2084D

Timing Network | Network Configuration | ETR Configuration | ETR Status | STP Configuration | **STP Status**

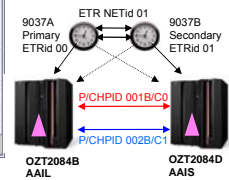
Timing state: Synchronized  
 Usable clock source: Yes  
 Timing mode: ETR (External Time Reference)  
 Stratum level: 1  
 Maximum timing stratum level: 3  
 Active STP version: 1  
 Maximum STP version: 1

System Information						
Local STP Link Identifier(s)	Remote Directly Attached System Type-Model-MFG-Plant-Sequence-Tag	System Name	Stratum Level	Active Version	STP Version	Maximum STP Version
001B.002B	002084-C24-IBM-02-000000046875-0000	OZT2084B	1	1	1	1

Local Uninitialized STP Links			
Local STP Link Identifier	STP Link Type	Uninitialized Reason Code	Detail Code
02B0	Coupling-peer	Offline	
04B0	Coupling-peer	Offline	

Refresh Cancel Help

https://tsghmc3.au.ibm.com/hmc/wcl/T2dedd0e7# tsghmc3.au.ibm.com



### Timing network panel after migrating to a mixed CTN

https://tsghmc3.au.ibm.com - TSGHMC3: Syst...

System (Sysplex) Time for OZT2084D

Timing Network | Network Configuration | ETR Configuration | ETR Status | STP Configuration | **STP Status**

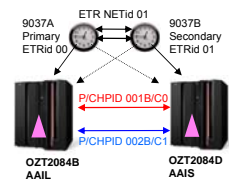
**Coordinated Server Time**  
 Time: 2:36:00 PM  
 Date: 1/15/07

**Offsets**  
 Leap second: 0  
 Total time (hours : minutes): 11 : 00

**Network**  
 Timing network type: Mixed CTN  
 Coordinated timing network (CTN) ID: ISCTEST - 1  
 CTN time source: Sysplex Timer connection

Refresh Cancel Help

https://tsghmc3.au.ibm.com/hmc/wcl/T2dedd0e7# tsghmc3.au.ibm.com



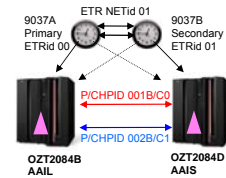
## D ETR after migrating to a mixed CTN

```

RESPONSE=AAIL
IEA282I 14.37.56 TIMING STATUS 179
SYNCHRONIZATION MODE = ETR
  CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                  OPERATIONAL
ENABLED                      ENABLED
ETR NET ID=01                ETR NET ID=01
ETR PORT=03                  ETR PORT=03
ETR ID=00                    ETR ID=01
THIS SERVER IS PART OF TIMING NETWORK ISCTEST -01
    
```

```

RESPONSE=AAIS
IEA282I 14.39.07 TIMING STATUS 841
SYNCHRONIZATION MODE = ETR
  CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                  OPERATIONAL
ENABLED                      ENABLED
ETR NET ID=01                ETR NET ID=01
ETR PORT=02                  ETR PORT=02
ETR ID=01                    ETR ID=00
THIS SERVER IS PART OF TIMING NETWORK ISCTEST -01
    
```

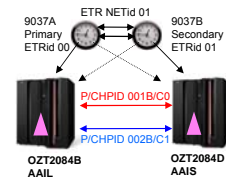


## XCF message for migration to mixed CTN

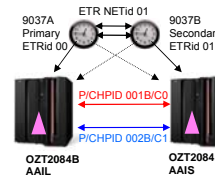
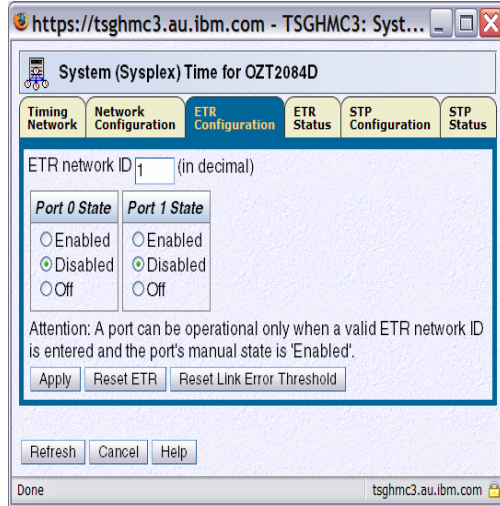
```

IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTEM: AAIL
PREVIOUS ETR NETID: 01
CURRENT CTNID: ISCTEST -01

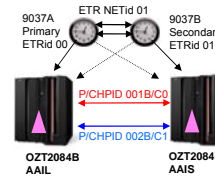
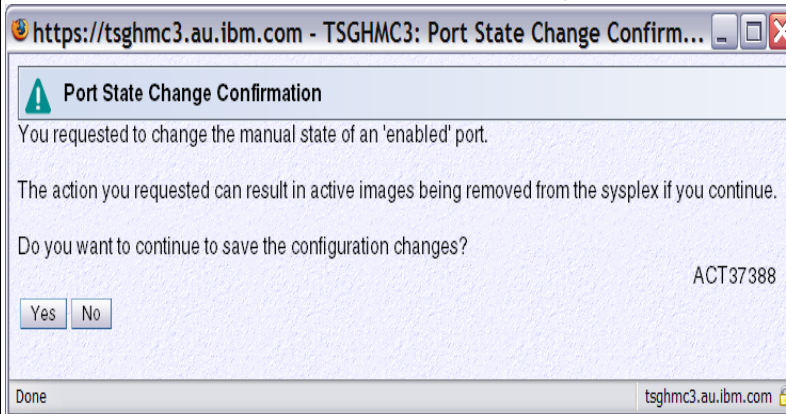
IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTM: AAIS
PREVIOUS ETR NETID: 01
CURRENT CTNID: ISCTEST -01
    
```



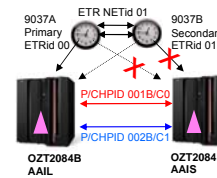
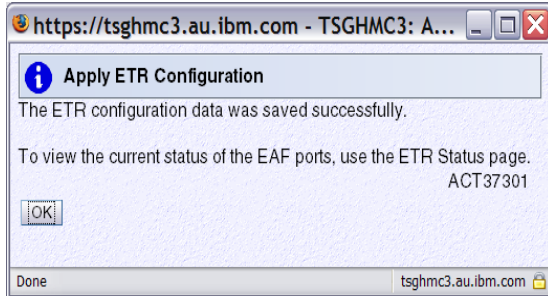
## Configuring OZT2084D as stratum 2



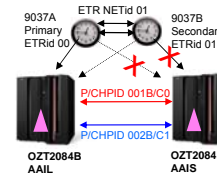
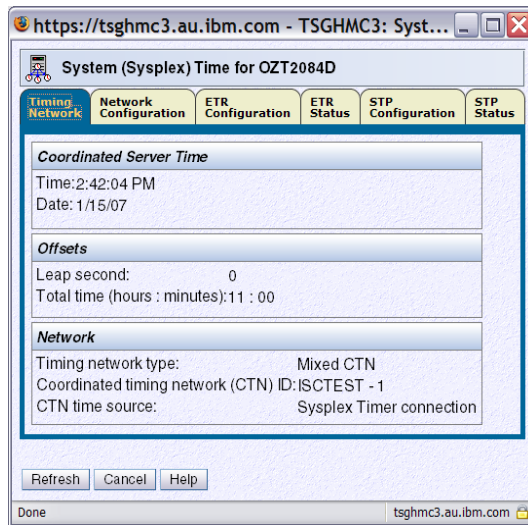
## Confirmation panel for port state change



## ETR configuration change panel



## Timing network panel after migrating to a mixed CTN on the stratum 2 server



## ETR status panel after migrating to a mixed CTN on the stratum 2 server

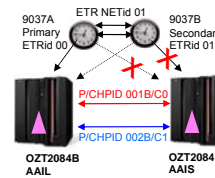
System (Sysplex) Time for OZT2084D

**ETR Status Word**  
 Attachment control register: 08C4  
 Stepping mode: Local  
 EAF stepping port number: 0  
 Port 0 state: Semi-operational  
 Port 1 state: Semi-operational

**ETR Data Word 1 - Port 0**  
 ETR network ID (in decimal): 1  
 ETR ID (in decimal): 1  
 ETR port number (in decimal): 2

**ETR Data Word 1 - Port 1**  
 ETR network ID (in decimal): 1  
 ETR ID (in decimal): 0  
 ETR port number (in decimal): 2

**ETR Card Status**  
 Port 0 status: Light detected  
 Port 1 status: Light detected



## STP status panel after migrating to a mixed CTN on the stratum 2 server

System (Sysplex) Time for OZT2084...

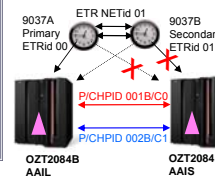
**Timing Network**  
 Timing state: Synchronized  
 Usable clock source: Yes  
 Timing mode: STP (Server Time Protocol)  
 Stratum level: 2  
 Maximum timing stratum level: 3  
 Active STP version: 1  
 Maximum STP version: 1

**System Information**

Local STP Link Identifier(s)	Remote Directly Attached System Type-Model-MFG-Plant-Sequence-Tag	System Name	Stratum Level	Active STP Version	Maximum STP Version
001B.002B	002084-C24-IBM-02-000000046875-0000	OZT2084B	1	1	1

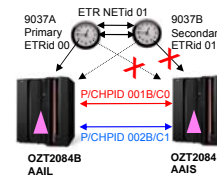
**Local Uninitialized STP Links**

Local STP Link Identifier	STP Link Type	Uninitialized Reason Code	Detail Code
02B0	Coupling-peer	Offline	
04B0	Coupling-peer	Offline	



## Timer messages after disconnecting the ETR ports to migrate OZT2084D to Stratum 2

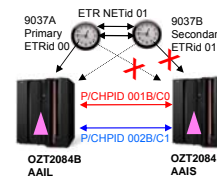
```
*IEA393I ETR PORT 0 IS NOT OPERATIONAL. THIS MAY BE A CTN CONFIGURATION CHANGE
*IEA393I ETR PORT 1 IS NOT OPERATIONAL. THIS MAY BE A CTN CONFIGURATION CHANGE
IEA380I THIS SYSTEM IS NOW OPERATING IN STP TIMING MODE.
```



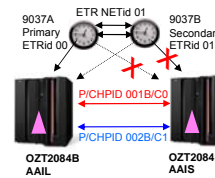
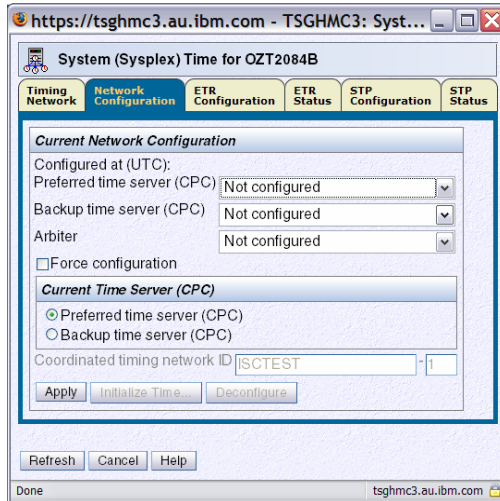
## D ETR after migrating to a mixed CTN and configuring OZT2084D to Stratum 2

```
RESPONSE=AAIL
IEA282I 14.46.16 TIMING STATUS 186
SYNCHRONIZATION MODE = ETR
CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                OPERATIONAL
ENABLED                    ENABLED
ETR NET ID=01              ETR NET ID=01
ETR PORT=03                ETR PORT=03
ETR ID=00                  ETR ID=01
THIS SERVER IS PART OF TIMING NETWORK ISCTEST -01
```

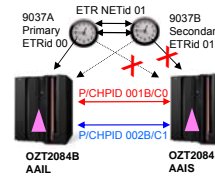
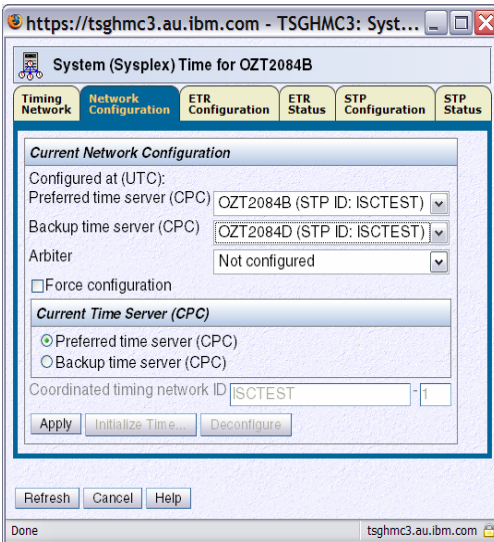
```
RESPONSE=AAIS
IEA386I 14.45.57 TIMING STATUS 846
SYNCHRONIZATION MODE = STP
THIS SERVER IS A STRATUM 2
CTN ID = ISCTEST -1
NUMBER OF USABLE TIMING LINKS = 2
THIS SERVER HAS ONLY A SINGLE SOURCE OF TIMING SIGNALS
```



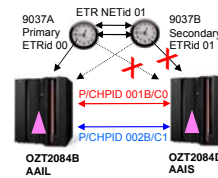
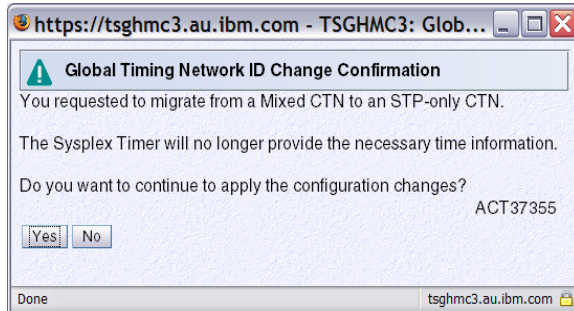
## Network configuration panel after migrating to a mixed CTN



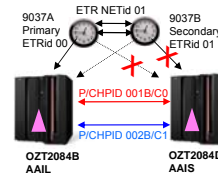
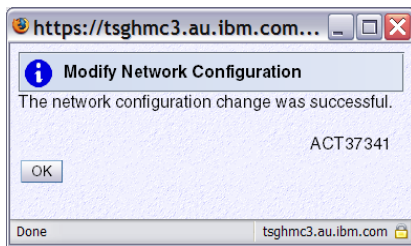
## Using the Network configuration panel to migrate to STP only



### Mixed CTN to STP only confirmation panel

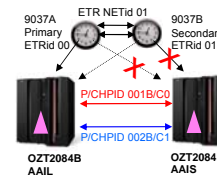
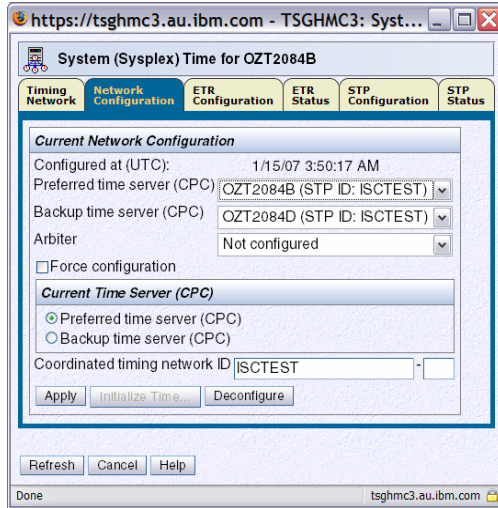


### Network configuration change panel

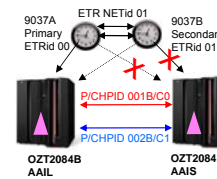
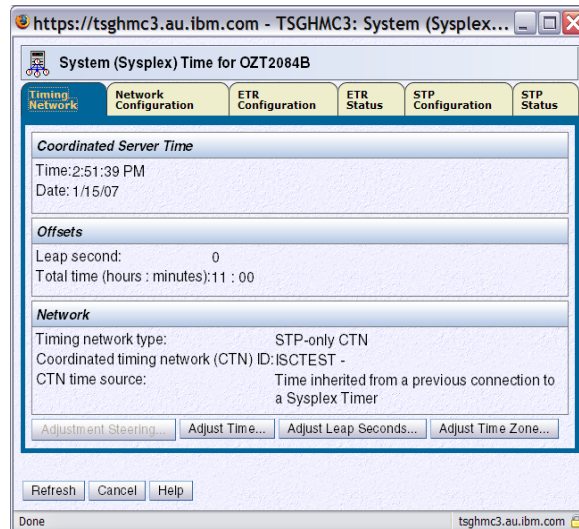




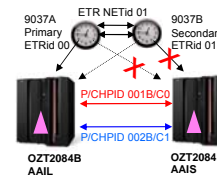
## Network configuration panel to migrate to STP only



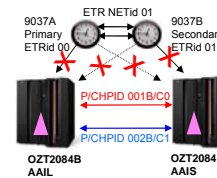
## Timing network panel for STP only



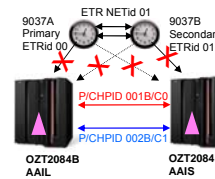
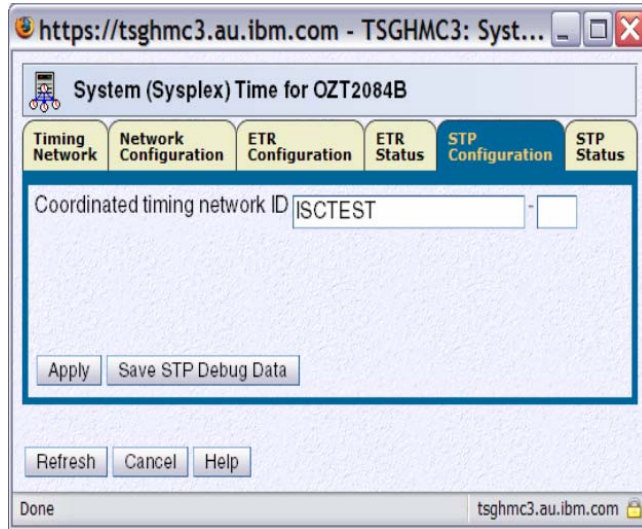
### ETR configuration panel for STP only



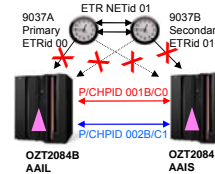
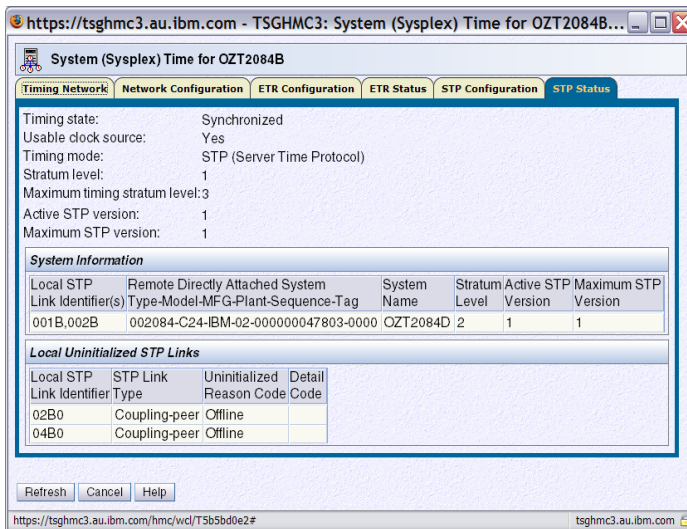
### ETR status panel for STP only



### STP configuration panel for STP only



### STP status panel for STP only



## Timer and XCF messages migrating to an STP only CTN

```
*IEA393I ETR PORT 0 IS NOT OPERATIONAL.
      THIS MAY BE A CTN CONFIGURATION CHANGE.

*IEA393I ETR PORT 1 IS NOT OPERATIONAL.
      THIS MAY BE A CTN CONFIGURATION CHANGE.

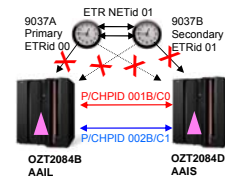
IEA380I THIS SYSTEM IS NOW OPERATING IN STP TIMING MODE.

IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTEM: AAIL
PREVIOUS CTNID:  ISCTEST -01
CURRENT  CTNID:  ISCTEST

IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTEM: AAIS
PREVIOUS CTNID:  ISCTEST -01
CURRENT  CTNID:  ISCTEST

*IXC439E ALL SYSTEMS IN SYSPLEX P04AAIBM ARE NOT SYNCHRONIZED
TO THE SAME TIME REFERENCE.
SYSTEM: AAIL  IS USING CTNID: ISCTEST -01
SYSTEM: AAIS  IS USING CTNID: ISCTEST

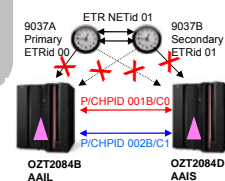
IXC435I ALL SYSTEMS IN SYSPLEX P04AAIBM ARE NOW SYNCHRONIZED
TO THE SAME TIME REFERENCE.
SYSTEM: AAIL  IS USING CTNID: ISCTEST
SYSTEM: AAIS  IS USING CTNID: ISCTEST
```



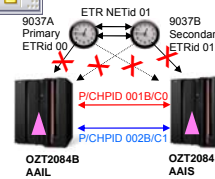
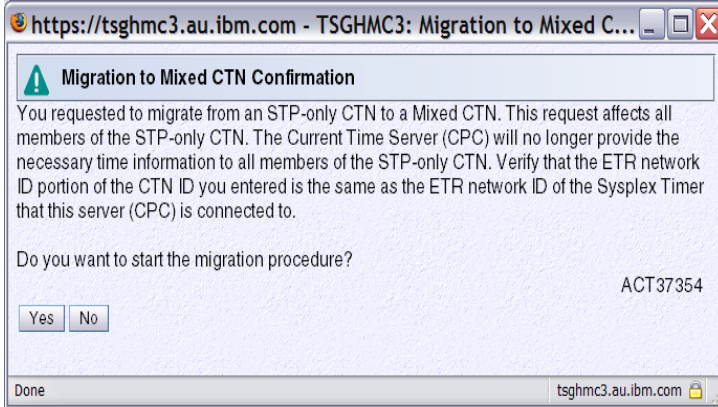
## D ETR after migrating to an STP only CTN

```
RESPONSE=AAIL
IEA386I 14.57.45 TIMING STATUS 192
SYNCHRONIZATION MODE = STP
THIS SERVER IS A STRATUM 1
CTN ID = ISCTEST
THE STRATUM 1 NODE ID=002084.C24.IBM.02.000000046875
THIS IS THE PREFERRED TIME SERVER
THIS STP NETWORK HAS NO SERVER TO ACT AS ARBITER
```

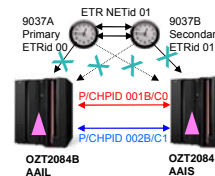
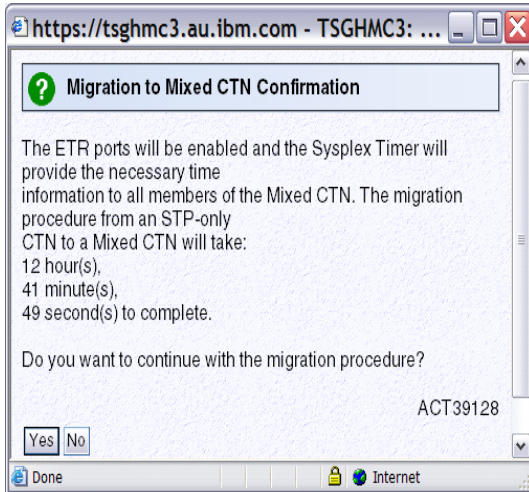
```
RESPONSE=AAIS
IEA386I 14.58.11 TIMING STATUS 851
SYNCHRONIZATION MODE = STP
THIS SERVER IS A STRATUM 2
CTN ID = ISCTEST
THE STRATUM 1 NODE ID=002084.C24.IBM.02.000000046875
THIS IS THE BACKUP TIME SERVER
NUMBER OF USABLE TIMING LINKS = 2
THIS STP NETWORK HAS NO SERVER TO ACT AS ARBITER
```



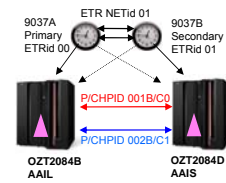
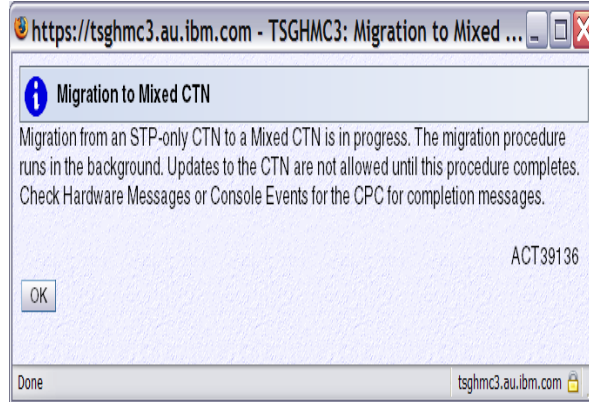
# Migration from STP-only to Mixed CTN



# Migration from STP to mixed Confirmation panel

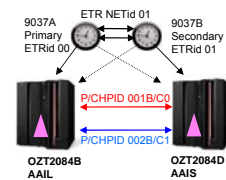


## Migration from STP to mixed



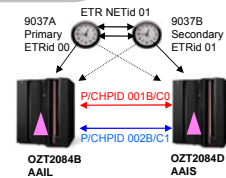
## Migration from STP to mixed SYSLOG for AAIL

```
IEA267I ETR PORT 0 IS NOW AVAILABLE.
IEA267I ETR PORT 1 IS NOW AVAILABLE.
IEA260I THE CPC IS NOW OPERATING IN ETR MODE.
IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTEM: AAIL
PREVIOUS CTNID: ISCTEST
CURRENT CTNID: ISCTEST -01
IEA273I TOD CLOCKS DYNAMICALLY ADVANCED TO MAINTAIN ETR SYNCHRONISM.
```



## Migration from STP to mixed SYSLOG for AAIS

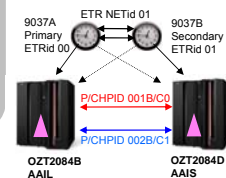
```
IEA267I ETR PORT 0 IS NOW AVAILABLE.
IXC438I COORDINATED TIMING INFORMATION HAS BEEN UPDATED
FOR SYSTEM: AAIS
PREVIOUS CTNID: ISCTEST
CURRENT CTNID: ISCTEST -01
IEA267I ETR PORT 1 IS NOW AVAILABLE.
IEA260I THE CPC IS NOW OPERATING IN ETR MODE.
*IXC439E ALL SYSTEMS IN SYSPLEX P04AAIBM ARE NOT SYNCHRONIZED 032
TO THE SAME TIME REFERENCE.
SYSTEM: AAIL IS USING CTNID: ISCTEST
SYSTEM: AAIS IS USING CTNID: ISCTEST -01
IEA273I TOD CLOCKS DYNAMICALLY ADVANCED TO MAINTAIN ETR SYNCHRONISM.
IXC435I ALL SYSTEMS IN SYSPLEX P04AAIBM ARE NOW SYNCHRONIZED 034
TO THE SAME TIME REFERENCE.
SYSTEM: AAIL IS USING CTNID: ISCTEST -01
SYSTEM: AAIS IS USING CTNID: ISCTEST -01
```



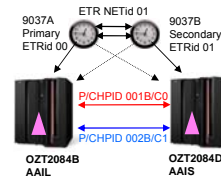
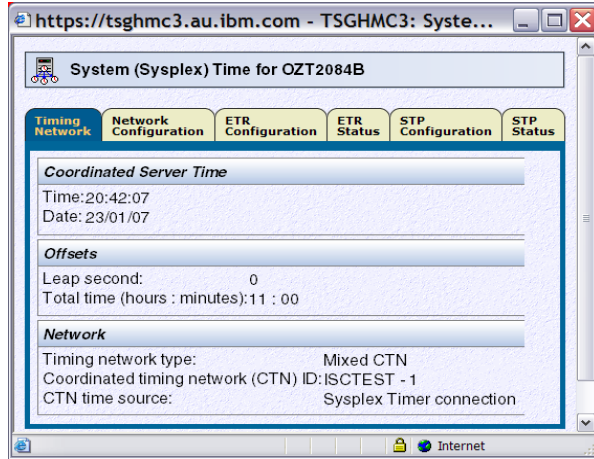
## Migration from STP to mixed D ETR display

```
RESPONSE=AAIL
IEA282I 20.21.05 TIMING STATUS 817
SYNCHRONIZATION MODE = ETR
CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                OPERATIONAL
ENABLED                    ENABLED
ETR NET ID=01              ETR NET ID=01
ETR PORT=03                ETR PORT=03
ETR ID=00                  ETR ID=01
THIS SERVER IS PART OF TIMING NETWORK ISCTEST -01
```

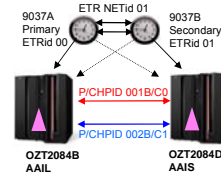
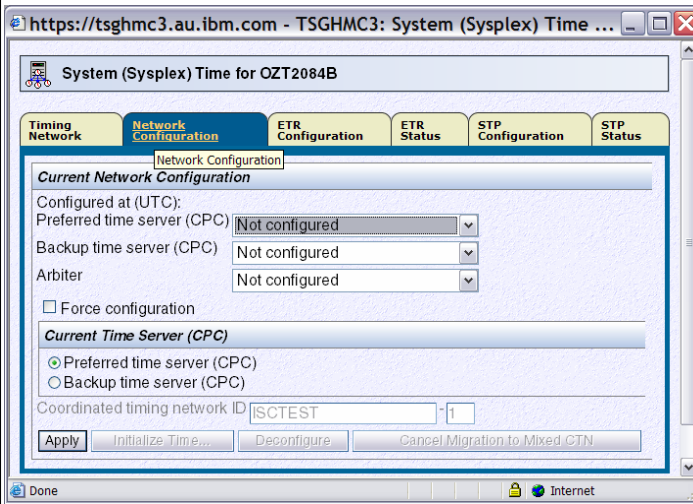
```
RESPONSE=AAIS
IEA282I 20.21.54 TIMING STATUS 053
SYNCHRONIZATION MODE = ETR
CPC PORT 0 <== ACTIVE      CPC PORT 1
OPERATIONAL                OPERATIONAL
ENABLED                    ENABLED
ETR NET ID=01              ETR NET ID=01
ETR PORT=02                ETR PORT=02
ETR ID=01                  ETR ID=00
THIS SERVER IS PART OF TIMING NETWORK ISCTEST -01
```



# Migration from STP to mixed Timing network panel

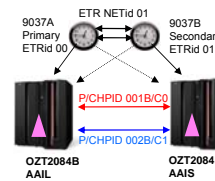
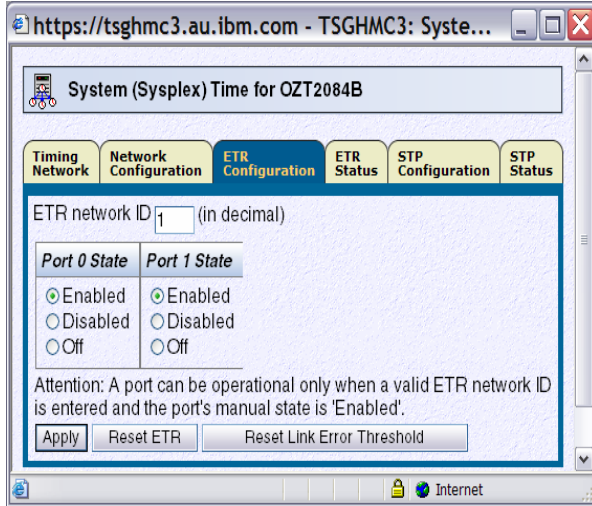


# Migration from STP to mixed Network configuration panel

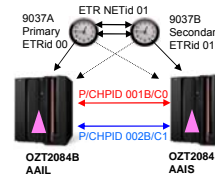
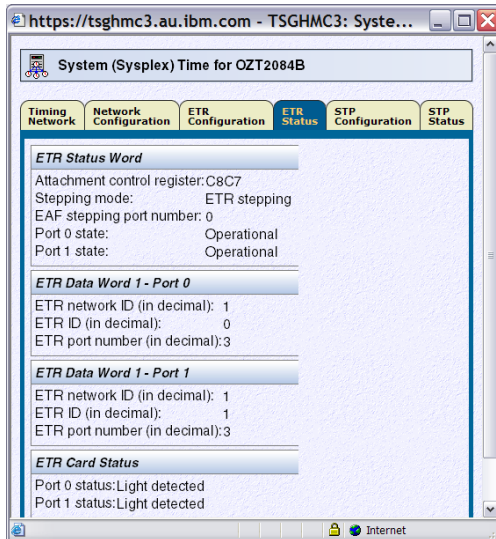




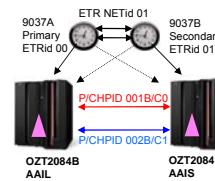
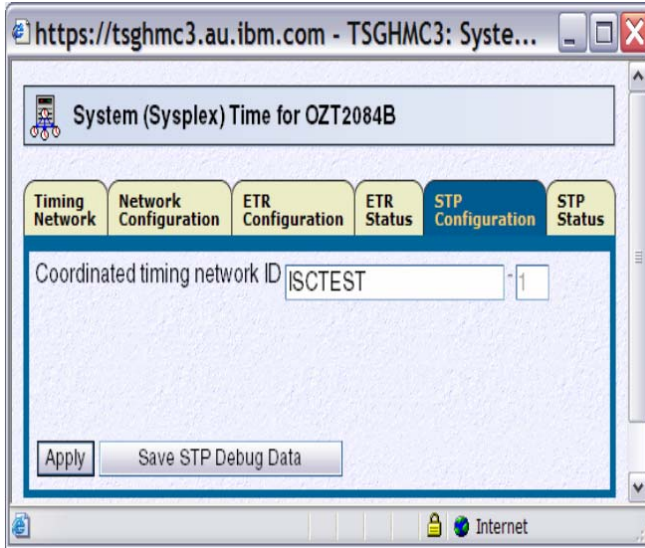
## Migration from STP to mixed ETR configuration panel



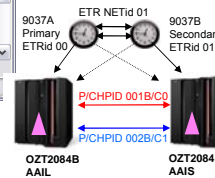
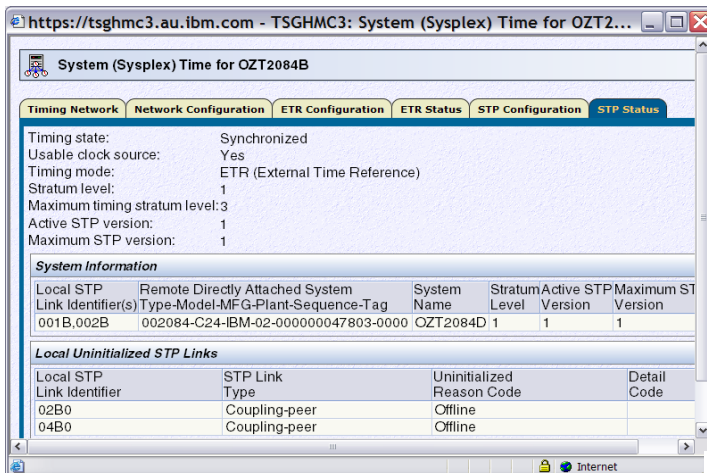
## Migration from STP to mixed ETR status panel



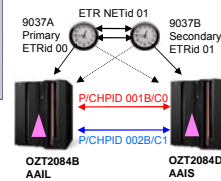
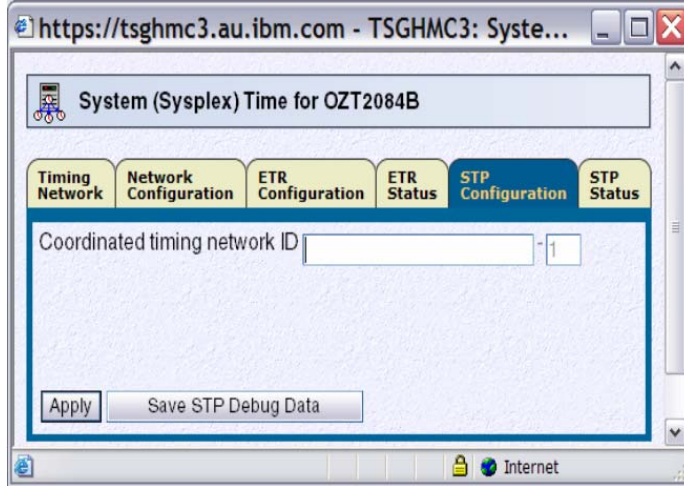
# Migration from STP to mixed STP configuration panel



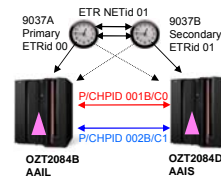
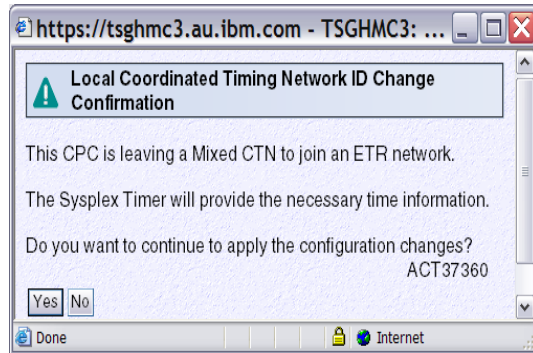
# Migration from STP to mixed STP status panel



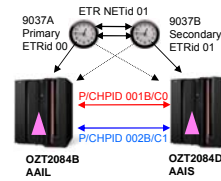
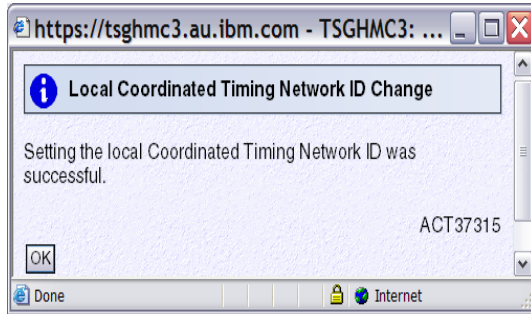
# Migration from mixed to ETR STP configuration panel on OZT2084B



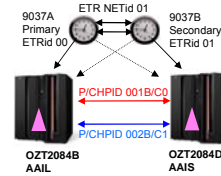
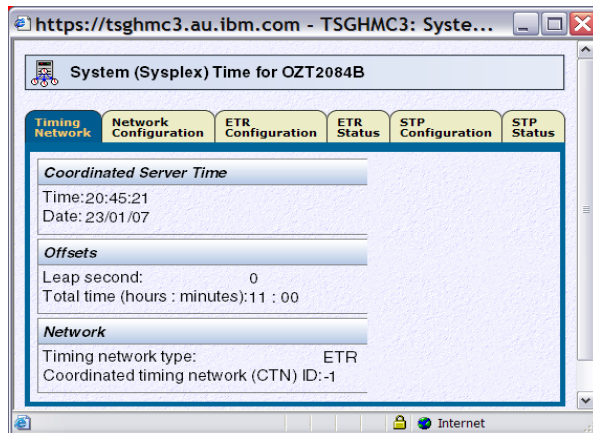
# Migration from mixed to ETR Confirmation panel



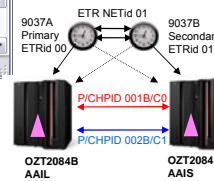
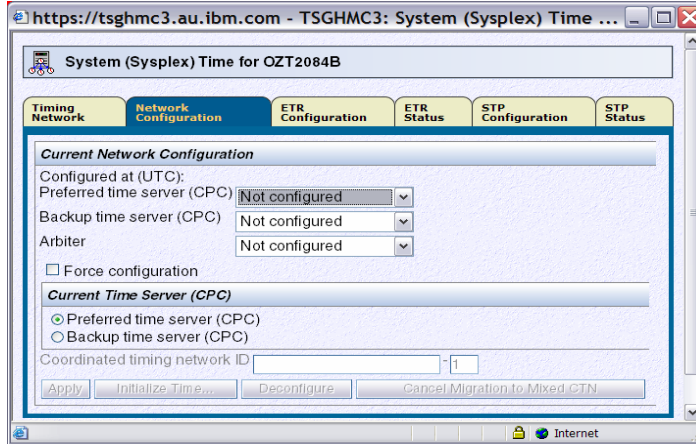
# Migration from mixed to ETR Result panel



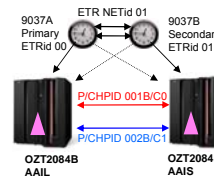
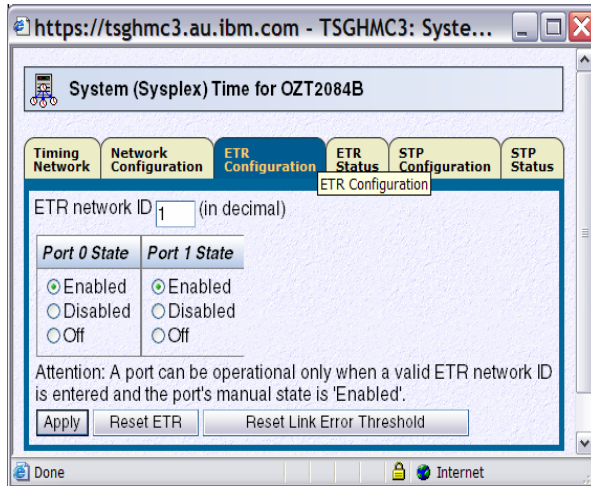
# Migration from mixed to ETR Timing network panel on OZT2084B



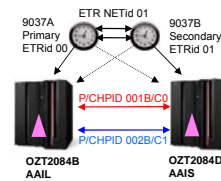
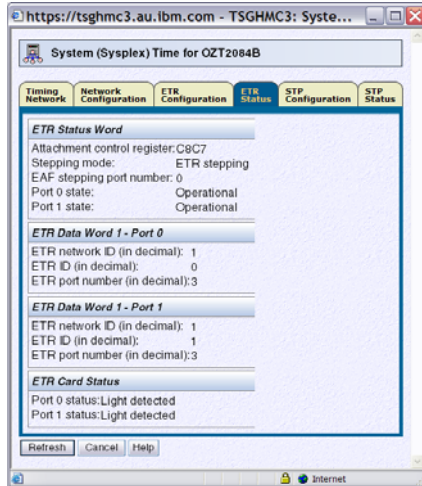
# Migration from mixed to ETR Network configuration panel on OZT2084B



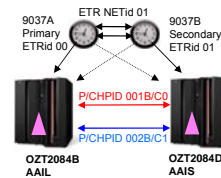
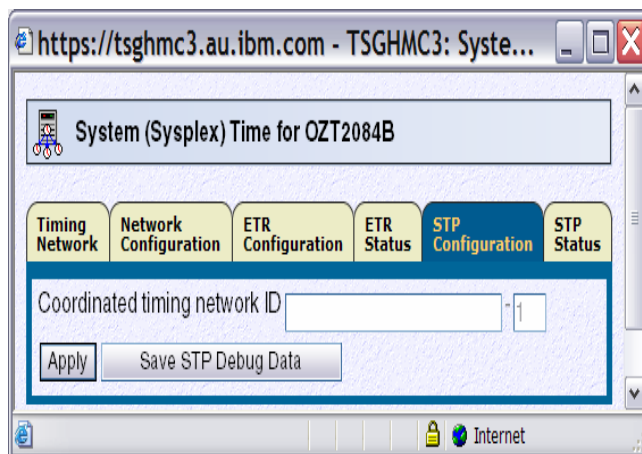
# Migration from mixed to ETR ETR configuration panel on OZT2084B



# Migration from mixed to ETR ETR status panel on OZT2084B



# Migration from mixed to ETR STP configuration panel on OZT2084B



# Migration from mixed to ETR STP status panel on OZT2084B

System (Sysplex) Time for OZT2084B

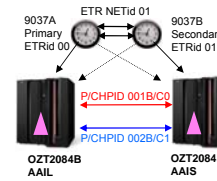
Timing state: Synchronized  
Usable clock source: Yes  
Timing mode: ETR (External Time Reference)  
Maximum timing stratum level: 3  
Active STP version: 1  
Maximum STP version: 1

**System Information**

Local STP Link Identifier(s)	Remote System Type	Directly Attached	System Model	Stratum	Active	STP Maximum	STP Version

**Local Uninitialized STP Links**

Local STP Link Identifier	STP Link Type	Uninitialized Reason Code	Detail Code
001B	Coupling-peer	Incoming ESP command reject	Configuration error
002B	Coupling-peer	Incoming ESP command reject	Configuration error
02B0	Coupling-peer	Offline	
04B0	Coupling-peer	Offline	



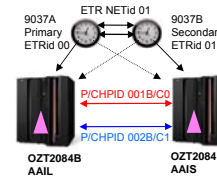
# Migration from mixed to ETR STP configuration panel on OZT2084D

System (Sysplex) Time for OZT2084D

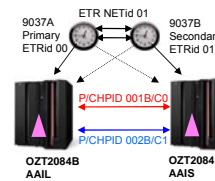
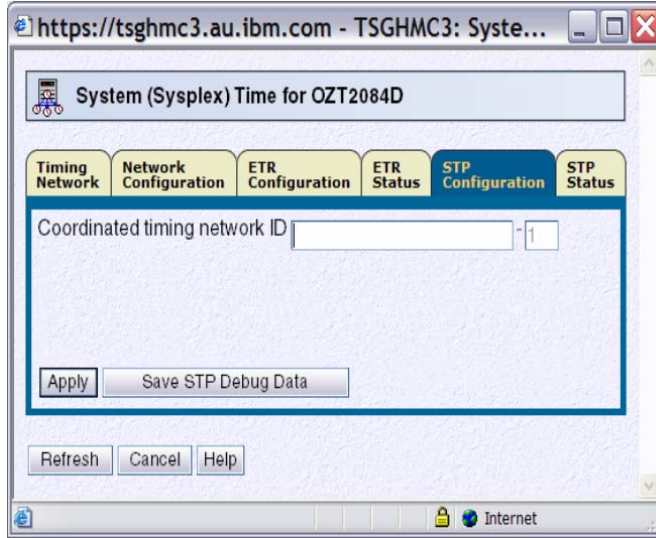
Coordinated timing network ID:  - 1

Apply Save STP Debug Data

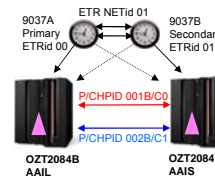
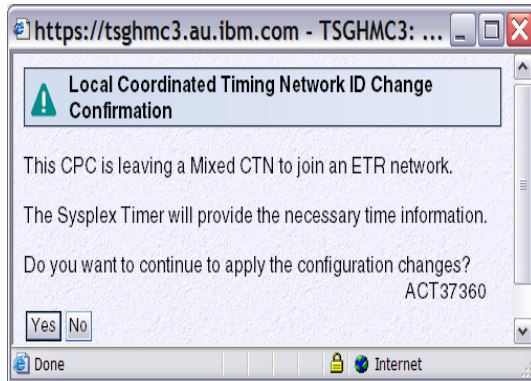
Refresh Cancel Help



# Migration from mixed to ETR STP configuration panel on OZT2084D

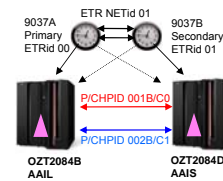
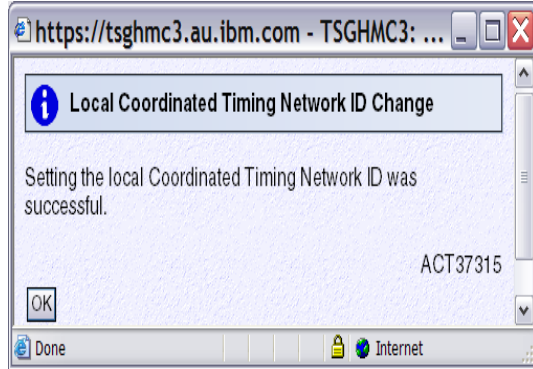


# Migration from mixed to ETR Confirmation panel

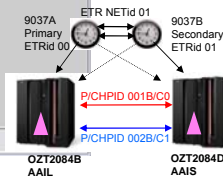
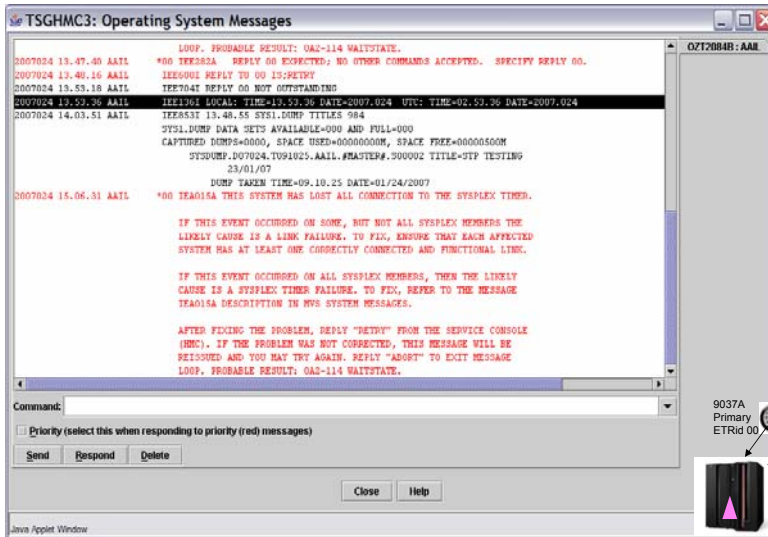




# Migration from mixed to ETR Result panel



# Disconnecting ETRs - Console for AAIL



## Disconnecting ETRs - Console for AAIS

**TSGHMC3: Operating System Messages**

```

PM=2  IH=0  CEM=0  EM=0  FO=0  IP=0  NOAMRF
ID:P/K  T MESSAGE TEXT
22 P *22 1ST3HE000 - ONE COMMANDS MAY BE ENTERED
13 P *13 1ST3HE030 - ONE COMMANDS MAY BE ENTERED
2007024 14.07.23 AAIS
IEK114E 14.07.23 2007.024 ACTIVITY 430
JOBS  M/E  TS  USRKS  SYSAS  UNITS  ACTIVE/MAX  VTAM  OAS
00001 00011 00000 00030 00010 00000/00350 00006
VLF  VLF  VLF  NSW  S  LLA  LLA  LLA  NSW  S
JES2  AAIS  IEFFPROC  NSW  S  DM722  Z2  IEFFPROC  NSW  S
JESF  JESF  JESF  NSW  S  NET  NET  NET  NSW  S
T30  T30  STEP1  OUT  S  PEPGAT  PEPGAT  IEFFPROC  NSW  30
TCP1P  TCP1P  TCP1P  NSW  50  PORTMAP  PORTMAP  PORTC  OUT  30
OSNNFD  OSNNFD  OSNNFD  OUT  50  PFD01  STEP1  CSRTASK  OUT  A0
2007024 15.06.32 AAIS  *00 IEA015A THIS SYSTEM HAS LOST ALL CONNECTION TO THE SYSPLEX TIMER.

IF THIS EVENT OCCURRED ON SOME, BUT NOT ALL SYSPLEX MEMBERS THE
LIKELY CAUSE IS A LINK FAILURE. TO FIX, ENSURE THAT EACH AFFECTED
SYSTEM HAS AT LEAST ONE CORRECTLY CONNECTED AND FUNCTIONAL LINK.

IF THIS EVENT OCCURRED ON ALL SYSPLEX MEMBERS, THEN THE LIKELY
CAUSE IS A SYSPLEX TIMER FAILURE. TO FIX, REFER TO THE MESSAGE
IEA015A DESCRIPTION IN MVS SYSTEM MESSAGES.

AFTER FIXING THE PROBLEM, REPLY "RETRY" FROM THE SERVICE CONSOLE
(HMC). IF THE PROBLEM WAS NOT CORRECTED, THIS MESSAGE WILL BE
REISSUED AND YOU MAY TRY AGAIN. REPLY "ABORT" TO EXIT MESSAGE
LOOP. PROBABLE RESULT: 0A2-114 WAITSTATE.
    
```

Command:

Priority (select this when responding to priority (red) messages)

Send Respond Delete

Close Help

Java Applet Window

## Disconnecting ETRs - SYSLOG for AAIL

```

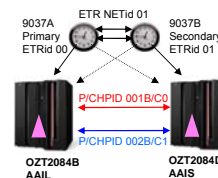
15:06:29.68 *IEA262I ETR PORT 0 IS NOT OPERATIONAL.
15:12:38.74 IXC613I SYSTEM AAIL HAS RESUMED NORMAL PROCESSING.
REASON: TIME SYNCHRONIZATION RESTORED.
15:06:31.73 *00 IEA015A THIS SYSTEM HAS LOST ALL CONNECTION TO THE SYSPLEX TIMER.

IF THIS EVENT OCCURRED ON SOME, BUT NOT ALL SYSPLEX MEMBERS THE
LIKELY CAUSE IS A LINK FAILURE. TO FIX, ENSURE THAT EACH AFFECTED
SYSTEM HAS AT LEAST ONE CORRECTLY CONNECTED AND FUNCTIONAL LINK.

IF THIS EVENT OCCURRED ON ALL SYSPLEX MEMBERS, THEN THE LIKELY
CAUSE IS A SYSPLEX TIMER FAILURE. TO FIX, REFER TO THE MESSAGE
IEA015A DESCRIPTION IN MVS SYSTEM MESSAGES.

AFTER FIXING THE PROBLEM, REPLY "RETRY" FROM THE SERVICE CONSOLE
(HMC). IF THE PROBLEM WAS NOT CORRECTED, THIS MESSAGE WILL BE
REISSUED AND YOU MAY TRY AGAIN. REPLY "ABORT" TO EXIT MESSAGE
LOOP. PROBABLE RESULT: 0A2-114 WAITSTATE.

15:12:19.52 IEE600I REPLY TO 00 IS:RETRY
15:12:25.10 IEA273I TOD CLOCKS DYNAMICALLY ADVANCED TO MAINTAIN ETR SYNCHRONISM.
15:12:35.59 IEA267I ETR PORT 0 IS NOW AVAILABLE.
15:12:39.12 *25 IXC402D AAIS LAST OPERATIVE AT 15:06:28. REPLY DOWN AFTER SYSTEM
RESET, OR INTERVAL=S5555 TO SET A REPROMPT TIME.
    
```



## Disconnecting ETRs - SYSLOG for AAIS

```
15:06:31.00 *IEA262I ETR PORT 1 IS NOT OPERATIONAL.
15:06:32.78 *00 IEA015A THIS SYSTEM HAS LOST ALL CONNECTION TO THE SYSPLEX TIMER.
```

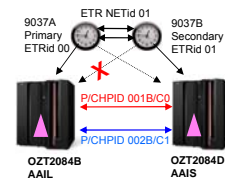
IF THIS EVENT OCCURRED ON SOME, BUT NOT ALL SYSPLEX MEMBERS THE LIKELY CAUSE IS A LINK FAILURE. TO FIX, ENSURE THAT EACH AFFECTED SYSTEM HAS AT LEAST ONE CORRECTLY CONNECTED AND FUNCTIONAL LINK.

IF THIS EVENT OCCURRED ON ALL SYSPLEX MEMBERS, THEN THE LIKELY CAUSE IS A SYSPLEX TIMER FAILURE. TO FIX, REFER TO THE MESSAGE IEA015A DESCRIPTION IN MVS SYSTEM MESSAGES.

AFTER FIXING THE PROBLEM, REPLY "RETRY" FROM THE SERVICE CONSOLE (HMC). IF THE PROBLEM WAS NOT CORRECTED, THIS MESSAGE WILL BE REISSUED AND YOU MAY TRY AGAIN. REPLY "ABORT" TO EXIT MESSAGE LOOP. PROBABLE RESULT: 0A2-114 WAITSTATE.

```
15:14:52.05 IEE600I REPLY TO 00 IS:RETRY
15:14:58.19 IEA273I TOD CLOCKS DYNAMICALLY ADVANCED TO MAINTAIN ETR SYNCHRONISM.
15:15:02.39 IEA267I ETR PORT 1 IS NOW AVAILABLE.
15:15:04.50 IXC613I SYSTEM AAIS HAS RESUMED NORMAL PROCESSING.
```

REASON: TIME SYNCHRONIZATION RESTORED.



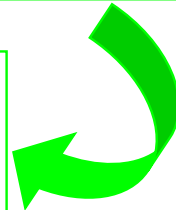
## D ETR (STP Mode)

D ETR

```
IEA386I 11.25.04 TIMING STATUS 787
SYNCHRONIZATION MODE = STP
THIS SERVER IS A STRATUM 3
CTN ID = ITSOPK
THE STRATUM 1 NODE ID = 002094.S18.IBM.02.00000002991E
NUMBER OF USABLE TIMING LINKS = 4
```

THIS STP TIMING NETWORK HAS NO SERVER TO ACT AS ARBITER

[THIS IS THE PREFERRED TIME SERVER]  
 [THIS IS THE BACKUP TIME SERVER]  
 [THIS IS THE ARBITER SERVER]  
 [THIS SERVER HAS NO LINK TO THE PREFERRED TIME SERVER]  
 [THIS SERVER HAS NO LINK TO THE BACKUP TIME SERVER]  
 [THIS SERVER HAS NO LINK TO THE ARBITER SERVER]  
 [THIS STP NETWORK HAS NO SERVER TO ACT AS BACKUP]  
 [THIS STP NETWORK HAS NO SERVER TO ACT AS ARBITER]  
 [THIS SERVER HAS ONLY A SINGLE SOURCE OF TIMING SIGNALS]  
 [NUMBER OF USABLE TIMING LINKS = y]  
 [THERE IS ONLY ONE LINK BETWEEN THE PREFERRED AND BACKUP TIME SERVERS]



## DISPLAY XCF,SYSPLEX,ALL

D XCF,S,ALL

IXC335I 15.15.08 DISPLAY XCF 319

SYSTEM	TYPE	SERIAL	LPAR	STATUS	TIME	SYSTEM STATUS
S14	2084	F49F	01	09/17/2006	15:15:07	ACTIVE TM=ETR
S08	2084	08AD	01	09/17/2006	15:15:03	ACTIVE TM=STP
S04	2086	599F	01	09/17/2006	15:15:05	ACTIVE TM=STP

## DISPLAY CF

D CF

IXL150I 08.33.26 DISPLAY CF 132

COUPLING FACILITY 002084.IBM.02.00000004F49F

PARTITION: 00 CPCID: 00

CONTROL UNIT ID: F240

NAMED CF06

COUPLING FACILITY SPACE UTILIZATION

ALLOCATED SPACE		DUMP SPACE UTILIZATION	
STRUCTURES:	491008 K	STRUCTURE DUMP TABLES:	0 K
DUMP SPACE:	20224 K	TABLE COUNT:	0
FREE SPACE:	469248 K	FREE DUMP SPACE:	20224 K
TOTAL SPACE:	980480 K	TOTAL DUMP SPACE:	20224 K
		MAX REQUESTED DUMP SPACE:	0 K
		STORAGE INCREMENT SIZE:	256 K

VOLATILE: YES

CFLEVEL: 14

CFCC RELEASE 14.00, SERVICE LEVEL 00.21

BUILT ON 09/08/2006 AT 14:29:00

COUPLING FACILITY HAS ONE OR MORE DEDICATED PROCESSORS

CF REQUEST TIME ORDERING: REQUIRED AND ENABLED

COUPLING FACILITY SPACE CONFIGURATION

	IN USE	FREE	TOTAL
CONTROL SPACE:	511232 K	469248 K	980480 K
NON-CONTROL SPACE:	0 K	0 K	0 K

## CF Request Time Ordering messages

```
CF REQUEST TIME ORDERING: NOT-REQUIRED AND ENABLED
CF REQUEST TIME ORDERING: NOT-REQUIRED AND NOT-ENABLED
CF REQUEST TIME ORDERING: REQUIRED AND NOT-ENABLED
REASON: FUNCTION NOT INSTALLED ON THIS SYSTEM
REASON: ETR NOT CONNECTED TO COUPLING FACILITY
REASON: REQUEST TIME ORDERING FUNCTION FAILURE
REASON: ETR NETID MISMATCH - CF ETR NETID: etr netid
REASON: CTNID MISMATCH - CF CTNID: ctnid
```

## STP Prerequisites

### ▪ Hardware

- System z9, z990 or z890 server
  - Concurrent MCLs on Driver 55 (z990, z890) to install STP Licensed Internal Code (LIC)
  - MCL to enable STP
- System z9 HMC
  - New HMC
    - Can upgrade existing HMC

### ▪ Software

- z/OS 1.7 or higher
  - STP code in z/OS 1.7 (default = disabled)
  - APARs for STP support
  - APAR to enable STP
- Toleration code for z/OS 1.4, 1.5, 1.6

## Publications/Education/Reference

- **Redbooks**
  - Server Time Protocol Planning Guide SG247280
    - Available at announce time
  - Server Time Protocol Implementation Guide SG247281
    - Available at General Availability (GA)
  - S/390 Time Management and IBM 9037 Sysplex Timer, SG24-2070
- **Hardware Management Console**
  - z9 Hardware Management Console Users Guide
  - z990 Hardware Management Console Users Guide
  - z890 Hardware Management Console Users Guide
- **Server Installation Planning**
  - System z9 EC Installation Manual for Physical Planning, GC28-6844
  - System z9 BC Installation Manual for Physical Planning, GC28-6855
  - zSeries 990 Installation Manual for Physical Planning, GC28-6824
  - zSeries 890 Installation Manual for Physical Planning, GC28-6828
- **Education**
  - Introduction to Server Time Protocol (STP)
    - Available on Resource Link
    - <https://www.ibm.com/servers/resourcelink/hom03010.nsf?OpenDatabase>
- **STP website**
  - <http://www.ibm.com/systems/z/ps0/stp.html>
- **Systems Assurance**
  - The IBM team is required to complete a Systems Assurance Review (SAPR Guide SA06-012) and to complete the Systems Assurance Confirmation Form via Resource Link



# Questions ?

# Thank You !

- Luiz A. Fadel  
– fadel@br.ibm.com
- Ewerson Palacio  
– bird@br.ibm.com

