

## Technical Note 80

### Process for establishing Redundant Systems using PMCS 6.5 and Wonderware InTouch™ 7.0

**Subject:** Establishing a standardized process for redundant system implementation

**Applies To:** PMCS 6.5, Wonderware InTouch 7.0

#### Notes:

- The intelligence used to control the “heartbeat” and redundancy control status (which machine will be Primary/Backup) is the Enertec software Substation Automation Redundant Fail-Over System or most commonly known as SARFOS. If unavailable, the integrator will need to develop similar control functionality (i.e. scripting control of a PLC).
- Since the number of configured Waveform Clients is an unpredictable value (any workstation can act as a view node) and the scripting ability to break all active connections from the Waveform Server is unavailable → The PMCS Waveform Server and Waveform Client do NOT support full redundant operation at present.

#### Initial Conditions:

- SARFOS configured with IP address of Primary and Backup servers
- SARFOS monitoring PMCS EventServer and PMCS EventLog to provide automatic restart capabilities
- DDE server configured and communication with device(s) tested
- SARFOS, DDE server, EventServer and EventLog are running on both servers with the ports on the Backup server suspended (“Poking” the following from a small client will adequately suspend the ports è Application: GE32MODB, Topic: SYSTEM, Item: SUS\_RES\_PORTXX )

#### Procedure:

- The following steps are based on setting up redundancy in the Event Server and customizing scripts in the Wonderware InTouch 7.0 software package.
- This procedure is written to show a single port and single device and can easily be expanded to support multiple ports and devices.
- A diagram of a Single Server Configuration and a Redundant Server Configuration are available at the end of the document.
- For simplicity, the procedure is sectionalized into key components: Event Server Redundancy Configuration, Access Names, Tagnames, and Condition Scripts.

### Event Server Redundancy Configuration

Note: Upon installation of PMCS 6.5, Microsoft ODBC drivers get installed. This configuration process is explained using a Microsoft Access Database.

#### PERFORM THE FOLLOWING ON BOTH PMCS 6.5 SERVERS

- On the PMCS 6.5 Server, ensure the path to the Eventlog Database (<drive>:\GE\_PMCS\eventlog\database\ ) is SHARED and MAPPED to allow access to each remote server.
- Verify under the System DSN tab of ODBC (Start→Settings→Control Panel→ODBC Data Sources) that the Name: pmcs65 Driver: Microsoft Access Driver (\*.mdb)
- To Create the **Backup ODBC Data Source** while viewing the System DSN tab, use the following steps:
  - ◆ Click ADD
  - ◆ Select Microsoft Access Driver (\*.mdb)
  - ◆ Click FINISH
  - ◆ Under Data Source Name enter **Backup\_pmcs65**
  - ◆ Click SELECT and choose the remote servers eventlogger.mdb
  - ◆ Click OK and verify the **Backup\_pmcs65** appears in the System DSN tab

- To Configure the Redundancy Paths in the Event Server, use the following steps:
  - ◆ Start the Event Server and click the STOP button to stop data logging.
  - ◆ Select Configure → Redundancy → Host Database and verify Access is selected and **pmcs65** appears in the data source name.
  - ◆ Select Configure → Redundancy → Back up Database and verify Access is selected, enter **Backup\_pmcs65** in the data source name and enter the remote PMCS65 server name (as defined in your network) in the Backup PC Name block.

#### Access Names

Access Name: *SARFOS*  
 Node Name: *<Blank>*  
 Application Name: *SARFOS*  
 Topic Name: *System*  
 Which Protocol: *DDE*  
 When to advise server: *Advise only active items*

Access Name: *GE32MODB*  
 Node Name: *<Blank>*  
 Application Name: *GE32MODB*  
 Topic Name: *System*  
 Which Protocol: *DDE*  
 When to advise server: *Advise only active items*

Access Name: *EVENTLOG*  
 Node Name: *<Blank>*  
 Application Name: *EVENTLOG*  
 Topic Name: *System*  
 Which Protocol: *DDE*  
 When to advise server: *Advise only active items*

#### **\*\*NOTE\*\***

Using GE Device Wizards will create the access name for each device when defined within the GE Device Wizard

#### Tagnames

Tagname: *SARFOS\_HOSTSTATUS*  
 Type: *I/O Message*  
 Group: *\$System*  
 R/W: *Read\_Write*  
 Access Name: *SARFOS*  
 Item: *Hoststatus*

Tagname: *SARFOS\_REMOTESTATUS*  
 Type: *I/O Message*  
 Group: *\$System*  
 R/W: *Read\_Write*  
 Access Name: *SARFOS*  
 Item: *Remotestatus*

Tagname: *SARFOS\_LOCALNODENAME*  
 Type: *I/O Message*  
 Group: *\$System*  
 R/W: *Read\_Write*

Access Name: *SARFOS*  
Item: *Localnodename*

Tagname: *SARFOS\_REMOTENODENAME*  
Type: *I/O Message*  
Group: *\$System*  
R/W: *Read\_Write*  
Access Name: *SARFOS*  
Item: *Remotenodename*

**\*\*NOTE\*\***

Using GE Device Wizards will create the Tagnames for each device when defined within the GE Device Wizard

**CONDITION SCRIPTS**

Condition: **SARFOS\_HOSTSTATUS == "PRIMARY" AND  
(SARFOS\_REMOTESTATUS == "BACKUP" OR  
SARFOS\_REMOTESTATUS == "UNKNOWN")**

Comment: Establish system setup in primary mode

Condition Type: On True (This requires the system to TRANSITION from FALSE to TRUE to trigger)

Script:

{SUSPENDING PORT 37 ON REMOTE DDE SERVER}

WWPoke("\\ + SARFOS\_REMOTENODENAME + "GE32MODB" , "SYSTEM",  
"SUS\_RES\_PORT37", "0");

{RESUMING PORT 37 ON LOCAL DDE SERVER}

WWPoke("GE32MODB" , "SYSTEM", "SUS\_RES\_PORT37", "1");

{DYNAMICALLY ASSOCIATES ALL DDE TAGS FOR THE CHOSEN DEVICE TO THE PRIMARY  
SERVER}

IOSetAccessName( "ML745", SARFOS\_LOCALNODENAME, "", "" );

{START HOST WFS}

WWStartApp( "WFSERVER", "NORMAL" );

WWPoke("WFSERVER" , "WFSERVER", "WFS\_START", "1");

WWControl(InfoAppTitle("WFSERVER"), "Minimize" );

Condition: **SARFOS\_HOSTSTATUS == "BACKUP" AND  
(SARFOS\_REMOTESTATUS == "UNKNOWN" OR**

**SARFOS\_REMOTESTATUS == "PRIMARY")**

Comment: Establish system setup in alternate mode

Condition Type: On True (This requires the system to TRANSITION from FALSE to TRUE to trigger)

Script:

```
{SUSPENDING PORT 37 ON LOCAL DDE SERVER}
```

```
WWPoke("GE32MODB" , "SYSTEM", "SUS_RES_PORT37", "0");
```

```
{DYNAMICALLY ASSOCIATES ALL DDE TAGS FOR THE CHOSEN DEVICE TO THE BACKUP SERVER}
```

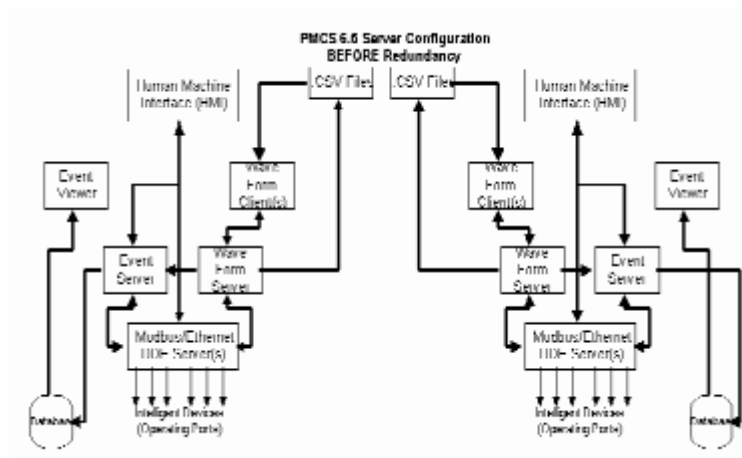
```
IOSetAccessName( "ML745", SARFOS_REMOTENODENAME,"", "" );
```

```
{KILL LOCAL WFS}
```

```
WWControl(InfoAppTitle("WFSERVER"), "CLOSE" );
```

```
{FORCES LOCAL EVENTLOGGER TO BACKUP MODE}
```

```
WWPoke("EVENTLOG", "System", "Loggermode", "2");
```



**Keywords**

REDUNDANCY, SARFOS, SCRIPT

**Related Notes**

None

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