Tech Note 744
Resolving Incorrect Shift Times When MESDB is Moved to Another Time Zone

Topic#: 002520
Created: November 2010

Introduction

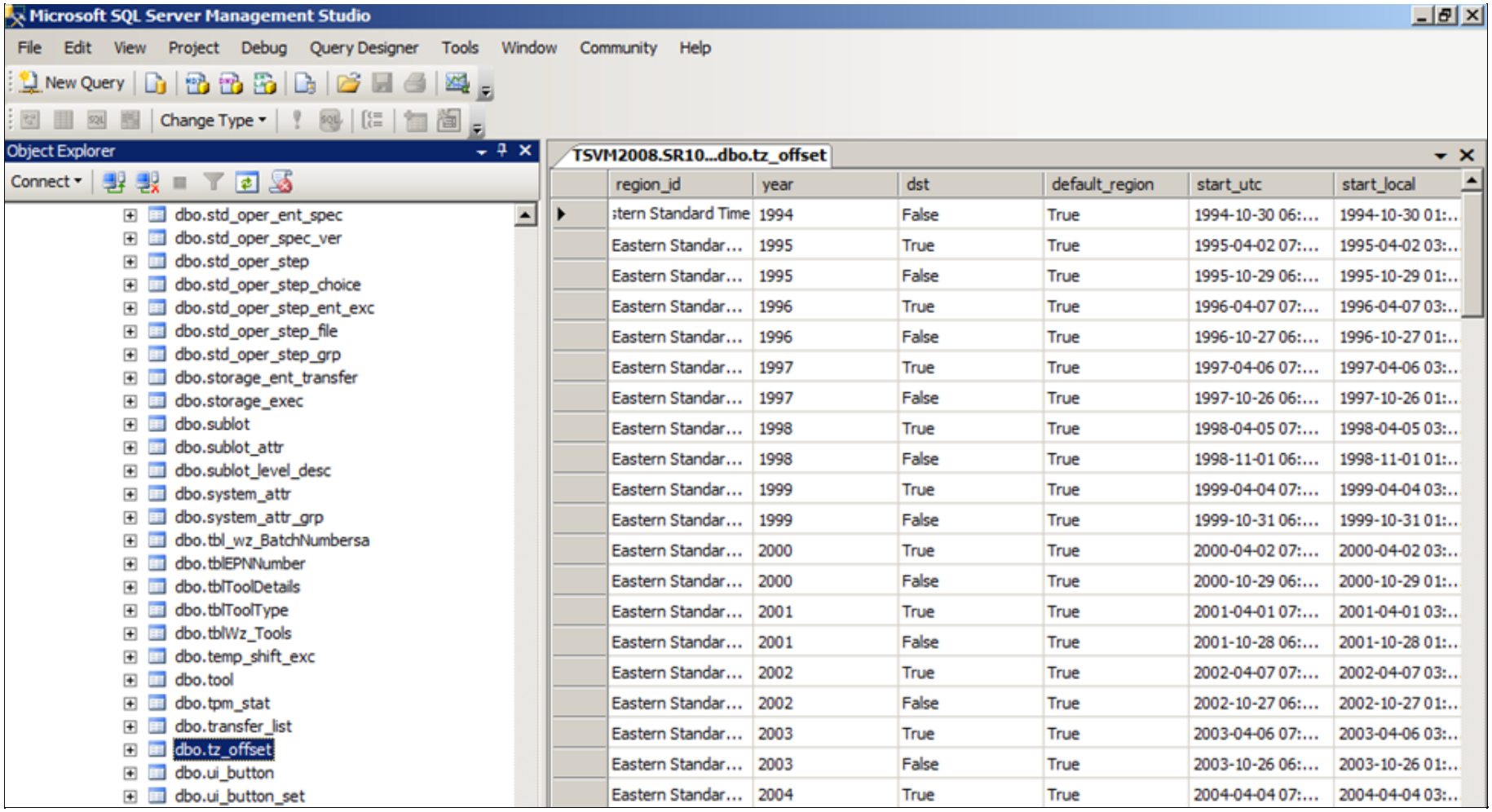
This *Tech Note* explains resolving a known issue that occurs when the MES Database (MESDB) is moved to a different time zone.

The issue is that previously-configured Shifts revert back to the original time zone after the database is relocated.

After the first shift change in the new time zone, the shift defined in the database will revert back to the time zone to where the database and shifts were first defined. The UTC time written to the database will be off after the first shift change.

This is due to the new table in MES 4.0 called **dbo.tz_offset**. When the Middleware is first started it looks at the time zone for the machine it is installed on and writes that time zone data to the **dbo.tz_offset** table as the default time zone.

Figure 1 (below) shows that it wrote Eastern Standard time.



region_id	year	dst	default_region	start_utc	start_local
;tern Standard Time	1994	False	True	1994-10-30 06:...	1994-10-30 01:...
Eastern Standar...	1995	True	True	1995-04-02 07:...	1995-04-02 03:...
Eastern Standar...	1995	False	True	1995-10-29 06:...	1995-10-29 01:...
Eastern Standar...	1996	True	True	1996-04-07 07:...	1996-04-07 03:...
Eastern Standar...	1996	False	True	1996-10-27 06:...	1996-10-27 01:...
Eastern Standar...	1997	True	True	1997-04-06 07:...	1997-04-06 03:...
Eastern Standar...	1997	False	True	1997-10-26 06:...	1997-10-26 01:...
Eastern Standar...	1998	True	True	1998-04-05 07:...	1998-04-05 03:...
Eastern Standar...	1998	False	True	1998-11-01 06:...	1998-11-01 01:...
Eastern Standar...	1999	True	True	1999-04-04 07:...	1999-04-04 03:...
Eastern Standar...	1999	False	True	1999-10-31 06:...	1999-10-31 01:...
Eastern Standar...	2000	True	True	2000-04-02 07:...	2000-04-02 03:...
Eastern Standar...	2000	False	True	2000-10-29 06:...	2000-10-29 01:...
Eastern Standar...	2001	True	True	2001-04-01 07:...	2001-04-01 03:...
Eastern Standar...	2001	False	True	2001-10-28 06:...	2001-10-28 01:...
Eastern Standar...	2002	True	True	2002-04-07 07:...	2002-04-07 03:...
Eastern Standar...	2002	False	True	2002-10-27 06:...	2002-10-27 01:...
Eastern Standar...	2003	True	True	2003-04-06 07:...	2003-04-06 03:...
Eastern Standar...	2003	False	True	2003-10-26 06:...	2003-10-26 01:...
Eastern Standar...	2004	True	True	2004-04-04 07:...	2004-04-04 03:...

FIGURE 1: REGION_ID IS EASTERN STANDARD TIME

Application Versions

- MES 4.0

Procedure

To resolve this problem, complete the following steps.

1. Open the MES Client and select the **Shift and Shift Schedule** feature. Delete all the shift data for all of the entities (Figure 2 below).

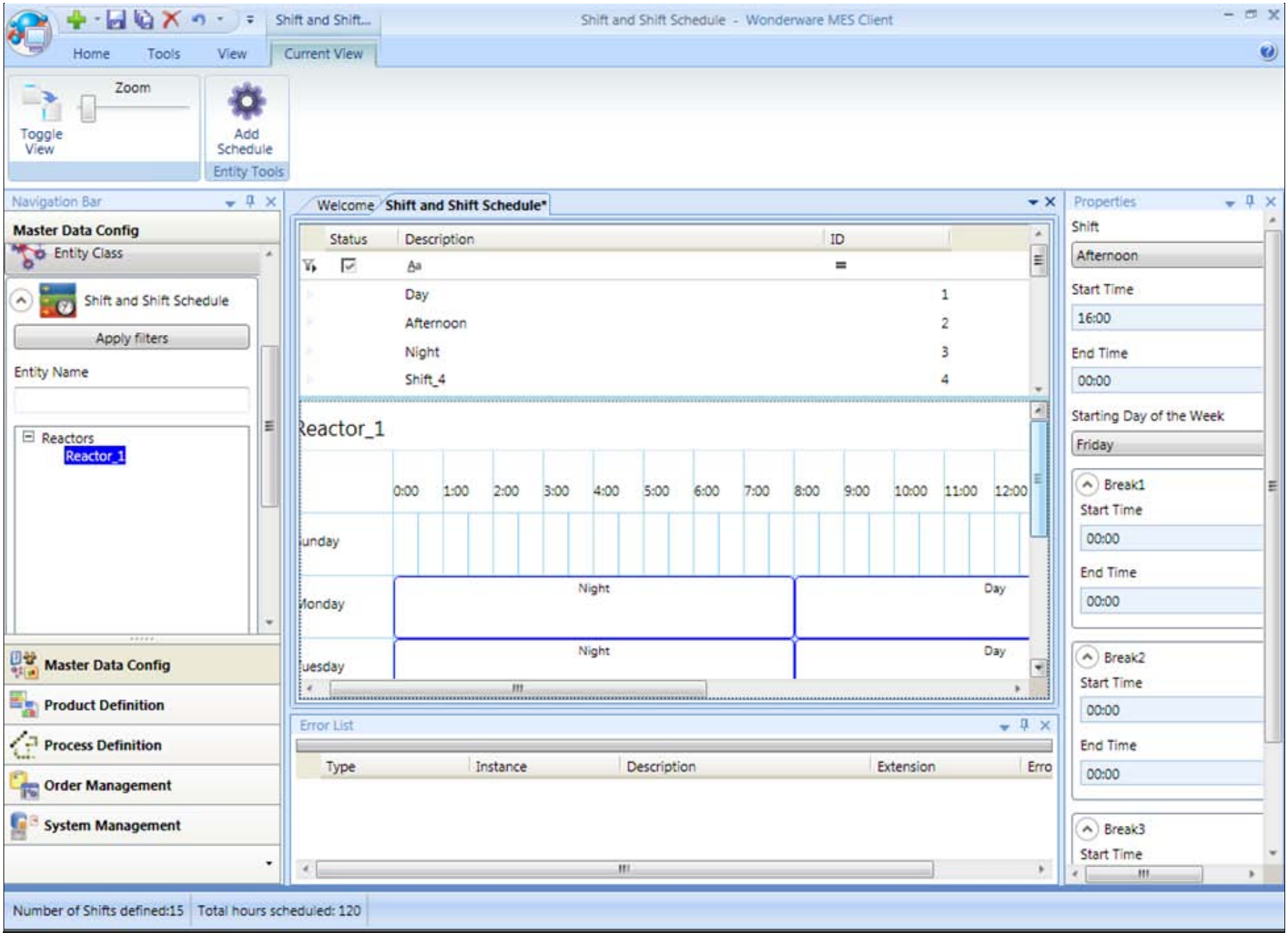


FIGURE 2: EXISTING SHIFT DATA

2. Delete all the shift data for all of the entities (Figure 3 below).

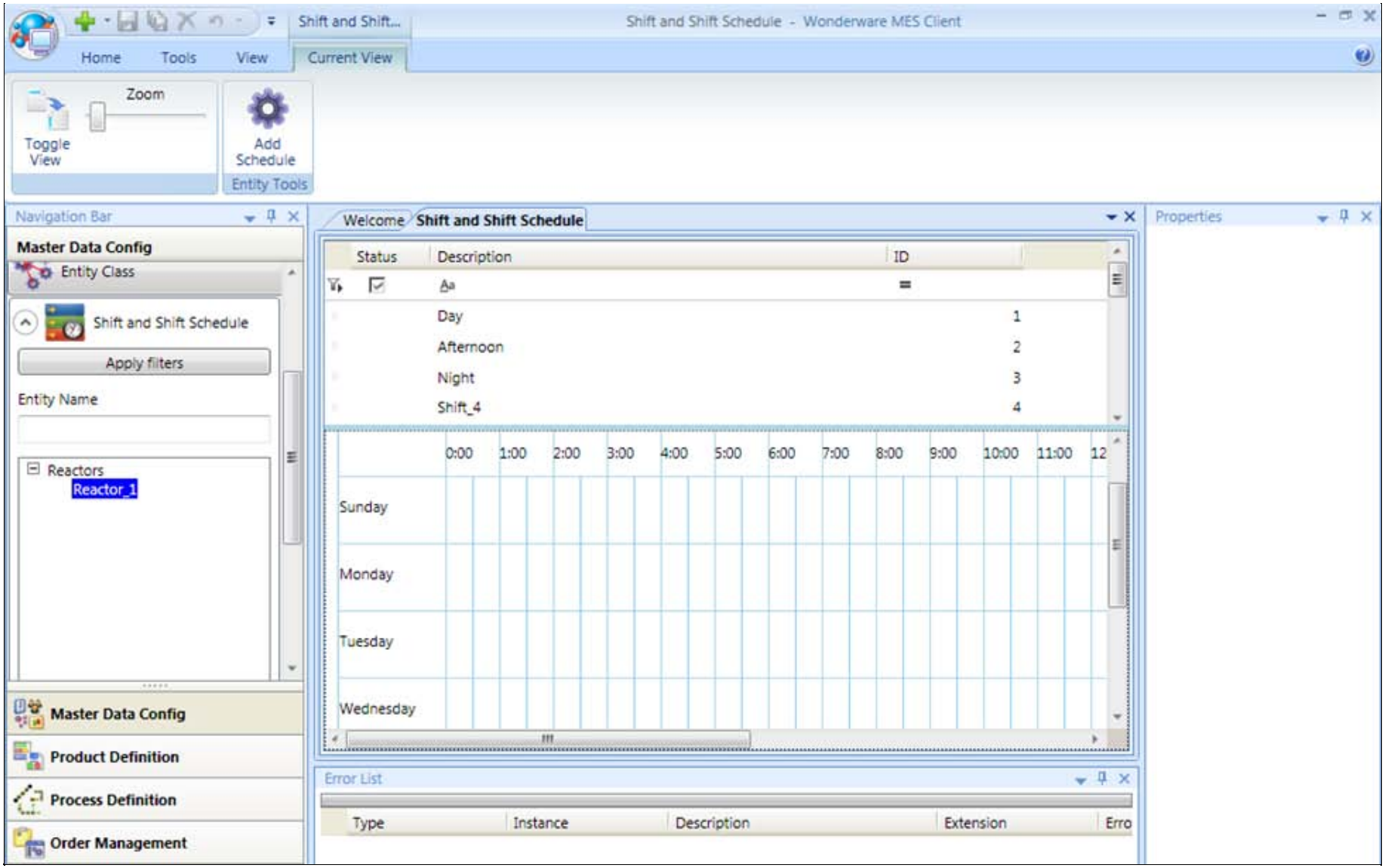


FIGURE 3: DELETED SHIFT DATA IN SHIFT AND SHIFT SCHEDULE TAB

3. Shutdown the Middleware and Factelligence services.
4. Now go to the 4.0 MES Database and select the **dbo.Shift_to_go** table and delete all data Shift data like below. You can use the query truncate in SQL profile Truncate table Shift_to_go

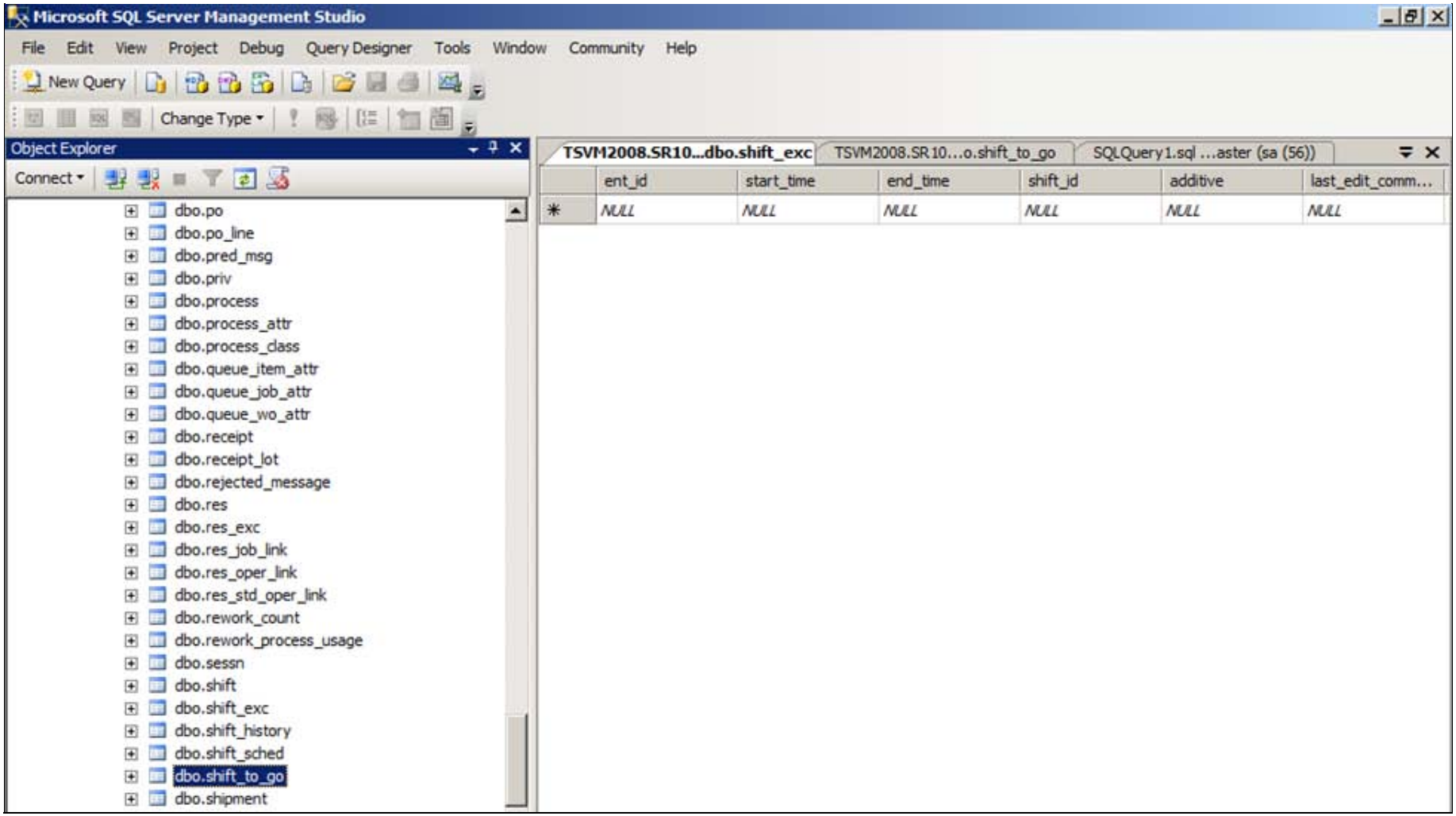
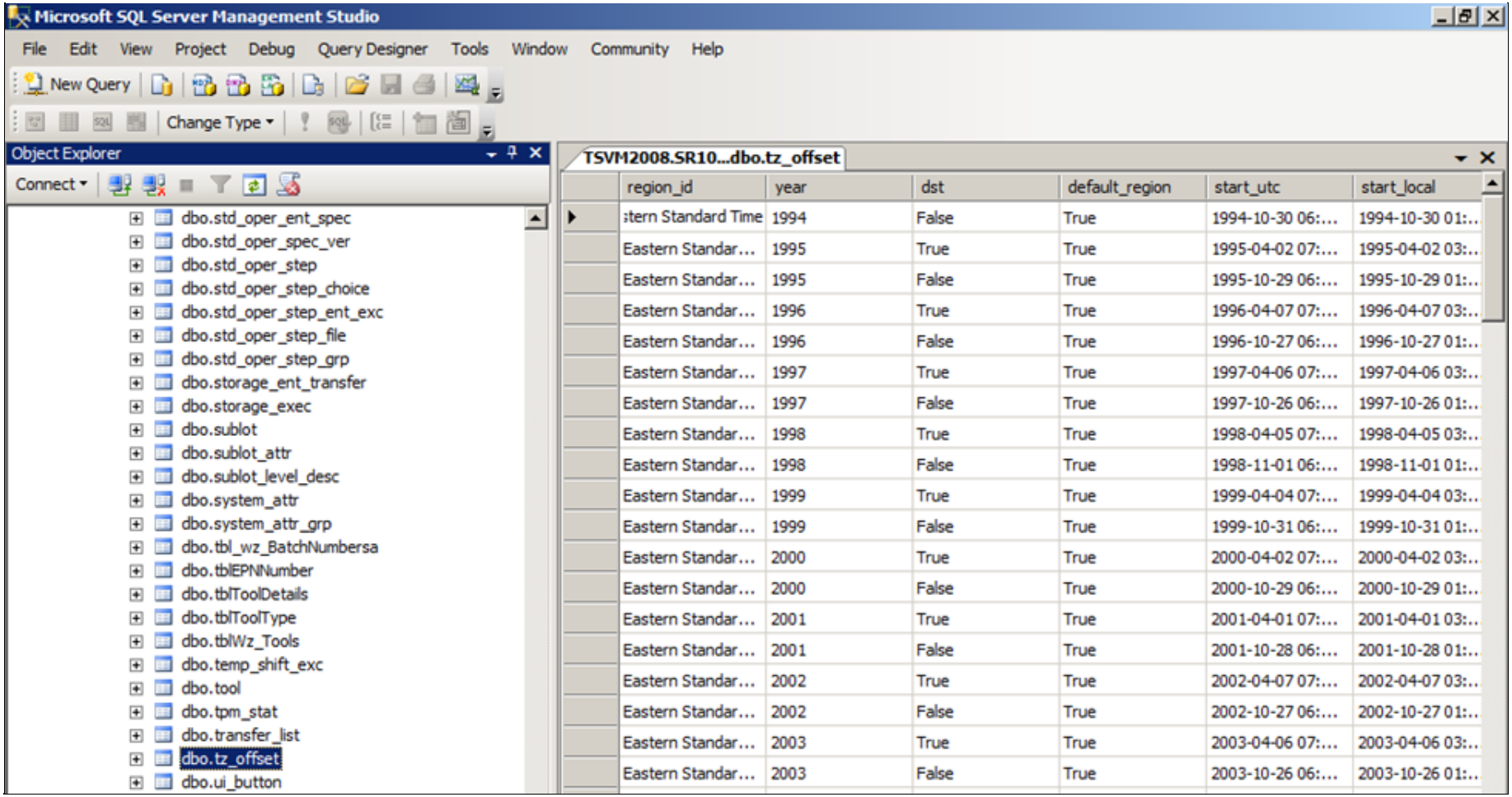


FIGURE 4: DELETED SHIFT DATA IN SHIFT_TO_GO TABLE

5. Delete the data in the **dbo.tz_offset** table.
6. You can use the following query to truncate the Offset table: `Truncate table tz_offset`

   Figure 5 (below) shows the default region is **Eastern Standard**.



region_id	year	dst	default_region	start_utc	start_local
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Eastern Standar...	1996	False	True	1996-10-27 06:...	1996-10-27 01:..
Eastern Standar...	1997	True	True	1997-04-06 07:...	1997-04-06 03:..
Eastern Standar...	1997	False	True	1997-10-26 06:...	1997-10-26 01:..
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Eastern Standar...	1999	False	True	1999-10-31 06:...	1999-10-31 01:..
Eastern Standar...	2000	True	True	2000-04-02 07:...	2000-04-02 03:..
Eastern Standar...	2000	False	True	2000-10-29 06:...	2000-10-29 01:..
Eastern Standar...	2001	True	True	2001-04-01 07:...	2001-04-01 03:..
Eastern Standar...	2001	False	True	2001-10-28 06:...	2001-10-28 01:..
Eastern Standar...	2002	True	True	2002-04-07 07:...	2002-04-07 03:..
Eastern Standar...	2002	False	True	2002-10-27 06:...	2002-10-27 01:..
Eastern Standar...	2003	True	True	2003-04-06 07:...	2003-04-06 03:..
Eastern Standar...	2003	False	True	2003-10-26 06:...	2003-10-26 01:..

FIGURE 5: TZ_OFFSET TABLE WITH DEFAULT REGION DATA

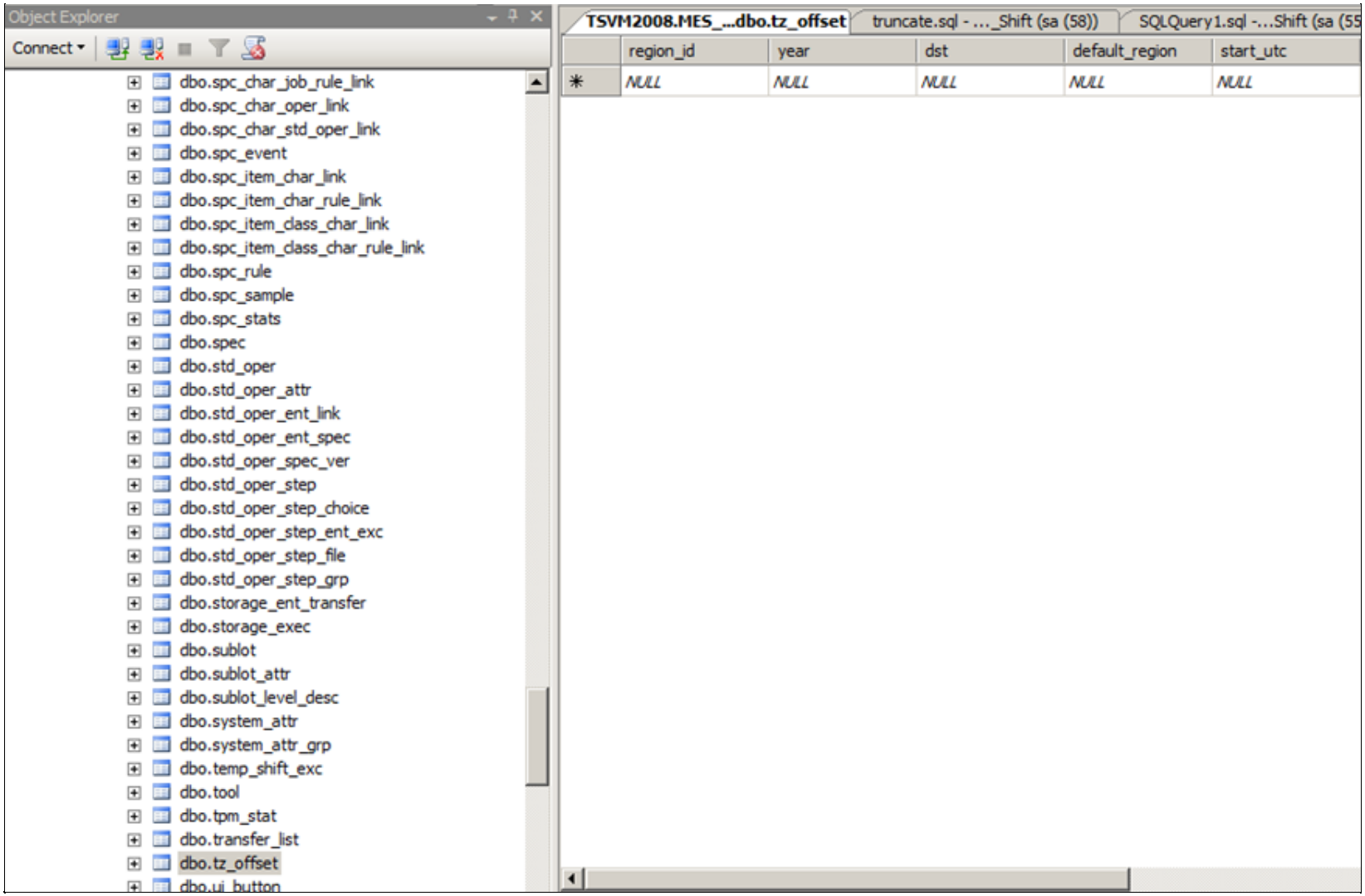

FIGURE 6: DATA DELETED FROM TZ_OFFSET TABLE

This table is re-populated when the new time zone is set on the database server and the Middleware is started.

For this example, the time zone was changed to Pacific Coast time zone. Figure 6 (below) shows that when the Middleware was restarted the dbo.tz_offset was populated with the new time zone setting (Pacific coast).

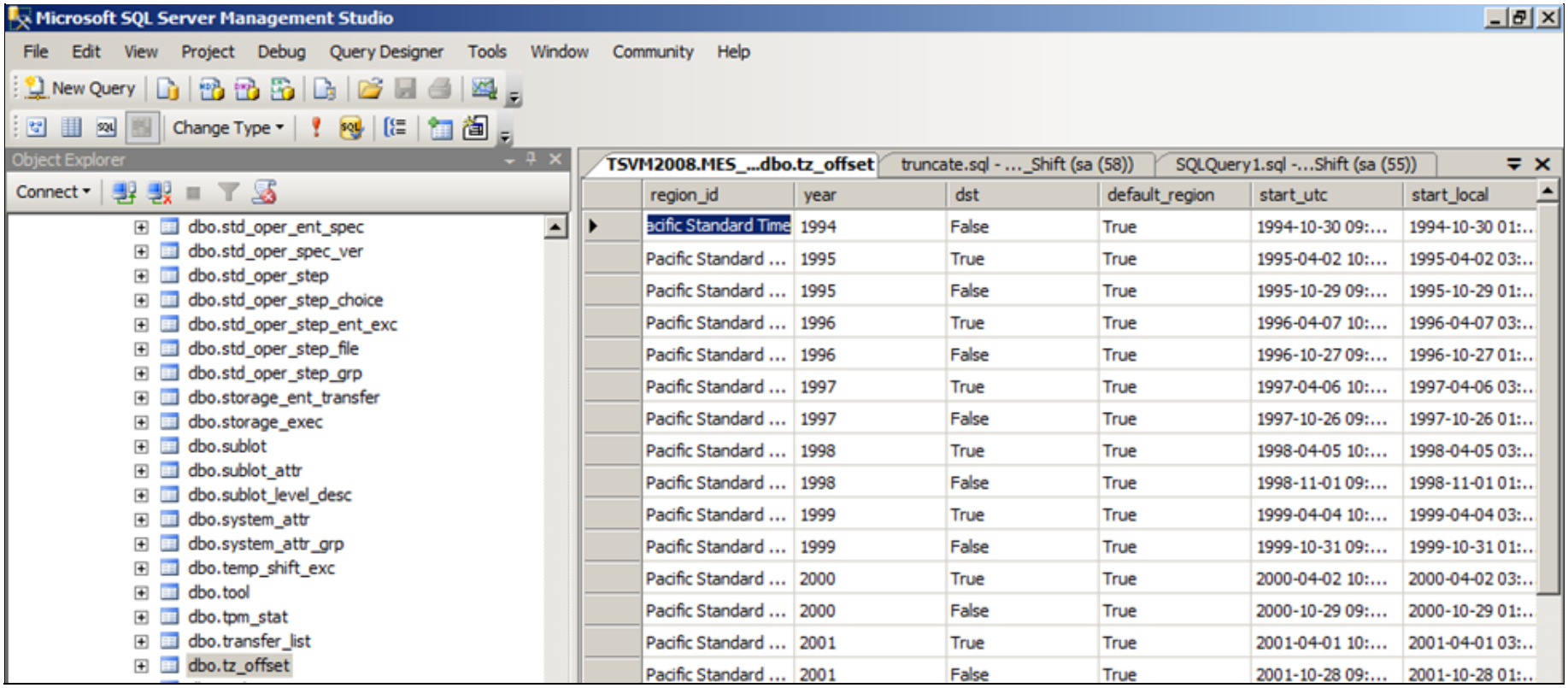

FIGURE 7: DEFAULT REGION _ID IS PACIFIC STANDARD TIME

7. Open the MES Client and select the **Shift and Shift Schedule** feature and add all the shift data for all of the entities.

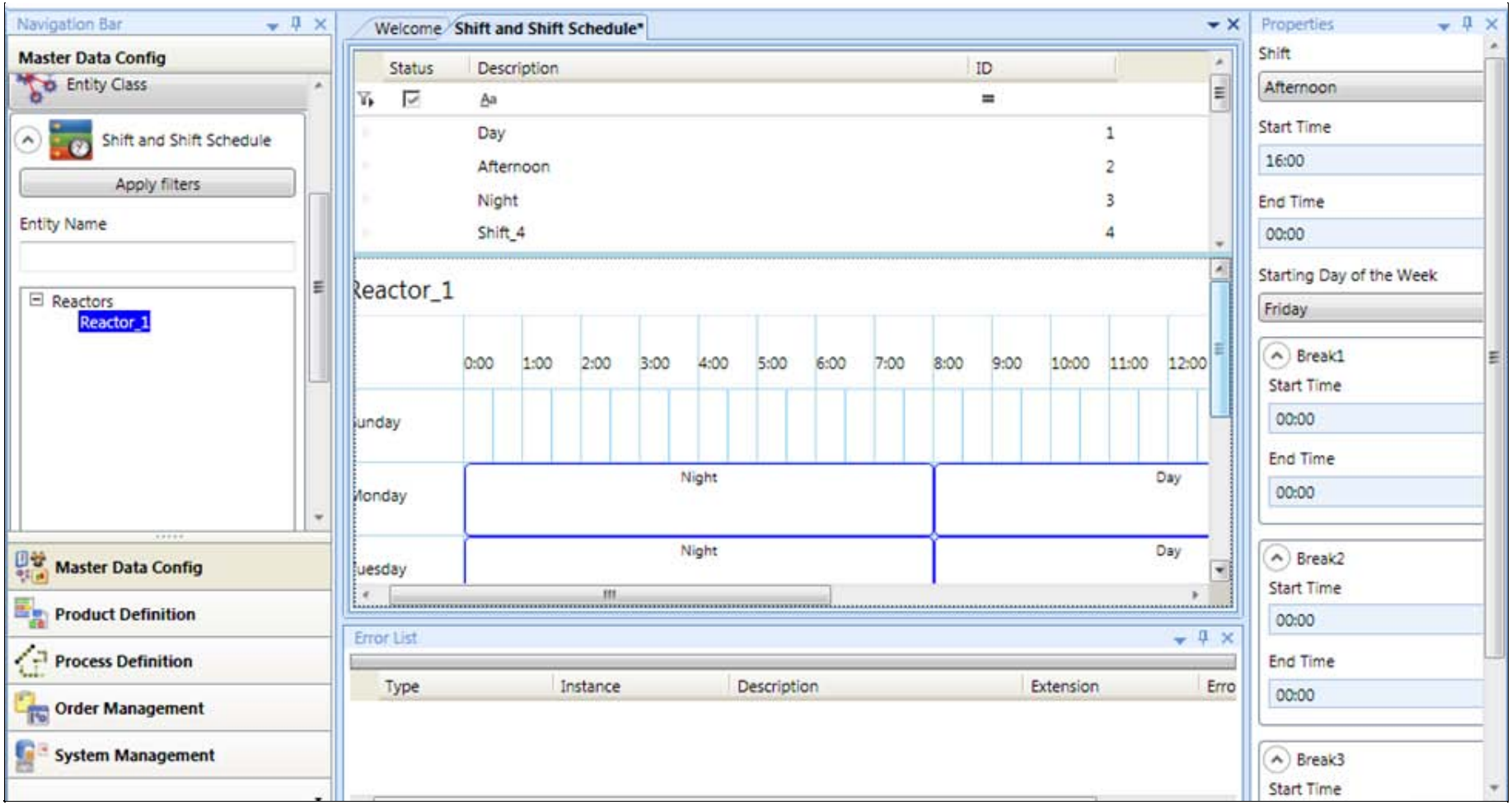

FIGURE 8: NEW SHIFT INFORMATION

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