Manejo de fechas y tiempo

El estándar SQL maneja 4 tipos de datos relacionados al tiempo y a las fechas:

- DATE
- TIME
- TIMESTAMP
- INTERVAL

Adicionalmente para hacer más fácil la manipulación de fechas y tiempo, SQL nos permite recuperar la fecha u hora actual con las siguientes palabras:

- CURRENT_DATE
- CURRENT_TIME
- CURRENT_TIMESTAMP

Operaciones con tiempo y fechas:

Expresión	Resultado
DATE ± entero	DATE
DATE ± intervalo de tiempo	TIMESTAMP
DATE + tiempo	TIMESTAMP
INTERVAL ± INTERVAL	INTERVAL
TIMESTAMP ± INTERVAL	TIMESTAMP
TIME ± interval de tiempo	TIME
DATE – DATE	entero
TIME – TIME	INTERVAL
entero * INTERVAL	INTERVAL

Los tipos de datos para tiempo y fecha pueden incluir alguno de los siguientes campos

- MILLENIUM
- CENTURY
- DECADE
- YEAR
- QUARTER
- MONTH
- DAY
- HOUR
- MINUTE
- SECOND
- MILLISECONDS
- MICROSECONDS

Operaciones con Fechas

1) Fecha y hora actual

```
SELECT CURRENT_DATE; --Resp: "2012-05-04"
SELECT CURRENT_TIME; --Rpta: "21:51:00.157-05"
SELECT CURRENT_TIMESTAMP; --Resp: "2012-05-04 21:52:26.643-05"
SELECT CURRENT_TIME (1); --Resp: "21:52:38.9-05" ( precision )
SELECT CURRENT_TIMESTAMP (2); --Resp: "2012-05-04 21:52:49.48-05" ( precision )
SELECT LOCALTIME; --Resp: "21:53:02.926"
SELECT LOCALTIMESTAMP; --Resp: "2012-05-04 21:53:15.128"
SELECT LOCALTIME (2); --Resp: "21:53:27.38" ( precision )
SELECT LOCALTIMESTAMP (2); --Resp: "2012-05-04 21:53:37.37" ( precision )
SELECT now(); --Resp: "2012-05-04 21:53:49.042-05"
SELECT timeofday(); --Resp: "Fri May 04 21:54:01.212000 2012 CDT"
SELECT TIMESTAMP 'now'; --Resp: "2012-05-04 21:54:14.722"
SELECT TIME 'now'; --Resp: "21:54:25.927"
```

2) WITHOUT/WITH TIME ZONE

```
SELECT TIMESTAMP WITHOUT TIME ZONE 'now'; --Resp: "2012-05-04 21:56:20.474"
SELECT TIMESTAMP WITH TIME ZONE 'now'; --Resp: "2012-05-04 21:56:32.375-05"
```

3) AT TIME ZONE: CONVERSIÓN A DIFERENTES ZONAS HORARIAS

```
SELECT TIMESTAMP WITH TIME ZONE '2009-11-06 17:05:01' AT TIME ZONE 'UTC-6';
 --Resp: "2009-11-07 04:05:01"
SELECT TIMESTAMP WITH TIME ZONE '2009-11-06 17:05:01' AT TIME ZONE 'UTC-7';
--Resp: "2009-11-07 05:05:01"
SELECT TIMESTAMP WITH TIME ZONE '2009-11-06 17:05:01' AT TIME ZONE 'UTC-8';
--Resp: "2009-11-07 06:05:01"
SELECT TIMESTAMP WITH TIME ZONE '2009-11-06 17:05:01' AT TIME ZONE 'MST';
--Resp: "2009-11-06 15:05:01"
SELECT TIMESTAMP WITH TIME ZONE '2009-11-06 17:05:01' AT TIME ZONE 'PST';
--Resp: "2009-11-06 14:05:01"
```

4) EXTRACT

```
SELECT EXTRACT(MILLENNIUM FROM TIMESTAMP '2009-11-06 17:05:01'); --Resp: 3
(MILENIO)

SELECT EXTRACT(CENTURY FROM TIMESTAMP '2009-11-06 17:05:01');

 --Resp: 21 (SIGLO)

SELECT EXTRACT(DECADE FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 200 (DÉCADA)

SELECT EXTRACT(YEAR FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 2009 (AÑO)

SELECT EXTRACT(QUARTER FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 4 (TRIMESTRE(1-4))

SELECT EXTRACT(MONTH FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 11 (MES(1-12))

SELECT EXTRACT(WEEK FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 45 (NUM. SEMANA)

SELECT EXTRACT(DAY FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 6 (DIA)

SELECT EXTRACT(HOUR FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 17 (HORA(0 - 23))

SELECT EXTRACT(MINUTE FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 5 (MINUTO)

SELECT EXTRACT(SECOND FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 1 (SEGUNDO)

SELECT EXTRACT(MICROSECONDS FROM TIMESTAMP '2009-11-06 17:05:01.5');

--Resp: 1500000 (MICROSEGUNDO)

SELECT EXTRACT(MILLISECONDS FROM TIMESTAMP '2009-11-06 17:05:01.5');

--Resp: 1500 (MILISEGUNDO)

SELECT EXTRACT(EPOCH FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 1257545101 (SEGUNDOS DESDE 1970-01-01 00:00:00-00)

SELECT EXTRACT(DOW FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 5 (DIA DE LA SEMANA(0-6)(0=Domingo))

SELECT EXTRACT(DOY FROM TIMESTAMP '2009-11-06 17:05:01');

--Resp: 310 (DIA DEL AÑO(1 - 365/366))
```

5) DATE_PART

```
SELECT date_part('YEAR', TIMESTAMP '2009-11-06 17:05:01'); --Resp: 2009 (AÑO)
SELECT date_part('MONTH', TIMESTAMP '2009-11-06 17:05:01');
--Resp: 11 (MES(1-12))
SELECT date_part('DAY', TIMESTAMP '2009-11-06 17:05:01'); --Resp: 6 (DIA)
SELECT date_part('HOUR', TIMESTAMP '2009-11-06 17:05:01');
--Resp: 17 (HORA(0 - 23))
SELECT date_part('MINUTE', TIMESTAMP '2009-11-06 17:05:01'); --Resp: 5 (MINUTO)
SELECT date_part('SECOND', TIMESTAMP '2009-11-06 17:05:01'); --Resp: 1 (SEGUNDO)
```

6) DATE TRUNC

```
SELECT date_trunc('YEAR', TIMESTAMP '2009-11-06 17:05:01');
 --Resp: "2009-01-01 00:00:00" (AÑO)
SELECT date_trunc('MONTH', TIMESTAMP '2009-11-06 17:05:01');
--Resp: "2009-11-01 00:00:00" (MES(1-12))
SELECT date_trunc('DAY', TIMESTAMP '2009-11-06 17:05:01');
--Resp: "2009-11-06 00:00:00" (DIA)
SELECT date_trunc('HOUR', TIMESTAMP '2009-11-06 17:05:01');
--Resp: "2009-11-06 17:00:00" (HORA(0 - 23))
SELECT date_trunc('MINUTE', TIMESTAMP '2009-11-06 17:05:01');
--Resp: "2009-11-06 17:05:00" (MINUTO)
SELECT date_trunc('SECOND', TIMESTAMP '2009-11-06 17:05:01');
--Resp: "2009-11-06 17:05:01" (SEGUNDO)
```

7) INTERVAL

```
SELECT EXTRACT(YEAR FROM INTERVAL '2009 years 24 months'); --Resp: 2011
SELECT EXTRACT(MONTH FROM INTERVAL '2009 years 25 months');
--Resp: 1 (MES(0 - 11))
SELECT date_part('HOUR', INTERVAL '5 hours 3 minutes'); --Resp: 5
SELECT date_trunc('HOUR', INTERVAL '5 hours 3 minutes'); --Resp: "05:00:00"
```

8) OPERACIONES CON FECHAS

```
SELECT date '2009-11-06 17:05:01' + integer '10'; --Resp: "2009-11-16 17:05:01"

SELECT date '2009-11-06 17:05:01' + interval '1 hour'; --Resp: "2009-11-06
18:05:01"

SELECT interval '24 hours'; --Resp: "24:00:00"

SELECT interval '12 hours 5 minutes 10 seconds'; --Resp: "12:05:10"

SELECT time '01:00' + interval '3 hours'; --Resp: "04:00:00"

SELECT timestamp '2009-11-06 17:05:01' - timestamp '2009-10-06 17:05:01';

--Resp: "31 days"

SELECT time '2009-11-06 17:05:01' - time '2009-11-06 16:05:01'; --Resp:
"01:00:00"
```