Upcoming PostgreSQL Features

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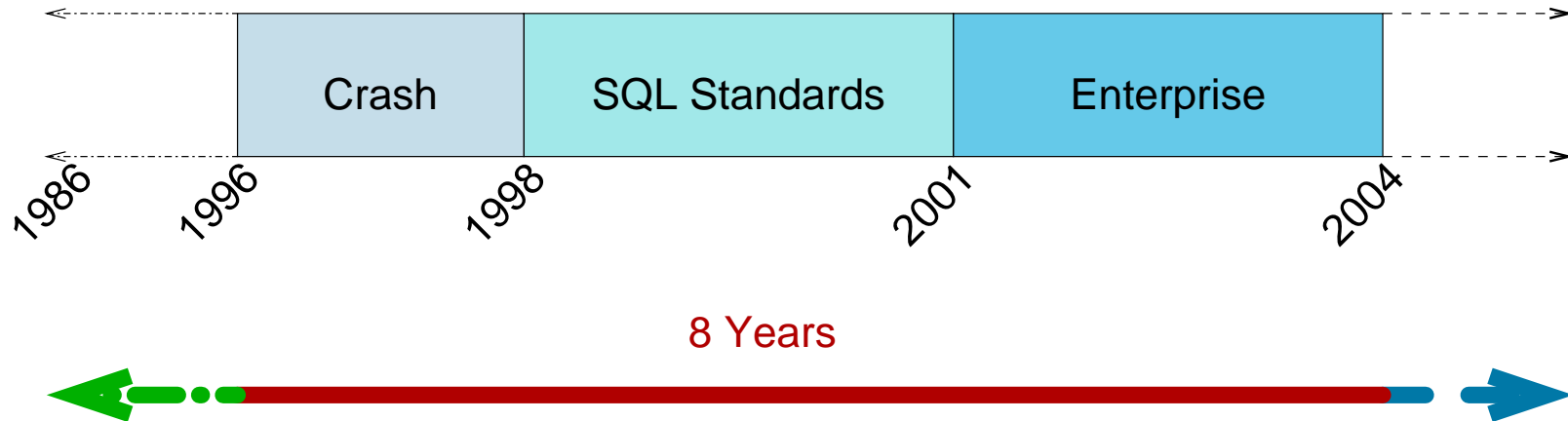
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Abstract

This outlnkes the upcoming features of PostgreSQL.

PostgreSQL Evolution

Enterprise features include:

- Improved Performance

- Simplified Maintenance and Administration
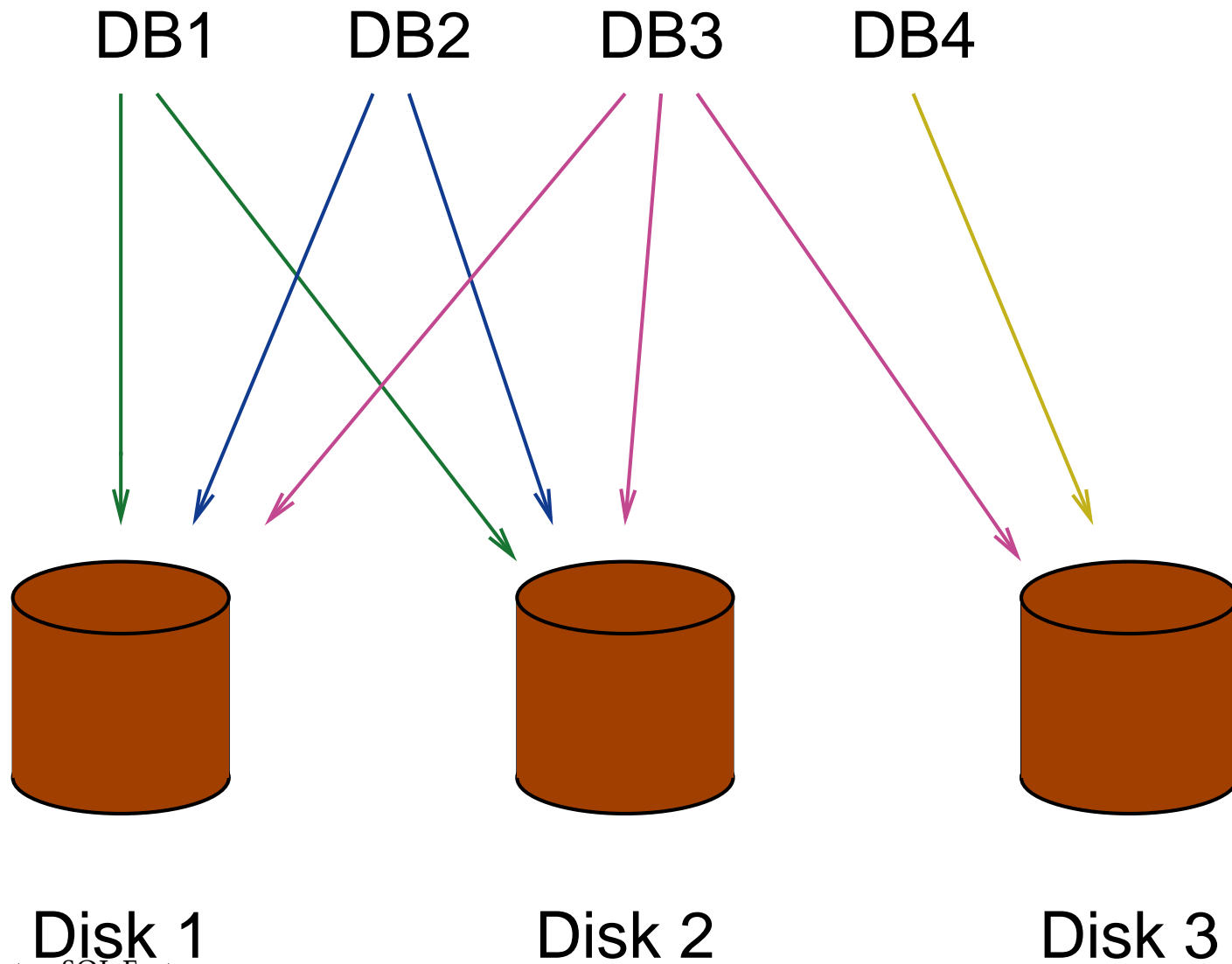
- Efficient 24/7 Operation

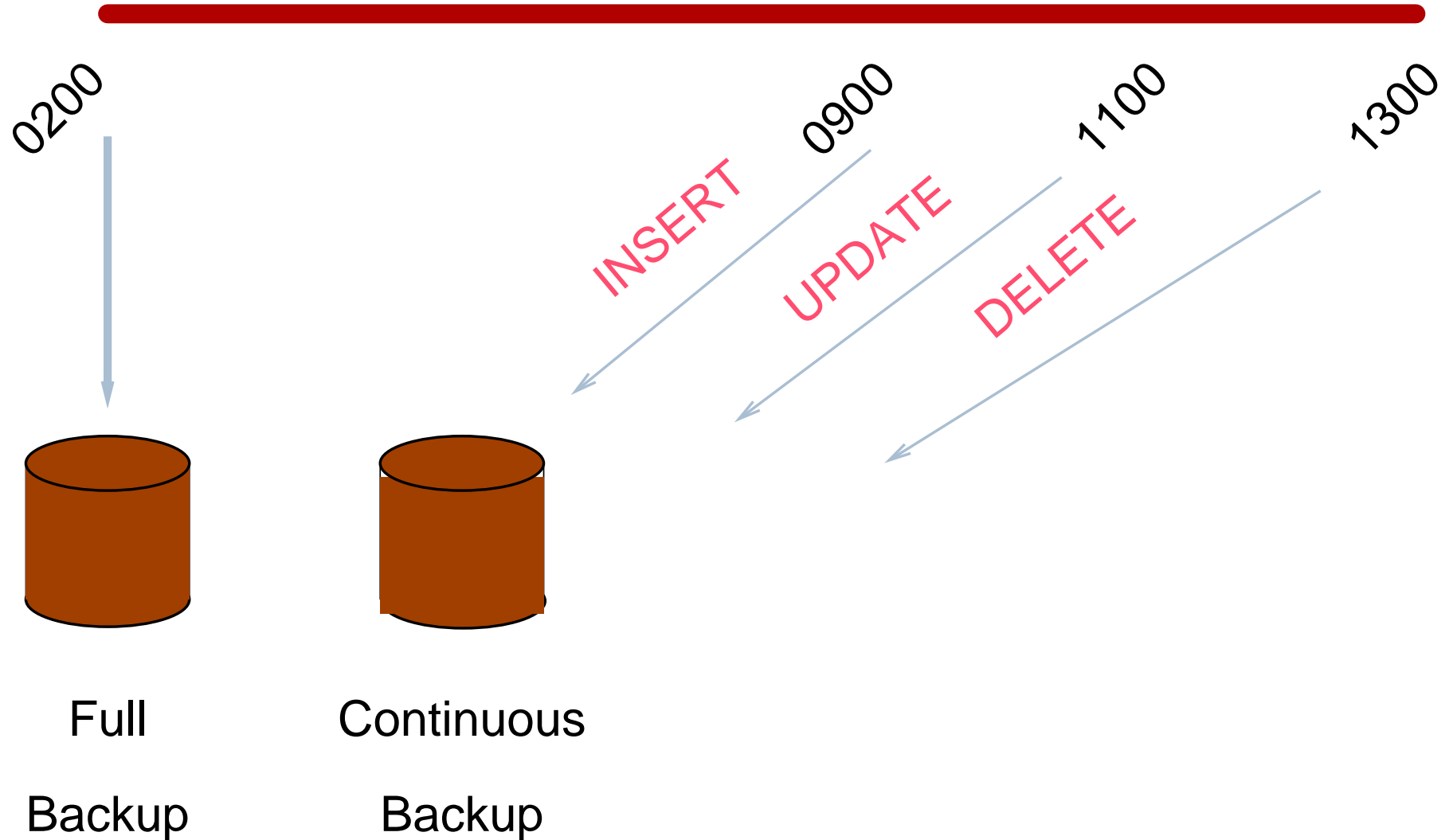# MS Windows port: Windows NT4+

MS Windows 2K/XP

Postmaster

Cygwin

Tablespaces

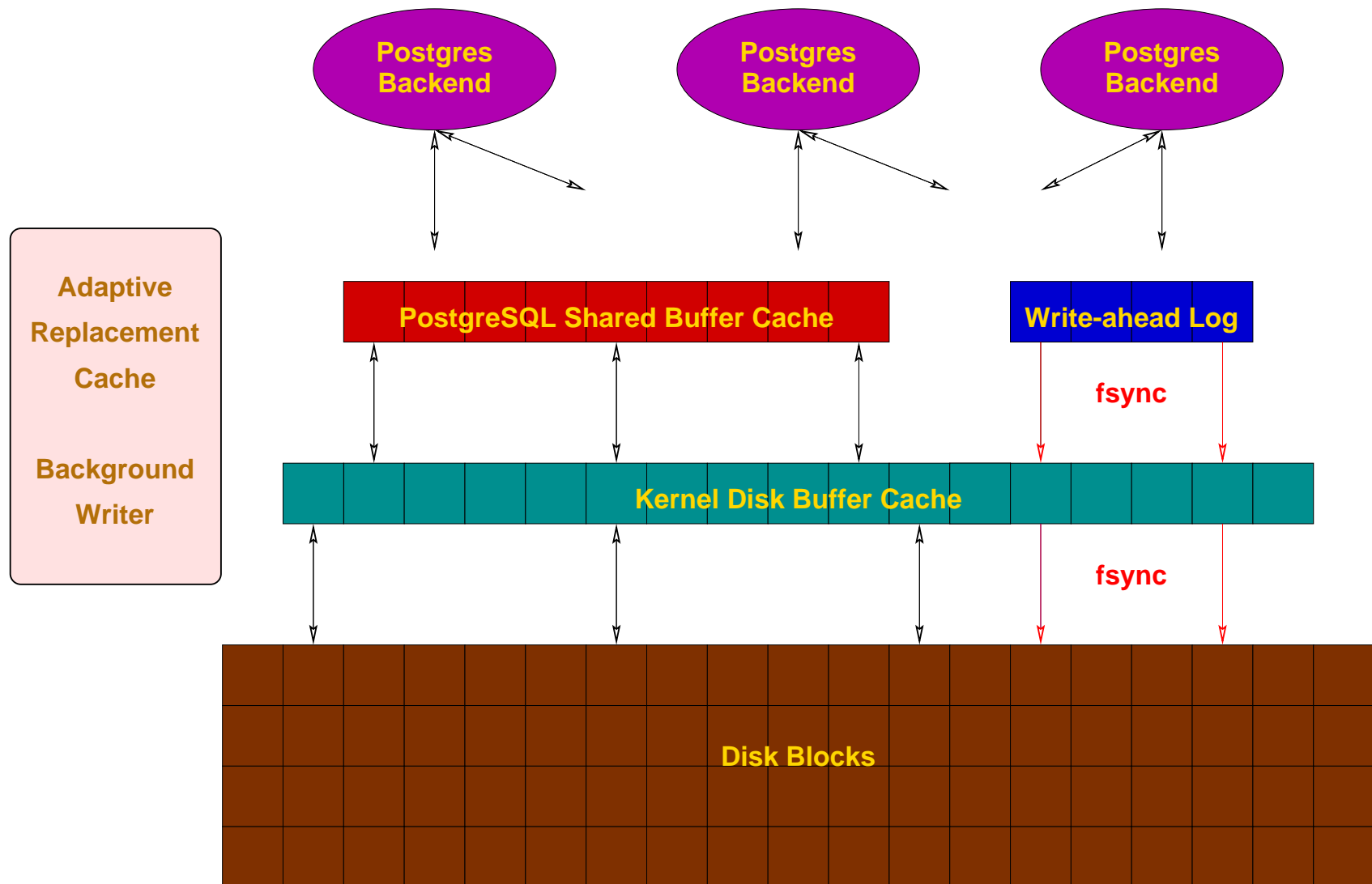DB1　DB2　DB3　DB4

Disk 1　　Disk 2　　Disk 3

Savepoints

```
test=> BEGIN WORK;
BEGIN
test=> SAVEPOINT one;
BEGIN
test=> INSERT INTO test VALUES (55);
ERROR:  duplicate key violates unique constraint "ii"
test=> ROLLBACK TO SAVEPOINT one;
ROLLBACK
test=> UPDATE test SET total = total + 1;
UPDATE 1
test=> COMMIT WORK;
COMMIT
```

Point-in-time Recovery: Continuous Backup

Improve Shared Buffer Management, Writer, Checkpoint, Vacuum

Postgres Backend

Postgres Backend

Postgres Backend

Adaptive Replacement Cache

Background Writer

PostgreSQL Shared Buffer Cache

Write-ahead Log

fsync

Kernel Disk Buffer Cache

fsync

Disk Blocks

Change Column Types

```
ALTER [ COLUMN ] column TYPE type [ USING expression ]
ALTER TABLE distributors    ALTER COLUMN address TYPE varchar(80);
```

New Perl Server-Side Language

- Persistent, shared storage area

- Triggers

- Returning records

- Arrays of records

- SPI calls

COPY Handles Comma-Separated-Value Files

```
COPY tablename [ ( column [, ...] ) ]
    FROM { 'filename' | STDIN }
    [ [ WITH ]
          [ BINARY ]
          [ OIDS ]
          [ DELIMITER [ AS ] 'delimiter' ]
          [ NULL [ AS ] 'null string' ]
          [ CSV [ QUOTE [ AS ] 'quote' ]
                [ ESCAPE [ AS ] 'escape' ]
                [ FORCE NOT NULL column [, ...] ]
COPY tablename [ ( column [, ...] ) ]
    TO { 'filename' | STDOUT }
    [ [ WITH ]
          [ BINARY ]
          [ OIDS ]
          [ DELIMITER [ AS ] 'delimiter' ]
```

```
                    [ NULL [ AS ] 'null string' ]
                    [ CSV [ QUOTE [ AS ] 'quote' ]
                          [ ESCAPE [ AS ] 'escape' ]
test=> COPY pg_class TO STDOUT WITH CSV;
views,17055,17217,1,0,17216,0,0,0,0,0,f,f,v,7,0,0,0,0,0,f,f,t,f,"{postgres=ar
data_type_privi-
leges,17055,17220,1,0,17219,0,0,0,0,0,f,f,v,5,0,0,0,0,0,f,f,t,f,"{postgres=ar
```

Server Administration

- Log disconnections

- Line line prefix: user name, database name, remote IP address, and session start time

- New log output options

- Statement logging control: modification, DDL

- Configuration files can be relocated

Qustions?