

# PL/SQL static code analysis: "COMMIT" and "ROLLBACK" should not be called from non-autonomous transaction triggers

2 minutes

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Calling COMMIT or ROLLBACK from within a trigger will lead to an ORA-04092 exception, unless the trigger has its own autonomous transaction.

## Noncompliant Code Example

```
SET SERVEROUTPUT ON
```

```
CREATE TABLE accounts(  
  balance NUMBER  
);
```

```
INSERT INTO accounts VALUES(0);
```

```
CREATE TABLE log(  
  message VARCHAR2(100)  
);
```

```
CREATE TRIGGER beforeLogger  
  BEFORE UPDATE ON accounts
```

```
FOR EACH ROW
BEGIN
    INSERT INTO log VALUES('Attempt to update the value from '
    || :OLD.balance || ' to ' || :NEW.balance);
    COMMIT; -- Noncompliant, will fail with a ORA-04092
END;
/
```

-- We want to be able to log any attempt to update the  
"accounts" table

```
BEGIN
    UPDATE accounts SET balance = 100;
    ROLLBACK; -- Ultimately, this update is rolled back, however
we still want to log it
END;
/
```

```
SELECT * FROM log;
```

```
DROP TRIGGER beforeLogger;
```

```
DROP TABLE log;
```

```
DROP TABLE accounts;
```

## **Compliant Solution**

```
SET SERVEROUTPUT ON
```

```
CREATE TABLE accounts(
    balance NUMBER
);
```

```
INSERT INTO accounts VALUES(0);
```

```
CREATE TABLE log(  
    message VARCHAR2(100)  
);
```

```
CREATE TRIGGER beforeLogger  
    BEFORE UPDATE ON accounts  
    FOR EACH ROW  
DECLARE  
    PRAGMA AUTONOMOUS_TRANSACTION;  
BEGIN  
    INSERT INTO log VALUES('Attempt to update the value from '  
    || :OLD.balance || ' to ' || :NEW.balance);  
    COMMIT; -- Compliant, commits the trigger's autonomous  
transaction, not the main one  
END;  
/
```

```
-- We want to be able to log any attempt to update the  
"accounts" table
```

```
BEGIN  
    UPDATE accounts SET balance = 100;  
    ROLLBACK; -- Ultimately, this update is rolled back, however  
we still want to log it  
END;  
/
```

```
SELECT * FROM log;
```

```
DROP TRIGGER beforeLogger;
```

```
DROP TABLE log;
```

```
DROP TABLE accounts;
```