

Inside the `PrintExplainStatement()`-function the query is passed to the `ExplainStatement`-method of the specific database-provider:

```

3
4 //Exit gracefully if called directly or profiling data is missing.
5 if ( !isset($_POST['intDatabaseIndex']) && !isset($_POST['strProfileData']) )
6     exit('Nothing to profile. No Database Profiling data received.');
```

```

7
8 if ( !isset($_POST['intDatabaseIndex']) || !isset($_POST['strProfileData']) )
9     throw new Exception('Database Profiling data appears to have been co
10
11 $intDatabaseIndex = intval($_POST['intDatabaseIndex']);
12 $strReferrer = htmlspecialchars($_POST['strReferrer']);
13
14 $objProfileArray = unserialize(base64_decode($_POST['strProfileData']));
15 $objProfileArray = $Type::Cast($objProfileArray, $Type::ArrayType);
16 $intCount = count($objProfileArray);
17
18 function PrintExplainStatement($strOriginalQuery) {
19     global $intDatabaseIndex;
20     if (substr_count($strOriginalQuery, "AUTOCOMMIT=1") > 0) {
21         return null;
22     }
23     $result = "";
24
25     $objDb = $Database->GetDatabase($intDatabaseIndex);
26     $objDbResult = $objDb->ExplainStatement($strOriginalQuery);
27     if ($objDbResult) {
28         return "";
29     }
30

```

The ExplainStatement is a method of the specific database-provider. We tested the sql-injection with postgres and mysql(i). This could be exploited with both databases. Let's see how it looks in the postgres-provider:

```

402
403 }
404
405 public function ExplainStatement($sql) {
406     return $this->Query("EXPLAIN " . $sql);
407 }
408
409 }
410
411 * Database exception class
412

```

```

413
414 * Sends the "SELECT" query to the database and returns the result
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In ExecuteQuery it finally gets executed. Unfiltered:

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120
121 }
122
123 protected function ExecuteQuery($strQuery) {
124     $objResult = $this->Query($strQuery);
125     if ($objResult) {
126         return $objResult;
127     }
128     return null;
129 }
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We were able to write proof-of concept exploit for mysql and postgres. Unfortunately with mysql we were not able to use a stacked-queries-payload and we had to exploit this vulnerability with a timebased approach.

## Vulnerable Versions

All versions including 3.1.1 are affected.

## Tested Versions

QCubed 3.1.1

## Impact

An unauthenticated attacker could access the database remotely. In worst case scenarios an attacker might be able to execute code on the remote machine.

## Mitigation

A patch was delivered by QCubed that allows to disable the profile-functionality.

## Vendor Contact Timeline

2020-04-19 Contacting the vendor  
2020-04-19 Vendor replied  
2020-05-01 Vendor released a patch at Github  
2021-02-15 Public disclosure

## Advisory URL

<https://www.ait.ac.at/ait-sa-20210215-02-unauthenticated-sql-injection-qcubed>

[ PHP Programming Web Security CVE ]



My name is Wolfgang Hotwagner. I am a Linux and Information Security enthusiast. This blog is about my journey through Computer Science.

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