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Performance Comparisons with Relational Databases

Background

In order to populate a relational database with information from LDAP it is first necessary to translate the information schema. After the relational database has been created information can be extracted from the LDAP database, translated and added to the relational database.

Test Environment

MySQL (version 5.0.45) database and a native LDAP client. The OpenLDAP (version 2.2.13) and MySQL server run on the same hardware (SLC 4.5, Xeon 2.4Ghz, 1GB Memory). The Oracle RAC (Real Application Cluster) instance consits of two nodes with a replicated database.

Test Description

The first set of tests evaluated the response times for different API implementations. The following queries were used.

SQL Query for API Test:

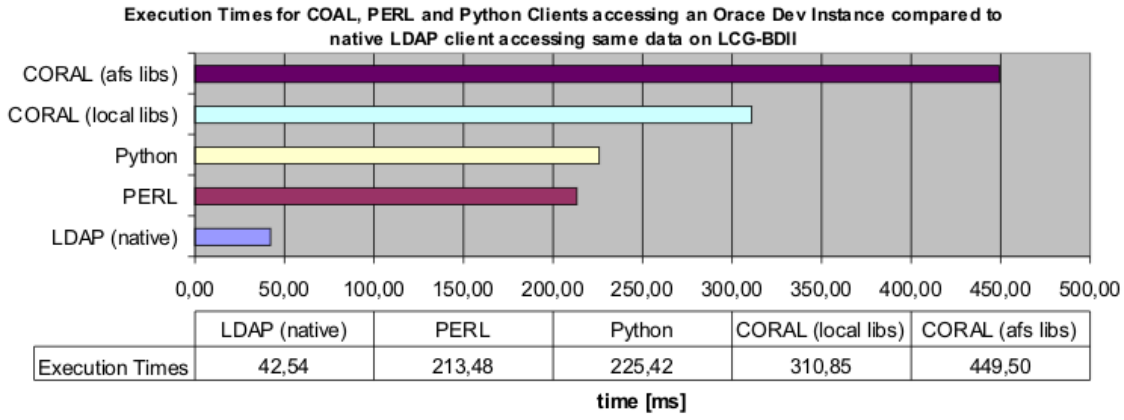
```
SELECT * FROM GlueSA, ValueTable, TypeTable
WHERE VALUETABLE.PARENTID=GLUESA.ID
  AND VALUETABLE.TYPEID = TYPETABLE.TYPEID
  AND TYPETABLE.NAME ='GlueSAAccessControlBaseRule'
  AND VALUETABLE.VALUE='lhcb'
```

LDAP query for API Test:

```
ldapsearch -x -LLL -h lcg-bdii:2170 -b o=grid '(&(objectClass=GlueSA)(GlueSAAccessControlBaseRule
```

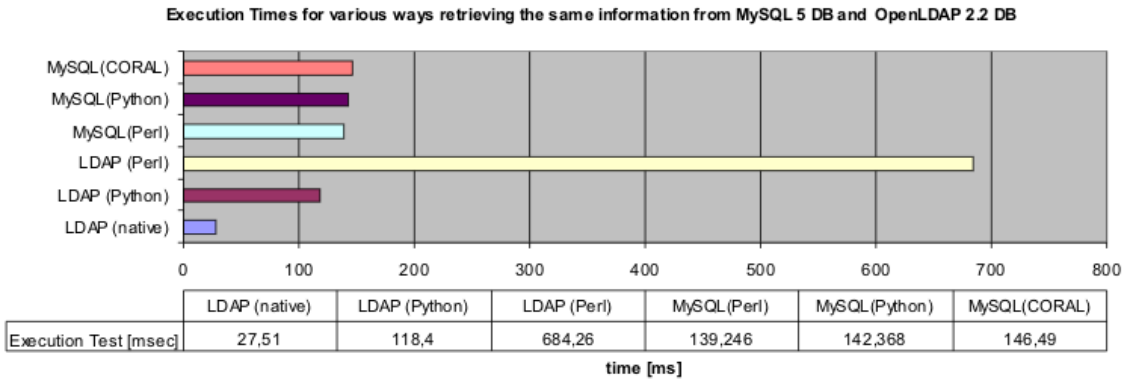
Test Results

Oracle



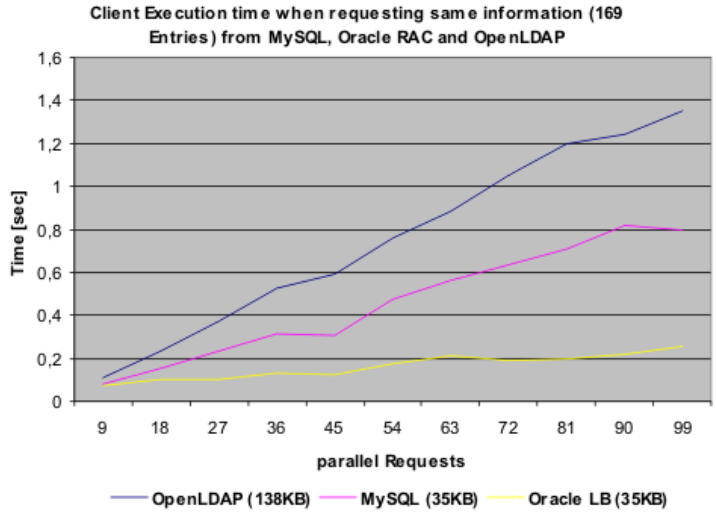
All client implementations use the **Oracle libs available from AFS**.

MySQL

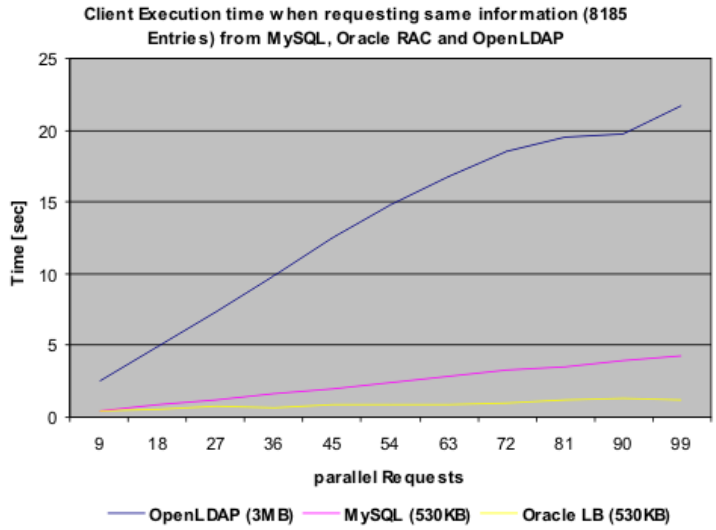


	LDAP (native)	LDAP (Python)	LDAP (Perl)	MySQL(Perl)	MySQL(Python)	MySQL(CORAL)
Execution Test [msec]	27,51	118,4	684,26	139,246	142,368	146,49

Medium Response Size



Large Response Size



The Response Size significantly differs between LDAP and the relational model

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This topic: EGEE > RelationalComparison
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