

v1.20_MySQL

- [illegible]

, SoftWLC , . **mysql-server-5.7.**

$$\vdots$$

		/
eltex_ems	, , EMS, EMS .	eltex-ems-db
eltex_alert	EMS .	eltex-ems-db
wireless	SSID. / .	eltex-ems-db
eltex_auth_service	, NBI.	eltex-auth-service-db
radius	Wi-Fi, , .	eltex-radius-db
ELTEX_PORTAL	, .	eltex-portal
eltex_doors	JWT-, .	eltex-doors

	service mysql status	 mysql start/running, process <pid>  mysql stop/waiting
	service mysql start	 mysql start/running, process <pid>  start: Job is already running: mysql

	service mysql stop	 <pre>mysql stop/waiting</pre>
	service mysql restart	 <pre>mysql stop/waiting mysql start/running, process <pid></pre>

MySQL `/etc/mysql/my.cnf` (, mysql-server) `/etc/mysql/conf.d/eltex-ems.cnf` (, , eltex-ems-db).

, . `max_connections.` `/etc/mysql/mysql.conf.d/mysqld.cnf` , . , :

```
max_connections = 500
```

()

MyISAM eltex_alert syslog. InnoDB , radius.radacct

, MyISAM InnoDB (`/etc/mysql/conf.d/eltex-ems.cnf` `key_buffer_size innodb_buffer_pool_size`).

- , 30-40% RAM .
- , , , Java (eltex-ems), - tomcat6, NBI, , eltex-apb, . . .
- , InnoDB, 2-3 , MyISAM , syslog .

, SoftWLC , :

16G:

```
key_buffer_size = 2G
innodb_buffer_pool_size = 4G
```

64G:

```
key_buffer_size=8G
innodb_buffer_pool_size=24G
```

MySQL :

```
service mysql restart
```



`key_buffer_size innodb_buffer_pool_size`

MySQL

rsyslog

DHCP RADIUS rsyslog.

:

```
CREATE USER 'rsyslog'@'HOST' identified by 'root';
GRANT ALL on Syslog.* TO 'rsyslog'@'HOST' identified by 'root';
```

HOST – RADIUS DHCP . . .

GUI EMS

EMS , , MySQL :

```
GRANT ALL PRIVILEGES ON *.* TO 'root'@'HOST' IDENTIFIED BY 'root';
FLUSH PRIVILEGES;
```

HOST – EMS VRRP. . .

		50	50 200	200 500	500 4 .
SoftWLC ()					
nbi ()		16	38	78	156
	radius	4	12	24	48
	ems	4	10	22	48
	wireless	4	10	22	48
	logs	2	4	6	8
	eltex_auth_service	2	2	4	4
ems ()		20	40	92	186
	event	4	8	16	32
	tree	4	8	20	40
	syslog	2	4	4	4
	radius	4	8	20	40
	wireless	3	6	14	30
PCRF ()		6	12	24	48
	radius	2	4	8	16
	sql.ems	2	4	8	16
	sql.wireless	2	4	8	16
radius		5	10	15	32

eltex-auth		2	2	2	5
eltex-portal		10	10	15	32
eltex-portal-constructor		10	10	10	10
rsyslog-mysql		2	4	6	10
		2	2	2	2
		8	8	8	8
MySQL		78	130	234	449
(,)					

mysql c MySQLTuner

MySQLTuner — perl-, MySQL MySQL-.



MySQL , MySQLTuner 24 .

:

```
/usr/lib/eltex-ems-db/tools/mysqltuner.pl --user root --pass root
```

:

```
>> MySQLTuner 1.6.14 - Major Hayden <major@mhtx.net>
>> Bug reports, feature requests, and downloads at http://mysqltuner.com/
>> Run with '--help' for additional options and output filtering

[--] Skipped version check for MySQLTuner script
[OK] Logged in using credentials passed on the command line
[OK] Currently running supported MySQL version 5.7.32-0ubuntu0.16.04.1
[OK] Operating on 64-bit architecture

----- Storage Engine Statistics -----
[--] Status: +ARCHIVE +BLACKHOLE +CSV -FEDERATED +InnoDB +MEMORY +MRG_MYISAM +MyISAM +PERFORMANCE_SCHEMA
[--] Data in InnoDB tables: 31M (Tables: 79)
[--] Data in MyISAM tables: 1M (Tables: 6)
[OK] Total fragmented tables: 0

----- Security Recommendations -----
[OK] There are no anonymous accounts for any database users
[OK] All database users have passwords assigned
[!!!] User 'root@localhost' has user name as password.
[!!!] User 'javauser@%' hasn't specific host restriction.
[!!!] User 'radius@%' hasn't specific host restriction.
[!!!] There is no basic password file list!

----- CVE Security Recommendations -----
[--] Skipped due to --cvefile option undefined

----- Performance Metrics -----
[--] Up for: 1d 19h 3m 44s (62K q [0.404 qps], 2K conn, TX: 29M, RX: 6M)
[--] Reads / Writes: 86% / 14%
[--] Binary logging is disabled
[--] Physical Memory      : 7.8G
[--] Max MySQL memory    : 480.4M
[--] Other process memory: 2.3G
[--] Total buffers: 320.0M global + 1.1M per thread (151 max threads)
```

```

[--] P_S Max memory usage: 72B
[--] Galera GCache Max memory usage: 0B
[OK] Maximum reached memory usage: 371.0M (4.65% of installed RAM)
[OK] Maximum possible memory usage: 480.4M (6.02% of installed RAM)
[OK] Overall possible memory usage with other process is compatible with memory available
[OK] Slow queries: 0% (0/62K)
[OK] Highest usage of available connections: 31% (48/151)
[OK] Aborted connections: 0.04% (1/2596)
[OK] Query cache is disabled by default due to mutex contention on multiprocessor machines.
[OK] Sorts requiring temporary tables: 0% (0 temp sorts / 1K sorts)
[!!!] Joins performed without indexes: 2591
[OK] Temporary tables created on disk: 17% (333 on disk / 1K total)
[OK] Table cache hit rate: 84% (659 open / 776 opened)
[OK] Open file limit used: 1% (285/16K)
[OK] Table locks acquired immediately: 100% (84K immediate / 84K locks)

----- Performance schema -----
[--] Performance schema is enabled.
[--] Memory used by P_S: 72B
[--] Sys schema is installed.

----- ThreadPool Metrics -----
[--] ThreadPool stat is disabled.

----- MyISAM Metrics -----
[!!!] Key buffer used: 18.5% (3M used / 16M cache)
[OK] Key buffer size / total MyISAM indexes: 16.0M/1.1M
[OK] Read Key buffer hit rate: 99.0% (7K cached / 71 reads)
[!!!] Write Key buffer hit rate: 11.9% (538 cached / 474 writes)

----- AriaDB Metrics -----
[--] AriaDB is disabled.

----- InnoDB Metrics -----
[--] InnoDB is enabled.
[OK] InnoDB buffer pool / data size: 256.0M/32.0M
[OK] InnoDB buffer pool instances: 1
[!!!] InnoDB Used buffer: 13.20% (2162 used/ 16382 total)
[OK] InnoDB Read buffer efficiency: 99.22% (268998 hits/ 271102 total)
[!!!] InnoDB Write Log efficiency: 154.55% (17 hits/ 11 total)
[OK] InnoDB log waits: 0.00% (0 waits / 28 writes)

----- TokuDB Metrics -----
[--] TokuDB is disabled.

----- Galera Metrics -----
[--] Galera is disabled.

----- Replication Metrics -----
[--] Galera Synchronous replication: NO
[--] No replication slave(s) for this server.
[--] This is a standalone server.

----- Recommendations -----
General recommendations:
  Set up a Secure Password for user@host ( SET PASSWORD FOR 'user'@'SpecificDNSorIp' = PASSWORD
('secure_password'); )
  Restrict Host for user@% to user@SpecificDNSorIp
  Adjust your join queries to always utilize indexes
Variables to adjust:
  join_buffer_size (> 256.0K, or always use indexes with joins)

```



, [!!!]