



memcached介绍

ECOM

jingmi@baidu.com



What is memcached?

- memcached is a high-performance, distributed memory object caching system, generic in nature, but intended for use in speeding up dynamic web applications by alleviating database load. (memcached是一个基于对象的高性能分布式缓存系统，通常情况下，它可以有效减轻数据库负载，用以提升动态web应用的速度)

History

- 2003-05-30: Server's stable.
- 2003-06-10: Perl API separated and documented.
- 2003-06-16: PHP support now included.
- 2004-04-30: Version 1.1.11 released. New option (off by default) to not act as a cache, but hold items forever until deleted (or until machine goes down, rather).
- 2006-09-09: Version 1.1.13 released. Building is easier, libevent detection is improved, better Solaris support.
- 2006-09-09: Version 1.2.0 released. Improved memory efficiency of up to 40%. New UDP interface.
- 2007-05-02: Version 1.2.2 released. Memcached can be configured to support multithreading. Big code cleanup with performance improvements.

Who's using memcached?

- [LiveJournal](#)
- [Slashdot](#)
- [WikiPedia](#)
- [SourceForge](#)
- [Facebook](#)

How it works?

- Insert & Search （插入与搜索）

Hash table: $O(1)$

- Memory Allocation （内存分配）

Slab allocator(Not malloc(3), but available)

How to start?

- Simple Way

```
$ ./memcached -d -m 2048 -l 10.0.0.40 -p 11211
```

- Some Useful Options

- p <num> TCP port number to listen on (default: 11211)
- U <num> UDP port number to listen on (default: 0, off)
- s <file> unix socket path to listen on (disables network support)
- l <ip_addr> interface to listen on, default is INADDR_ANY
- d run as a daemon
- m <num> max memory to use for items in megabytes, default is 64 MB
- c <num> max simultaneous connections, default is 1024

How to use it?(1)

- OO Style Programming(PHP)

```
$mem = new Memcache;  
$mem->connect('localhost', 11211) or die ("Could not connect!");  
  
$version = $mem->getVersion();  
echo "Ver: $version\n";  
  
$mem->set('buf', $buf);  
$mem->add('var_key', 'test variable', false, 30);  
$value = $mem->get('buf');
```

How to use it?(2)

- Functional Style Programming(PHP)

```
/* connect to memcached server */  
$memcache_obj = memcache_connect('memcache_host', 11211);  
  
memcache_set($memcache_obj, 'var_key', 'some variable', 0, 30);  
  
echo memcache_get($memcache_obj, 'var_key');  
  
$var = memcache_get($memcache_obj, array('some_key', 'another_key'));
```


How to use it?(3)

- Distributed Support(PHP)

```
$mem = new Memcache;  
$bool = $mem->addServer("localhost", 11210, FALSE);  
$bool = $mem->addServer("localhost", 11211, FALSE);  
$bool = $mem->addServer("localhost", 11212, FALSE);  
$bool = $mem->addServer("localhost", 11213, FALSE);  
  
$mem->set($key, $value);  
$value = $mem->get($key);
```

NOTE:

addServer()返回值不可靠(NOT RELIABLE)!

How to use it?(4)

- PHP Distributed Support Implementation

Hash: CRC Algorithm

- Fault-tolerance Of PHP API In Distributed Environment（在使用PHP API进行分布式应用下的容错）

NONE!!!

How to use it?(5)

- C API

[apr memcache](#) by Paul Querna; Apache Software License version 2.0

[libmemcache](#) by Sean Chittenden; BSD license.

How to use it?(6)

- Other Programming Language API

Perl

Python

Ruby

Java

C#

MySQL

PostgreSQL

Tune & Speed Up

- Options

- f <factor> chunk size growth factor, default 1.25

- n <bytes> minimum space allocated for key+value+flags, default 48

- t <threads> Number of threads to use to process incoming requests.

- Hack Source Code(官方To Do List)

- Global Lock（全局锁修改为线程锁）

Limitation

- Authentication Limitation （单一的权限认证）
Bind host IP only.

- Can I iterate the items of the memcached server?
（我能遍历所有存储的记录吗？）

NO.

- Length

Key: 最大250Bytes, Value: 最大1M Bytes

Installation

- libevent

需要首先安装这个东东，以提供对事件驱动的支持（好像还必须安装在公共库的目录下，这就需要root权限的支持）

Entpassport - Session

