ApsaraDB for Memcache

Introduction

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ApsaraDB for memcacheApsaraDB for memcache is memory-based cache service, it supports high speed access of mass small data. ApsaraDB for memcache can greatly relieve the pressure on backend storage, improving the response speed of websites or applications. ApsaraDB for memcache supports the data structure of Key-Value, and all clients compatible with the Memcached protocol can communicate with ApsaraDB for memcache.ApsaraDB for memcache supports the out-of-the-box way for rapid deployment. For dynamic Web and APP applications, the pressure on the database can be relieved by cache service so as to improve the overall response speed of websites.As with local MemCache, ApsaraDB for memcache is compatible with the Memcached protocol and user environment, and can be directly used for ApsaraDB for memcache, and the difference is that its hardware and data are deployed in the cloud, and complete infrastructure, network security assurance and system maintenance service are available. All these services do not need investment, and have to be paid according to usage.Product featuresApsaraDB for memcache has the following features:● Excel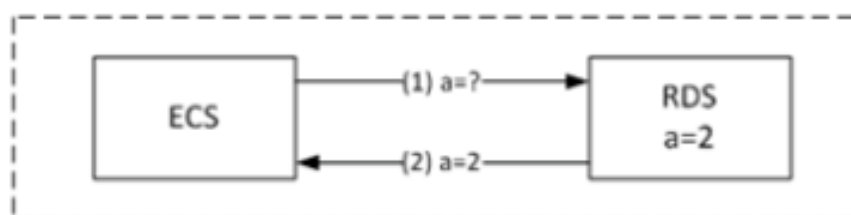lent performance. Cache data are stored in memory, and data access can be returned quickly.● Reliable service. When a server goes down, the cluster will quickly restore service, and service can be restored after current clients of users are reconnected automatically.● Security assurance. ApsaraDB for memcache only supports ECS access, and IP address of the origin server can be restricted to avoid outside attack.● Elastic expansion. When the business scope changes, users can modify the configuration of ApsaraDB for memcache instance at any time, the ApsaraDB for memcache instance will not stop the service during configuration change, and it is not necessary to modify your client program.● Management transparency. ApsaraDB for memcache is an out-of-the-box service, the ApsaraDB for memcache team of Aliyun is responsible for management of ApsaraDB for memcache products, including routine maintenance, software and hardware fault handling and patch update, to let you focus on guaranteeing healthy and effective services.● Compatibility. ApsaraDB for memcache is compatible with memcache binary protocol, and can be used by all clients (binary SASL) conforming to the protocol.

Application scenarios
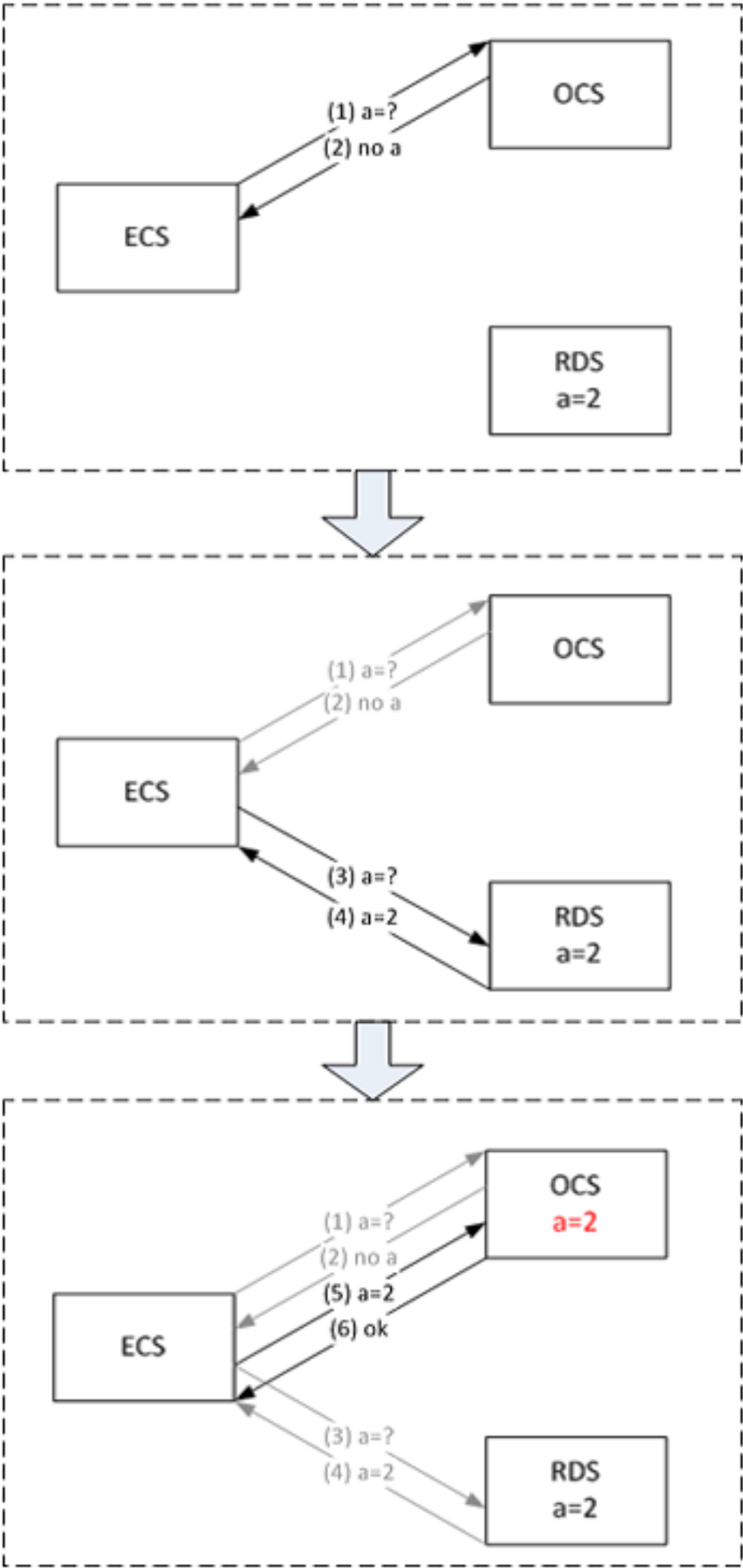
Database cache

ApsaraDB for memcache can be used as database cache. If you have previously purchased ECS and RDS, the application program is deployed on the ECS, and application data are placed in the RDS, then your system architecture is roughly as follows. When the application triggers a data reading

request (a=?), the RDS will directly return data (a=2).

As the volume of business increases, the number of concurrent requests for RDS will increase constantly, followed by system load increase of RDS and response delay decline, and even service interrupt due to RDS overload in serious cases. In order to solve such problems, you can use ApsaraDB for memcache in combination with RDS to make up storage solutions of high throughput and low delay. ApsaraDB for memcache does not have the characteristics of relational database, it only supports read/write of key-value. Compared with RDS, ApsaraDB for memcache has two advantages: ● Fast response time, and the time delay of ApsaraDB for memcache request is usually within a few milliseconds. ● ApsaraDB for memcache can support higher QPS (query per second) than RDS. When ECS, RDS and ApsaraDB for memcache are used in combination, you can use the following architecture, then the data reading process will be as follows:

1. When the application triggers a data reading request (a=?), access ApsaraDB for memcache first, no data exists in the ApsaraDB for memcache at the time, and return null to the application.
2. The application triggers another data reading request (a=?) again, and RDS will return data (a=2).
3. The application writes such data in the ApsaraDB for memcache (a=2), as a result, the application can directly hit the cache while reading data in the next time.

The load of the

database can be greatly relieved by placing hot data in the ApsaraDB for memcache, which can save the cost of RDS, and improve availability of the system.

Temporary data storage

Another application scenario of ApsaraDB for memcache is temporary data storage as an application program. Some application programs have to maintain a large number of temporary data such as social network, e-commerce, game and advertisement, and temporary data can be stored in the ApsaraDB for memcache to reduce the expense of memory management and improve workload of the application programs. In a distributed environment, temporary data can be globally stored in the ApsaraDB for memcache uniformly to avoid data loss due to single point of failure, and solve synchronization problems among application programs. A common example is to use ApsaraDB for memcache as a session manager, if the number of visitors to your website is large, you may deploy web application on several ECSs, and the frontend uses SLB for load balancing. Then if different requests from the same user may be served by several ECSs, these ECSs can use the ApsaraDB for memcache for global storage to save Session data of Web Server, Token of user, authority information and other data.

Inapplicable scenarios

● ApsaraDB for memcache only supports data of Key/Value format, but does not support array, map and list of complex type. Data of complex type are not suitable to be stored in ApsaraDB for memcache. ● Data of ApsaraDB for memcache are stored in the memory, the service can not guarantee that cache data are not lost, and data with high requirements for consistence are not suitable to be stored in ApsaraDB for memcache. ● The Key of a single cache data supported by ApsaraDB for memcache shall not exceed 1KB, Value shall not exceed 1MB, and too large data are not suitable to be stored in ApsaraDB for memcache. ● ApsaraDB for memcache does not support transaction, and data having transactional requirements are not suitable to be written in ApsaraDB for memcache, but shall be directly written in the database. ● When data access distribution is uniform, and data are free of obvious difference in cold and hot, lots of access requests can not be hit in ApsaraDB for memcache, and the effect of using ApsaraDB for memcache as database cache is not obvious. When ApsaraDB for memcache is selected as the cache, the requirements of business mode for data access shall be fully taken into account.

The Terms constitute a valid agreement onApsaraDB for memcache between Aliyun Computing Co., Ltd. (hereinafter referred to as Aliyun) and you. You may accept the Terms by offering your stamp, clicking on the webpage or in other manners accepted by Aliyun, or actually using ApsaraDB for memcache provided by Aliyun. If you have done so, it signifies you have entered into the agreement with Aliyun and agreed to all the provisions in the Terms. If any discrepancy arises between the document stamped by both parties and the service term document accepted by clicking the webpage or in any manners, the document stamped by both parties shall apply. Before agreeing to the Terms, please carefully read all contents (especially bold and/or underlined contents). If you have any doubt

on the Terms, please consult through the contact information published on Aliyun official website (www.aliyun.com) so that Aliyun will explain to you the Terms. If you disapprove any content of the Terms or you are unable to correctly comprehend the interpretation of Aliyun on the Terms, do not proceed any further.

1. Definitions 1.1 "You" in the Terms refers to all subjects using Aliyun ApsaraDB for memcache (including but not limited to individual, group, company and organization), or called "users". 1.2 The "service" described in the Terms covers the ApsaraDB for memcache, relevant technical and network support services provided by Aliyun to you as indicated in www.aliyun.com. 1.3 ApsaraDB for memcache refers to memory-based online cache service provided by Aliyun, it supports high speed access of mass small data. ApsaraDB for memcache can greatly relieve the pressure on backend storage, improving the response speed of websites or applications. ApsaraDB for memcache supports the data structure of Key-Value, and all clients compatible with the Memcached protocol can communicate with ApsaraDB for memcache. Aliyun will provide you with ApsaraDB for memcache according to provisions in the Terms. 1.4 An ApsaraDB for memcache instance (hereinafter referred to as "instance") refers to an ApsaraDB for memcache sale page by users at Aliyun or a cache unit opened the ApsaraDB for memcache console. Each ApsaraDB for memcache instance has its rated cache capacity, peak throughput and QPS, and provides link address, user name and password, and users can be connected to ApsaraDB for memcache instances from ECS instances to read/write cache data.
2. Service charge 2.1 Aliyun will publish the price system, charging method and other information of ApsaraDB for memcache on Aliyun official website. You may autonomously choose to open corresponding ApsaraDB for memcache instance. 2.2 Aliyun will collect your service charge from the date of opening the ApsaraDB for memcache instance, and stop charging when you actively close the instance, or your service is terminated by Aliyun due to arrearage, or other ApsaraDB for memcache are terminated. 2.2 You understand and agree that Aliyun has right to irregularly adjust the product system, name or price and charging method of ApsaraDB for memcache according to the operation conditions. 2.2.1 Aliyun will do its reasonable utmost to inform you of the adjustment and changes by means of official website announcement and on-site-notification in advance or send to you in advance through the contact information reserved. 2.2.2 Upon implementation of the adjustment published by Aliyun on its official website, your newly opened ApsaraDB for memcache instances will follow the new product system, name or price and charging method effective at that time. 2.2.3 Before the adjustment is implemented by Aliyun, for your newly opened ApsaraDB for memcache instances, all costs incurred before the time of implementation shall follow old rules, and all costs incurred after the time shall follow new rules. 2.3 Aliyun reserves the right to temporarily suspend ApsaraDB for memcache and/or technical support for you, even terminate ApsaraDB for memcache and/or technical support in the case of arrearage or probable arrearage.

2.3.1 Arrearage of your ApsaraDB for memcache instances has occurred, and renewal is not available in time to make up arrearage in the grace period given by Aliyun. 2.3.2 Arrearage of your ApsaraDB for memcache instances has occurred, and arrearage of other Aliyun services or products opened

under your Aliyun account has occurred and arrearage is not made up in the grace period. 2.3.2 Arrearage of your ApsaraDB for memcache instance has not occurred, but Aliyun has reasons to judge that you will not pay Aliyun service charge according to provisions in the Terms. Aliyun will do its reasonable utmost to inform you of the early arrearage warning, arrearage notice, renewal reminder, and stop notice by means of on-site-notification or send to you through the contact information reserved. 2.4 You shall understand and agree that all the free services or activities in the Aliyun pricing system are the one-time special offers granted by Aliyun beyond normal service charge, such offers do not cover modification, update and maintenance charges of the free services, and the free services shall not be converted to charge against any chargeable service.

1. Rights and obligations 3.1. Your rights and obligations 3.1.1 You understand and agree that you will take full responsibilities for all activities and events entered with your Aliyun account and password (including but not limited to information disclosure, information release, clicking agreement online or submitting various rules and agreements, renewing agreements or purchasing service online). You are responsible for the data you store on Aliyun cloud platform and responsible for the integrity and confidentiality of the password and cipher code used to access and manage the products and services on the Aliyun cloud platform. You are solely responsible for all losses and consequences as a result of loss or leakage of the aforementioned data, password and cipher code due to your improper maintenance or unsecured confidentiality. 3.1.2 You agree to the Terms as well as relevant management standards and procedures given on the service presentation page. You understand that the aforementioned agreement and standards may be changed at any time. If any content of the Terms is to be changed, Aliyun will announce at an appropriate space on www.aliyun.com to inform you of the change 30 days in advance. If you disapprove the change made by Aliyun to the Terms, you have the right to stop using Aliyun services. In this case, Aliyun will finish the final settlement of service charge with you. If you continue using Aliyun services, it is deemed that you accept the change made to the Terms by Aliyun. 3.1.3 You shall pay service charges as per page prompts of Aliyun and the provisions in the Terms. 3.1.4 You shall judge by yourself the adaptability between ApsaraDB for memcache opened by Aliyun and applicable operating system, database and other software and hardware of your choice, and take full responsibilities for all consequences as a result of such choice. 3.1.5 You shall complete all preparations and corresponding operation for the service by yourself, including but not limited to carefully reading service description and relevant documents published by Aliyun on the website, configuring third-party clients, and operating based on relevant operation guide. In addition, you shall take full responsibilities for all consequences as a result of such operation. Aliyun will not actively intervene in your actions, and assumes no responsibility for such actions. 3.1.6 You understand and agree that although Aliyun promises that the ApsaraDB for memcache will be available at all time, but your ApsaraDB for memcache may be affected in the following cases: 3.1.6.1 ApsaraDB for memcache is not available as a result of unavailability of hardware and/or network resources of the whole machine room due to natural disaster or IDC failure. 3.1.6.2 When a machine goes down or fails, resulting in data loss, ApsaraDB for memcache is still available as a whole, but ApsaraDB for memcache cache data stored in the memory of the machine will fail. 3.1.6.3 When ApsaraDB

for memcache is upgraded, ApsaraDB for memcache is still available as a whole, but ApsaraDB for memcache cache data stored in the memory of a single machine will fail. You shall confirm that your application architecture can bear the effects of loss of partial cache data due to the accident. 3.1.7 In the process of using ApsaraDB for memcache, you shall promise:

3.1.7.1 Do not undermine or attempt to undermine the network security (including but not limited to fishing, hacker, Internet fraud, a website or space suspected to contain or disseminate virus, Trojan, malicious code, suspected attacks inflicted to other websites or servers by a virtual server, e.g. scanning, sniffing, ARP fraud and DOS). 3.1.7.2 Do not do or try to do anything to change the system configuration provided by Aliyun or undermine system security and network security. 3.1.7.3 Do not modify, translate, rewrite, lease and transfer license, do not disseminate or transfer any software or service provided by Aliyun on the information network, and do not reverse engineering or decompile the source code of any software provided by Aliyun or do not attempt to discover such source code in any other manner. 3.1.7.4 Do not use any service provided by Aliyun to conduct any activities which may infringe the lawful rights and interests of Aliyun, Aliyun's affiliated companies or companies (including but not limited to Alibaba, Taobao, Alipay, Alimama and AliFinance (hereinafter referred to as Alibaba companies) or websites subordinated Alibaba Group. The aforementioned activities which may infringe the lawful rights and interests of Alibaba companies and websites include but are not limited to breach of any service agreement/terms, management standards and transaction rules published by Alibaba companies and sabotage or attempted sabotage of the fair transaction environment or normal transaction order of Alibaba companies. 3.1.7.5 Do not conduct any illegal or transgressive activity or any activity in breach of the Terms. 3.1.8 If you use other services provided by Aliyun while using ApsaraDB for memcache, you understand and agree: 3.1.8.1 If ApsaraDB for memcache is independent of other services provided by Aliyun, you shall observe the ApsaraDB for memcache Terms and other Aliyun service terms. If Aliyun interrupts, suspends and terminates its services as a result of your violation of other Aliyun service terms, normal operation of ApsaraDB for memcache will not be affected. 3.1.8.2 If ApsaraDB for memcache and other Aliyun services are interdependent, i.e., ApsaraDB for memcache is based on other services provided by Aliyun, you shall observe the ApsaraDB for memcache Terms and other Aliyun service terms. If Aliyun interrupts, suspends and terminates other services as a result of your violation of other Aliyun service terms, affecting the normal use of your ApsaraDB for memcache, Aliyun assumes no responsibility. 3.1.9 You must keep your website access logs (including the content of released information, the time of release, IP address, domain name, etc.) as per requirements specified in laws and regulations such as Regulation on Internet Information Service and Administration of Internet Electronic Messaging Services Provisions. These logs shall be provided in case of legal investigation performed by state organs. You should take all legal responsibilities arising from your failure to keep relevant records as required. 3.2 Aliyun's rights and obligations 3.2.1 Aliyun will provide you with services according to provisions in the Terms and service standard on the product page. 3.2.2 Within the service term, Aliyun will provide you with 7×24h after-sale failure services. 3.2.3 Aliyun is only responsible for relevant operation and maintenance of ApsaraDB for memcache. You shall be responsible for other parts of ApsaraDB for memcache called by yourself. In addition, your use of third party clients and upgrade of the operating system by yourself will result in downtime and other bad effects. Please

identify risks and operate carefully. Aliyun assumes no responsibility for that. 3.2.4 Aliyun will solve any failure unrelated to human error; however, any failure resulting from your fault, force majeure or any other factor beyond Aliyun's control will not be covered. 3.2.5 If Aliyun finds that you use ApsaraDB for memcache to conduct illegal business or attack Aliyun network and services, or conduct any illegal or transgressive activity or any activity in breach of the Terms, Aliyun will reserve the right to suspend or terminate your ApsaraDB for memcache without prior notification, and shall not undertake any obligation and responsibility. 3.2.6 If your computer is attacked by computer virus, network intrusion and attack/sabotage (including but not limited to DDOS) and other events or actions (hereinafter collectively referred to as such actions) detrimental to the network security, and such actions have a harmful effect on Aliyun or affect the smooth communication between Aliyun and Internet, or between Aliyun and specific networks or servers, or affect the internal communication of Aliyun, Aliyun will reserve the right to suspend or terminate your ApsaraDB for memcache without prior notification, and shall not undertake any obligation and responsibility.

1. Storage and disclosure of user data 4.1 Aliyun may provide services to you by using your information (including but not limited to account, email address and telephone number), including but not limited to sending you product and service information. You agree to receive email and information from Aliyun and its partners. 4.2 Your user data will be fully or partially disclosed in the following circumstances: 4.2.1 Disclose to a third party with your consent. 4.2.2 Disclose to a third party, or administrative organization or judicial organization according to relevant provisions of the law, or the requirements of the administrative organization or judicial organization. 4.2.3 Disclose to a third party if you are in violation of relevant Chinese laws and regulations. 4.2.4 Your data must be shared with a third party in order to provide you with desired software or services. 4.2.5 Your user data must be disclosed in an emergency to safeguard the interests of Aliyun users and the masses. 4.2.6 Your user data shall be disclosed to protect the copyright, patent right, trademark right and other intellectual property rights or other lawful rights and interests of Aliyun. 4.2.7 Other situations in which your user data shall be disclosed in accordance with the law. 4.3 Regardless of the reason, Aliyun is entitled to delete your data after termination of the service. That is, the instance will be released and the cache data will be cleaned.

2. Intellectual property right 5.1 You should ensure that the materials submitted to Aliyun, the use of Aliyun services and the results of using such services will not infringe upon the lawful rights and interests of any third party. If a third party files claims, launches a lawsuit or is likely to launch a lawsuit against Aliyun for infringement of the copyright or other rights of the third party or for violation of Chinese laws and regulations or other applicable laws, you shall handle the claims, lawsuit and related issues by yourself, and exempt Aliyun from any liability. In case of any losses to Aliyun due to your actions, you shall compensate for any expenses or losses borne by Aliyun. 5.2 If a third-party organization or individual questions or complains about the ownership of intellectual property rights of the materials involved in your use of the Aliyun services, you have the responsibility to provide the intellectual property certificate and coordinate with Aliyun to handle the complaint. 5.3 You acknowledge that the intellectual property rights of any information, technology or technical support, software or service provided to you by Aliyun belong to Aliyun or a third party. You are not allowed to copy, distribute, transfer, license or allow others to use the

aforementioned resources without express consent of Aliyun or the third party, otherwise you shall bear the responsibility accordingly.

3. Confidentiality 6.1 Confidential information refers to all the technical and non-technical information disclosed by one party to another (including but not limited to product information, product plan, price, finance plan, marketing plan, business strategy, customer information, customer data, R&D, software and hardware, API application data interface, technical specification, design, special equation and special algorithm). 6.2 Under the Terms, any party must preserve confidentiality of the aforementioned information of the other party and strictly require the employees with access to such information to fulfill the confidentiality obligation. The party granted access to the aforementioned confidential information shall not disclose such information, unless a national authority mandates the party to do so or such information is already declared public information. 6.3 Both parties under the Terms expressly acknowledge that their user information and business data are their important assets and their important confidential information. Under the Terms, both parties agree to make best efforts to protect the aforementioned confidential information from disclosure. If any of the aforementioned confidential information is disclosed, both parties shall cooperatively take all reasonable actions to prevent or mitigate adverse consequences.

6.4. This clause does not become invalid due to termination of the Terms.

1. Term and termination 7.1 The service term starts from the time of opening OCS, and ends when the situation as agreed by laws or the Terms occurs. 7.2 OCS will be terminated in any of the following situations: 7.2.1 Both parties agree to terminate OCS. 7.2.2 You close OCS instance and will no longer use any Aliyun service. 7.2.3 Due to change of its own operation policy, Aliyun can terminate services under the Terms by means of releasing on-site-notification or issuing notice at an appropriate space of the website 30 days in advance. 7.2.4 If you have severely breached the Terms (including but not limited to the following situations: a. you have not fulfilled the payment as stipulated by the service agreement, and/or b. you have severely breached the commitment made in the Terms, and/or c. you have severely violated laws), Aliyun has the right to unilaterally terminate ApsaraDB for memcache. 7.2.5 Aliyun has taken necessary technical measures (and will constantly improve such measures as technology evolves) to prevent the events or actions (hereinafter collectively referred to as such actions) detrimental to network security, including computer virus, network intrusion and attack/sabotage (including but not limited to DDOS), however, due to the limitation and relativity of the network security technology and the unpredictability of such actions, if such actions inflicted on your website jeopardize Aliyun or other networks or servers of Aliyun (including but not limited to local, nonlocal and international networks and servers) or affect the smooth communications between Aliyun and Internet, or between Aliyun and specific networks or servers, or affect the internal communication of Aliyun, you understand and agree that Aliyun may suspend or terminate ApsaraDB for memcache. 7.3 When ApsaraDB for memcache provided by Aliyun to you is terminated in any of the above situations, the final settlement of service charge will be executed when ApsaraDB for memcache is terminated. 8 Liability for breach 8.1 Any party in

failure to fulfill its obligation according to provisions in the Terms, or breach of its commitment made in the Terms shall be held legally liable for the breach. 8.2 Regardless of whether ApsaraDB for memcache provided by Aliyun to you has been terminated, Aliyun reserves the right to pursue liability for the breach over arrearage or other nonperformance in the period of using ApsaraDB for memcache. 8.3 You understand and agree that, due to the special characteristics of computer and Internet, the following situations will not be deemed as breach of Aliyun: 8.3.1 Aliyun needs to interrupt ApsaraDB for memcache for a short period of time due to server configuration or maintenance. 8.3.2 Blocking in Internet channels results in reduced access speed of your website. 8.3.3 Regular or irregular upgrade and maintenance of ApsaraDB for memcache by Aliyun affects your ApsaraDB for memcache, but Aliyun will inform you in advance as much as possible. 8.4 Under no circumstance will Aliyun assume any responsibility for indirect, consequential, disciplinary, accidental or special damage, including the profit loss resulting from your use of Aliyun services (even if you have been informed of the possibility of such loss). 8.5 Under no circumstance will the amount of compensation paid for breach under the Terms exceed the total service charge for the breach related service.

9 Force majeure 9.1 If a type of force majeure or an accident makes it impossible, unnecessary or meaningless to execute any of the Terms, the party suffering the force majeure or an accident shall not be held liable. 9.2 Force majeure or accident can be an unforeseeable, insurmountable or unavoidable event that imposes significant impact on one party or both parties. Such events include but are not limited to the natural disasters such as flood, earthquake and plague and the social events such as war, unrest, government act, interruption of telecommunications trunk line, hacker attack, network blocking, technological adjustment of telecommunication operator and governmental control. 10 Law application and dispute resolution 10.1 The Terms is subject to the laws of the People's Republic of China. 10.2 If any dispute arises during execution of the Terms, both parties shall negotiate and solve it. If such negotiation brings no solution, any party may litigate the issue to the Hangzhou West Lake District People's Court governing the area in which Aliyun is located. 11 Supplementary provisions 11.1 The service description, price description and product help presented on relevant pages of www.aliyun.com as well as the user confirmed order page constitute an integral part of the Terms. In case of any discrepancy between the service description, price description and product help presented on relevant pages and/or user confirmed order page and the Terms, the Terms shall prevail. 11.2 Aliyun has the right to fully or partially transfer the rights and obligations under the Terms to any affiliated company of Aliyun, provided that Aliyun posts a notification of such transfer on www.aliyun.com, or sends the notification to your website or sends the notification in written form to you in 30 days prior to such transfer. 11.3 If any of these service terms, by its nature or for any other reason, is behooved to continue existing after termination of the agreement, that service term is deemed to be continuingly existent. Such service terms include but are not limited to warranty clauses, confidentiality clauses, intellectual property clauses, law application clauses and dispute resolution clauses. 11.4 Under the Terms, Aliyun can inform you by means of announcement on webpage, on-site-notification, email, short message or written letter, and such notice shall be deemed to be delivered to the recipient at the date of its issuance.