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FAQ

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Document conventions

Style	Description	Example
Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	**Danger:** Resetting will result in the loss of user configuration data.
Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	**Warning:** Restarting will cause business interruption. About 10 minutes are required to restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	**Notice:** If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	**Note:** You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.How to configure RAM permissions for Game Shield

Context

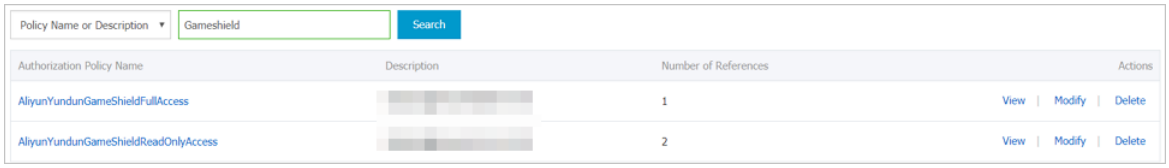
Game Shield supports the division of permissions through the RAM system. The specific steps are as follows.

Procedure

1. See Create a RAM user to create and configure RAM accounts.
2. Assign Game Shield's related permissions.

   Currently, the following two permissions are supported:

   - Manage Game Shield's full operation permission: AliyunYundunGameShieldFullAccess
   - Manage Game Shield's read-only access permission: AliyunYundunGameShieldReadOnlyAccess



2.FAQs about forwarding rule configurations

What forwarding rules and ports are supported by Game Shield?

Supported port range: 80, 443, and 1025 to 65535

Supported forwarding rule: TCP

What is the forwarding entry limit on Game Shield ports?

Game Shield's single IP can support up to 50 port forwarding entries. If you need more, you can create multiple business groups (50 forwarding entries per business and the IP forwarding rules under all businesses are the same) to meet your requirements.

To turn on the game application gateway, you can contact Game Shield's team to enable the SDK access and meet the business requirements through 4-layer port multiplexing. (In this mode, the program requires great modification.)

How does Game Shield support the HTTP/HTTPS protocol?

Use the TCP protocol for forwarding instead of HTTP and HTTPS protocols.

It is expected that Game Shield will launch the local HTTP proxy mode in May.

Are multiple single-forwarding backend servers supported?

The single forwarding rule can support 20 origin sites. By default, load balancing and session maintenance are enabled according to the number of connections.

3.How do I resolve the host property mismatch issue after my client accesses the GameShield server over HTTP or HTTPS?

Problem description

If your client accesses the GameShield server over HTTP or HTTPS and the domain name is replaced with the IP address of the GameShield server in the host property of the URL, the request is sent by using the IP address instead of the domain name. In this case, the value of the host property that is obtained by the GameShield server is the IP address of the server. The GameShield server responds to the request in one of the following ways:

- If the GameShield server is configured with only one domain name, it may ignore the value of the host property and return the correct page.
- If the GameShield server is configured with multiple domain names, it returns **404** or **403** error code.

If your client accesses the GameShield server over HTTPS, the GameShield server may not be able to find a matching Secure Sockets Layer (SSL) certificate. As a result, the GameShield server returns only the default SSL certificate or does not return an SSL certificate. In this case, your client cannot pass the SSL certificate verification. This occurs because the SSL certificate contains the domain name of the GameShield server while the host property of the URL is set to the IP address of the Gameshield server.

Traditional solutions

Access the GameShield server over HTTP

The solution is simple if your client accesses the GameShield server over HTTP. In most cases, third-party libraries provide interfaces that allow developers to change the value of the host property in an HTTP request header to the required domain name.

Access the GameShield server over HTTPS

- **Troubleshooting in Android**

- **Troubleshoot the failure of SSL certificate verification**

  During an SSL handshake, your client checks whether the value of the host property in the requested URL is a domain name that is included in the SSL certificate provided by the GameShield server. For example, if the original requested URL is `https://aliyundoc.com`, the URL that is obtained by the GameShield server becomes `https://10.10.10.10`.

  Because the host property of the URL is set to the IP address of the Gameshield server, your client cannot pass the SSL certificate verification, which results in a request failure.

  In most cases, an Android operating system provides an interface that allows you to verify whether the value of the host property in the URL matches that in an SSL certificate. You can use the interface to replace the IP address of the GameShield server in the host property of the URL with the domain name. Then, the issue can be resolved.

  Sample code in Java

```
HostnameVerifier hnv = new HostnameVerifier() {
@Override
public boolean verify(String hostname, SSLSession session) {
//Example
if("yourhostname".equals(hostname)){
return true;
} else {
HostnameVerifier hv =
HttpsURLConnection.getDefaultHostnameVerifier();
return hv.verify(hostname, session);
}
}
};
HttpsURLConnection.setDefaultHostnameVerifier(hnv);
```

- Troubleshoot server name indication (SNI) issues

  Your client sends a request to the GameShield server by using the IP address. In this case, the value of the host property obtained by the GameShield server is the IP address of the server. However, the GameShield server is configured with multiple domain names. The obtained IP address of the GameShield server cannot match any of the domain names in the SSL certificate provided by the GameShield server.

  An Android operating system provides an interface that allows your client to pass in a custom SSLSocketFactory. The SSLSocketFactory is used to create SSLSocket objects. SSLSocket is an extension of the socket protocol and provides an SSL handshake function. An Android operating system provides the SSLCertificateSocketFactory implementation class to resolve issues caused by SNIs.

  Sample code in Java

```
conn.setSSLSocketFactory(new SSLSocketFactory(){
@Override
public Socket createSocket(Socket s, String host, int port,boolean autoClose) throws IO
Exception{
SSLCertificateSocketFactory sslSocketFactory = (SSLCertificateSocketFactory)SSLCertific
ateSocketFactory.getDefault(0);
SSLSocket sslSocket = (SSLSocket)sslSocketFactory.createSocket(s, realHost,port,autoClo
se);
sslSocket.setEnableProtocols(sslSocket.getSupportedProtocols());
sslSocketFactory.setHostname(sslSocket, realHost);
return sslSocket;
}
});
```

- Troubleshooting in iOS
  - Troubleshoot the failure of SSL certificate verification

    Add a pre-process to the `URLSession:didReceiveChallenge:completionHandler` method in `NSURLSession` to change the value of `domain` from the IP address in the requested URL to the required domain name.

    Sample code in Objective-C

```
- (void)URLSession:(NSURLSession *)session
didReceiveChallenge:(NSURLAuthenticationChallenge *)challenge
completionHandler:(void (^)(NSURLSessionAuthChallengeDisposition disposition, NSURLCred
ential *credential))completionHandler
{
NSURLSessionAuthChallengeDisposition disposition = NSURLSessionAuthChallengePerformDefa
ultHandling;
NSURLCredential *credential = nil;
// Pre-processing before an SSL certificate verification.
NSString *domain = challenge.protectionSpace.host; // Obtain the value of the host prop
erty (domain name or IP address) in the current request. For example, 10.10.10.10.
NSString *testHostIP = self.tempDNS[self.testHost];
// The value of the Common Name (CN) field (the domain name issued by the SSL certifica
te) in the SSL certificate returned by the GameShield server may be inconsistent with t
he value of the host property.
// Because the value of the host property is replaced with the IP address of the GameSh
ield server before the request is sent, the value cannot match the domain name returned
by the GameShield server during SSL certificate verification. This prevents the request
from being sent.
// Replace the IP address of the GameShield server with the required domain name before
SSL certificate verification.
if ([domain isEqualToString:testHostIP]) {
domain = self.testHost; // Replace the IP address of the GameShield server with the req
uired domain name www.aliyundoc.com.
}
// The following logic of the code is the same as that in the AFURLSessionManager.m fil
e in AFNetworking.
if ([challenge.protectionSpace.authenticationMethod isEqualToString:NSURLAuthentication
MethodServerTrust]) {
if ([self evaluateServerTrust:challenge.protectionSpace.serverTrust forDomain:domain])
{
// The evaluateServerTrust:forDomain method is used to check whether the SSL certificat
e returned by the GameShield server can be trusted during an SSL handshake.
// Check whether the domain name in the requested URL is consistent with the CN field d
eclared in the SSL certificate.
credential = [NSURLCredential credentialForTrust:challenge.protectionSpace.serverTrust]
;
if (credential) {
disposition = NSURLSessionAuthChallengeUseCredential;
} else {
disposition = NSURLSessionAuthChallengePerformDefaultHandling;
}
} else {
disposition = NSURLSessionAuthChallengeCancelAuthenticationChallenge;
}
} else {
disposition = NSURLSessionAuthChallengePerformDefaultHandling;
}
if (completionHandler) {
completionHandler(disposition, credential);
}
}
```

For more information about the definition of the `evaluateServerTrust:forDomain` method, see the code in the `AFSecurityPolicy` module in `AFNetworking`. The sample code is in Objective-C.

```
- (BOOL)evaluateServerTrust:(SecTrustRef)serverTrust forDomain:(NSString *)domain {
// Create an SSL certificate verification policy.
NSMutableArray *policies = [NSMutableArray array];
if (domain) {
// Check whether the domain name in the request is consistent with the CN field declare
d in the SSL certificate.
[policies addObject:(__bridge_transfer id)SecPolicyCreateSSL(true, (__bridge CFStringRe
f)domain)];
} else {
[policies addObject:(__bridge_transfer id)SecPolicyCreateBasicX509()];
}
// Bind the SSL certificate verification policy to serverTrust. serverTrust is the SSL
certificate returned by the GameShield server.
SecTrustSetPolicies(serverTrust, (__bridge CFArrayRef)policies);
// Evaluate whether serverTrust can be trusted.
// The evaluation is performed base on the official documentation at https://developer.
apple.com/library/ios/technotes/tn2232/_index.html.
// If the result is kSecTrustResultUnspecified or kSecTrustResultProceed, serverTrust p
asses the SSL verification.
SecTrustResultType result;
SecTrustEvaluate(serverTrust, &result);
return (result == kSecTrustResultUnspecified || result == kSecTrustResultProceed);
}
```

- **Troubleshoot SNI issues**

  You can troubleshoot SNI issues by using the underlying library named libcurl. This library support SNI fields.

  Sample code in Objective-C

  ```
  //{HTTPS domain name}:443:{IP address}
  NSString *curlHost = ...;
  _hosts_list = curl_slist_append(_hosts_list, curlHost.UTF8String);
  curl_easy_setopt(_curl, CURLOPT_RESOLVE, _hosts_list);
  ```

  The value of the `curlHost` parameter is the `hosts_list` struct in C. For example, you can set the value to `{HTTPS domain name}:443:{IP address} or _hosts_list`. By passing in `CURLOPT_RESOLVE` to the `curl_easy_setopt` method, you can configure the mapping in the HTTPS request. This way, SNI is set.

GameShield solutions

Alibaba Cloud GameShield provides you with a better solution:

1. Resolve the domain name of the website to 127.0.0.1.

   > **Note** Before you change the DNS record, make sure that the domain name does not have online services.

2. If your client sends a request over HTTP or HTTPS, change the access mode from the original `127.0.0.1:Proxy port` to `Domain name:Proxy port` to access the web server. The proxy port is returned by the `getProxyTcpByDomain` interface.

The issues, such as SSL verification and using one IP address to provide HTTPS services for multiple domains can be resolved. This solution saves you the need to modify code and offers better protection for the origin server.

GameShield solutions are more secure than traditional solutions. Traditional solutions expose domain names in code, if the domain name is configured with the IP address of the origin server, attackers can easily find the origin server. With GameShield, attackers cannot obtain the IP address of the origin server even if they find the domain name of the origin server.

We recommend that you use GameShield to resolve host property mismatch from the perspective of compatibility, simplicity, and security.