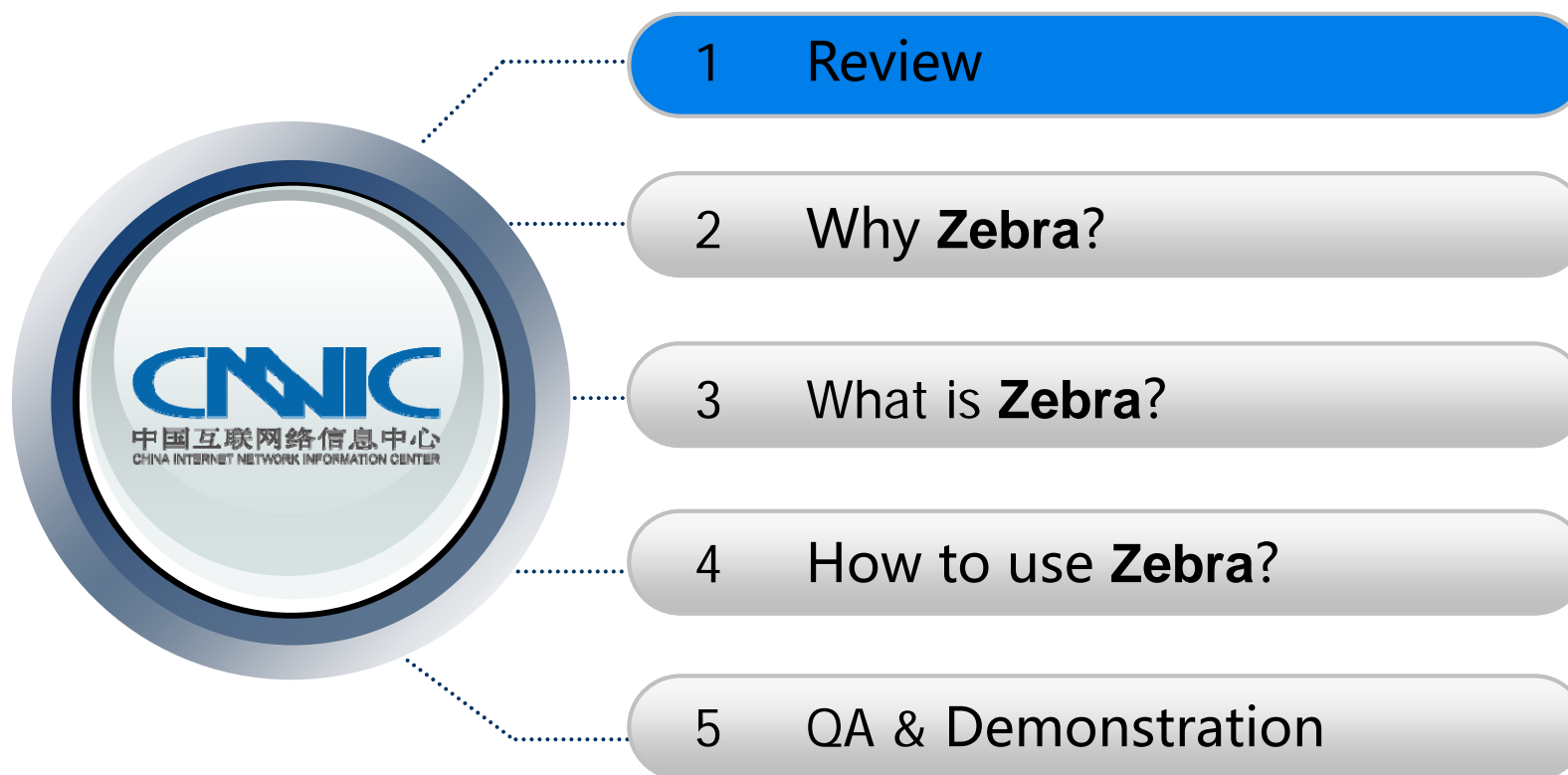




Zebra

2013.8

CN**IC**
中国互联网络信息中心
CHINA INTERNET NETWORK INFORMATION CENTER



- 1 Review
- 2 Why **Zebra**?
- 3 What is **Zebra**?
- 4 How to use **Zebra**?
- 5 QA & Demonstration

Name Server

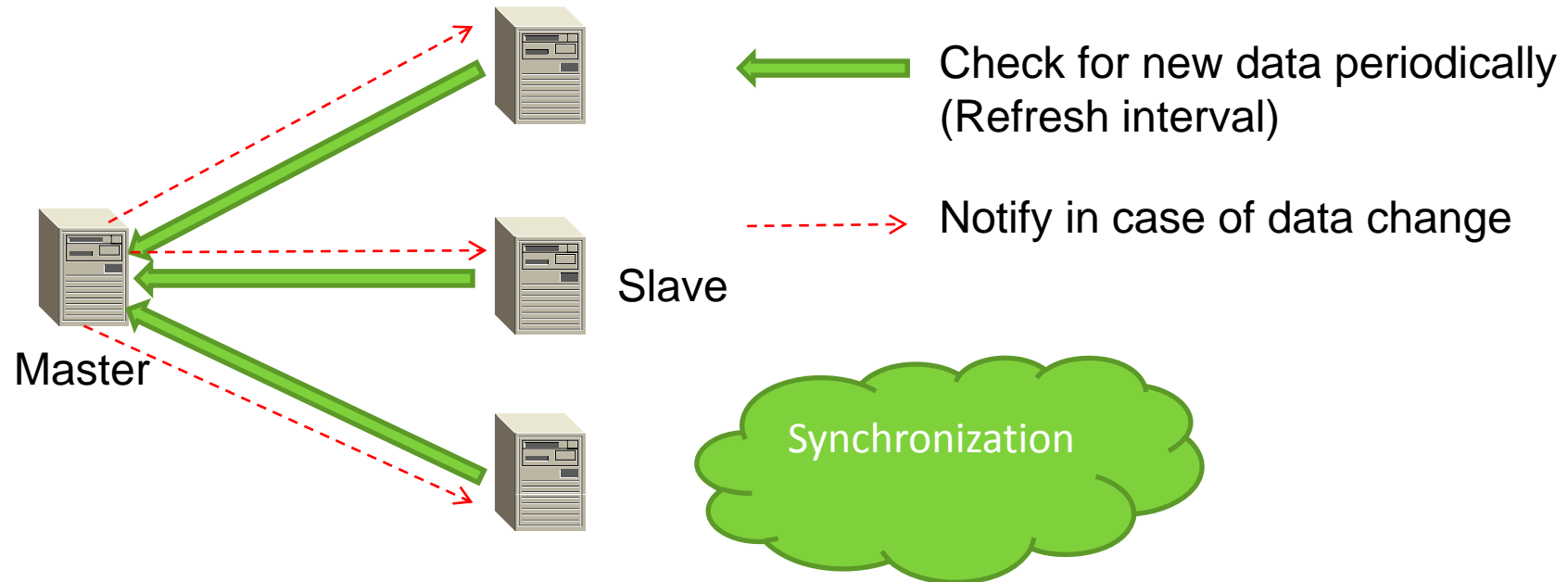
- Software running on a host for answering DNS queries.
- Authoritative & recursive

Authoritative Name Server

- Only answer queries for data over which it has authority(extern copy, dynamic DNS, file or database)
- Referral to another nameserver in case of no answer

Master/Slave

- Each domain should be served by at least 2 servers : 1 master & 1 slave(RFC 2182)

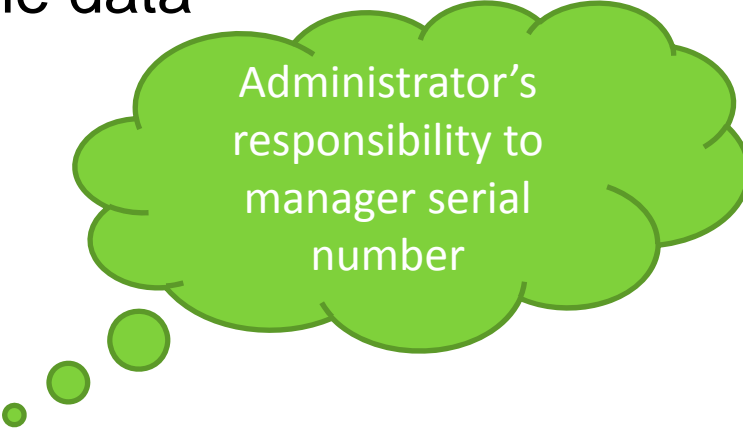


Serial Number


- SOA field
- YYYYMMDDNN (ex. 2013072901)

Slave will only copy zone data when this number **INCREASES**

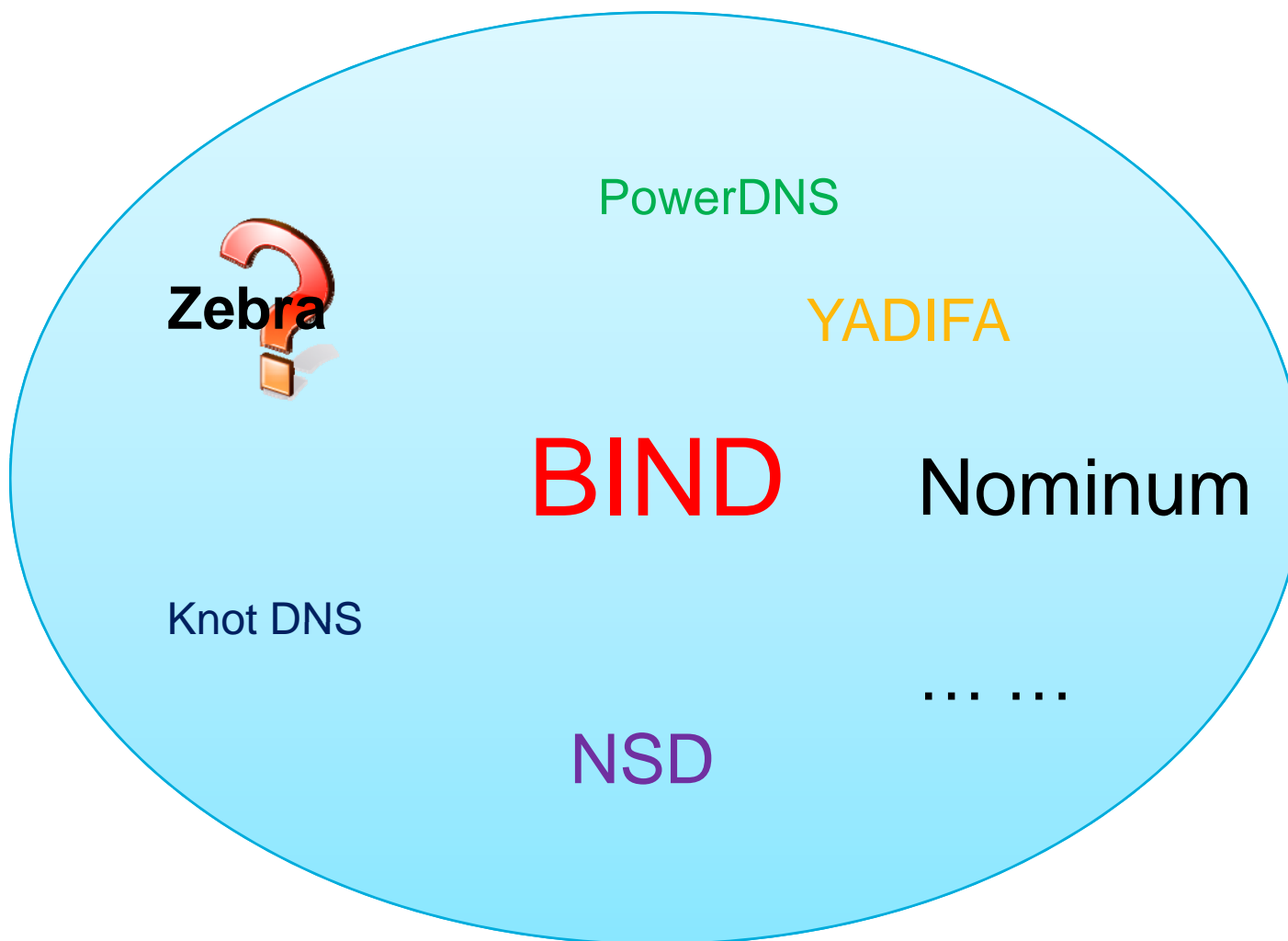
- ◆ Periodic UDP query to check Serial Number
- ◆ If increased, TCP transfer of zone data



Administrator's
responsibility to
manager serial
number



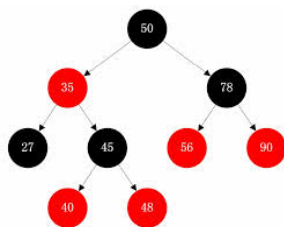
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BIND (Industry standard)



Zonefiles



Tree structured data



Specific requirements



Massive amount of zonefiles, hard to maintain



Long start up time



Chinese domain, dynamic remove zone, etc.

To solve problems which others can not

Zebra(Requirement-oriented)



Database backend

Fast start up



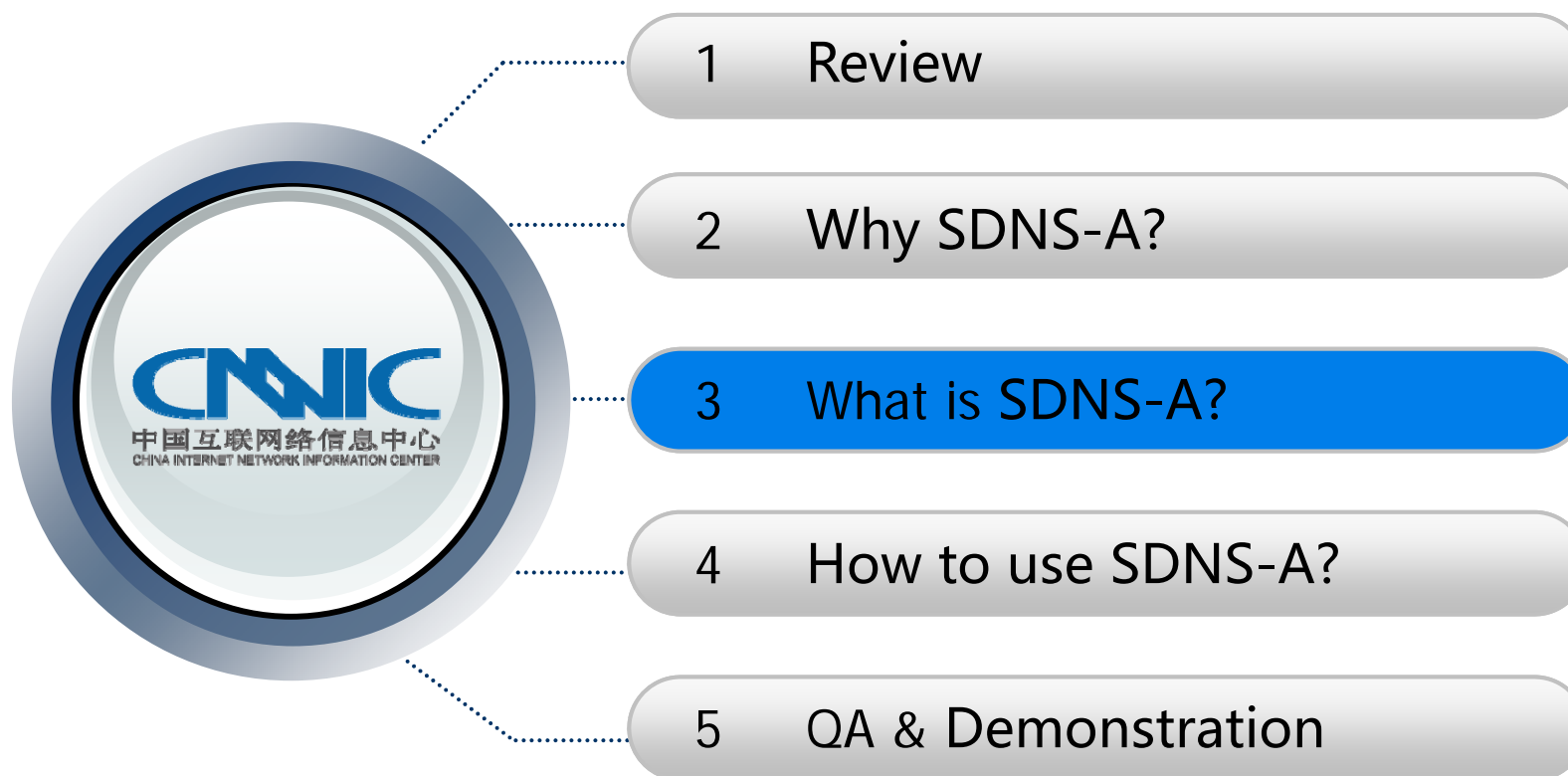
High-performance cache

High QPS



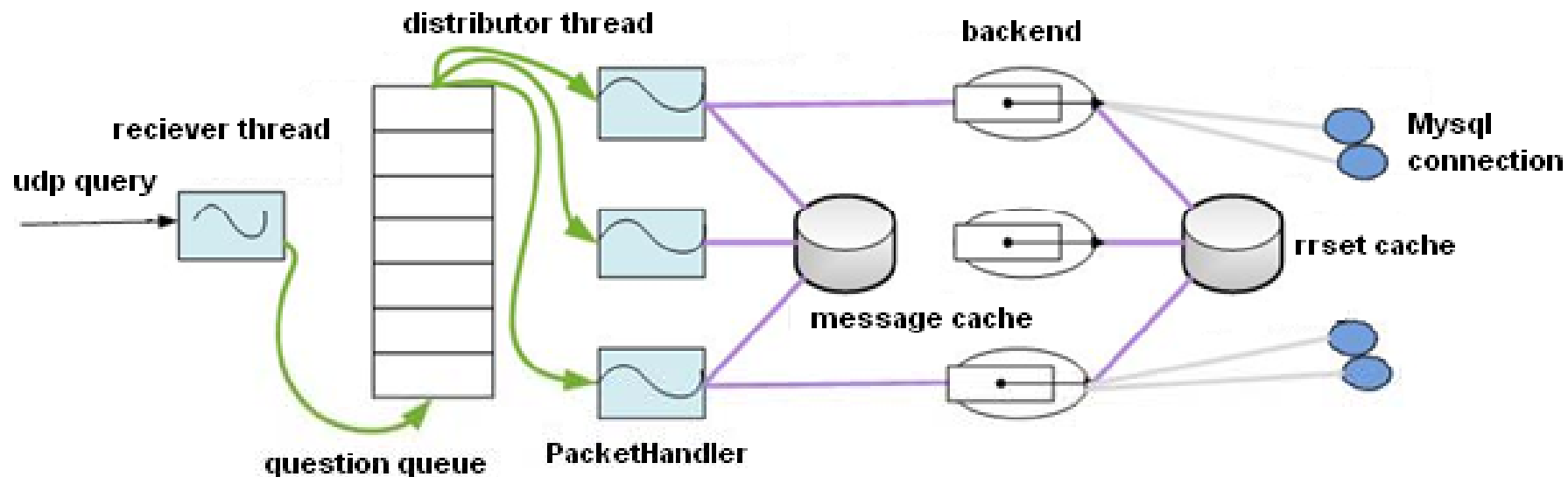
Website management

User friendly



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Architecture



Database architecture

- 4 tables



Views



Domains



Records



Supermasters

Initially has a view named “default” with a netmask “1.1.1.1/0”

Remote control


```
Zebra_control <command> <arguments>
```

Command	Description
add_view	<i>Add a view with particular netmasks.</i>
remove_view	<i>Remove a view by view name.</i>
update_view	<i>Update a view .</i>
add_zone	<i>Add a zone(from zonefile or by default).</i>
remove_zone	<i>Remove a zone from a view.</i>
update_zone	<i>Update a zone from zonefile.</i>
show	<i>Show a specific statistic or 'all' to get a list. Ex. Qps</i>
dump_cache	<i>Dump cache(for debug only).</i>
...

Configure file

```
Zebra.conf  
<parameter> =<content>
```

```
launch=gmysql  
gmysql-dbname=zebra  
gmysql-user=root  
gmysql-host=127.0.0.1  
gmysql-password=abc123  
local-address=127.0.0.1,218.241.108.207  
local-port=53  
master=yes  
log-rollsizе=50  
sys-logfile=/home/wangnan/zebra_log/zebra_sys.log  
query-logfile=/home/wangnan/zebra_log/zebra_query.log  
... ..
```



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1. Decompress the install packet

```
tar -zxvf zebra_install_tar.gz  
cd zebra_install  
sh install.sh
```

2. Load database structure

```
Mysql -uroot -p<password>  
create database zebra  
use zebra  
source <install packet dir>/no-dnssec.schema.mysql.sql
```

3. Start SDNS-A

```
/usr/local/sbin/zebra_server
```

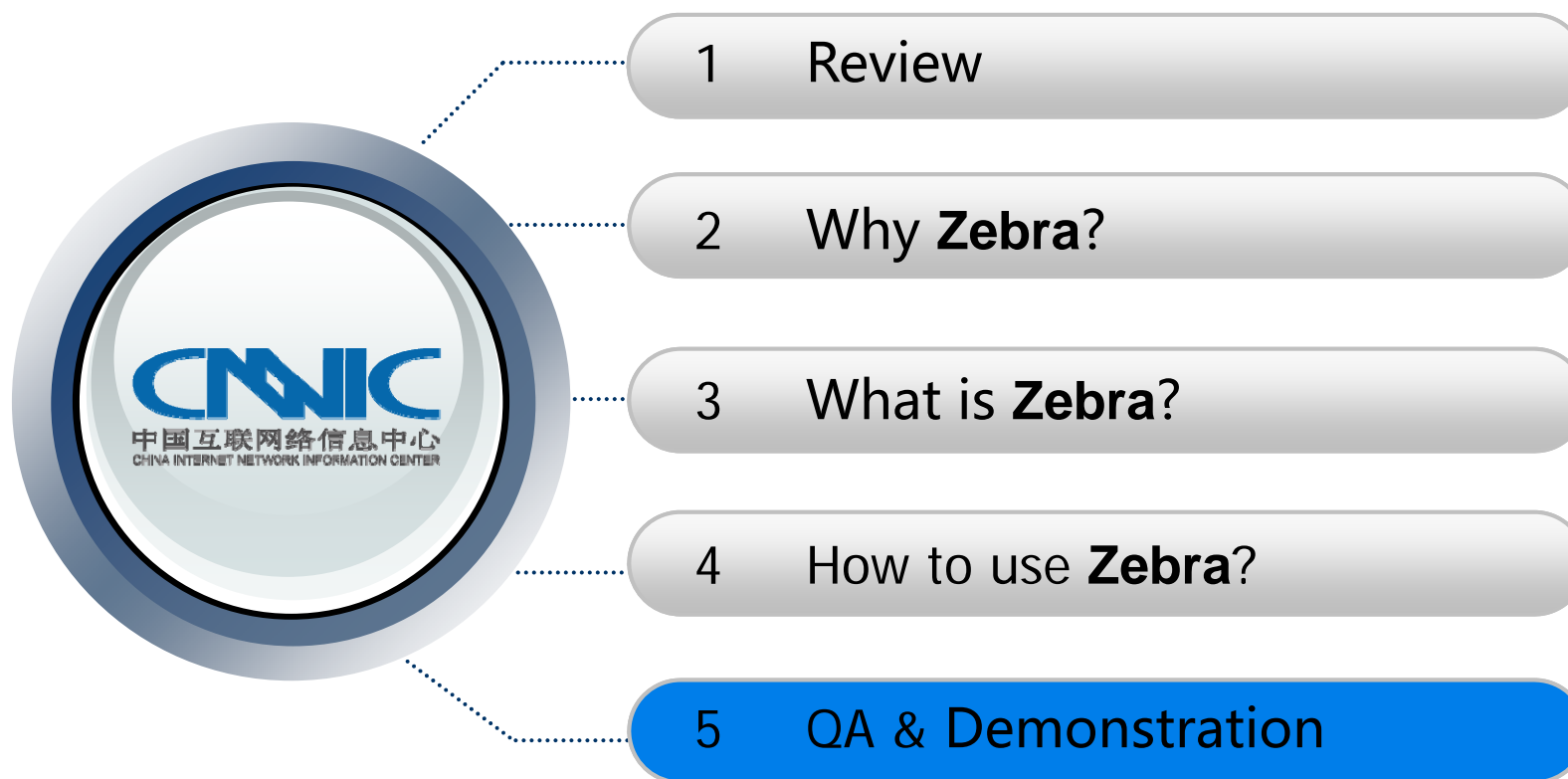
4. Log on website

```
<server_ip>:9999
```

The screenshot displays the SDNS-A web management interface. The top navigation bar includes the SDNS-A logo, tabs for 'System' and 'Data', and system status information: 'Hello admin! Server: 218.241.108.207 (OPS : 0) <Running> Chinese | English QUIT'. The left sidebar contains a menu with categories: 'Server Management' (Server Status, Configuration), 'Group Management' (Group List), 'User Management' (User List), and 'System Management' (Configuration). The main content area is titled 'Add Master/Slave Server' and features a form with 'Type' set to 'Master', an empty 'Server IP' field, and a 'Master' dropdown set to '-Select-'. A 'SAVE' button is present. Below the form is a table with the following data:

Type	IP	Master Server	Operation
Master	218.241.108.207	None	✘

A red tip message reads: '(Tips: Double-click the icon to view the status of the server.)'. Below the table, a server icon is shown with the IP address '218.241.108.207' underneath it.



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QA



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