

# **P8-03-0618 ES和Redis环境安装与配置**

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## **一、IDC机房和P8架构中硬件设备选购案例**

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### **1.1生产环境中选购的依据**

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**价格、性能、冗余**

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#### **1.1.1 生产环境负载均衡集群系统架构设备选购方案**

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**LVS1 DELL R610 1U CPU E5\*2 8G \*2 (4) 硬盘SAS 146G \*2 RAID 1**

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**LVS2 DELL R610 1U CPU E5\*2 8G \*2 (4) 硬盘SAS 146G \*2 RAID 1**

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#### **1.1.2 Web层硬件选择和RAID级别**

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**WWW主站1 业务(2台) DELL R730 2U CPU E5 \*2 8G(16 32G) SAS 300G \*2 RAID0**

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**WWW主站2 业务(2台) DELL R730 2U CPU E5 \*2 8G(16 32G) SAS 300G \*2 RAID0**

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**备选方案:R430 R610 1U**

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#### **1.1.3数据库层硬件选择以及RAID级别(Oracle和MySQL)**

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**MySQL主库1-1 DELL R730 2U CPU E5 \*2 8G(16 32G) SAS 300G \*6 RAID10**

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**MySQL主库1-2 DELL R730 2U CPU E5 \*2 8G(16 32G) SAS 300G \*6 RAID10**

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MySQL从库1-1 DELL R730 2U CPU E5 \*2 8G(16 32G)  
SAS 300G \*6 RAID0或5

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MySQL从库1-2 DELL R730 2U CPU E5 \*2 8G(16 32G)  
SAS 300G \*6 RAID0或5

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MySQL从库2-1 DELL R730 2U CPU E5 \*2 8G(16 32G)  
SAS 300G \*6 RAID0或5

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MySQL从库2-2 DELL R730 2U CPU E5 \*2 8G(16 32G)  
SAS 300G \*6 RAID0或5

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#### 1.1.4存储层硬件选择和RAID级别

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##### 数据备份硬件以及RAID级别

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DELL R610 E5 \*2 16G-32G SAS 10K 2T \*6 可以不做RAID  
交叉备份

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DELL R730 E5 \*2 16G-32G SAS 10K 2T \*6 RAID5 折中方案

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提示：备份服务器 一般我们考虑容量和冗余 对性能要求不高。

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#### 1.1.5 共享存储NFS硬件选择以及RAID级别

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NFS1 DELL R730 E5 8G\*2 SAS15K 600G \*6  
RAID10/RAID5/RAID0

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NFS2 DELL R730 E5 8G\*2 SAS15K 600G \*6  
RAID10/RAID5/RAID0

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#### 1.1.6 分布式存储GFS、MFS

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NFS1 DELL R730 E5 8G\*2 SAS15K 600G \*6  
RAID10/RAID5/RAID0

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## NFS2 DELL R730 E5 8G\*2 SAS15K 600G \*6 RAID10/RAID5/RAID0

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### 1.1.7 监控管理/网关层硬件选择以及RAID级别

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DELL R610 /R430 E51 8G-16G 146G SAS 2块 RAID1

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### 1.1.8 网络设备【全千兆设备】

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华为 H3C CISCO DLINK 易捷等

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所有的服务器 都带有远程管理卡 4 + 1

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## 二、搭建ES环境P8集群架构中要求ES单节点

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### 2.1 环境要求

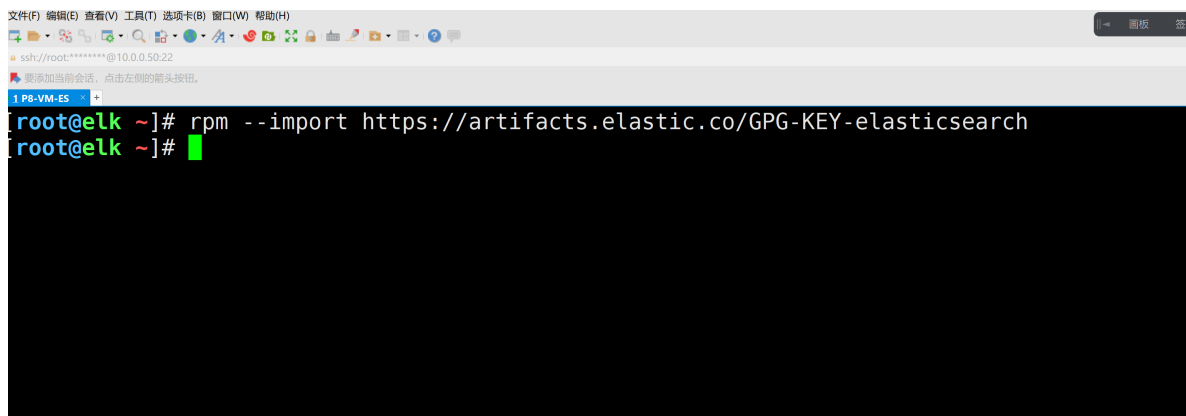
---

Java JDK1.8.0 以上的版本 11.0

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```
yum install -y java-1.8.0-openjdk*
```

```
rpm --import https://artifacts.elastic.co/GPG-KEY-elasticsearch
```



### 配置清华源

---

vim /etc/yum.repos.d/elasticsearch.repo

```
[elasticsearch-7.x]
name=Elasticsearch repository for 7.x packages
baseurl=https://mirror.tuna.tsinghua.edu.cn/elasticstack/7.x/yum/
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
```

```
enabled=1
autorefresh=1
type=rpm-md
```

```
[elasticsearch-7.x]
name=Elasticsearch repository for 7.x packages
baseurl=https://mirror.tuna.tsinghua.edu.cn/elasticsearch/7.x/yum/
gpgcheck=1
gpgkey=https://artifacts.elastic.co/GPG-KEY-elasticsearch
enabled=1
autorefresh=1
type=rpm-md
~
~
~
~
```

## yum makecache && yum install -y elasticsearch

```
[root@elk ~]# yum makecache && yum install -y elasticsearch
```

```
Total download size: 300 M
Installed size: 300 M
Downloading packages:
elasticsearch-7.7.1-x86_64.rpm | 300 MB 00:01:01
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Creating elasticsearch group... OK
Creating elasticsearch user... OK
Installing : elasticsearch-7.7.1-1.x86_64 1/1
### NOT starting on installation, please execute the following statements to configure elasticsearch service to start
automatically using systemd
  sudo systemctl daemon-reload
  sudo systemctl enable elasticsearch.service
### You can start elasticsearch service by executing
  sudo systemctl start elasticsearch.service
future versions of Elasticsearch will require Java 11; your Java version from [/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.2
52.b09-2.el7_8.x86_64/jre] does not meet this requirement
Created elasticsearch keystore in /etc/elasticsearch/elasticsearch.keystore
Verifying : elasticsearch-7.7.1-1.x86_64 1/1

Installed:
  elasticsearch.x86_64 0:7.7.1-1

Complete!
[root@elk ~]#
```

## 配置ES

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```

## JVM configuration
#####
## IMPORTANT: JVM heap size
#####
##
## You should always set the min and max JVM heap
## size to the same value. For example, to set
## the heap to 4 GB, set:
##
## -Xms4g
## -Xmx4g
##
## See https://www.elastic.co/guide/en/elasticsearch/reference/current/heap-size.html
## for more information
##
#####

# Xms represents the initial size of total heap space
# Xmx represents the maximum size of total heap space
Xms1g
-Xmx1g
#####
## Expert settings
#####
"jvm.options" 77L, 2373C

```

如果电脑配置不够 可以256 最大512M

cd /etc/elasticsearch

vim elasticsearch.yml 如果没有vim 就yum install -y vim

```

#
# Use a descriptive name for your cluster:
#
cluster.name: P8
#
# ----- Node -----
#
# Use a descriptive name for the node:
#
node.name: node-1
#
# Add custom attributes to the node:
#
#node.attr.rack: r1
#
# ----- Paths -----
#
# Path to directory where to store the data (separate multiple locations by comma):
#
path.data: /var/lib/elasticsearch
#
# Path to log files:
#
path.logs: /var/log/elasticsearch
#
# ----- Memory -----

```

```
#
# Elasticsearch performs poorly when the system is swapping the memory.
#
# ----- Network -----
#
# Set the bind address to a specific IP (IPv4 or IPv6):
#
network.host: 0.0.0.0
#
# Set a custom port for HTTP:
#
http.port: 9200
#
# For more information, consult the network module documentation.
#
# ----- Discovery -----
#
# Pass an initial list of hosts to perform discovery when this node is started:
# The default list of hosts is ["127.0.0.1", "[::1]"]
#
#discovery.seed_hosts: ["host1", "host2"]
#
# Bootstrap the cluster using an initial set of master-eligible nodes:
#
cluster.initial_master_nodes: ["node-1"]
#
```

## 效验

```
Verifying : curl-7.29.0-51.el7.x86_64
Updated:
  curl.x86_64 0:7.29.0-57.el7
Dependency Updated:
  libcurl.x86_64 0:7.29.0-57.el7          libssh2.x86_64 0:1.8.0-3.el7
Complete!
[root@elk /etc/elasticsearch]# curl http://127.0.0.1:9200
{
  "name" : "node-1",
  "cluster_name" : "P8",
  "cluster_uuid" : "FtnezSzIR_C3_HzRiIJZ1w",
  "version" : {
    "number" : "7.7.1",
    "build_flavor" : "default",
    "build_type" : "rpm",
    "build_hash" : "ad56dce891c901a492bb1ee393f12dfff473a423",
    "build_date" : "2020-05-28T16:30:01.040088Z",
    "build_snapshot" : false,
    "lucene_version" : "8.5.1",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
```

## 方式二

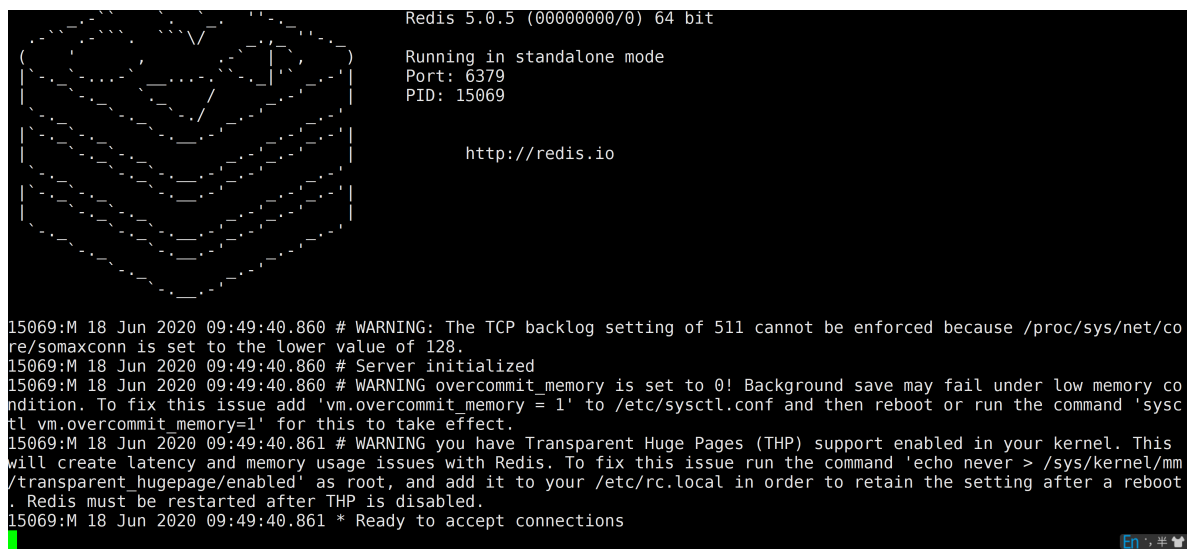
```
10.0.0.50:9200
{
  "name" : "node-1",
  "cluster_name" : "P8",
  "cluster_uuid" : "FtnezSzIR_C3_HzRiIJZ1w",
  "version" : {
    "number" : "7.7.1",
    "build_flavor" : "default",
    "build_type" : "rpm",
    "build_hash" : "ad56dce891c901a492bb1ee393f12dfff473a423",
    "build_date" : "2020-05-28T16:30:01.040088Z",
    "build_snapshot" : false,
    "lucene_version" : "8.5.1",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
```

表示搭建成功了。

### 三、单主机 3主3从 主机的配置2C 4G

序号	主机名称	角色	数量	IP内网	IP外网	端口	软件
1	Redis-Master-01	Node01	1	10.0.0.51		7000	wget
2	Redis-Master-02	Node02	1	10.0.0.51		7002	wget
3	Redis-Master-03	Node03	1	10.0.0.51		7004	wget
4	Redis-Slave-01	Node04	1	10.0.0.51		7001	wget
5	Redis-Slave-02	Node05	1	10.0.0.51		7003	wget
6	Redis-Slave-03	Node06	1	10.0.0.51		7005	wget

### 要求Redis 5.0.5



```
Redis 5.0.5 (00000000/0) 64 bit
Running in standalone mode
Port: 6379
PID: 15069

http://redis.io

15069:M 18 Jun 2020 09:49:40.860 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 128.
15069:M 18 Jun 2020 09:49:40.860 # Server initialized
15069:M 18 Jun 2020 09:49:40.860 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.overcommit_memory = 1' to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
15069:M 18 Jun 2020 09:49:40.861 # WARNING you have Transparent Huge Pages (THP) support enabled in your kernel. This will create latency and memory usage issues with Redis. To fix this issue run the command 'echo never > /sys/kernel/mm/transparent_hugepage/enabled' as root, and add it to your /etc/rc.local in order to retain the setting after a reboot. Redis must be restarted after THP is disabled.
15069:M 18 Jun 2020 09:49:40.861 * Ready to accept connections
```

```
redis-cli -a Redis123 --cluster create 10.0.0.60:7000 10.0.0.60:7001 10.0.0.60:7002 10.0.0.60:7003 10.0.0.60:7004 10.0.0.60:7005 --cluster-replicas 1
```

