



Home Management and Database patching with RHP

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Established in 1998

21 years on Polish IT market

Computerworld TOP200 2019 Edition

Ranked 5th amongst IT Integrators in Poland

53rd on the list of all Polish IT companies

Locations

Headquarters in Wrocław, Branches in
Warszawa, Poznań and Katowice

People

Over 100 employees (65 engineers)

Competency centers

Oracle, Infrastructure & Cloud, Automation,
Virtualization, ITSM, Cybersecurity



Database Consolidation



200 DATABASES

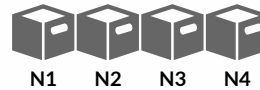
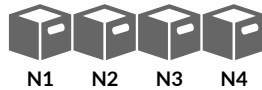
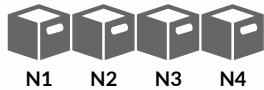
Cluster #1

Cluster #2

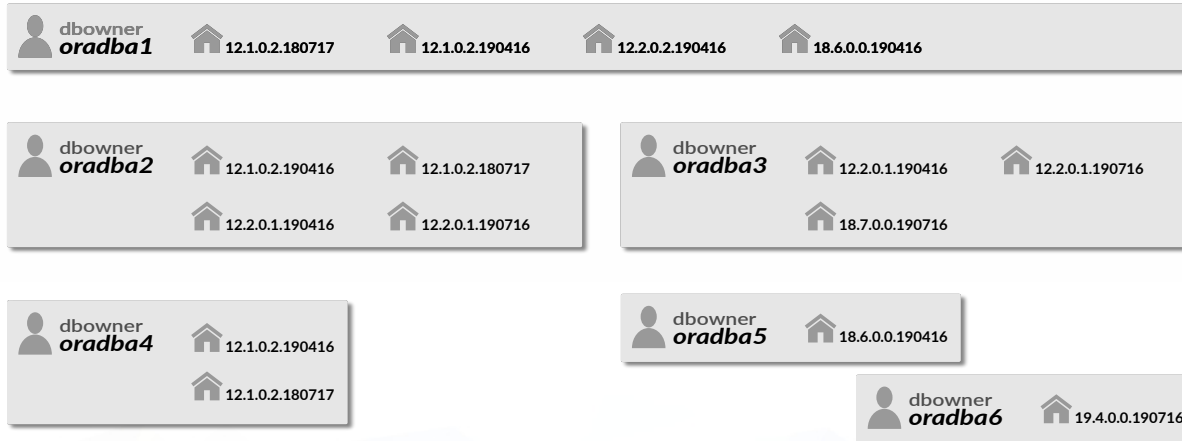
Cluster #3

Cluster #4

4 CLUSTERS



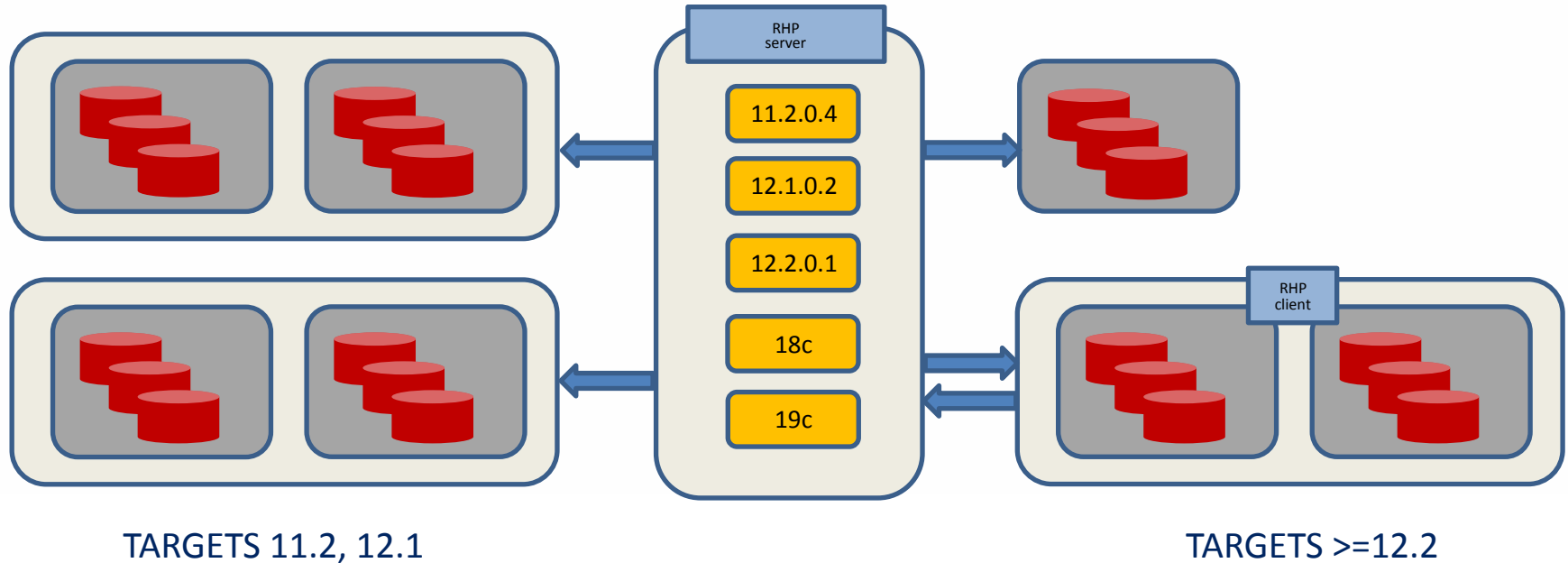
16 DB NODES



6 DB OWNERS
7 DB VERSIONS

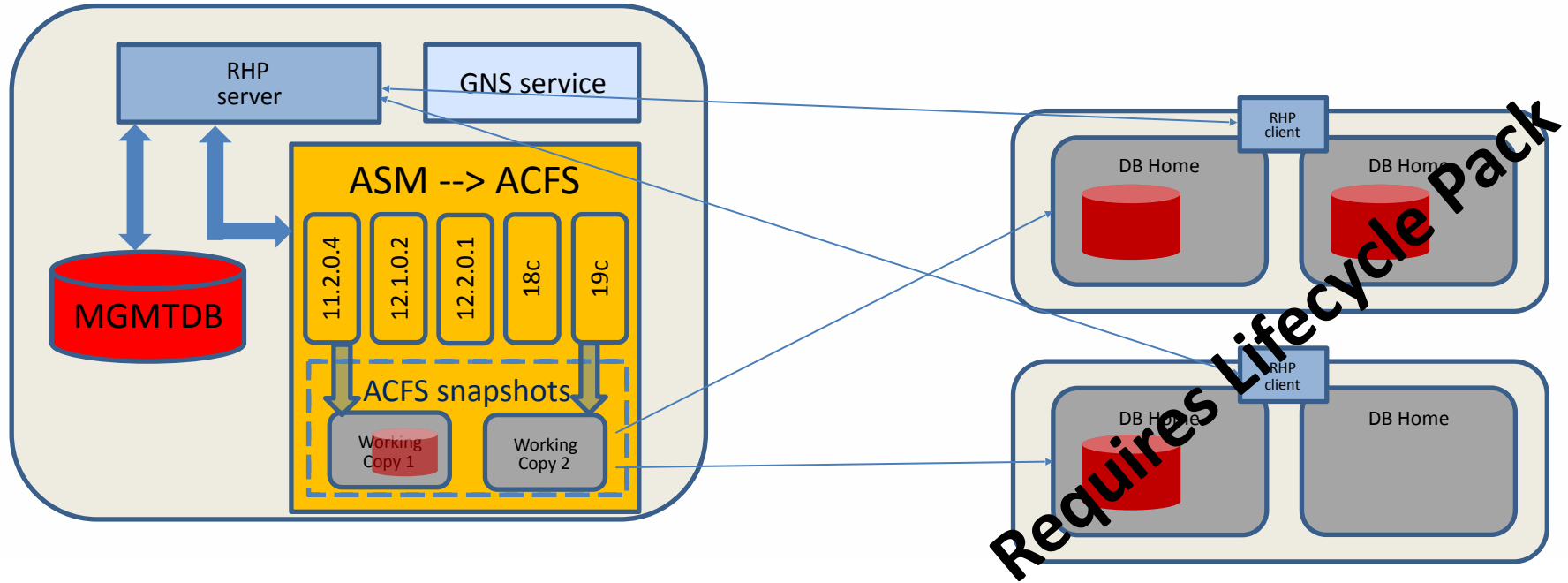
136 ORACLE HOMES

RAPID HOME PROVISIONING – Architecture



 Golden Image  Working copy  Oracle Clusterware

RAPID HOME PROVISIONING – Components



RHP - Independent Automaton

```
[oracle@exa01vm01 ~]$ rhpctl -help
```

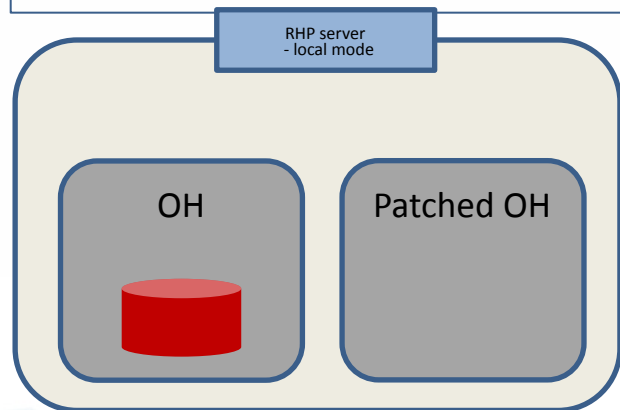
Performs patching of databases and Grid Infrastructure.

Usage:

`rhpctl move` Moves a resource from a source path to a destination path.

For detailed help on each command use:

```
rhpctl <command> -help
```



Oracle Clusterware >=18

Oracle Database >= 11.2.0.4



Working
copy



Oracle
Clusterware

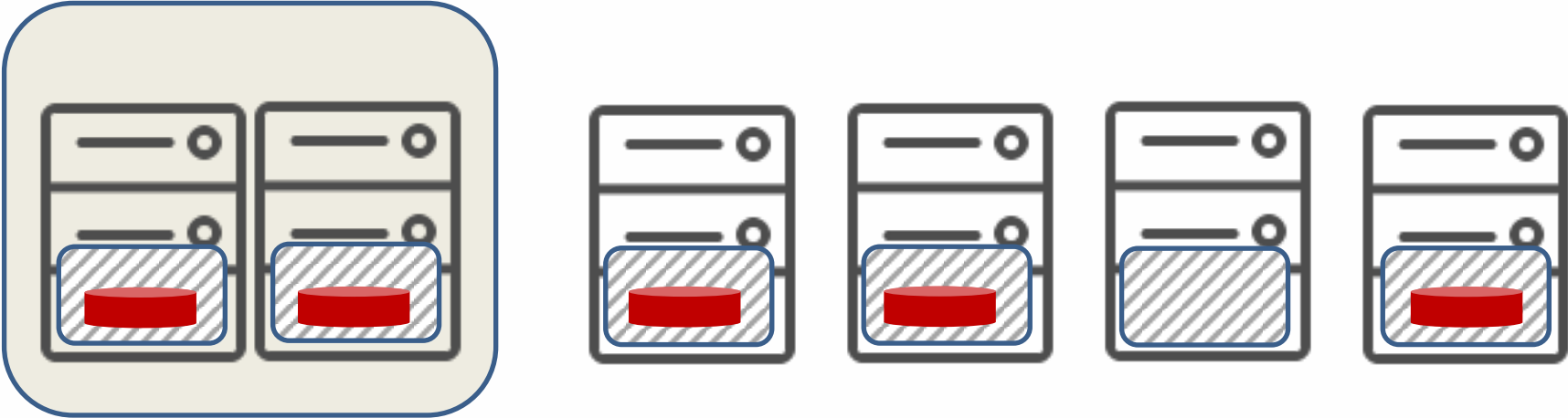
Database Licensing Information User Manual

When deployed across multiple clusters, requires Oracle Database Lifecycle Management Pack for Oracle Database on targets

MOS - RHP: Rapid Home Provisioning Server - Minimum Requirement (Doc ID 2126710.1)

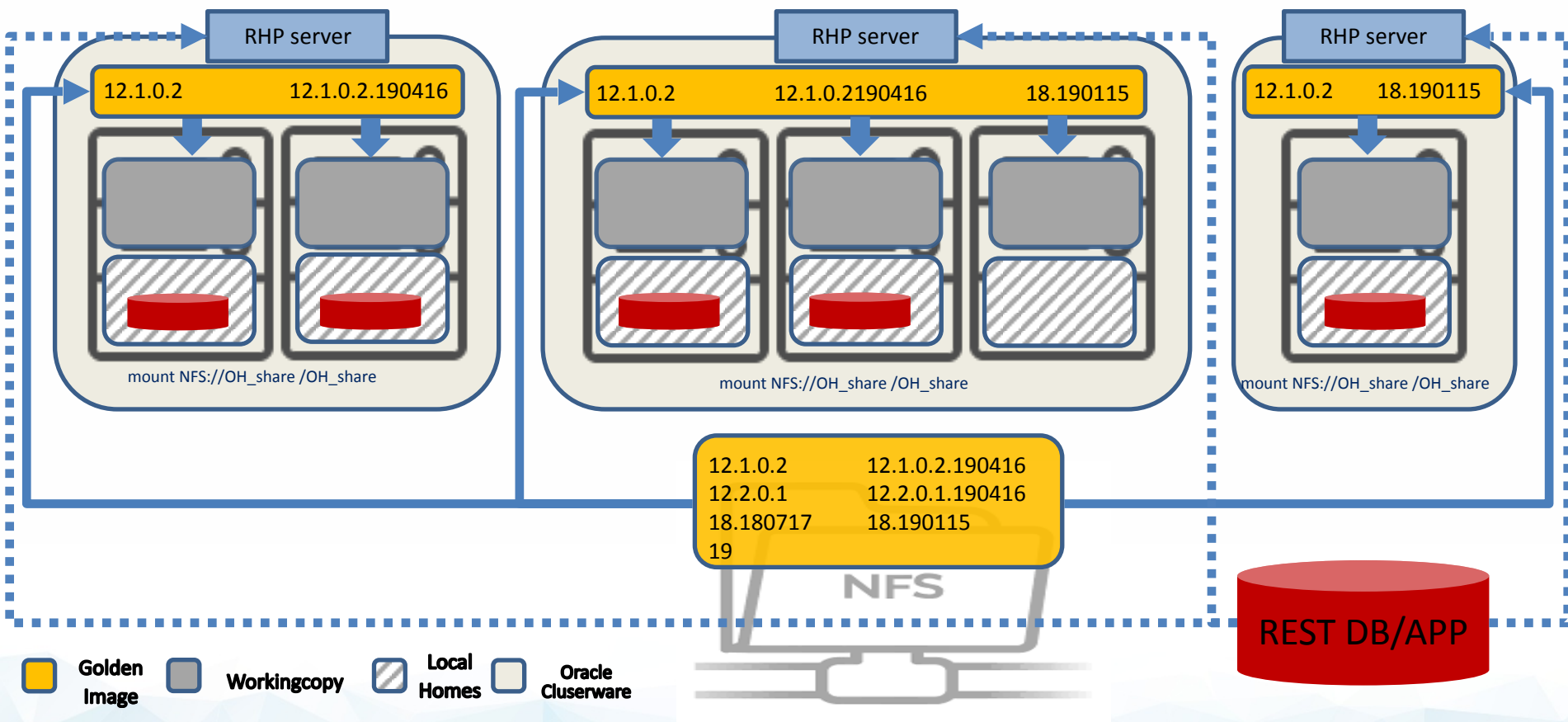
Rapid Home Provisioning (RHP) is a feature of Grid Infrastructure 12.1 and later. The architecture consists of a Server and one or more Clients. The Server may provision and patch Homes locally without any extra license needed. If Clients are configured, they require Database Lifecycle Management Pack licensing.

Rapid Home Provisioning – the different approach



 Golden Image  Workingcopy  Local Homes  Oracle Clusterware

Rapid Home Provisioning – the different approach



Rapid Home Provisioning – enable REST api

❑ Create RHP REST user

```
[grid@exa01vm02 ~]$ rhpctl register user -restuser -user resttest -email  
rest@test.rest -rhpuser grid  
Enter user "resttest" password:  
exa01vm02.ora.lab.advatech.pl: Audit ID: 3
```

❑ Enable REST

```
[grid@exa01vm02 ~]$ srvctl stop rhpserver  
[grid@exa01vm02 ~]$ srvctl modify rhpserver -enableHTTPS YES  
[grid@exa01vm02 ~]$ srvctl start rhpserver
```

Rapid Home Provisioning – enable REST api

❑ Set the certificate

```
[grid@exa01vm02 ~]$ crskeytoolctl -printrootcert  
Cluster root public certificate printed to file [/home/grid/  
b441af55ae504f74ffe6274d65e0d979.pem].
```

❑ Check REST API

```
[grid@exa01vm02 ~]$ export CURL_CA_BUNDLE=/home/grid/  
b441af55ae504f74ffe6274d65e0d979.pem  
[grid@exa01vm02 ~]$ curl -u resttest https://exa01vm02:8894/rhp-restapi/rhp/  
workingcopies  
Enter host password for user 'resttest':  
{"items":[]}
```

Rapid Home Provisioning – config DB

Create wallet

```
orapki wallet create -wallet <wallet_path> -pwd <wallet_pwd> -auto_login
```

Add certificate and user to the wallet

```
orapki wallet add -wallet <wallet_path> -trusted_cert -cert <cert_pem_file>  
mkstore -wrl <wallet_path> -createCredential <connect_string> <rest_user>
```

Rapid Home Provisioning – config DB

- ❑ Create ACL on database with privileges „connect, use-password”

```
BEGIN
  DBMS_NETWORK_ACL_ADMIN.create_acl(acl => 'RHP_TEST.xml', description=> 'RHP TEST',
    principal => 'SYSTEM', is_grant => TRUE, privilege => 'connect');
  DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE(acl => 'RHP_TEST.xml',
    principal => 'SYSTEM', is_grant => TRUE, privilege => 'use-passwords');
  DBMS_NETWORK_ACL_ADMIN.assign_acl(acl => 'RHP_TEST.xml', host => '*');
  DBMS_NETWORK_ACL_ADMIN.ASSIGN_WALLET_acl(acl => 'RHP_TEST.xml', wallet_path =>
'file:<WALLET_PATH>');
  commit;
END;
/
```

- ❑ Use UTL_HTTP package to send http requests