



LHC Long Shutdown 2 and database changes

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changes

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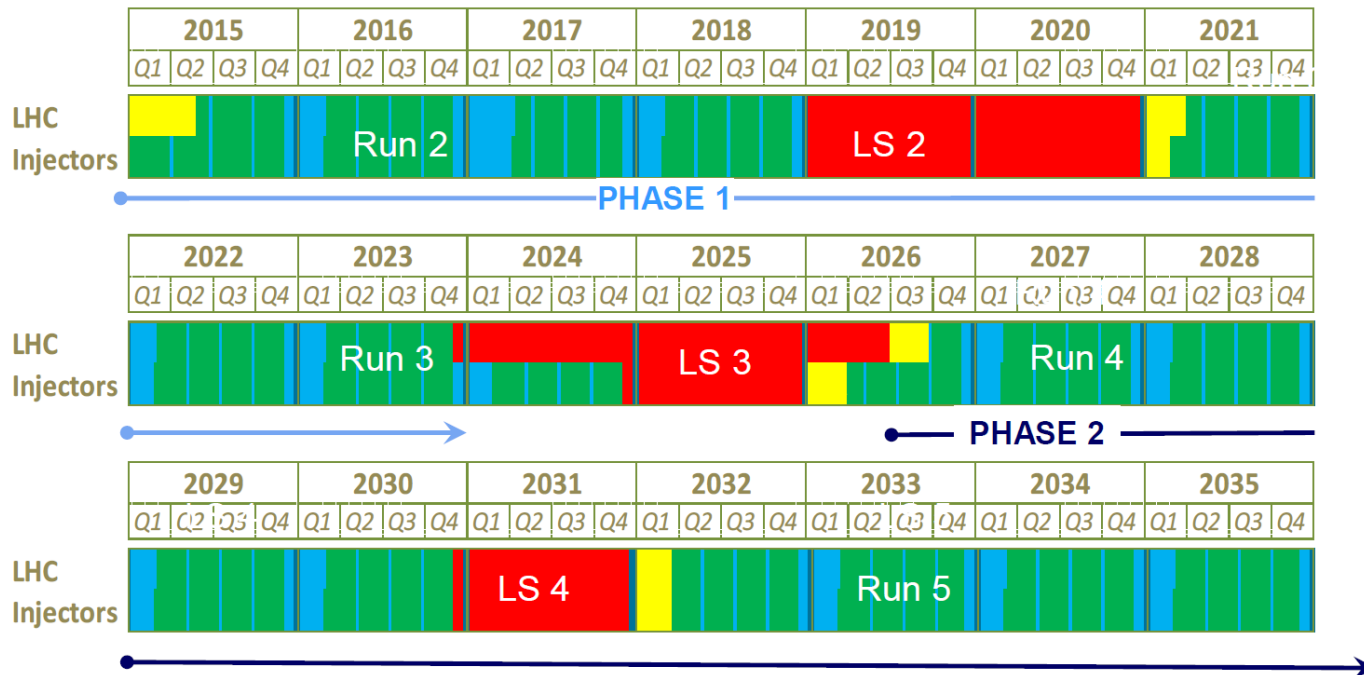
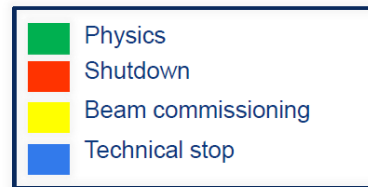
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Strictly Oracle
content

LHC roadmap: according to MTP 2016-2020 V2

LS2 starting in 2019 => 24 months + 3 months BC
 LS3 LHC: starting in 2024 => 30 months + 3 months BC
 Injectors: in 2025 => 13 months + 3 months BC



Challenges

- No changes during runs
- Forecast needs before next runs
- Cope with support roadmaps

Cope with support roadmaps

Hardware renewal

Hardware renewal

PHYSICS
DATABASES
HARDWARE
(EOS 2022)

OTHER
DATABASES
HARDWARE
(EOS 2019)

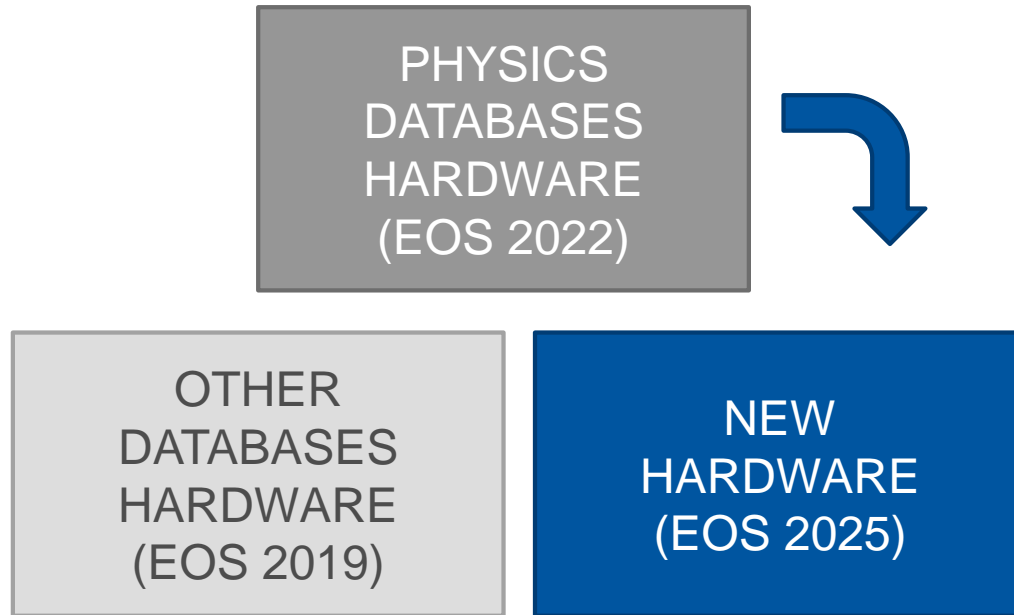
Hardware renewal

PHYSICS
DATABASES
HARDWARE
(EOS 2022)

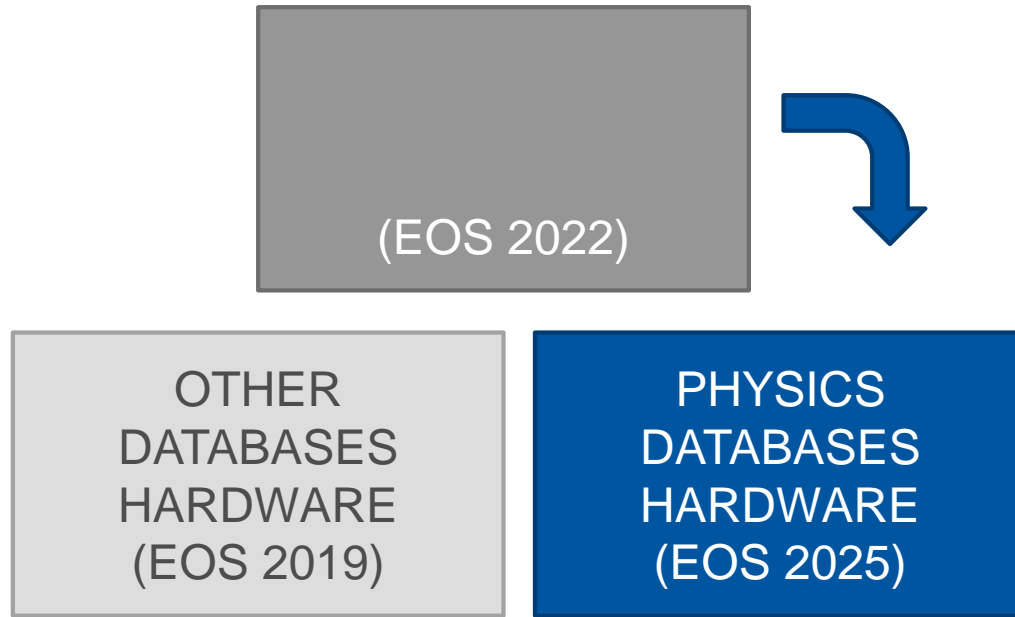
OTHER
DATABASES
HARDWARE
(EOS 2019)

NEW
HARDWARE
(EOS 2025)

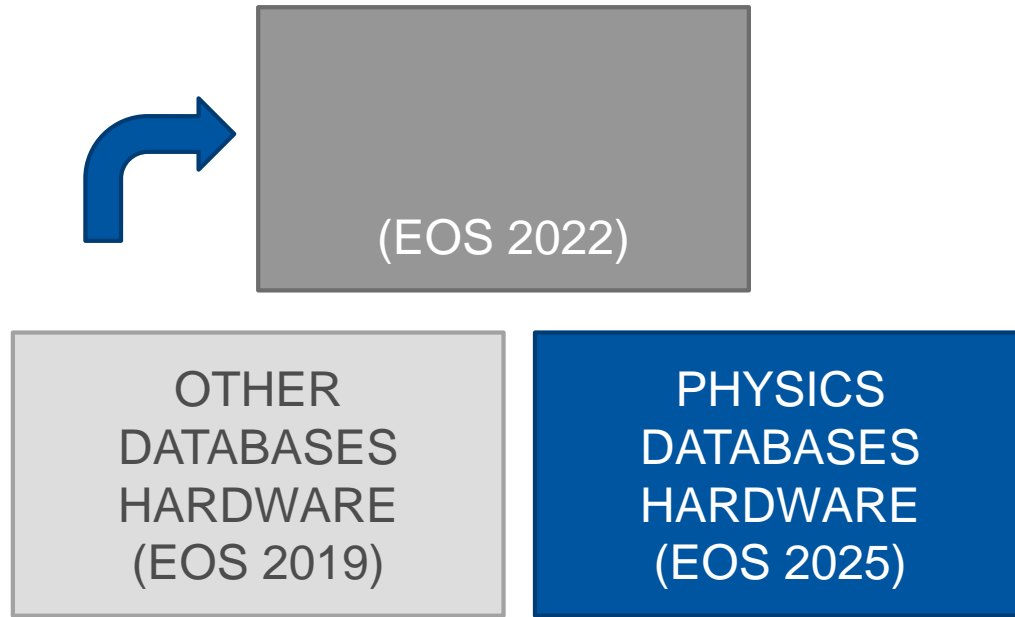
Hardware renewal



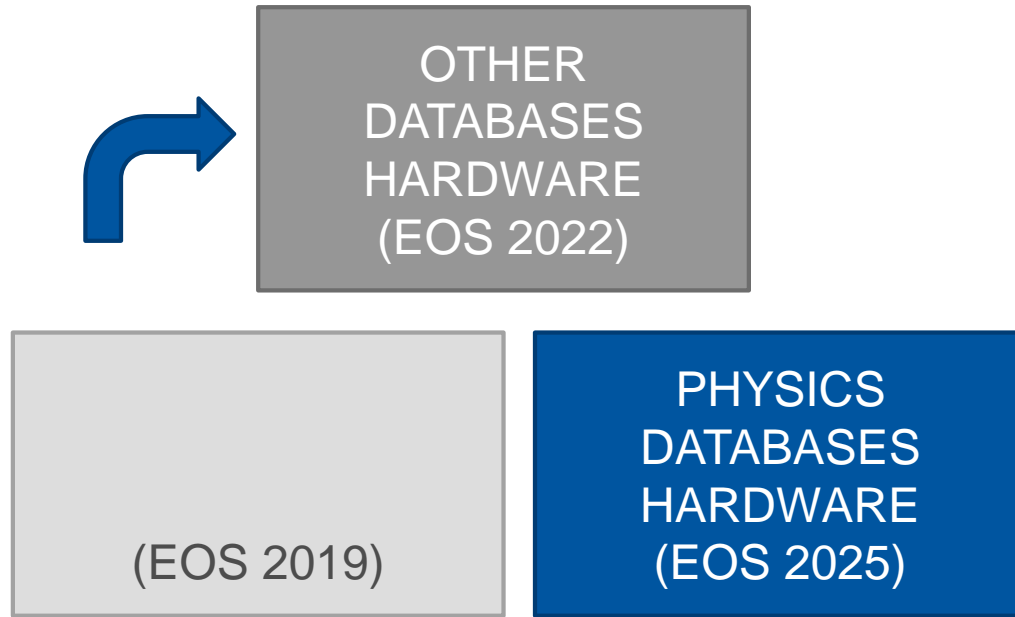
Hardware renewal



Hardware renewal



Hardware renewal

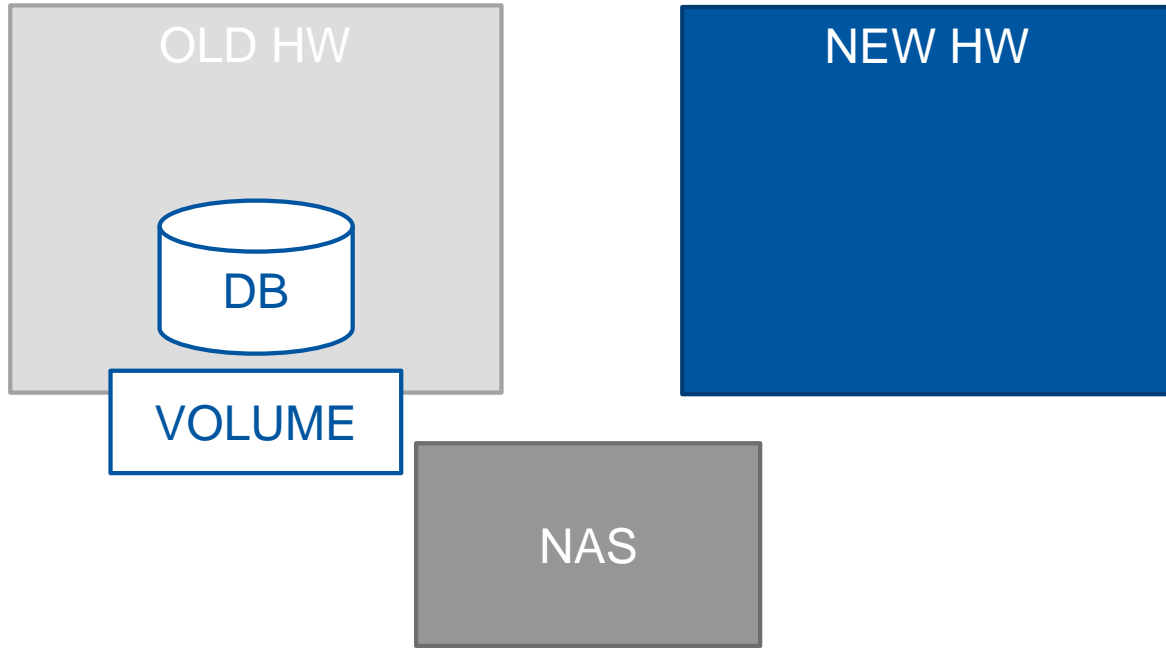


Hardware renewal

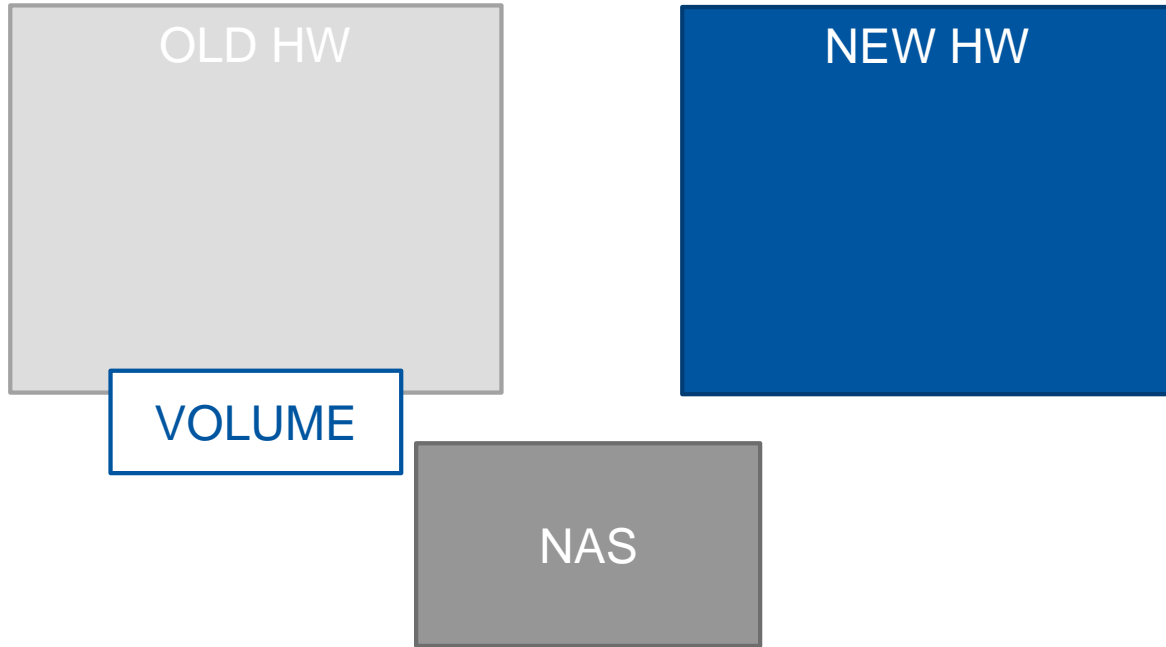
OTHER
DATABASES
HARDWARE
(EOS 2022)

PHYSICS
DATABASES
HARDWARE
(EOS 2025)

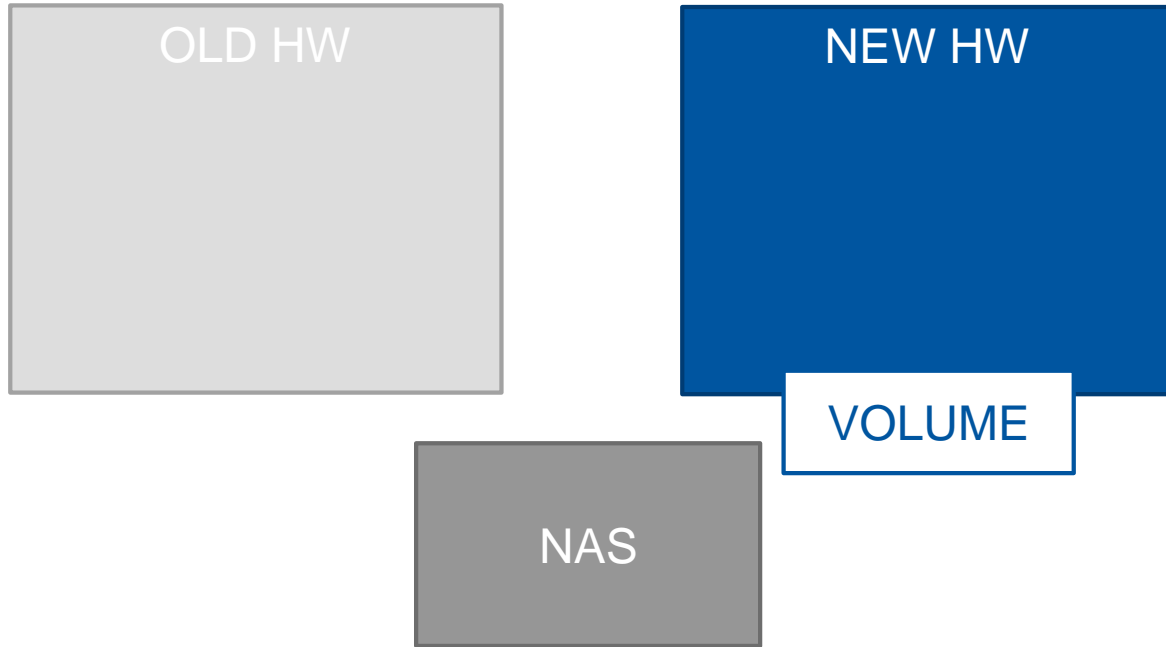
Moving process 1



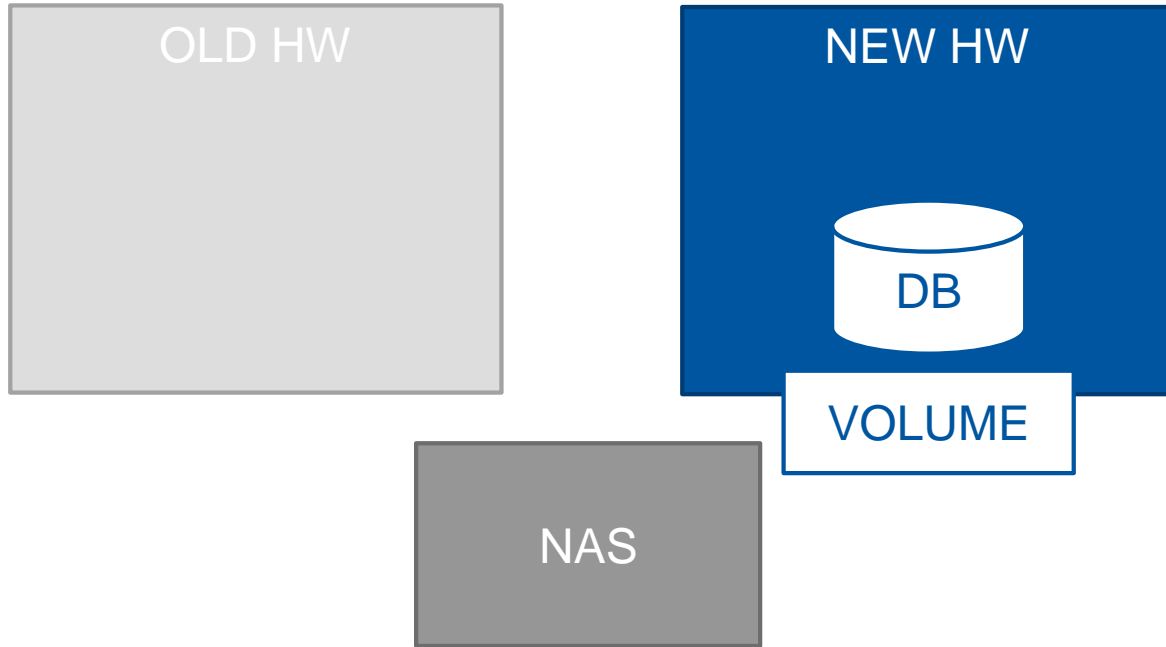
Moving process 1



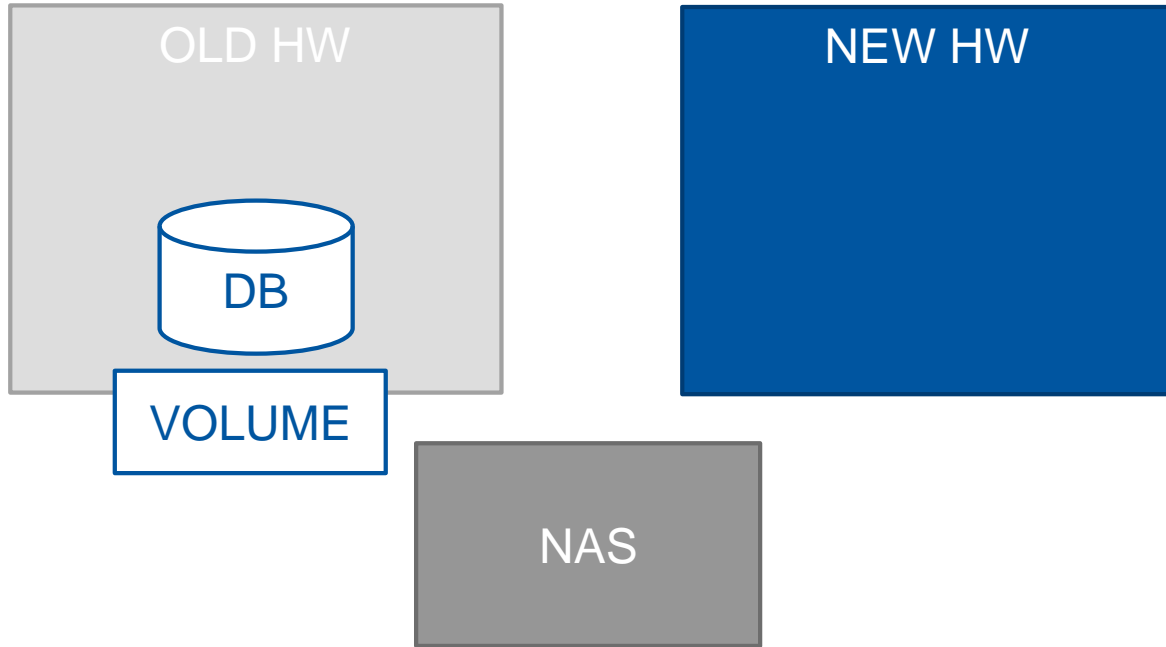
Moving process 1



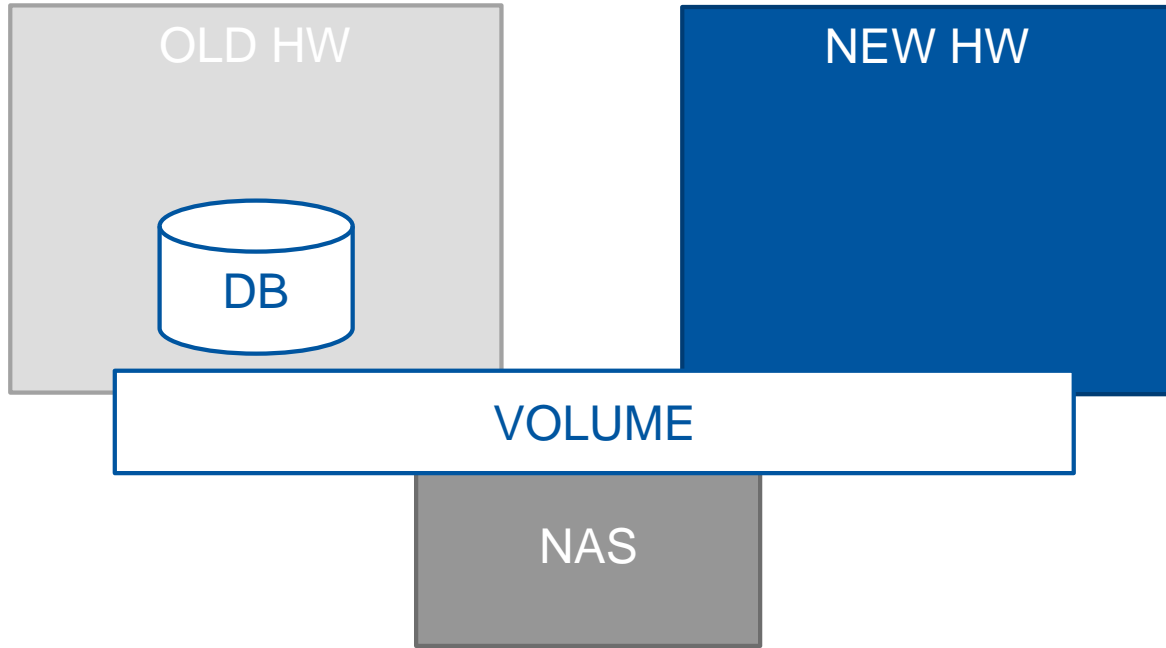
Moving process 1



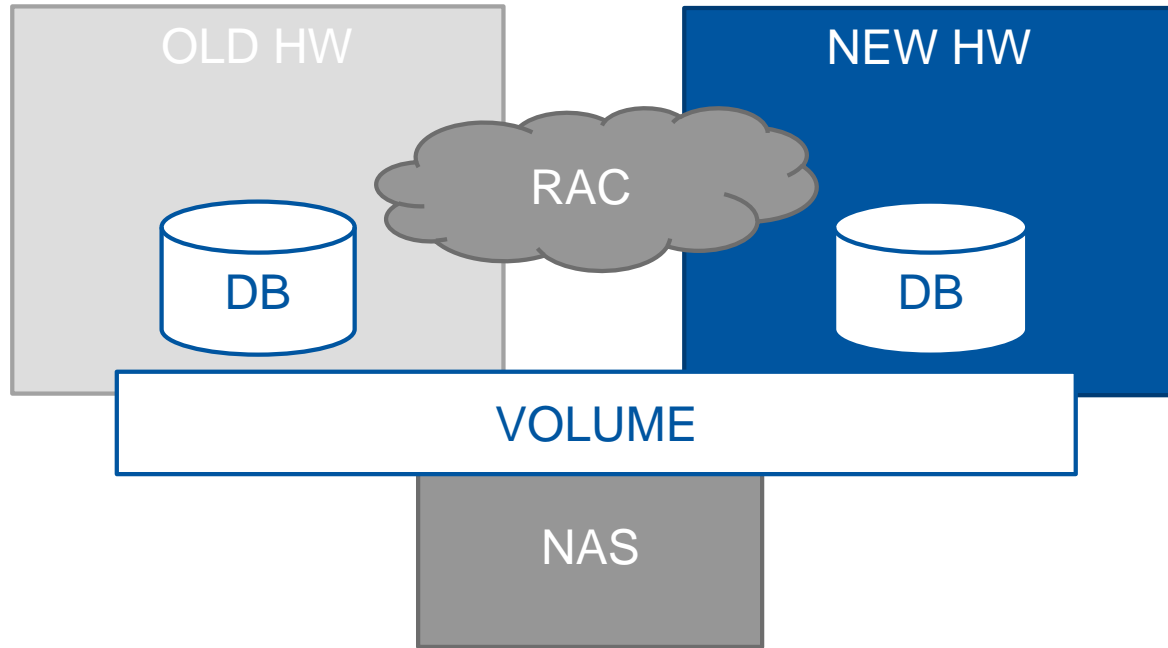
Moving process 2



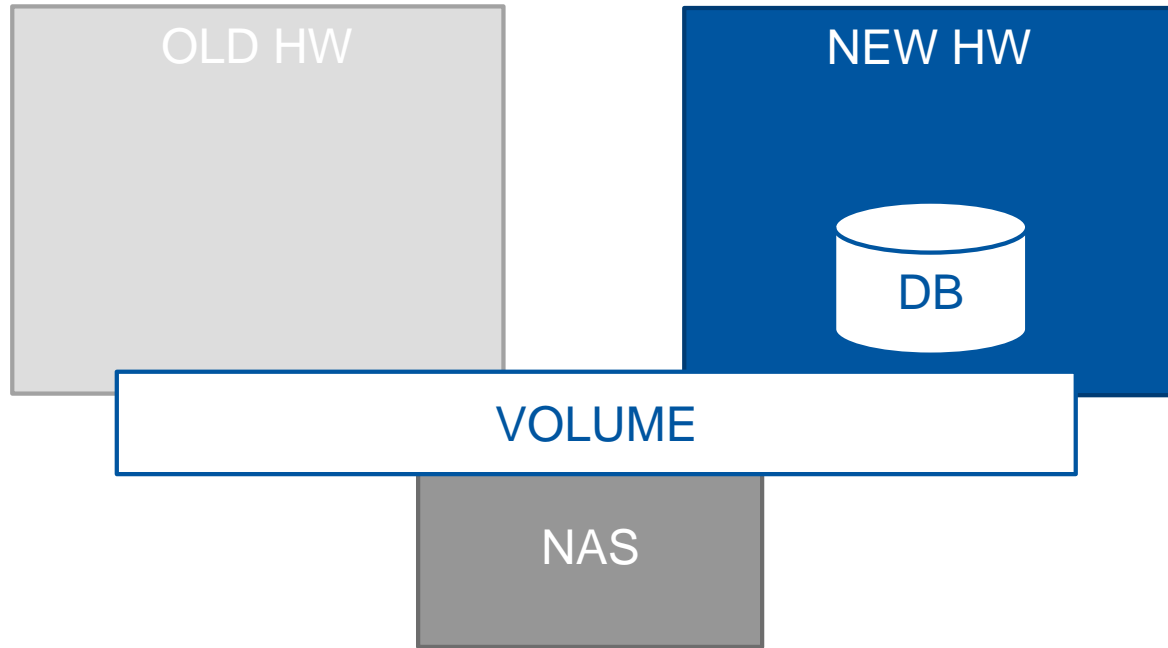
Moving process 2



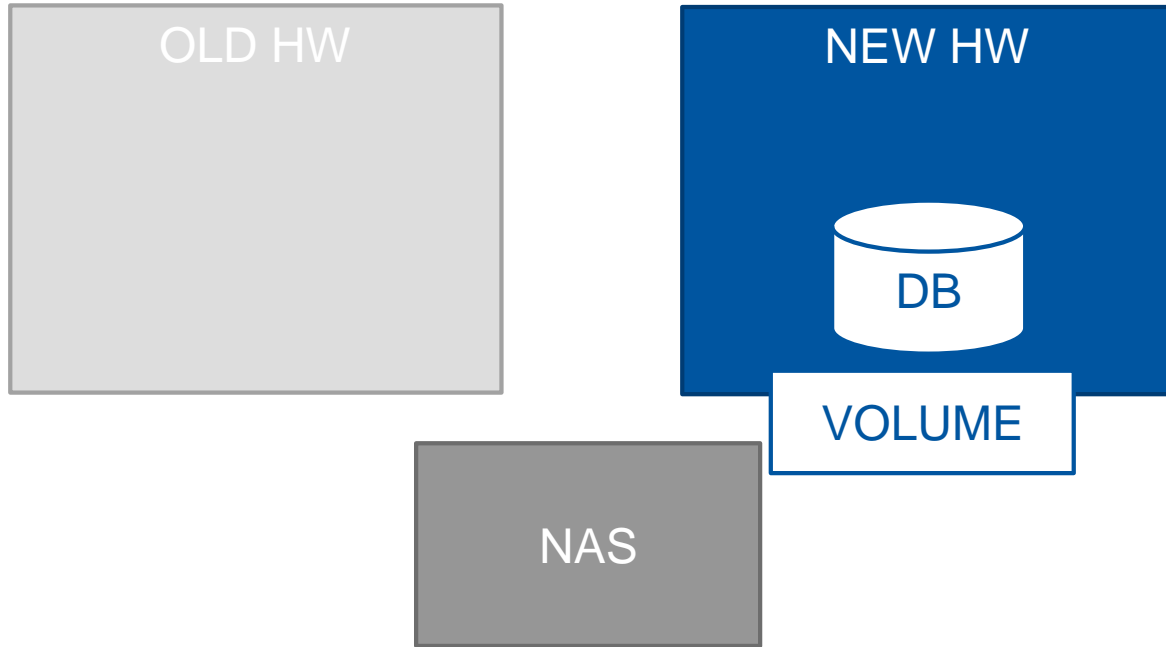
Moving process 2



Moving process 2



Moving process 2



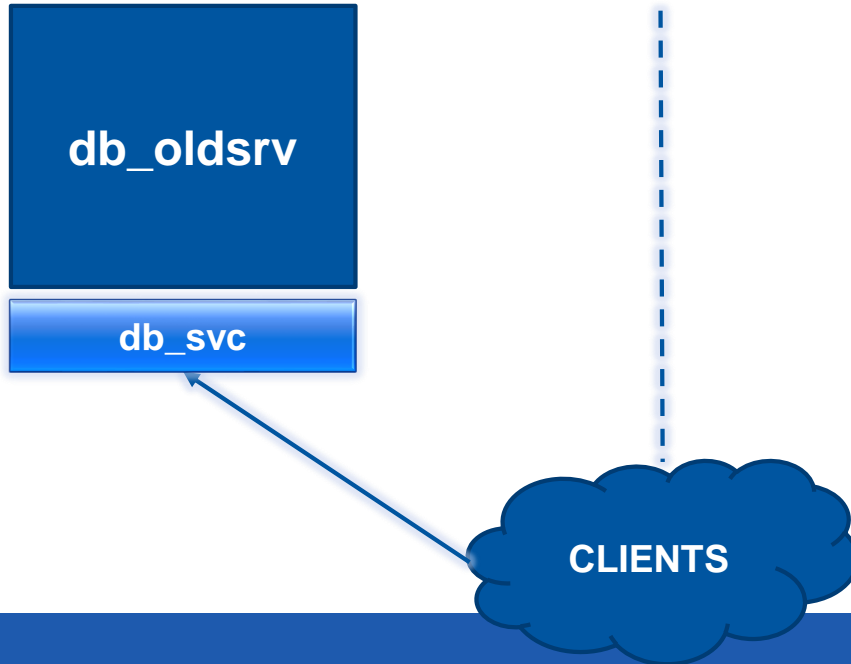
Cope with support roadmaps

Storage renewal

Storage Renewal using Data Guard and Functional Aliases

```
db1-s IN CNAME oldsrv-s  
db2-s IN CNAME oldsrv-s
```

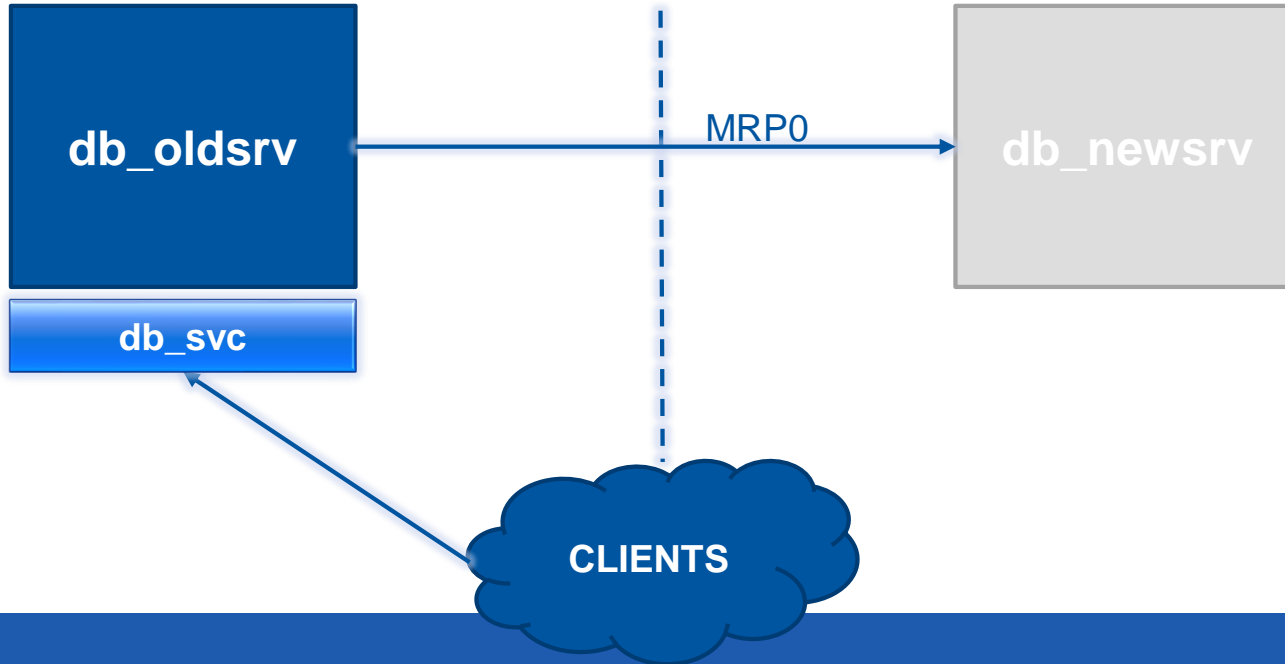
```
(ADDRESS= (HOST=db1-s) (PORT=1521) )  
(ADDRESS= (HOST=db2-s) (PORT=1521) )
```



Storage Renewal using Data Guard and Functional Aliases

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db1-s IN CNAME oldsrv-s  
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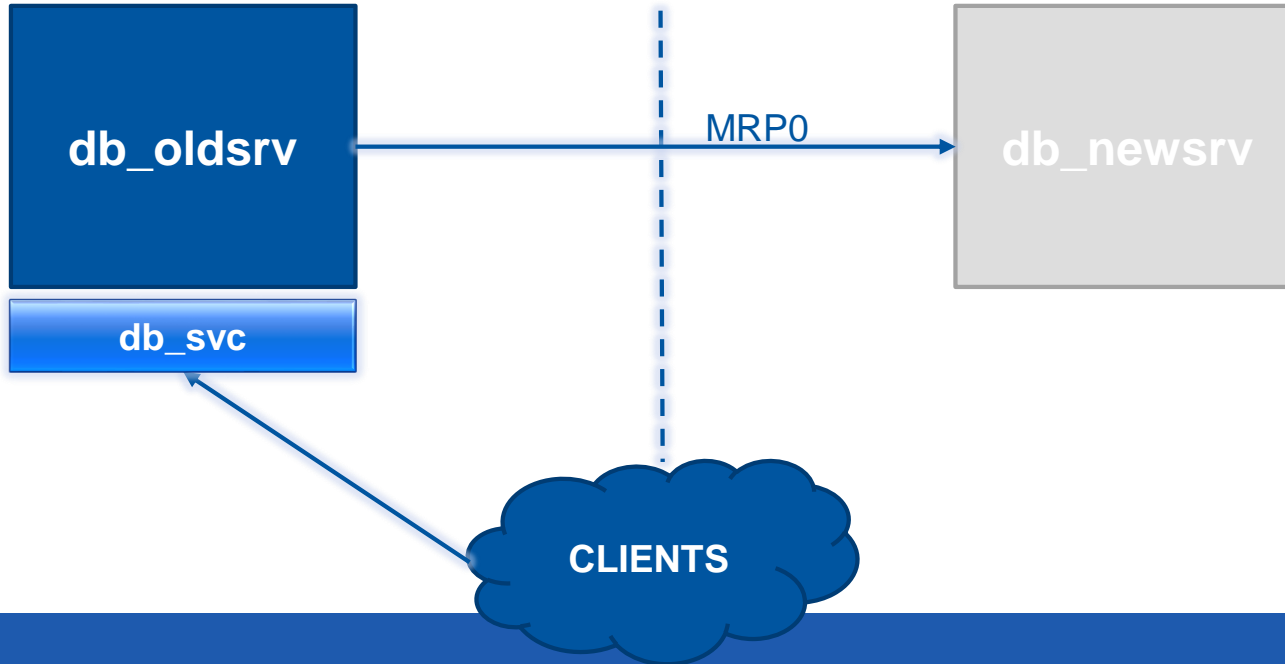
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Storage Renewal using Data Guard and Functional Aliases

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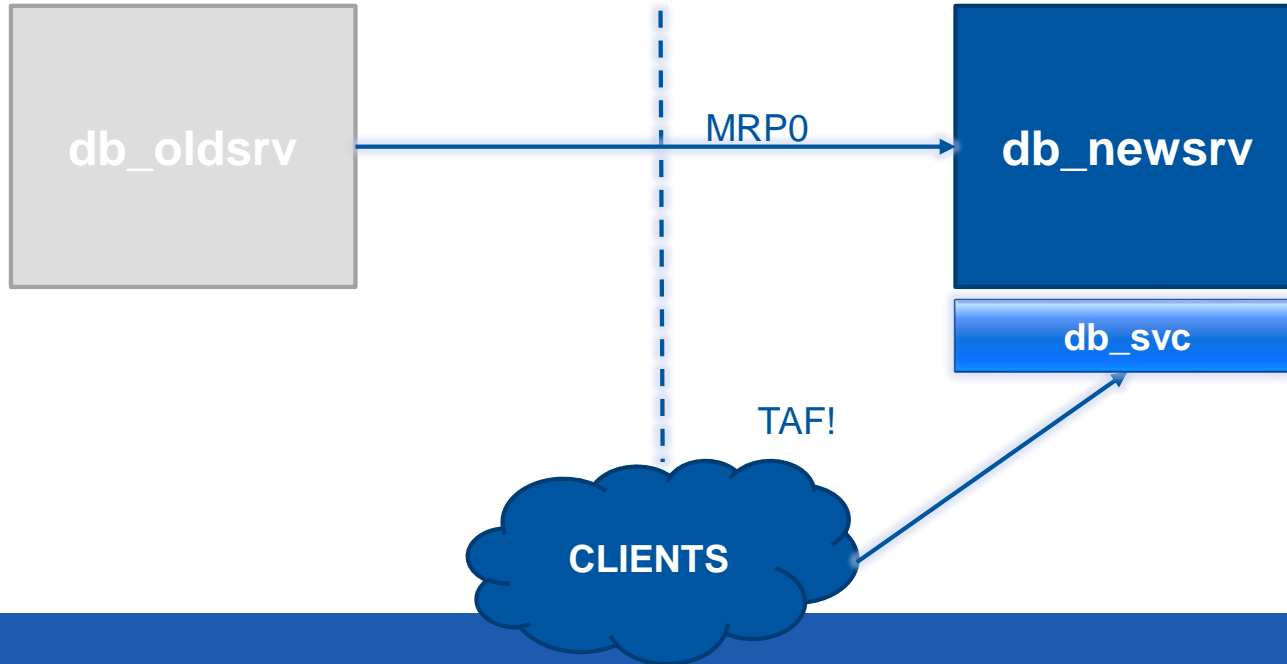
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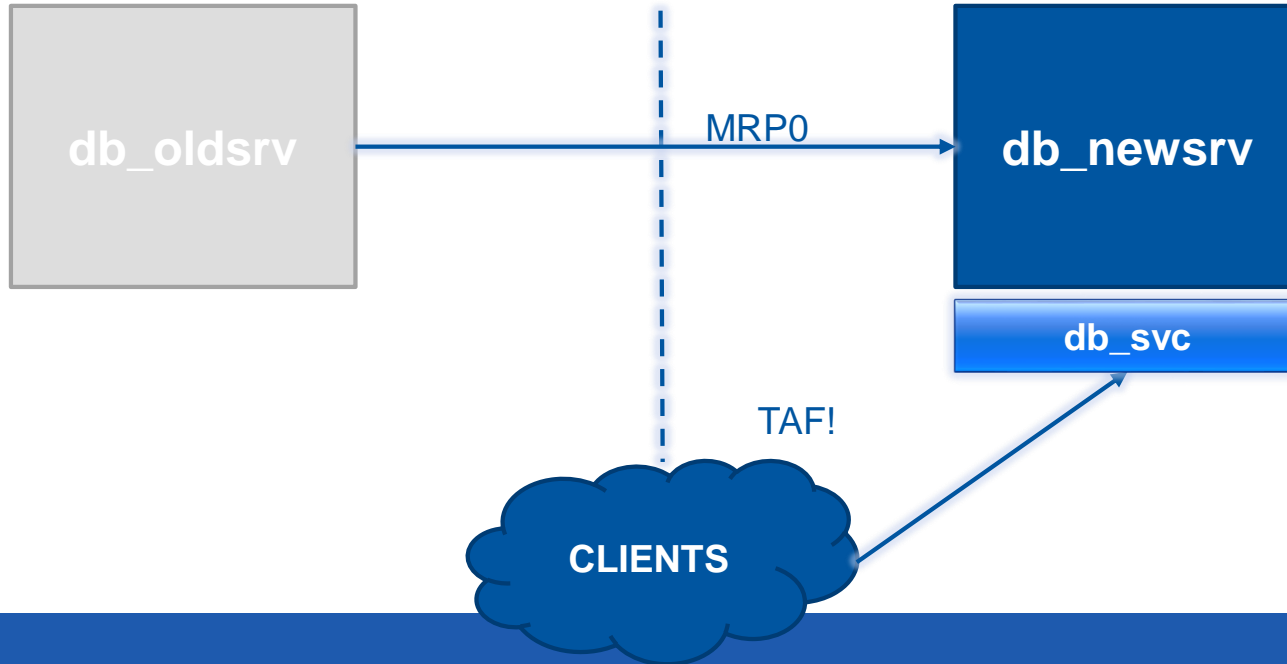
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Storage Renewal using Data Guard and Functional Aliases

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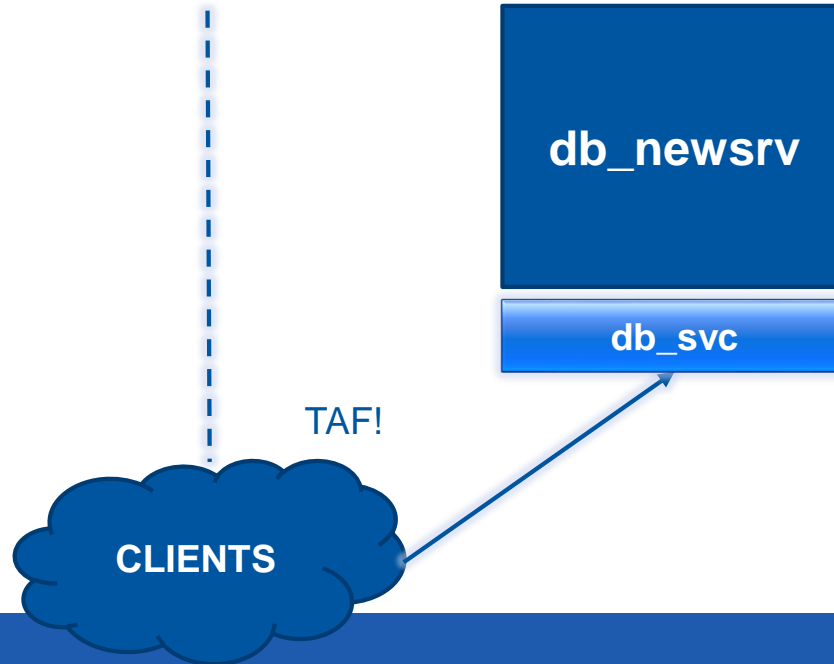
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```



Storage Renewal using Data Guard and Functional Aliases

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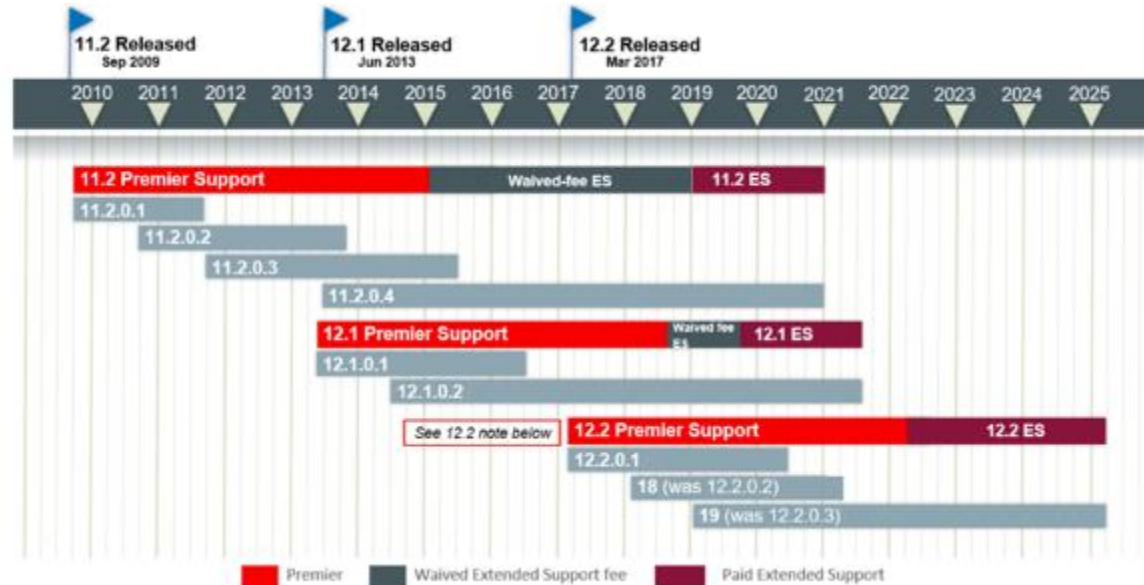
```
(ADDRESS= (HOST=db1-s) (PORT=1521) )  
(ADDRESS= (HOST=db2-s) (PORT=1521) )
```



Cope with support roadmaps

Software upgrade

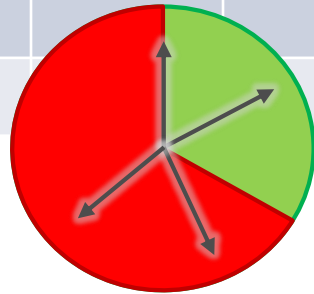
Software upgrade



Source: Release Schedule of Current Database Releases (Doc ID 742060.1)

What does it change?

	Jan 18	Apr	Jul	Oct	Jan 19	Apr	Jul	Oct
RU	18.1.0	18.2.0	18.3.0	18.4.0	18.5.0	18.6.0	18.7.0	18.8.0
2 {	RUR1		18.2.1	18.3.1	18.4.1	18.5.1	18.6.1	18.7.1
	RUR2			18.2.2	18.3.2	18.4.2	18.5.2	18.6.2
RU					19.1.0	19.2.0	19.3.0	19.4.0
RUR1							19.2.1	19.3.1
RUR2								19.2.2



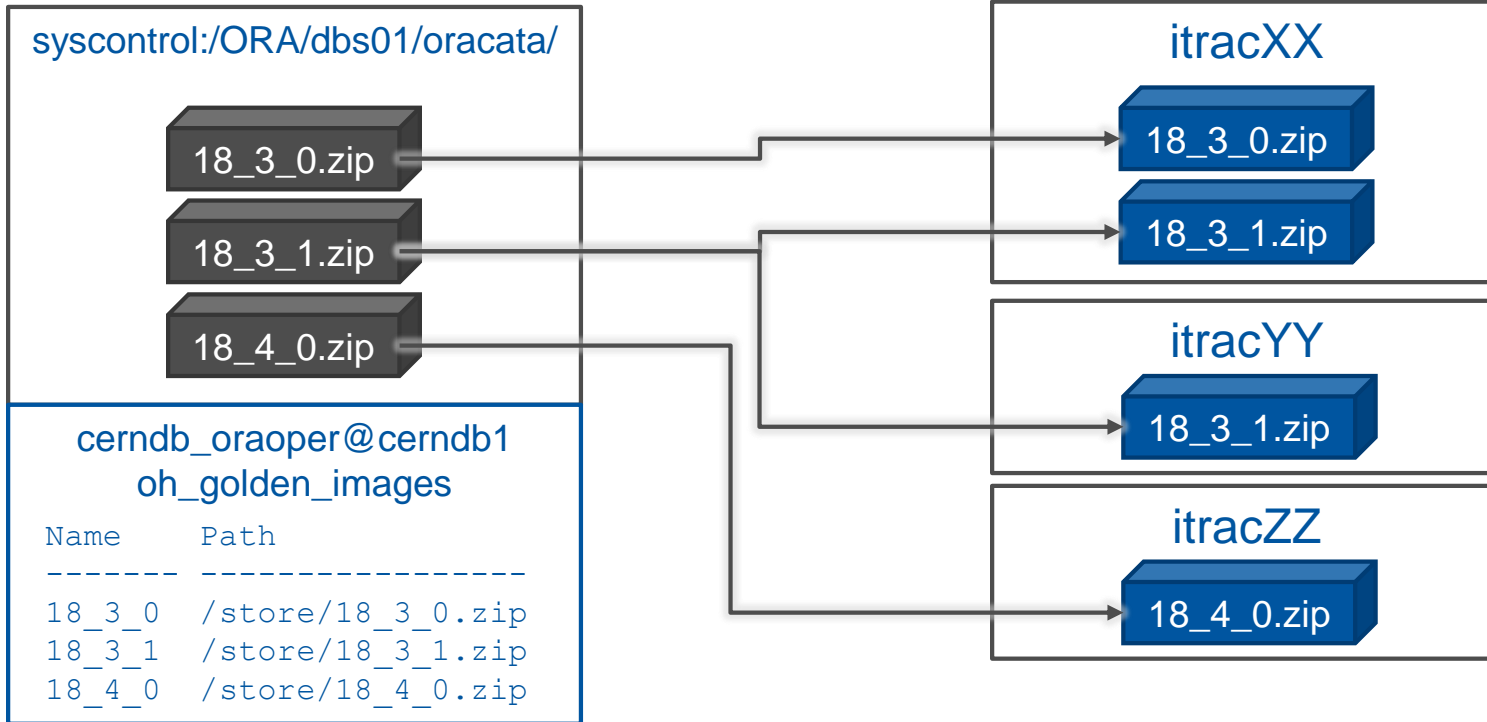
What does it change?

Short
Development
cycle

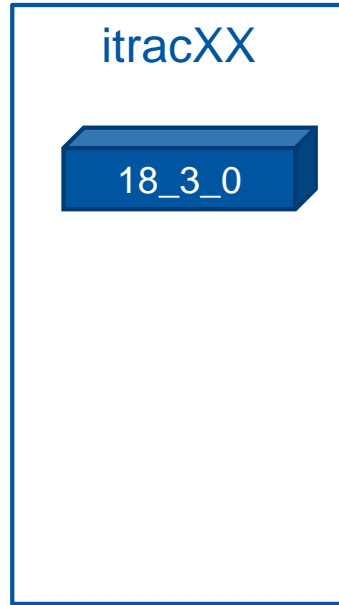


Frequent
Upgrades
And Updates

Golden images

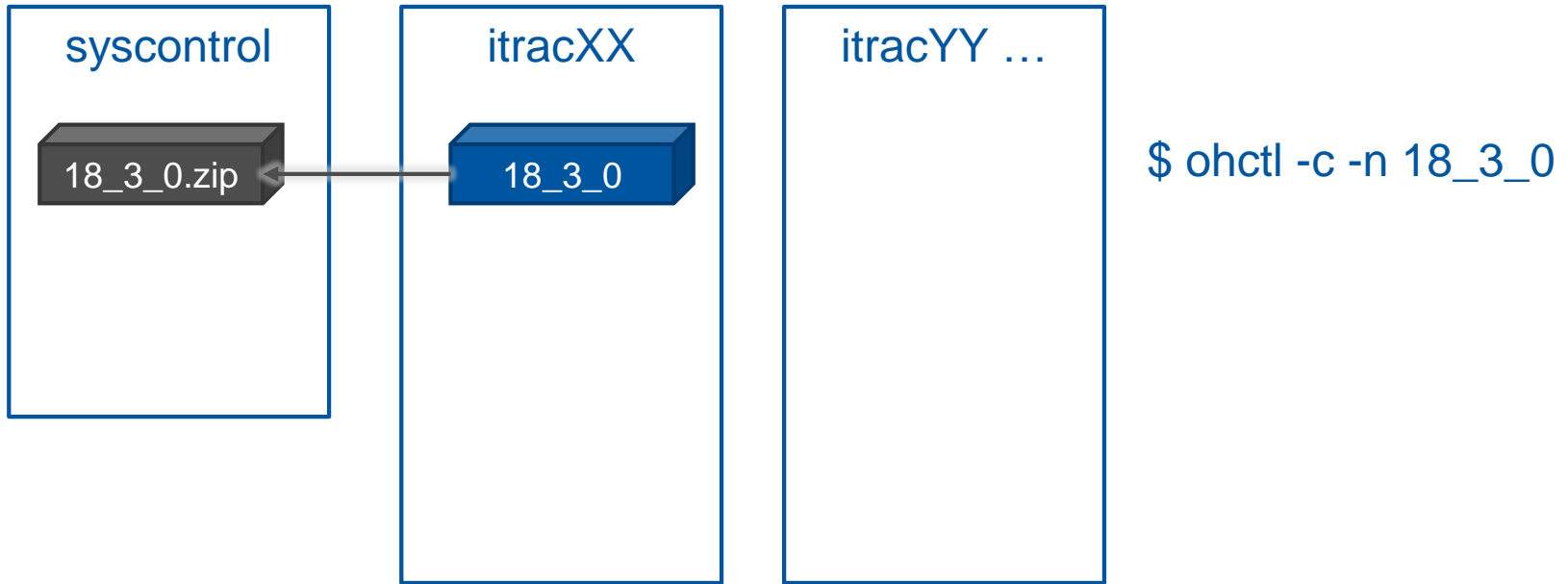


Typical workflow

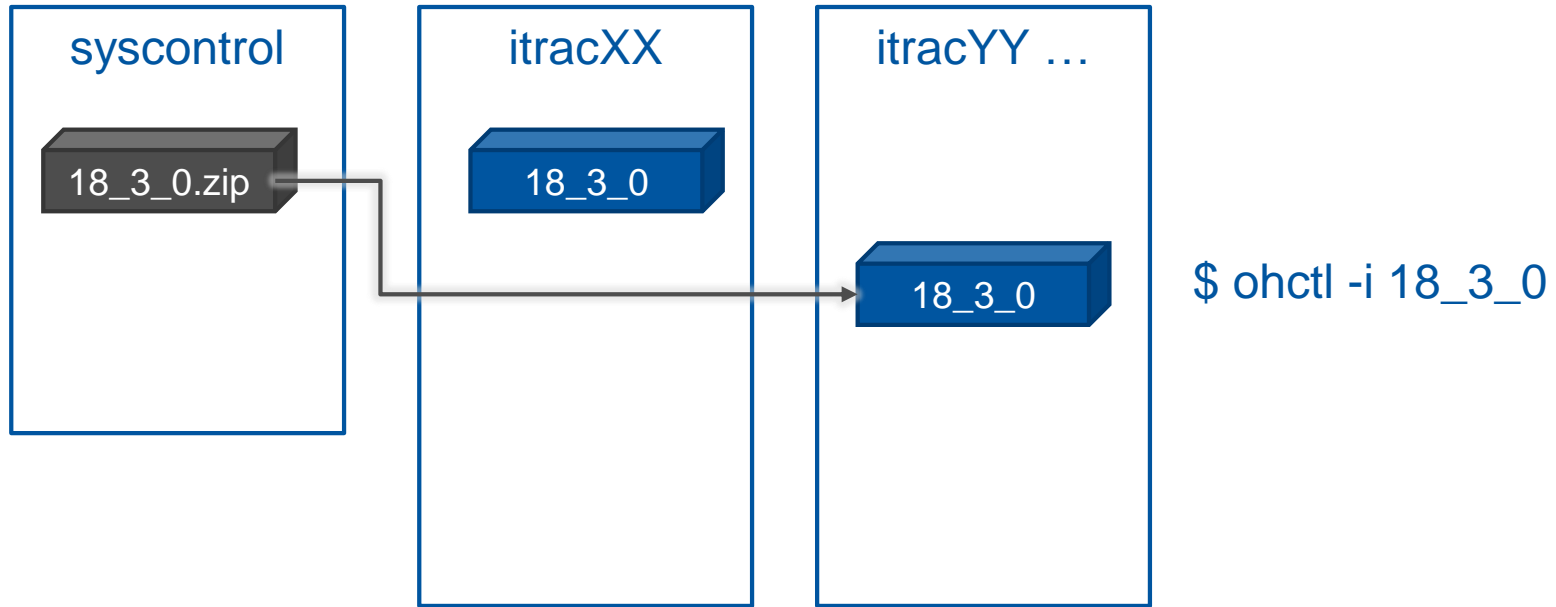


First Install

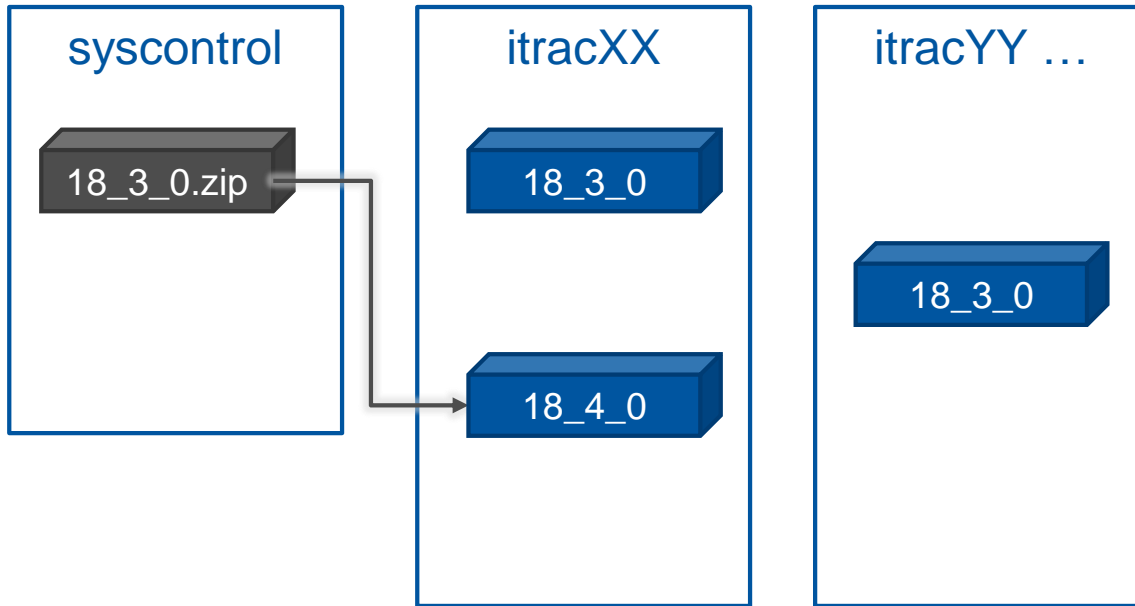
Typical workflow



Typical workflow

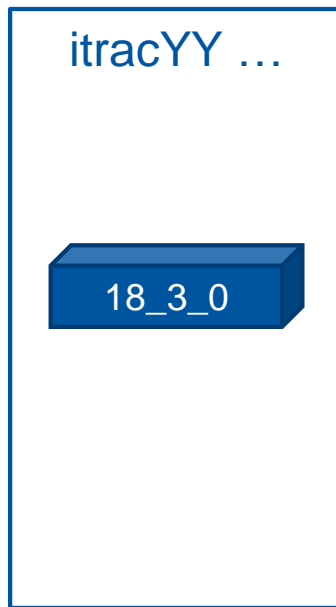
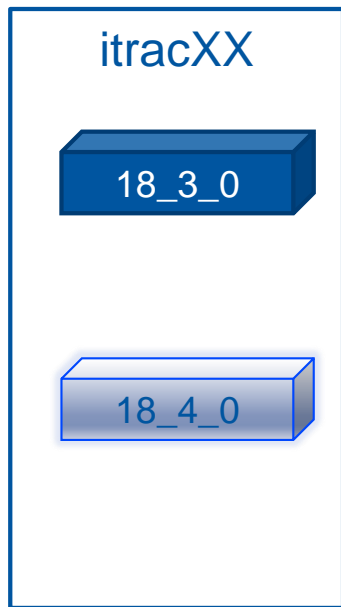


Typical workflow



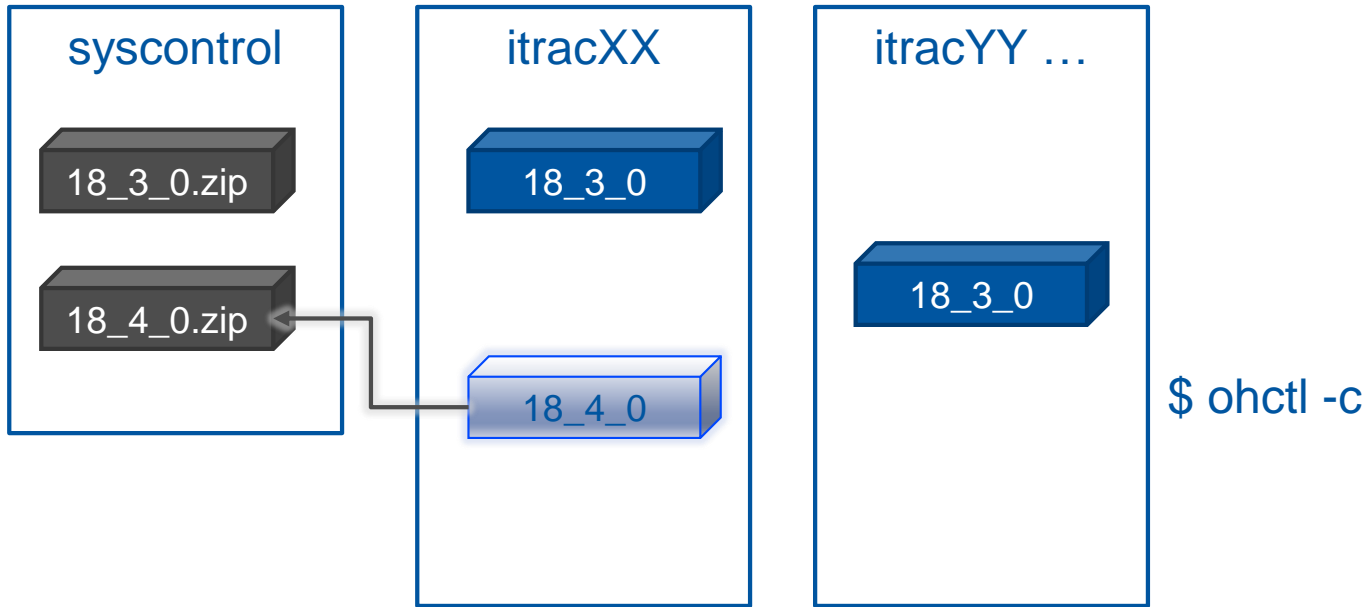
```
$ ohctl -i 18_3_0 -n 18_4_0
```

Typical workflow

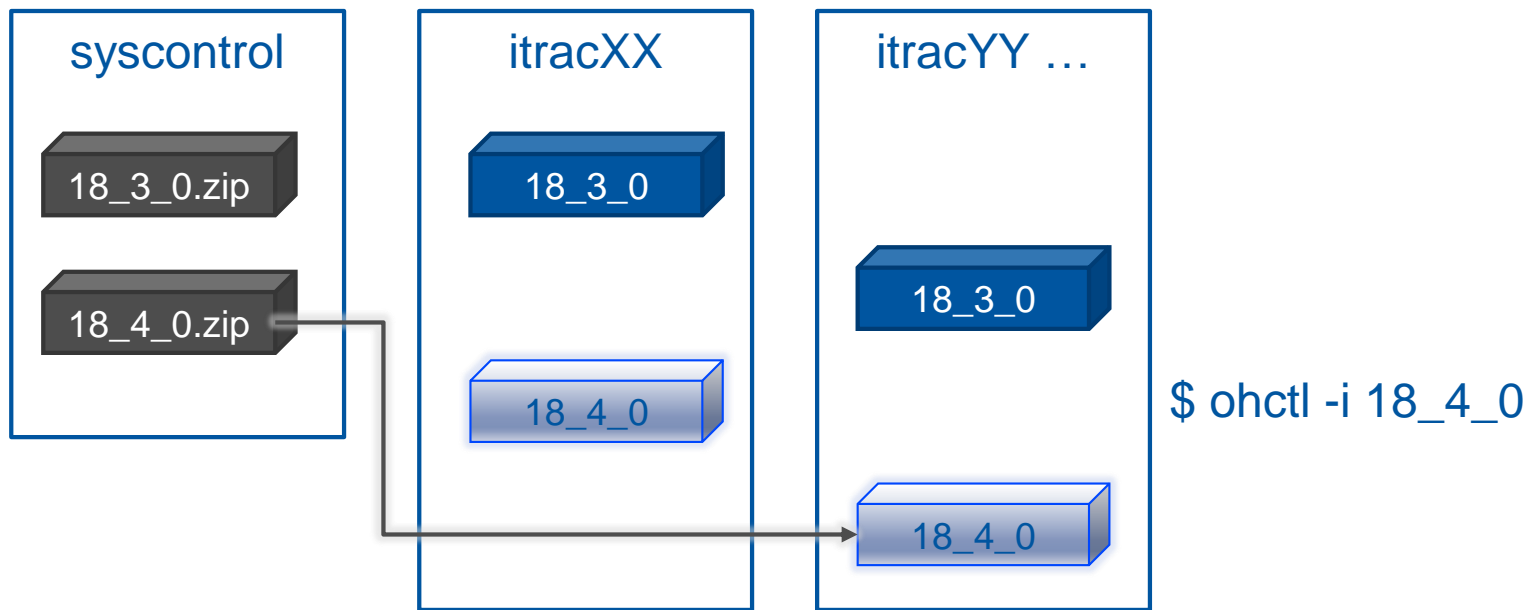


Manual patching

Typical workflow



Typical workflow



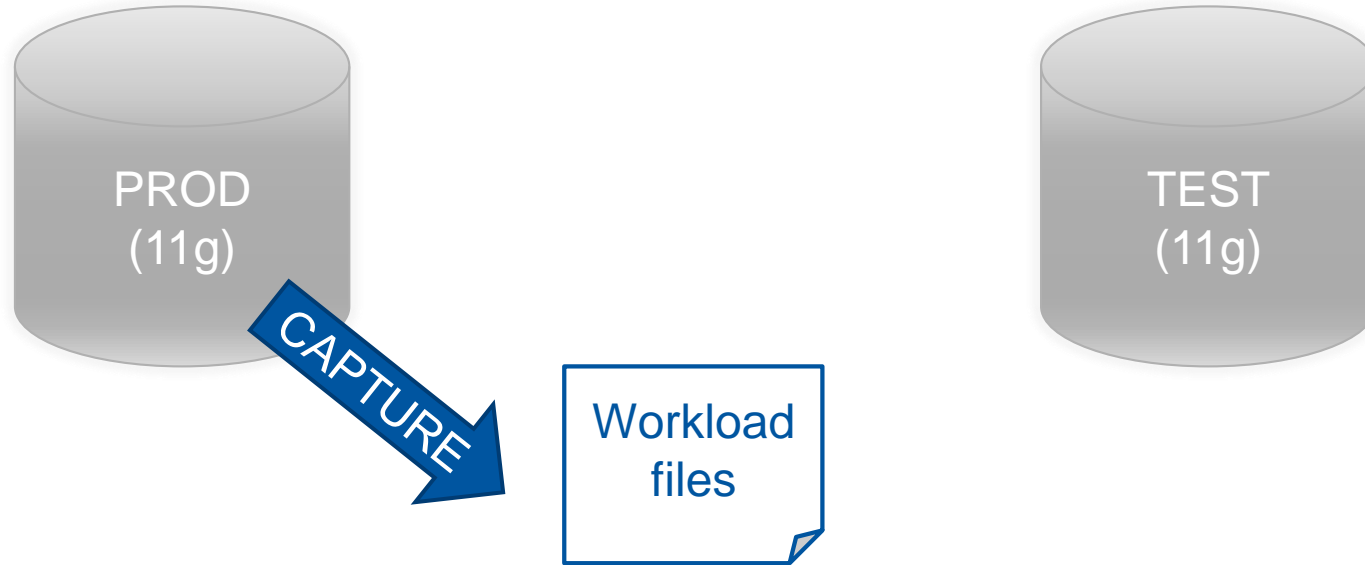
Upgrading the databases



Upgrading the databases (RAT)



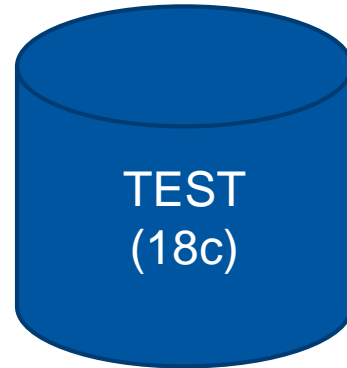
Upgrading the databases (RAT)



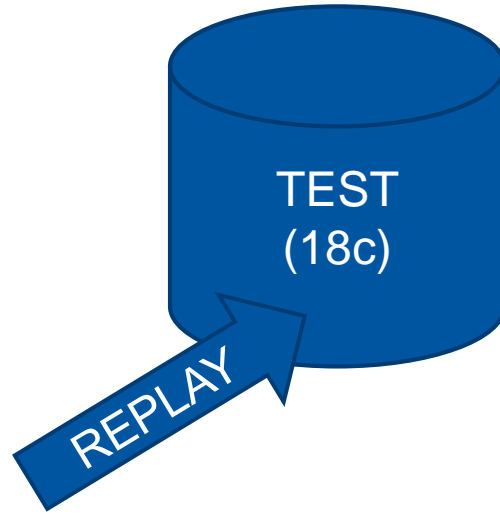
Upgrading the databases (RAT)



Upgrading the databases (RAT)



Upgrading the databases (RAT)



Monitoring



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From many to One

Lemon

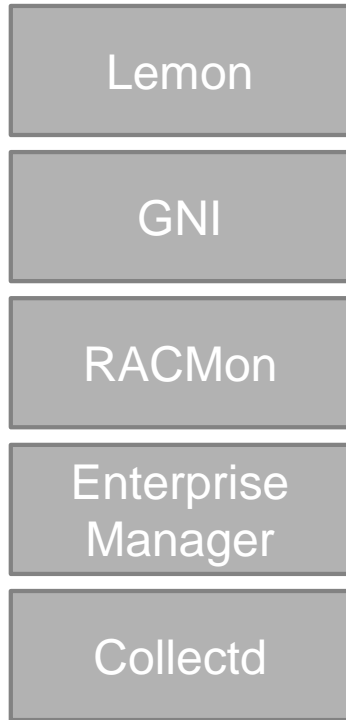
GNI

RACMon

Enterprise
Manager

Collectd

From many to One



From many to One

- Maintained by Oracle through releases
- Included in what we already pay
- Command line interface ;-)



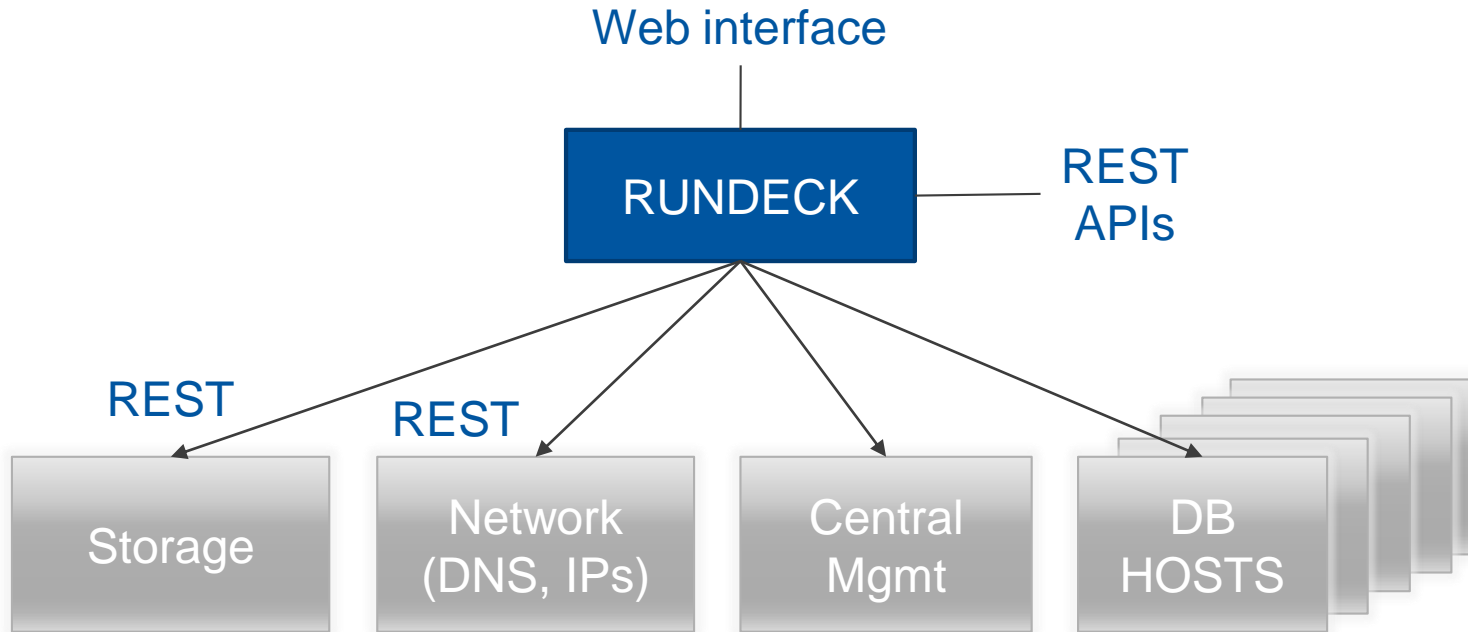
Automation and control







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Automation and control



Automation and control

- New cluster install (Grid Infrastructure) ✓
- New database creation 
- Database cloning 
- Exports/imports on demand 
- Backups/snapshots on demand 
- Other tasks will come to our mind

What is your question?



Thank you

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