

# EASIS: An Optimized Information Service for High Performance Computing Environment

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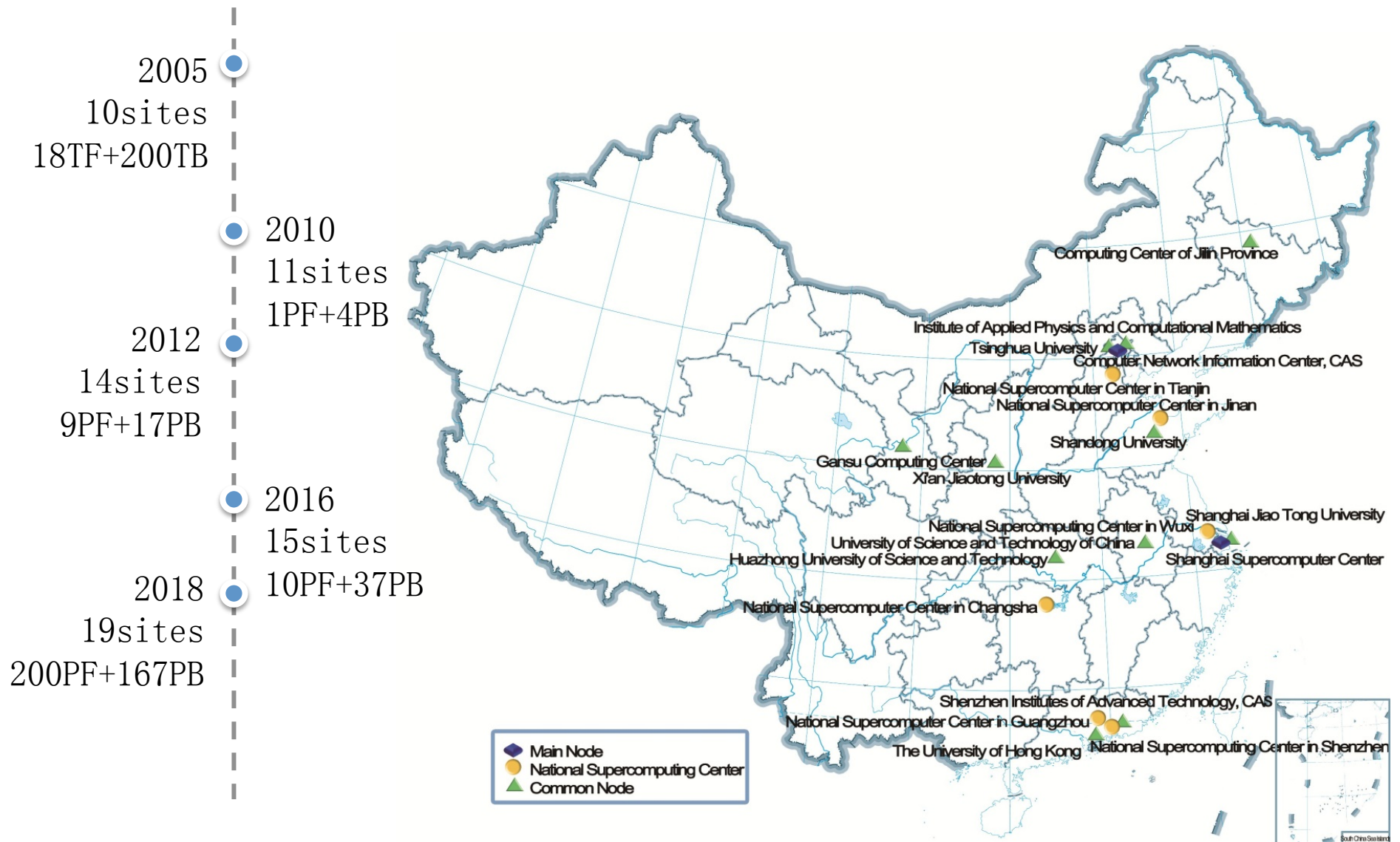
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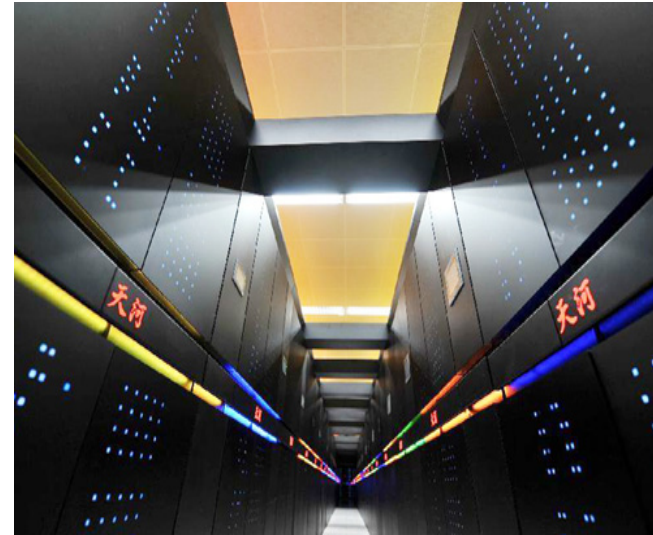
## Introduction

- ◆ The High Performance Computing Environment in China (CNGrid)

# INTRODUCTION-CNGRID



# INTRODUCTION-TIANHE2



- Tianhe-2
- #1 TOP 500, 2013-2015
- 54,902.4 TFlop/s, 3,120,000 cores
- 17,808.00 kW
- Guangzhou

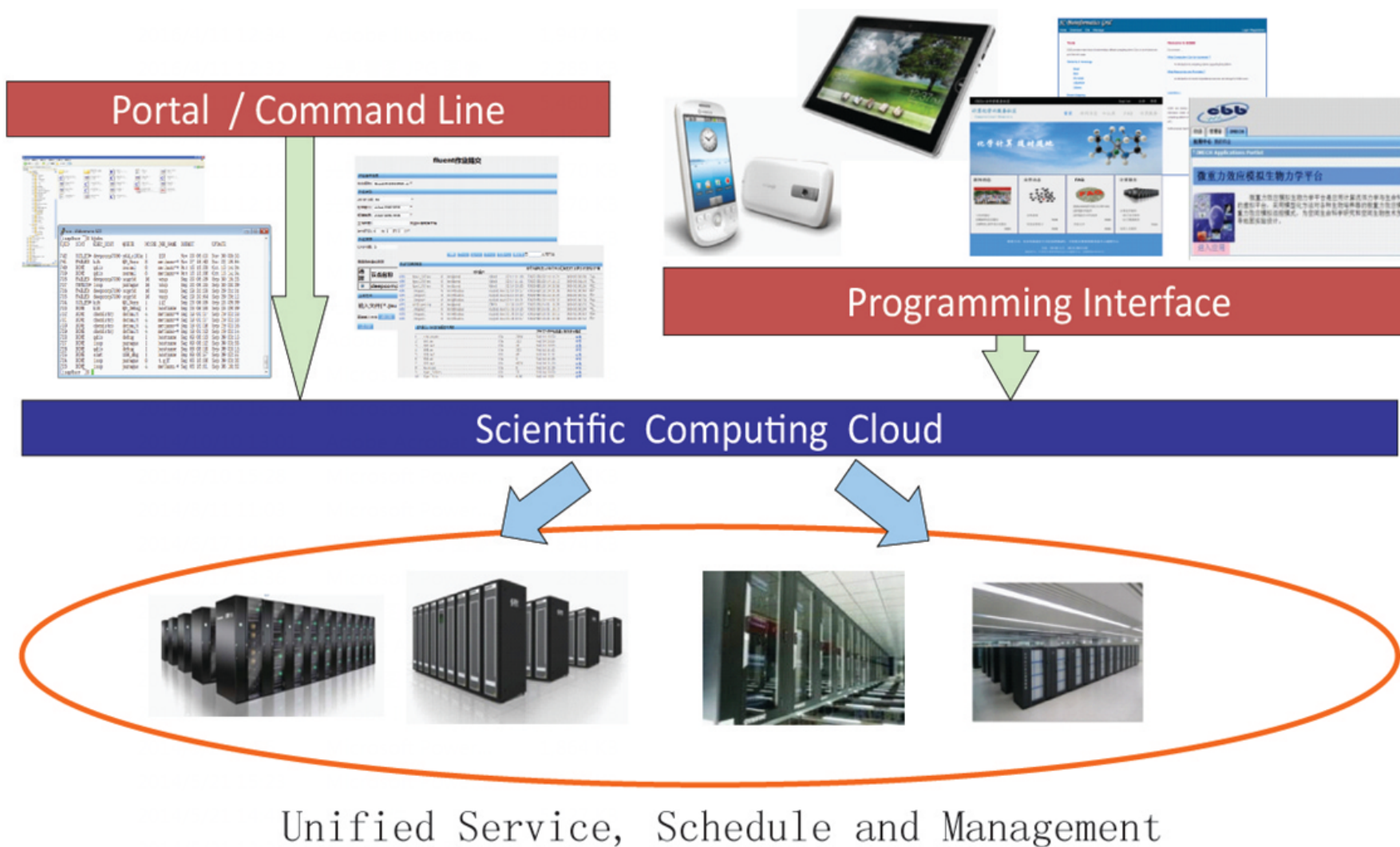
# INTRODUCTION-SUNWAY TAIHULIGHT



- Sunway TaihuLight
- #1 TOP 500, 2016-now
- Sunway processor: SW26010
- 125.436PFlops, 10,649,600 cores
- 15,371 kW
- Wuxi

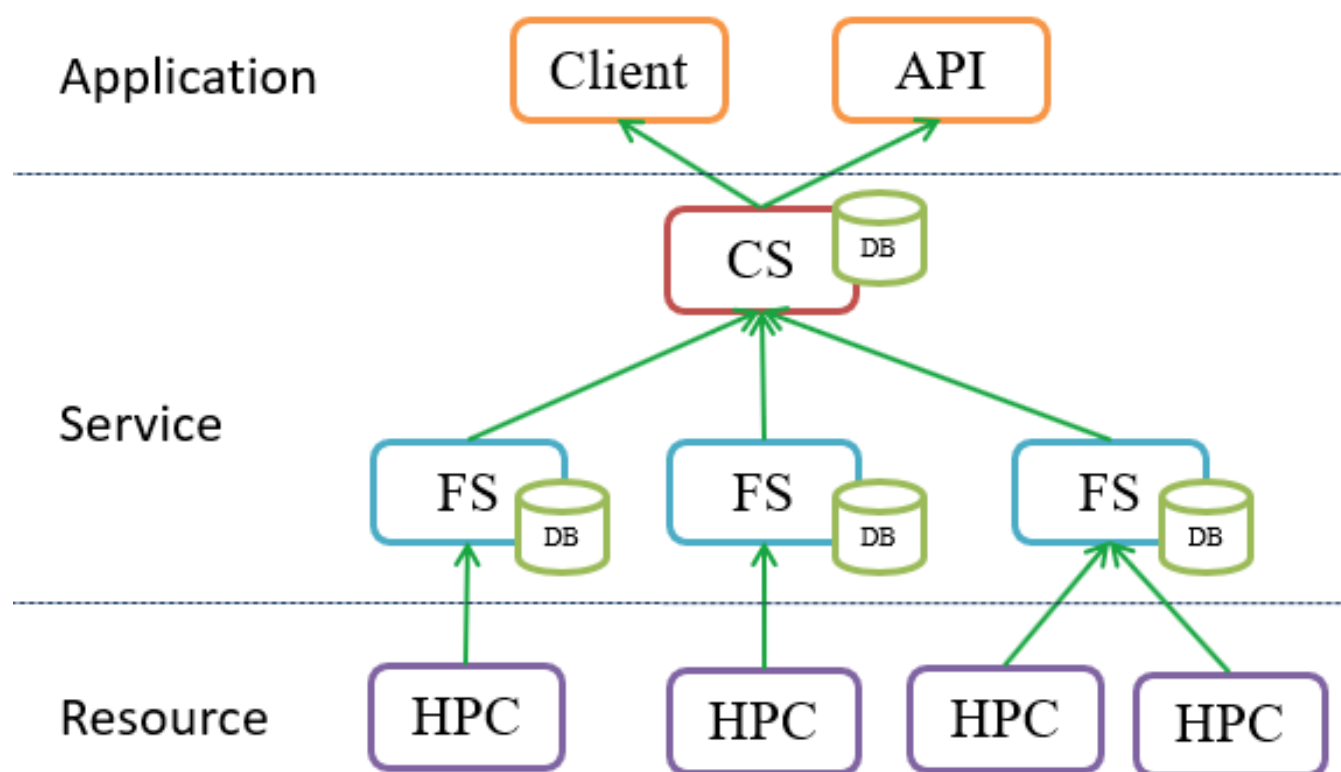


# INTRODUCTION

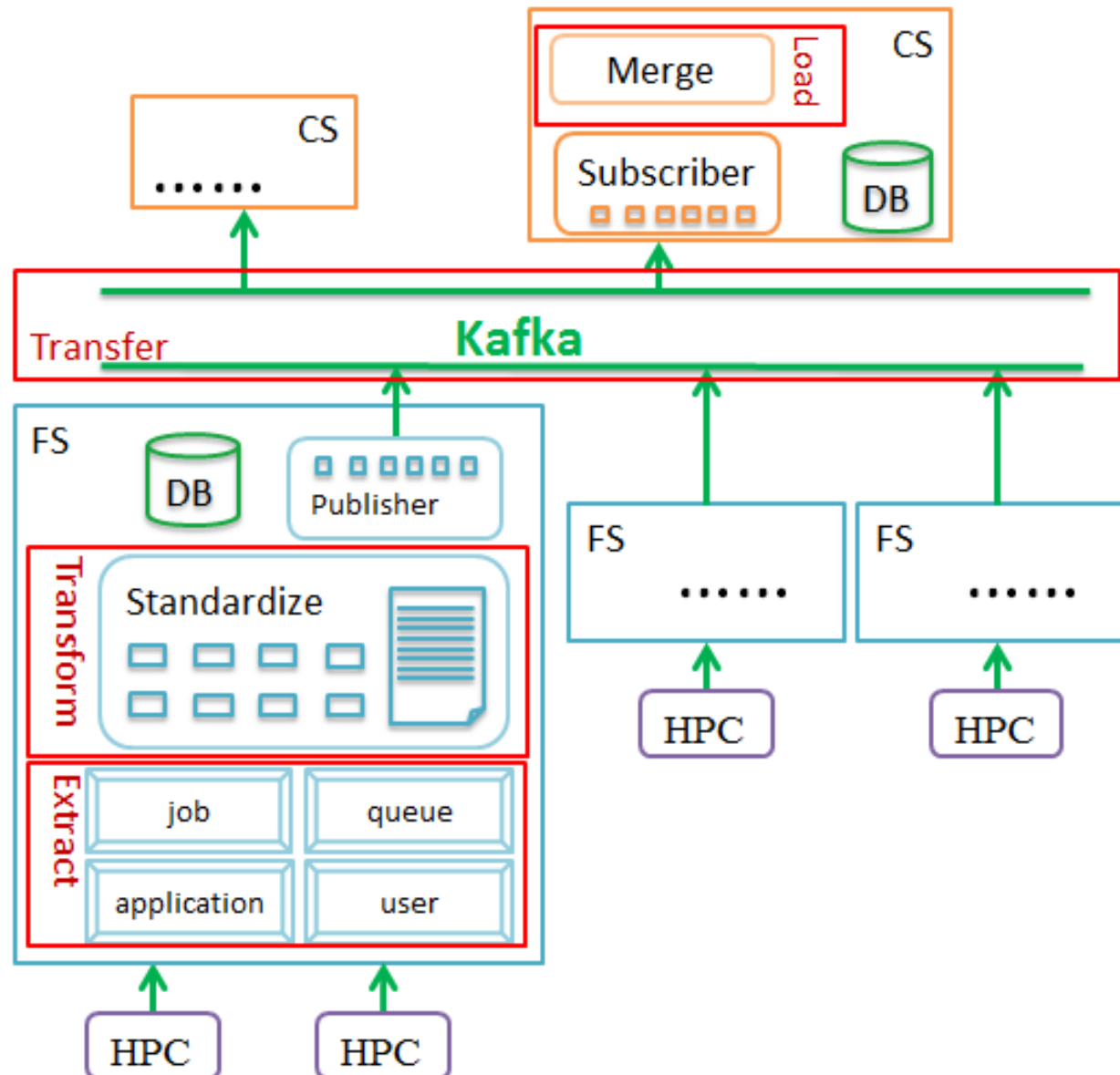


02

## The Structure of EASIS







03

## Key Technologies of EASIS

- ◆ Standardizing information
- ◆ Merging information
- ◆ Fault tolerance

## Standardizing information

Information Type	Standard Format of Information
job	{“GID”:“GID”,“status”:“status”,“utime” :“utime” }
queue	{“ID”:“ID”,“hpcname”:“hpcname”,“njobs”:“njobs”, “pendjobs”:“pendjobs”,“runjobs”:“runjobs”, “status”:“status”}
application	{“ID”:“ID”,“hpcname”:“hpcname”,“applicationname”:“applica tionname”,“version”:“version”, “description”: “description”}
user	{“username”:“username”,“hpcname”:“hpcname”}

## Merging information

### *Invalid-Update*

```
{“GID”: “9632587419632587411”, “status”: “PEND”, “utime” :  
“1512543239”},
```

```
{“GID”: “9632587419632587411”, “status”: “RUN”, “utime” : “1512543267”},
```

```
{“GID”: “9632587419632587411”, “status”: “DONE”, “utime” :  
“1512543299”}
```

```
{“GID”: “9632587419632587411”, “status”: “DONE”, “utime” : “1512543299”}
```

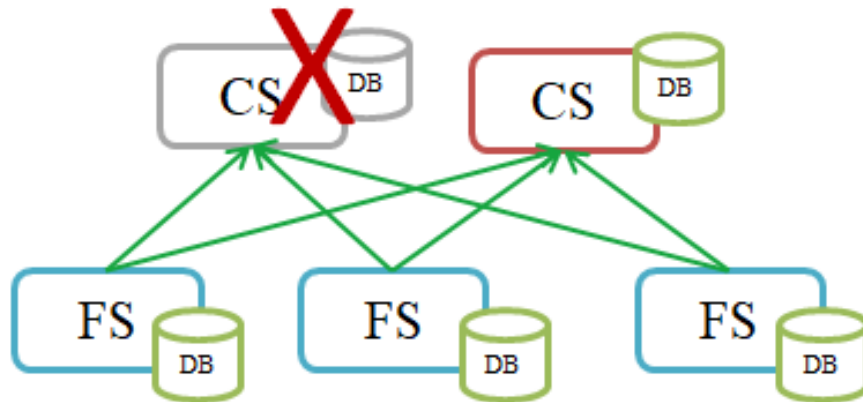
### *Merged-Update*

```
{“GID”: “9632587419632587411”, “status”: “PEND”, “utime” :  
“1512543239”},
```

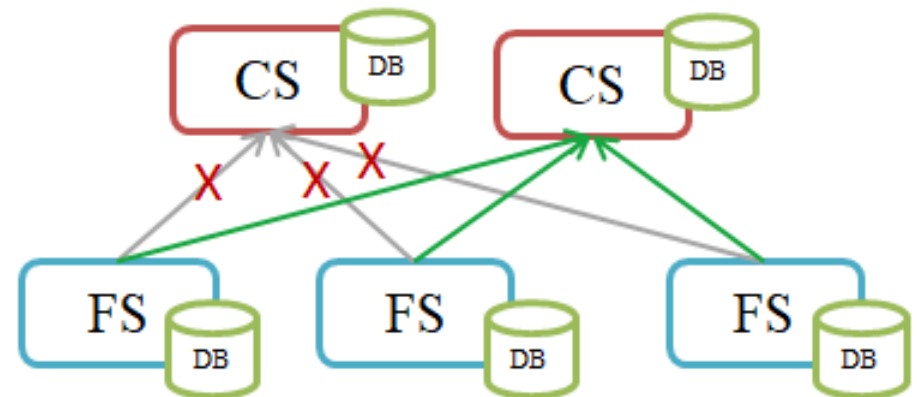
```
{“GID”: “9632587419632587412”, “status”: “PEND”, “utime” :  
“1512543239”}
```

```
{“GID”: “9632587419632587411”, “9632587419632587412”, “status”: “PEND”, “u  
time”: “1512543239”}
```

## Fault tolerance



Server-Fault-Tolerant



Network-Fault-Tolerant

04

## Acknowledgement

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Thank you!

<http://www.cngrid.org>