



Sites, pledges and CRIC in DUNE

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Expressing requirements and requests

- Drafting the computing CDR has exposed some limitations with trying to categorise sites
- In particular, there is uncertainty about the shift from WLCG tier model to DOMA picture (which we previously adopted) and then to “data lakes”
- Some countries want to run CPU only sites in close cooperation with sites with storage
- Also CPU-only sites may or may not provide caches
 - In fact presence/absence of caches doubles the number of categories
- So instead **focus on services for the CDR** and when setting out requirements computing capacity



Sites and services model

- A site provides a set of services
 - **Each service** must meet DUNE's minimum requirements
 - Levels are being worked out as part of the CDR drafting
 - Each service has an overhead for the DUNE ops team, so we need to impose minimum capacities
- Always Network plus at least one of:
 - DUNE Compute Element
 - DUNE Storage Element (“disk”)
 - Data Cache
 - Data Archive (“tape”)
- Require at least WLCG Tier-2 incident response times and reliability
- Require formal or informal participation in WLCG (including via OSG)



More on services requirements

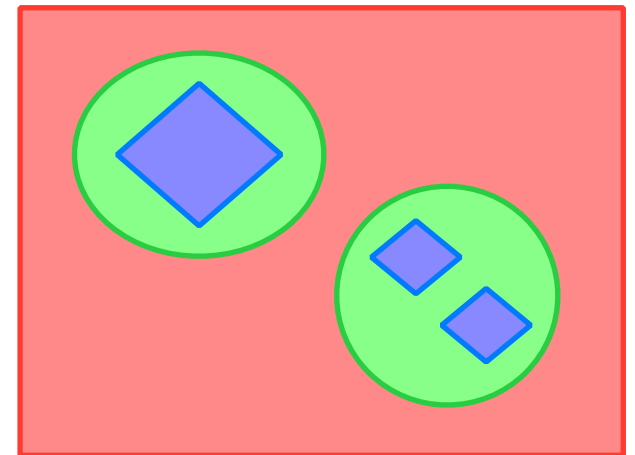
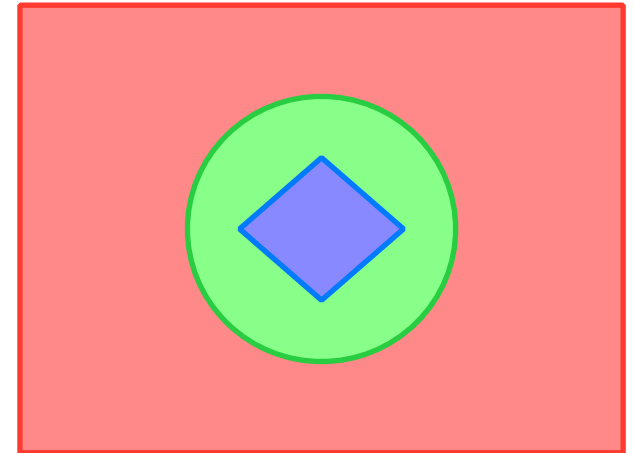
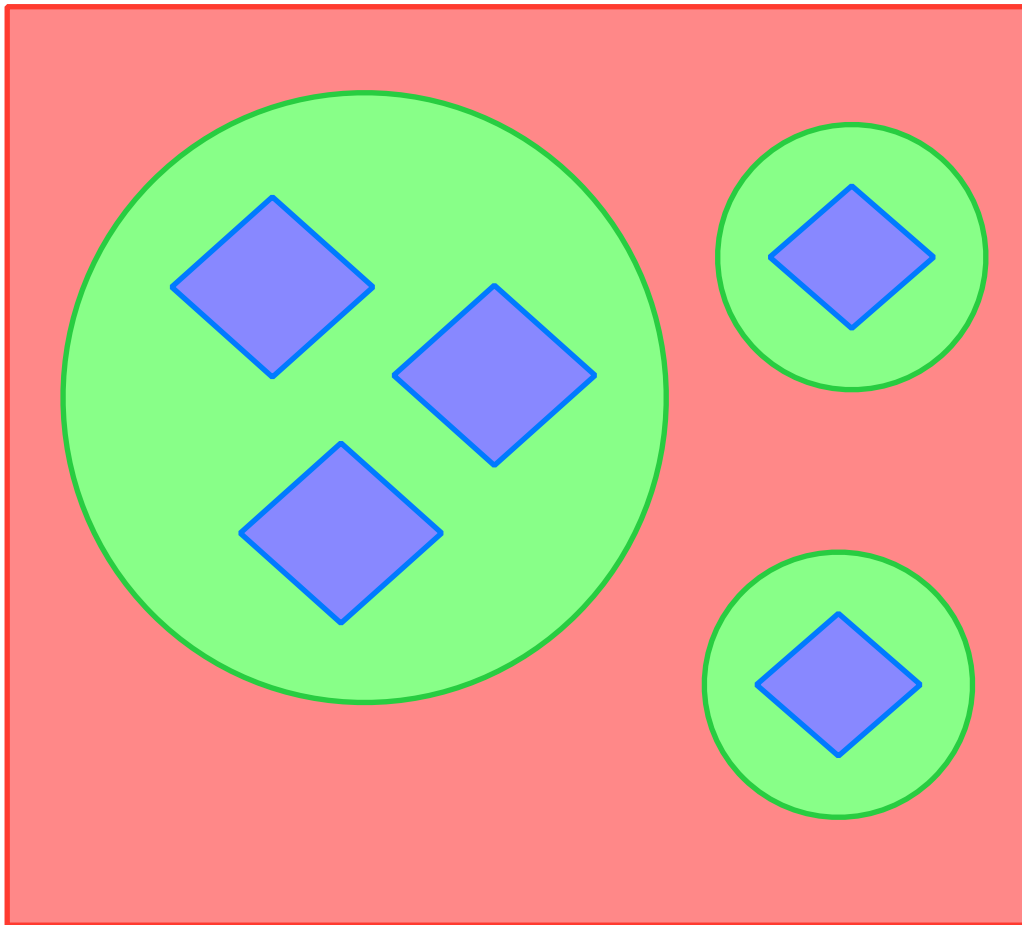
- DUNE Compute Element
 - A few hundred available processors at minimum
 - Subclasses to run simulation, data processing, data analysis jobs
 - Data jobs require “nearby” storage or cache
- DUNE Storage Element
 - A few hundred TB of disk at minimum
 - Sufficient network to get data in and out. A few hundred available processors “nearby”.
- “Nearby” means good enough networking that jobs can access storage without unacceptably low CPU efficiencies



Sites, federations, and countries

- A site is the “atomic” unit of operations activity
 - Can receive tickets, turn up to meetings etc
- Sites are grouped into federations, as in WLCG
 - Pledges are made at the level of federations
 - Can be used to smooth out outages and planned site upgrades
 - Federation pledges entered into CRIC as with WLCG
- Countries consist of one or more federations
 - Generally map to funding bodies
 - Countries are represented directly or indirectly at CCB
 - Expected contributions from each country can be calculated from their share of the DUNE membership

Country / federation / site





Pledges in CRIC

- DUNE CRIC service is in evaluation
- Same system as used in WLCG - hosted by CERN
- List of DUNE sites, generated from pilot factory configs
 - <http://dune-cric.cern.ch/core/experimentsite/list/>
- Federations can now enter their informal pledges to DUNE
 - Same process as LHC experiments
 - Listed at <https://dune-cric.cern.ch/core/pledge/list/>
- CRIC has machinery to compare requests and pledges
 - DUNE centrally will put global requests into CRIC
 - Can also pull in accounting info from APEL to see what was actually delivered

CRIC federation pledge creation

The screenshot shows a web browser window with the URL `dune-cric.cern.ch`. The page title is "Create Pledge object". The navigation bar includes "Core", "Core API", "DUNE", "DUNE API", "Admin", "Logs", "Help", and a user profile for "andrew.mcnab@cern.ch".

Info

VO name: DUNE *

Year: 2020 *

Pledge Type: Disk *

Rc: ----- *

Status: Unlocked

Status value can only be changed by the WLCG office.

Comment: [Empty text box]

Pledge

1st Quarter: 0 *

Info: In order to declare the same pledge for the whole year fill only 1st quarter value and leave the rest of the quarters empty. The value of the 1st quarter will be copied to all the fields for this year.

2nd Quarter: 0

3rd Quarter: 0

Footer: CRIC © DUNE CRIC Web Portal | server: dune-cric-1.cern.ch | release: core-0.3.6-6-g3a7d96 dune-ea8c6c1

CRIC federation pledges

Not Secure — dune-cric.cern.ch

Core Core API DUNE DUNE API Admin Logs Help andrew.mcnaab@cern.ch Request privileges Exit

Export Filter Columns 9/16 Federation View Regional Centers and pledges provided by VOs Show 100 entries

Reload

filter by Federation filter by filter by filter by 2020 filter by filter by filter by Comment

Edit	Federation	Tier	VO	Country	Year	Type	Pledge	Comment
✎	UK-London-Tier2	2	DUNE	United Kingdom	2020	Disk	300 TBytes	
✎	UK-London-Tier2	2	DUNE	United Kingdom	2020	CPU	1500 HEP-SPEC06	150 cores x nominal 10.0 HS06/core
✎	UK-NorthGrid	2	DUNE	United Kingdom	2020	Disk	1000 TBytes	
✎	UK-NorthGrid	2	DUNE	United Kingdom	2020	CPU	1500 HEP-SPEC06	150 cores x nominal 10.0 HS06/core
✎	UK-ScotGrid	2	DUNE	United Kingdom	2020	CPU	1000 HEP-SPEC06	100 cores x nominal 10.0 HS06/core
✎	UK-ScotGrid	2	DUNE	United Kingdom	2020	Disk	0 TBytes	
✎	UK-SouthGrid	2	DUNE	United Kingdom	2020	CPU	1000 HEP-SPEC06	100 cores x nominal 10.0 HS06/core
✎	UK-T1-RAL	2	DUNE	United Kingdom	2020	Disk	1000 TBytes	
✎	UK-T1-RAL	2	DUNE	United Kingdom	2020	CPU	5000 HEP-SPEC06	500 cores x nominal 10.0 HS06/core
Edit	Federation	Tier	VO	Country	Year	Type	Pledge	Comment

CRIC DUNE CRIC Web Portal server: dune-cric-1.cern.ch | release: core-0.3.6-6-g3a7dd96 dune-ea8c6c1



Summary / 30,000 ft view

- We put requirements on **services**
- DUNE ops people interact with **site** people
- Pledges are made by **federations** in CRIC
- **Country** representatives go to the CCB