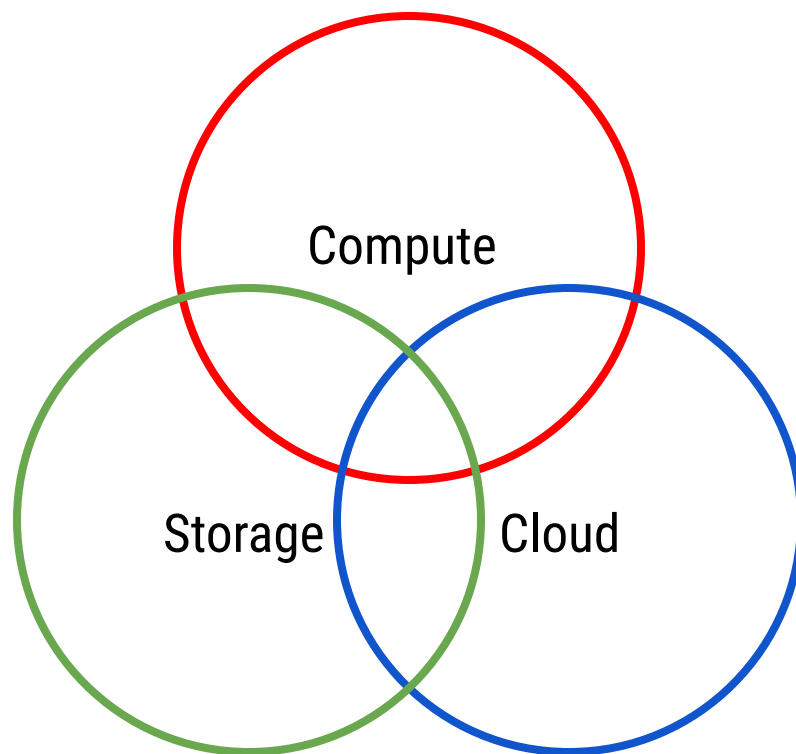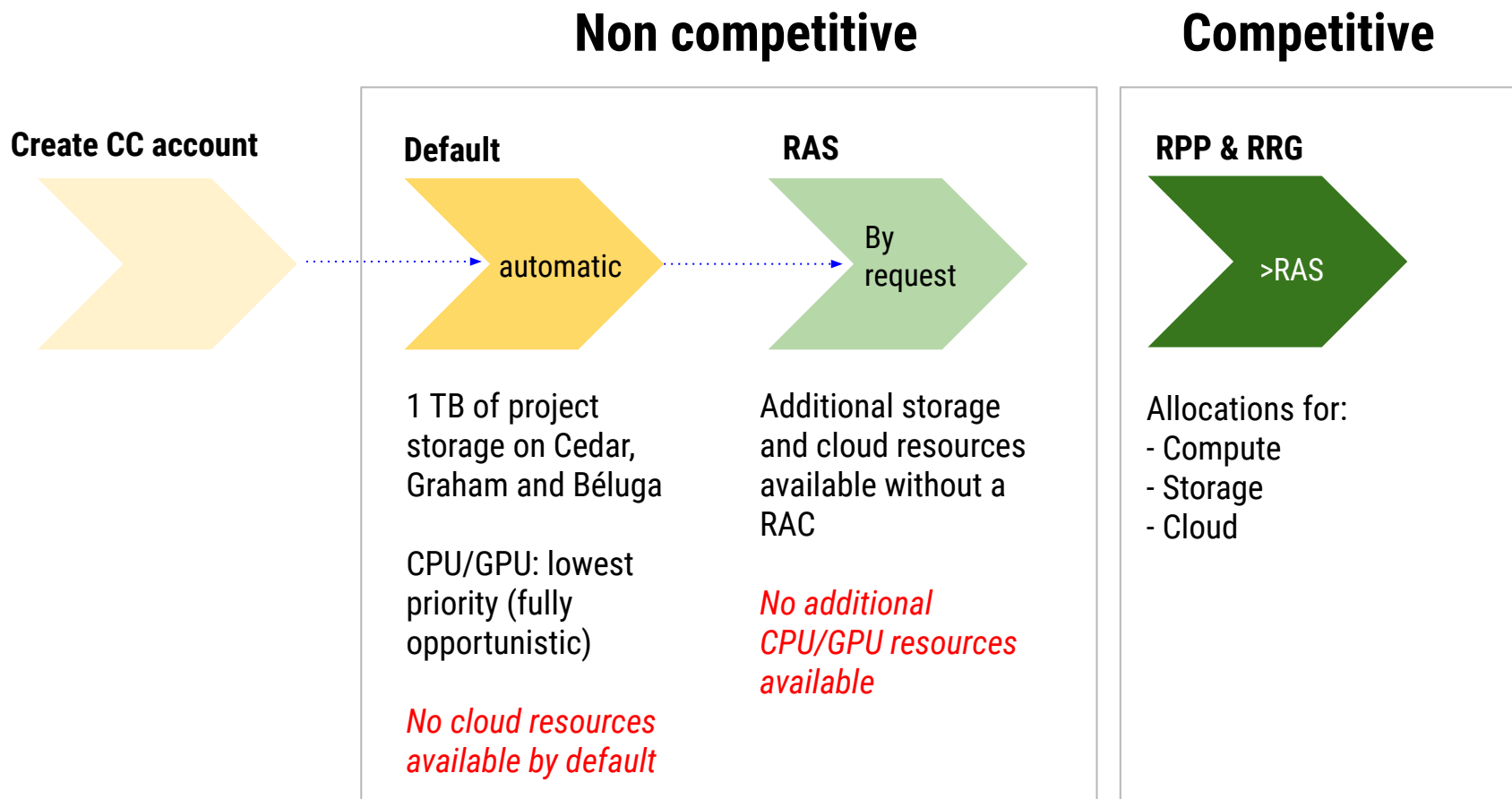# Preparing for RAC 2021 Applications

Outline

- Accessing resources
- What resource allocation competition (RAC) means to you
- What RAC programmes are available
- Eligibility
- How to prepare an RAC application by PI or a delegated person
- How RAC allocations are determined
- Q and A's

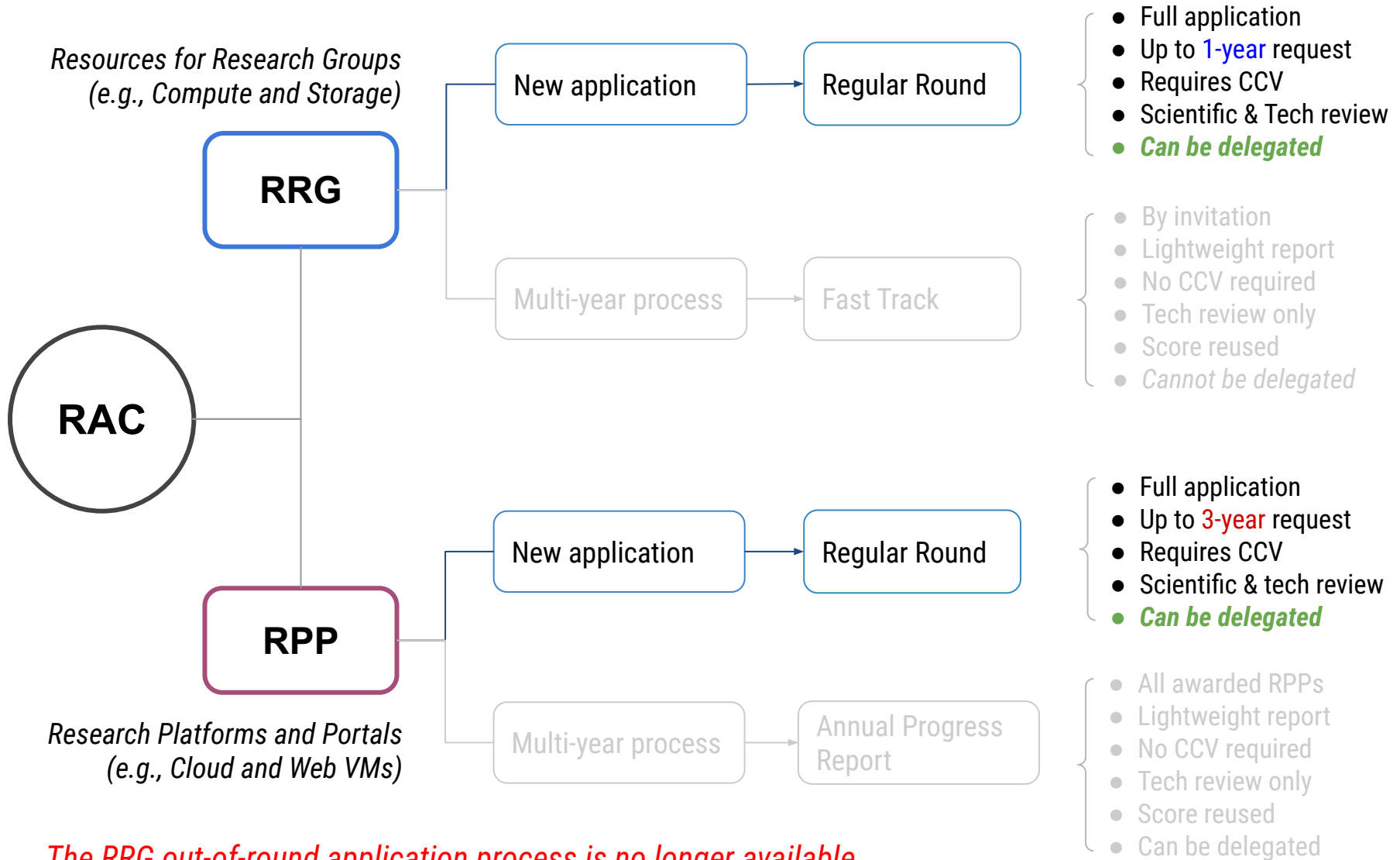# Accessing ARC Resources

Accessing ARC Resources

Non competitive   **Competitive**

Create CC account

Default   **RAS**   **RPP & RRG**

automatic   By request   >RAS

1 TB of project storage on Cedar, Graham and Béluga

CPU/GPU: lowest priority (fully opportunistic)

No cloud resources available by default

Additional storage and cloud resources available without a RAC

No additional CPU/GPU resources available

Allocations for:
- Compute
- Storage
- Cloud

More about [Rapid Access Service](#)

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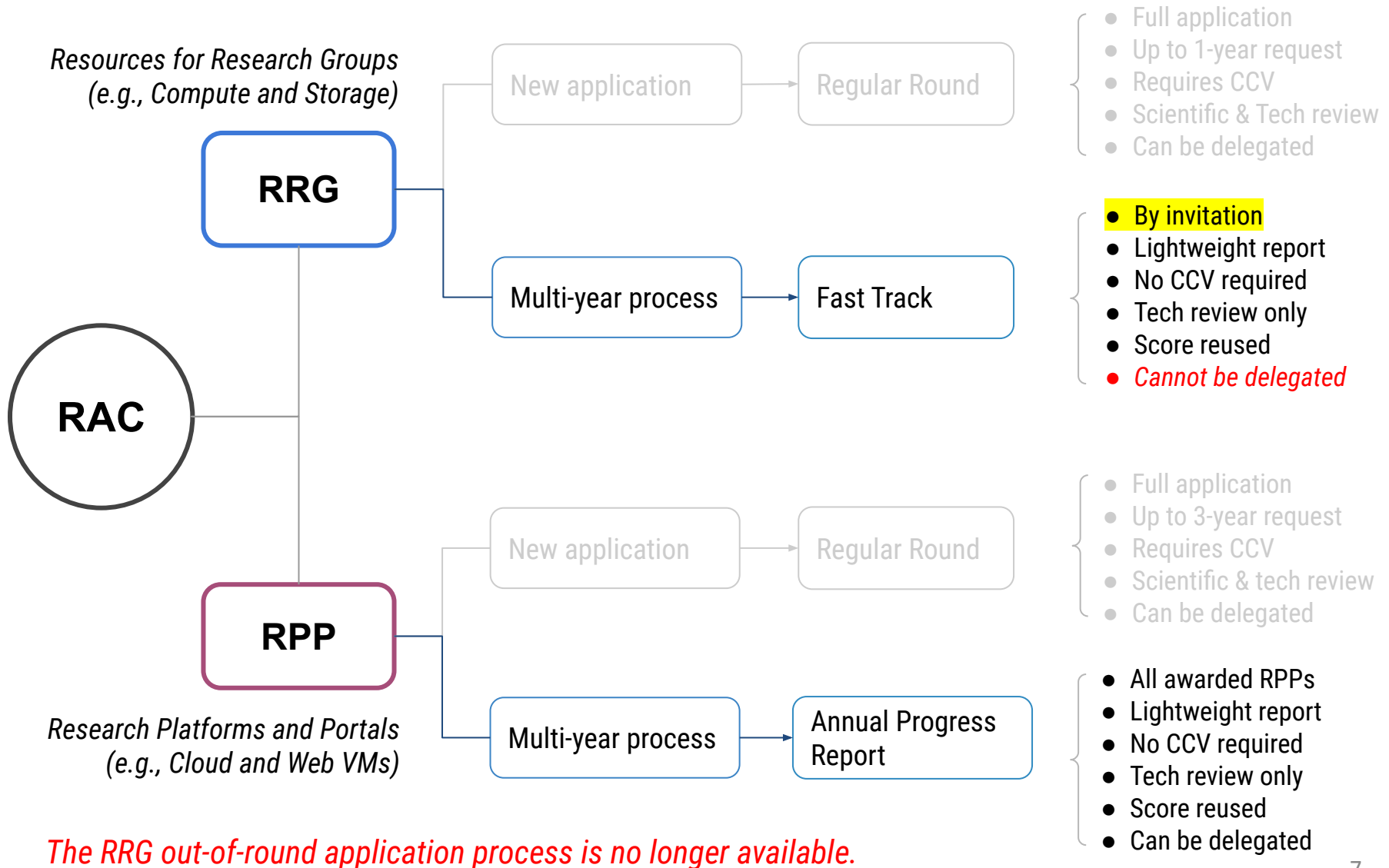
What does RAC mean and should I apply for it?

- You need to apply for Resource Allocation Competition (RAC) if you expect your group to need more than the default amount of resources (50 core years, 10 GPU years, 10 TB storage) for the next year.
- RAC competitions are run once a year, in the fall.
- Only the PIs (faculty) and eligible for the tri-council fundings can apply for RAC, for the whole research group. But a delegated person may write the application.
- What RAC is for
  - **Compute** - priority access to CPUs and GPUs for a prescribed amount.
  - **Storage** - access to the storage exceeding the default amount (10 TB).
  - **Portal** - guaranteed access to cloud and the storage via cloud.
- What RAC is NOT for
  - to have the resources set aside for you all the time.
  - your jobs not to wait in the queue.

What RAC programme should I apply for

Resources for Research Groups (e.g., Compute and Storage)

RAC

RRG

New application → Regular Round

- Full application
- Up to 1-year request
- Requires CCV
- Scientific & Tech review
- *Can be delegated*

Multi-year process → Fast Track

- By invitation
- Lightweight report
- No CCV required
- Tech review only
- Score reused
- *Cannot be delegated*

RPP

New application → Regular Round

- Full application
- Up to 3-year request
- Requires CCV
- Scientific & tech review
- *Can be delegated*

Multi-year process → Annual Progress Report

- All awarded RPPs
- Lightweight report
- No CCV required
- Tech review only
- Score reused
- Can be delegated

Research Platforms and Portals (e.g., Cloud and Web VMs)

The RRG out-of-round application process is no longer available.

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What RAC programme should I apply for

Resources for Research Groups (e.g., Compute and Storage)

RRG

RAC

RPP

Research Platforms and Portals (e.g., Cloud and Web VMs)

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The RRG out-of-round application process is no longer available.

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RAC minimum eligible amounts

HPC	Cloud
- CPU > 50* Core years, OR - GPUs > 10 GPU years, OR - Project storage > 10 TBs, OR - Nearline storage > 10 TBs	- Compute Cloud > 80 VCPUs, OR - Persistent Cloud > 25 VCPUs, OR - Volume and Snapshots Storage > 1000 GB**, OR - Shared Filesystem Storage > 10 TBs, OR - Object Storage > 10 TBs

*If a group requires =<50 core years but high memory per core, use the following formula to calculate the Core Year Equivalent.

Core Equivalent =MAX(cores, mem requested / 4GB)

Mem requested = CY * mem per core requested

**Note that the unit used in the online form for Volume and Snapshots Storage is GB.
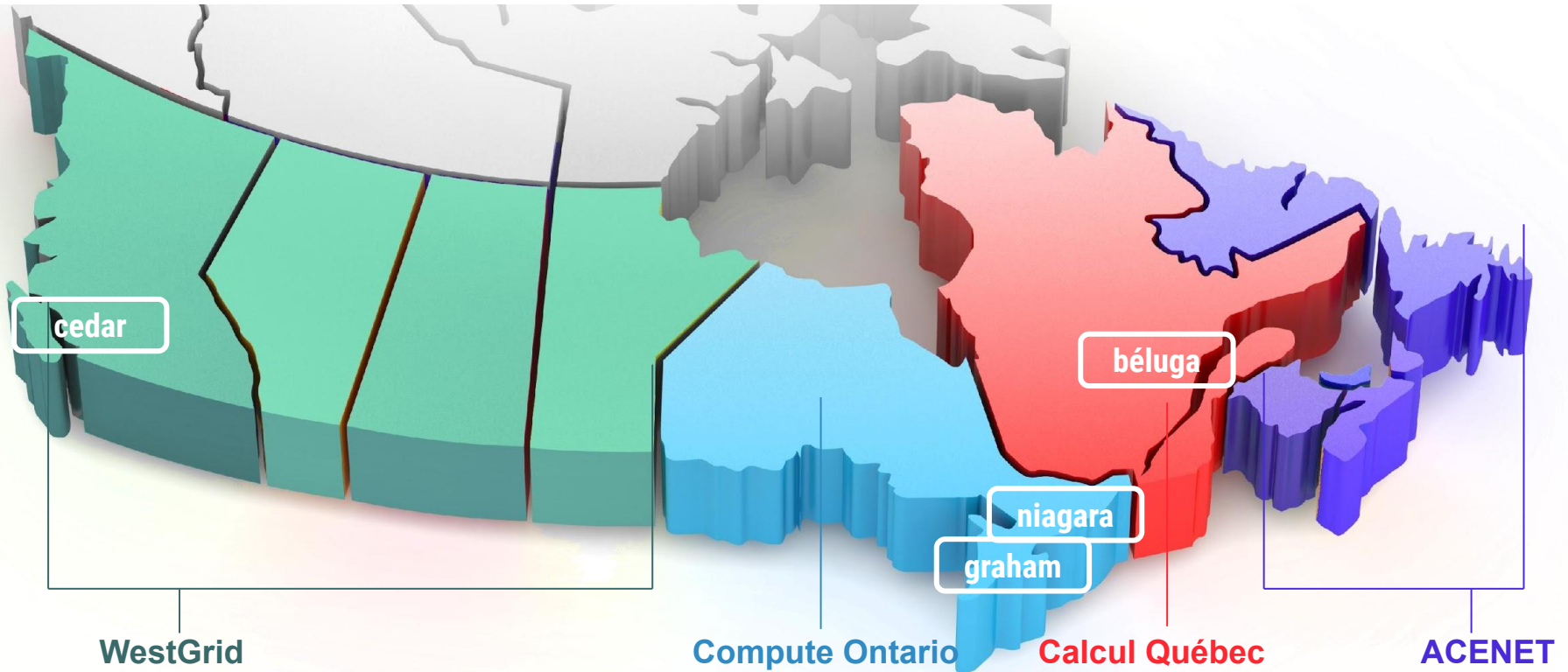
One may apply for allocations on more than one systems. We may move your allocations to a system you didn't apply to balance the overall allocations on a system if such a move does not affect your needs.

How to apply: *By a PI (faculty) or a delegated person*

The PI - *supervisor* - must have an account first. Steps to apply for an account:

- Go to CCDB at Compute Canada https://ccdb.computecanada.ca/.
- Fill out the online application form and submit.
- Your account application will be processed within about 2 working days.

How to apply: *By a PI (faculty) or a delegated person*

==Postdocs, graduate students need to apply for an account themselves==.

What a PI should do

- Get your Compute Canada Role ID (CCRI) by logging to the Compute Canada portal https://ccdb.computecanada.ca/; it looks like **abc-123-13**. Give it to the person, e.g., postdocs, grad students, etc. applying for an account.

What postdocs, graduate students and others should do

- Get the CCRI from your supervisor (PI).
- Go to https://ccdb.computecanada.ca/.
- Fill out the online application form, identifying him/herself as a **sponsored** user, type in your CCRI, and submit.
- The PI will receive an email notification re the account application, asking you to approve the application (**make sure to also check your SPAM box**). Once the PI approves the application, the postdoc's / student's account becomes active.

How to apply: *Consultation*

The goal is to

- Determine whether the resources needed for your project justify submitting a RAC application;
- Verify the project's eligibility to the right programme (RPP vs RRG);
- Provide technical assistance with the calculation of the resources needed.

We could help to have a quick assessment to determine whether you should apply and what to include in your application.

You may ask for a consultation by sending an email to rac@computecanada.ca, and you may indicate an individual (check our web site http://www.sharcnet.ca/) to have a consultation with.

How to apply: *Check-list*

The following are required to complete a new application
1. **Online application form**;
2. **CCV** recently update;
3. **Application Document** that details your computational plan and justifies your requests for the resources. Use the template provided on RAC web page, which greatly helps to organize the information to be provided.

How to apply: *Fast-Track of RRG*

By invitation only: Lightweight application process. The score from your previous RRG application is reused, and all requests are subject to scaling based on resource constraints.

Certain modifications to current allocations are allowed. This includes:

- A 10% increase of PROJECT, NEARLINE and/or dCache storage resources is allowed, up to a maximum of 50 TB of additional storage based on the eligible amount communicated in the invitation email. The additional storage resources requested may be fully, partially or not allocated based on resource constraints and storage utilization information.

- Minor adjustments to project description (major changes to the project may require a new application).

- Modification of cluster

Important: Increase of CPU or GPU requests are not allowed. If you need more of any of these resources, you must submit a new application.

Read the Fast Track guide for more details.

How to apply: *Online application demo*

How to apply: *Important dates*

Event	Date
Fast Track Submissions *by invitation only*	Sept 23 to Oct 28, 2020
Resources for Research Groups (RRG) & Research Platforms and Portals (RPP)	Sept 23 to Nov 5, 2020
RPP 2020 Progress Report submissions	Nov 10 to Dec 11, 2020
Email with RAC 2021 results	Mid March 2021

How RAC allocations are determined

Assessment

- Technical reviewers forward comments to the science reviewers.
- Scientific reviews are done by subcommittees by disciplines, selected by the applicant.

RAC administrative committee review

- The committee goes through the applications to find admissible applications with a cut-off science score, e.g. no less than 3.0
- The committee applies a scaling process to the compute requests and GPU requests to ensure that total allocated amount will fit the allocatable resources.

Sources of information

Compute Canada

- https://www.computecanada.ca/ Look for RAC 2021 page at the end of Research Portal Home.
- Technical Glossary (on CCF wiki https://docs.computecanada.ca/)

SHARCNET

- https://training.sharcnet.ca/ Look for seminars under Getting Help.

Q&A