THE UNIVERSITY OF BRITISH COLUMBIA

REPORT TO THE BOARD OF GOVERNORS

SUBJECT	**DIGITAL RESEARCH INFRASTRUCTURE PROJECT UPDATE**
MEETING DATE	**SEPTEMBER 24, 2019**

Forwarded on the Recommendation of the President

APPROVED FOR SUBMISSION

Santa J. Ono, President and Vice-Chancellor

FOR INFORMATION

Report Date	August 2, 2019
Presented By	Gail Murphy, Vice-President Research & Innovation Deborah Buszard, Deputy Vice-Chancellor and Principal, UBC Okanagan Andrew Szeri, Provost and Vice-President Academic, UBC Vancouver Peter Smailes, Vice-President Finance & Operations

EXECUTIVE SUMMARY

The UBC Board of Governors approved $7.9M Digital Research Infrastructure FY19 capital expenditure was purchased, installed, and is being configured to provide institutional compute and storage resources. The new system, referred to as UBC Sockeye, is in beta testing now and will be available to UBC researchers in the fall of 2019.

UBC Sockeye will be of particular benefit to early-career researchers and faculty recruited by UBC, and who specialize in computationally intensive research, health and sensitive research that requires processing of sensitive or confidential datasets. The investment will supplement the current national platform for digital research infrastructure; the national platform is currently unable to meet the needs of all UBC researchers. In the 2018 federal budget, $572M was dedicated towards improving the national platform. It will take time for additional capacity made possible through this investment to become available. The investment in UBC Sockeye will help to bridge this gap to enable the needs of UBC researchers to be addressed.

The current focus of the UBC Advanced Research Computing (ARC) team is on finalizing the models for allocating resources, internal and beta testing, communications planning, launch, and enabling application for the resources by UBC researchers. The formation of the DRI Resource Allocation Committee (DRAC), the committee that will manage applications for, and allocations of, the resources, is underway.

Attachments

1. Digital Research Infrastructure Briefing Note

STRATEGIC CORE AREAS SUPPORTED

☐ **People and Places** a **Research Excellence** ☐ **Transformative Learning** ☐ **Local / Global Engagement**

Board of Governors Briefing Note

Meeting Date: September 12, 2019

Subject: **Digital Research Infrastructure**

Executive Sponsor: Gail Murphy, Vice-President Research and Innovation
Deborah Buszard, Deputy Vice Chancellor and Principal, UBC Okanagan
Andrew Szeri, Provost and Vice President Academic, UBC Vancouver
Peter Smailes, Vice President Finance & Operations

Summary

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UBC Sockeye will be of particular benefit to early-career researchers and faculty recruited by UBC, and who specialize in computationally intensive research, Indigenous peoples studies, and health research that requires processing of sensitive or confidential datasets. The investment will supplement the current national platform for digital research infrastructure; the national platform is currently unable to meet the needs of all UBC researchers. In the 2018 federal budget, $572M was dedicated towards improving the national platform. It will take time for additional capacity made possible through this investment to become available. The investment in UBC Sockeye will help to bridge this gap to enable the needs of UBC researchers to be addressed.

Current Focus

- Communications planning, launch, user training,
- Finalize the models for allocation of DRI resources,
- Internal and beta testing.

The formation of the DRI Resource Allocation Committee (DRAC), the committee that will manage applications for, and allocations of, the resources, is also underway.

Communications and User Training

Communications planning to support the launch of the DRI system has begun, in conjunction with Vice President Research and Innovation and UBC Information Technology. A communications team has been engaged to promote the launch and provide support through the call for applications and initial round of allocations of compute resources. Application guidelines and training material are being developed. Information sessions will be offered to research applicants prior to and during the call for applications. Applicants will have the option to consult with the Advanced Research Computing team to assist with the application process. User training will be provided to research teams with an allocation on the DRI system (see Appendix A: DRI Deployment Communications Plan).

Call for Applications – Allocation Model

Details of the DRI system allocations model are being finalized. The initial call for applications will be an open competition for shared allocations on the DRI system. This will provide timely access to the computing resources for a majority of users prioritizing based on only technical criteria. Following the formation of the DRAC, a competition for reserved allocations will be launched. Reserved allocations will cater for specialized, larger scale high-performance computing needs.

Internal and Beta Testing

Internal testing of UBC Sockeye is in progress and expected to continue until the fall. Beta testing with the research community is scheduled to take place in August. At the completion of beta testing, participants are expected to provide input via a feedback survey to inform fine-tuning of the system configuration and tailoring of user communications for launch readiness.

DRI Resource Allocation Committee (DRAC)

The formation of the DRAC is underway with the anticipated nomination of a Chair and upcoming call for members. DRAC will provide oversight to the allocation of defined DRI resources to researchers, ensuring the distributions are fair and equitable based on technical and scientific criteria. DRAC will also guide the allocation of large-scale reserved computing resource and be responsible for an annual review of the resource allocation process and distribution of resources.

Status and Roadmap of the FY19 Investment

- June 2018, the UBC Board of Governors passed a resolution for the release of $7.92M for the FY19 phase capital investment pending joint approval of all procurement processes by the Chair of the Finance Committee and Chair of the Learning & Research Committee.
- September 2018, the FY19 purchase of goods and services contracts were signed and executed pending UBC Board of Governors approval for the FY19 DRI Capital Expenditures.
- November 2018, the Chair of the Finance Committee and Chair of the Learning & Research Committee approved all FY19 procurement processes and contracts awarded.
- March 2019, fulfillment of all conditions and invoicing of the FY19 purchase order contracts.
- April 2019, DRI system initial configuration is completed and ready for testing.
- May 2019, development of a test plan and beginning of internal systems testing, which is expected to continue until the fall.
- August 2019, beta testing to provide researcher input and inform fine-tuning of the system configuration.
- September 2019, anticipated call for applications opens for all UBC researchers.
- October 2019, anticipated start of allocations on the DRI systems.

FY19 DRI System Component Summary

High Performance Computing Platform
7376 CPU Cores
24 General Purpose GPU
1PB high performance parallel storage platform for HPC workloads

High Performance File Storage Platform
Provides scalable, high-performance, multi-tenant and multi-protocol storage
Approximately 1PB usable capacity
Supports CWL authentication options and traditional file protocols

Object Storage Platform
Provides highly scalable, mid-performance, multi-tenant, multi-protocol, and highly resilient modern object-based access
Approximately 13PB raw and 10PB useable capacity
Supports CWL authentication and modern object protocols

Appendix A: DRI Deployment Communications Plan

Background

The new local installation of advanced research compute and storage capacity, named UBC ARC Sockeye, will be available for use by researchers in October 2019. Researchers are expected to be able to access and use this capacity in the fall of 2019. A Digital Research Allocation Committee (DRAC) is being formed that will be responsible for allocating resources to user applicants.

This communications plan aims to ensure that UBC researchers are aware of the opportunity to access this infrastructure. The plan targets communications to promote the launch of the new computing resources, ensure adequate information sessions are provided and training material is made available to support users through the application process, onboarding and use of the DRI system.

Target Audience

The following stakeholder groups are target audiences of the communications plan:

- The UBC research community, including faculty, postdoctoral fellows, research associates and graduate students
- UBC Deans, Heads and Directors
- Health authority leadership (VCHRI, PHSA, PHCRI, BCCHR) and etc

Communications Goals

1. Increase awareness about UBC's advanced research computing infrastructure and how to apply for access and allocation
2. Provide clear, transparent application instructions, guidelines and information
3. Explain how UBC's advanced research computing infrastructure differs from and complements resources offered by other organizations such as Compute Canada
4. Clarify how this computational and storage investment can be utilized to solve regional challenges in health research

Communications Leads

- UBC ARC with support from VPRI and UBC IT Communications teams

Partners and Collaborators

- UBC VPRI Communication Team
- UBC VPRI Shared Research Platforms (Marie-Claude Fortin)
- Library (Communications Lead, Michelle Blackwell)
- Medicine IT
- Health Authorities
- Faculty Communicators
- UBC Internal Communications
- UBC IT Client Service Managers

Key Messages

- As a leading global research institution, UBC is launching a new advanced research computing infrastructure available to the UBC research community across all campuses.
- This infrastructure supplements existing national digital research infrastructure available through Compute Canada to meet immediate needs and to assist researchers in bridging to national platforms.

- UBC Sockeye is particularly valuable to researchers who are new to UBC, are early-career researchers, or who work with sensitive or confidential data (i.e., health data) as it meets data privacy requirements;
- The UBC research community is invited to apply for access and allocation in the fall of 2019;
- Allocations will be reviewed quarterly through a new resource allocation process including the adjudication of applications, where applicable, by a committee consisting of faculty members, ARC staff, and a member from the UBC Research Ethics Boards.

Key Considerations

- This is an initial launch. There will be ongoing expansion and staged implementation.
- Access will be adjudicated, where applicable, through a competition-based process, and therefore will not meet all researchers' needs;
- References to "UBC ARC" must not misrepresent ARC's authority in resource allocation decisions. ARC will implement the resource allocations, as per DRI Resource Allocation Committee's recommendation.

Existing Assists (Communications to Date)

Investment announcement: Capital Investment in Advanced Research Computing Infrastructure (Sept 2018, UBC VPRI)

KPIs and Metrics

We will measure the success of this communications plan by visits to the DRI information on the ARC website, complete DRI applications received, and the number of inquiries about DRI.

Approval and Sign Off

This Communications Plan has been reviewed and approved by the following before proceeding:

- ❑ Feedback/reviewed by UBC/ARC team member
- ❑ Feedback/reviewed by Steve Cundy
- ❑ Sign-off from Director, Communications
- ❑ Sign-off from VPRI Communication

High Level Communications Workplan

	Best testing phase						
	Item	**Audience**	**Channel(s)**	**Lead**	**Send date**	**Notes**	**Strategic goal**
	Beta communications email #1	Beta testing group	Email	UBC IT Communications / ARC	Send communications week of August 5 for August 19 start	Email on start of initiative. Include a rough draft of the quick start guide	Provide clear instructions and information
	Beta communications email #2	Beta testing group	Email	UBC IT Communications / ARC	End of beta testing period		Capture feedback from testers on usability and performance

	Launch of Initial Call for Applications						
	Item	**Audience**	**Channel(s)**	**Lead**	**Send date**	**Notes**	**Communications goal**
	Launch, Call for Applications, invitation to info sessions	UBC research community	- News Release – UBC internal channels - VPRI channels (ADRs) - ARC website - UBC IT website and social - Newsletters - Digital signage - Faculty communications - ShareIT (IT Intranet)	VPRI Communications team	September 2019		- Provide clear application instructions and information - Ensure research community understands how to apply - Explain how UBC's infrastructure is different and complements existing DRI
	Application Guidelines and supporting materials	UBC research community	-VPRI channels -ARC website	UBC IT / VPRI Communications / ARC	September 2019	Support communication above	- Provide clear application instructions and information - Ensure research community understands how to

							apply and who to contact for assistance
	Dedicated Sockeye service web presence	UBC research community	ARC website	UBC IT / VPRI Communications / ARC	September 2019	E.g. – Service information - Application guidelines - FAQs - Start guide, - Detailed user guide - Links to ARC support - Links to partners and resources	- Provide clear application instructions and information - Ensure research community understands how to apply and who to contact for assistance - Clarify how DRI can solve health research challenges

	Application Period (3 weeks)						
	Item	**Audience**	**Channel(s)**	**Lead**	**Send date**	**Notes**	**Strategic goal**
	Info sessions, Workshops	Applicants	- In-person info sessions on Vancouver and Okanagan campuses - Consultation with ARC team	ARC	October 2019		Provide assistance through the application process
	Reminder of closing deadline	UBC research community	-VPRI website and social channels -ARC website -UBC IT website and social	VPRI Communications team	October 2019		Provide assistance through the application process

	User Onboarding						
	Item	**Audience**	**Channel(s)**	**Lead**	**Send date**	**Notes**	
	Email to applicants	Applicants	Email	ARC	October 2019		Inform applicants of allocation

	Onboarding of users into DRI System	DRI Users	-ARC website - User training - User guide and documentation	ARC/VPRI/IT	October 2019	Training material	Inform and train users on how to get started and use the DRI system
	DRI Spotlight stories	UBC research community	- VPRI website and social channels - ARC website	VPRI/ARC	Winter 2020	Interview and profile key researchers on their area(s) of work	Increase awareness