

e-Ciber Network:

Cyberinfrastructure and Services to Enable Secure and High-Performing e-Science

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Abstract:

RNP's network and services reach about 1500 campuses of different and heterogeneous organizations. In addition to higher education and research institutions, RNP also serves museums, cultural institutions, teaching hospitals, technology parks, startup incubators, funding agencies, scientific societies, and, most recently, R&D departments of companies. Even among higher education institutions, there are huge disparities of cyberinfrastructure needs. For instance, there are small colleges in remote towns connected at 100 Mbps. On the other hand, there are prestigious universities in urban areas connected at 10 Gbps connection.

In order to foster greater and more consistent use of the new 100 Gbps connections that is being deployed in the national RNP backbone, as well as in new and upgraded international links, the new e-Ciber network will be built as a subset of RNP, aimed at delivering high-performing services to the most infrastructure-demanding research centers in Brazil.

Initially, 6 institutions were invited to join the initiative, from different scientific domains (climate, space, agricultural, Oil & Gas, material sciences and computer science). They were selected considering their research infrastructures (e.g. supercomputers and instruments) and computing demand, assuming that those institutions are in a better position to make use of 100 Gbps end-to-end connectivity to improve their research process.

Our vision is for RNP to be recognized by these institutions as an essential contributor to both the improvement of the quality of their research processes and the improvement of their privacy and security process.

To achieve this vision, it is crucial to have all e-Ciber participants engaged and eager to co-create solutions that will benefit their institutions' mission. The project is using product discovery, design thinking and cybersecurity risks analysis techniques to identify the most important solutions that should be offered to each e-Ciber institution, targeting both IT managers and researchers as end-users.

The e-Ciber network is not about just delivering 100Gbps high-capacity connectivity to a subset of high-demanding research institutions. Our moonshot is to provide a significant gain in both: in the data-driven research process and in the cybersecurity process of the participating organizations. This talk aims at sharing our findings and the challenges experienced so far.

Keywords: Research engagement, cyberinfrastructure, advanced networking, research and education networks, eScience e cybersecurity.

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