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The next generation of Scientific Computing at the Australian Synchrotron

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The Australian Synchrotron is a division within ANSTO and one of Australia's premier research facilities. It produces powerful beams of light that are used to conduct research in many important areas including health and medical, food, environment, biotechnology, nanotechnology, energy, mining, agriculture, advanced materials and cultural heritage.

After 15 years of uninterrupted operation with the original 10 experimental endstations, called beamlines, the Australian Synchrotron is currently entering an exciting new phase with the addition of 8 new beamlines. This created an opportunity for the Scientific Computing team to redesign the whole software stack from the ground up.

This presentation will take you on a journey of Scientific Computing at the Australian Synchrotron. You will learn how we employ modern, industry standard tools and architectures in a research environment in order to handle the large data throughput of modern detectors and provide the robustness our users expect from us. A particular focus will be on our use of cloud technologies, running on-premise, across our whole stack from hardware control to data processing on GPUs.

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