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Using Linux containers for EPICS gateways

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Experimental Physics and Industrial Control System (EPICS) gateways allow the (read-only) access of almost all of the process variables (PVs) available at the Australian Synchrotron from almost any network. An EPICS gateway is both a Channel Access server and a Channel Access client. Users connect to the server side, and the client side connects to Input Output Controllers (IOCs) as well as other gateways. There are three main reasons to use EPICS gateways in an EPICS based controls system: improved performance by having only the gateways connect to PVs, additional access security beyond that of the Channel Access server, and the ability to bridge different subnets (e.g. access accelerator PVs at the beamlines).

In this talk we will review the previous EPICS gateway configuration at the Australian Synchrotron and will explain in detail the new architecture which makes use of dynamically configured Linux containers running on CentOS 7. Finally we will discuss the experiences gained during the system's past 5 months in production.

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