

ML-based xApp

NOTE: This xApp is obsolete - for ML-based xApps, take a look at AD and QP xApps.

This page documents ideas and techniques related to using ML techniques in the RIC/xApps (under [O-RAN](#)).

Documentation related to the Amber release of this xApp can be found [here](#).

There are many ways ML could be used in the RIC and how the ML techniques could be embedded in the xApps. Therefore, the following are just examples

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Using Acumos ML models in the RIC - [demo link](#)

Slide deck with Acumos intro and ML based xApp design for Amber release

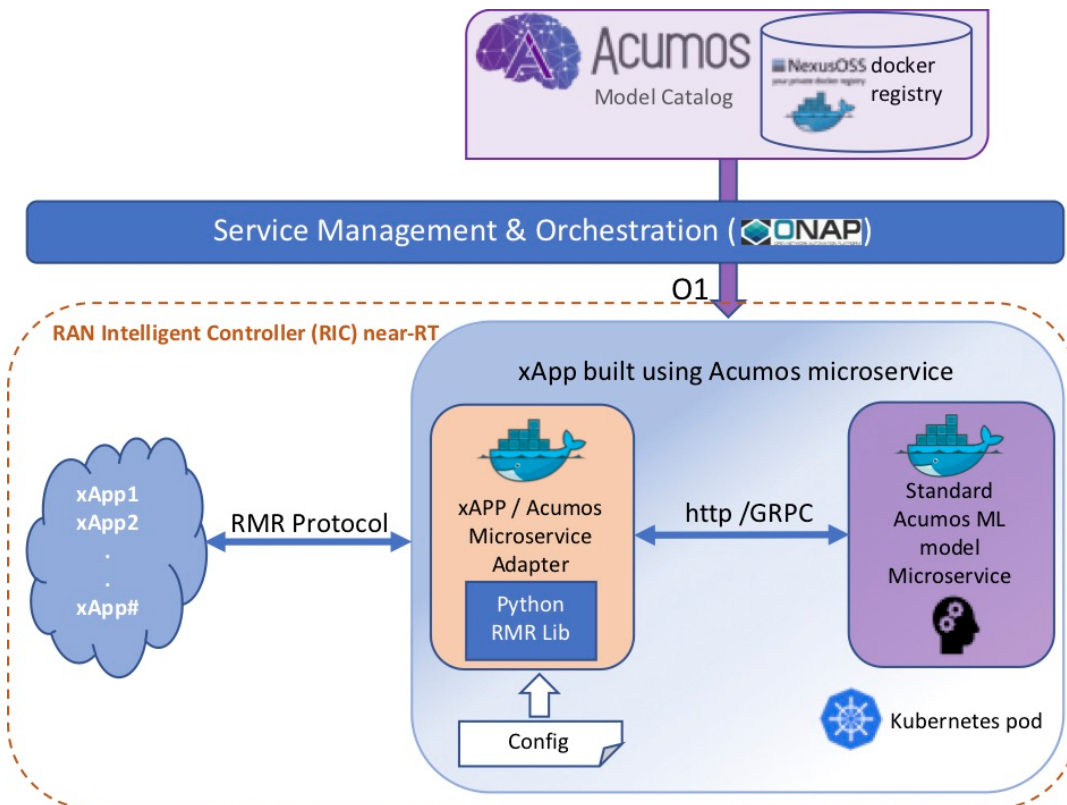
[Gerrit Repo](#)

Why Acumos?

- [How-to onboard ML model into Acumos - demo video for AI/ML experts](#)
- [Is there any company currently using Acumos?](#)

Using Acumos ML models in the RIC - [demo link](#)

- Goal is to support ML models in non-real time and near-real time RIC usecases.
 - quickly import an Acumos model into RIC and adapt it into as an xApp (near-real time).
 - deploy Acumos models as is into non-real time (mostly on ONAP side).
- Priority is to get something working with minimal changes possible on ML models
 - focus on performance in the later releases, since many ML models take some time to execute anyway.
- Build a standard xApp/Acumos microservice adapter
 - deployed along with the Acumos ML model in one Kubernetes pod.
- Adapter speaks RMR protocol to RIC
 - communicates with the Acumos ML model in the standard http / GRPC manner.
- Configuration needed for each deployment
 - to tell adapter how to speak with Acumos ML model.
 - can be auto generated using ML model protobuf definition.
- Consider writing custom RMR model runner
 - for performance in near-real time RIC xApps in the following releases.



Slide deck with Acumos intro and ML based xApp design for Amber release



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Gerrit Repo

<https://gerrit.o-ran-sc.org/r/admin/repos/ric-app/ml>

Why Acumos?

In short, the unique features are 1) Distributed AI Marketplace, 2) Interoperable ML Microservices, and 3) Common Open Source Framework to AI.

To expand more on advantages:

1. Standardized platform and easy export and Docker-file deployment to any environment, including major public clouds, make stand-up and maintenance a breeze.
2. Simplified toolkit and model onboarding helps data scientists focus on building great AI rather than maintaining infrastructure.
3. Visual design editor and drag-and-drop application design and chaining lets trainers and other end users deploy normally complicated AI apps for training and testing in minutes.

<https://www.acumos.org/>

How-to onboard ML model into Acumos - demo video for AI/ML experts

[soup-to-nuts wiki page](#)

Is there any company currently using Acumos?

Yes, Ericsson, Huawei, Orange, AI4EU, AT&T, and TechM successfully deployed and using Acumos instances. For reference LF public instance - <http://marketplace.acumos.org>;