



Enabling big computation for biomedical modeling and simulation!

METWORX is high-performance cloud computing made simple. On-demand and with just a few clicks, METWORX will provision your grid computing infrastructure in minutes, ready to use from the convenience and security of a web browser. METWORX is delivered as a Platform-as-a-Service (PaaS).

Optimized for the Cloud - METWORX is designed from the ground up as an optimized cloud computing experience. It's more than adaptation of traditional work practices. METWORX implements the best practices of cloud computing every step of the way. Your systems are always up-to-date, running on cloud optimized hardware.

Architecture - METWORX is architected as a user-level, on-demand, extensible framework. This design gives each user the ability to launch one to many multicore computing grids, and disks of varying size (up to 1 TB), exclusively for their own work. There is no waiting in line for computational capacity. Users in your organization are brought together and administered as a group, while enjoying the flexibility of the user-level structure.

User Experience - From the METWORX portal, users create encrypted disks and select workflows (the combination of infrastructure and tools working together in the same workspace) for their analysis. Users specify a minimum and maximum number of computational cores - METWORX *autoscales* based on the job demands. Running workflows connect seamlessly to the RStudio or PiranaJS workspaces, all without leaving the web browser environment.

Extensible - All users will benefit by performing analysis with workflows derived from the well-equipped base machine image - METWORX Performance. Users also have the option to extend the functionality of their systems with the other members of the METWORX family of products: METWORX Packs and METWORX Envision. METWORX Packs provide detailed instructions and code examples for specialized analysis. METWORX Envision, a specially coded web app, powered by a high-performance, cloud-based computational workflow, and intended for non-technical audiences. METWORX Envision's powerful analytics capabilities allows decision makers to perform interactive, on-the-fly simulation, decision-path exploration, and visualization of results, given previously developed models, all in real time.

METWORX Performance



METWORX Packs



METWORX Envision



Security - METWORX runs entirely in a web browser, over SSL, with data encrypted in transit and at rest. METWORX runs in the Amazon Web Services (AWS) ecosystem, the world leader in cloud computing technologies. Your METWORX infrastructure is deployed directly into your organization's AWS account. With built-in administrative controls, METWORX users are brought together and managed by your organization. You maintain control of your system, data, and resources.

A browser based, one-click user-friendly portal bringing the power and ease of cloud computing to quantitative analysis

A user-level, on-demand framework for flexible system size invocation - flexible number of processors and storage size (up to 1TB)

A system of qualified, managed, reproducible software systems and optimized data analytic workflows with RStudio, PiranaJS, metrumrg, PsN, OpenGrid Scheduler, NONMEM®, OpenBUGS, Stan

Runs in Amazon Web Services (AWS), the world leader in cloud computing technologies, in your private AWS account

A secure environment for your sensitive data, encrypted in transit and at rest

Extensible functionality with the addition of METWORX Packs and METWORX Envision



Software - METWORX workflows are based on the robust Ubuntu Linux LTS operating system and come with a pre-specified software bundle that includes R, RStudio, metrumrg, PiranaJS*, PsN, gfortran, Intel FORTRAN*, OpenBUGS, Stan, Python, Perl, NONMEM®, Grid Engine (run queueing system), TexLive, and much more. For commercial software (*), customers bring their own licenses.

Quality Assurance - Through code, METWORX is built for quality assurance. The entire METWORX infrastructure is code-based, versioned, and highly defined. This yields an extraordinarily reproducible environment and provides an audit trail of all code base changes. This ability to clone infrastructure makes it easy to reproduce work, which is especially important for regulatory submission. Disaster recovery also benefits by the use of code. A rebuild of your METWORX system only takes a few minutes and data restoration from your most recent disk snapshot is fast and easy. Our software qualification suite, a scripted sequence of testing, is executed programmatically on all METWORX machine images. This testing provides documented evidence that the key computational software is installed correctly and operating as expected.

METWORX is the result of many years of development and practical experience. It will help you get work done.