Symphony reduces the average time to set up and accredit secure analytic cells from ten months to one.

Symphony brings ideas to missions faster, cheaper, better—and more securely.

Put Big Data to Work on Your Complex Missions—Right Now

The challenges facing our world, our people, and our government are inherently complex. Consider the decisions necessary around aviation, severe weather events, disease, healthcare fraud, and poverty. Luckily, there's another side to that complexity. Applying machine learning and other artificial intelligence tools to the vast amounts of data available from different organizations can transform intriguing ideas into real-world solutions. But there's a roadblock. The traditional approach of building secure computing infrastructure around big datasets typically comes with a significant cost and several months of stand-up-time that would have been far better focused on the actual problems. At MITRE, we developed a means of compressing this process dramatically—Symphony.

Integrated Packages Support Government Missions

Symphony is an automated provisioning framework that rapidly builds secure analytic cells in the cloud for geospatial, artificial intelligence, and machine learning. Symphony accelerates the process by providing pre-built, automated “recipes” to stand up the environment and software, as well as bundled documentation and security controls, in a matter of days. With these integrated system packs, MITRE can assist you with applying Symphony to provision and configure 5–20+ servers that will work on mission problems “right out of the box” in a flexible framework, fully ready to support the entire mission. Specifically, we are offering data analytics, machine learning, data visualization, and geospatial analysis packs.

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MITRE Empowers Ideas with Automation & Accreditation

As an operator of seven federally funded research and development centers, MITRE has no commercial conflicts of interest, and we are objective and honest partners. We developed Symphony as an "80 percent solution," to help the government speed research and encourage collaboration among data scientists. Symphony's cells include the analysis tools, data engines, orchestration, and technical security controls necessary for big data analytics.

Symphony is particularly well-suited to big data analysis initiatives and data-driven public-private partnerships involving sensitive data where data fusion/analytics, agility, reusability, and scalability are critical. Following are a few examples of how Symphony was instrumental in quickly bringing together multiple datasets in a secure manner.

- **National Geospatial-Intelligence Agency on GEOWorks**: The National Geospatial-Intelligence Agency (NGA) delivers world-class geospatial intelligence that provides a decisive advantage to policymakers, warfighters, intelligence professionals, and first responders. The agency has long recognized that many powerful ideas come from individuals or researchers from smaller organizations that do not necessarily have access to large datasets. In partnership with MITRE, NGA recently announced GEOWorks, which gives researchers the ability to apply their ideas and algorithms against real data in an environment developed—and secured—via Symphony. GEOWorks will be making numerous datasets available to researchers, starting with those working in the fields of agriculture, aviation, humanitarian aid relief, maritime safety, and terrain.

- **Payment Integrity Research and Analysis Capability (PIRAC)**: An ongoing challenge for the federal government is to reduce improper payments—those that should not have been made or were made in the wrong amount. MITRE used Symphony as part of an internally funded innovation project to develop a PIRAC proof of concept involving data from the Census, Department of Education, and the National Center for Education Statistics. MITRE developed models that can be used in associating the risk of improper payments for thousands of school districts receiving a major type of Department of Education grant involving more than $15 billion in fiscal year 2017.

- **Healthcare Anti-Fraud Innovation Network**: Each year in the United States, tens of billions of healthcare dollars are lost to fraud, waste, and abuse. The Centers for Medicare & Medicaid Services asked MITRE to use Symphony to create a proof of concept for the Healthcare Anti-Fraud Network (HAFIN). HAFIN is designed to help healthcare payers and other stakeholders identify unscrupulous or wasteful providers and outright criminals; provide real-time alerts about such bad actors to Medicare and other payers; and educate stakeholders throughout the industry about the techniques being employed against them.