



IBM Platform Symphony software family

High performance grid services for distributed computing and big data analytics

Not all grid computing is the same

For many large enterprises, grid computing is the primary solution for accelerating a wide variety of distributed computing and big data analytic processes. And for grid-enabled applications, maximizing performance and scale are the primary concerns. But not all grid middleware is the same.

Some products impose architectural limitations or restrict your choice of operating systems or developer tools. Another potential constraint is persuading multiple lines of business (LOBs) to share a common infrastructure. Their fear of losing control and missing service level objectives can lead to cumbersome, expensive, application-specific grids sized to peak demand.

Facing increasing financial pressures, organizations like yours are looking for better ways to improve IT performance, reduce infrastructure costs and expenses, and meet your company's demand for higher quality answers faster.

Benefit from fast, scalable performance that's easier to manage

The IBM® Platform™ Symphony family of software helps you control the massive compute power available in your current and future technical computing systems to address your most challenging and complex problems.

Platform Symphony is a high-performance grid middleware and management solution that runs on your choice of hardware and operating environments. You can run pre-integrated applications available from a variety of independent software vendors (ISVs), or you can easily adapt and accelerate your own compute- and data-intensive parallel workloads on a grid, helping to make them fast and flexible.



Platform Symphony software can help you achieve breakthrough results in business and research activities. Its power and control also help address challenges in parallel application development and deployment and in technical computing infrastructure management. Platform Symphony software can help deliver faster, better quality results—even while using a smaller amount of required infrastructure.

The numbers are impressive for IBM Platform Symphony.

- Scales to 40,000 service instances per application
- Provides sub-millisecond latency for grid services
- Throughput exceeding 17,000 tasks per second
- Reallocates up to 1,000 grid services per second

Help reduce infrastructure expenses and management costs

The resource sharing model for Platform Symphony software makes it practical to deploy multiple heterogeneous applications on the same shared grid. And, at the same time, preserve LOB ownership while delivering service level guarantees.

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- Built for your most challenging big data problems
 - Low-latency Hadoop MapReduce-compatible implementation is built in
 - Multi-tenant heterogeneous application architecture
 - Optimized to accelerate big data workload performance
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With this unique capability, the Platform Symphony family helps your IT administrators avoid many of the business and technical concerns that often hinder the sharing of resources and lead to discrete siloed grids. By sharing resources fluidly while preserving ownership, resources are utilized more fully, delivering better performance and helping minimize infrastructure costs for your enterprise.

A single infrastructure for distributed computing and big data

Analytic workloads are increasingly both compute- and data-intensive. Many types of applications demand fast analyses of vast amounts of data stored using in-memory data grids or distributed file systems.

Unlike other grid management solutions that require a separate infrastructure to support these data-intensive problems, the Advanced Edition of Platform Symphony includes an Apache Hadoop-compatible MapReduce implementation optimized for low latency, reliability and resource sharing. Using this capability, users can run Hadoop and non-Hadoop applications written in other languages on the same shared distributed infrastructure. In addition, the multi-tenant architecture of Platform Symphony allows multiple MapReduce engines to be deployed on a single shared infrastructure.

Give business-critical workloads the rapid response they need

Platform Symphony is able to react almost instantly to changes in application demand, reallocating as many as 1,000 compute engines per second to different workloads depending on sharing policies and application priorities that you define. This can deliver better application performance, better utilization and a faster response to business-critical demands.

Four editions of Platform Symphony

Platform Symphony is available in four editions, all of which feature low-latency high performance computing (HPC) service-oriented architecture (SOA) as well as agile service and task scheduling. The editions range in scalability from one or two hosts for the Developer Edition, to up to 5,000 hosts and 128,000 cores for the Advanced Edition.

IBM Platform Symphony Developer Edition: Build and test applications without the need for a full-scale grid (available for download at no cost).

IBM Platform Symphony Express Edition: For departmental clusters, this is an ideal, cost-effective solution.

IBM Platform Symphony Standard Edition: Choose this version for enterprise-class performance and scalability.

IBM Platform Symphony Advanced Edition: Your best choice for distributed compute- and data-intensive applications, including Hadoop MapReduce.

Optional applications to extend Platform Symphony capabilities

Several add-on tools and complementary products can be used with both Platform Symphony Standard and Advanced Editions. They are all designed to help you do more while spending less.

IBM Platform Symphony Desktop Harvesting: This add-on harnesses the resources from available idle desktops, adding them to the pool of potential candidates to help complete tasks. Platform Symphony services do not interfere with other applications running on the desktops; and harvested resources are managed directly through the integrated management interface.

IBM Platform Symphony Server/VM Harvesting: To take full advantage of more of your enterprise's resources, this addition allows you to tap idle or underutilized servers and virtual machines (VMs). Instead of requiring new infrastructure investments, Platform Symphony locates and aggregates these server resources as part of the grid whenever additional capacity is needed to handle larger workloads, or when the speed of results is critical.

IBM Platform Symphony GPU Harvesting: To unleash the power of general-purpose graphic processing units (GPUs), this tool enables applications to share expensive GPU resources more effectively and to scale beyond the confines a single GPU. Sharing GPUs more efficiently among multiple applications, and detecting and addressing GPU-specific issues at run time helps improve service levels and reduce capital spending.

IBM Platform Analytics: IBM Platform Analytics is an advanced analysis and visualization tool for analyzing massive amounts of workload and infrastructure usage data collected from IBM Platform Symphony clusters. It enables you to easily correlate job, resources and license data from multiple Platform Symphony clusters for data driven decision making.

IBM Platform Application Service Controller: IBM Platform Application Service Controller, available as an add-on to the Advanced Edition, extends the IBM Platform Symphony grid to provide a shared-service backbone for a broad portfolio of born-in-the-cloud services including Spark, MongoDB and Cassandra. By enabling a wide variety of applications to share resources and coexist on the same infrastructure, Platform Application Service Controller helps organizations improve time-to-results performance, reduce costs, simplify management, and increase efficiency. Platform Application Service Controller is also available as a standalone product.

Why IBM?

IBM Platform Computing™ brings industry-leading cluster, grid and HPC cloud management software to the IBM Technical Computing portfolio. These offerings help accelerate time to results for compute- and data-intensive applications running on distributed technical and analytics computing environments for workloads as diverse as real-time analytics, business simulations, product design analysis and risk management—applications that exemplify the smarter computing era.

Platform Computing technical and HPC applications fuel product development, inform critical business decisions and help enable breakthroughs in financial services, life sciences, telecommunications, manufacturing, digital media, oil and gas, government, research and education. More than 2,500 clients—including 23 of the top 30 largest global enterprises—use Platform Computing solutions.

By combining software from Platform Computing with IBM Technical Computing solutions, IBM can better serve enterprise clients who are turning to high performance technical computing to help accelerate time to results, improve infrastructure utilization and reduce operating costs—no matter what hardware you have installed.

For more information

To learn more about IBM Platform Symphony software, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: ibm.com/platformcomputing

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Please Recycle



Highlights

- Delivers faster throughput and performance
 - Achieves higher levels of resource utilization
 - Provides faster results for short-duration MapReduce jobs
 - Helps reduce infrastructure and management costs
 - Lowers application development and maintenance costs
 - Provides the agility to respond instantly to real-time demands
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IBM Platform Symphony

High-performance grid services for distributed computing and big data analytics

IBM® Platform™ Symphony software helps you control the massive compute power available in your current and future technical computing systems to address your most challenging and complex problems. This software can help you achieve breakthrough results in business and research activities. It can address challenges in parallel application development and deployment, and technical computing infrastructure management. Platform Symphony software can deliver faster, better quality results—even while using a smaller amount of required infrastructure.

Add more performance and scalability to your grid

Platform Symphony is an enterprise-class grid manager for running distributed application services on a scalable, shared, heterogeneous grid. The software is able to react almost instantly to changes in application demand.

With the flexibility to adapt when priorities change, Platform Symphony can reallocate over 1,000 compute engines per second to different workloads depending on sharing policies and application priorities that you define. This translates into better application performance, better utilization and an ability to respond quickly to business critical demands.

Platform Symphony is most often used with programmatic (API driven) workloads. Whereas a batch scheduler can schedule jobs in seconds or minutes, Platform Symphony can schedule tasks in milliseconds. Because of this difference, Platform Symphony can be described as supporting online or near real-time requirements. Well documented APIs enable fast integrations for applications written in these languages: C, C++ C#, .NET, Visual Basic, Java, Excel COM, R, scripts and native binaries.



Flexible, reliable MapReduce integration

The Advanced Edition of Platform Symphony includes an Apache Hadoop-compatible MapReduce implementation optimized for low latency, reliability and resource sharing. Unlike the open source solution which has no capability to re-start failed services automatically, this function is built into Platform Symphony's MapReduce implementation, delivering improved reliability. Platform Symphony Advanced Edition can also run multiple MapReduce and non-MapReduce jobs concurrently for better throughput and resource utilization.

Runs in a multitude of environments

Platform Symphony clients and services can be implemented on different operating environments, languages and frameworks. Clusters can also be comprised of nodes running multiple operating systems. For example 32- and 64-bit Linux hosts can be mixed running different Linux distributions, and multiple Microsoft Windows operating systems can be deployed as well. Platform Symphony can manage all these different types of hosts in the same cluster and control what application services run on each host.

Gain a competitive edge

Platform Symphony can provide a competitive advantage by quickly solving a wide range of parallelizable compute and data-intensive business problems. Complex simulations can be run with sub-millisecond latency and applications can process compute tasks with throughput in excess of 17,000 tasks per second. For organizations that need a fast service-oriented computing infrastructure, Platform Symphony delivers.

For more information

To learn more about the IBM Platform Symphony software, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: ibm.com/platformcomputing



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