

HPC Infrastructure As a Service

Akhela offers access to its state-of-the-art Datacenter for remote computing resources. The Datacenter is equipped with high-speed redundant secure connections. Our Datacenter is available for pre-staging, training, integration, testing, practice deployment, live demos and Proof of Concept, disaster recovery solutions, hosting services, and other production and non-production uses.

We offer a broad spectrum of HPC systems: from small size industry standard servers to enterprise large-scale cluster systems.

HPC infrastructures value-added services:

- monitoring
- infrastructure security
- application security
- Change & Configuration management
- Proof of Concept installations

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akhela

Akhela: a brief profile

Akhela is a fast-growing company which is becoming an important and recognized player in the emerging market of IT security and systems optimization. It works in compliance with quality reference standards, is ISO 9001 certified and has achieved Level 2 certification of CMMI® for Development. Akhela is the ICT company of Saras Group.

Akhela manages the production supervision system and the information systems of one of the most important high conversion supersites in Europe, namely the Saras Refinery, located in Sarroch (Sardinia). As a result of this activity, Akhela has developed a wealth of methodologies, competencies, experiences, procedures and systems for the supervision of mission-critical environments and services.

Akhela's proven success in managing Saras and other high profile companies systems and infrastructures witnesses its ability to successfully respond to stressfull and challenging requirements coming from critical situations, highly complex environments and strict schedules.

Akhela's procedures and infrastructures have been designed to guarantee the highest level of business continuity and to assure confidentiality for all the information and activities carried out on behalf of our customers.

Akhela's services for HPC

Akhela provides high quality services for HPC clusters and computing solutions, such as:

- on-site infrastructure management
- solutions development & integration
- managed services
- provisioning of HPC infrastructure as a Service

Each service is supplied by a team of professionals, consisting of IT architects, project managers, system engineers, software analysts, software developers and service desk specialists.

On-site infrastructure services

Management and optimization of existing HPC infrastructures.

Assessment

Customers site networks, storage, applications, physical infrastructures and architectures are assessed in order to ensure optimal system configuration, applications utilization and capacity planning for systems growth.

Plan & Design

Architects work closely with customer to plan HPC cluster infrastructure in order to identify computing performance needs and technical requirements in terms of availability and scalability.

Installation (cluster deployment)

Engineers deliver high-quality, consistent and easily maintained installations for HPC solutions backed by state-of-the-art best practices regarding proper hardware and software configuration (firmware levels, patches and updates installation), environmental and power requirements and overall Datacenter design.

Optimization & tuning (Health Check)

Customers HPC cluster environment will be reviewed to improve infrastructure reliability and efficiency, performing a set of system configuration analysis (i.e. bottleneck detection) by using benchmarks suites like Linpack, to identify and fix performance issues.

Migration

Migration from Windows 2003 Compute Cluster to Windows 2008 HPC Server cluster.

Migration from Linux clusters to Windows 2008 HPC Server clusters.

Proof of Concept

Proof of Concept for testing, on a small scale, the solution performance, reliability and scalability. Proof of Concept includes system staging and burn-in, live demos, application testing and pilot installations.

Application Development & Integration

Our technical team collaborates with customers to identify specific application requirements and deliver high-value solutions. Broad support will be provided, from custom algorithm development to customer requirements analysis.

Software Optimization

HPC environment performs at its best level thanks to our Software Optimization services: benchmarking, profiling and application tuning. Development and deployment efforts as well as costs can be reduced by using application reengineering and porting proven methodologies.

Code parallelization

Applications written for serial computation (one instruction may execute at a time) will be rebuilt according to concurrent programming best practices in order to allow parallelization tailored to the target fabric.

Code assessment

Performance characteristics and bottlenecks of the application are assessed, opportunities for performance gains are evaluated, and finally application code is modified in order to achieve the desired performance. Additionally, our developers collaborate with third party software providers to improve software functionality and performance, change implementation and redefine acceptance tests.

HPC Software development

Development of SOA Applications (Embarrassingly Parallel Problem) and MPI Applications (Distributed Systems).

Excel 2010 customization

Office Excel 2010 Workbooks parallelization, running User Defined Functions (UDF) in an HPC cluster, using Excel 2010 as a cluster Service Oriented Architecture (SOA) client.

HPC Managed Services

Our certified engineers have many years of experience in ICT Industry and a plenty of certifications in all facets of network and infrastructure design, integration, analysis and monitoring.

Consulting services

Customers needs will be gathered by highly-skilled experts in order to satisfy business requirements with the most fitting technical solutions.

Monitoring

Open-Source monitoring solutions can be installed on customer HPC infrastructure so that the whole system is under full control. Furthermore processes, jobs, and application status will be continuously checked and every system or application fault will be notified to administrators; alarms filtering and notification is also provided.

Infrastructure Security

Our IT Security team supports customers on security policies definition and implementation, system hardening (system patching, network security, installation of potential active protection systems, supply of step-by-step guidelines for installation and system hardening) and personnel training.

Application Security

Security management at application level, providing services such as HPC application penetration testing, guidelines for secure HPC application, check list & test validation specifications, training on code inspection techniques (detection of vulnerabilities and security problems on customer's applications).

Change & configuration management

A proven experience on Datacenter Automation and Configuration Management allows us to implement Change and Configuration Management and Task Automation solutions adapted to customers requirements.

A consolidated methodology for complex infrastructures management and a software that allows change & configuration management and tasks automation.

Technical support with a dedicated Service Desk

A single point of contact (via telephone, email and/or web form) that supports customers on application and infrastructure topics.

- GOLD Support: 5x8x365
- PLATINUM Support: 7x24x365