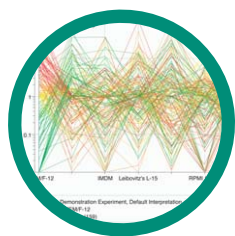
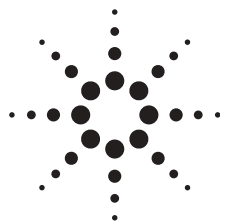


Signet 5.0 from Agilent

Analysis platform for collaborative life science research

Informatics Solutions



Signet is the most scalable and robust expression data analysis platform available, meeting the demands of both high-throughput sample volumes and increasing numbers of users. Signet streamlines microarray research at large and multi-campus organizations, and provides facilities for robust data analysis, collaborative workflow management, automating research procedures, and secure data administration. Thousands of scientists at hundreds of organizations, including 11 of the world's top 13 pharmaceutical companies, use Agilent's solutions to accelerate the pace of functional genomics research and drug discovery.

A collaborative environment for discovery

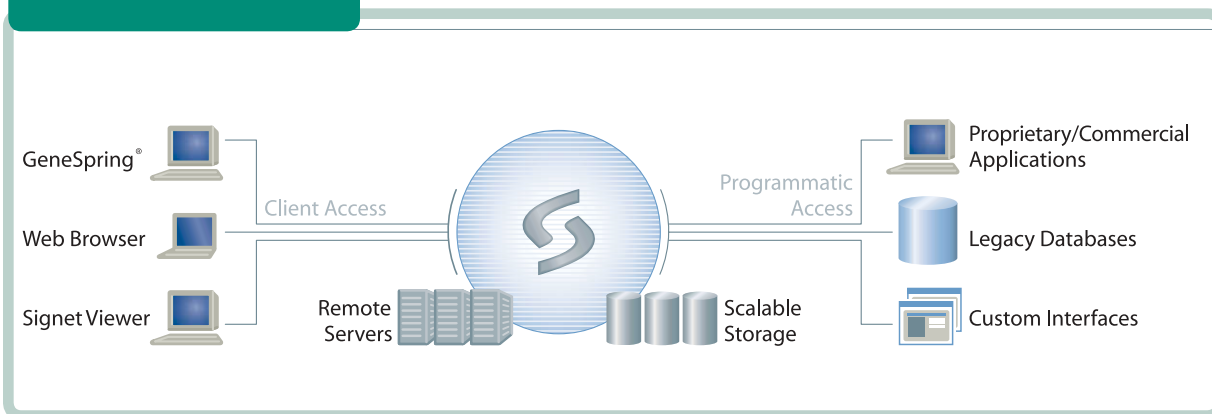
Signet is tailored to match the workflow requirements of both high-volume genomic research and the modern drug discovery process. Today's most challenging genomic projects often require multiple teams of researchers to tackle important questions. Agilent provides the tools to facilitate communication and collaboration between researchers, seamlessly connecting individual efforts and integrating the flow of knowledge throughout an institution. With Signet, gene expression data is made available to research teams and project managers throughout global organizations, making the discovery process more efficient. Colleagues anywhere in the world can view experimental data and published results from Signet via their web browser.

One analysis platform, from desktop through enterprise

At the core of Signet is a highly scalable platform for expression data analysis. Its sample-centric data representation is optimized to manipulate expression data generated in a high-throughput environment. Powerful search facilities allow users to efficiently query the data accumulated across the entire institution. Unique to Signet is its accessibility through one of three software clients that cater to users with differing levels of proficiency.

Signet provides a robust and customizable environment for genomic data analysis. It combines a highly scalable architecture, a rich set of analysis tools, and a series of programmatic interfaces that enable departmental or multi-campus enterprises to maximize the value of their genomic research.

The Signet System



Agilent Technologies

Signet 5 from Agilent

“Gene expression analysis is a fundamental tool of modern drug discovery and development, and AstraZeneca expects to benefit from broader access to Agilent’s informatics technology. We believe their products will enhance our ability to exploit our complementary investments in this area.”

—Dr. Kenneth Fasman

Vice President and Global Head of R&D Informatics, AstraZeneca

Signet web access provides those who are not directly involved in the processing of raw data — project managers, clinicians, and collaborators — an easy means of viewing published data and summary reports via their web browser.

For users who need to view data, interpret results and publish findings, the Signet Viewer provides an intuitive interface in a simple-to-administer client.

Researchers requiring sophisticated analyses can access Signet through Agilent’s GeneSpring software. The integration of GeneSpring and Signet is seamless—data that centrally resides in Signet is immediately available on individual researchers’ local workstations. Analyses performed on desktop computers can be automatically synchronized to Signet ensuring that valuable results are accessible throughout the institution and do not go unnoticed.

Signet allows data generated by individual researchers to be shared globally with co-workers and colleagues. With the Signet architecture, researchers have the best of two worlds — the convenience of desktop analysis tools and the scalability of central expression data management.

An extensible environment for workflow automation

Signet’s robust suite of application programming interfaces (API’s) allows organizations to incorporate an assortment of separate, independent tools and/or workflows into a single integrated informatics environment.

For organizations with multiple data repositories, or a variety of sources generating new expression data, the Signet SampleLoader API streamlines the data collection process. The Signet SampleLoader can be configured to automatically retrieve data from legacy databases, networked file storage, or directly from measurement technology platforms such as the Affymetrix GCOS database. Designed specifically to meet the needs of large-scale microarray facilities, SampleLoader ensures expression data can be conveniently consolidated and made instantly accessible to scientists throughout the organization.

The Signet SOAP API and native Java API provide standards compliant architectures for integrating commercial or proprietary applications within Signet via an expanding list of programming languages including Java, C++, Visual Basic, Perl, Python and others. User workflows can be tailored to meet the needs of the enterprise by building customized web interfaces to guide researchers through standardized research protocols.

Compliance

Collaboration
Identification

Genome Screening

Signet 5 from Agilent

Additionally, custom applications can be deployed on Signet RemoteServer using the plug-in API. For organizations using Agilent's GeneSpring application, this permits custom analysis and visualizations running on Signet RemoteServer to be launched from GeneSpring and to appear seamlessly within the GeneSpring user interface.

Distributed and scalable data analysis

With Signet's RemoteServer, computationally intensive tasks can be redirected to a distributed server farm. GeneSpring users can easily offload calculations by selecting an option while in an analysis window. This allows power users to combine the results of numerous experiments and take advantage of multidimensional analysis techniques without burdening their local workstation or the primary Signet server. At the same time, users can rely on pre-packaged, scripted routines to quickly retrieve expression profiles of interest.

Target validation, diagnostic markers, and drug discovery

Agilent's statistical tools are designed to efficiently place new genes into well-characterized biological pathways, uncover potential regulatory elements, characterize responses to drugs, and identify markers for diseases. By addressing biological questions directly, Agilent accelerates discovery, facilitating the leap from hypothesis to target gene, and ultimately, from candidate to drug.

Controls for Electronic Records

Expression analysis technologies are playing an increasing role in drug discovery, validation, and approval processes. Signet provides a suite of features that enable organizations to remain compliant with the Food and Drug Administration's 21 CFR Part 11 requirements. These features include:

- Audit trails to record the creation, modification and deletion of records
- Security enhancements to authenticate users and administrators
- Electronic signatures applied to the creation of new objects
- Guidelines for archiving records and implementing Standard Operating Procedures (SOPs)

Largest compilation of public data

The Signet Public Data Repository (GPDR) – the world's largest collection of publicly available microarray and proteomics datasets – is a valuable resource for validating and cross referencing your research results. Over 6,300 samples and their detailed attributes have been curated into standard MIAME format, normalized, and grouped into experiments for immediate access and analysis. The GPDR allows researchers to leverage vast amounts of knowledge from disparate public resources all in a single location.

"The Agilent analysis suite represents the current state of the art in data analysis. Its flexibility to handle the numerous microarray platforms as well as mass spec data is unmatched."

—Dr. Harold Garner

Professor of Biochemistry,

University of Texas Southwest

Data Mining

Discovery

Knowledge Management

Signet 5 from Agilent

A flexible, customizable solution

With Signet, an organization can quickly respond to massive increases in gene expression data without having to overburden its IT staff. Using guided automated installers, system administrators will find that Signet is easy to deploy and customize in any environment without disrupting existing workflows or overloading a single server with analytical tasks. Data can be stored using a proprietary flat-file system or an Oracle database. Signet is a Java application that can be deployed on a variety of Unix-based platforms or on Windows workstations. The web interface, the Signet Viewer, and the server software are customizable and designed to perform smoothly with users' existing server architecture. Gene expression data from anywhere in the organization can be published directly to Signet for easy, password-protected access by other researchers. Clinical observations, experimental conditions, and sample data can be viewed either through a web browser, through the Signet Viewer, or directly through GeneSpring.

Effective screening for compound evaluation

Signet integrates techniques such as PEER-C (Probe Entire Enterprise Repository for Conditions), as well as Search for Similar Samples, for characterizing the results of compound screening experiments and studying tissue-specific regulation. Using these techniques, gene expression profiles within Signet that are similar to a target profile .

Secure server-side management and administration

Signet is designed to run on a secure password-protected server, and supports Secure Sockets Layer (SSL) authentication. All data is archived, accessed, and retrieved based on individual and group permissions that can be assigned at multiple levels:

- **Network level security** – Signet can reside behind or in front of an institution's firewall
- **Group level security** – administrators determine group access to selected directories
- **User level security** – administrators determine which individuals or groups have data access
- **Data level security** – access to individual entries in the repository can be restricted to selected groups or users

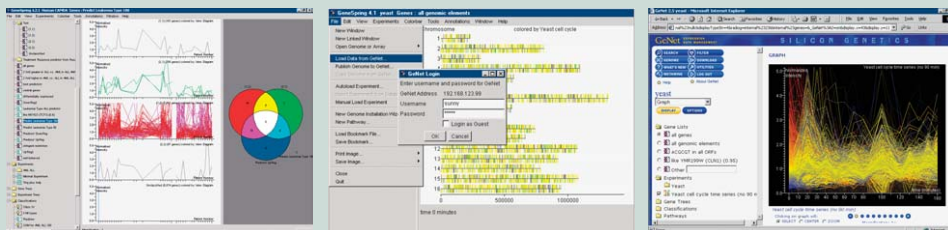
In addition, Signet includes administration tools to:

- Build a standards-compliant repository
- Enforce Standard Operating Procedures (SOPs) within workflows
- Record and track experiments across groups and organizations
- Avoid redundant experiments or analyses
- Group experiments by projects or research teams
- Protect intellectual property through SSL

World-class technical support

The Agilent technical support team is available to respond promptly to your questions about Signet, GeneSpring or Varia by phone or e-mail. Additionally, a broad assortment of training resources is available to speed up your learning process. Agilent offers a series of face-to-face workshops geared to accommodate beginning through advanced users. Online training sessions on a variety of topics are available—moderated in real time by subject matter experts. For those preferring to learn on their own schedule, a collection of self-paced, interactive tutorials are accessible online.

Features of Signet



Visualization Tools

- Chromosome maps
- Graphs/plots
- Venn diagrams
- Pathways

Seamless Integration

- Easy GeneSpring upload
- Centralized data storage
- Secure system

Customizable

- Supports multiple platforms
- Scalable
- Flexible
- Easy to deploy

Informatics Solutions Website:

www.agilent.com/chem/informatics

Buy online at: www.agilent.com/chem/store

For a complete listing of customer centers by country, visit our website at: www.agilent.com/chem/contactus

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