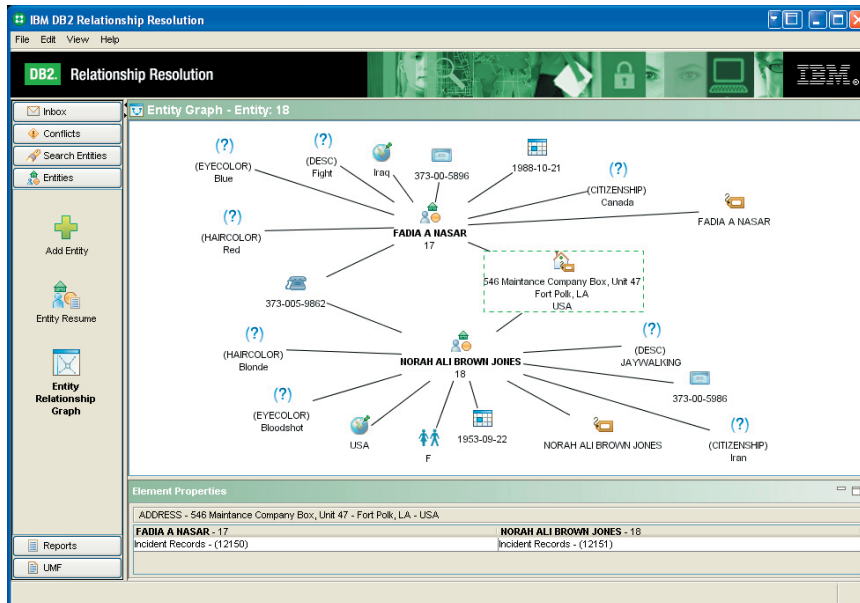


Protect customers, employees, and national security  
when you know "Who Knows Who?"



## IBM Relationship Resolution Version 4.1 Technical Information



Relationship Resolution identifies relationships among identities in various databases within an organization. Alerts are generated when potentially dangerous or positive relationships are detected, ensuring that your organization has the information it needs to make informed decisions in real-time.

IBM Relationship Resolution 4.1 is a unique and dynamic solution that identifies potentially dangerous or profitable non-obvious relationships among people and entities in real-time. For maximum flexibility and speed, state-of-the-art Relationship Resolution technology features:

### True Relationship Awareness

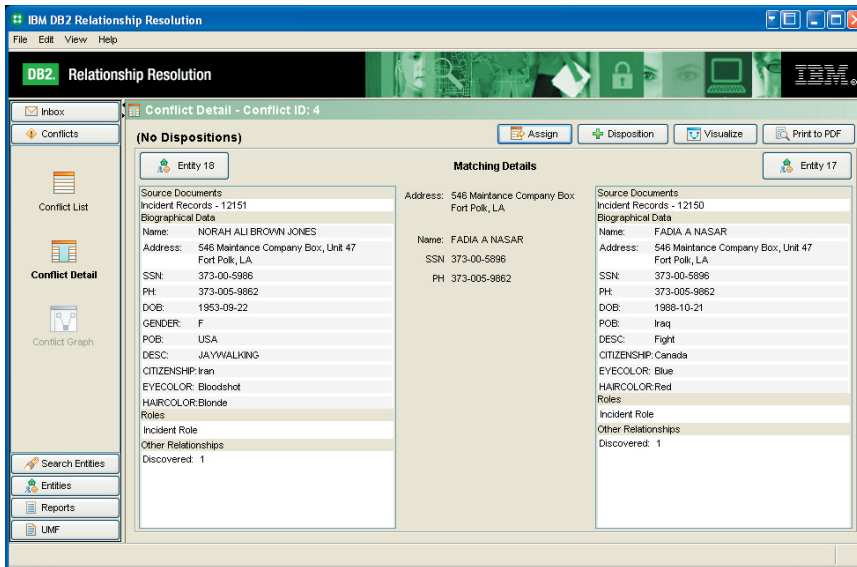
Relationship Resolution is capable of identifying and tracking dynamic human relationships in real-time. Relationship Resolution enables a company to identify and manage a cluster of high value, closely connected customers, which opens new doors in terms of customer relationship management. For example, this feature would prevent a company from canceling an unprofitable account when they knew that this account was related to a highly profitable account.

### Real-Time, Stateless, Self-Tuning Entity Resolution

Relationship Resolution is designed from the ground-up to support your organization by delivering accurate identity information based on both real-time and batch data. Critical decisions must be made using the freshest data, but warehouses and mining technologies cannot usually

### New for IBM Relationship Resolution Version 4.1

- **Extended platform support for z/Linux.**
- **Advanced capabilities in handling Anglo and Arabic cultural names.**
- **Enhanced name recognition capabilities including matching of out-of-order words, names consisting of more than three parts, improved fuzzy matching, and initials.**
- **Web-based user interfaces and local language support: English, French, Spanish, German, Italian and Brazilian Portuguese.**
- **Organizational name matching including global company names.**
- **The user interface provides multi-language support for an easier-to-use environment and deployment of EAS outside of English-speaking countries.**



*Relationship Resolution identifies individuals sharing a common piece of information, and alerts allow for real-time responses. A common phone number, bank account, address, etc. allow your team to act immediately and provide the most appropriate response for the given situation.*

deliver up-to-date, accurate information based on the most recent knowledge. Using IBM's exclusive Entity Resolution™ technology, Relationship Resolution solves this problem by keeping an up-to-date identity repository that is incrementally built by each piece of incoming data. No purges, sweeps or reloads are necessary—Relationship Resolution only gets more precise as it continues to accumulate context over time.

Relationship Resolution easily adapts to your organization's data to ensure a perfect fit through time. Any name, number, address or other attributes can be used to match identities together in the system. And as new data is added, Relationship Resolution continues to self-correct past

decisions in real-time. For example, if a new piece of data indicates that two identities previously believed distinct are actually one person, Relationship Resolution automatically detects this and “snaps” the two identities together in real-time.

### **Configurable Alert Rules**

Relationship Resolution enables you to “tune” alert rules to narrow your focus on areas that are truly relevant to your objectives. In less than three seconds, Relationship Resolution enables companies to publish results to any of a number of vehicles, including: e-mail alert, pager, cell phone, investigatory workflow system, or right back into the calling system to alert the person as they complete data entry.

### **Real-Time International Name Resolution**

Relationship Resolution has an integrated ability to determine which names belong to the same root name (e.g. Betty, Liz, and Eliza all root to Elizabeth). Proprietary algorithms compare names and evaluate similarities, detect errors and generic values, analyze name order (e.g. Smith Robert = Robert Smith) and determine if a name refers to an individual or to a company.

Additionally Relationship Resolution Version 4.1 adds enhanced name recognition capabilities built into the product, including names consisting of more than three parts, matching of out-of-order words, improved fuzzy matching, organizational name matching such as global company names, as well as handling of initials. IBM Relationship Resolution v4.1 name recognition includes advanced capabilities in handling Anglo and Arabic cultural names.

### **Real-Time International Address Hygiene**

U.S. and international address hygiene capabilities, embedded in Relationship Resolution, provide real-time enhancements to incoming addresses. Additionally, the core address hygiene capabilities within Relationship Resolution are enhanced when other IBM and third party tools are leveraged, including address validation and geographical coordinate (latitude and longitude) information.

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## Platforms Supported

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Platform	Architecture	OS Version Support	Database Version Support
IBM AIX	POWER4, POWER5	IBM AIX 5.2	IBM DB2 UDB 8.2, IBM DB2 for z/OS v8, Oracle 9iR2, Oracle 10g
Linux 64bit	Intel Itanium 2 (IA-64)	SUSE Linux Enterprise Server 9	IBM DB2 UDB 8.2, IBM DB2 for z/OS v8, Oracle 9iR2, Oracle 10g
Linux 32bit	Intel x86 (IA-32)	Red Hat Linux AS 3.0	IBM DB2 UDB 8.2, IBM DB2 for z/OS v8, Oracle 9iR2, Oracle 10g
Sun Solaris	UltraSparcII, UltraSparcIII	Sun Solaris 8, Sun Solaris 9	IBM DB2 UDB 8.2, IBM DB2 for z/Os v8, Oracle 9iR2, Oracle 10g
MS Windows	Intel x86 (IA-32)	Microsoft Windows 2000 & 2003	IBM DB2 UDB 8.2, Oracle 9iR2, Oracle 10g, MS SQL Server 2000
HP-UX	Intel Itanium 2 (IA-64)	HP-UX 11i IPF	IBM DB2 UDB 8.2, IBM DB2 for z/OS v8, Oracle 9iR2, Oracle 10g
zLinux 64 bit	zSeries	SUSE Linux Enterprise Server 9	IBM DB2 8 for z/OS

*Relationship Resolution supports a wide variety of operating systems and databases.*

### Configurable Data Quality Management

Relationship Resolution includes a suite of data quality management configuration options ranging from standardized number formatting, to date range rules, to domain testing and transaction reasonability.

### Multiple Views Possible with Full-Attribution Data Model

Relationship Resolution supports EVERY version of the truth about individual identities rather than the conventional single view. This is possible because all records are retained separately in Relationship Resolution, allowing it to support multiple views of an individual.

Most systems retain only the “best” or most recent name, address, or account information. This practice results in serious data survivorship issues. Valuable customer history

may be lost or overwritten. To solve this problem, Relationship Resolution supports full data attribution, which means that every name, address, identifying number, etc. is retained with a pure reference to each data source. Full attribution substantially enhances resolution accuracy and enables Relationship Resolution to be completely reconcilable to source systems. Of similar significance, full attribution eliminates the need for the repository to be completely refreshed from time to time, a serious yet common limitation of other repositories.

By maintaining the full attribution of each data element, “the pedigree” the system is able to conjoin or disjoin identities automatically as new information enters the system. The system also maintains an immutable audit trail on data elements enabling analysts to

trace each piece of data back to the source system from which it came.

### Sequence Neutrality

Full attribution also allows the system to become sequence neutral, i.e. it does not matter in which order information arrives; the end result is always the same. If the system determines two people are one person and later receives data that contradicts this assumption, Relationship Resolution will go back and make the necessary adjustments and create two individual identities based on the new data.

### Highly Scalable

Relationship Resolution’s architecture has been built from the ground-up to support parallelism. Data quality and entity resolution processes are configured as pipelines. Multiple pipelines can be operated on one or multiple systems. Performance is dependent

of the underlying system I/O Throughput. This proven architecture has been able to support literally thousands of data sources and in excess of 100,000,000 data source records.

### **Configurable Query Tools**

Relationship Resolution allows searches through its cleansed pipeline search technology. Cleansed pipeline search allows for the same algorithms that are used during entity resolution to be employed when searching, providing the best results to search requests. The output of these searches is fully configurable, so sensitive information about identities can be automatically removed from search responses. Queries may be performed over a number of protocols, including files, queues, or SOAP-based Web Services.

Thus an investigator might suspect someone of potential fraud and set a query (in effect, an alert – for which there are various delivery facilities) to provide an alert if and when that person does anything suspicious.

### **EAS Visualizer**

The Entity Analytic Solutions Visualizer is a robust, cross-platform tool that includes extensive search and

report features designed to provide analysts with a comprehensive graphical representation of the information available within an Entity Analytic Solutions database. In addition, it provides the capability for end users to import Universal Message Format (UMF) data into the database via Web Services to increase speed of deployability.

### **EAS Console**

The EAS Console provides a graphical interface that allows easy interaction with Relationship Resolution. It makes configuring and monitoring the system fast and simple.

### **Degrees of Separation**

This optional feature of Relationship Resolution provides the user with the ability to extend the recognition of undeclared affinity groups and networks of identities across customers, employees, suppliers, other involved people and so forth, by evaluating relationships (the sensitivity is user-definable) well beyond a single degree and up to thirty (30) degrees of separation.

### **For more information**

To learn more about IBM Entity Analytic Solutions products, including Relationship Resolution, please visit: [ibm.com/db2/eas](http://ibm.com/db2/eas)



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