IBM i2 National Security and Defense Intelligence

Introduction
The defense and national security environment has changed dramatically in recent years. While the government agencies involved in defense and in national security remain the key national lines of defense, the threats that these agencies face are now more sophisticated. Enemy actors are utilizing up-to-the-minute technologies, capable of operating across multiple jurisdictions and theaters, experts at obfuscating purpose and intent and practiced in using high-quality techniques to achieve their aims. And while the threats continue to evolve and grow, national security and defense organizations face shrinking budgets and tighter resources.

One of the key commodities agencies have to combat these threats is information; however, today, the information required to counter these threats has become vast, is widely dispersed, and can be almost impossible to piece together and effectively exploit.

Because those bent on undermining a nation’s defense have become more sophisticated, to prevent those activities, agencies must keep pace with ever more sophisticated attacks and to help them do this, access to accurate, up-to-date, and comprehensive information is vital. Additionally, contingency operations demand the ability to operate remote from HQ facilities in austere environments with little or no connectivity.
Intelligence analysis solutions from IBM help agencies gather dispersed intelligence data from internal and external sources, securely manage that data and apply powerful analytical tools to help identify, uncover, disrupt, deter, or prosecute those attempting to attack public safety.

With so much data to process, it's possible, and not unusual, for all agencies to be data rich and information poor – particularly so in Defense and National Security, where data sources can be both disparate and large. Having access to a wealth of data is important, but if extracting insights from that data is difficult, it does little to help solve or understand a particular problem. In both defense and National Security, being data rich, but having no streamlined way of exploiting the data, with no way to define and test multiple hypotheses is a burden that carries consequential risk.

With IBM® i2® National Security and Defense Intelligence, agencies will be armed with knowledge tools that have the power to analyze large quantities of data, provide new insights and reveal connections previously unknown. i2 National Security and Defense Intelligence:

- Provides a rich visual analysis environment, supported by an optimized analysis repository, which presents data through a consistent user experience.
- Accelerates the creation and representation, understanding and dissemination of network, temporal, statistical and geospatial analysis in that visual environment.
- Uses exact and fuzzy searching techniques to reveal information connections.
- Provides access to previous analyses for building upon key information to ensure comprehensive and efficient intelligence product production.
- Provides data acquisition that is designed to fit the way you want to work:
  - Search and retrieve at point of need – Data on Demand.
  - Ingest mapped and processed data through Extract Transform Load (ETL)
  - Ad-hoc data ingestion that fits the user workflow
- Enables disconnected working to support:
  - Field operators in gathering, searching and discovering intelligence through a thin client when connectivity is available
  - Analysts to load relevant data sets and deploy on contingency operations with the intelligence they need to support the mission and where data communication is infrequent or not possible
- Helps users compartmentalize data thus segmenting data by operation or case.
- Provides security classification based on user's clearance level, role and group membership to define information access at a granular level.
- Allows users to implement data management policies that match current organizational policies and define what users are allowed to do with system data once they have access to it.
- Is designed to deploy without requiring changes to current infrastructure.
- Integrates with additional IBM solutions to match requirements for additional capabilities.

Who should read this white paper
This document is intended for those requiring an enterprise level intelligence analysis solution designed to support an organization's intelligence operations from HQ out to individual field operatives.
**i2 National Security and Defense Intelligence options**

i2 National Security and Defense Intelligence is available in two options which have been assembled to best suit the users’ operations.

- i2 National Security and Defense Intelligence Standard
  - For Analysts engaged in the generation of intelligence products for J2, J3, and J5 decision makers
- i2 National Security and Defense Intelligence Field
  - For support of forward-deployed field operators and collection teams who require much lighter usage to support their duties

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### Benefits of i2 National Security and Defense Intelligence

**Holistic View**

Gain a holistic view of defense intelligence activities. Remove barriers to information access and sharing and enable the entire organization to focus solely on its mission of predicting, preventing and defeating the threat in a rapidly changing environment.

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### Key capabilities

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**Force multiplier**

Provide the organization with the force multiplier of advanced analytics to help close the operational intelligence gaps and ensure you are best placed to fight the mission with minimum hazard.

**Modular design**

Modular design allows i2 National Security and Defense Intelligence to integrate with any part of the organization’s information structure bridging the difficulties of interoperability.

**Flexible approach**

i2 National Security and Defense Intelligence provides the freedom to roll out functionality based on the most prevailing business needs first or to complement existing capabilities.

**Proven capabilities**

Powered by the IBM i2 Intelligent Analysis Platform – the i2 National Security and Defense Intelligence solution inherits a tried and tested set of products and provides a framework for non-disruptive integration of existing i2 and other IBM products – delivering additional benefits from existing investment.

**Enhance benefits from additional IBM products and solutions**

i2 National Security and Defense Intelligence can integrate with IBM products to create additional business value:

- IBM Content Analytics can be used to connect i2 National Security and Defense Intelligence to unstructured data inputs that users have gathered to uncover deeper, relevant insights from e-mail, unstructured reports, and social networks.
- IBM SPSS can be used to inform forward-thinking mission planning with advanced analysis for optimizing daily operations and resource allocation.
- IBM G2 can be used to help resolve identities of players in the mission space from layers of complex information.
- IBM Case Manager may be used to provide case and content management as well as case-ready reporting.
Key features of i2 National Security and Defense Intelligence

Role-based design
i2 National Security and Defense Intelligence has been designed to deliver capabilities specific to the user, whether they be analysts deployed at HQ or the field who require the full complement of knowledge tools or collection teams who require less intensive knowledge tools to support their duties.

Integrating intelligence into your infrastructure
At the core of i2 National Security and Defense Intelligence is the i2 Intelligence Analysis Platform. This is a relatively new addition to the i2 Intelligence Analysis portfolio and represents not just a technical refresh but a new breed of application built to shape around your mission not limit it.

All operations today have budgets and unfortunately, many agencies find themselves facing budgets that are static or even declining. IBM i2 recognizes this and the i2 Intelligence Analysis Platform is designed to supply vital information to key personnel without requiring changes to current infrastructure. This is achieved by:

- Flexible data acquisition and/or storage routes which can leave existing data in place
- Supplying staff available anywhere access through a web-based client.
- Compartmentalizing data thus segmenting data by operation or case and matching the organization structure.
- Re-using security classifications based on the user's clearance level, role and group membership to define information access at a granular level.
• Implementing data management policies that match current organizational policies and define what users are allowed to do with system data once they have access to it.

**Acquiring, managing and manipulating data efficiently**

A significant part of any operation is acquiring and harnessing information which, with the right staff and knowledge tools, can be applied to the mission as a force multiplier.

While having access to large quantities of data from disparate sources is valuable, it is only useful and effective if the intelligence repository (for locally stored intelligence) or data index (for federated search of data in place) can be easily and efficiently accessed, interrogated and where necessary updated.

A comprehensive, user-friendly repository filled with up-to-date information from disparate data sources that can be shared across bureaucratic and geographic boundaries is an invaluable asset to agencies involved in maintaining peace and security.

i2 National Security and Defense Intelligence brings together both the i2 Intelligence Analysis Platform and IBM i2 Analyst’s Notebook Premium to provide a wide range of data management capabilities including:

• A user-friendly data-entry environment and wizard-style data importers
• Tools that collate that wide variety of dispersed data into a single source
• Storing data in a scalable analysis repository that allows application to any size agency
• A structure that facilitates data sharing with neighboring jurisdictions and agencies
• Knowledge capture features that track user’s notes about how the data evolves

The philosophy behind the i2 National Security and Defense Intelligence data access is to recognize there is no one size fits all approach to data acquisition and ingestion. Instead two clear work streams are provided:
• Search and retrieve at point of need, which we call data on demand.
  – Data is up-to-date
  – User will be working with the latest information
  – Particularly useful for frequently updated data source
  – No ETL processing overhead
  – Data Governance may not allow copying the data to another location
• Ingest mapped and processed data through Extract Transform Load (ETL)
  – All or part of the content of the supplying data source
  – Data transformed into linked, real world entities and stored within the Intelligence Analysis Repository
  – Search Mechanisms in the Intelligence Analysis Platform and Analyst's Notebook Premium “just work”
  – User control for one off data load versus scheduled

Having a vast information store at its fingertips can dramatically improve an agency's effectiveness and efficiency. But only if that information is intelligently collated, accessible and securely held. i2 National Security and Defense Intelligence helps agencies aggregate data, link multiple identities of the same person and update and track the evolution of information.

Robust and highly configurable security model
i2 National Security and Defense Intelligence comes pre-built with a robust and highly flexible access control model that caters for all data authorization needs. This model is accredited to applicable security standards such as DCID 6-3 PL-3 and provides a configurable authentication and user management mechanism using your organization's existing directory services.

The security model provides fine-grained access control for data, the flexibility of which stems from its generic, three-dimensional model:

• Security Classification – based on the clearance level of the user
  – Each user is assigned one or more security classification groups which can be defined according to an organization's needs. For example the groups: Unclassified, Confidential, Secret and Top Secret. These can then be used to define which data users are allowed to see
• Role-based security – based on the user's roles or groups
  – Users can be assigned to one or more roles. These roles could reflect users' job functions, department or team, and can be used to not only define what data users have access to but what they are allowed to do within the system
• Compartment-based security – based on the user's need to know
  – Compartments provide for partitioning according to a separate criterion from role. They allow data to be segmented by for example operation or case. While a user may have an appropriate general security classification, they may still be prevented from seeing data because they do not have access to the correct compartment
  – With information sharing so important the platform security also makes it possible to provide data "sign posting" where specific groups or users can be allowed to see that an item exists (but not any data within it), but with information on who to contact to request more information

Discovery
There are a number of powerful search tools that will quickly locate and identify information of interest depending on the particular part of a workflow the user is engaged in or the particular task they are undertaking.

A thin client Intelligence Portal provides a common, collaborative environment for front-line, back-office, and managerial teams to access key information held in structured, unstructured, and historical intelligence products.

From the intelligence portal a user can:

• Search previously created and stored charts that are rich in intelligence, compare versions and view small and large chart thumbnails.
• Create, retrieve, update entities, links and properties according to the schema.
• Query multiple repositories either:
  – Within the i2 National Security and Defense Intelligence eco-system
  – Or "data in place" using federated search for example accessing existing IBM i2 iBase databases
• Query by full text or property-based searches.
• Send search results of entities, links and properties into sets or i2 Analyst’s Notebook Premium for extended analysis and visualization with a choice of mapping schemas.
• Create alert criteria and be notified of alerts to changes in the underlying data from other collaborating systems or people.
• Invoke and access other analytic capabilities.

The search tools will also very depending on if the user is an analyst, an operator involved in data collection and whether they are working in the field or a fixed or mobile base.

**Analysis**

i2 National Security and Defense Intelligence is built on technologies that have successful track-records in deployments around the world in both national security and defense intelligence organizations.
Modern operations, whether they come under peace-keeping, counter-intelligence or force protection require the application of specific analysis techniques to draw out the correct inferences in the mass of data to ensure the best outcomes.

i2 National Security and Defense Intelligence includes the capability to support

These operations can be over large geographical areas with varied populations with insurgents living and operating amongst them. For intelligence to be effective and underpin accurate situational awareness field analysts and the forward operating base must be able to pass vast amounts of up-to-date information to Battalion Headquarters to prevent intelligence summaries losing their value through time delays.

By using i2 Analyst's Notebook Premium, which is provided with i2 National Security and Defense Intelligence, organizations have been able to:

- Build a clear picture of the situation from the ground up and add to it with information going directly into the HQ
- Minimize duplication of effort and maximize corroboration
- Cope with the complexity of data in large quantities
- Facilitate rapid fusion of intelligence

The outcome from being able to build an accurate and up-to-date picture situational awareness allows the organization to:

- Disrupt Insurgent activity
- Gain a deeper perspective on the understanding of human terrain
- Visualize the cause and effect of exploiting Insurgency activities
- Improve the safety of the local population and personnel in the field

**Work in a disconnected environment**
Contingency operations often come with a requirement to deploy at short-notice. This will mean the analyst will need to ‘lock and load’ with an intelligence data set pertinent to the operation and deploy.
Analysis is supported by a number of techniques including:

- Visualization and analysis of complex networks
- Target discovery with social network analysis
- Visual filters, histograms and heat maps
- Integrated mapping for geographical analysis

i2 National Security and Defense Intelligence gives analysts a ‘load and go’ capability which will support them while working independently and without data connection, prior to Forward Operating Base (FOB) arrival. In this time, the analyst will use the intelligence on the laptop to aid the operational goals and will also collect new intelligence that will be of use to the broader operation.

Significant amounts of data can be loaded for field work and a wide range of query parameters can be used to ensure the analyst takes exactly the right information with them.
When arriving at a Forward Operating Base the analyst can upload their new or updated work into the main repository from where it can be accessed by HQ-based colleagues. In addition the analyst may choose to ‘load and go’ with a refreshed information set updated by colleagues involved in the mission but located elsewhere.
How does i2 National Security and Defense Intelligence integrate with other IBM i2 products?

i2 National Security and Defense Intelligence can be integrated with complimentary IBM solutions, including:

- IBM Content Analytics can be used to connect i2 National Security and Defense Intelligence to unstructured data inputs that users have gathered to uncover deeper, relevant insights from e-mail, unstructured reports, and social networks.
- IBM SPSS can be used to inform forward-thinking mission planning with advanced analysis for optimizing daily operations and resource allocation.
- IBM G2 can be used to help resolve identities of players in the mission space from layers of complex information.

Can I upgrade from other IBM i2 products?

An upgrade from i2 Analyst's Notebook Premium to i2 National Security and Defense Intelligence is available.
Implementation and Education
IBM offers standard training courses for the products included in i2 National Security and Defense Intelligence both for analysts and administrators. These courses are designed to help your staff get immediate time-saving and analytical benefits from your new system.

Consulting options are also available to support your deployment

For more information
To learn more about IBM i2 National Security and Defense Intelligence, please contact your IBM representative, or visit: ibm.com/i2software

To learn more about all of the IBM Smarter Cities solutions, visit: ibm.com/smartercities