BlackBerry Intelligent Security

Product Overview

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What is BlackBerry Intelligent Security?

BlackBerry Intelligent Security is a cloud service that can dynamically adapt the security requirements and behavior of your users' devices and work apps to their real-world contexts. For example, if a BlackBerry Dynamics app reports a location that is not typical for the user, BlackBerry Intelligent Security can dynamically limit the user's access to work apps, disable device features such as the camera, and enforce stricter authentication requirements. Likewise, if a BlackBerry Dynamics app reports a location that is typical for the user, BlackBerry Intelligent Security can apply device behaviors that make it easier to access work apps and resources.

BlackBerry Intelligent Security adds a layer of adaptive security to your organization's existing UEM domain without introducing an additional software footprint. It is a cloud service that collects data from existing BlackBerry solutions, including BlackBerry Enterprise Identity and BlackBerry Dynamics apps.

The BlackBerry Intelligent Security services gather and process behavioral data, app events, and location data to calculate risk levels for each user in real-time:

- Behavioral risk: An assessment of risk (low, medium, or high) based on the user's typical activities.
- Continuous authentication risk: An assessment of risk based on a model of the user's typical usage of a BlackBerry Dynamics app. If the app reports behaviors or events that do not fit the user's model, BlackBerry Intelligent Security triggers an authentication prompt and the user must prove their identity if they want to continue using the app. Continuous authentication is currently supported only for BlackBerry Work.
- Geozone risk: An assessment of risk (low, medium, or high) based on the user's proximity to learned locations. You can also define custom geozones with static risk levels (for example, a specific office location with a low risk level).

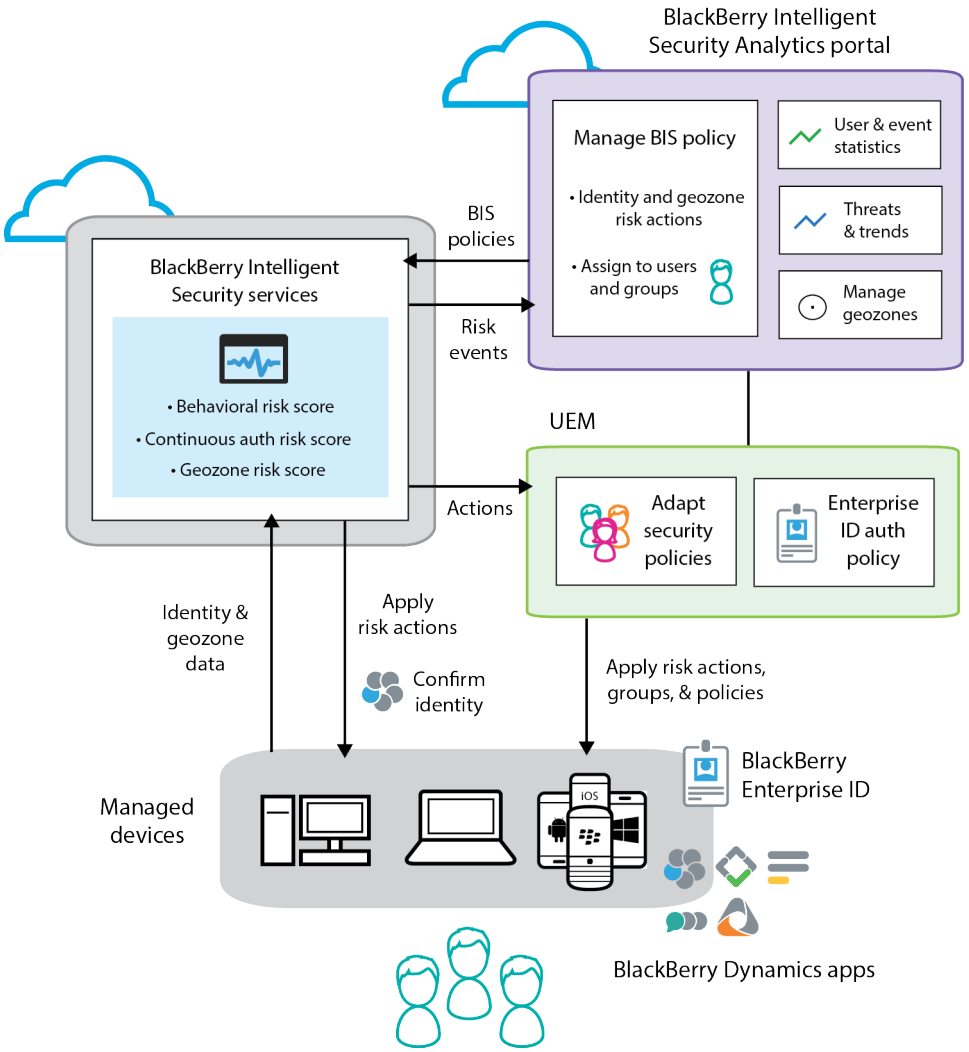
You can choose which risk engines you want BlackBerry Intelligent Security to use. For the different types and levels of risk, you can configure actions that you want BlackBerry Intelligent Security to execute when a user meets that risk criteria, including:

- Assigning the user to a local UEM group with policies, profiles, apps, and permissions appropriate for that risk level
- Temporarily blocking all BlackBerry Dynamics apps
- Temporarily blocking the specific BlackBerry Dynamics app that initiated the risk assessment

After some initial configuration, BlackBerry Intelligent Security continuously applies adaptive and intelligent security standards to each user's device and work apps based purely on the user's behavior, device usage, and physical location, with no action required by users or administrators.

BlackBerry Intelligent Security also adds new functionality to BlackBerry Enterprise Identity authentication policies. You can now incorporate a user's behavioral risk level, geozone risk level, or a defined geozone into the factors that determine the authentication type required for work apps and services. For example, if a user's behavioral risk level is high, you can require the user to enter both a password and use BlackBerry 2FA to access work apps.

Architecture: BlackBerry Intelligent Security



Component	Description
Managed devices	BlackBerry Enterprise Identity and BlackBerry Dynamics apps that use the BlackBerry Analytics SDK send usage data, events, and location data to the BlackBerry Intelligent Security services. The BlackBerry Dynamics apps released by BlackBerry (BlackBerry Work, BlackBerry Access, and so on) include the BlackBerry Analytics SDK.

Component	Description
BlackBerry Intelligent Security services	The BlackBerry Intelligent Security services receive usage data, events, and geolocation data from BlackBerry Enterprise Identity and BlackBerry Dynamics apps. The services process this data and use machine learning to train and develop a risk model for each user. The services use this risk model to analyze new data that is received and to generate various risk scores for the user in real time, including a behavioral risk score, a continuous authentication risk score, and a geozone risk score. The services communicate the user's current risk scores and the corresponding risk actions that you configure to BlackBerry Dynamics apps, the BlackBerry Intelligent Security Analytics Portal, and BlackBerry UEM. BlackBerry Work supports continuous authentication. If the BlackBerry Intelligent Security services receive behavioral data or app events from BlackBerry Work that do not fit the user's usage model, BlackBerry Intelligent Security triggers an authentication prompt. The user must successfully authenticate if they want to continue to use BlackBerry Work.
BlackBerry Intelligent Security Analytics Portal	You use the web-based BlackBerry Intelligent Security Analytics Portal to manage the service, including: • Configuring and customizing the risk engines • Defining geozones to enforce security standards for specific locations • Creating and assigning BlackBerry Intelligent Security policies that apply adaptive actions to users' devices based on each user's level of risk • Viewing user and event statistics • Identifying trends and potential security threats The portal communicates with the BlackBerry Intelligent Security services and UEM to apply policies to devices.
BlackBerry UEM or BlackBerry UEM Cloud	You use the UEM management console to create and configure local user groups that define security standards and device behaviors for the different risk levels and defined geozones. When you create a policy in the portal, you associate each group with one or more of the behavioral risk levels, geozone risk levels, or defined geozones. The BlackBerry Intelligent Security services communicate with UEM and direct it to apply risk actions (group assignments, temporary blocks of BlackBerry Dynamics apps) to users' devices.
BlackBerry Enterprise Identity	You can configure BlackBerry Enterprise Identity authentication policies that can change a user’s authentication requirements in different risk scenarios. You can factor the user’s behavioral risk level, geozone risk level, or a defined geozone into the risk factors in an authentication policy. If the user meets a certain risk level, the policy adapts the user’s authentication requirements accordingly.

How does BlackBerry Intelligent Security determine a user's behavioral risk level?

The BlackBerry Intelligent Security services calculate a user's behavioral risk level by processing the following contextual and behavioral data from BlackBerry Enterprise Identity and BlackBerry Dynamics apps:

- Geolocation (latitude/longitude)
- Unique user identifiers
- WAN IP
- BlackBerry Dynamics app identifiers
- Browser fingerprint (if using BlackBerry Enterprise Identity)

The majority of this data is provided by BlackBerry Dynamics apps.

The BlackBerry Intelligent Security services process this data and use machine learning to build a risk data model that characterizes a user's typical behavior. The data model is dynamic and is based on the user's last 30 days of activity. It can take some time to create a user's initial data model (for example, several days) because the services require a sufficient amount of user activity to establish a reliable model. The services retain user data for 30 days only (you can change the data retention period).

The BlackBerry Intelligent Security services assess incoming data based on the existing model and determine whether current data is consistent with the user's regular pattern of behavior and the behavior of similar device users in the organization (for example, for users in the same location). This assessment results in a risk level and corresponding risk actions for each user that are sent to UEM to execute.

The risk assessment can identify key security concerns, such as:

- Whether the user's current location is consistent with past behavior
- Whether the user's current location is possible based on the user's last reported location
- Whether and how often the device has accessed the current network
- Whether the user's app activity is consistent with past behavior

The services determine a user's risk level in real time as data is received. Geolocation data is given the most weight in the calculation of the risk level, followed by unique user identifier data, and then WAN IP and app identifier at equal weight. Browser fingerprint data is used as the app identifier for browser apps.

You can also enable a feature that allows users to reduce their behavioral risk level to low by completing a BlackBerry 2FA authentication prompt. This can help users avoid more restrictive group assignments when they engage in behaviors that do not fit their existing risk model (for example, the first time a user travels to a new office location or engages in different activities for a new role).

How does BlackBerry Intelligent Security determine a user's geozone risk level?

The BlackBerry Intelligent Security services process event and location data from apps to learn about the locations (geozones) that are typical for each user at different times. You can configure a BlackBerry Intelligent Security policy to execute risk actions based on the user's proximity to a learned geozone.

For example, if a user is in the range of a learned geozone at a given day and time, their geozone risk level is low and the assigned policy executes the actions for the low risk level. Likewise, if the user is out of the range of a learned geozone, their geozone risk level is medium or high (depending on how far out of range the user is) and the assigned policy executes the corresponding actions. You can customize the range for each geozone risk level.

The services can learn new geozones for a user over time. The first time a user occupies a new location that is outside of their typical geozones, their behavioral and geozone risk levels may be higher than usual, but if the user is reported at that location with greater frequency, it can become a new learned geozone that results in a lower risk level.

You can use the BlackBerry Intelligent Security Analytics Portal to define specific geozones, each with a set risk level (high, medium, or low); you configure default risk actions for each risk level in a BlackBerry Intelligent Security policy. For example, you can define a geozone for a specific office location with a low risk level. If a user is in that geozone, their risk level will be low regardless of how far it is from their typical geozone. Note that the overall assessment of the user's geozone risk level is also impacted by the user's current behavioral risk assessment.

The BlackBerry Intelligent Security services retain user data for 30 days only (you can change the data retention period).

How does continuous authentication work?

As a user uses the BlackBerry Work app, the app sends behavioral data and events to the BlackBerry Intelligent Security services, including the user's typical physical interactions with the app (scrolling, swiping, and so on) and frequently used device and app features (copy, screen shot, reply all, and so on).

The services use this information to train and develop a reliable usage model for the user based on established patterns of activity. The model is dynamic and based on the user's last 30 days of activity (you can change the data retention period). It can take some time to create a user's initial model as the services collect sufficient data.

If BlackBerry Work reports behavior or app events that do not fit a user's established model, BlackBerry Intelligent Security immediately triggers a reauthentication prompt in the app. The user must successfully authenticate and prove their identity if they want to continue using BlackBerry Work or any other BlackBerry Dynamics app on the device. If the user authenticates successfully, their risk level is reduced.

This reauthentication in response to anomalous use is a direct and immediate way to protect users from malicious attempts at accessing valuable work data.

Configuring and using BlackBerry Intelligent Security

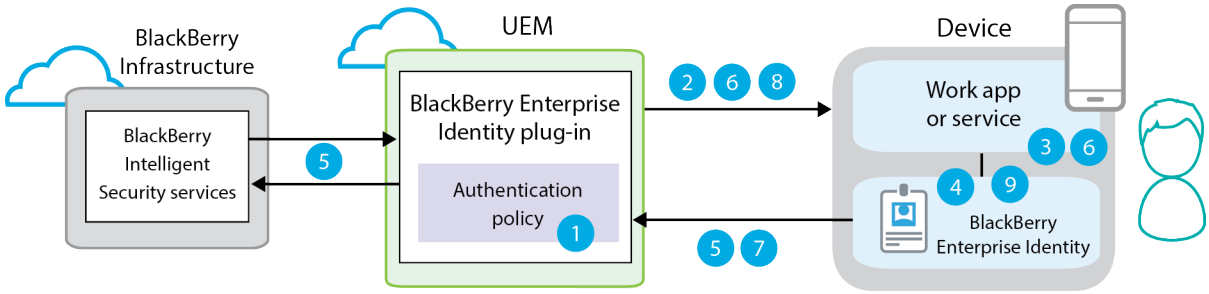
You complete the following steps to enable and use BlackBerry Intelligent Security in your organization's BlackBerry UEM or BlackBerry UEM Cloud domain. For software requirements and complete instructions for each step, see the BlackBerry Intelligent Security Administration Guide.

1. Purchase BlackBerry Intelligent Security licenses for your organization's users. Assign the BlackBerry Intelligent Security entitlement to users.
2. Enable BlackBerry Intelligent Security in an existing or new UEM domain.
3. Assign a BlackBerry Intelligent Security administrator role to the users that will manage the service.
4. Optionally, customize the BlackBerry Intelligent Security risk engines and how long the service retains data.
5. Create local UEM user groups. Each group will be used for one or more of the behavioral risk levels, geozone risk levels, or defined geozones. Configure each group with a custom combination of IT policies, profiles, app assignments, and permissions that meet your organization's standards for each risk level or geozone.
6. Optionally, define geozones to set security standards for specific locations.
7. Create a BlackBerry Intelligent Security policy. The policy defines which risk engines you want BlackBerry Intelligent Security to use to determine user risk levels, and the actions the service should take for different types and levels of risk. How you configure the policy determines how BlackBerry Intelligent Security enforces adaptive security standards that are appropriate for each user's current activity and context.
8. Assign the BlackBerry Intelligent Security policy to users and groups.
9. Create and configure a BlackBerry Enterprise Identity authentication policy. When you add one or more risk scenarios that determine the authentication requirements for users, you can specify a behavioral risk level, a geozone risk level, or a defined geozone as a risk factor.
10. Assign the BlackBerry Enterprise Identity authentication policy to user groups.
11. By default, BlackBerry Intelligent Security runs in passive mode, where it collects data and builds risk models and learned locations for individual users, but does not execute risk actions. After enough data has been collected and used to create reliable risk models and learned locations, you can enable active mode.

BlackBerry Dynamics apps send app events and location data to the BlackBerry Intelligent Security services at regular intervals. BlackBerry Enterprise Identity sends data to the services at runtime. The services processes this data to generate identity and geozone risk scores in real-time for each user. Based on your configuration of the policy, BlackBerry Intelligent Security executes management actions that correspond to a user's risk level (for example, assigning the user to a UEM group or temporarily blocking BlackBerry Dynamics apps).

Based on your configuration of the BlackBerry Enterprise Identity authentication policy, a user's current behavioral risk level, geozone risk level, or a defined geozone can also determine how the user logs in to services and work apps (for example, no authentication, single sign-on, password, BlackBerry 2FA, or a combination of methods).

Workflow: Integrating BlackBerry Intelligent Security with BlackBerry Enterprise Identity



This workflow describes how BlackBerry Intelligent Security can be integrated with BlackBerry Enterprise Identity to dynamically adapt a user's authentication requirements based on their current level of risk.

1. The administrator creates a BlackBerry Intelligent Security policy in the BlackBerry Intelligent Security Analytics Portal and a BlackBerry Enterprise Identity authentication policy in the UEM management console. The authentication policy specifies that if the user's behavioral risk level is high, the minimum authentication that is required is both a password and BlackBerry 2FA.
2. The administrator assigns the BlackBerry Intelligent Security policy and the BlackBerry Enterprise Identity authentication policy to a user account. The policies are applied to the user's device.
3. The user tries to log in to a work app or service on the device.
4. The app or service invokes BlackBerry Enterprise Identity for authentication.
5. BlackBerry Enterprise Identity determines the authentication policy that is assigned to the user and retrieves the user's current behavioral risk level from BlackBerry Intelligent Security.
6. If the user's behavioral risk level is high, the user is prompted for a password and BlackBerry 2FA authentication. The user enters their password and completes 2FA authentication.
7. BlackBerry Enterprise Identity sends the user credentials to UEM.
8. The BlackBerry Enterprise Identity plug-in authenticates the user and returns the user identity.
9. BlackBerry Enterprise Identity returns the successful authentication result and the user is logged in to the app or service.

Use cases

The following use cases demonstrate how you can use BlackBerry Intelligent Security in everyday situations. In the cases that follow, an administrator has configured and assigned a BlackBerry Intelligent Security policy and a BlackBerry Enterprise Identity authentication policy.

Adapting device behavior in a high-risk scenario

Jane Smith arrives at the airport for a business trip. She uses her work device, an iPhone, to access the airport's free Wi-Fi network.

The BlackBerry Dynamics apps on Jane's iPhone send data to the BlackBerry Intelligent Security services indicating that she is on a less secure network and that she is in a location that is far away from her typical learned location for that day and time. The services calculate a high behavioral risk level and a high geozone risk level and communicate these assessments to Jane's work apps, the BlackBerry Intelligent Security Analytics Portal, and UEM. The BlackBerry Intelligent Security policy that is applied to Jane's device takes effect, assigning Jane to a group with more restrictive device policies and profiles to ensure a higher level of security while Jane is at the airport.

When the new group configuration is applied to Jane's iPhone, she notices the following changes:

- When she tries to log in to work apps and services, she must provide both a UEM password and complete BlackBerry 2FA authentication.
- The iPhone camera is temporarily disabled.
- Bluetooth functionality is temporarily disabled.
- Her access to the company's intranet websites is currently restricted.
- Data synchronization to work apps, such as BlackBerry Work, occurs less frequently.

The new group assignment with these high-security device behaviors remains in place until Jane's behavioral and geozone risk level is recalculated and reduced. When she has a lower risk level, BlackBerry Intelligent Security will reassign her to a group that corresponds to the new risk level.

Adapting device behavior in a low-risk scenario

Bob Jones arrives at his company's main office to attend a lengthy board meeting. He checks his Android phone during the meeting to make sure that he doesn't miss any important emails. His phone is using the trusted, secure work network.

The BlackBerry Dynamics apps on Bob's Android device send data to the BlackBerry Intelligent Security services indicating that he is on a secure network and in a physical location that is typical for the current day and time. The services calculate a low behavioral risk level and geozone risk level and communicate these assessments to Bob's work apps, the BlackBerry Intelligent Security Analytics Portal, and UEM. The BlackBerry Intelligent Security policy that is applied to Bob's device takes effect and assigns Bob to a group with less restrictive device policies and profiles to ensure easy access to work resources in a highly secure location.

When the new group configuration is applied to Bob's phone, he notices the following changes:

- He can use fingerprint authentication to access work apps.
- He is prompted to authenticate with work apps less frequently.
- When he browses to intranet websites, he is automatically authenticated and is not prompted for his username and password.
- He can access privileged apps that he is not able to log in to when he is out of the office.

When Bob leaves the office later that evening to go home, his device sends data to BlackBerry Intelligent Security that results in a new behavioral risk level and a new geozone risk level, with corresponding assignments to groups with profiles and permissions that are appropriate for that risk level.

Adapting device behavior in a defined geozone

Evan is in Vancouver on vacation. He has brought along his work device, an Android phone, so that he can keep up on his emails. Because he is currently located outside of the range of his typical learned geozones, the BlackBerry Intelligent Security services assess his geozone risk level to be high. As a result, the BlackBerry Intelligent Security policy that is applied to Evan's device takes effect and assigns Evan to a group with more restrictive device policies and profiles. His access to work apps and intranet sites is very limited and he has to sign in to work apps with both a password and BlackBerry 2FA authentication.

Evan decides to spend one day of his vacation visiting his company's Vancouver office so that he can meet a few coworkers and attend an important meeting. A BlackBerry Intelligent Security administrator has created a defined geozone for the Vancouver office and configured it with a static low risk level.

While Evan is visiting the office, the BlackBerry Intelligent Security policy executes the group assignment that Evan's administrator configured for this low-risk office location. Evan has unrestricted access to his work apps and intranet sites, and he can use single sign-on authentication for his work apps.

Confirming a user's identity

Michael is the main point of contact for an important project that his team is working on. He regularly fields questions and requests from key stakeholders within the company.

As Michael travels between offices to work with different team members and meet with project contacts, he uses BlackBerry Work to keep up with his emails. Two weeks ago, Michael's company implemented BlackBerry Intelligent Security. His administrator enabled the continuous authentication feature.

As Michael has been using BlackBerry Work, BlackBerry Intelligent Security has been collecting data about how he uses the app, including the physical gestures and the app features that he typically uses. BlackBerry Intelligent Security has used this information to train and develop a model that characterizes how Michael uses BlackBerry Work on a daily basis.

Michael is currently out of the office attending a conference. While he is having a discussion with a prospective customer, he sets his unlocked Android device on a table. Malcolm, an employee from a competing company, steals Michael's device.

Malcolm quickly leaves the conference hall and opens BlackBerry Work on Michael's device. He forwards several confidential emails to his own email account. BlackBerry Intelligent Security recognizes this as abnormal behavior that does not fit Michael's usage model; Michael rarely forwards emails to other people. BlackBerry Intelligent Security immediately triggers a reauthentication request in BlackBerry Work. BlackBerry Work and all other BlackBerry Dynamics apps on Michael's device are blocked until the correct password or fingerprint is provided.

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Published in Canada