Cisco Platform Exchange Grid (pxGrid)

Overview

The age of information has created the need for even more information. This is especially true in today's IT infrastructure, where keeping a network and its connected devices secured and operating smoothly requires numerous IT tools and platforms, many of which create "silos" of information that aren't shared. These tools and platforms are effective within their specific domains, but the information is generally needed by other siloed platforms to help operate and secure the environment. The industry has historically addressed information sharing between platforms via specific, single-purpose APIs. But in today's IT infrastructures, the number of platforms to share among is too great for one-off, platform-specific APIs to address alone.

Cisco® Platform Exchange Grid (pxGrid) enables multivendor, cross-platform network system collaboration among parts of the IT infrastructure such as security monitoring and detection systems, network policy platforms, asset and configuration management, identity and access management platforms, and virtually any other IT operations platform. When business or operational needs arise, ecosystem partners can use pxGrid to share contextual information with Cisco platforms that use pxGrid as well as any ecosystem partner system that uses pxGrid.

Cisco pxGrid provides a unified framework that enables ecosystem partners to integrate to pxGrid once, then share context bidirectionally with many platforms without the need to adopt platform-specific APIs. pxGrid is fully secured and customizable, enabling partners to share only what they want to share and consume only context relevant to their platform. This level of customizability ensures scalability when integrating with one or multiple systems. Furthermore, pxGrid enables ecosystem partner platforms to execute network actions with the Cisco network infrastructure. This suite of context sharing and network control capabilities enables IT infrastructure providers to address more use cases, undertake their functions more effectively, and extend their reach into the network infrastructure.

Highlights and Components

The pxGrid framework is composed of:

- **pxGrid controller:** The controller orchestrates connections between platforms and authorizes what contextual information gets shared between those platforms. This control function is provided by Cisco Identity Services Engine (ISE).
- **pxGrid connection agent:** A Cisco-provided connection agent is integrated in the ecosystem partner platform. This agent enables the partner platform to communicate with the pxGrid controller and configure what information to share and with which partner platforms.

Key capabilities of pxGrid include:

- A single interface for multiple systems and all context. Connect to other pxGrid adoption platforms to share relevant contextual information such as real-time operation status, historical event information, operational telemetry, usage statistics, or any other information an IT platform has to share or needs to consume.
- Ability to control what context is shared and with which platforms – Because pxGrid is customizable, partners can "publish" only the specific contextual information they want to share and can control the partner platform that information gets shared with.
- Bidirectional context sharing – pxGrid enables platforms to both share or publish context as well as consume or "subscribe to" context from specific platforms. These features are orchestrated and secured by the pxGrid controller.
- Ability to share context data in native formats – Contextual information shared via pxGrid is done in each platform's native data format.
- Ability to connect to multiple platforms simultaneously – pxGrid enables platforms to publish only the context data relevant to partner platforms. Numerous context "topics" may be customized for a variety of partner platforms, yet always shared via the same reusable pxGrid framework. Furthermore, only sharing relevant data enables both publishing and subscribing platforms to scale their context sharing by eliminating excess, irrelevant data.
- Integration with Cisco platforms – pxGrid provides a unified method of publishing or subscribing to relevant context with Cisco platforms that utilize pxGrid for 3rd party integrations.
- Collaboration with Cisco network infrastructure and Cisco Open Network Environment (ONE) for network actions – pxGrid provides a conduit for ecosystem partner platforms to execute network actions within the Cisco network infrastructure on users and devices via Cisco ISE.

Common Use Cases

- Share context between multiple systems to decipher relevance of network events – Many IT operations systems provide only basic information associated with a security, performance, or other type of alarm (IP address, for example). This requires operators to look at multiple operational consoles to piece together information needed to understand the relevance of an alarm and determine if any action is required. pxGrid provides a framework for sharing relevant contextual information between operations platforms so it is readily accessible.
- Access user and device context from Cisco ISE – Ecosystem partner platform integration with ISE gives IT organizations a consistent method of making their IT platforms identity-, device-, and policy-aware. ISE can provide accurate, real-time user, endpoint device-type, security posture, and network access policy context to ecosystem partner platforms in many areas of networking. This awareness enables partners to address more use cases and undertake their functions more effectively.
- Share context for use in network access policy on Cisco ISE – Ecosystem partners can share context relevant to their user or device network access policy. ISE uses this context in conjunction with native ISE policies to make network access decisions, such as what network resources a user or device has access to.

Benefits

- The pxGrid agent only has to be integrated once to then be able to interface with many platforms simultaneously.
- Context shared can be customized based on relevance to specific use cases and platforms.
- Customizing what context is shared enables scalability.
- Integrated authorization and security ensures only appropriate context is shared with the right integration partners.
- pxGrid enables access to a growing ecosystem – Cisco and beyond.

Industry Standards

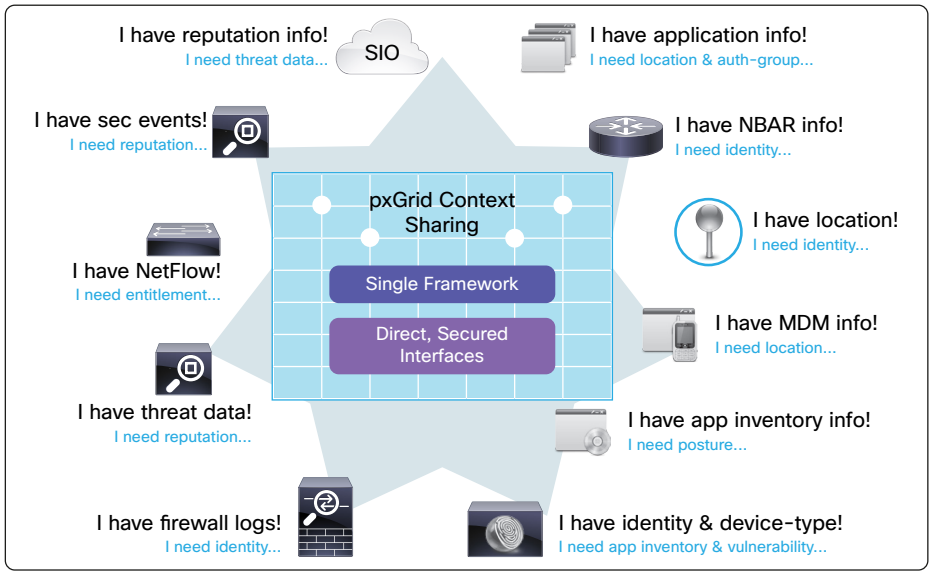
Cisco will work with relevant industry organizations to drive context-sharing standards applicable to pxGrid. Cisco is committed to open standards that facilitate platform-to-platform communications to enable more efficient and effective network and IT operations.

Availability

pxGrid is available today for select ecosystem partners. Integration between ISE and ecosystem partners is accomplished by either ISE sharing its real-time user/device and policy context with the partner, the partner sharing its context with ISE for use in network access policy, or both. In either case, ISE network response capabilities give partner platforms the ability to reach into the Cisco network infrastructure to execute network actions on users and devices – such as quarantine and blocking access – via pxGrid and collaboration with Cisco ONE.

Throughout 2014, additional Cisco platforms will adopt pxGrid, providing additional integration opportunities in the Cisco portfolio.

Figure 1. Platform Exchange Grid Framework



For More Information

Inquiries regarding joining the pxGrid ecosystem may be sent to pxGrid-integration@cisco.com.

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