Deployment Choices for ExtremeCloud™ IQ Site Engine

Supporting Cloud Connected and Local/On-Premises Modes

ExtremeCloud IQ - Site Engine extends the value of ExtremeCloud IQ cloud network management offering. It enables a cloud migration path for 3rd party and non-cloud native networking devices while enhancing ExtremeCloud IQ's management capabilities with additional features for Extreme Networks' Universal Hardware (switches and access points) as well as legacy devices. This allows business leaders to realize their network modernization goals by adopting a cloud-based operational model at their own pace without having to rip and replace their existing distributed infrastructure, and enabling it all at scale, thereby conveying the tenets of "The Infinite Enterprise". ExtremeCloud IQ - Site Engine provides end-to-end network management for both traditional and fabric enabled architectures, task automation, real-time analytics, service assurance, and orchestration. As well, it provides a centralized dashboard view of the entire network with visibility of all network devices without having to piece together multiple applications.

Figure 1 illustrates the specific role of ExtremeCloud IQ – Site Engine as a cloud enablement pathway within the ExtremeCloud IQ ecosystem. For additional information regarding Extreme IQ – Site Engine and its integrated applications (ExtremeAnalytics and ExtremeControl) please refer to the ExtremeCloud IQ – Site Engine Data Sheet.

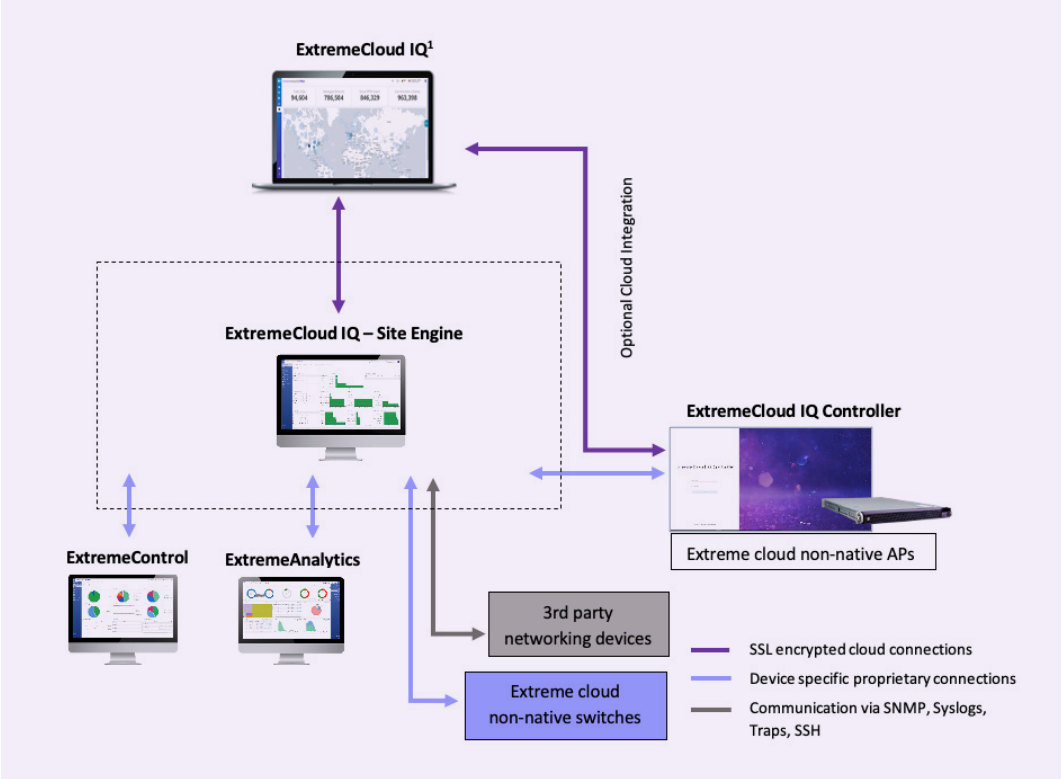

Figure 1: ExtremeCloud IQ – Site Engine – The Enablement Pathway to ExtremeCloud IQ and the Cloud

Deployment Choices

ExtremeCloud IQ – Site Engine offers flexible deployment options to address different customers and their specific organizational needs. It enables a pathway to the cloud via seamless integration with ExtremeCloud IQ thereby addressing the ever-growing trend towards public cloud deployments, as well as offering a local deployment option.

Most benefits are gained by using it together with ExtremeCloud IQ in an internet connected mode of operation to manage the network in the public cloud with Amazon Web Services (AWS), Google Cloud Platform (GCP), and Microsoft Azure. The internet connected mode can also provide flexible deployment models to address an organization's specific non-cloud native and multivendor devices. As well, multiple instances of localized ExtremeCloud IQ - Site Engines connected via the internet to a single instance of ExtremeCloud IQ

[1] For more information regarding the ExtremeCloud IQ deployment choices, refer to the Solution Brief

is supported to provide a “manager of managers” type of configuration whereby ExtremeCloud IQ can provide central visibility to the underlying local and potentially distributed instances of ExtremeCloud IQ – Site Engine.

Additionally, the ExtremeCloud IQ – Site Engine can also be deployed in a non-internet, locally connected, air gap mode suited for specific high-risk industries such as the government and military which require restricted access to public networks. This deployment model features physical isolation from unsecured networks like the internet and local area networks, while respecting client data sovereignty requirements. Breaching a network deployed in an air gap mode requires physical access to the network, thus eliminating the possibility of network infiltration through remote hacking. Networks operating in air gap mode can be deployed much quicker, and back-ups of client data hosted on the air gap network can be used to expedite disaster recovery efforts should a disaster occur in an externally connected segment in the client’s network.

Figures 2a and 2b symbolically and figuratively illustrate the flexible deployment options offered by ExtremeCloud IQ – Site Engine, namely the Public* + Local internet connected mode and the Local, non-internet connected, air gap deployment mode.

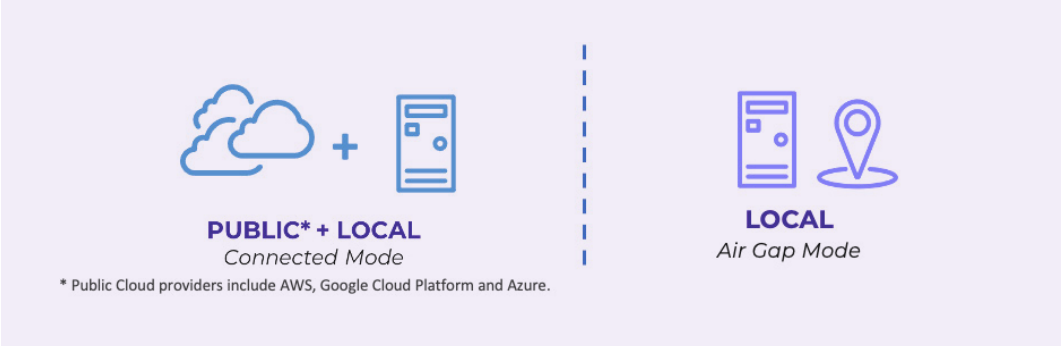

Figure 2a: Flexible Deployment Options

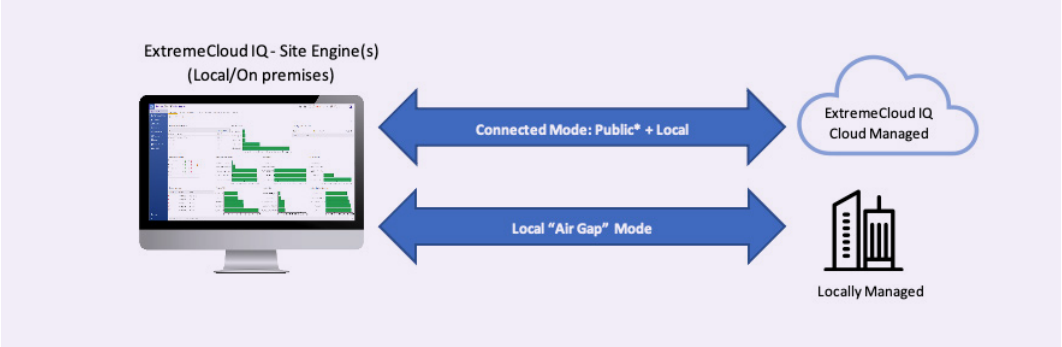

Figure 2b: Flexible Deployment Options

In the connected mode, internet connectivity is required and ExtremeCloud IQ - Site Engine is tightly integrated with ExtremeCloud IQ and receives its licenses from ExtremeCloud IQ which acts as the licensing authority. In the air gap mode, internet connectivity is not required, and all license files required by ExtremeCloud IQ – Site Engine need to be generated via the Extreme Portal. It should be noted that in the disconnected, air gap deployment mode, cloud specific AI/ML related functionality offered by ExtremeCloud IQ is excluded.

Figure 3 illustrates the user interface screen whereby the user can select the desired deployment model that meets the requirement of their ExtremeCloud IQ – Site Engine.

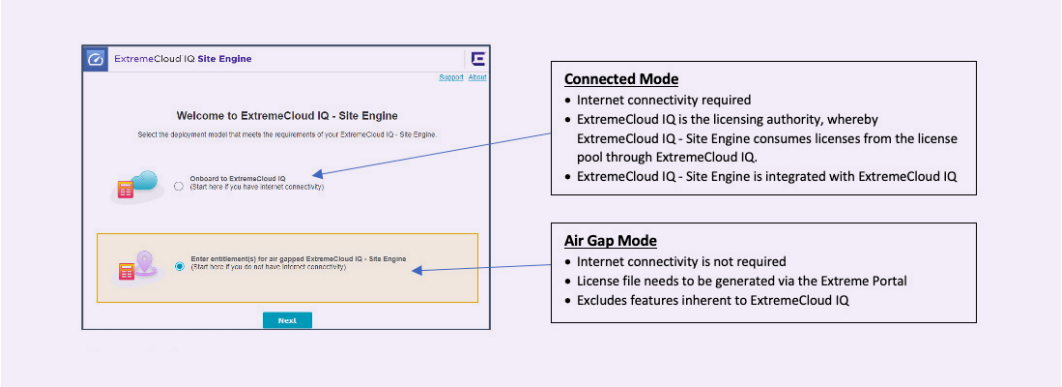

Figure 3: Deployment Model Selection

Specifically, as it relates to the Connected Mode, once ExtremeCloud IQ – Site Engine is onboarded to ExtremeCloud IQ and the connection between the two applications is established, an additional configuration option regrading the sharing of Stats and Alarms is available to the user as shown in Figure 4.

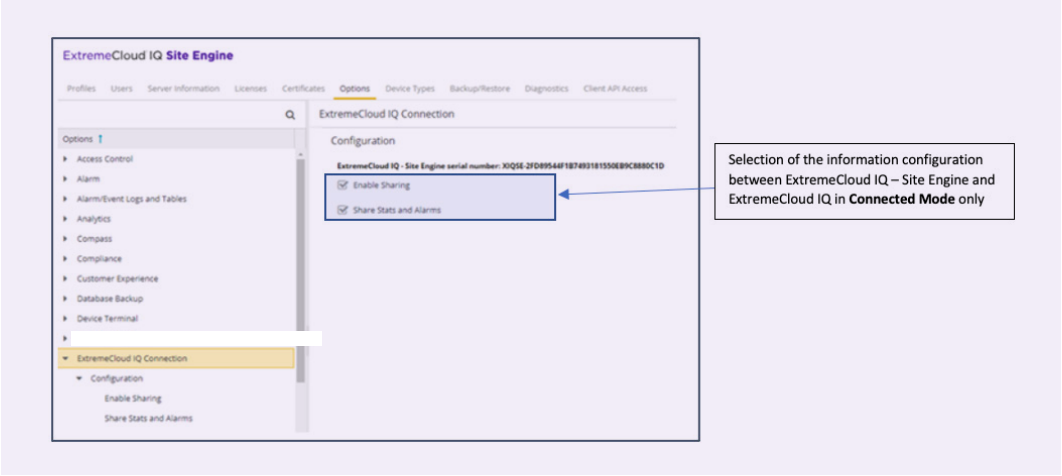

Figure 4: Configuration of Information Sharing (Connected Mode)

The information sharing options are as follows:

Enable Sharing - When selected, it allows ExtremeCloud IQ - Site Engine to share device data with ExtremeCloud IQ. This function is selected by default.

Share Stats and Alarms - When "Enable Sharing" is selected, the "Share Stats and Alarms" option is selected by default. The following information as shown in Table 1 is shared with ExtremeCloud IQ.

Table 1 highlights which parameters are shared when the "Share Stats and Alarms" is disabled, and which additional parameters are shared when it is enabled. As such, network administrators can define based on their requirements what level of visibility in the cloud they will provide in the connected mode.

Connected mode with Share Stats and Alarms ENABLED	Connected mode with Share Stats and Alarms DISABLED
	Shared

• User device groups synced to Cloud Config. Group (CCG)
• License type - Pilot/Navigator
• Additional information:
  • Model, Operating System and Make
  • Hostname
  • IP
  • MAC
  • Firmware
  • Serial number
  • Device Status
  • Alarms
  • Ports
  • Stats (CPU, memory, MAC, temperature, fan status, and power status)
  • Uptime
  • LLDP Neighboring
	• User device groups synced to Cloud Config. Group (CCG)
	• License type - Pilot/Navigator
	• Additional information:
	  • Model, Operating System and Make
	  • Hostname
	  • IP
	  • MAC
	  • Firmware
	  • Serial number
	  • Device Status

	Not Shared
	• Alarms • Ports • Stats (CPU, memory, MAC, temperature, fan status, and power status) • Uptime • LLDP Neighboring

Table 1: Sharing of Stats and Alarms

Table 2 provides a list of benefits realized from ExtremeCloud IQ - Site Engine's supported deployment models.

ExtremeCloud IQ – Site Engine Deployment Model	Benefits to the Organization
Public + Local	• Enables operations with disparate network device types in internet and non-internet connected deployment models. • Provides a choice to operate with Extreme Networks' cloud native, non-native cloud, and 3rd party devices. • Enables extension of management capabilities for task automation, access control, granular visibility with real-time analytics and multi-vendor device management. • Provides the ability to have advanced infrastructure management and remediation tools[1], as well as explainable machine learning derived insights and intelligence[2] for their cloud native devices with ExtremeCloud IQ. [1] Via an ExtremeCloud IQ Pilot License [2] Via an ExtremeCloud IQ Co-Pilot License
Local (On Premises)	• Enables network management and orchestration for non-internet connected air gap deployments. • Provides data sovereignty and control of data residency by hosting in a non-internet connected location. • Ideal for cloud/internet averse agencies (ex. Government, Military) as well as heavily regulated industries. • Provides monitoring and management of 3rd party devices and Extreme Networks' non-native cloud devices. • Enables extension of management capabilities for task automation, access control, granular visibility with real-time analytics and multi-vendor device management.

Table 2: ExtremeCloud IQ – Site Engine Deployment Model Benefits

ExtremeCloud IQ – Site Engine deployments can vary in size, and the industry verticals they target. For example, it is common to find mid to large size enterprises in industries that span healthcare, financial services, government, and retail, with greater than twenty to hundreds of switches and twenty-five hundred access points as part of their networking infrastructure. Ideal customer profiles for an ExtremeCloud IQ- Site Engine deployment comprise those which require visibility across all network devices (wired, wireless and 3rd party), have a roadmap to a cloud management and/or management of non-internet connected devices via a single application. Table 3 provides examples of customers that would be best served by either a "Local + Public Cloud" or a purely "Local", air gap deployment type.

Customer Example	ExtremeCloud IQ – Site Engine Deployment Suggestion
Customer Example #1: Mixed Organization • Managing 3rd party and cloud non-native devices • NAC security requirement • Managing some remote sites with cloud-native network devices	**Local + Public Cloud**
Customer Example #2: Large Campus • Strict data residency requirements • On-premises management • Managing 1,000+ on-site network devices • Non-cloud native network devices • Infrastructure comprises Fabric installation	**Local** (Air Gap)

Table 3: ExtremeCloud IQ – Site Engine Customer Deployment Examples

Conclusion

ExtremeCloud IQ – Site Engine offers clients an internet connected (Public + Local) and a non-internet connected (Local) Air Gap deployment option. Internet connected flexible deployment models enable organizations to address their non-cloud native and 3rd party devices, whereas non-internet connected mode enables organizations to adhere to specific industry and regional requirements regarding data sovereignty. As such, organizations are offered the choice of how they want to manage their network. This choice provides clients a pathway to the cloud whereby their existing networking devices can be migrated to the cloud if they are currently deployed in a local only (air gap) mode, thus ensuring a phased approach to cloud adoption in cases where deployment requirements change over the course of time.