Citrix IoT Solution

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As more IoT devices enter the workspace, they come with challenges such as managing device security, network configuration, data management, point to point communication. At Citrix we are releasing the 1st version of an IoT Solution that will address all the above challenges in an easy fashion.

The best aspect of this solution, it leverages the customer's existing IT infrastructure deployed with Citrix Endpoint Management. And we further extend that architecture by adding few more of Citrix's product to make this a robust IoT solution.

Citrix Workspace IoT Solution

Citrix's customers can deploy IoT devices, access events and insights, and experience applications all through Citrix Workspace.

IoT devices in the enterprise world are defined by their location. They can also be described as shared devices: that send events to a cloud, and the end user consumes the information on the end user's device.

The future of work includes use cases such as open seating, voice assisted workflows, and mobile workflows. Citrix Ready Workspace hub, Alexa, and Apple TV are enterprise IoT devices that enable future of work use cases. As part of the Citrix IoT solution – all these devices are available for deployment.

Citrix IoT Workspace Admin Deployment

Citrix-Ready Workspace hub, which acts as edge device (computing, Bluetooth beacon, Azure IoT certified) and thin client can be provisioned in bulk across geos. The Workspace hub is deployed through Citrix Endpoint Management. The setup is based on the location of the device. With this change, security becomes paramount and the admin needs to have a setup for managing and securing this new deployment.
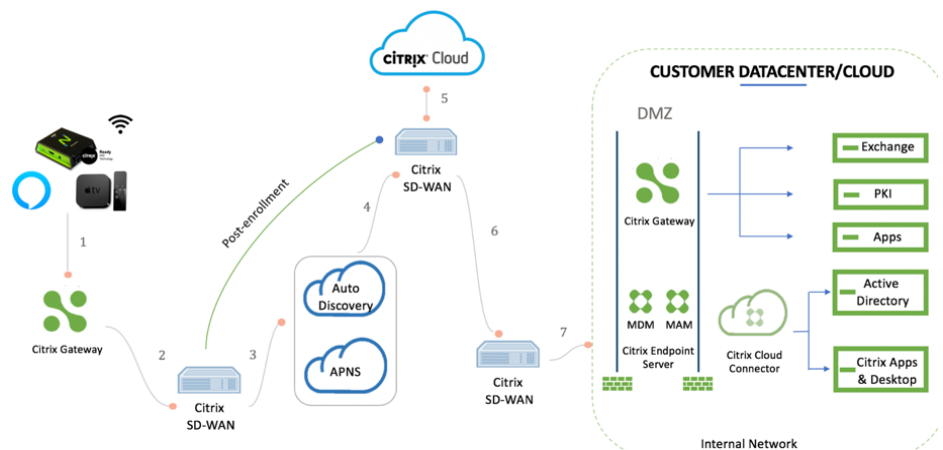

Fig. 1: The cloud architecture of the Citrix Workspace IoT Solution

Workspace IoT Device Enrollment

Enrollment:

- Out-of-the-box Workspace hubs are connected to your company network

- The Citrix Gateway and SD-WAN recognizes the control traffic sent from the hub and redirects it to the AutoDiscovery/APNS/other services as required for first time setup

- Once, the discovery takes place, the corresponding Endpoint Management server is contacted

- The Endpoint server then redirects to Citrix Workspace platform which is the central hub for authentication

- Citrix Workspace platform then communicates with Citrix Gateway to send the Workspace Hub's credentials to the company's server

- The Gateway in turn communicates with the internal servers which contains the relevant PKI, AD, Exchange information

- This information is then sent back to the Citrix Workspace platform and Endpoint Server which on confirming the authentication, enrolls the corresponding Workspace Hub

Using the above enrollment workflow – Apple TV, and Alexa can also be enrolled securely.

The following Citrix products cohesively provide comprehensive experience for Workspace IoT.

Citrix Workspace platform

Via Citrix Workspace platform the admin can access all the tools involved in the IoT device's lifecycle such Citrix Workspace, Citrix Endpoint Management, Citrix Analytics, ADC, SD-WAN. Customers' can easily add-on their existing infrastructure and utilize the existing cloud console to manage the new IoT setup.

Citrix Endpoint Management (CEM)

The CEM solution provides IoT enrollment, IoT security, OS updates, and application updates. CEM extends policy provisioning and easy maintenance to enterprise IoT devices.

Citrix Gateway

Post enrollment Citrix Gateway consolidates remote access infrastructure to provide single sign-on across all applications. In a typical deployment the Citrix Gateway appliance is located in the DMZ.

Citrix SD-WAN

The Citrix SD-WAN can be placed on the branch side as well on the Data center side to provide QoS. It is capable of optimizing the ICA protocol in case when the Workspace Hub is being utilized as a thin-client for the WS App. When the Hub is being utilized for IoT Hub use case, the Citrix SD-WAN can optimize and prioritize the IoT related bandwidth to the cloud (Citrix Cloud/public cloud).

Citrix Analytics Service (CAS)

Events captured on the Workspace Hub are analyzed via Citrix Analytics. Citrix Analytics provides insights to help the admin link users with the Workspace Hubs and take actions on metrics such as

> • Productivity: **Device location, Device status, User history, Failed Connection**
>
> • Security: The admin can view security threats and assessments: **Unauthorized users, Risky Device, Remote login attempt**

Extending the Thin Client to Workspace IoT Hub

Today the Citrix Ready Workspace Hub can integrate with IoT solutions by sending webhook-style triggers when users log on and off the device. This can be used, for example, to initiate changes in IoT lighting, projectors, blinds and many other devices, as part of a smart office solution [1,2]. Workspace Hub is also capable of being the common connection point for a variety of devices, including traditional USB human-input devices, as well Bluetooth thermometers [3], securely routing data from these devices to the application. Every Workspace Hub also contains a BLE beacon, which can be used to trigger activities based on the proximity of a user's device [4].

All these events can be sent to Citrix Analytics Service. Using Citrix API platform, in the future, microservices can be built off of these events and can be serviced via the Intelligent Workspace.

References:

[1] https://www.citrix.com/blogs/2018/04/27/workspace-hub-is-now-azure-iot-certified/

[2] https://www.citrix.com/blogs/2018/04/27/integrating-the-workspace-hub-with-azure-logic-apps/

[3] https://www.citrix.com/blogs/2016/03/08/the-workspace-hub-for-healthcare/

[4] https://www.citrix.com/blogs/2018/02/14/announcing-the-citrix-ready-workspace-hub/

Workspace Intelligence

Citrix Workspace intelligence will be the only source of accessing all IoT applications. It will provide a single and uniform experience to the end user.

Citrix Workspace IoT Solution Conclusion

Citrix customer, can connect with Citrix and it partners to learn more on how we can support their IoT deployment.

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