LANCOM Techpaper
LMC Open Notification Interface

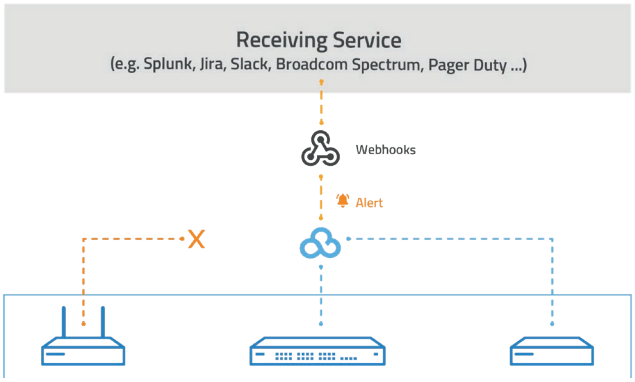
A modern IT infrastructure is a mosaic of multiple systems for different application areas, with the LANCOM Management Cloud being the mosaic piece for orchestrating the network components. To reduce this complexity, a central monitoring and alerting system is often used as an aggregator, enabling the administrator to bundle the notifications for events in these different systems in one interface.

The advantage of such a system is that the administrator can receive and respond to incident notifications even faster - regardless of the application area (network, mailing, telephony, etc.).

To connect the LANCOM Management Cloud to such systems, the ‚Open Notification Interface' is used, which is described below.

The Open Notification Interface based on webhooks technology

The underlying webhook technology of the Open Notification Interface has been under development since 2007. It sends a notification in the form of an HTTP post to the connected system when certain events occur that have been predefined by the requestor.



Principle of the Open Notification Interface: A device goes offline -> the notification is created in the LMC -> the LMC notifies the external receiving service.

The requestor/user defines which contents (body) the event notification from the LMC should contain. Normally, the webhook body contains some information to identify the events, such as a unique ID, the project name, the actual notification as well as the event date, etc..

```
{
“alertId”: “UUID”,
“projectName”: “string”,
“accountId”: “UUID”,
“title”: “string”,
“text”: “string”,
“createdAt”: “date”,
“stateUpdatedAt”: “date”,
“state”: “string”,
}
```

Example of a webhook body

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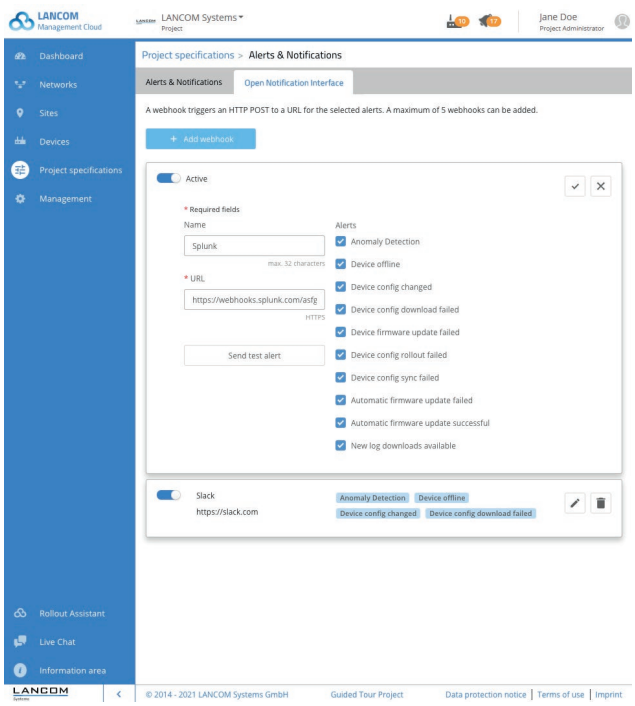
Since the webhook is based on HTTP, it is possible to secure the communication using standard technologies:

- Source IP address filtering
- HTTP basic authentication
- The body signature in a custom HTTP header (usually HMAC).
- Mutual TLS authentication (not common, high cost of configuration).

By using the webhook technology, the LMC is now able to communicate with a wide variety of applications and web services. Some of the major event aggregators offer the ability to map the content of the webhook call to their internal data structure, making it possible to aggregate the events, for example in Splunk, a logging, monitoring and reporting platform where data from a wide variety of sources can be made available to users.

The implementation in the LMC

The LMC offers the possibility to set up to 5 external reception points for this notification. These reception points can be set up under *‚Project Specifications > Alarms and notifications > Webhooks'*.



For each webhook, it is possible to specify which notification should be delivered to the receiving service connected to it.

For example, if a device is detected as not connected to the LMC, the LMC generates a new alarm, which becomes visible as a new notification alarm. The LMC then calls each individual webhook configured for that alarm type.

The webhook calls follow the same pattern as sending the e-mails:

- A call is made when the event occurs
  (e.g. first device offline)
- A call is made when the state of the system has deteriorated
  (e.g. further devices are offline)
- A call is made when the alarm is resolved
  (e.g. all devices are online again)

The LMC offers the possibility to test the correct configuration of the webhook. It is even possible to trigger a test call directly on the configuration page.

Secure end-to-end communication

To guarantee the authenticity of a call, a custom header containing the HMAC signature of the body is added to the HTTP request. The administrator is prompted to specify a secret key that will be used to sign the message.

Conclusion

Thanks to the addition of this feature to the LMC, it is now possible to forward the collected alarms to any system that offers communication via webhook. The flexibility of this technology also makes it very easy to integrate the main aggregation tools with little effort.