Global Projects GPC
Customization from Challenge to Production in Four Days

Wake-on-LAN is a Local solution in a Nation-wide SD-WAN Network

Global Projects Company (GPC) is considered as one of the leading companies in Kuwait in the field of public safety, secure communication and control room systems. Global Projects provides smart critical communication networks and relevant applications for public safety and security organizations.

GPC are long-time partners of Goodmill Systems and operate Goodmill's w24 routers, connecting a fleet of vehicle and fixed-locations in a harmonized SD-WAN network. Some of the fixed locations are distant, far-away places. And GPC had been experiencing power disturbances and interruptions, causing remote computers to shut down and not always rebooting back up.

As anyone who has operated a geographically dispersed network will attest, such disturbances are serious practical problems. On one occasion Global had to send a technician on a 200 km round-trip journey just to restart a PC.

GPC's experts identified Wake-on-LAN (WoL) as a potential solution to their problem and successfully used it in their test network with commercially available software. WoL is a feature of many ethernet interface cards which allows them to detect special ethernet "magic packets" even when the host PC is powered down; and to wake the PC up. But WoL has a limitation, in that it relies on network broadcasting, which is limited to the local LAN. WoL from network-to-network is possible but this needs support on every intermediate router and thus is unnecessarily complicated to implement.

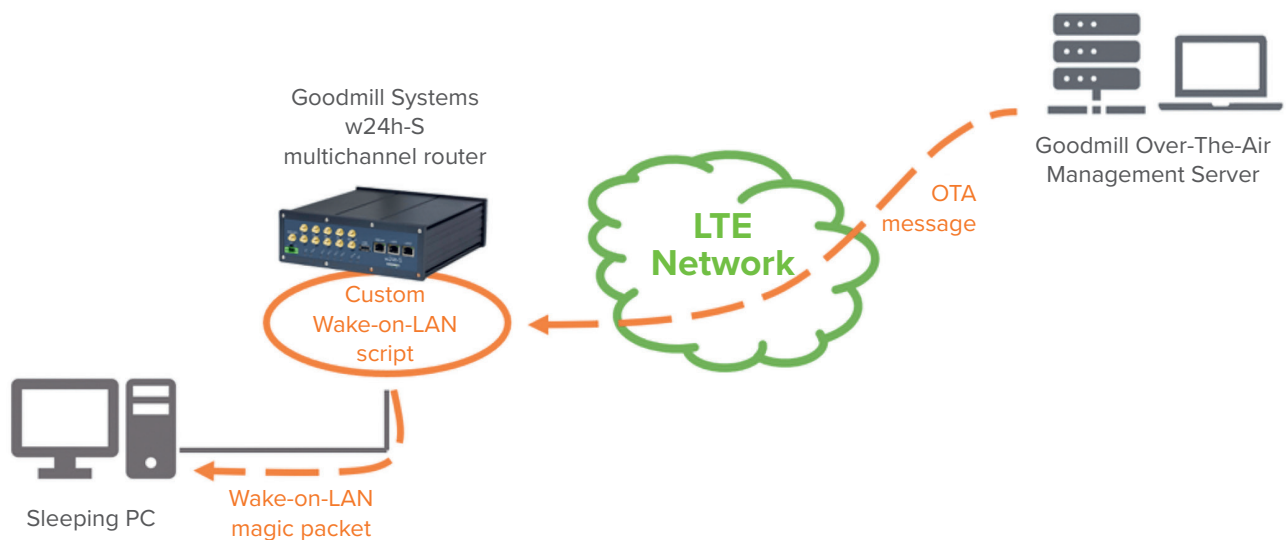## GPC SOUGHT A SOLUTION OVER GOODMILL ROUTERS OVER A 4G NETWORK

First step was to identify that instead of trying to send the WoL packets all the way from GPC's datacentre, across their own complex network, plus the 4G network, Goodmill might be able to deploy a script to run on the w24 routers at the remote sites, right next to the sleeping PC's. This would be a lot more straightforward than the alternative, since not all parts of the chain are in GPC's control. It could even be that the direct WoL packet transmission would've turned out to be impossible.

Goodmill created such a script that crafts the magic Wake-on-LAN packets to be sent onto the local LAN to wake up the PC. The script is configured and pushed to each w24 router from Goodmill's Over-The-Air Manager, so there's no need to visit the remote sites at all; not even to implement the solution.

By generating the WoL magic-packets on the Goodmill router itself, onto its own LAN, there is no problem with broadcast; and the PCs on the LAN can be awoken on demand. GPC's engineers can awake a PC behind a Goodmill w24 router with a simple action on the Goodmill Over-The-Air Manager, in their datacentre or in any location they wish to deploy it.

GPC's engineers quickly tested the solution and confirmed that it solves their problem. The whole enquiry-to-solution time was only four days.

While this need was for a specific customer case, the same solution can now be deployed together to any of our joint customers and even faster than in four days. And as GPC and Goodmill continue collaboration, similar agile and flexible solutions will be needed and delivered to a host of satisfied customers.

Goodmill Systems
w24h-S
multichannel router

Goodmill Over-The-Air
Management Server

OTA
message

LTE
Network

Custom
Wake-on-LAN
script

Sleeping PC

Wake-on-LAN
magic packet