WTL Powers Pre-Paid Converged Mobile Voice & Data Service

Background

United Mobile (UM) are a Zurich-based innovative operator in the mobile environment. They have long been leaders in the field of seamless GSM callback and other solutions for the roaming market. The company faced a growing demand for roaming data solutions to complement their existing voice offerings. Historically, all services had been run on a Pre-Paid basis. Therefore, the requirement now emerged for a GSM Pre-Paid platform that could support the existing voice applications plus a new data element.

WTL Solution

WTL already had a long term relationship as an equipment supplier to UM since the company was founded (the original SIM-based callback service was developed jointly by the two companies). A large number of UM's subscribers are currently still hosted on WTL platforms. Therefore, it was natural that UM would approach WTL for this new requirement.

A solution was designed to add RADIUS support to the WTL IPNx switch at the heart of UM's Pre-Paid network. The data service itself was to be delivered by high-end Cisco routers, and these communicated with the IPNx switch using RADIUS for authentication and charging. UM also decided to use the IPNx to allocate IP addresses to data users after they had been authenticated.

This meant that the WTL IPNx was acting as a combined voice switch, RADIUS server, DHCP and Pre-Paid database.

Alois Widmann, UM's CTO, commented, "We were very happy to find that WTL could support us with this requirement. We expected that we might have to buy a completely new RADIUS and DHCP server, and then somehow integrate all of that with our Pre-Paid application. This way we have all the voice and data authentication, rating, charging, and balance checking all in one place."

Real Time Balance Management

A very flexible rating system was designed for the data traffic to give UM close control over subscriber charging. A particular requirement in the UM business model was that it must be possible to charge different rates depending on user location (where they are currently roaming).

The WTL Pre-Paid application within the IPNx allows UM to charge data users by volume (per kilobyte transferred) or a flat fee (daily charge whenever the service is used), or a combination of both. The IPNx checks the data consumption regularly during the call, updates the subscriber's balance accordingly, and instructs the router to cut the session if the balance reaches zero.

An extensive test service was created using a mirror WTL Pre-Paid platform, and this was rigorously tested from multiple different roaming locations. After fine-tuning of the data charging profiles deployment of the full, live system quickly followed.

Powerful Pre-Paid Database

WTL's Technical Director, Benoit Bolsee, explained some of the technology supporting this project, "This was our first installation of a converged Pre-Paid voice plus data solution, but it is something that we always knew was possible with the IPNx's powerful Pre-Paid application. We have deliberately designed the application to handle time-based, volume-based, or one-shot activities. So, that would cover, for example, a combined voice, data and SMS Pre-Paid service."

The IPNx utilises a sophisticated, high speed, distributed database for subscriber balances. A dual redundant network design means there is not a single point of failure. A slave database keeps track of changes to the master and takes over in the event of failure. On restoration, the slave updates the master with just the changes since the failure.
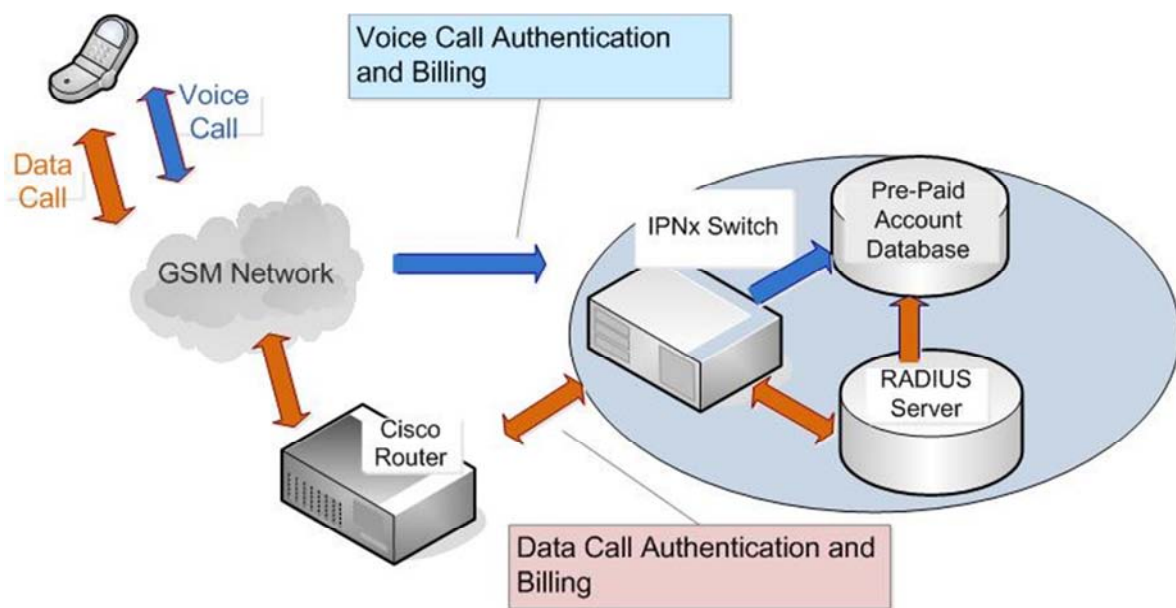

Figure 1: IPNx Switch as RADIUS Server plus Pre-Paid Database

WTL's Business Development Director, Simon Pearson, commented, "We will see more and more converged services being developed by service providers. However, the rules remain the same – the service has to be paid for, and Pre-Paid is the most reliable model for this. It also shows that, as an equipment vendor, you cannot second guess a customer's future needs. In our case we rely on having the most flexible Pre-Paid application and strong APIs to allow us or our customers to develop the extra service logic."

Pre-Paid Data & Voice Service
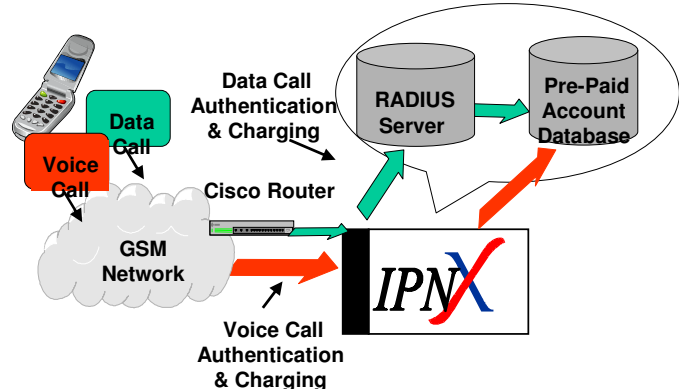
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About United Mobile

United Mobile is a licensed mobile Virtual Network Operator and provides worldwide mobile communication services with its own network infrastructure. These services allow customers to make outgoing calls at low rates worldwide, and to receive free incoming calls in over 80 countries. Among these are the EU countries, South Africa, Australia, Singapore and the UAE – countries where an incoming call can otherwise cost up to two to three Euros per minute. The United Mobile service selects the best local provider, guaranteeing the best voice quality without the user having to worry about high costs.

With its international focus and the worldwide network coverage, United Mobile is among the top mobile phone industry companies worldwide. For more information on the company: www.united-mobile.com.

About WTL

World Telecom Labs is a Belgium-based company which has long been a leader in the provision of VoIP switches, Pre-Paid applications, and signalling gateways for emerging carriers and telecom service operators. WTL has an installed base of 100,000s of voice ports with service providers worldwide switching billions of minutes of VoIP traffic using WTL equipment. For more information about WTL and its products, please visit **www.wtl.dk** or email **sales@wtl.dk**.