

## CASE STUDY



### About WiFi SPARK

WiFi SPARK specializes in providing secure, high performance solutions for wireless or wired Internet access. With over 500 active hotspot locations across Europe, WiFi SPARK is the fastest growing WiFi provider in the U.K.

Verax NMS **reduces costs of IT service delivery, shortens downtimes and increases customer satisfaction levels** through streamlining processes of business service management, problem detection and incident resolution.

Verax NMS is used to provide proactive monitoring of:

- **Data center** infrastructure: servers, virtualization, power supplies and others.
- **Enterprise applications**: databases, transaction servers, application servers and others.
- **Networks and desktop computers.**

For more information on the product, please visit:

[veraxsystems.com/en/products/nms](http://veraxsystems.com/en/products/nms)

**verax**  
systems

**micro-link**  
MICRO-LINK d.o.o. • Jarušića 9a • 10000 Zagreb  
Croatia • t. +385 1 36 36 884 • f. +385 1 36 45 850  
microlink@microlink.hr • www.microlink.hr

**Verax NMS enabled WiFi SPARK to proactively monitor their data center, applications (billing, payments and network edge access) as well as the entire WiFi network.**

## Assuring network, service access control and billing services for WiFi SPARK – the fastest growing WiFi service provider in the U.K.

### BACKGROUND AND OBJECTIVES

WiFi SPARK (WFS) is a fast-growing managed service provider of WiFi services for hotels, conference centers, franchises, marinas and other locations. Due to the scale of operation, WFS required a complete monitoring and service assurance system to:

- **Prevent revenue losses.** WFS services about 2000-3000 simultaneous WiFi users. Given the scale, any problem immediately impacts the revenues (i.e. users cannot log in). This also holds true for prepaid access – if the bandwidth sold is not used up, the future revenues (e.g. new voucher purchases) are deferred.
- **Improve end-user experience** not only by preventing downtime before it happens, but also ensuring timely responses to all requests such as user registration, purchases, log in and others.
- Discover service degrading issues **before they are reported to the helpdesk.**
- Increase operational efficiency of **systems management** by effective root-cause analysis.

### NETWORK

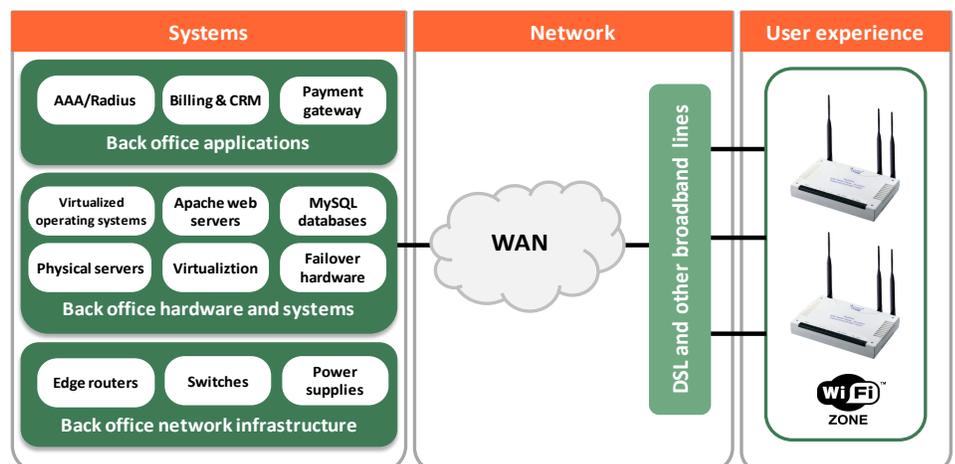
WiFi Access Point (AP) types used by WFS vary depending on hotspot location and peak number of users. Premium locations (such as marinas, exhibition centers or large hotels) use high-end equipment (from CISCO or Motorola), smaller ones (such as pubs) use less performant equipment such as US Robotics. Together with accompanying routers and DSL modems, this is more than two thousand devices, easily handled by Verax NMS.

WiFi APs use DSL lines as backhaul in most cases. These lines are leased from other providers, such as British Telecom, and are also monitored to verify the providers' SLA compliance.

Verax NMS is also responsible for automation of actions such as scheduled reboots at nighttime.

Due to a complex structure of the network, dependencies and root-cause analysis are a must. Monitoring methods are simple and usually limited to SNMPv2 ICMP pings. WFS have built their own controller software, which is also Verax NMS-monitored on the process level.

### Verax NMS Service Assurance solution



## CASE STUDY

### NETWORK ACCESS CONTROL

Network edge control and user access is controlled via a distributed RADIUS server. Its health and performance are essential for the service as:

- **RADIUS downtime** immediately causes revenue losses as the entire service is down (users cannot log in, existing sessions are terminated).
- **Low performance** lowers customer experience (long time to log in), but can also lead to revenue leaks (if interim messages are lost, some bandwidth usage may not be accounted for).

Verax NMS not only monitors RADIUS response times, but also checks operating system and database performance (e.g. CPU load, SQL query responses). The NMS groups inter-dependent components into so called **business aspects** which reflect the status of a service as a whole. This way, the WFS IT team can immediately see that poor performance of RADIUS is related to high CPU load or network congestion, rather than the RADIUS server itself.

### BILLING

WFS uses a proprietary billing solution with a subscriber self-care portal and a payment gateway. Monitoring of the billing system is a complex task and required building a number of business aspects within Verax NMS both for WFS-owned system components (database servers, Apache HTTP servers, etc.) and external elements, e.g. credit card clearing system on the Internet. Such an approach allowed to inform the IT team that the billing and self-care service are down even if faults occurred outside WFS premises.

### DATA CENTER INFRASTRUCTURE

All WFS back office applications run within a fault tolerant, VM\*Ware-enabled data center. During the implementation, Verax NMS was configured to monitor the following infrastructure elements:

- **Virtualization** host software (VM\*Ware) and supervised virtual machine instances.
- Virtualized **operating system** parameters such as disk I/O, memory, file systems and others.
- **Server software** such as distributed MySQL, Apache server, load balancers, RADIUS content servers and others.
- Data center **networking infrastructure** such as switches and routers.
- Uninterruptible **power supplies**.
- Verax NMS software itself (self monitoring).

### IMPLEMENTATION

Verax NMS at WFS was installed in a virtualized environment. CentOS Linux and Oracle Express were selected as operating environment and database system. A staged approach to the project was taken starting with WiFi network monitoring as the most-often failing system. This was followed by adding network edge, data center and billing monitoring.

The system was installed from a pre-configured VM ESX image over the VPN. Verax Systems provided initial configuration and assistance to the WFS team, as well as migration of data from the previously used NMS system. At the end, a training was provided to the WFS team for it to become self-sufficient.

### SUMMARY

WiFi SPARK were searching for a single integrated solution to cover end-to-end monitoring of all business from the network to the billing system.

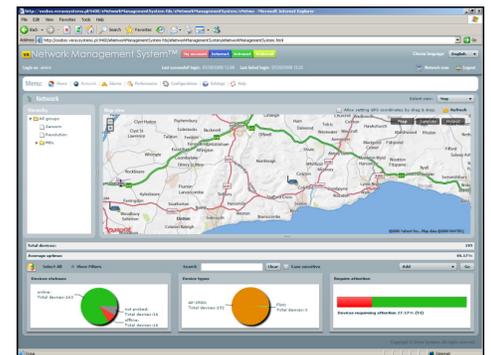
The implementation of Verax NMS at WFS resulted in the following benefits:

- **Quick overview of system state** to the managers through rich, user-defined dashboards.
- Increasing customer experience by **reducing the number of problems** reported to the service desk by the end users
- **Reduction of downtime costs** by detecting potential problems before they seriously affect the service.
- **Reduction of issue resolution costs** by preventing problems before they have an impact on the service.
- **Shortened service downtime** through quicker problem analysis via event correlations, SMS notifications and automated business logic.
- Automated calculation of IT service metrics for availability and performance.

### LEARN MORE

In order to learn more about Verax NMS or view the Verax NMS demo, please visit us on the Internet at:

[veraxsystems.com/en/products/nms](http://veraxsystems.com/en/products/nms).



**verax**  
systems

Verax Systems Corp. is a provider of software enabling end-to-end IT & Telco service delivery, assurance and compliance. We offer a comprehensive set of integrated applications covering the entire lifecycle from service definition through provisioning and monitoring to billing.

### Worldwide offices

Plano, TX (U.S.A.)  
Newton Abbot (England)  
Poznań (Poland)  
Dublin (Ireland)  
Munich (Germany)

[www.veraxsystems.com](http://www.veraxsystems.com)