

Providing the Customer with Real Time Analytics

Brian Horn

MikroTik MUM

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Speaker

- ▶ Brian Horn

- ▶ BSEE, MIEEE
- ▶ Winters Broadband LLC
 - ▶ California WISP founded in 2002
- ▶ WISP TRACON LLC
 - MikroTik Training and Consulting
 - Founded in 2014
- ▶ MikroTik Certified Trainer

- ▶ Jeff King

- ▶ B.Sc.Eng
- ▶ MikroMonitor architect and developer



MUM Video

- ▶ This presentation contains a number of bullet points, it is highly recommended that the video in the MUM archive be watched as it provides additional information

Analytics

- ▶ **Analytics** is the discovery, interpretation, and communication of meaningful patterns in data. (Wikipedia)
- ▶ We conduct **Analytics** when we do network fault diagnosis, network upgrade planning and when we diagnose customer service problems.
- ▶ MikroTik devices collect the data we need, our challenges are:
 - ▶ Extracting the relevant data
 - ▶ Interpreting that data
 - ▶ Communicating it in a meaningful way

Customer Knowledge

- ▶ Minimal, typical user considers networking plug & play
- ▶ Allowing access to basic configuration parameters not advisable
 - ▶ Channel Frequency
 - ▶ Channel Width
 - ▶ Firewall
 - ▶ Port Forwarding

Customer Service Issues

- ▶ Customer expects service to meet his expectations while not understanding technology
- ▶ These expectations result in service calls
 - ▶ Service is slow
 - ▶ Streaming video is buffering
 - ▶ Service is not working
 - ▶ Connection keeps being dropped
- ▶ These calls cost time and money, increasing the required support staff

Solving the Problem

- ▶ Implementation of managed services
 - ▶ Every customer has a MikroTik router
 - ▶ Powers CPE
 - ▶ Gold Configuration, customized
 - ▶ System Identity, IP address, SSID, Wi-Fi password
 - ▶ Customer has no access to router configuration
 - ▶ No monthly charge for managing router
- ▶ Implemented remote diagnostics
- ▶ Increased ROI
 - ▶ Reduced truck rolls and operating costs

Complex Networks

- ▶ Coverage area - indoor/outdoor
 - ▶ MikroTik based
- ▶ Design, Install & Manage
- ▶ Specific customer requirements

Addressing those Customer Issues

- ▶ Service is slow
 - ▶ Bandwidth utilization
 - ▶ Bandwidth tests
- ▶ Streaming video is buffering
 - ▶ Bandwidth utilization
 - ▶ Interference
- ▶ Service is not Working
 - ▶ One device or all devices?
 - ▶ Connectivity/Authentication
 - ▶ IP address assignment

Remote Diagnostic Tools

- ▶ Use of MikroTik features and tools using either WinBox or command line
 - ▶ Interface List
 - ▶ DHCP Leases
 - ▶ Wireless Registration
 - ▶ Wireless Scan
 - ▶ Torch
 - ▶ ARP Table
 - ▶ Graphing
 - ▶ Queues
 - ▶ Traceroute
 - ▶ Packet Sniffer
 - ▶ Log

Managed Service Implementation Review

- ▶ Goals achieved
 - ▶ Reduced truck rolls
 - ▶ Increased staff productivity
 - ▶ Increased revenue
- ▶ Although Winbox may be used for most diagnostic analysis all data is available via:
 - ▶ Command Line
 - ▶ API
- ▶ Analysis of results
 - ▶ Many issues could be resolved by customer if he were presented with the results of the diagnostics in a simple graphical manner
- ▶ The challenge is to access the relevant information and present it to the customer in an easy to understand format.

MikroMonitor Goals

- ▶ User friendly GUI interface
 - ▶ Not another app
 - ▶ No configuration
- ▶ Intuitive status display of customers service/network
 - ▶ Map output from analytical tools into an easily understandable format
 - ▶ Display optimized for all types of client devices
 - ▶ All Apple, Android, Windows, Linux ...

MikroMonitor Features

- ▶ Confirm customer is seeing their network and associated devices
 - ▶ Display of IP addresses
- ▶ Real time display of bandwidth utilization including who is the main user
- ▶ Display of connected devices
 - ▶ 2G Wi-Fi, 5G Wi-Fi or Ethernet
 - ▶ Display of quality of Wi-Fi connection
- ▶ Display of bandwidth usage
 - ▶ Daily average
 - ▶ Month to date

MikroMonitor - Home



Menu

- Connected Devices
- Usage history
- Customer Portal

Managed Router Monitor
Pasternack, Gregory

Customer Name

Thursday 11 October 2018 18:58:42

Your IP address is XX.XX.XX.XX

IP Address

Technical Support:

530-852-7990

support@winters-broadband.com

Company Contacts

Accounts:

530-852-7990

accounts@winters-broadband.com



Current Bandwidth Usage

Grey line indicates line of service plan

MikroMonitor - Connected Devices

The screenshot shows the MikroMonitor interface for a managed router. It displays a list of connected devices with columns for Device name, IP address, and On WiFi status. Below this, it shows the current top bandwidth users with columns for Traffic Direction, User Name, and Bandwidth Use.

Managed Router Monitor
Pasternack, Gregory
Thursday 11 October 2018 19:00:13

Connected Devices

Device name	IP address	On WiFi
HaikuEC3DC4	192.168.88.116	2G WIFI ●●●
NoahsMBP	192.168.88.141	5G WIFI ●●
NoahPad2	192.168.88.214	2G WIFI ●
AndreasMBP	192.168.88.123	2G WIFI ●●
AnsiPad	192.168.88.171	2G WIFI ●●●
RiverPhone7p	192.168.88.131	5G WIFI ●
XboxOne	192.168.88.149	2G WIFI ●●●
RiverPad	192.168.88.144	5G WIFI ●●
AndrealPhone	192.168.88.125	5G WIFI ●
LVH233MBP	192.168.88.135	5G WIFI ●
ts7200	192.168.88.126	No

Current Top Bandwidth User(s)

Traffic Direction	User Name	Bandwidth Use
Download	RiverPad	7.74Mbps
Upload	RiverPad	0.39Mbps

Device Name

IP Address

Device Connectivity

- 2G Wi-Fi
- 5G Wi-Fi
- Ethernet

Connection Qualify

- Good
- Average
- Poor

Top Current Bandwidth Users

MikroMonitor - Usage History

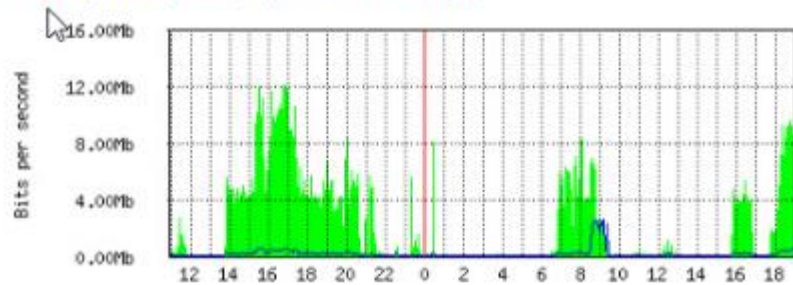
WINTERS BROADBAND MikroMonitor

Managed Router Monitor
Pasternack, Gregory

Thursday 11 October 2018 19:00:53

Download and Upload Usage Profile

One Day History Graph (5 Minute Average)



← Average Daily Usage

Monthly Usage

Download: 96.83 GB Upload: 4.15 GB

← Monthly Usage to date

MikroMonitor Implementation

- ▶ Customer must be connected to their home network
 - ▶ An attempt to connect to MikroMonitor without connection to the customers home network results in a message advising MikroMonitor is only available when connected to their home network
- ▶ Open web browser and navigate to me.winters-broadband.com
 - ▶ DNS server A record associated URL to IP address
- ▶ MikroMonitor Home page is displayed
 - ▶ Navigated to Connected Devices or Usage Reports
 - ▶ Navigation link to company customer portal is included

MikroMonitor Server

- ▶ Linux based server
- ▶ Custom MikroMonitor application

MikroMonitor Summary

- ▶ MikroMonitor uses the power of MikroTik products and their API to deliver a solution empowering the end user providing:
 - ▶ Current usage and available bandwidth
 - ▶ Customer can determine if they want to upgrade their service tier
 - ▶ Comprehensive display of connected devices and the connection quality
 - ▶ Information on top bandwidth user/s
 - ▶ Daily and monthly usage statistics
 - ▶ Link to company designated portal
 - ▶ Support and billing contact information

Enhanced customer experience, reduced service calls, increased revenue

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The text is centered on a white background that occupies the left and middle portions of the frame.

MikroMonitor

Questions?

planning@winters-broadband.com