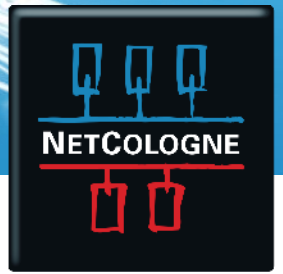
CARRIER GRADE CAPTIVE PORTAL @ HOTSPOT.KOELN

Ivan Andric



AGENDA

- About NetCologne
- Our WiFi history
- What Is HOTSPOT.KOELN
- Structure Of The Carrier Grade Captive Portal Solution
- MikroTik Powered Network
- The Result

NETCOLOGNE

Our City - Our Region

Our Head-Office

SERVICES

Home & Business Customers

PHONE & INTERNET

396.000*

of which 248.000 via own infrastructure

CABLE TV & INTERNET

238.000*

MOBILE

14.000*

* 3/2017

OUR WIFI HISTORY

14 years experience

- 2004 – Installation of 450 Access-Points in the Cologne Trade Fair (koelnmesse)

  for the photokina (the world's leading trade fair for photo, video and imaging)
- 2005 – Installation of 20 APs for the World Youth Day and the papal visit
- since 2005 – a lot of installations for hotels, hospitals, event locations, companies…
- 2006 – WiFi installation for the VIP-Area in the RheinEnergie Stadium (FIFA World Cup 2006)
- 2013 – The start of HOTSPOT.KOELN (Christmas Market, Roncalliplatz)
- 2014 – New and whole WiFi installation in the RheinEnergie Stadium (220 AP) for up to 50.000 users
- Currently we oversee more than 1.500 APs (+ 2.200 for schools)
- 2018 – Installation of additional 200 outdoor APs in the city

THE WIFI CHRISTMAS TREE

Christmas 2013 – HOTSPOT.KOELN „Test Installation“

WHAT IS HOTSPOT.KOELN ?

Free WiFi for everybody

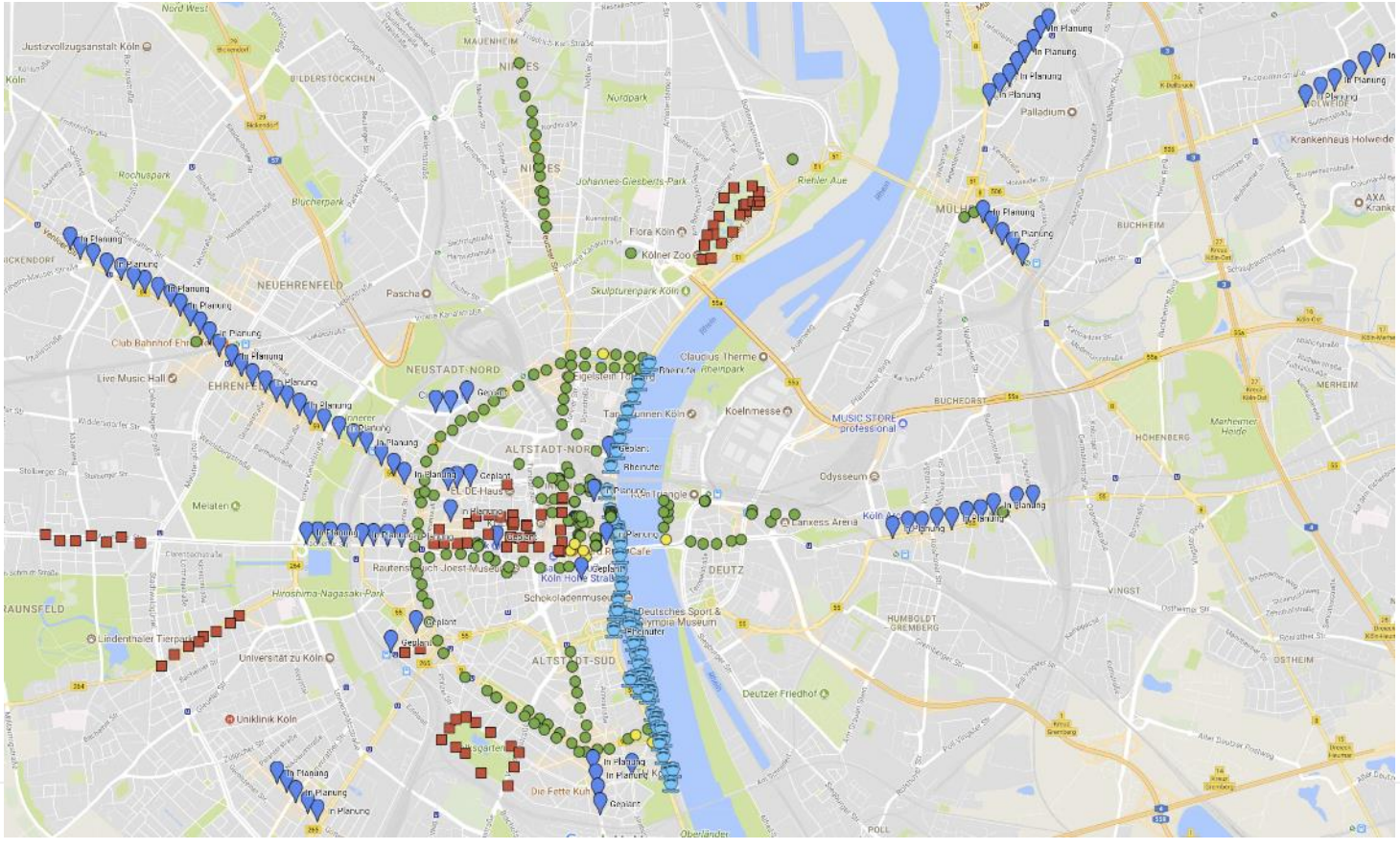
The Dom-City has its own public WiFi network: HOTSPOT.KOELN. Visitors and residents can surf the Internet free of charge - whether they are sightseeing, strolling through the Old Town or working in the café. Today, many public places are already connected to the WiFi network and more than 500 outdoor Access-Points are installed in the city. On average, almost 55,000 users dial into the network every day.

HOTSPOT.KOELN

Requirements for the solution

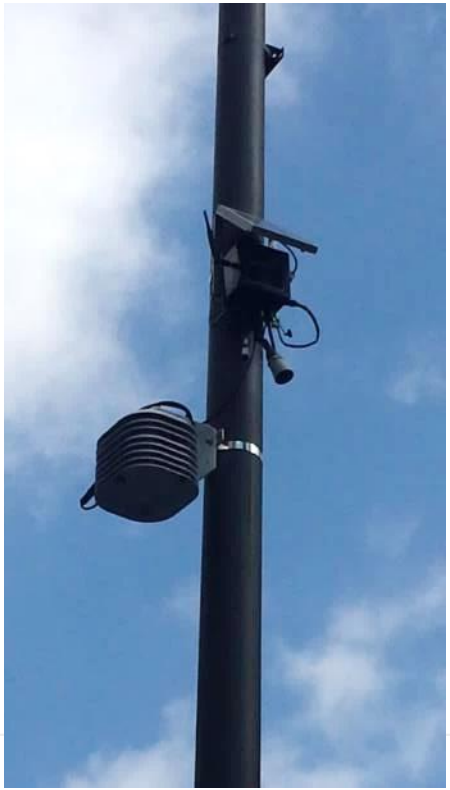
- Comprehensive WiFi coverage
- Automatic roaming between the locations
- Location based services
- Capacity sufficient for events (sites in the city for more than 7.000 people)
- Broadband Access
- Out- and Indoor coverage
- Multilingual & Multitenant capable Portal System
- Integration of existing WiFi installations

OUTDOOR AP OVERVIEW



IOT READY

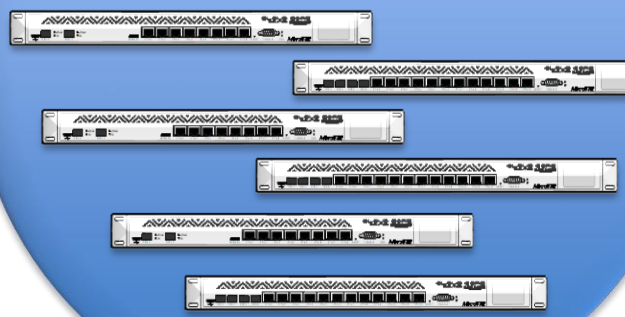
IoT Sensors in the Climate-Street



CARRIER CLASS CAPTIVE PORTAL

The main components

MikroTik
Cloud Core Router



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meconet
a3MANAGER

Radius
SQL
WiFi HotSpot
WEB Portal
WEB Admin
Load Balancer

PORTAL SWITCH & ROUTER

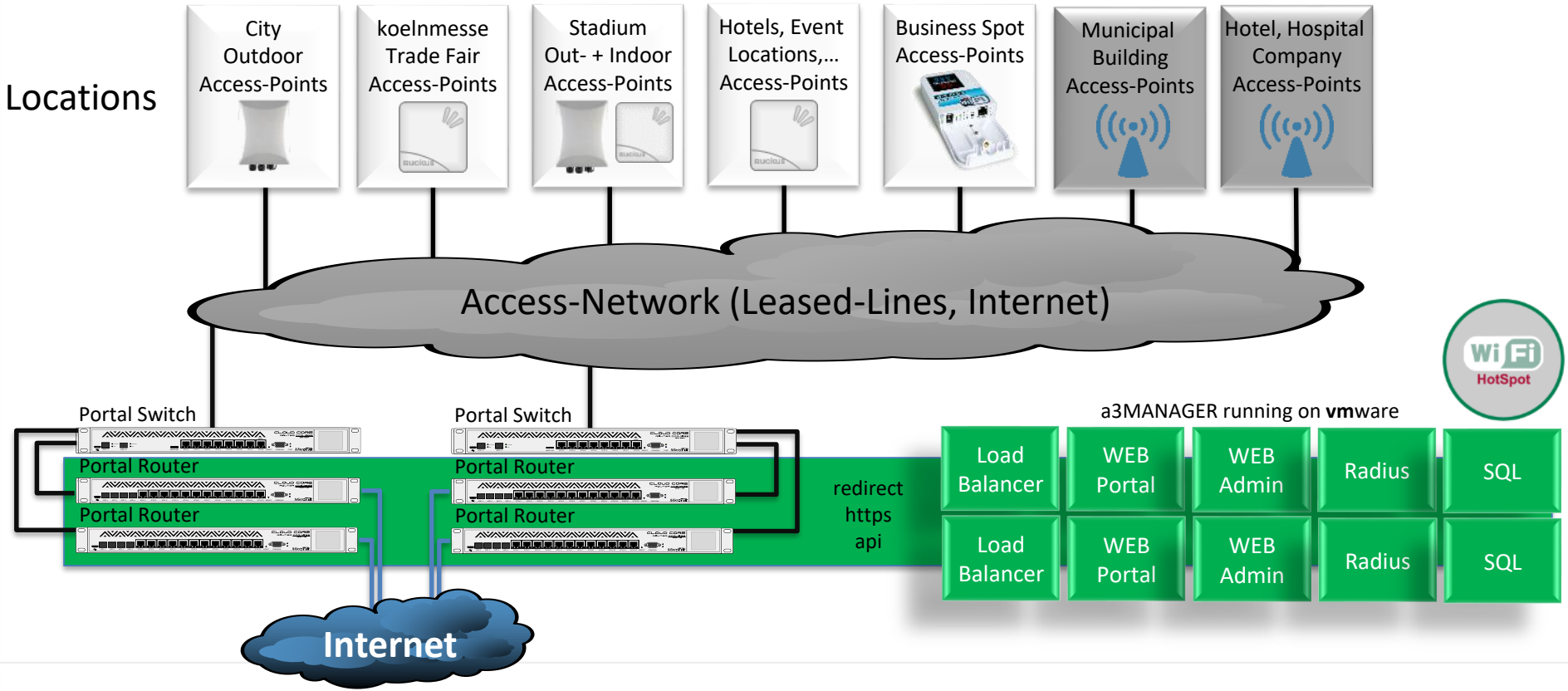
Portal Switch (CCR1036-8G-2S+)

Collects the VLANs and distribute them to the Portal Router

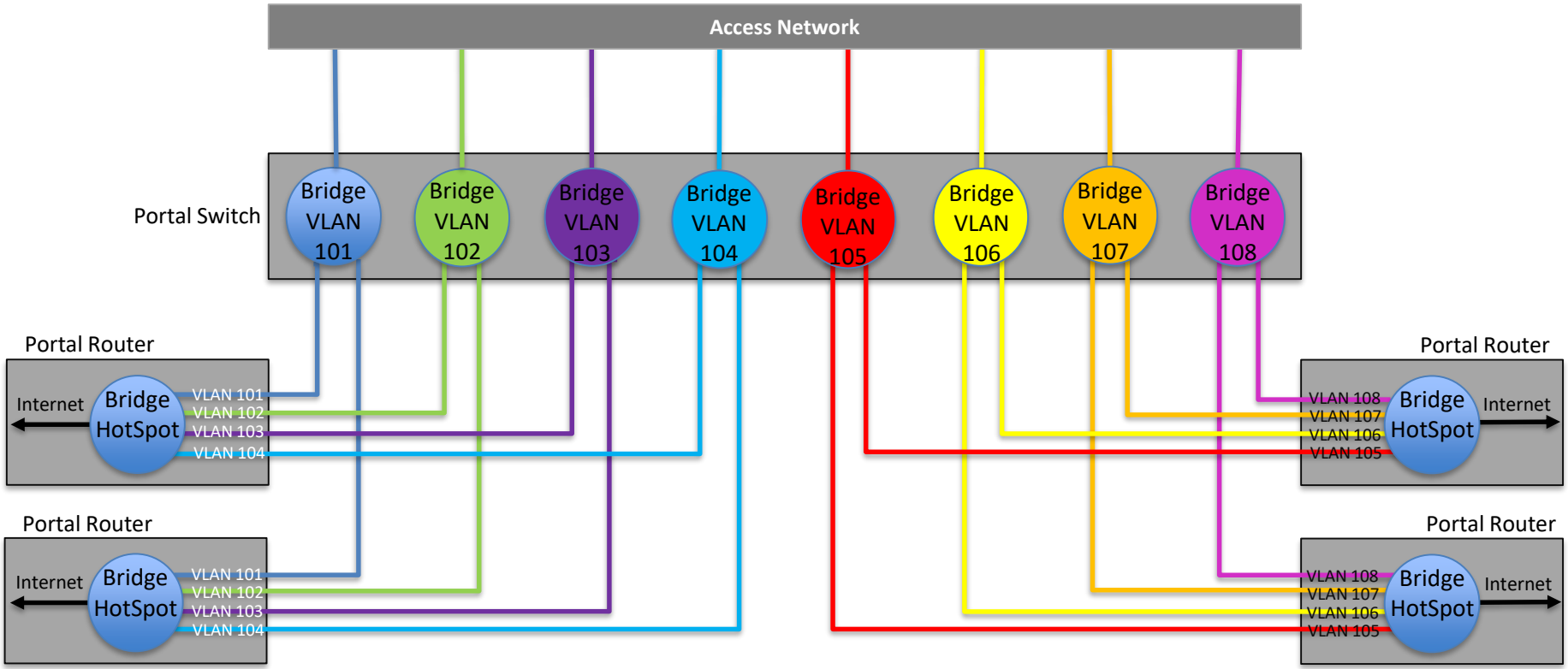
Portal Router (CCR1036-12G-4S)

HotSpot function with redirect to the a3MANAGER Captive Portal web page, DHCP, DNS, Router, NAT, Firewall,…

SCHEMATICALLY COMPOSITION



VLAN DISTRIBUTION



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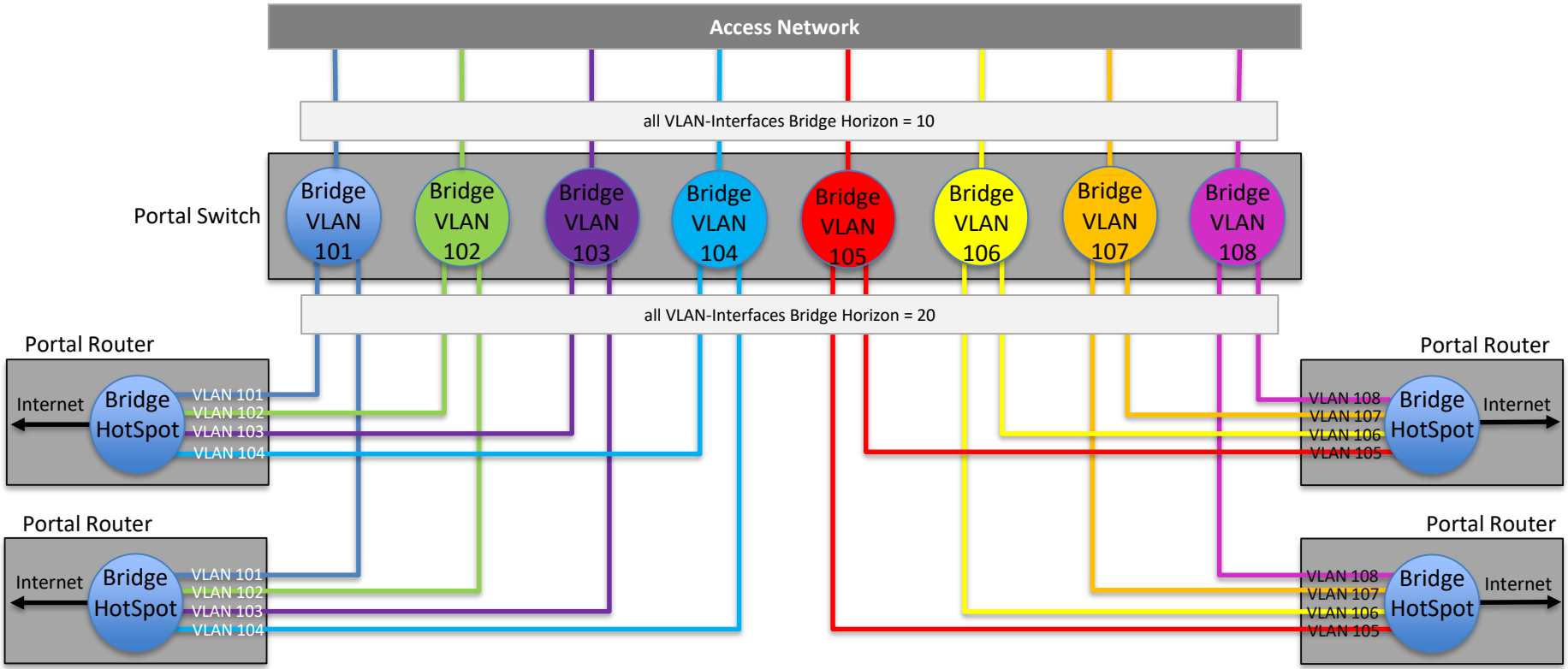

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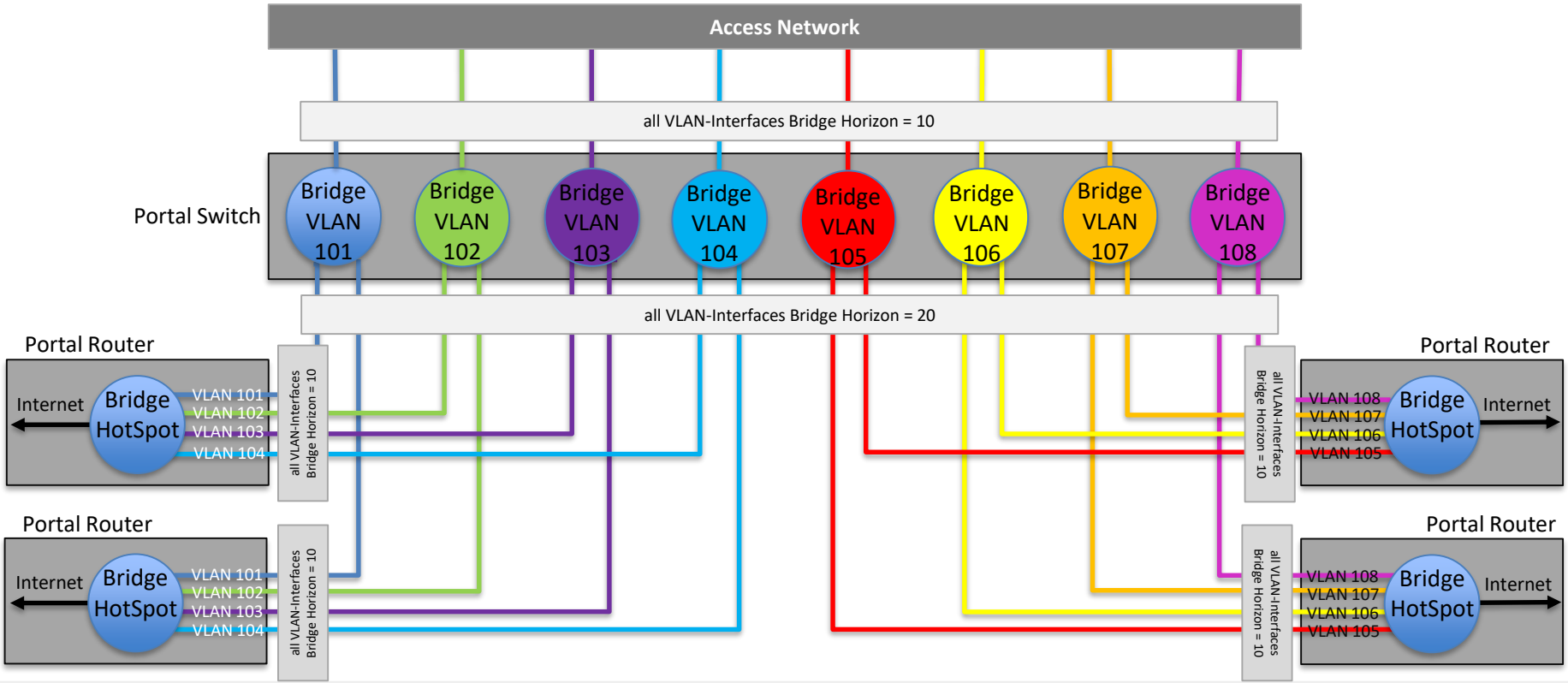
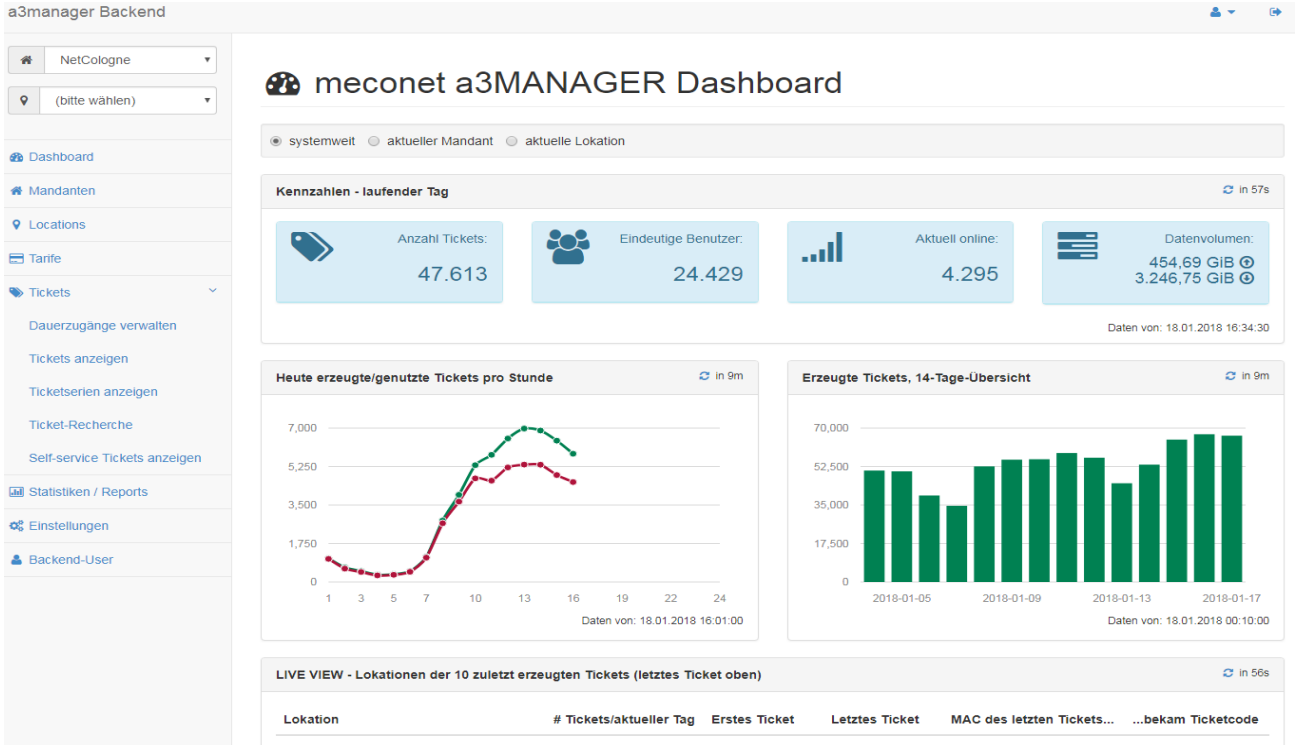


A3MANAGER DASHBOARD



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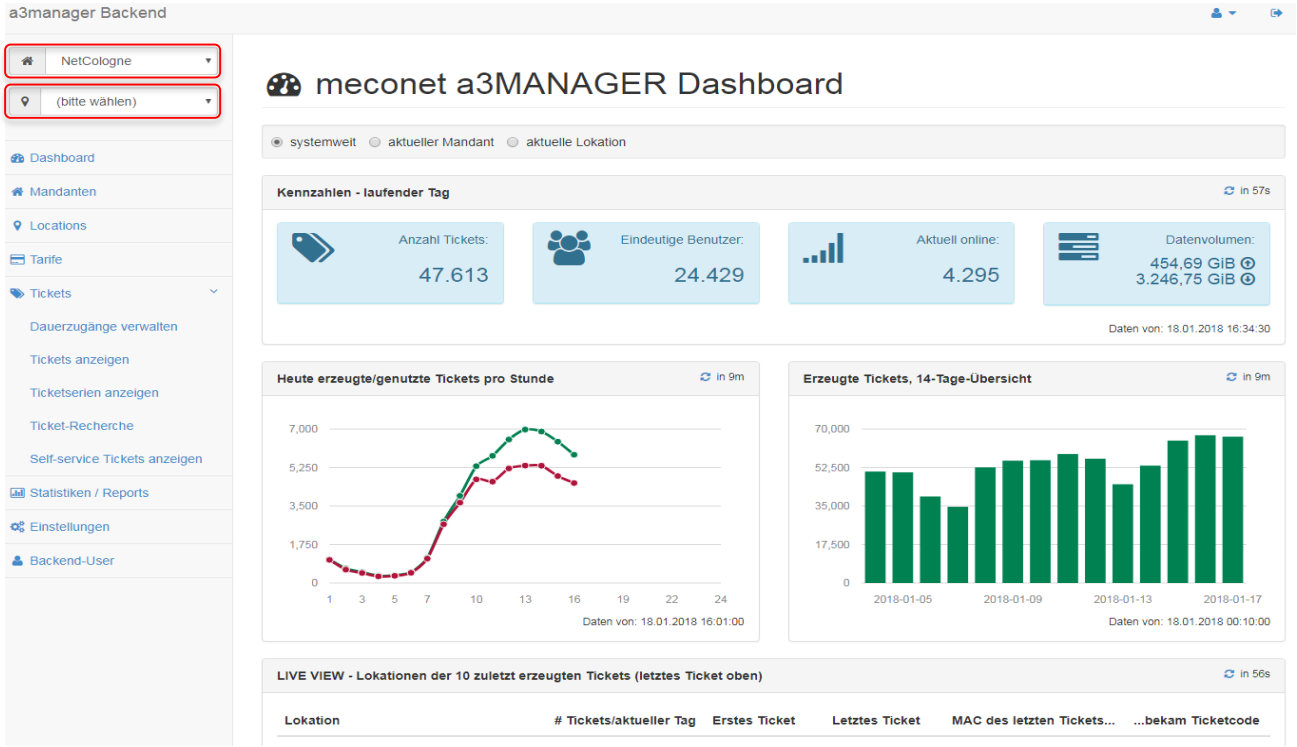

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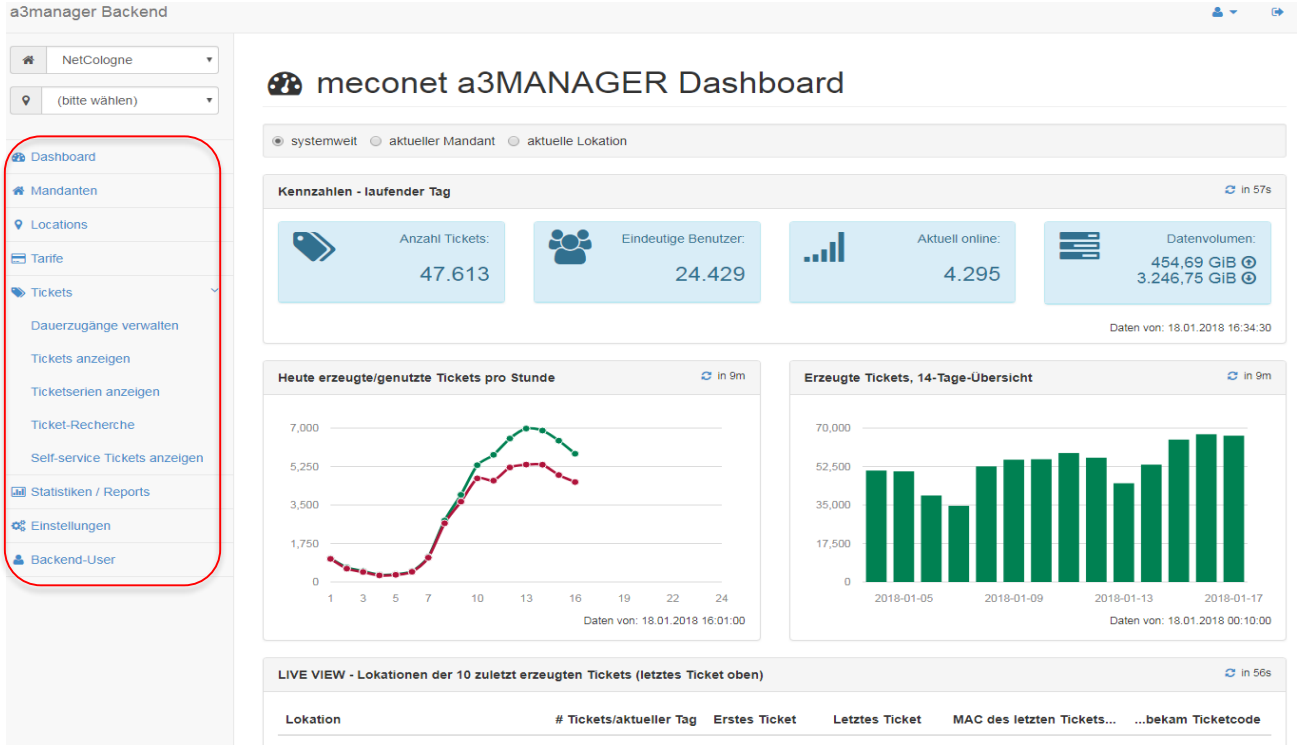

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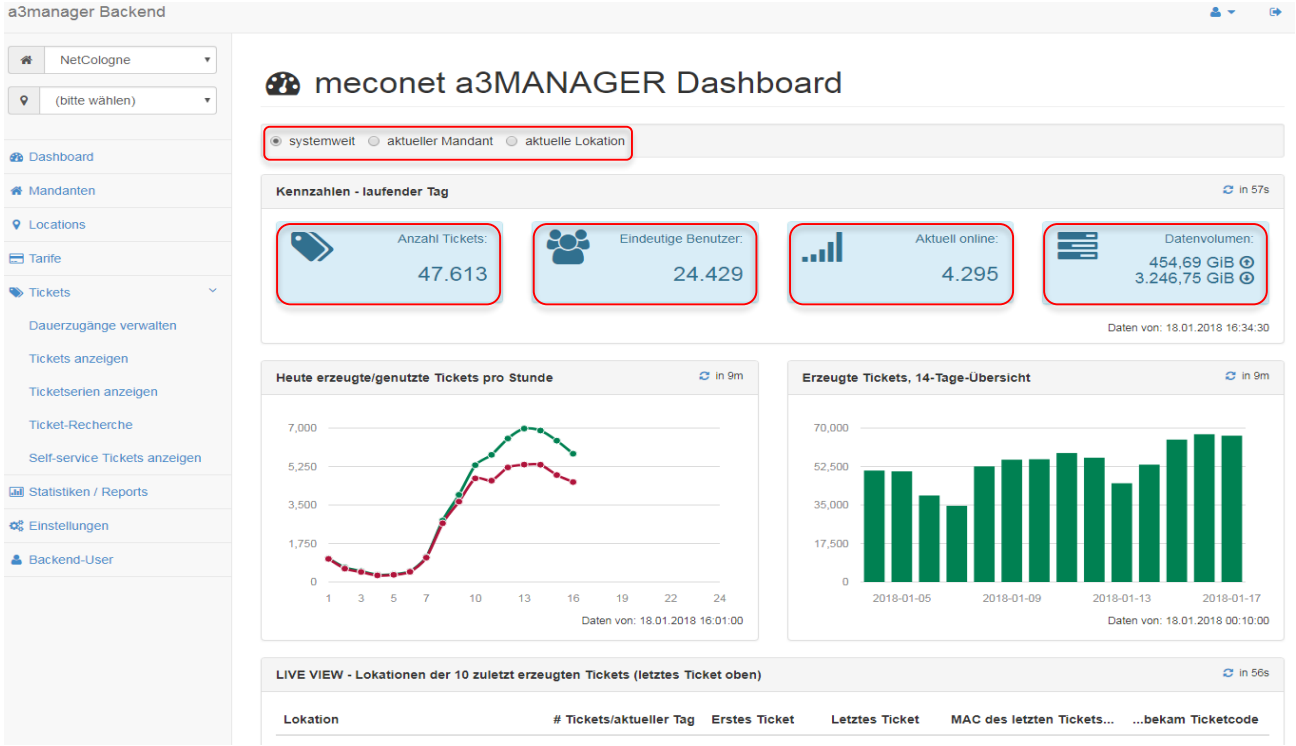

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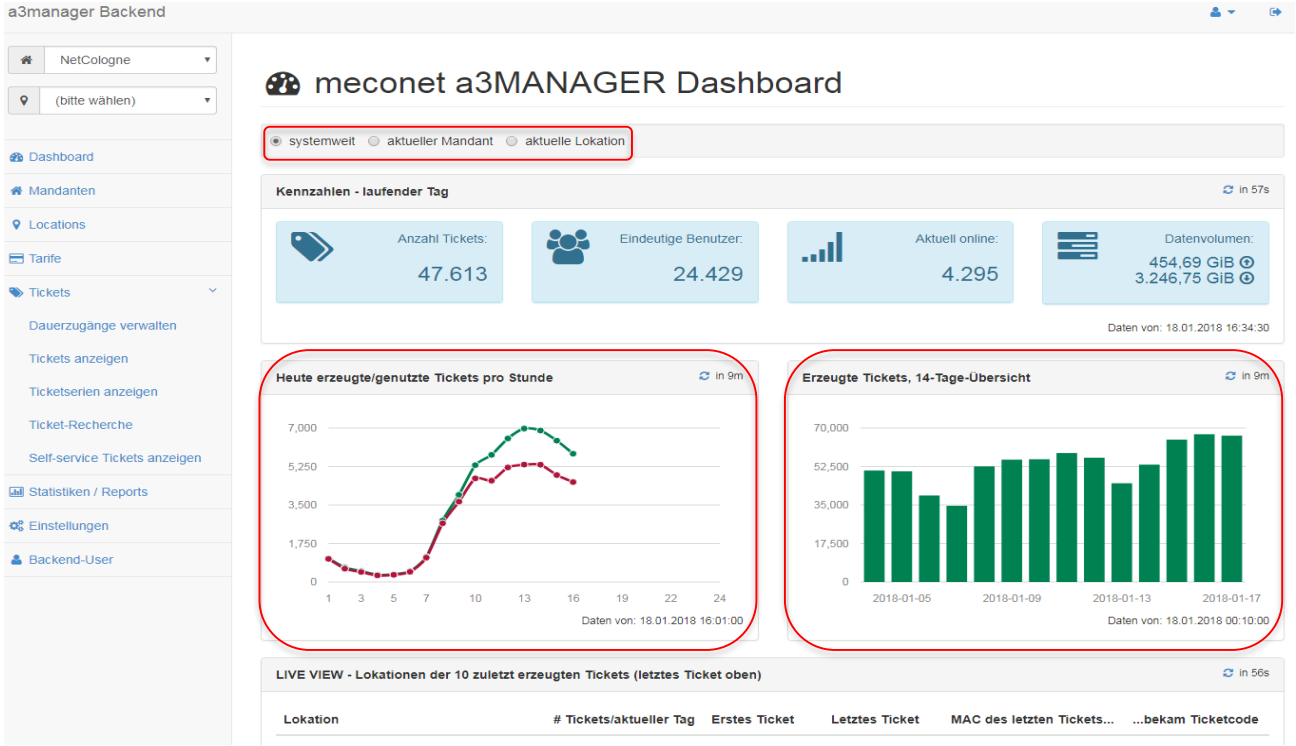


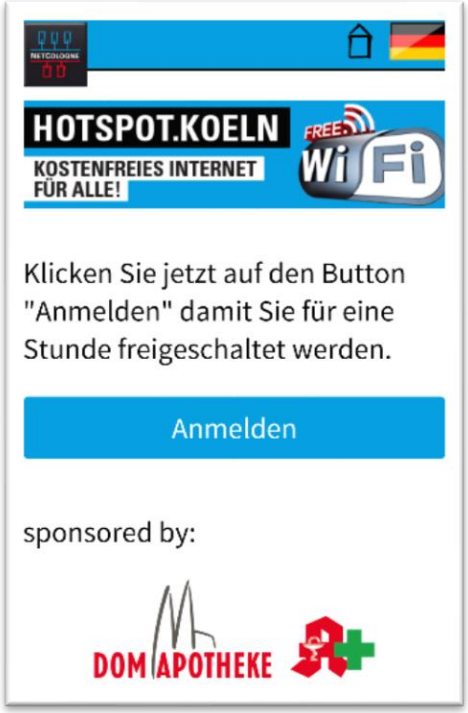
A3MANAGER

Some features

- Individual characteristics for each location / VLAN
  - Bandwith, Volume, Time Credit, …
- Advertisement
- Voucher
- Self-Service
- MAC-Authentication
- PayPal integration
- Statistics / Reports
- and many more…

MULTITENANT LOGIN PAGE

VLAN = Location/Customer



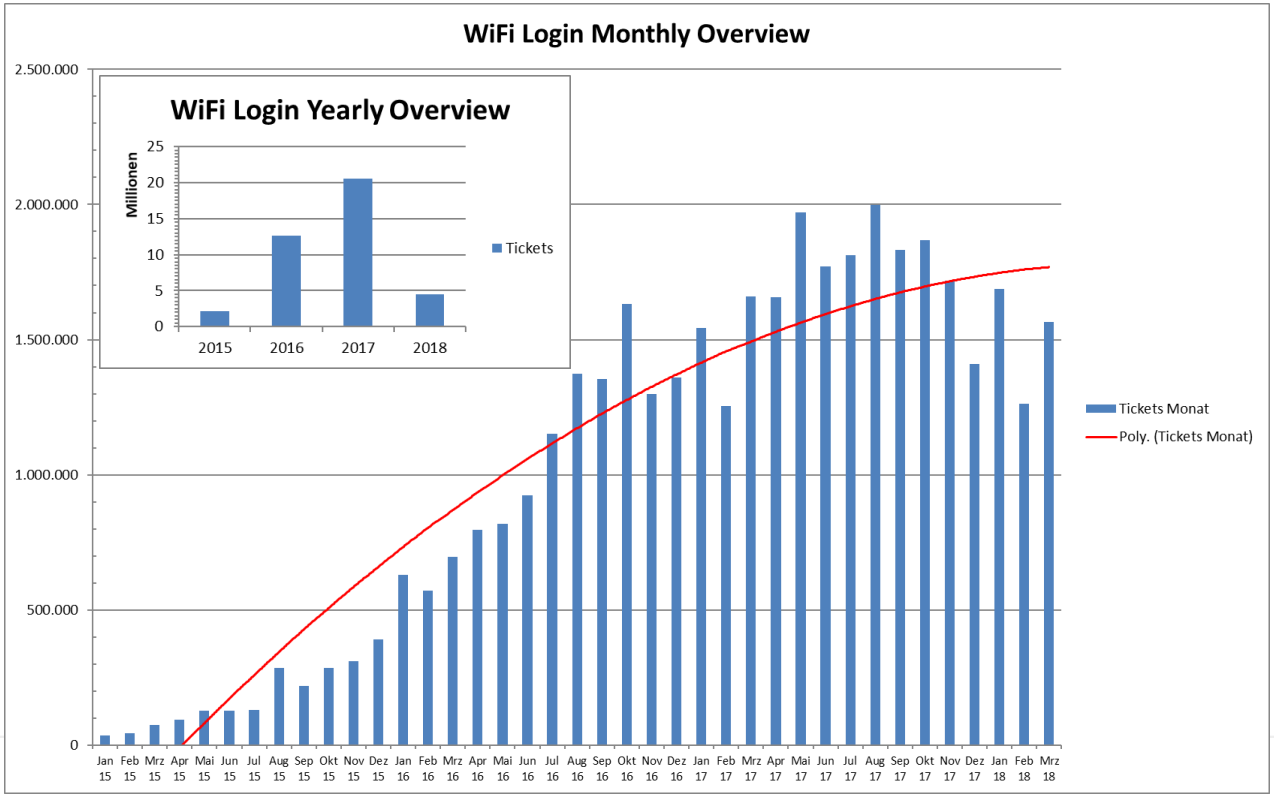
MIKROTIK POWERED NETWORK

MikroTik Equipment in our WiFi Network

- CCR1036-8G-2S+ 8 x as Portal Switch
- CCR1036-12G-4S 18 x as Portal Router
- CCR1036-12G-4S 12 x as Router, NAT Gateway, L2TP Server,…
- CCR1072-1G-8S+ 10 x as MPLS/VPLS Backbone Router
- CCR1016-12S-1S+ 16 x as MPLS/VPLS Fiber Access Router
- CCR1009-7G-1C-1S+ 10 x as L2TP Bridge (up to 1GBit/s Access)
- hex 50 x as L2TP Bridge (up to 100Mbit/s Access)
- wAP 300 x as Access-Point (Internet Access, L2TP)
- CRS212-1G-10S-1S+IN 16 x as Fiber Access Switch

THE RESULT

20.5 Million Tickets (Login) in 2017



THANK YOU

Ivan Andric

NETCOLOGNE

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WEIL UNS VIEL VERBINDET