Data Sheet - Automate

Enable true network automation to make your network reliable and efficient

The ever-increasing network complexity demands automation to maintain businesses productivity and competitiveness. However, adoption of network automation is limited by the 'fear of the unknown' stemming from possible instability caused by legacy, such as poor configurations and hidden or stranded services which often results in expensive and disruptive transformation projects. Zeetta solves this problem with minimum costs and disruption by following a systematic approach of network modernisation. It starts with the discovery and complete **Visualisation** of the true condition of your network. After that, the efficiency of the network is **Optimized** to achieve stability and high levels of performance. Finally, a resilient network is delivered through **Automation** of its operations to 'Unlock the Power of the Network'.

Zeetta Automate is the final step in that journey. It brings to life the real benefits of software defined networking (SDN) programmability by simplifying the scheduling and deployment of network reconfigurations to drive down the network's operational costs while increasing business agility. **Automate** cuts the roll-out costs by scheduling automated network changes and reduces substantially configuration time by applying end-to-end network configuration profiles ('**modes**') using an intuitive graphical user interface.

Highlights

- Includes the visualisation features of Zeetta Visualise and optimisation features of Zeetta Optimise
- Introduces the concept of 'network mode' as a collection of network services that define a specific operational network profile
- Dynamically reconfigures mixed LAN, WLAN and private cellular (LTE/5G) networks
- Reconfigurations can be programmed, scheduled, activated by the user or triggered by independent events
- Change network operating mode on demand to meet business needs
- Automatically determines the best path for services across a network using Automatic Path Computation
- Hitless configuration of network services (if underlying hardware allows)
- Implicit error checking for conflict of services
- A new mode can be created from the menu of available services and can be stored ready for use when needed
- Dynamic quarantining of unexpected or rogue devices
- Dynamic Service Delivery (automated configuration of VLANs in access and truck ports to deliver connectivity to tracked devices when they roam in the LAN)
- Assisted service conflict resolution.

Benefits

- In addition to the benefits of Zeetta Optimise, Automate allows you to create, deploy and fully manage groups of services and configurations ('modes'), dynamically and reliably across your network
- Bring to life the real benefits of SDN programmability and transform your network to an agile platform that rapidly and reliably transitions from one operational mode to another in line with the changing needs of your business.
- Schedule, roll out or roll back modes and services at the touch of a button across multiple sites, multiple vendors and mixed LAN, WLAN and private LTE/5G technologies
- Mitigate the risk of human and configuration errors by implicit and automatic error checking at each stage
- Create common, standardised services across multi-vendor networks exploiting synergies and driving down operational costs.

Enabling Programmable Networks

In addition to the features of **Zeetta Optimise**, **Zeetta Automate** enables scheduling and automated implementation of new network services or groups of services on demand It provides complete programmable control of legacy and next generation networks driving down the cost of network operations while increasing business agility.

Automate enables IT teams and managed service providers to schedule configuration changes in specific times and dates It helps to identify and remove expired or stranded services and configurations It allows services to be standardised across multiple sites and provides a way to seamlessly reconfigure networks at the touch of a button to accommodate changes in demand quickly and reliably.

Zeetta Automate delivers up to 50% reduction in roll-out costs by scheduling automated network changes and reduces configuration time by up to 90% using 'mode' management.

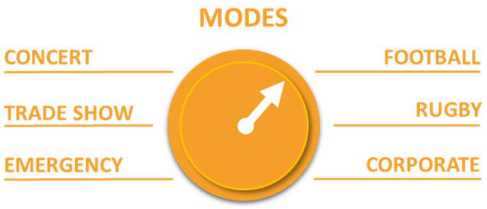
Mode Management

Zeetta Automate uses the concept of **network 'mode'** to provide an intuitive yet powerful way to automate network configurations required to deliver customised connectivity requirements to networks with regular or frequent service alterations such as those found in multi-purpose and multi-tenant venues.

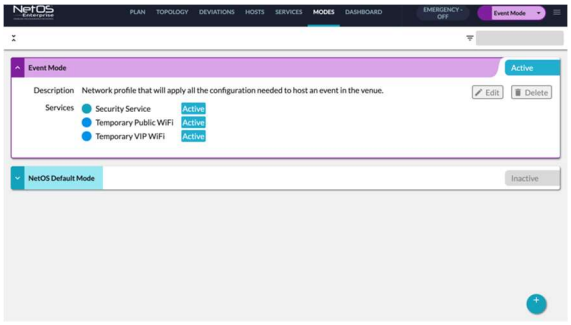
A network 'mode' is simply a way to describe the configuration of the whole network. It includes all the service and device configurations which must be deployed and managed -as a group- to satisfy the business requirements.

For a particular network, a number of modes can be defined resulting in the ability to change or tune service delivery based on environmental needs. For example, if a sports venue requires the network to be adapted for different uses, for say a corporate event one day to a sporting event another, then a mode change can be triggered to simply adapt all the service connectivity and device configurations as required for each event.

Similar to the dial on a washing machine selecting different wash cycles, a network mode selector can be imagined that modifies and therefore adapts the whole network configuration according to the requirement of the network administrator as shown in the figure below.



Modes in combination with the adaptation of services and device configuration offer a powerful way to manage bespoke modifications to network connectivity services which could be temporary or semi-permanent. The figure below shows how a mode is depicted in **Automate**'s user interface.



Network modes in combination with the adaptation of services and device configuration offer a powerful way to manage bespoke modifications to network connectivity which could be temporary or semi-permanent.

Mode activation can be automated by defining an activation schedule as part of the mode configuration. Alternatively, a mode can be activated manually. By definition, a network can only ever have one mode active at any one point in time.

Any attribute of a **service** defined by **Zeetta Optimise** (apart from the service identity) can be modified by a mode. For example, additional endpoints (ports, hosts) and SSIDs for a Wi-Fi service. However, a mode is not allowed to create new services, but only modify, activate or deactivate existing services from the service catalogue.

Any attribute of a **device** (apart from those which are needed for device communication or device identity) can be modified by a mode. For example, location, PoE, dynamic VLAN port enablement, etc.

A mode can be defined to conduct any number of operations listed in the specifications table.

Schedule Mode Selection

Making cyclic adaptations to network services with **Automate** is made as easy as the automatic operation of a day/night switch for a lamp such that no human action is needed to configure the network. This enables adaptations in the network to be done, for example, in quiet times and allows network changes to complete before they are actually needed.

Scheduling the selection of a mode means that network adaptation for an event can be pre planned and coordinated without the need for additional intervention by the network administrator

This is achieved through the ability to calendar the triggering of a selected network mode. Refer to the section on Service Deliver, Automated Activation.

Service calendaring is the driver to scheduling service activation. Mode scheduling simply makes changes to services which are activated by the service schedule or for services not controlled by a schedule.

Emergency Mode Activation

Prioritising network connectivity for the emergency services is becoming increasingly important with the heightened security threats facing our world today. Mode management can be used to reconfigure the network settings so emergency services take priority over other services, in a single action. A special "emergency mode" can be defined to reduce low-priority traffic while maintaining essential services to emergency support personnel.

In a Wi-Fi network for example, emergency mode could deactivate non-essential VLANs, remove non-essential Wi-Fi, SSIDs and drop or throttle any associated traffic maintaining only the essential network services to serve the emergency.

The emergency mode can be activated by the network administrator through **Automate**'s GUI. To avoid accidental triggering, several levels of confirmation can be used before the emergency mode can be actually activated. Thanks to the agility of the Mode Management the network can revert to its pre-emergency operating state by simply pressing the Emergency button again.

Emergency mode is an example of how mode management can provide re-prioritisation of network services in respond to external triggers or operating environment changes.

Applications and APIs

One of the most important functions of **Automate** is the ability to support network applications that use the Automate's Northbound Interface to provide intent-based orchestration of services across the network. This programmability results in a more efficient and effective management of the network, reduced costs -as many trivial but error prone tasks are automated- and increased resilience and stability. This section describes examples of network applications associated with **Zeetta Automate**.

Applications, can be developed by Zeetta or 3rd parties using **Automate**'s published Application Programming Interfaces (APIs). They allow business systems to directly interact with the network thereby facilitating networking and management tasks or functions.

For example, the visualisation options offered by Zeetta Visualise are applications that provide different views of the network through an intuitive graphical user interface.

One other application that combines the visualisation features of **Zeetta Visualise** with **Zeetta Optimise's** ability to provision services across the network is the Network Resource Booking App. Its main function is to simplify the scheduling and creation of bespoke connectivity services to predefined locations in a smart venue.

Network Resource Booking App

The Network Resource Booking App (NRBA) allows the user to create temporary network services (e.g. SSIDs in a Wi-Fi environment) to specific locations in the network for a specified time frame without the need to manually configure individual network devices. **Automate** enables this in a vendor- and technology-agnostic way. The resulting service is termed an 'event'.

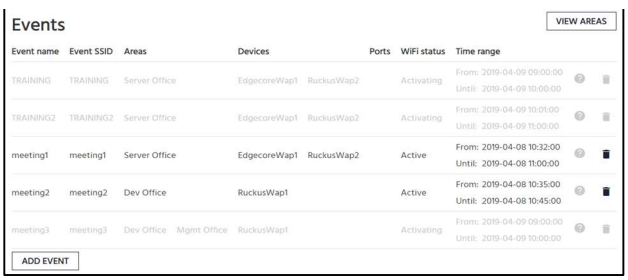
The business benefit is that NRBA offers an easy way to create branded (Wi-Fi) services in a multi-vendor environment which could create additional revenue opportunities by offering a better user experience by partitioning service delivery.

The NRBA handles the automatic mapping of the service to the corresponding network devices. For example, in a Wi-Fi deployment, the SSID name is specified by the user, making it possible to brand the Wi-Fi service. The NRBA consists of three main functions:

- The List of Events provides a list of scheduled events
- The 'View & Select Areas' screen provides a visual presentation of all bookable areas to assist selection
- The 'Add Event' wizard takes the user through the procedure to define key parameters and book the event

List of Events

The List of Events is the main screen of the NRBA and is used as the landing page after the launch of the application. It contains a list of all currently scheduled events and flags those that are currently active as shown in the figure below. From the List of Events the user can navigate to 'View & Select Areas' screen or the 'Add Event' wizard.



View & Select Areas

In this screen the user is presented with all the available areas in the venue that can be booked for an event. It uses the Facility Plan view of **Zeetta Visualise** with all the bookable areas clearly marked on the floorplan (a drop-down menu allows the selection of a specific floor level to view in a multi-level buildings). Then the user can select the bookable area(s) by point-and-click as shown in the figure below.

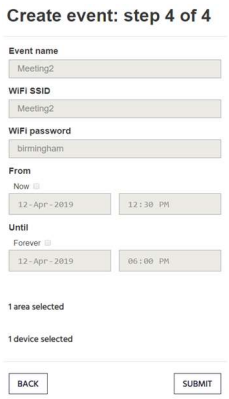
'Add Event' wizard

Following the selection of venue's location, the 'Add Event' wizard is then used to collect sufficient information from the user to create the desired service. For example, in the case of creating a Wi-Fi hotspot, the application will ask for few key SSID parameters:

- The SSID name and password and the time period for the event as required by the user
- The specific Wi-Fi access points that will provide the SSID are selected by the user. For that, the NRBA presents the bookable access point(s) that are available during the specified time frame and in the location selected by the user, again using the same site-specific floorplans with the available access points superimposed.

The NRBA automatically pushes the resulting SSID profile to the relevant devices at the event start time and deletes the SSID profile at the event end time.

At each step it is possible to return to the previous step. The figure below shows an example of the final screen of the add event wizard.



Calendaring Application

The Calendaring Application is an extended version of the NRBA application that can be used to schedule connectivity services so they can be made available in a specific point in the future and for a specific duration. This would enable the delivery of connectivity services in a customised and programmable way while automating the process and eliminate human error.

Moreover, the simplicity of provisioning the service through an easy-to-use graphical user interface would not require expert skills and knowledge of particular vendor solution or technology.

Automate 1.0 - Feature Specifications

Software Defined Networking	Powered by NetOS® SDN orchestration platform based on the OpenDaylight controller from the Linux Foundation®
Supported network technologies	Enterprise-class Ethernet (802.3 family with VLAN tagging) Wireless LAN (802.11 family) FWA using mmWave LTE Evolved Packet Core (3GPP Release 15) 5G Packet Core (NSA, SA) (3GPP Release 16/17) *
Supported platforms	Edgecore AS4610, Edgecore EWS4502, ECW7220-L Extreme X440, X460G2 & X670G2 Cisco Catalyst (IOS-XE) Ruckus SZ100, vSZ, ZF T300 Ruckus T310c, T710, T710s, M510, R720 Meraki MR42 NEC PF5459 Extreme X440, X460G2 & X670G2 NEC PF5459 Aruba Edge switches Aruba core switches Aruba Wi-Fi Juniper EX

Modification Type

Service Modifications	Activate service	Example: Override IPTV service schedule to active
	Deactivate service	Example: Deactivate football player tracking service
	Add to list	Example: Add endpoint to service (Wi-Fi AP)
	Remove from list	Example: Remove SSID from service
Device Modifications	Add/Set property	Example: Set PoE on switch port GE 1 1 1
	Remove property	Example: Untrack host
	Modify property	Example: Change device name (“Switch”→“Switch Reception area3”)
Device Modifications		

Minimum Server Requirements

Processor	Four core i7 CPU e.g. Intel® Core™ i76770HQ.
Memory	Minimum 32GB RAM* (* This requirement is a function of the number of hosts in a network)
Disk Space	Minimum 1TB drive in a Redundant Array of Independent Disks (RAID) 1 ** ** Disk space is a function of how often log files are rotated and of the logging configuration

About Zeetta Networks

We offer high quality software tools that enable Enterprises and Managed Service Providers to monitor, control and operate their networks in a simple, flexible, customised and cost-effective way so they can optimise the utilization of their network infrastructure and deliver a better experience to their customers without escalating CAPEX and OPEX

Our software transforms their traditionally static network into a programmable platform that allows better monitoring of devices, users and applications across the network, automates network processes and provides advanced security and cost savings, whilst enabling development of new revenue generating applications

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