

Data Sheet - Optimise

Easily manage connectivity services across your network

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 Optimise is the second step in that journey. It is a versatile multi-technology and multi-vendor network controller that simplifies network operations and eliminates human error that cause more than 70% of network outages. **Optimise** substantially reduces the time spend in creating and managing connectivity services as it automatically computes the optimal data path for the delivery of the service and configures all the necessary network elements as required. Most importantly, **Optimise** knows the state of the network in real time and allows the network operator to make network changes with live data. This beats automated scripting frameworks and removes the necessity to employ network specialists in managing the network.

Highlights

- Includes the visualisation features of Zeetta Visualise
- Drives network stability by identifying stranded devices, obsolete configurations and erratic network behaviour
- Discovers, controls and reconfigures expired or poor configurations
- Substantially reduces service introduction time by automating the configuration process
- End-to-end service configuration wizard eliminates the need of configuring network devices one-by-one
- Automatically determines the best path for services across the network using Zeetta's Automatic Path Computation (APC)
- Automatically computes intermediate configurations from service end points
- Creates and manages network services across mixed LAN, Wireless LAN and cellular LTE/5G networks
- Included with Zeetta Automate

Benefits

- In addition to the benefits of Zeetta Visualise, Optimise performs analysis of the current network configuration and removes obsolete or wrong configurations that prevent effective delivery of connectivity in your network
- Creates mixed technology (LAN/WLAN/LTE/5G), multi-vendor and multi-site services with minimum human intervention. Notably, well over 70% of network outages are caused by human error
- Substantially reduces service creation time by employing automatic path computation where only the end points of a service need to be defined and then all the intermediate network elements are identified and configured automatically
- Easily discovers and reconfigure expired or legacy configurations that create security back doors, network instability and service failure
- Enables the rapid creation and management of services in complex enterprise network environments
- Eliminates the need to manage services in technology or vendor silos with dedicated specialist teams. Lowers the costs of managing complex networks combining mixed technologies, multiple vendors and sites.
- Simplifies legacy configuration management and reduces the overall cost of network operations (OPEX)

In addition to the features of **Zeetta Visualise**, **Optimise** can create and manage connectivity services in heterogeneous networks across different technologies, vendors and sites.

A **'service'** is defined as the set of configurations which satisfies an end to end connectivity requirement. So, a service can constitute anything from a simple Wi-Fi SSID to a more complex point-to-point connectivity service, such as a new IPTV or public Internet service which spans the LAN. Services are designed and managed through **Optimise's** admin GUI or through the open services API.

Service Orchestration

Optimise offers a framework of operations called 'Service Orchestration' that makes creation and consumption of network services easy and efficient. It simplifies the tasks of defining, creating, monitoring and maintaining network services by modeling connectivity in a **service-centric** manner and by matching user connectivity intentions to the capabilities of the network.

Through service orchestration, **Optimise** delivers both control and data plane services in an automatic manner This is in contrast to the conventional configuration management tools that require tedious, device-by-device human intervention for the provisioning of a service.

Optimise takes an **intent-based 'service centric' view** of the network and orchestrates services, end-to-end, across all the different technologies and vendors that make up the underlying physical network This means that Optimise becomes the ultimate arbiter of all the services in the network.

End-to-end service orchestration reduces time-to-value for both new and existing connectivity services, improves network integrity and simplifies the definition, creation, monitoring and maintenance of network services.

Service Orchestration Process Flow

The figure below illustrates the process flow that **Optimise** follows to orchestrate a service. It consists of three key steps:

- 1. Intent is captured.** The user's service requirements are captured. This could simply be: *"I want to create a connectivity service for my CCTV system on these locations"*.
- 2. Service is orchestrated.** Given the user-specified endpoints, **Optimise** calculates the data path, assesses the availability of the resources across the network and creates a new network configuration
- 3. Service is deployed.** For example, if an end-to-end, multi-endpoint network service composed of a VLAN has been created, then the user can provision the service to new devices by simply plugging them to the network to automatically access the service.



Service Design

The first step in defining a new network service is to capture the connectivity requirement i.e. the user intent This is done through interaction with an internal list of pre-defined services (service catalogue) eliminating the need to have spreadsheets for storing service configurations used in traditional systems.

Optimise exposes only the necessary set of parameters needed to create a connectivity service depending on the user profile (expert/non-expert) as described in the specifications table.

'Plug-n-play' service delivery

Services may be designed to contain **explicit** or **implicit** service endpoints or a mix of the two. This enables **Optimise** to deliver specific services in either static or dynamic manner to support mobility application. Endpoint classifications are defined in the specifications table.

The ability to support implicit endpoints ensures that instant and correct connectivity is delivered to a device as soon as it joins the network regardless of the location it accesses the network (i.e. enabling 'plug and play' functionality).

Service Creation

Service creation checks if the defined service can be delivered by the network, and if it can, the resources required to deliver the service are reserved and the service is made available for activation. Depending on the type of services being requested, **Optimise** determines the feasibility of the service by checking the availability of the required network assets, resolves any conflict with existing services and identifies the optimum path using Zeetta's Path Computation Engine (PCE).

Automatic Path Computation

Optimise uses Zeetta's own Automatic Path Computation Engine (APCE) and special data routing algorithms to calculate the optimum path for the delivery of a service. For the creation of a new service, only the end points need be defined, and APCE calculates all the intermediate points and their corresponding configurations saving up to 90% of the time compared to conventional systems.

Optimise reduces service creation time by more than 90 as it automatically computes the optimal path for the delivery of a service and identifies and configures all the necessary network devices as required.

Service Delivery

Service delivery is the activation of the service. It results either in the service being delivered to the network (i.e. the proper configurations are pushed to the network devices) or in the service simply being made available for delivery. Services can be activated and delivered using a number of methods including manual activation, automated activation (scheduling) or through a separate software module such as mode selection by **Zeetta Automate**.

Service Modification

Service modification provides the ability to modify key parameters of a service including service name, Wi-Fi SSID, VLAN settings and adding/removing endpoints. Modifications are allowed for services in any part of the service lifecycle and can be performed in two ways: Manually or through the use of modes by **Zeetta Automate**.

Improving Network Reliability

Optimise can be used to improve the stability and reliability of the network by executing a 'performance audit' of a service across the network. In such a case, **Optimise** will examine every node of the network and perform an analysis of its configuration. It will then work out the ideal configuration for the services currently in use and if required, suggest a new optimum configuration. The user has the option to accept all, part or none of the new configuration

Once a selection is made, **Optimise** will use APCE's algorithms to define the optimum path for the delivery of the service. Then the requested configuration changes will be applied to the appropriate network devices without any further human intervention.

Optimise also improves legacy network management by identifying expired configurations that cause network instability and service failure.

Service Health Monitoring

Monitoring the health of a service can quickly identify issues which affect users' connectivity services so that remedial actions can be taken to maintain the user experience.

In the context of Service Orchestration via **Optimise**, the overall health of a service is important for two main reasons:

1. The network resources required for a service may be unavailable at the time the service is configured to the network
2. Provide the necessary data to allow intelligent decisions to be taken to self-heal network resources

Notifications & Alerts

Optimise's notifications and alerts function allows users to configure alerts to notify of events that require user attention. It is a method to take automated actions based on conditions configured in an alert. An alert is sent when conditions have met the criteria or rule selected for the alert. The threshold and notification criteria determine when and at what frequency alerts are generated.

Notifications and alerts can be integrated with 3rd party solutions for provide ticket desk integration or for sending alerts such as SMS, email or IM. Passive monitoring of alarms is currently carried out by **Prometheus**.

Network Performance Monitoring

Optimise uses data collected from a number of sources including data collectors, data mining and search analytics to:

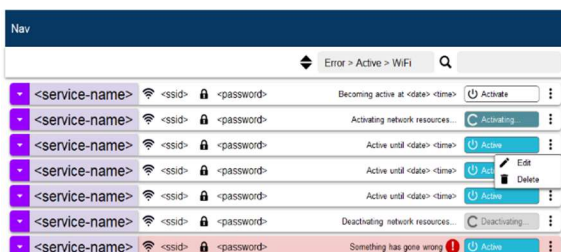
- Monitor the overall performance of network services
- Report the integrity of services with respect to performance
- Run synthetic transactions in order to test the integrity of a path against SLA
- Deliver statistics for SLA assurance and diagnostics
- Provide data needed to offer self-healing.

Device data collectors harvest data from different network data sources including Wi-Fi access controllers (via multiple APIs), Wi-Fi access points (multiple protocols), SNMP, sFlow, OpenFlow counters and device specific CLI over SSH. Data are stored in a Mongo or Elastic search database and are accessible for further processing or visualization through Visualise GUI.

Service Management View

The Service Management view provides an interface to the **Optimise's** Service Orchestration functionality. The view is intended to be used by network administrators, engineers or other users who are familiar with networking.

The Service Management view lists the currently configured services and their state. From this view a user is able to take a number of actions to modify, activate and delete services. The user can select the columns of preference and filter the service catalogue view.



The Service Management view provides access to the New Service wizard.

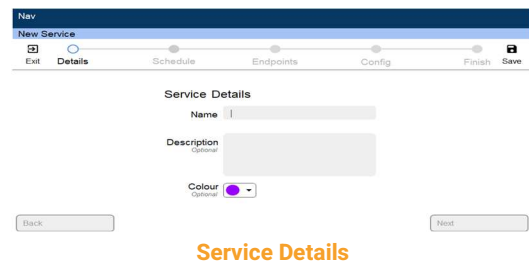
Service Creation Wizard

The Service Creation Wizard takes the user on a seamless journey to capture their basic intent for service delivery. The wizard captures the following data from the user:

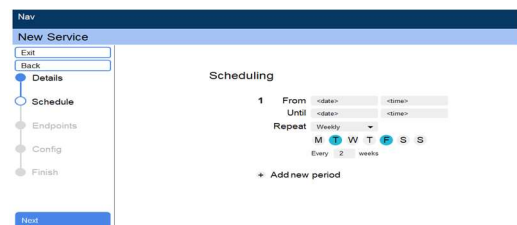
- **Service Details.** The user defines a name, description and colour to represent a service.
- **Schedule.** The user can optionally schedule the service activation at a later time.
- **Endpoints.** The user can select endpoints for the service from a number of views including Map, Plan, Topology and list views. Endpoint selection can be filtered using vendor, geographic location, floor and area.
- **Wireless and advanced configuration.** The user can add basic Wireless network configuration and advanced Layer2 and Layer3 configuration as desired.

After the data has been captured from the user, the wizard shows a summary of the defined service and waits for the user's confirmation. Once the user confirms the creation of the new service **Optimise** provisions the service in the network and uploads a copy in the Service Catalogue view.

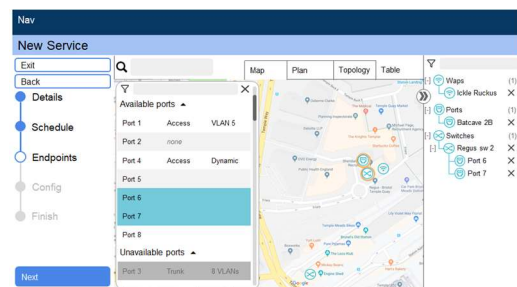
Screenshots of the New Service Wizard interface are shown in the following example figures.



Service Details



Scheduling



End Point selection (example Google Maps view)



Summary of defined service

Optimise 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 Cisco Catalyst (IOS-XE) Meraki MR42 Ruckus SZ100, vSZ, ZF T300 Ruckus T310c, T710, T710s, M510, R720	Aruba Edge switches Aruba core switches Aruba Wi-Fi Juniper EX Extreme X440, X460G2 & X670G2 NEC PF5459

Service Design & Definition

Configurable service parameters	Basic Service Configuration	<ul style="list-style-type: none"> • Service name • End Points <ul style="list-style-type: none"> • Switch ports • Wireless Access Points (Security, Band) • Network hosts • Other wireless (5G Small cell, mmWave) • LAN <ul style="list-style-type: none"> • Layer 2 (VLAN number, VLAN name) • Layer 3
	Advanced Service Configuration	<ul style="list-style-type: none"> • End Points • Wi-Fi / Wireless <ul style="list-style-type: none"> • Radio (Band, channel) • Security policies (ACL, WPA, etc.) • LAN <ul style="list-style-type: none"> • Layer 2 (Topology/Hub, Rate limits) • Layer 3 (IP Address, Subnet, DHCP server IP address, DHCP pool) • Security (Firewall) • Router <ul style="list-style-type: none"> • Backhaul selection (Optical, LTE/5G, Satellite) • Routing priorities

Service Endpoints

Explicit service endpoints (static)	Endpoints for static assets to which the service must be delivered. Examples: <ul style="list-style-type: none"> • Switch ports • Wireless Access Points • Default service endpoints (such as a server)
Implicit service endpoints (dynamic)	Endpoints for assets which could access the network at different points over time. Examples: <ul style="list-style-type: none"> • New switch • Wireless Access Points • Printer • CCTV camera

Minimum Server Requirements

Processor	Four core i7 CPU e.g. Intel® Core™ i7-6770HQ.
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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