application note

Lab automation solutions: TSI AgileWARE® and POLATIS® optical circuit switching

Introduction

Organizations both from the government sector as well as private enterprise are under intense pressure to rapidly test and deliver enhanced network services, validate new equipment and quickly resolve customer issues. To do this they need to get more and more out of lab system test resources. In today's ever-changing business climate, automating critical lab and system test resources to increase utilization and reduce costs while allowing operators remote access is critical.

Key features / Benefits
- Single pane of glass
- Self-service scheduling
- Maximize CAPEX spending
- Automate and orchestrate
- Continuous circuit monitoring and diagnostics
- One-time network verification
- Multi-tenant and scalable

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Challenge

Whether driven by the experience of the pandemic, or by the desire to leverage a geographically diverse workforce, many organizations now require the ability to manage labs and complete testing cycles remotely. The ability to remotely control the testing and DevOps cycle is now considered essential in many organizations and has been driven largely by the following key factors:

- Managing hybrid network environments – many organizations must leverage both on-premises and cloud-based resources.
- Ensuring the health and security of the testing workforce as well as the lab environment by allowing complex network changes without lab personnel.
- Maximizing the efficiency of a distributed, geographically diverse workforce to enable 24/7 testing schedules with automatic conflict resolution.
- Driving efficiency to shorten development cycles and product development time while increasing equipment utilization.

Solution

Network designers now have two powerful tools at their disposal when deploying an automated lab solution: transparent optical circuit switching (POLATIS®) at the physical layer and a sophisticated Lab as a Service (LaaS) solution (AgileWARE® from TSI).
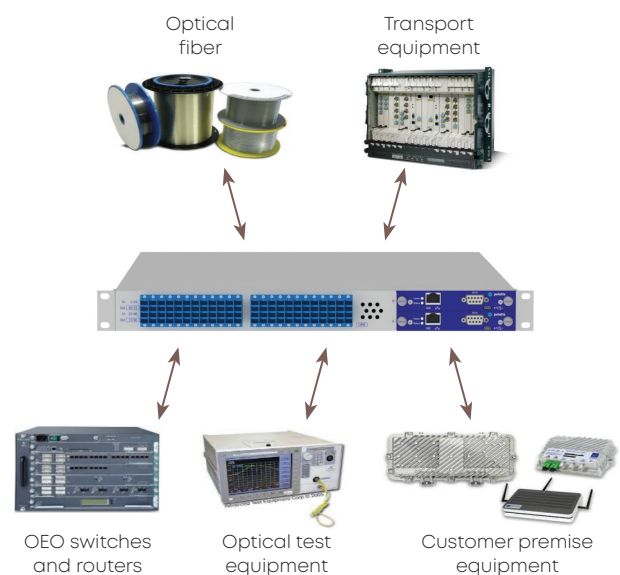
Integrating the AgileWARE® LaaS platform with POLATIS® fiber layer switches provides an easy-to-use and extremely flexible solution for configuring fiber layer connectivity on-demand. The joint solution enables infrastructure vendors, data center operators and network service providers to quickly and simply execute complex equipment, system, and service testing.

POLATIS® fiber layer optical circuit switching

POLATIS® optical circuit switching creates a transparent fiber layer interconnection platform, enabling dynamic and transparent interconnection of any device with an optical interface.

POLATIS® is the optical test platform of choice for many government agencies, military branches, and most of today's transport and data system vendors.

- Industry leading insertion loss and repeatability.
- Ultra-low signal latency.
- Signal agnostic.
- Bidirectional.
- Dark fiber switching.
- Optical power monitoring (OPM).
- Variable optical attenuation (VOA).

Optical fiber

Transport equipment

OEO switches and routers

Optical test equipment

Customer premise equipment

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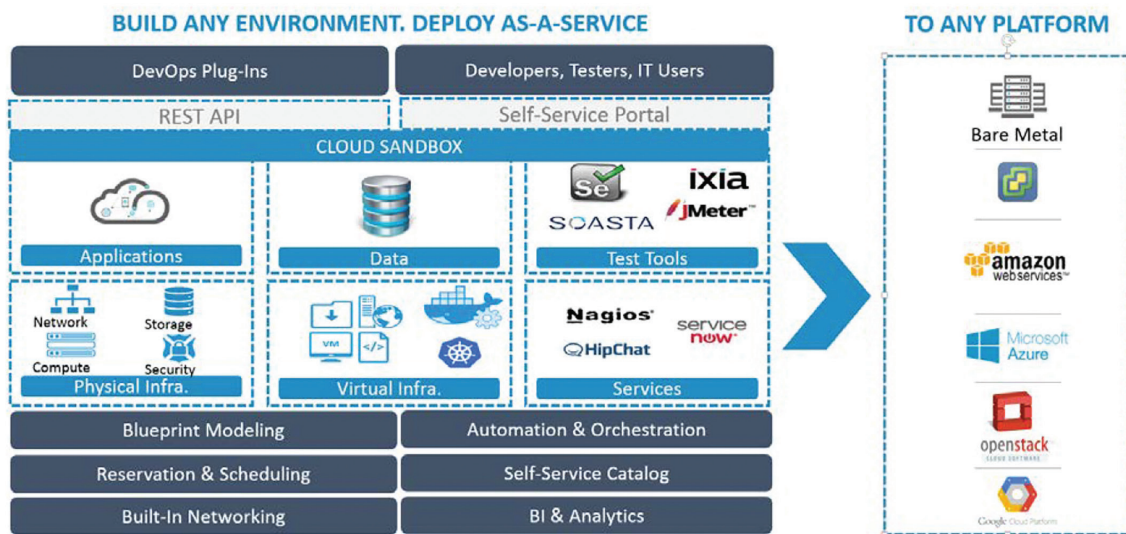
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AgileWARE® Lab as a Service (LaaS) Solution with TSI

Simple, secure, self-service automation and orchestration for provisioning cloud-agnostic infrastructure environments in minutes, not months – for remote labs or on-prem.

AgileWARE® slashes circuit setup time by automating the management of IT resources. It offers clear visibility into your organization's resources as well as their availability status and it optimizes resource use. AgileWARE's unique monitoring and diagnostic automation gives a real time view of the entire health of your infrastructure or lab.

At reservation time, the route activation automatically configures the connectivity mapping in the corresponding L0/L1 fabric.

AgileWARE solution

Lab monitoring and diagnostic web portal

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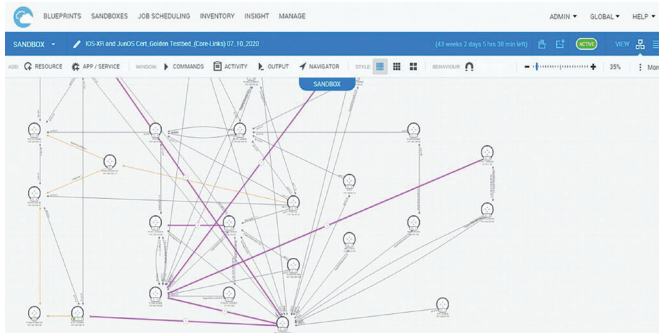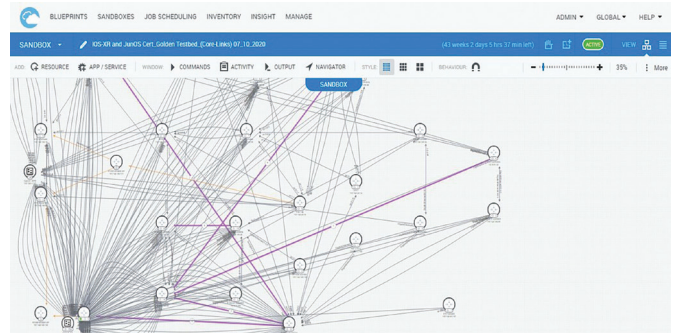
Functions

AgileWARE® also provides the following:
- Inventory management, with agnostic vendor appliance, VMs, and clouds.
- Resource scheduling and provisioning, domain and user role management.
- Automation framework built in with network save and restore.
- Automated power and network monitoring dashboard.
- Design with logical view that drives L1 physical view.

Logical view

Physical view

Key features / Benefits

Single pane of glass
Manage fiber optical connections and control **all** devices with a single interface

Self-service scheduling
On-demand equipment reservation and scheduling eases user frustration, maximizes production time

Maximize CAPEX spending
15% savings on hardware utilization typical with fiber layer optical switching

Automate and orchestrate
Simplified configuration and provisioning of saved configurations allow for near instant reconfiguration of topologies

Continuous circuit monitoring and diagnostics
Full view of circuit quality continuously monitored and diagnostic debug for circuit anomalies

One-time network verification
95% reduction in setup times and costs allows for dynamic, real-time network health checks and provisioning

Multi-tenant and scalable
Consolidated labs with a globally shared secure user and resource base

More to explore

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tsieda.com
Phone: +1 407-339-4874 x102
Email: info@tsieda.com

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