

Testing in Carrier Ethernet Wholesale -- Top Three Operational Challenges and Best Practices

Description

Abstract: The Standardization Of Mef Ce 2.0 Wholesale Ethernet Has Set The Stage For Service Providers To Seamlessly Expand Into Newer Territories. Mef Ce 2.0 E-Access Services Provide Service Providers And Wholesale Access Providers With A Standards-Based Approach For Evaluating And Procuring E-Access Networks. This Article Provides An Overview Of Challenges In Ce 2.0 Wholesale Ethernet Testing And Offer Best Practices.

Overview Of Mef Ce 2.0 E-Access And Wholesale

The Mef Introduced The Ce 2.0 E-Access Services Standard To Create A More Efficient Wholesale Marketplace And Fuel The Growth Of Carrier Ethernet Services Across The Globe.

Service Providers Contending With Multiple Different Ad-Hoc Arrangements To Access Out-Of-Franchise Customer Locations Are Seeking To Reduce The Time, Resources And Costs Associated To Interconnecting With Local Wholesale Access Providers. At The Same Time, Access Providers Are Seeking More Efficient Ways To Implement, Offer And Operate Wholesale Services While Benefiting From Faster Times To Revenue.

Challenges In Wholesale Ethernet Testing

In The Process Of Interconnecting With Local Wholesale Access Providers, Testing Of The Access Provider Networks And The End-To-End Circuit Is The Key To Ensuring Sla Compliance. Testing In A Multi-Operator Environment Involves The Following Challenges:

1. Circuit Configurations And Equipment Used Keep Changing Due To Operational Changes And Issues

Before Mef Standardized Ce 2.0 E-Access, The Biggest Challenge That Service Providers Had To Contend With Was In Communicating The Service Definitions And Terminologies That Each Operator Used. With Mef Ce 2.0 E-Access, The Service Definition And Terminologies Have Been Standardized And Has Created A Common Language For Operators To Work Together In A Carrier Ethernet Environment. Thus, Mef Ce 2.0 E-Access Is A Great Step To Bring Together Carriers Across Geographies To Understand Each Other's

Service Definitions And Capabilities.

However, As The Services Are Offered Over Time To Customers, Circuit Configurations Could Vary, Equipment Used May Vary And There Could Be Other Operational Changes And New Network Problems Could Occur. So The Challenge Is For Carriers To Ensure That They Offer, On An On-Going Basis, The Configurations And Quality Of Service Consistent With Mef Ce 2.0.

2. Ce 2.0 Definitions Are Not Easily Understood By Network Operations Team And Technicians

The Mef Ce 2.0 Is Generally Well Understood By Technically Strong Teams Such As Network Engineering And Network Architecture. However, On A Day-To-Day Basis, The Teams That Are Involved In Testing And Turning Up The Services As Well As Monitoring And Troubleshooting The Networks, Typically The Network Operations Teams, Often Lack A Good Understanding Of These Definitions.

To Realize The Maximum Potential Of Mef E-Access Standardization, Clearly The Service Definitions And Thereby Testing Should Be Aligned With Mef Ce 2.0 Attributes, Performance And Bandwidth Profiles.

But Clearly For Testing Teams And Network Operations Teams, Especially Those Belonging To Service Providers In Geographies Where Carrier Ethernet Adoption Is Still Low, To Understand These Definitions And Be Prepared To Handle Technical Issues Is Not Easy And Could Take Substantially More Time.

3. Need For Testing Beyond Y.1564 As Part Of Service Turn-Up

Although Getting Their Services Certified Is A Big Step Towards Mef Ce 2.0 Network Integrity, Often Service Providers Solely Rely On Either Itu-T Y.1564 Or Rfc 2544 During Service Activation. While Necessary, These Tests Prove To Be Insufficient To Ensure Carrier Grade Service Delivery Network-Wide.

Experience Shows That Like The Proverbial ‘Tip Of The Iceberg’, There Are A Number Of Problems That Could Potentially Lie Undetected Until Subscribers Start Using Their Services. For Instance, The Common Cause Of Most Customer Reported Issues Points To Configuration Mismatches And Equipment Interoperability Issues Resulting In Problems Relating To Vlan Preservation, Cos Label Preservation, Mtu Handling, Burst Handling, Port Security And Control Packet Handling.

This Is Because Rfc 2544/Y.1564 Is Focused On Performance Parameter Verification. However It Does Not Ensure Many Of The Functional Aspects As Described By Mef.

Mef Ce 2.0 Has Been Standardized To Include All These Aspects As Part Of The Service Definition And Hence It Is Important To Verify All These Aspects As Part Of Service Turn-Up.

But Verifying All The Mef Ce 2.0 Attributes For Every Service Turn-Up Requires Considerable Amount Of Time. And The Network Test Engineers May Not Really Have The Skills Required To Test All These Scenarios.

Best Practices

1. Mef Ce 2.0 Attributes, Bandwidth Profile And Performance Verification As Part Of Every Service Turn-Up

It Is Recommended That Service Providers Perform Verification Of All The Ce 2.0 Attributes Such As Vlan Preservation, Cos Preservation, Burst Handling, Control Frame Handling, Port Security, Etc. Before Each Service Is Turned-Up.

This Practice Has The Following Benefits:

- Any Issues Detected In The Networks Can Be Exchanged In A Standardized Manner Across Operators To Expedite The Process Of Turning Up The Circuit.
- It Ensures Highest Integrity Of The Networks Before Turn-Up, Thereby Eliminating Extended Troubleshooting Cycles After Turn-Up. This Is Especially Important In Wholesale Because Troubleshooting In A Multi-Operator Environment Could Potentially Involve Finger-Pointing, Thereby Delaying The Whole Process.

2. Automation Of Mef Ce 2.0 Test Scenarios

Since Verification Of All The Mef Ce 2.0 Attributes And Especially Bandwidth Profile And Performance Parameters Is Extremely Time Consuming When Performed Manually, Productivity Of The Technicians Could Be Vastly Improved If The Test Scenarios Required To Cover These Verifications Are Automated.

As An Added Benefit, With Automation, Network Test Engineers Can Cover The Test Scenarios Without Having To Fully Understand All The Nuances Of The Individual Tests.

3. Standardized Mef Ce 2.0 Aligned Test Reports

Once The Tests Are Executed, The Test Reports Should Reflect Appropriate Results In A Standard Mef Terminology Based Template, Covering All The Attributes.

This Would Provide A Common Platform For Wholesale Partners To Share Test Logs And Expedite The Trouble Resolution In A Multi-Operator Network.

Veryx's Solution

Veryx Samtest Service Activation And Diagnostics Solution Provides Comprehensive Test Coverage For Mef Ce 2.0 Attributes, Bandwidth Profile And Performance Verification. Samtest Offers Automated Testing With Standardized Reports Aligned To Mef Ce 2.0 And Enables Quick Verification Before Every Service Turn-Up.

[Learn More About Samtest](#)

About Veryx Technologies

Veryx Technologies Provides Innovative Testing, Automation, And Monitoring Solutions For Developing And Deploying Communication Networks. Veryx Delivers Superior Value To Its Customers Through The Design, Development And Deployment Of Comprehensive, High Quality, Flexible Products In The Testing Domain. Veryx Products Are Well Complemented By The Professional Services That It Offers To Its Customers.

[Learn More About Veryx](#)

About Author

Madhan Panchaksharam Is The Senior Manager – Product Management And Marketing At Veryx Technologies. Madhan Drives The Overall Product Management And Marketing Efforts At Veryx. He Has Close To A Decade Of Experience In The Networking Industry Spanning Multiple Technologies, Including Broadband Access, Carrier Ethernet And Mobile Backhaul. He Has A Master's Degree In Strategy And Marketing From Indian Institute Of Management, Lucknow And Bachelor's Degree In Electronics And Communication Engineering From College Of Engineering, Guindy, Chennai. Madhan Can Be Reached At Madhan.panchaksharam@Veryxtech.com.