



DNE TECHNOLOGIES

Solutions

Legacy to IP Transition Strategy

There exists an operational need to transition existing TDM-based communications to net-centric, all IP/Ethernet networking, utilizing Ethernet interfaces and/or Ethernet translation for serial interfaces. This transition demands the use of new, low cost equipment that reduces size and power requirements, provides dynamic bandwidth management and guarantees delivery of high priority services over Ethernet. Additionally, this equipment must be simple to operate, unobtrusive and flexible enough to support legacy, hybrid and All IP configurations.

Consider the legacy network in Figure 1 below. To accommodate a mix of low speed serial interfaces, T1/E1 traffic and IP flows, a substantial number of network elements have been introduced to support aggregation, serial-to-Ethernet translation and service prioritization. These network elements consume significant space and power, add operations and management complexity, and require extensive operator training in a variety of communications disciplines.

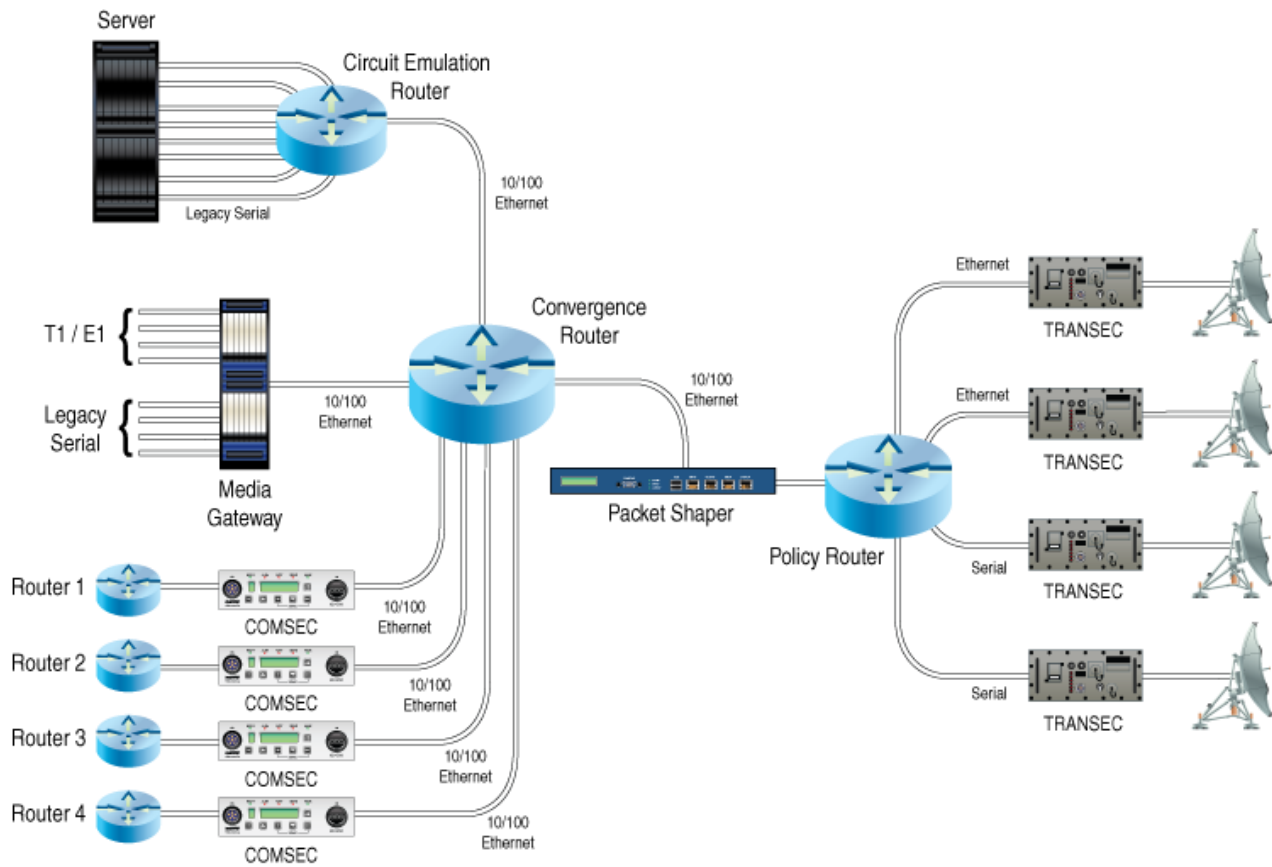


Figure 1: Legacy Network

In Figure 2, several of these network elements are replaced with a PacketAssure iQ4000; specifically the convergence router (aggregation), the packet shaper (efficiency) and the policy router (prioritization). In

this example, the PacketAssure iQ4000 consolidates the functions of the replaced network elements in a single, unified platform, easing operations and management complexity. Inputs to the iQ4000 interfaces are aggregated, cross-connected to the desired output interfaces and sent to the appropriate encryption and transmission devices as either Ethernet or serial-framed Ethernet. Dynamic bandwidth allocation, inherent in the packet processing capabilities of the iQ4000, ensures maximum efficiency and high throughput levels for extended service life. At this stage of transition, all traffic flows to/from the iQ4000 may ride on Ethernet or serial connections and can be differentiated in a highly granular fashion to ensure the required prioritization of key Real Time services.

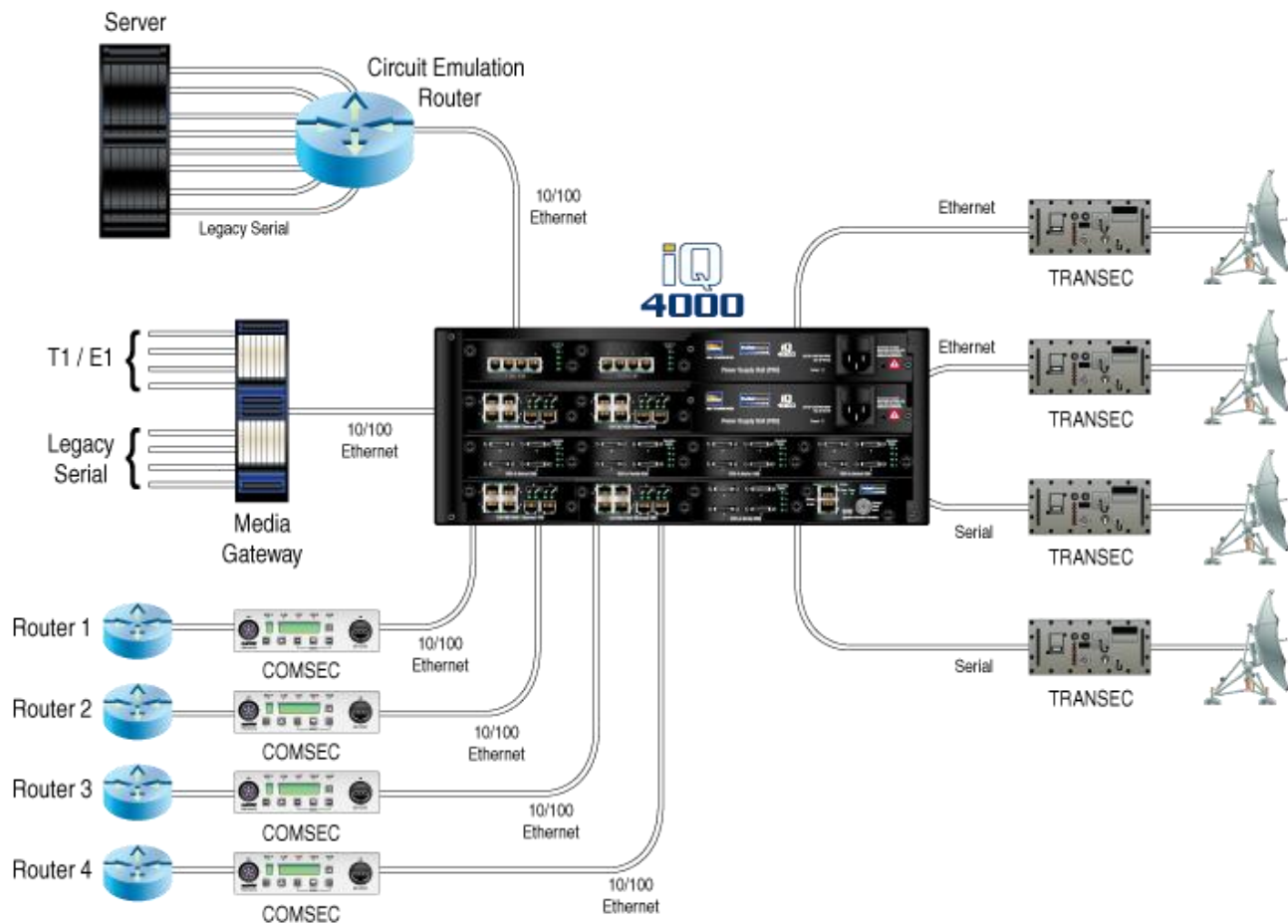


Figure 2: First Stage Transition

In Figure 3, the network undergoes further consolidation, as the circuit emulation router is eliminated and the feeds from the server now connect directly to the iQ4000. Since PacketAssure iQ provides circuit emulation support through standard interchangeable interfaces, these feeds can remain as legacy serial or migrate to Ethernet, as dictated by mission requirements. The media gateway may also be

removed, with its T1/E1 and legacy serial interfaces now directly connected to the iQ4000 as well. At this stage, the network has been consolidated even further. Operational management and complexity, plus size, weight and power have been proportionally reduced. All physical interfaces have been standardized to Ethernet; or if desired, a mix of Ethernet, Serial and T1/E1 interfaces, to maintain connectivity with any remaining legacy assets. Either way, dynamic bandwidth management, also available on the iQ4000 legacy interfaces, continues to ensure maximum efficiency and high throughput levels.

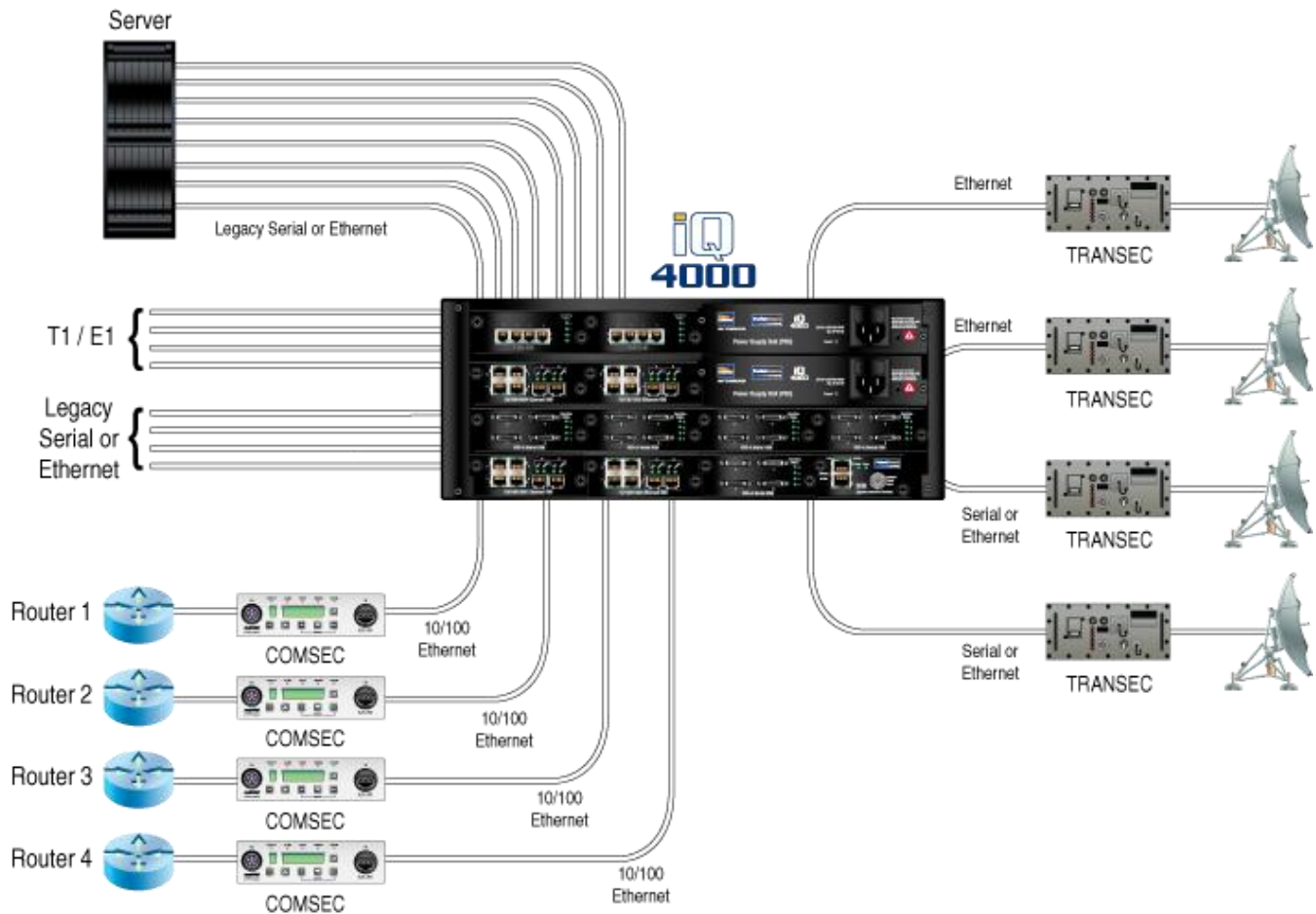


Figure 3: Second Stage Transition

The stages described above outline some of the many ways that an effective Legacy to IP Transition can occur using the PacketAssure iQ as the enabling platform. The modularity, scalability and broad flexibility afforded by the PacketAssure IQ product line allows network

planners and designers the latitude to effect transitions at the pace, and to the degree, they desire.

To summarize, a Legacy to IP Transition strategy, designed around the PacketAssure iQ Service Delivery Manager, offers the following features and benefits:

- A level of service quality and predictability, comparable to time-division multiplexer technology, is available to all services at any point in the transition
- Effective IP traffic aggregation and management that can deliver cost improvement over IP router-based alternative architectures
- Standards-based, interchangeable interface modules ensure long service life, as the basic platform does not have to change to meet transition requirements
- Extends the life of legacy assets as required with aggregation of serial circuits over IP/Ethernet **and** IP/Ethernet over Serial circuits
- Reduces training requirements for operators by consolidating and simplifying the management interfaces that pertain to traffic management and service guarantees
- Consolidates network elements, leading to significant reduction in size, weight, and power consumption over present architectures

For more information about this solution and the PacketAssure iQ Series of Service Delivery Managers, please contact Ultra Electronics DNE Technologies at:

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About Ultra Electronics DNE Technologies

For over fifty years, Ultra Electronics DNE Technologies has provided communications devices to the US Department of Defense, Homeland Security and other government agencies. Ultra Electronics DNE Technologies manufactures networking equipment that economizes bandwidth and extends the drive distances of tactical communications devices. This equipment is used throughout the US Department of Defense and other government agencies to support the transition to IP networking, particularly in areas where bandwidth-intensive network traffic is restricted by a single satellite or radio signal. Ultra Electronics DNE Technologies manufactures the AN/FCC-100, the TAC Multiservice Access Concentrator series, PacketAssure Service Delivery Managers and NRZ/CDI/FOM converters, including the CV-MCU2 converter/multiplexer.

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