

GENERAL DATACOMM

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What's Your Network Cost?


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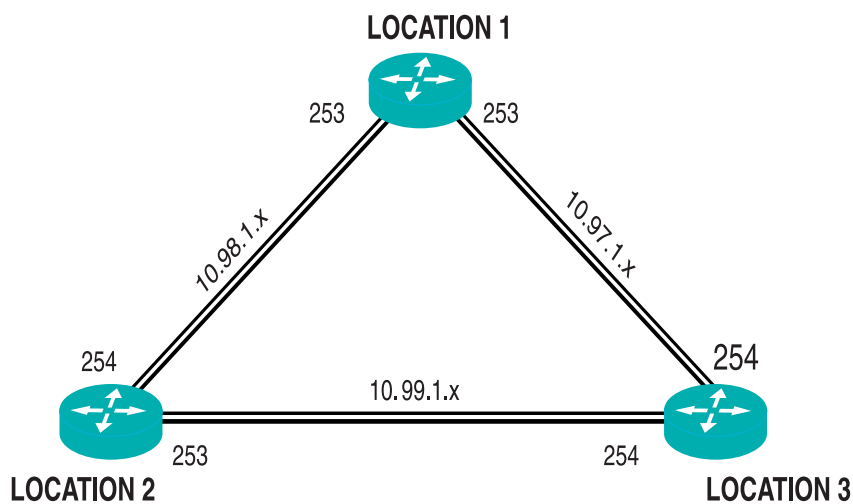
General DataComm

The Best Connections in the Business

Network and IT Managers are faced with three major hurdles in today's business environment: reduced capital expenditures, increased network complexity, and increasing recurring support costs. GDC has introduced a product set that can reduce or eliminate all of those problems. And GDC products are guaranteed for 5 years and have extremely low power consumption – in most cases 6 Watts or less.

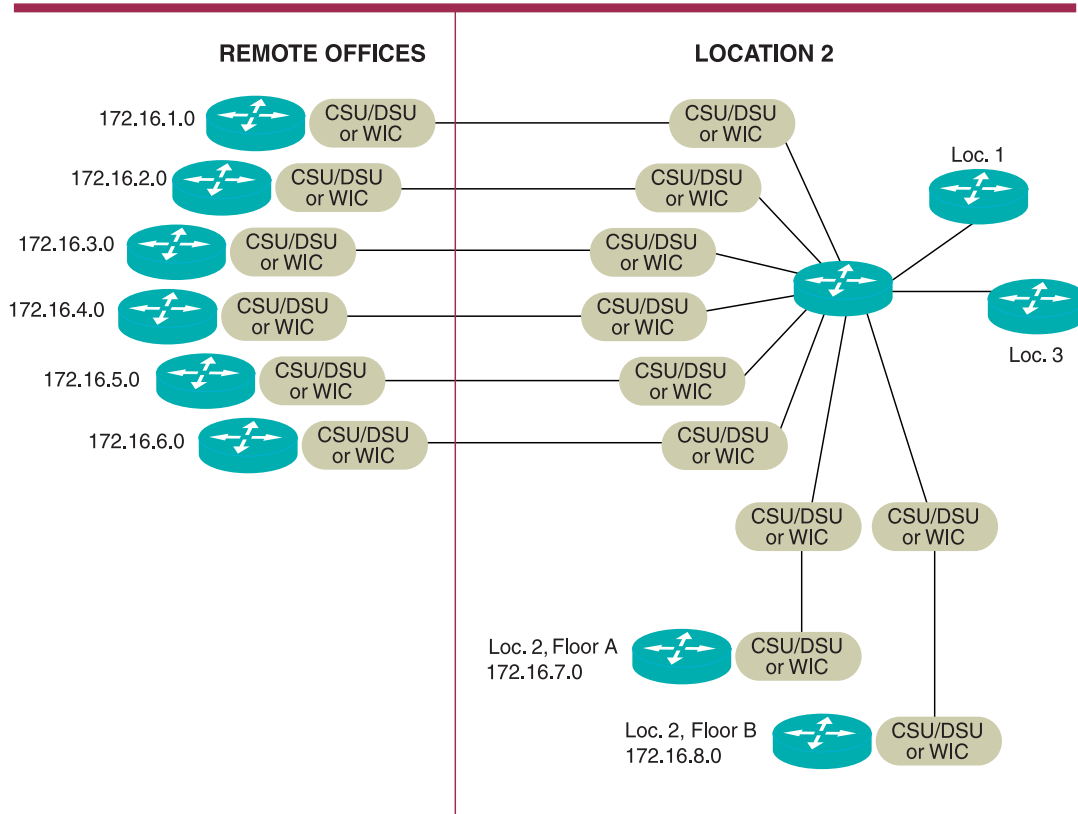
Introduction: A typical backbone network is shown in the figure below:

NETWORK BACKBONE

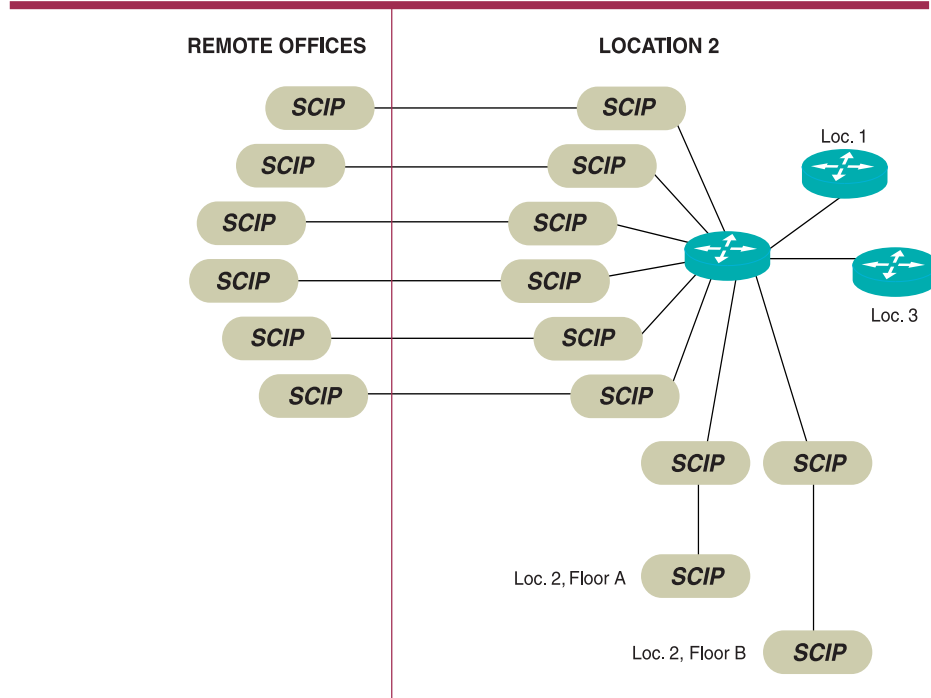


Most backbone networks have routers that are robust and capable of handling large amounts of traffic. These routers typically have advanced security features and hold all of the information about the network. If these routers were the only ones that needed to be configured, it would save the network administrators substantial amounts of time which would translate to significant labor savings. Unfortunately, remote locations require additional routers and they, too, have to be managed and configured. The figure below takes one of the backbone routers and shows the remote locations connections into the network.

NETWORK TOPOLOGY (Typical)



There are several problems that the IT Managers and Network Administrators have in implementing and managing this type of network. The capital cost is high (in having to purchase routers and CSU/DSUs, etc.) which creates a cost burden in today's business climate. External routers at locations distant from the backbone routers actually create a situation where each remote must be treated as a separate network. Note that in each of the remote locations shown in the figure above, IP addressing becomes a significant issue especially with subnets. As shown in the figure below, GDC's new product set changes the dynamics of the network.

NETWORK TOPOLOGY (Enhanced with GDC SCIP LAN-X)

The first thing one notices in this diagram is that routers at the remote locations are no longer used. Second, and perhaps more important, is that the remote locations and the main router all use the same IP addressing range. This makes for a much simpler and more efficient network, and saves on configuration management time and maintenance.

GDC developed a concept of "Transparent Ethernet Extension" that allows standard Ethernet service to be sent over various telephony circuits¹. "Transparent Ethernet Extension" does not mean that all traffic at a remote location must flow over the telecom circuit. In fact, GDC's SCIP includes an intelligent routing algorithm that keeps local traffic off the telecom circuit, allowing for increased telecom circuit efficiencies. It is as simple as plugging the GDC device into any available Ethernet port at the router and the appropriate telecom circuit. In most cases, it is analogous to plugging a modem into a personal computer.

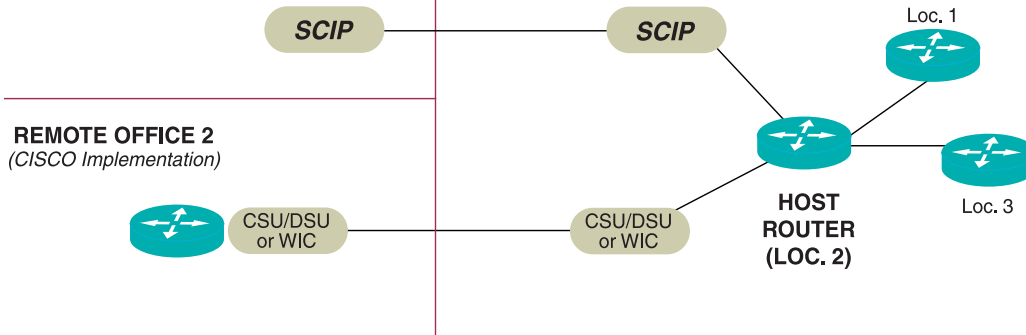
Operating Cost Advantages of Using GDC Product

In the section above, the GDC method of implementing a remote IP network is contrasted with that of a traditional network using a router and CSU/DSU configurations. The following figure shows both implementations in order to compare the operating costs of both implementations and to demonstrate the savings that can be realized using the GDC Enhanced method.

¹ GDC SCIP conforms to 802.3 standard. T-1, E-1 and G.shdsl are currently supported.

NETWORK IMPLEMENTATION COMPARISON

REMOTE OFFICE 1 (GDC Implementation)



The table below shows the costs ² associated with each implementation:

Remote Office 1		Remote Office 2	
Two GDC SCIP	\$3990	Cisco 2621	\$3595
CSU/DSUs	Included	Two T1 CSU/DSUs	\$1990
RS232 Port	Included	RS232 Port	\$495
Five Year Warranty	Included	1 Year Warranty	\$950
Total First Year Cost	\$3990		\$7030

Using the costs above, the GDC implementation will save \$3040 per location in capital and warranty costs alone. There are considerably more savings to be realized using the GDC approach, including reduced configuration expense, reduced upgrade expenses and reduced maintenance expenses.

If we look at Remote Office 2, the router at the remote office needs to be configured independently of the central router. In addition, the central router has configuration information that must be contained relative to the address ranges used at the Remote Office. So there are two sets of configuration data that must be maintained in order for the network to operate correctly. In Remote Office 1, using the GDC implementation, only the central router has to be configured.

² List pricing was used for comparison purposes.

There is a substantial saving in Network Administrator labor using the GDC configuration, since less than 50% of the configurations will be required. If we assume a loaded labor rate of \$100/hour, then savings could easily be several thousands of dollars per remote location.

Another opportunity for sizeable savings comes from the surveillance and maintenance area. In Remote Office 2, the remote router needs to be monitored independent of the host router. This creates a situation where resources associated with surveillance must be devoted to that monitoring. In part, those are people resources and other infrastructure requirements associated with systems set up for monitoring. In Remote Office 1, there is no need for additional surveillance as the host router is the only element needing to be monitored.

This represents a major part of the monitoring and surveillance budget associated with a large network. In terms of site maintenance, the GDC solution described in Remote Office 1 is far superior to that of a traditional routed network as in Remote Office 2. Since there are no configuration requirements in the GDC solution, there is no need for archiving configurations in some format on some server. In fact, the GDC solution has a unique feature that allows for extremely fast recovery - each unit has full knowledge of the other so that if one fails and a replacement is connected, it "learns" about the network from its mate. This saves the costs associated with technician dispatch and saves the time necessary at the site to affect the repair.

The last cost-saving area to examine is upgrades. Upgrades take many forms, with the two most popular being for new features and heightened security. In the case of Remote Office 2, both routers have the potential for such upgrades. However, in Remote Office 1, only the host router needs to be upgraded - a clear advantage over the traditional method illustrated in Remote Office 2.

The operating savings by using the example shown in Remote Office 1 versus the traditional implementation in Remote Office 2 can be quite substantial. Clearly, the capital savings are significant but the savings in time and managing of the network are far more so making a compelling argument for moving forward with the enhanced GDC configuration.

The GDC solution means reduced capital costs for hardware purchases. Additionally, you will benefit from reduced or eliminated recurring expenses and savings associated with management, configuration, and maintenance.

GDC's solution provides the break-through means for deploying networks at lower costs.

And, you can increase your level of service. For mission-critical applications, GDC's solution can be configured in pairs so that telecommunications facilities and hardware failures can be self-healing and transparent to the customer.

For applications that require additional ports, GDC also offers high performance Ethernet switches that are extremely cost-conscious provide significant security options, and consume very low amounts of power – typically less than 6 watts for 9 ports.

GDC has a long history of delivering products that are flexible, fault tolerant, NEBS 3 Certified and "Telco -Tough".

GDC's SpectraComm IP family of products is the smart choice for networks that require reduced capital costs and reduced or eliminated recurring expenses.

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