<https://www.centurylink.com/wholesale/pcat/resaleshns.html>

**Resale - Self-Healing Network Service (SHNS) - V21.0**

[History Log](https://www.centurylink.com/wholesale/downloads/2015/150824/HL_Resale_SHNS_V21.doc)

**Product Description**

CenturyLink's retail telecommunications service, Self-Healing Network Service (SHNS), is available for resale by Competitive Local Exchange Carriers (CLECs) to their end-users. Additional information about resale of CenturyLink's retail services can be found in the [Resale General](https://www.centurylink.com/wholesale/pcat/resalegeneral.html) Product Catalog (PCAT).

SHNS offers end-users a premium service arrangement designed to provide high capacity digital services between multiple end-user designated premises and CenturyLink wire centers. SHNS is an arrangement that automatically detects a fault in the Network and reconfigures itself to maintain a near continuous flow of information between locations.

The SHNS arrangement is made up of two concentric rings that connect two or more locations which connect multiple node locations, with fiber optic cable pairs. Locations included on the ring are specified by the end-user. One ring is the active transmission path, while the second ring serves as a backup transmission path. The direction of communications on the active path is transmitted in one direction (e.g., clockwise) around the ring. Should a failure occur in a component of the active path, the service will "heal" itself by automatically rerouting the signal in the opposite direction (e.g., counter-clockwise) around the ring by using the alternate path.

A SHNS ring is composed of a minimum of three nodes. There are three types of nodes which include:

* Access Nodes, which are located in a specific end-user designated premises
* Hub Nodes, which are located at CenturyLink wire centers
* Control Nodes, which are used under specific circumstances instead of Hub Nodes

SHNS is ordered by bandwidth. Bandwidth ranges from Optical Carrier Level 3 (OC3) and up. Certain interface (located at your end-user's premises) types can correspond only to specific bandwidth capacities. The interface types start at the DS1 level and can range into Optical Carrier (OC) levels. Refer to [Technical Publication 77346](http://centurylink.com/techpub/77346/77346.pdf) for a list of all the interface possibilities associated with specific transport capacities.

**Availability**

SHNS is available where facilities exist throughout [CenturyLink QC](https://www.centurylink.com/wholesale/pcat/territory.html). When facilities are not available, Special Construction may be necessary and will be charged for as specified in the CenturyLink™ Rates and Services Schedule No.1 (QCRSS No.1) or the state specific [Tariffs/Catalogs/Price Lists](http://www.centurylink.com/Pages/AboutUs/Legal/Tariffs/displayTariffLandingPage.html). Additional information regarding Special Construction can be found in [Resale General](https://www.centurylink.com/wholesale/pcat/resalegeneral.html).

**Terms and Conditions**

The end-user is responsible for all equipment and cable on their side of the Network Interface Device (NID). The Digital Service Level 1 (DS1) and Digital Service Level 3 (DS3) interfaces must conform to standard [American National Standards Institute (ANSI)](http://webstore.ansi.org/) DS1 or DS3 specifications.

CenturyLink is responsible for the equipment and cable on the CenturyLink side of the NID.

SHNS is available for resale as an end-to-end finished service:

* For intrastate/intra-Local Access and Transport Area (LATA) use only
* As long as it is not combined with retail
* A Design Layout Record (DLR) will not be provided, as CenturyLink will maintains the circuit

SHNS provided from an end-user designated premises and a CenturyLink Hub (end-link) or from Hub to Hub (mid-link) is not available for resale at discount.

**Technical Publications**

Technical requirements, including Network Channel/Network Channel Interface (NC/NCITM) codes are specified in:

* [Technical Publication 77332](http://centurylink.com/techpub/77332/77332.pdf)
* [Technical Publication 77346](http://centurylink.com/techpub/77346/77346.pdf)

**Pricing**

**Rate Structure**

CenturyLink retail rates, rate elements, and how they apply to SHNS can be found in the QC RSS No.1 or the state specific [Tariffs/Catalogs/Price Lists](http://www.centurylink.com/Pages/AboutUs/Legal/Tariffs/displayTariffLandingPage.html).

Additional general resale rate structure information is located in the [Resale General](https://www.centurylink.com/wholesale/pcat/resalegeneral.html) PCAT.

SHNS is billed on a month-to-month basis or on a fixed-period [Contract Service Arrangement (CSA)](https://www.centurylink.com/wholesale/pcat/resalegeneral.html#tariffs). Contact your [CenturyLink Sale Executive](https://www.centurylink.com/wholesale/clecs/accountmanagers.html) for additional information.

**Rates**

Retail rates can be found in the QC RSS No.1 or the state specific [Tariffs/Catalogs/Price Lists](http://www.centurylink.com/Pages/AboutUs/Legal/Tariffs/displayTariffLandingPage.html).

CenturyLink's retail rates for SHNS, less any applicable resale discount, apply to resold SHNS. Rates and/or discounts can be found in Exhibit A or the specific rate sheet in your Interconnection or Resale Agreement.

**Tariffs, Regulations and Policy**

Information is available in the QC RSS No.1 or the state specific [Tariffs/Catalogs/Price Lists](http://www.centurylink.com/Pages/AboutUs/Legal/Tariffs/displayTariffLandingPage.html).

Additional information can be found in your Interconnection or Resale Agreement or in the [Statement of General Terms and Conditions (SGAT)](http://qwest.centurylink.com/about/policy/sgats/) for the relevant state.

**Optional Features**

Optional features and functions available for SHNS include:

|  |  |
| --- | --- |
| **Feature** | **Functionality** |
| Software Reconfiguration Capability (SRC) | Allows your end-user to reconfigure the existing ports within the SHNS using software commands. The capability allows for the ability to change the location where an individual port can originate and terminate on the SHNS ring. There must be a minimum of two ports per order and no more than one port per termination point. |
| OC3 Central Office (CO) Multiplexing (MUX) | Aggregates off net SHNS traffic for distribution on and off the SHNS ring. Available for specific bandwidths only. |
| Transmux, also know as Ring MUX Ports | Allows your end-user the ability to have high bandwidth interfaces at some locations connecting to multiple lower bandwidth interfaces in other locations. Traditional designs dictate that the circuits entering and departing a facility do so at the same bandwidth. This option allows multiple circuits to be aggregated into a single larger channel. |
| Ethernet circuits | Can ride SHNS via the use of Ethernet interfaces. CenturyLink supports 10 Megabit Ethernet, 100 Megabit Ethernet and 1,000 Megabit Ethernet ports. Bandwidth speeds of 10M, 50M, 100M, 150M, 300M, 450M, 600M and 1000M are available via the Ethernet ports. Typically, an Ethernet circuit will have Ethernet interfaces at both ends of the circuit. However, CenturyLink can support circuits that have an Ethernet interface at one end and a SONET interface at the other end. |

**Features/Benefits**

Benefits of SHNS include:

|  |  |
| --- | --- |
| **Features** | **Benefits** |
| Instantaneous restoration | SHNS provides a separate physical route for normal transmission with a diverse back-up route allowing for instantaneous restoration in case of working path failure or performance degradation. |
| Enhanced reliability | 99.99% availability rate; one error in one billion bits (10 to the 9th); with CenturyLink controlled performance monitoring and alarm surveillance on a 24-hour basis. |
| Enhanced customer control | Your end-user has access to detailed and continuous performance monitoring information allowing them enhanced control of reliability conditions and maintenance situations; with the SRC option, your end-user is provided enhanced control of traffic routing. |
| Customized support | SHNS provides design and installation intervals ordered on an Individual Case Basis (ICB) based on specific customer design needs. |
| Greater flexibility | Access to other services allows customized SHNS integration into the customer's total multi-location network. |
| Cost effectiveness | Customer savings due to added reliability and extremely limited downtime; rate reductions will be passed on to the customer; volume discounts with higher capacity pricing. |
| General availability | Integration of greater reliability throughout CenturyLink’s 14-state region. |

**Applications**

Typical users of SHNS include:

* Medium to large businesses with applications in telemarketing or data centers requiring voice, data, and video applications.
* Businesses with bandwidth requirements of DS1 or higher that require backup between two hosts or the use of videoconferencing between two or more sites.

**Implementation**

**Product Prerequisites**

If you are a new CLEC and are ready to enter the Interconnection business with CenturyLink, view [Getting Started as a Facility-Based CLEC](https://www.centurylink.com/wholesale/clecs/clec_index.html) or [Getting Started as a Reseller](https://www.centurylink.com/wholesale/clecs/reseller_index.html). If you are an existing CLEC wishing to amend your Interconnection Agreement or your New Customer Questionnaire, you can find additional information in the [Interconnection Agreement](https://www.centurylink.com/wholesale/clecs/negotiations.html).

For CSAs, contact your [CenturyLink Sales Executive](https://www.centurylink.com/wholesale/clecs/accountmanagers.html) to establish the contract and also obtain a contract identification number.

**Pre-Ordering**

General pre-ordering information is located in the [Pre-Ordering Overview](https://www.centurylink.com/wholesale/clecs/preordering.html).

The following activities may need to be performed by you in preparation for the issuance of the ordering request:

* Validate address
* Check facility availability
* Validate Connecting Facility Assignment (CFA)
* Check service availability
* Review Customer Service Record (CSR)

**Ordering**

It is important to understand the [Resale General](https://www.centurylink.com/wholesale/pcat/resalegeneral.html) procedures before ordering SHNS.

General ordering activities are identified in the [Ordering Overview](https://www.centurylink.com/wholesale/clecs/ordering.html).

Service interval guidelines are found in the [Service Interval Guide (SIG)](https://www.centurylink.com/wholesale/guides/sig/index.html).

Two requests are required to establish SHNS, the bandwidth fiber ring network (when larger than 45 megabits per second (Mbps)) and the interface request to connect onto the fiber ring network. The bandwidth request must be completed prior to the issuance of the interface requests.

The bandwidth request includes:

* Access Node (AN)
* Hub Node (HN)
* Interoffice Transport (IOT)
* Software Reconfiguration Capacity (SRC)

The interface request includes:

* Access Port (AP)
* Hub Port (HP)
* Central Office Connecting Channel (COCC), if applicable
* MUX

Once the bandwidth fiber ring network has been established, only one request is required to order additional interface requests (ports) on the ring. If a port circuit originates at a point on the ring and terminates at a point off the SHNS, the Service Level Agreement (SLA) and Mean Time To Repair (MTTR) of the end to end circuit, including the portion of the circuit on the SHNS, will be the same as that of a circuit that is entirely off the SHNS.

When disconnecting SHNS, all interface orders must be disconnected prior to the bandwidth fiber ring being disconnected.

SHNS orders are submitted using the Local Service Ordering Guidelines (LSOG) forms. Adhere to the LSOG guidelines outlined for Resale Private Line (PLT) - Non Switched services. Orders are submitted using the following forms:

* Local Service Request (LSR)
* Resale Private Line (RPL)

Detailed information describing field entry requirements are available in the [LSOG](https://www.centurylink.com/wholesale/clecs/lsog.html).

Enter the CSA contract number in the VTA field on the LSR.  
  
For the Transmux option, use the REMARKS field on the LSR to indicate the desired location and interface level.

When submitting a request for a one-time renewal of a fixed term agreement which qualifies for a 10% discount in CenturyLink Operating Companies Tariff F.C.C. No. 11, 15.4.7 (B), within the last 6 months of the contract for 12, 24 and 36 month term, or the last 12 months of a 60 month term, a remark. "ONE TIME RENEWAL", is required on the LSR requesting renewal of the contract for the ring. All ports on the ring convert to monthly pricing at the expiration of the original fixed term of the ring. No additional service requests will be required for the ports in this situation.

Orders should be placed using the EASE-LSR Graphical User Interface [(GUI)](https://ease-lsr.lumen.com/) or  [EASE-LSR Extensible Markup Language (XML)](https://ease.lumen.com/).

Use of Universal Service Order Codes (USOCs) and Field Identifiers (FIDs) are described in the Universal Service Order Codes (USOCs) and Field Identifiers (FIDs) Overview. Use of the[USOC/FID Finder](https://www.centurylink.com/wholesale/pcat/usocfid.html) will assist you in identifying USOC and FID requirements.

Ethernet over SONET (EoS)

CenturyLink requires that all order requests for Ethernet over SONET (EoS) go through the Automatic Quote and Contact Billing (AQCB) pre-order process before you submit your service request. The AQCB inquiry is reviewed to ensure that the equipment deployed for your SONET system supports EoS, and to determine any additional requirements that might be necessary to provide the service. In the event a facility build is required, additional information regarding the equipment and space requirements at the customer premise are found in the [Customer Premise Site Visit Requirements for Fiber Based Services](https://www.centurylink.com/wholesale/downloads/2012/120113/DNLD_Cust_Prem_Site_Visit_Requirements_01_13_12.doc). Contact your CenturyLink account team to initiate the pre-order request; they will provide you with the AQCB inquiry number to include in the REMARKS Section of your service request.

Contact your CenturyLink account team to initiate the pre-order request; they will provide you with the AQCB inquiry number to include on your service request.

If an AQCB ID number has been provided to you, that information must be populated into the VTA field after the contract term period: i.e. "36 AQCBID#".

**Provisioning and Installation**

General provisioning and installation activities are described in the [Provisioning and Installation Overview](https://www.centurylink.com/wholesale/clecs/provisioning.html).

Firm Order Confirmation (FOC) intervals are available in the [SIG](https://www.centurylink.com/wholesale/guides/sig/index.html).

A jeopardy occurs on an LSR request if a condition exists that threatens timely completion. Jeopardy notification information is described in the [Provisioning and Installation Overview](https://www.centurylink.com/wholesale/clecs/provisioning.html).

**Maintenance and Repair**

When placing trouble reports, the account telephone number and/or the appropriate circuit identification must be provided. Information is available in the [Maintenance and Repair Overview](https://www.centurylink.com/wholesale/clecs/maintenance.html).

**Billing**

On a monthly basis, CenturyLink will provide you with billing information that will provide summary account information as well as end-user sub-account information. ~~Detailed information regarding the Customer Records and Information System (CRIS) Summary Bill, Inquiry and Disputes is described in~~[~~Billing Information - Customer Records and Information System (CRIS)~~](https://www.centurylink.com/wholesale/clecs/cris.html)~~.~~ Ensemble is the new billing system for customers. For questions about the bill, please follow the instructions on the reverse side of each billing statement.

The Ensemble bill is described in [Billing Information – Ensemble](https://www.centurylink.com/wholesale/clecs/ensemble.html).

**Training**

View CenturyLink courses in the~~Course~~[Training Catalog](https://www.centurylink.com/wholesale/training/coursecatalog.html).

**Contacts**

CenturyLink contact information is located in [Wholesale Customer Contacts](https://www.centurylink.com/wholesale/clecs/customercontacts.html).

**Frequently Asked Questions (FAQs)**

**1. If I am collocated at a CenturyLink CO, will the node be considered a Hub Node or an Access Node?**  
CenturyLink cannot place a node in collocation space. Instead, CenturyLink will place a Hub Node in the CenturyLink serving wire center (SWC) space. Then, circuits can go from the Hub Node to collocation space via collocation and private line products.

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