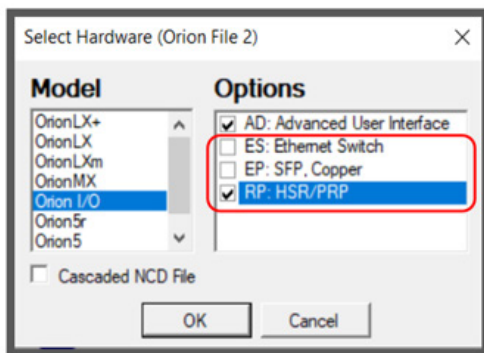


# PRP/HSR Redundant Ethernet for Orion

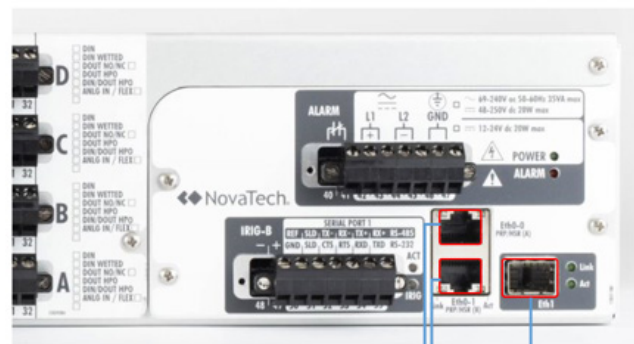
PRP (Parallel Redundancy Protocol) and HSR (High-Availability Seamless Redundancy) are now available on the OrionLX+ and Orion I/O. PRP/HSR provides high-performance Ethernet redundancy with no packet losses, a distinction over other types of redundant Ethernet. Either PRP or HSR can be used for all substation applications including high-speed protective relay intercommunication.

## PRP/HSR on the Orion I/O

PRP/HSR is one of four network options on the Orion I/O. In the other three options, the Orion I/O always has one standard copper port, plus a 3-port switch, an SFP port, or a second copper port. A single design provides either PRP or HSR, software selectable. LAN A and LAN B are brought out as 10/100/1000BaseT ports.



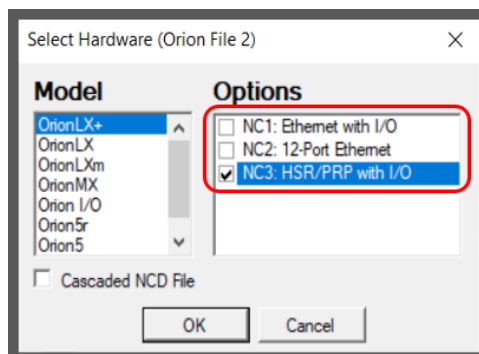
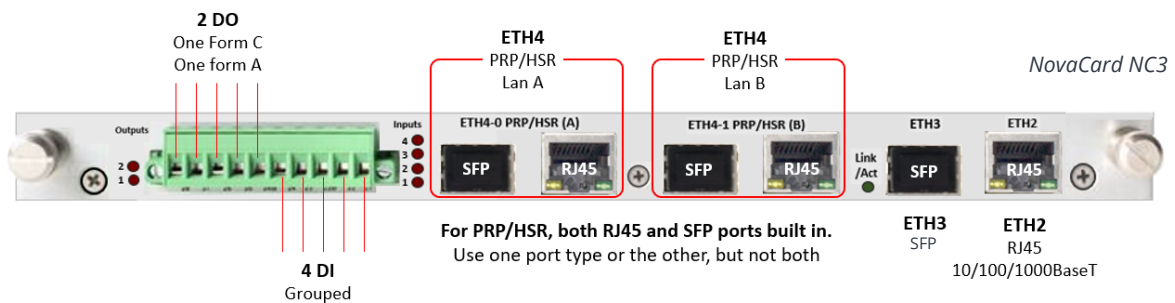
Selections for new Orion I/O PRO/HSR network options in NCD 3.37



PRP/HSR Ports "A" and "B"  
RJ45 10/100/1000BaseT  
SFP Port on other NIC

## PRP/HSR on the OrionLX+

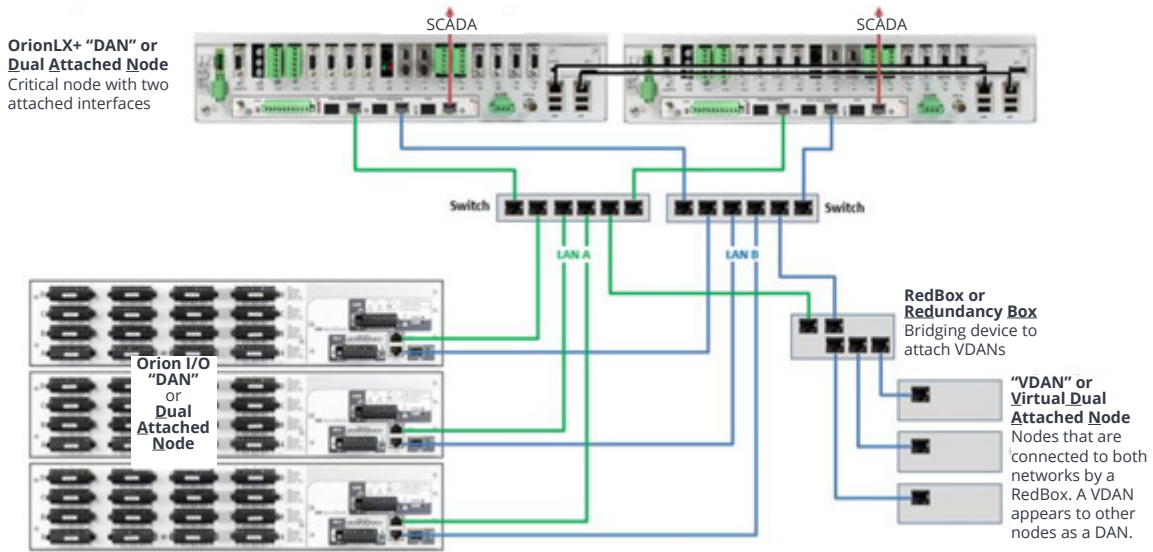
On the OrionLX+, PRP/HSR is offered on new NovaCard NC3, along with additional Ethernet ports and I/O. A single design provides either PRP or HSR, software selectable. LAN A and LAN B are brought out as both 10/100/1000BaseT ports and SFP ports.



Selections for new OrionLX+ NovaCards in NCD 3.37

## PRP Application with OrionLX+ and Orion I/O

A redundant OrionLX+ and three Orion I/O, as Dual Attached Nodes (DANs), are diagrammed below in a PRP network with redundant switches, a "RedBox" Redundancy Box, and Virtual Dual Attached Nodes (VDANs). The latter allow connecting devices without PRP ports.



## HSR Application with OrionLX+ and Orion I/O

A redundant OrionLX+ and three Orion I/O, as Double Attached Nodes (DANs), are diagrammed below in an HSR network with a "RedBox" Redundancy Box and Virtual Double Attached Nodes (VDANs). The latter allow connecting devices without HSR ports.

