

What to expect on the Nokia Optical Network Design Expert Lab Exam

Nokia Certified

Optical
Network
Design Expert

The Nokia Optical Network Design Expert Lab Exam is a three-and-a-half-hour practical exam that tests a candidate's ability to design optical networks based on the Nokia 1830 Photonic Service Switch (PSS) and 1830 Engineering and Planning Tool (EPT).

To register for the Nokia Optical Network Design Expert Lab Exam, candidates must have successfully completed the following prerequisite written exams:

- Nokia Fundamentals of Optical Network Design (4A0-250)
- Nokia Advanced Optical Network Design (4A0-255)

The Nokia Optical Network Design Expert Lab Exam covers topics presented in the Optical Network Certification courses corresponding to the above listed written exams.

Exam topics

Exam topics are summarized below. Candidates should be able to perform all tasks, understand all topics and work with all features. However, it is possible that some topics are not covered in the exam.

- Optical network design using 1830 EPT
- Traffic matrix analysis
- Configuration of optical node types (FOADM, ROADM, ILA, etc.)
- Manual modifications to automated EPT designs, including:
 - Routing
 - Span and link configurations
 - Network Element (NE) configurations
 - Shelf composition and card organization
- Design of CWDM and DWDM networks
- Traffic grooming and cascading
- Generalized Multiprotocol Label Switching (GMPLS)
- Protection and Restoration, including:
 - Diverse path
 - Dual homing
 - Guaranteed Restoration (GR)
 - Source-based Restoration (SBR)
 - Protection and Restoration Combined (PRC)
- Availability and cost calculations
- Availability-guaranteed design
- Optical Transport Network (OTN) hierarchy
- Encryption
- Synchronization
- Latency minimization
- Optical Signal-to-Noise Ratio (OSNR) margin requirements
- Quality of Transmission (QoT) guaranteed design
- Coherent and non-coherent transmission, and guardband
- Dispersion compensation requirements, and equipment selection
- Raman amplification
- Regeneration
- Forward Error Correction (FEC)
- EPT import and export features
- EPT reports, including commissioning file creation

Exam registration

- Registration and scheduling for the Nokia Optical Network Design Expert Lab Exam can be completed at the following URL: <http://networks.nokia.com/onc/exams>
- Lab exams are delivered at select Nokia locations globally. Candidates should plan to register six to eight weeks in advance of their targeted exam date.

Exam notes and tips

During the exam, candidates will be allowed to access soft copies of the product manuals for reference. The product manuals will be accessible from the PC used for the exam equipment. No other notes, textbooks, course materials or reference materials are allowed during the exam. Electronic devices, including cell phones, are not allowed in the examination room. Candidates will be provided with pen and paper during the exam.

The Optical Network Design Expert Lab Exam focuses on the engineering challenge of designing an optical network to meet certain specific requirements. The design task may be split into sub-tasks, or steps. In order to pass the exam, the candidate must achieve an overall score of 80%. The candidate must have an adequate level of hands-on experience with the design process and the EPT tool to maintain a reasonable pace during the exam to ensure that all required tasks can be completed within the allotted time.

Below are some tips to help candidates successfully prepare for and pass the Nokia Optical Network Design Expert Lab Exam:

1. Consider using My Nokia Optical Lab to help you prepare for the exam. My Nokia Optical Lab provides remote, dedicated access to a Nokia optical lab environment, including a lab type focused on 1830 EPT. Lab scheduling is available 24 hours a day, 7 days a week. In addition to lab access time, My Nokia Optical Lab includes (optional) multiple network design practice scenarios that can serve as an excellent exam practice and preparation tool. To find out more about My Nokia Optical Lab and/or to register, please visit <http://networks.nokia.com/onc/my-nokia-optical-lab>. A summary of all of the lab practice scenarios is available from this URL as well.
2. Ensure that you completely understand and are familiar with all of the topics in the student guides of the recommended ONC courses. This will help you to become more comfortable with the lab exam material.
3. Ensure that you are completely comfortable with all of the hands-on lab exercises in the recommended ONC courses.
4. If you are unclear about anything in the exam, ask the proctor for clarification. The exam proctor will attempt to clarify anything that may be ambiguous. Do not expect the proctor to provide other information during or after the exam.
5. Be sure to allow yourself adequate time to verify your work at each part of the exam.
6. Save your work often. Your exam mark will be based on your final submission.
7. Relax and read each instruction and requirement very carefully. Be thorough in your work, but remember to pace yourself appropriately.

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