

## Course Outlines

### 1. Overview

EXFO has developed customer training sessions to cover the BrixWorx product line. Those sessions are designed for multiple users and can be broken into modules.

#### 1.1. Delivery of Training

##### 1.1.1. Open Enrollment Training (3-4 days)

These are training events that are organized by EXFO Service Assurance; any customer wishing to receive training is invited to attend. These courses can be conducted anywhere; they are regularly scheduled outside of Boston, MA.

##### 1.1.2. Customer On-Site Training

These training events are delivered at the request of a specific customer. They can be offered at a customer location or at a site convenient to the specific customer (e.g., local hotel, customer office).

#### 1.2. Training Price List Description

Course Number	Course Title	Price List	Course Length
BP-9110	BrixWorx Operation Training	<ul style="list-style-type: none"> <li>— Prices are quoted for up to five people delivered either on-site or at Brix Networks headquarters.</li> <li>— <b>Required for all new system sales.</b></li> </ul>	3 days
BP-9111	BrixWorx Operation and System Administration Training	<ul style="list-style-type: none"> <li>— Prices are quoted for up to five people delivered either on-site or at Brix Networks headquarters.</li> </ul>	3-4 days
BP-9111-2	BrixWorx Open Enrollment Training	<ul style="list-style-type: none"> <li>— Open enrollment version of BP-9111.</li> <li>— This class is held at a location and multiple customers are invited to attend. Typically offered in Massachusetts, but can be changed.</li> <li>— See BP-9111 for description.</li> </ul>	3-4 days
BP-9110-ADDL	Additional student for any BP-9xxx	<ul style="list-style-type: none"> <li>— Each additional student registered in any training, beyond the original five, incurs additional cost.</li> </ul>	TBD
BP-9120	Customized Training	<ul style="list-style-type: none"> <li>— Statement of work is developed with customer to define the training required.</li> <li>— Cost, length and content are determined by the statement of work.</li> <li>— Customized training curriculum for up to five people extracted from existing training modules.</li> </ul>	TBD



## 2. Detailed Course Outlines

### 2.1. BP-9110–BrixWorx Operation Training

This three-day course provides an overview and covers the architecture of BrixWorx, BrixCall, BrixView and BrixVision. It offers hands-on exercises and lectures regarding the configuration of BrixWorx. Creating services and SLAs as well as testing strategies are covered as well. (Discussion based on the Customers Specific implementation and network can be included.)

#### 2.1.1. Content

##### Part 1: BrixWorx Overview

- The Brix System Introduction
  - BrixWorx, BrixCall, BrixView, Brix Vision
  - Brix reference materials
  - BrixWorx technical overview
- The Brix Solution
  - Network solution example review
  - Passive testing vs. active testing

##### Part 2: BrixWorx Architecture

- BrixWorx Consolidators
- BrixWorx Collectors
- Single Host Installations vs. Multiple Host Installations

##### Part 3: BrixWorx User Interface

- Navigating the BrixWorx GUI

##### Part 4: BrixWorx User Administration

- Creating Users
- Creating Subscriber Portals
- Configuring SNMP
- User Interface System Tab, Maintenance Windows, Help Desk

##### Part 5: BrixWorx Testing Theory and Test Suites

- Infrastructure Tests
- Voice Tests
- Video Tests
- Tests → Services → SLAs

##### Part 6: Creating Guaranteed Services

- Review BrixWorx Test Suites
  - Basic tests
  - Advance VoIP tests
- Configuring Services
- Managing Services
- Building Custom Services
- Service Templates
  - What are they?
  - How are they utilized?
  - Create SLAs from service templates
- Lab—Creating Services for Network Example

## Part 7: Creating SLAs

- Configuring SLAs
- Managing SLAs
- Building Customer and Shared SLAs
- Monitoring SLAs
  - Lab—creating SLAs for network example
- Thresholds
  - Definition and creation of thresholds
  - Analysis of thresholds
- Customer System SLA Services
  - With access to customer's system, configure services and SLAs (if possible)

## Part 8: Customer Implementation Review

- User Environment
  - How are users getting connected?
- What Is the Design of the Customers Network?
  - Review requirements
  - Review network diagram
  - Review existing SLAs, services and tests being utilized
  - What thresholds are defined?
- Review Alerts
  - How are alerts reported to customer?
  - Alert profiles
- What Reports Are Being Generated?
  - Review pre-defined reports
  - Review

## Part 9: On-Demand Testing

- On-Demand Tests
  - What tests are available?
  - How to configure?

## Part 10: BrixWorx Alerts

- Interpreting Alerts
- Debugging Using Alerts
- Alert-Notification Profiles

## Part 11: BrixWorx Reporting

- Additional Information
  - Trends
  - Repetitive errors
  - Failure periods
- Executive Information
  - Creating reports for specific requirements from executives/customers
  - Timeline view of network performance
- Real-Time Reports—NOC Views

## Part 12: Threshold Tuning

## Part 13: Verifier Overview

## Part 14: Verifier Installaiton

- Bench Configuring a Verifier
- Verifier Command Line Interface

### Part 15: Verifier Configuration

- Brix Verifier Overview
- Brix Verifier Deployment Scenarios
  - Configuring Verifiers into VLANs
- Brix Verifier Configuration Process
- Discovery Process and Verifier Communication
- Brix Verifier Configuration within the UI

### Part 16: BrixWorx Revision Tracking

### Part 17: Final Exam/Lab

#### 2.1.2. Pre-Requisite(s)

- Basic comprehension of TCP/IP
- Basic knowledge of routing
- Basic knowledge of telecommunications
- Basic understanding of Ethernet technology

#### 2.1.3. Target Audience

Training course targeted toward NOC and CSR level 1-3 users who will be utilizing BrixWorx to monitor and isolate problems on their network. Additional audience could be system architects who need to understand how to utilize BrixWorx to design testing strategies for their networks.

#### 2.1.4. Methodology

This course consists of lectures using PowerPoint presentations and demonstrations, as well as specific hands-on testing exercises.

#### 2.1.5. Typical Schedule (can be modified to accommodate attendees' working schedule)

BrixWorx Operations Training	
<b>DAY 1</b>	Part 1: BrixWorx Overview Part 2: BrixWorx Architecture Part 3: BrixWorx User Interface Part 4: BrixWorx User Administration Part 5: BrixWorx Testing Theory and Test Suites Part 6: Creating Guaranteed Services
<b>DAY 2</b>	Part 7: Creating SLAs Part 8: Customer Implementation Review Part 9: On-Demand Testing Part 10: BrixWorx Alerts Part 11: BrixWorx Reporting Part 12: Threshold Tuning
<b>DAY 3</b>	Part 13: Verifier Overview Part 14: Verifier Installation Part 15: Verifier Configuration Part 16: BrixWorx Revision Tracking Part 17: Final Exam/Lab

#### 2.1.6. Documentation

Attendees will receive the electronic version (PDF format) of the presentation, as well as related application notes.

## 2.2. BP-9111–BrixWorx Operation and System Administration Training

This three to four-day course provides an overview and covers the architecture of BrixWorx, BrixCall, BrixView and BrixVision. It offers hands-on exercises and lectures regarding the configuration of BrixWorx. Creating services and SLAs as well as testing strategies are covered as well. (Discussion based on the customer-specific implementation and network can be included.)

### 2.1.1. Content

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- Creating Users
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- Infrastructure Tests
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- Tests → Services → SLAs

#### Part 6: Creating Guaranteed Services

- Review BrixWorx Test Suites
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- Configuring Services
- Managing Services
- Building Custom Services
- Service Templates
  - What are they?
  - How are they utilized?
  - Create SLAs from service templates
- Lab—Creating Services for Network Example

#### Part 7: Creating SLAs

- Configuring SLAs
- Managing SLAs
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  - Lab—creating SLAs for network example

- Thresholds
  - Definition and creation of threshold
  - Analysis of thresholds
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  - What thresholds are defined?
- Review Alerts
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  - Alert profiles
- What Reports Are Being Generated?
  - Review pre-defined reports
  - Review

#### **Part 9: On-Demand Testing**

- On-Demand Tests
  - What tests are available?
  - How to configure?

#### **Part 10: BrixWorx Alerts**

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- Additional Information
  - Trends
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  - Failure periods
- Executive Information
  - Creating reports for specific requirements from executives/customers
  - Timeline view of network performance
- Real-Time Reports—NOC Views

#### **Part 12: Threshold Tuning**

#### **Part 13: Verifier Overview**

#### **Part 14: Verifier Installaiton**

- Bench Configuring a Verifier
- Verifier Command Line Interface

#### **Part 15: Verifier Configuration**

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  - Configuring Verifiers into VLANs
- Brix Verifier Configuration Process
- Discovery Process and Verifier Communication
- Brix Verifier Configuration within the UI

## System Administration

This portion of the class covers the UNIX environment of BrixWorx, such as processes running on the server, log files and debugging using information on the UNIX server, patching BrixWorx and the upgrade process.

### Part 16: BrixWorx Server Configuration

- Starting and Stopping BrixWorx on the Server
- How Is BrixWorx Started on the Unix/LINUX Server?
- Navigation and Organization

### Part 17: BrixWorx Installation Review

- Lab—Review Location of BrixWorx, Configuration of Oracle
- Choices Made at Installation Time
  - UI port number
  - Verifier communication port number

### Part 18: BrixWorx Maintenance Activities

- Log Files, Crontab, Checking Daemons and Database Files

### Part 19: BrixWorx Patches and Upgrades

- How to Get Patches?
- How to Install Patches?

### Part 20: Unix Command Line Environment

- Unix Daemons
- Unix Commands

### Part 21: SNMP Configuration/User Authentication

- RADIUS and LDAP with BrixWorx

### Part 22: BrixWorx Administration

- Starting and Stopping
- Reconfiguration

### Part 23: BrixWorx Revision Tracking

### Part 24: Final/Exam

#### 2.2.2. Pre-requisite(s)

- Basic comprehension of TCP/IP
- Basic knowledge of routing
- Basic knowledge of telecommunications
- Basic understanding of Ethernet technology

#### 2.2.3. Target Audience

Training course targeted toward NOC and CSR level 1-3 users who will be utilizing BrixWorx to monitor and isolate problems on their network. Additional audience could be system architects who need to understand how to utilize BrixWorx to design testing strategies for their networks.

This course will also focus on instructing the system administrators on how the BrixWorx implementation affects the server and what needs to be done to maintain the BrixWorx system.

#### 2.2.4. Methodology

This course consists of lectures using PowerPoint presentations and demonstrations, as well as specific hands-on testing exercises.

#### 2.2.5. Typical Schedule (can be modified to accommodate attendees' working schedule)

BrixWorx Operations Training	
<b>DAY 1</b>	Part 1: BrixWorx Overview Part 2: BrixWorx Architecture Part 3: BrixWorx User Interface Part 4: BrixWorx User Administration Part 5: BrixWorx Testing Theory and Test Suites Part 6: Creating Guaranteed Services
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<b>DAY 3</b>	Part 13: Verifier Overview Part 14: Verifier Installation Part 15: Verifier Configuration Part 16: BrixWorx Server Configuration Part 17: BrixWorx Installation Review
<b>DAY 4</b>	Part 18: BrixWorx Maintenance Activities Part 19: Patches and Upgrades Part 20: Unix Command Line Environment Part 21: SNMP Configuration/User Authentication Part 22: BrixWorx Administration Part 23: BrixWorx Revision Tracking Part 24: Final Exam/Lab

#### 2.2.6. Documentation

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## 2.3. Application-Specific Training

Building on the BrixWorx foundation, several applications are available:

### — BrixView

BrixView provides analysis, reporting and visualization capabilities—allowing users to view BrixWorx test results in a way that is meaningful to them.

### — BrixVision LM

BrixVision is a family of Brix IP video service assurance products for measuring end-to-end IPTV video quality.

### — BrixCall

BrixCall is a family of service assurance products for monitoring the results of VoIP call system passive testing.

### — BrixCare

BrixCare Self-Service (BrixCare) is a two-component layered product that provides VoIP service providers with management features and a Java-based applet for qualifying prospective subscribers. Residential VoIP service prospects initiate one or more sequential test calls to a test location (a Brix Verifier), and test results are returned to both the prospective subscribers and the BrixCare administrator.

Training for these products can be added to the standard BrixWorx training as required by customers.

## 2.4. Customer-Specific Training

EXFO Service Assurance attempts to adjust each customer training session to meet the needs of each customer as much as possible. Customized training sessions can also be developed for customer-specific requirements. This customization takes additional time and is priced to reflect the development and deliver time combined.

## 2.5. Modification of Standard Training Materials

These course outlines can be modified, but in order to be successful in utilizing the BrixWorx system we believe these outlines cover all the necessary topics.

Any modification of the standard class may be subject to additional time and cost.

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