OPNET

Model   Import

Analyze   Plan

Proposal for a Multimedia Tutorial:
Event Integration with VNE Server and Sentinel

TCO-620 Dr. Susan Codone
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Executive Summary

OPNET Technologies, Inc., offers a wide range of products for managing applications and networks, including SP Sentinel® and VNE Server®. These complex products require skilled configuration and integration with the customer's network devices. A typical workflow is to configure VNE Server to actively collect and maintain a virtual model of the customer's network, and then to configure SP Sentinel to import a snapshot of the model. After the import, the customer can perform downstream workflows including network planning, configuration validation, and analysis. One use case, known as *proactive change validation*, requires configuring the VNE Server to recognize a change in a network device (e.g., a configuration change) and then trigger a chain of events as a result of this change. The configuration of this workflow is known as *event integration.*

Because this use case has multiple potential sources for the network change and can trigger multiple downstream events, standard textual descriptions may not be very effective and can lead to confusion. We therefore propose the development of a multimedia tutorial that lets a user walk through each of the end-to-end workflows for a better understanding of the processes and outcomes.

Background

OPNET Technologies, Inc., founded in 1986, is a public software company based in Bethesda, MD, with locations throughout the U.S. and Europe. With nearly 700 employees, OPNET provides products and services to commercial, government, and university customers worldwide (www.opnet.com/corporate/investor_relations). The company's product portfolio includes SP Sentinel and VNE Server, both of which are discussed in this proposal. Customer education for OPNET products includes classroom training, "webinars," self-guided training (videos and tutorials), and certification exams. In addition, each year the company hosts a user conference (OPNETWORK) that is free for licensed users of the company's products. The conference includes classroom training, user forums, meetings with management and developers, and presentations by other customers.

Of the educational offerings, self-guided training is most similar to the multimedia product proposed herein. It consists of (1) text-based tutorials that are accompanied by example model files for import and (2) recordings of sessions from OPNETWORK. The written tutorials are similar to tutorials provided in the Sentinel user guide but are only offered through the Training portion of the customer support website. The problem with the tutorials is that they are written and presented in a linear fashion, while the workflow in question is decidedly non-linear. Also, the videos available with the self-guided training do not offer the user control over when and where they will "jump in" to the workflow. If a user only wants to learn about setting up syslog messages, for

example, the current video does not allow him/her to go to a section that only talks about syslog messages.

Proposed Solution

The proposed interactive tutorial will address all of the following:

- All workflows for event integration currently described in user guides
- Topics addressed in user conference proceedings[1]
- Topics addressed in self-guided training

In the current user guides, this workflow is split into two parts: half in the VNE Server user guide and half in the SP Sentinel user guide. The reason for the separation of the workflow is because each user guide is independent of the other, and the product managers do not want to present material in their user guide that is outside the scope of their products.

> Note that an SP Sentinel user *must* have VNE Server installed as part of their software package, so it makes little sense to break up the user material.

In the end, the user is the one who suffers because of this segregation, since the workflow requires *both* products to be used in an end-to-end fashion. Going to two separate user guides for the complete picture is confusing and frustrating for a user who just wants to get the job done. This multimedia tutorial of the end-to-end workflow will fill this gap for the user. The following four parts will represent the major sections of the tutorial:

- Home (the launch page)
- Configure Source
- Configure VNE Server
- Configure SP Sentinel

An added benefit of using an interactive design for the tutorial is to let users proceed at their own pace, and to return to sections of the material when needed. Much like "chapter" selections in a movie DVD, users will have complete control over which part of the workflow they wish to view.

Upon completion of development, this interactive, multimedia tutorial will be available alongside the user conference recorded sessions and PDF tutorials on the Education website. In time, multimedia tutorials will replace the need for PDF tutorials, and perhaps recorded sessions, as well.

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[1] Conference proceedings do not necessarily change each year. Some workflows stay rather static and are simply modified based on enhancements for a given release.

Technical Specification

This section describes the target user profile, the tools that will be used to create the proposed tutorial, and the system requirements for running the tutorial.

Target User Profile

Our target user is a network engineer with 8-10 years of experience who wants to use VNE Server to collect network data from all important network devices (e.g., routers, switches), and then import this data into SP Sentinel on a scheduled basis for analysis, proactive validation, and network change detection. The user has less than one year of experience with any OPNET product and needs to understand how to build and validate a model before relying on it for important administrative tasks and simulations.

The user will begin working with VNE Server and SP Sentinel after using this interactive tutorial and can refer back to the tutorial at any point, delving directly into any given portion of the tutorial when necessary.

Technology Profile

Tools

The proposed interactive tutorial (available in Flash or QuickTime format) will be created and produced using the following tools:

- **Adobe Captivate 5.5**, which can capture "fly-through" simulations of the workflows
- **Adobe PhotoShop CS5** (to touch up any screenshots as necessary, for example, to omit sensitive information)
- **OPNET VNE Server** (Development team requires access to a configured, working system)
- **OPNET SP Sentinel** (Development team requires access to a configured, working system that is on the same network as the VNE Server or can access it via the network)
- **SnagIt 10** (for any additional screen captures)

System Requirements

The tutorial will be developed to run from the DVD or to download from the OPNET Support website. The estimated size of the tutorial is ~20MB, so a notification box will inform the user of this when they initiate a download, giving them the opportunity to opt out, if desired. Therefore, we will develop the tutorial for the following configurations:

- **Windows systems**
  - XP or higher (32-bit or 64-bit)
  - At least 1 GB RAM

- o DVD drive
- o Web browser
  - Internet Explorer 6.0 or higher
  - Mozilla Firefox 4.0 or higher
  - Other browsers may work but will not be tested
- o Flash Player 9 or higher and/or QuickTime
- o Adobe Acrobat Reader 8.x or higher (for readme file)

- **Linux systems**
  - o Red Hat Linux 4.0 or higher
  - o At least 1 GB RAM
  - o DVD drive
  - o Web browser
    - Mozilla Firefox 4.0 or higher
    - Other browsers may work but will not be tested
  - o Flash Player 9 or higher and/or QuickTime
  - o Adobe Acrobat Reader 8.x or higher (for readme file)

- **Apple Systems**
  - o Intel core duo or newer processor
  - o Operating system
    - Mac OS X (10.3 or higher)
    - OS 5.x (iPad, iPhone)
  - o DVD drive
  - o QuickTime
  - o Adobe Acrobat Reader 8.x or higher (for readme file)
  - o Web browser
    - Safari 5.0 or higher
    - Mozilla Firefox 4.0 or higher
    - Other browsers may work but will not be tested

Team Profile

The following table describes the team and the tasks they will perform as part of this project. Each person has a critical contribution, as seen under the "Responsibility/Tasks" column. Of eight positions required, only five are full-time to this project.

Job Title	Responsibilities/Tasks
Project Manager	- Provide overall project direction - Coordinate and negotiate with OPNET's upper management - Manage team and timeline - Manage approval process

	• Create purchase order(s) for procurement of specified tools • Approve naming conventions, graphic requirements, and test plans • Final reviewer of total package prior to release • Manage deliverables
Production Specialist	• Produce prototypes during development • Manage assets • Administer content management system (CMS) • Administer and troubleshoot tools • Package final product (DVD, online) after approval from project manager in conjunction with OPNET management
Procurement Specialist[2]	• Procure necessary tools • Procure or allocate a server on which the prototype builds will be done; provide access to the team • Procure or allocate servers (Windows, Linux, Mac) on which testing will be done • Coordinate with engineering to gain access to fully configured VNE Server and SP Sentinel installations
Creative Specialist	• Create wireframes of overall workflow • Create, manage, and implement storyboards • Obtain screen captures. Identify any sensitive/private content that must be removed, and work with the ART Director to accomplish this. • Coordinate with AET to ensure OPNET's practices for instructional design are followed • Provide final approval of creative implementation
Technical Writer	• Work with Creative Specialist to develop wireframes and storyboards • Work with Creative Specialist to ensure that the script has the same content and flow as the actual workflow of the products • Provide textual content for each screen of the tutorial, including writing script for narrative where necessary • Provide voice-over narration where necessary
ART Director[3]	• Create art objects for tutorial (non-

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[2] This position is involved briefly at the outset of the project.

[3] This position consults throughout the project and is not full-time.

	screen capture art)
	• Provide scalable graphics for corporate identity
	• Remove sensitive/private information from screen captures
	• Design packaging of final deliverables (thumbnails, home screen, launch page for support website, and packaging for customers that wish to have a hard copy of the tutorial DVD)
QA Specialist	• Write test plan for prototype evaluations. • Evaluate product during rapid prototyping • Log bugs in the OPNET Software Problem Report (SPR) system • Coordinate with AET during usability test to determine if problems require an SPR. File the SPRs. • Test final product before release
Training Specialist / AET (OPNET)[4]	• Consult with team on instructional goals • Provide guidance for best practices and OPNET conventions for training • Identify 4-6 users for usability test. Arrange for and coordinate their login to the instructional design server to test the prototype. Work with QA specialist to identify and document problems found during the usability test. • Act as master reviewer during rapid prototyping phase

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[4] Position is required periodically throughout the project but is not full-time.

The Design

Treatment

This tutorial will be an interactive multimedia tool that will teach the user to prepare sources of network changes, configure the VNE Server, and configure automated tasks on the SP Sentinel workstation. The four parts of the tutorial will appear as four squares comprising a larger square (shown below) that will be created in Flash. This image is on the launch screen when the user starts the tutorial. This visual aligns with an image that appears in several places on the company's website, advertising the recognition the company has received as being in the Gartner Group's "Magic Quadrant for Application Performance Monitoring". When a user hovers the cursor over a square, that square will turn green (a metaphor for "go") and become clickable. When clicked, the cube will drop out of the square and roll toward the user. When it stops rolling, the cube will become similar to an image of a workspace on a desk, with controls along the bottom of the screen. A color palette provided by the Art department at OPNET will be used throughout the tutorial.
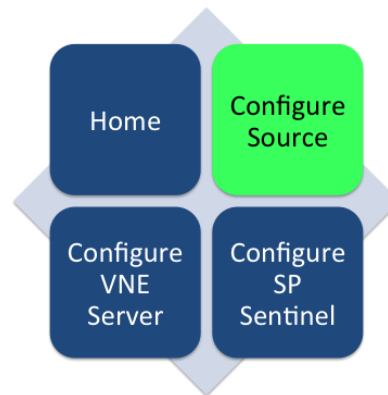
Figure 1. Metaphor for the Gartner Magic Quadrant Gartner Quadrant (L) / Target Colors (R)

Tool Specifications

The multimedia tutorial will be created using Adobe Technical Communication Suite 3.5—specifically using Adobe Captivate to create and produce the tutorial, and Adobe PhotoShop to create the graphics. "Fly through" simulations of the four parts of the workflow will be captured in OPNET SP Sentinel 17.5 and VNE Server 8.5 using Captivate. Audacity will be used to create the audio and narration files. System requirements must closely match what is supported for the OPNET products, as it is likely that this tutorial will be used on that machine or will be accessed via the Internet on the OPNET Support site.
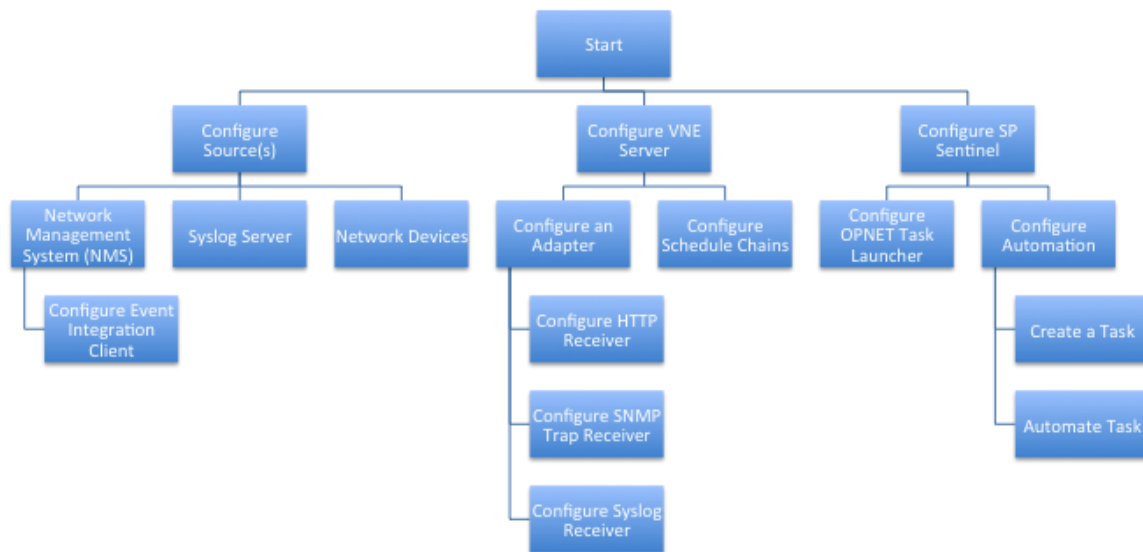
Tutorial Flow

The following flowchart demonstrates the flow of the tutorial.

Figure 2. Organization of Screens in Tutorial

During development, a rapid prototyping model will be used, with iterative feedback and development coordination during the development phase. A training specialist from the AET department will conduct a usability assessment with a small, representative user group during the final phase of the project. Feedback will be entered as SPRs and prioritized. "Showstoppers" will be addressed prior to launch.

Storyboards

Below is an example of five different storyboards that will be used for some of the screens in the tutorial. These storyboards are not sequential but offer an example of the way the tutorial will look. Be aware that the actual screens and text are subject to change, since the ART department at OPNET will be involved.

Course Name: TCO 620		Tutorial Name: Event Integration Workflow	
Page No.: 1	Page Title: Storyboards	Assignment Number: 3	Instructor Name: Dr. Susan Codone

File: Main_001

On-Screen Visuals
1. Logo, upper left
   - OPNET.bmp (logo)
2. **Main Flash navigational image**
   - Tutorial_001.swf
3. **Controls:**
   - Volume control (permits mute, as well)
   - "?" (brings up the Readme file with further instructions)
   - "Exit" (allows user to leave the tutorial)
4. **Audio:**
   - Main_001 (welcome and music)

OPNET — Exit

Event Integration with VNE Server and SP Sentinel

Home — Configure Source — Configure VNE Server — Configure SP Sentinel

Click any cube to begin!

On-Screen Text
1. Event Integration with VNE Server and SP Sentinel (tutorial name)
2. Click any cube to begin! (user instruction)

Narration (over a simple musical score, something freely available)

"Welcome to Event Integration with VNE Server and SP Sentinel. Select any square to begin.

We suggest you begin with Configure Source, which tells you how to set up a Syslog server, network device or network management system to communicate changes to VNE Server."

Functions and Interaction:

- Buttons (squares) are functional after narration completes
- Viewer selects one of the following:
  - **Home** (starts the navigation and music over again)
  - **Configure Source** (goes to Source_001)
  - **Configure VNE Server** (goes to VNES_001)
  - **Configure SP Sentinel** (goes to Sent_001)
- **Controls** – Work as described above. Each button has alt text ("Sound", "Help")

Notes:

ART department to create the actual images per OPNET guidelines.

On-Screen Visuals

1. **Interactive Flash syslog screen**
   - syslog_001.swf
2. **Controls:**
   - Volume control
   - Home (goes to main page)
   - Other controls allows user to go Back, Next, to the beginning of a section, or to the end of a section.
   - "?" (brings up the Readme file with further instructions)
3. Audio files:
   - Error_001.avi (ding)

On-Screen Text

1. Configure the Syslog Server
   - Gather the hostname and IP address by typing <command>.
   - You will need this information for the next step.
2. Tips
   1. Provides quick tips for doing this step.

Narration

"The first part of setting up your syslog server for communication with the VNE Server is to gather some information about the server.

Click Next when you're ready."

Functions and Interactions

1. Controls are active once the narration completes.
2. Viewer follows the instructions printed on the screen, allowing them to get a kinesthetic learning experience while in the tutorial, along with the visual and audio learning experience.

Syslog screen is interactive, allowing the user to enter certain commands and get prescribed output. A sound ("ding") plays in case of error.

Notes:

ART department designs the layout per OPNET conventions

Course Name: TCO 620		Tutorial Name: Event Integration Workflow	
Page No.: 15c	Page Title: Storyboards	Assignment Number: 3	Instructor Name: Dr. Susan Codone

On-Screen Visuals

1. **Interactive NetDoctor Report**
   - NetDoctor_002.swf
2. **Controls:**
   - Volume control
   - Home (goes to main page)
   - Other controls allows user to go Back, Next, to the beginning of a section, or to the end of a section.
   - "?" (brings up the Readme file with further instructions)
3. **Audio files:**
   - NetDoctor_002.avi

On-Screen Text

1. Check the NetDoctor Report
   - You configured and ran NetDoctor in the previous step. Your report should look similar to the one below. Click on the report to explore.

Narration

"NetDoctor reports are interactive displays of diagnostic data about your network. Notice the different sections of the final NetDoctor report. Try clicking on any element in the report to see more. For example, click on any label on the chart to get more information about the devices reported on."

Functions and Interactions

1. Controls are active once the narration completes.
2. Viewer can explore this NetDoctor report to get more information about the devices that triggered the change. Each NetDoctor report will be specific to which source(s) was/were configured earlier in the tutorial. In other words, the outcome is adaptive based on user selections.
3. The next step is to automate this task.

Notes:

ART department designs the layout per OPNET conventions. SMEs to provide a meaningful NetDoctor workflow sequence and report.

Course Name: TCO 620		Tutorial Name: Event Integration Workflow	
Page No.: 15e	Page Title: Storyboards	Assignment Number: 3	Instructor Name: Dr. Susan Codone

On-Screen Visuals

1. **Interactive Network Differences Report**
   - NetDiff_002.swf
2. **Controls:**
   - Volume control
   - Home (goes to main page)
   - Other controls allows user to go Back, Next, to the beginning of a section, or to the end of a section.
   - "?" (brings up the Readme file with further instructions)
3. **Audio files:**
   - NetDiff_002.avi

On-Screen Text

1. Check the Network Differences Report
   - You configured and ran a Network Differences report in the previous step. Your report should look similar to the one below. Click on the report to explore.

Narration

"Network Difference reports are interactive displays of data about what changed in your network since a selected baseline snapshot. Notice the different sections of the final report. Try clicking on any element in the report to see more. For example, click on any label on the chart to get more information about the devices reported on."

Functions and Interactions

1. Controls are active once the narration completes.
2. Viewer can explore this Network Differences report to get more information about the devices that triggered the change. Each Network Differences report will be specific to which source(s) was/were configured earlier in the tutorial. In other words, the outcome is adaptive based on user selections.
3. The next step is to automate this task.

Notes:

ART department designs the layout per OPNET conventions. SMEs to provide a meaningful Network Differences workflow sequence and report.

Course Name: TCO 620		Tutorial Name: Event Integration Workflow	
Page No.: 16a	Page Title: Storyboards	Assignment Number: 3	Instructor Name: Dr. Susan Codone

On-Screen Visuals

1. **Interactive automation information**
   - Auto_001.swf
2. **Controls:**
   - Volume control
   - Home (goes to main page)
   - Other controls allows user to go Back, Next, to the beginning of a section, or to the end of a section.
   - "?" (brings up the Readme file with further instructions)
3. **Audio files:**
   - Auto_001.avi

Automation Tasks

For any action you can run in SP Sentinel, you can configure a task. You can then set up the task for automation, letting SP Sentinel do the work for you!

- Create a task for automation
- Configure another source
- Exit tutorial now

On-Screen Text

1. What is a task?
   - For any action you can run in SP Sentinel, you can configure a task. You can then set up the task for automation, letting SP Sentinel do the work for you!
2. What would you like to do next?
   - Configure a task for automation
   - Configure another source
   - Exit tutorial now **Narration**

"Automation gives you a way to make repeatable workflows happen automatically or at the touch of a button. For the purposes of change detection, Sentinel workflows are triggered by a change event."

Functions and Interactions

1. Controls are active once the narration completes.
2. This screen is the main automation screen, from which the user can go down several paths. This selection allows them to skip the "About Automation" section and go right to configuring tasks.
3. When all tasks are finished, the user can click Home or Finished with Automation to either go back to the beginning of the tutorial or to the last screen.

Notes:

- Since this could be the end of the logical workflow, it makes sense to give the user the option to exit the tutorial. Likewise, we could just put the red X at the top right corner on each screen, depending on OPNET's preference.
- ART department designs the layout per OPNET conventions. SMEs to provide guidance for meaningful task automation.

Timeline

The estimated timeline for completion is about 70 days from the kick-off meeting until final delivery of the product. This timeline does not account for changes in scope, procurement delays, or a large number of SPRs identified as "showstoppers. The chart below shows Day 0 as the kick-off date, which we estimate to be January 9, 2012.
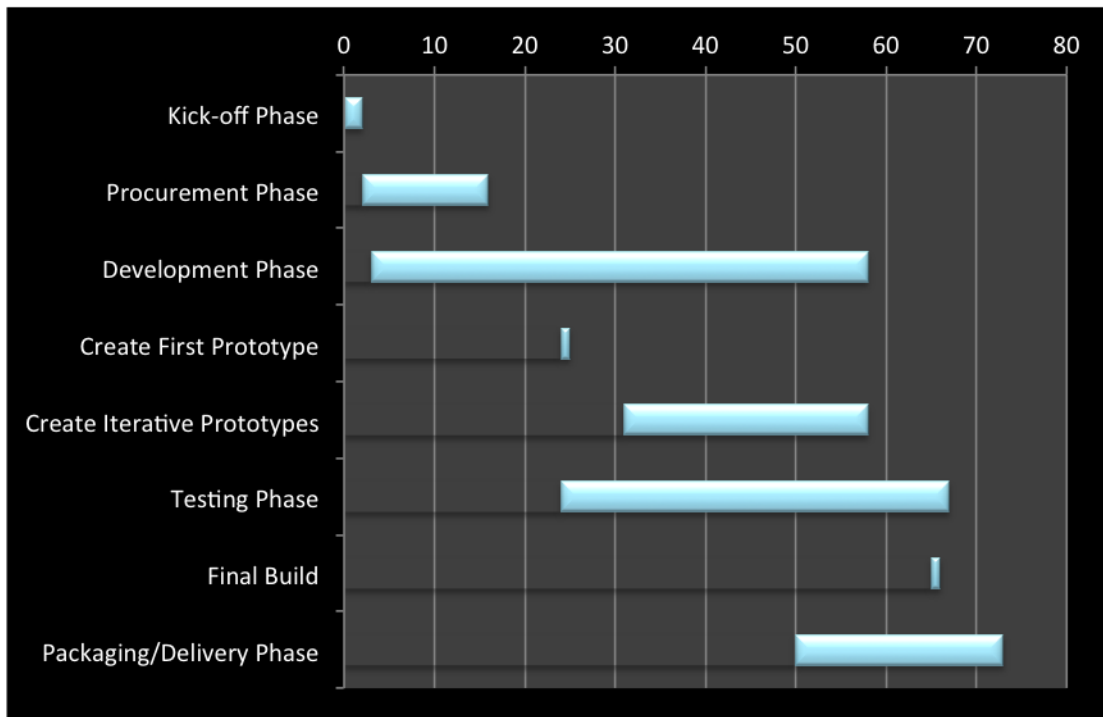
Summary

This proposal suggests a multimedia tutorial solution to an ongoing problem. Users who want to perform an end-to-end workflow using both VNE Server and SP Sentinel currently have to use two sets of user documentation to figure it out. Neither the OPNETWORK conference recordings nor the self-guided learning materials address the needs of these users.

In fact, these users want to have a network change trigger a chain of events starting at the VNE Server and ending with reports produced on the SP Sentinel workstation. The change might come from an NMS, a network device (e.g., a router), or a syslog server. Regardless of the source, the goal is to have certain changes perform certain workflows. This tutorial will allow the user to step through the end-to-end example, practicing the skills in a simulated network as they go. Controls allow the user to escape at any time or return to the home page to jump directly to another step. The benefit of this tutorial to the user reduces frustration and time spent looking for information (and perhaps not finding it), therefore reducing the need for users to call technical support or professional services for assistance.

Our team can solve this problem, given the time and materials, resulting in greater user satisfaction.