EPICenter 7 Scripting

Scripting with EPICenter 7

EPICenter® 7 has been redesigned to make complex scripting easier to do. Base-level scripts have been created with the ability to include almost any functionality desired or imaginable. Intricate tasks such as VLAN creation with EAPS (Ethernet Automatic Protection Switching) can be easily accomplished through the integration of scripting functionality in EPICenter.

Configuration Manager Scripting

EPICenter configuration manager is capable of running or pre-staging scripts on switches for later usage. It relies on the built-in capabilities within the ExtremeXOS® operating system and allows configuration or reconfiguration of features on individual switches or on multiple switches in parallel. Unlike other central management systems, configuration manager scripting does not require constant interactions with the remote device. Thus, scripts can be created for deployment onto switches and run autonomously even when changes could cause a loss of communications with the unit. Other common uses include scripts used to configure a new switch or to enable new feature on a switch.

New Features are Now Available through Scripts

In many competing network management systems (NMSs), new software features must be requested from the manufacturer. Once the request is made the administrator must wait for the feature to show up in the next feature pack.

EPICenter 7 has taken a different approach: Network administrators now have the ability to add their own custom features, whether they are very simple or extremely complex, through scripts. The only knowledge needed is the sequence of CLI commands needed to do a task. Now administrators can rapidly create and deploy custom features and tasks as needed.

Additionally, by providing users with a simple method to reuse scripts with variables and a dynamic custom scripting GUI, these grouped commands have a push-button-type ease of use. This capability allows for faster reuse and deployment of scripts through the scripting feature, without the need to wait for a future software feature pack.
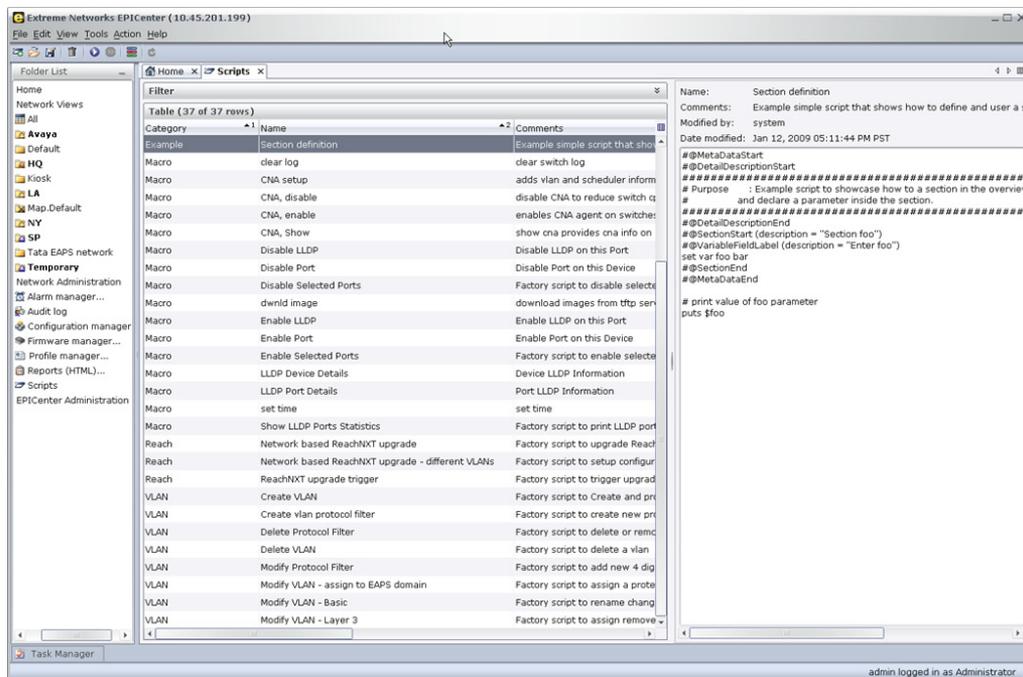

Figure 1: EPICenter Main Screen

Custom Deployment Sequence

EPICenter also now allows users to run a script on devices all at once, or to follow a specific predefined sequence. This feature enables administrators to make network-wide updates in a sequenced order with a few simple clicks. Prior to this capability, a network operator had to log into each individual system, make the changes, logout and then repeat the process for each device. Since this was a manual process, the user needed to be very careful to avoid typos or making errors in sequencing. With the custom deployment sequence feature in EPICenter, the plan can now be laid out and then executed with confidence. Network operators are no longer faced with manually typing a long sequence of commands, with the likelihood of accidentally going out of order or forgetting a critical step. Through the EPICenter custom deployment sequence capability, deployment can be speedy, repeatable, and error free.
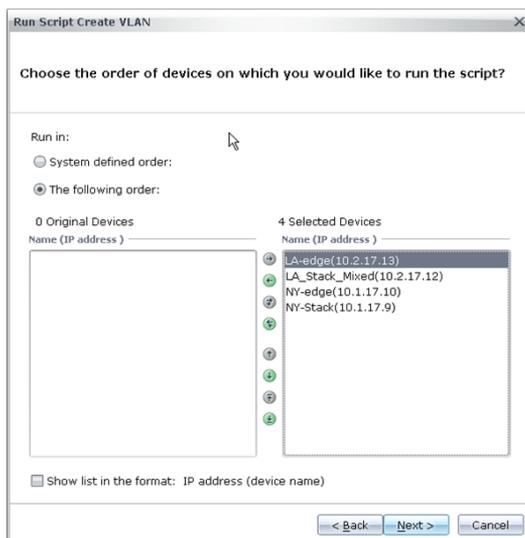

Figure 2: Custom Deployment Sequence

Power of Tcl

EPICenter 7 scripting leverages the power of Tcl, an industry-standard scripting language that allows for data and string manipulation, programming control structures, and other logical operations. Multifaceted scripts can be created and used for a wide range of functions, from making simple changes in the network to complex data-gathering activities and decision handling. With the availability of Tcl functions, it is now possible to capture data from multiple outputs, parse that information for key data points and then take action. Some tasks that would benefit from this capability include:

- Parsing of status screens to provide a summary of key information
- Obtaining a quick summary of device health and utilization
- Deploying an additional network feature after checking for dependencies
- Debugging and isolating network issues
- Achieving feature configuration uniformity

Auto-Generated GUI

One of the powerful features of scripting in EPICenter is its ability to auto-generate a user interface. Metadata can be embedded in the script where EPICenter then translates this data into labels and data entry fields. The GUI provides a simplified interface so that knowledge of how to create scripts can be isolated to specific staff members thereby significantly reducing training costs. Less-trained staff members can use the auto-generated GUI to customize variables at deployment without needing to understand the details of the scripts, and the GUI protects the scripts from accidental edits or changes.
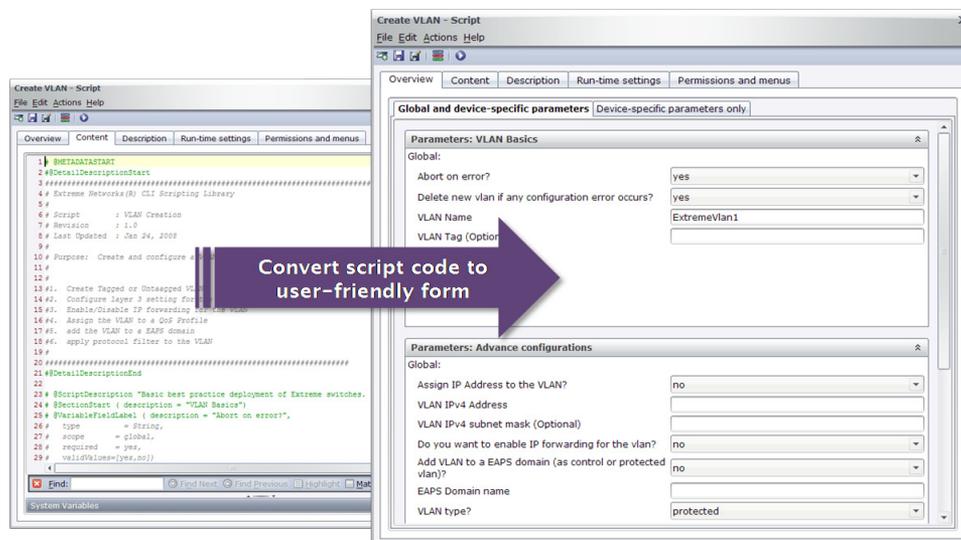

Figure 3: Auto-Generated GUI

Reuse of Scripts

One of the many benefits of scripting is the ability to deploy features in a uniform and repeatable fashion. In busy IT departments with ever-growing task lists and interruptions, standard processes can easily be disrupted or delayed—which increases the potential for human errors. Further, many network management systems provide static scripts that can be run only on a single device—customizing device-specific values is not possible. To work around this limitation, IT staffers replicate the script and change the values depending on the device being accessed, a manual process that can be prone to errors.

EPICenter 7 allows for the reuse of script files through the use of variables, which can be easily customized for each execution or device through the GUI. The GUI provides operators with meaningful labels for each variable that clearly state the intended purpose. By providing meaningful labels and confining changes to the GUI, operator errors are effectively minimized. In addition, when features are deployed using EPICenter and scripts, the exact commands, sequence, and values can be specified. This allows network managers to ensure that features are deployed correctly the first time and every time.

Because scripts can be used to automate configuration changes, the administrator may want to limit which members of the organization can view, modify, or execute scripts. EPICenter 7 provides the administrator the ability to associate access controls at the individual script level. For audit purposes, log entries are created whenever a script is executed.

Summary

EPICenter 7 network management system puts total control into the user's hands. The ability to create and automate any desired functionality is a new paradigm. Through easy to create and modify scripts, Extreme Networks® provides another way to make high-performance network configuration simpler and easier.