Harmonize Your SAS Environments with Hot Fix Versions

Jitendra N. Pandey

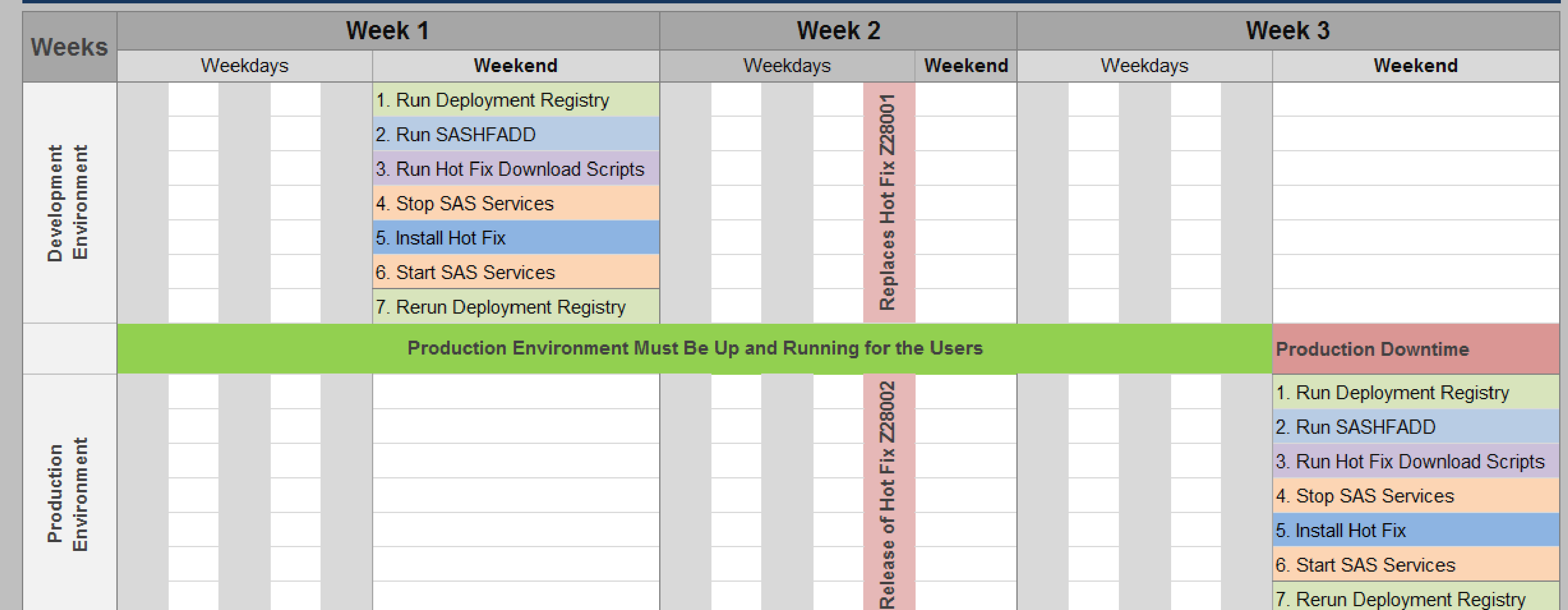### Electrolux Home Products Inc., Charlotte, NC

ABSTRACT

- The organizations that use SAS, tend to have more than one SAS environment, with at least one acting as a Development and the other one as a Production environment. Many organizations might also have Test, Sandbox and User Acceptance Testing (UAT) environments in addition to Development and Production, depending on the software development life cycle approach they use.

- SAS Platform Administrators and SAS Installation Representatives spend significant amount of time with SAS Deployment Manager to keep their SAS environments up-to-date with most recent Hot Fix updates released by SAS Technical Support. The Hot Fix installation is a critical part of SAS environment life cycle. However, at times it becomes difficult for SAS Platform Administrators and SAS Installation Representatives to maintain a consistency of Hot Fix versions across the environments. This ePoster provides an approach for how they can avoid running into Hot Fix version inconsistency across the environments.

A TYPICAL HOT FIX INSTALLATION PROCESS

- It is not always possible to install the hot fixes in all your SAS environments in the same downtime window. There are going to be two separate downtime windows, each for development and production environment. A typical hot fix installation process involves the following steps:
  - Run Deployment Registry Report
  - Run SASHFADD Tool
  - Run Hot Fix Download Scripts generated by SASHFADD
  - Stop SAS Services
  - Install Hot Fix
  - Start SAS Services
  - Rerun Deployment Registry Report for validation (optional)
- As the downtime window for development environment approaches, you follow the above steps and complete the hot fix installation. As the downtime window for production environment approaches, you follow the same steps, end of story.
- However, often times, a hot fix released from SAS Technical Support is replaced with another new hot fix for the same product and series that addresses additional new problem notes. It could be a problem if this happens between the two downtime windows. Let us take an example of hot fix Z28001. You installed Z28001 in your development environment and Z28001 was replaced by Z28002 before you could install the same in your production environment.

DIAGRAM OF TYPICAL HOT FIX INSTALLATION PROCESS

Weeks	Week 1		Week 2		Week 3	
	Weekdays	Weekend	Weekdays	Weekend	Weekdays	Weekend
Development Environment		1. Run Deployment Registry	Replaces Hot Fix Z28001			
		2. Run SASHFADD				
		3. Run Hot Fix Download Scripts				
		4. Stop SAS Services				
		5. Install Hot Fix				
		6. Start SAS Services				
		7. Rerun Deployment Registry				
	Production Environment Must Be Up and Running for the Users				Production Downtime	
Production Environment			Release of Hot Fix Z28002			1. Run Deployment Registry
						2. Run SASHFADD
						3. Run Hot Fix Download Scripts
						4. Stop SAS Services
						5. Install Hot Fix
						6. Start SAS Services
						7. Rerun Deployment Registry

OUTCOME OF TYPICAL HOT FIX PROCESS

If you run the deployment registry report in both the environments after the hot fix installation, you could clearly see the difference. The following snippet of the deployment registry reports from development (left) and production (right) environments shows that Z28001 is missing from the production environment:

```
          Host: wx6
       Product: odbc
       Version: 9.4
  Display Name: SAS/ACCESS Interface to ODBC
Hot Fix Entry: Hotfix Z28001
Hot Fix Entry: Hotfix Z28002
Display Version: 9.4_M3
```

```
          Host: wx6
       Product: odbc
       Version: 9.4
  Display Name: SAS/ACCESS Interface to ODBC

Hot Fix Entry: Hotfix Z28002
Display Version: 9.4_M3
```

Deployment Registry from Development Environment

Deployment Registry from Production Environment

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PROPOSED HOT FIX INSTALLATION PROCESS

The above inconsistency could have been avoided very easily if you ran deployment registry reports, SASHFADD and downloaded all the hot fixes in all of your SAS environments together in your first downtime window. Running deployment registry report and SASHFADD do not require your SAS services to be taken down. Once you have downloaded the hot fixes in all of the SAS environments during the same downtime window, you could install them in the environments during the downtime agreed for that environment, be it test, UAT or production. This way all of your SAS environments shall always be in sync from hot fix version perspective.

OUTCOME OF PROPOSED HOT FIX INSTALLATION PROCESS

```
            Host: wx6
         Product: odbc
         Version: 9.4
    Display Name: SAS/ACCESS Interface to ODBC
  Hot Fix Entry: Hotfix Z28001
  Hot Fix Entry: Hotfix Z28002
Display Version: 9.4_M3
```

```
            Host: wx6
         Product: odbc
         Version: 9.4
    Display Name: SAS/ACCESS Interface to ODBC
  Hot Fix Entry: Hotfix Z28001
  Hot Fix Entry: Hotfix Z28002
Display Version: 9.4_M3
```

Deployment Registry from Development Environment

Deployment Registry from Production Environment

DIAGRAM OF PROPOSED HOT FIX INSTALLATION PROCESS

Weeks	Week 1		Week 2		Week 3	
	Weekdays	Weekend	Weekdays	Weekend	Weekdays	Weekend
Development Environment		1. Run Deployment Registry		Replaces Hot Fix Z28001		
		2. Run SASHFADD				
		3. Run Hot Fix Download Scripts				
		4. Stop SAS Services				
		5. Install Hot Fix				
		6. Start SAS Services				
		7. Rerun Deployment Registry				
	Production Environment Must Be Up and Running for the Users					Production Downtime
Production Environment		1. Run Deployment Registry		Release of Hot Fix Z28002		
		2. Run SASHFADD				
		3. Run Hot Fix Download Scripts				
						4. Stop SAS Services
						5. Install Hot Fix
						6. Start SAS Services
						7. Rerun Deployment Registry

CONCLUSION

If we run deployment registry report, SASHFADD and hot fix download scripts generated by SASHFADD in all our SAS environments in the same time frame, all the same hot fixes will be downloaded from SAS Technical Support website. Once downloaded, they can be applied or installed in the environments when the downtime window for that environment reaches and the hot fix version inconsistency can be avoided without any compromise.

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ABSTRACT

The organizations that use SAS, tend to have more than one SAS environment, with at least one acting as a Development and the other one as a Production environment. Many organizations might also have Test, Sandbox and User Acceptance Testing (UAT) environments in addition to Development and Production, depending on the software development life cycle approach they use. SAS Platform Administrators and SAS Installation Representatives spend significant amount of time with SAS Deployment Manager to keep their SAS environments up-to-date with most recent Hot Fix updates released by SAS Technical Support. The Hot Fix installation is a critical part of SAS environment life cycle. However, at times it becomes difficult for SAS Platform Administrators and SAS Installation Representatives to maintain a consistency of Hot Fix versions across the environments. This paper provides an approach for how they can avoid running into Hot Fix version inconsistency across the environments.

INTRODUCTION

It requires a lot of planning and discussions with the development teams and the users to agree on a downtime window for hot fix installation for development and production environments. And it is not always possible to install the hot fixes in all your SAS environments in the same downtime window. There are going to be two separate downtime windows, each for development and production environment. A typical hot fix installation process involves the following steps:

1. Run Deployment Registry Report
2. Run SASHFADD Tool
3. Run Hot Fix Download Scripts generated by SASHFADD
4. Stop SAS Services
5. Install Hot Fix
6. Start SAS Services
7. Rerun Deployment Registry Report for validation (optional)

As the downtime window for development environment approaches, you follow the above steps and complete the hot fix installation. As the downtime window for production environment approaches, you follow the same steps, end of story.

However, often times, a hot fix released from SAS Technical Support is replaced with another new hot fix for the same product and series that addresses additional new problem notes. It could be a problem if this happens between the two downtime windows. Figure 1 outlines an example of a typical hot fix installation schedule. Let us take an example of hot fix Z28001. You installed Z28001 in your development environment and Z28001 was replaced by Z28002 before you could install the same in your production environment.

Figure 1. A Typical SAS® Hot Fix Installation Schedule for a two Environment Deployment

If you run the deployment registry report in both the environments after the hot fix installation, you could clearly see the difference. The following snippet of the deployment registry reports from development (left) and production (right) environments shows that Z28001 is missing from the production environment:

Figure 2. Snippet of SAS® Deployment Registry Report from Development (left) and Production (right) Environments

Now let's take a look at SAS Technical Support page of Z28002. As you can see that hot fix Z28001 was replaced by hot fix Z28002.

Figure 3. Snippet from SAS® Technical Support Page for Hot Fix Z28002

Your SAS/ACESS Interface to ODBC did not have either of Z28001 and Z28002. When you ran SASHFADD in your development environment, it determined from the deployment registry report from the development environment that your SAS/ACCESS interface to ODBC needed the hotfix Z28001 and it included Z28001 in the hot fix download script. You installed Z28001 in your development environment. However, by the time the downtime window for your production environment reached and you ran SASHFADD, SAS Technical Support replaced Z28001 with Z28002 and SASHFADD included Z28002 in the download script and you ended up downloading and installing Z28002 in your production environment and hence the inconsistency.

Some experts might argue that this is not an inconsistency because the previous Problem Note 58444 was also addressed by the hot fix Z28002, and we can have an ongoing debate if this is an inconsistency or not. The author of this paper believes that this is an inconsistency and looked out for a solution and also though it worth spreading among the SAS Platform Administrators via SAS Global Forum paper.

SOLUTION

The above inconsistency could have been avoided very easily if you ran deployment registry reports, SASHFADD and downloaded all the hot fixes in all of your SAS environments together in your first downtime window. Running deployment registry report and SASHFADD do not require your SAS services to be taken down. Once you have downloaded the hot fixes in all of the SAS environments during the same downtime window, you could install them in the environments during the downtime agreed for that environment, be it test, UAT or production. This way all of your SAS environments shall always be in sync from hot fix version perspective.

Figure 4. Proposed SAS® Hot Fix Installation Schedule for Development and Production Environments

Figure 5. Snippet of SAS® Deployment Registry Reports from Development (left) and Production (right) Environments

CONCLUSION

If we run deployment registry report, SASHFADD and hot fix download scripts generated by SASHFADD in all our SAS environments in the same time frame, all the same hot fixes will be downloaded from SAS Technical Support website. Once downloaded, they can be applied or installed in the environments when the downtime window for that environment reaches and the hot fix version inconsistency can be avoided without any compromise.

CONTACT INFORMATION

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