

Report on NANP Administration System (NAS) Security Breach July 13, 2004

Introduction

The purpose of this report is for NeuStar, as the North American Numbering Plan Administrator (NANPA), to report on a security breach with the NANP Administration System (NAS)¹ and the corrective action taken by NANPA to address this issue.

On June 12, 2004, NANPA determined that individual service provider-specific utilization and forecast data collected via the Number Resource Utilization/Forecast (NRUF) reporting process was viewable via NAS NRUF reports by other service providers. Based upon this discovery, NANPA took immediate steps to remove external NAS access to these reports.

The following report provides a summary of actions taken by NANPA to investigate and resolve this security issue.

Background

Since the May 24, 2004 introduction of NRUF in NAS, NAS provides a number of NRUF reports that permit a service provider registered in NAS to view its specific NRUF utilization and forecast data on file with NANPA. The data viewable by a service provider is limited to the data associated to that service provider's Operating Company Number (OCN), which is included in the user's NAS registration profile. One such report, the NRUF Forecast Report, provides the forecast a service provider submits (as identified by the service provider OCN) for a specific NPA code.

On Friday, June 11, 2004, Ms. Beth Sprague, NANPA Manager, NRUF and Industry Liaison, received an email at 11:19 a.m. CT (12:19 p.m. ET) from an employee of a service provider. The email inquired if the NAS NRUF Forecast Report was operating correctly. Specifically, the service provider employee sought clarification on whether the NRUF Forecast Report was designed to show only the forecast for the OCNs in her NAS user profile or every forecast report for the entire NPA. No other parties, including the NANPA Help Desk or other NANPA staff, were copied on the email. Ms. Sprague was out of the office that day attending the Industry Numbering Committee meeting in Overland Park, Kansas.² As a result, she did not open and read the email until Saturday, June 12, 2004 at approximately 7:00 p.m. ET. Upon reading the email, Ms. Sprague investigated the matter by logging into NAS using the service provider

¹ NeuStar is providing this report consistent with Section 7.19.1 of the NANPA Technical Requirements Document, dated March 2003.

² The INC meeting concluded approximately Noon local time. Ms. Sprague left the meeting approximately 11:00 a.m. CT and spent the rest of the day traveling back to the Washington DC area.

employee's NAS user ID and password, reviewed the NRUF Forecast Report and confirmed the report was incorrectly providing forecast data for OCNs other than the service provider's in the state and NPA selected. In addition, Ms. Sprague selected another NAS user with access to the NRUF Forecast Report and confirmed that the same problem was occurring in the NRUF Forecast Report for this user. She immediately contacted Mr. John Manning, NANPA Director and Mr. Rudy Amparano, NANPA Program Manager. Other NANPA staff members responsible for NAS software engineering and administration were subsequently contacted and access to all NAS NRUF reports was suspended at approximately 7:30 p.m. ET on June 12, 2004. Notification concerning this suspension of access was sent to the industry via the NAS NANP Notification System on June 14, 2004 (Attachment 1).

NANPA Investigation

NANPA immediately initiated an investigation to determine the scope of the security breach. First, NANPA confirmed that this issue was not unique to the registration profile of the service provider employee that originally notified NANPA of this issue, but rather it applied to all NAS users with access to the NRUF Forecast Report. In addition, NANPA confirmed that both the NAS utilization and forecast NRUF reports were displaying data for all OCNs for the selected state and NPA,³ rather than being limited to the OCN(s) of the NAS registered user. Our review also indicated the defect was introduced with a NAS software maintenance build implemented the weekend of June 5, 2004. Prior to this NAS software release, the reports were working properly.

It should be noted that until this matter was brought to our attention and confirmed, NANPA did not receive a notification or inquiry from another external NAS user concerning this issue. Further, NANPA established shortly after discovery of this problem that all NAS Central Office Code Reports that are OCN-dependent, similar to the NRUF reports, were functioning in accordance to requirements. These reports remained available to NAS users.

NANPA then reviewed NAS user logs to determine the specific users that viewed this information from June 5, 2004 to June 12, 2004, when access to the reports was suspended. NANPA's review identified 15 NAS users that accessed one or more of the NAS NRUF reports for 58 NPAs from June 5 through June 12, 2004. On June 15, 2004, NANPA sent a letter (Attachment 2) to each of the 15 NAS users informing them of the security issue and requesting that they certify in writing to NANPA that they did not download, print, save or otherwise retain any of the reports during the time frame above. This request included any portion of the data in the reports and/or any derivative works of the data. The letter also requested that if they downloaded, printed, saved or otherwise retained the information either to destroy and certify that they had done so or to return the information to NANPA.

³ NAS provides four NRUF reports: NRUF Forecast Report, NRUF Utilization Report, OCN Report for Forecast and OCN Report for Utilization.

As a result of this correspondence, NANPA received certification from all 15 NAS users that they had either destroyed or did not download, print, save or otherwise retain any of the reports. Attachment 3 provides a summary of the reports accessed by the 15 NAS users.

NANPA Corrective Action

As previously stated, the immediate corrective action taken was temporarily removing external access to all NRUF reports. Notification of this issue and corrective action was sent to NANPA staff and its senior management.

Second, NANPA has enhanced its current testing, software compilation and production deployment procedures. Previously, we did perform a standard suite of required testing after the software release, but in this instance, because the release should not have affected the NRUF reports, the suite of tests did not include testing the contents of these reports. The enhanced procedures now require with any NAS maintenance software release, the complete testing of access to and content of service provider specific NAS reports. Further, NANPA staff involved with future software releases participated in a review of the software compilation and production deployment procedures, ensuring a complete understanding of individual and team responsibilities for testing and deploying the software.

Third, external NAS users have been reminded to report any issues concerning NAS directly to the NANPA Help Desk (866-623-2283 or login@neustar.biz) to permit immediate review and action, as necessary. This will help ensure NANPA meets the 24-hour resolution requirement. Future reminders will be distributed.

Restoration of NRUF Reports

On July 1, 2004, NANPA restored service provider access to the NAS NRUF reports. This access was permitted only after NANPA had implemented the corrective actions outlined above, to include conducting thorough testing of all NAS reports with the July 1 NAS maintenance software release. Since deployment, NANPA has periodically tested these NAS reports to ensure they are working in accordance to requirements and to date, there have been no issues.

Attachment 1

Date: June 14, 2004

Title: Unavailability of NAS NRUF Reports

NANPA has temporarily suspended access to the NAS NRUF Reports available to service providers while it investigates technical issues associated with the reports. The issues concern the proper display of information in the reports. NANPA expects that accessibility to these reports will be restored within the next two weeks.

NAS users are reminded to direct any issues, problems or questions concerning NAS directly to the NANPA Help Desk at 866 623-2282 or login@neustar.biz.

NANPA
June 14, 2004

Attachment 2

June 15, 2004

Via Electronic Mail

Name
Service Provider Name

Dear Name:

The North American Numbering Plan (NANP) Administration System (NAS) provides Number Resource Utilization/Forecast (NRUF) reports that permit a service provider¹ registered in NAS to view its specific NRUF utilization and forecast data on file with NANPA.² The reports are designed such that the data viewable by a service provider is limited to the data associated to that service provider's Operating Company Number (OCN), which is included in the user's NAS registration profile. If the NAS user has multiple OCNs in their NAS profile, the NRUF reports will provide data associated with all OCNs in the user's profile for the state and NPA selected by the user.

The North American Numbering Plan Administrator (NANPA) recently determined that from June 5 to June 12, 2004, the NRUF reports were not working in accordance with requirements. As a result, service provider-specific data from other service providers was viewable in these reports. This information is considered by the Federal Communications Commission (FCC), NANPA and service providers as confidential data and thus should not be available to other service providers. As a result, NANPA immediately removed access to the NAS NRUF reports. NANPA is presently taking steps to identify the software problem to ensure this unauthorized access does not occur again in the future. We expect that the NRUF reports will be made available to external NAS users in a few weeks. Further, our investigation revealed that only a small number of NAS users accessed the NRUF reports during this time period and NANPA is quickly contacting those users with regard to this matter.

In analyzing NAS user logs from June 5 through June 12, NANPA identified that you (as determined by your NAS user identification) accessed at least one of these NRUF reports. In

¹ Service provider consultants may also review NRUF reports if authorized by a service provider.

² NAS provides four NRUF reports: NRUF Forecast Report, NRUF Utilization Report, OCN Report for Forecast and OCN Report for Utilization.

order to protect service provider-specific data, NANPA is requesting that you do **one** of the following:

1. Destroy any and all copies of the reports that you downloaded, printed, saved or otherwise retained during the time frame above and that you certify in writing to NANPA that you have done so. This includes any portion of the data in the reports and/or any derivative works of the data.
2. Return to NANPA any and all copies of the reports that you downloaded, printed, saved or otherwise retained during the time frame above and certify in writing to NANPA that you have provided all the copies of the reports. This includes any portion of the data in the reports and/or any derivative works of the data.
3. Certify in writing to NANPA that you did not download, print, save or otherwise retain any of the reports during the time frame above. This includes any portion of the data in the reports and/or any derivative works of the data.

To facilitate this process, NANPA has attached a sample certification statement for your use in responding to this letter. Please note that the certification must be signed (no electronic signatures) and faxed to the NANPA Help Desk at 703-738-7112. You may also mail this material to: NANPA (Attn: Beth Sprague), 46000 Center Oak Plaza, Sterling, VA 20166.

Due to the seriousness of this matter, NANPA requests that you reply within three (3) business days of receipt of this letter with one of the above responses. Please note that the FCC has been informed of this matter and NANPA will be reporting to the Commission on a regular basis concerning the responses received to this correspondence.

If you have any questions concerning this matter, please contact Beth Sprague at 571-434-5513 or Beth.Sprague@neustar.biz. Thank you for your cooperation in this important matter.

Sincerely,

John C. Manning
Director NANPA

Attachment

Cc: Beth Sprague - NANPA

CERTIFICATION OF [Your Name]

I, [Name], [Title] of [Name of Company], hereby make this certification on behalf of [Name of Company] that [Name of Company] has done one of the following as indicated below:

_____ Destroyed any and all copies of the Number Resource Utilization/Forecast (NRUF) Reports (the NRUF Reports) that we downloaded, printed, saved or otherwise retained during the period between June 5 and June 12, 2004. This includes any portion of the data in the reports and/or any derivative works of the data.

_____ Returned to the North American Numbering Plan Administrator (NANPA) any and all copies of the NRUF Reports that we downloaded, printed, saved or otherwise retained during the period between June 5 and June 12, 2004. This includes any portion of the data in the reports and/or any derivative works of the data.

_____ Certified in writing to NANPA that we did not download, print, save or otherwise retain any of the NRUF Reports during the period between June 5 and June 12, 2004. This includes any portion of the data in the reports and/or any derivative works of the data.

The NRUF Reports discussed herein refer to those reports that permit a service provider or service provider consultant registered in the North American Number Plan (NANP) Administration System (NAS) to view its specific NRUF utilization and forecast data on file with NANPA.

[Name of Company]

By: _____
[Name]
[Title]

Dated: June xx, 2004

Attachment 3

The NANP Administration System (NAS) provides four NRUF reports to a NAS-registered service provider or service provider consultant. The reports are as follows:

NRUF Utilization Report - The OCN, the State, and NPA(s) selected in the search criteria, which are available for selection according to the OCNs and NPAs in the NAS user's profile. The report will show the user's respective utilization data for the OCN and NPA(s) selected, reported by rural carriers at the central office code (NPA-NXX) level and reported by non-rural carriers at the thousand-block (NPA-NXX-X).

NRUF Forecast Report - The OCN, the State, and NPA(s) selected in the search criteria, which are available for selection according to the OCNs and NPAs in the NAS user's profile. The report will show the user's respective forecast data for the OCN and NPA(s) selected, reported by pooling carriers at the thousand-block (NXX-X) level by Rate Center, and reported by non-pooling carriers in pooling areas, at the central office code (NPA-NXX) level by Rate Center.

OCN Report for Forecast – The OCN, the State, and the NPA(s) selected, which are available for selection according to the OCNs and NPAs in the NAS user's profile. The report will show the Service Provider Contact information that reported forecast information for that OCN, including the Service Provider Name, Company Address, Service Provider Type, Parent Company Name and Parent Company OCNs, Contact Name, Email Address, Telephone Number Fax number, and the Federal Registration Number (FRN).

OCN Report for Utilization - The OCN, the State, and the NPA(s) selected, which are available for selection according to the OCNs and NPAs in the NAS user's profile. The report will show the Service Provider Contact information that reported utilization information for that OCN, including the Service Provider Name, Company Address, Service Provider Type, Parent Company Name and Parent Company OCNs, Contact Name, Email Address, Telephone Number Fax number, and the Federal Registration Number (FRN).

The table below identifies the specific NRUF report accessed by users from June 5, 2004 through June 12, 2004.

NAS User	NRUF Report	NPA
1	OCN Report for Utilization	706
2	OCN Report for Utilization, Forecast Report and Utilization Report	989
3	Utilization Report	507
4	OCN Report for Utilization and Utilization Report	803, 843, 864
	Utilization Report	229, 404, 470, 478, 678, 706, 770, 912
5	Utilization Report	251
6	Forecast Report	417
7	Utilization Report ³	204, 239, 321, 352, 386, 407, 561, 689, 727, 754, 772, 786, 813, 850, 863, 904, 941, 954
8	OCN Report for Utilization, Forecast Report and Utilization Report	530
9	Forecast Report	940
10	OCN Report for Utilization	309, 815
11	Forecast Report	251, 252, 274, 336, 402, 480, 520, 602, 623, 704, 828, 843, 910, 915, 919, 928, 980, 984
12	OCN Report for Utilization	570
13	OCN Report for Utilization and Forecast Report	920
14	OCN Report for Utilization	931
15	OCN Report for Utilization	830

³ This NAS user attempted to access an NRUF report for 18 NPAs (all in Florida). Due to the large volume of NRUF data associated with these 18 NPAs, it takes NAS several minutes to display the information. As a result, the user stated to NANPA that she did not wait for the NAS application to complete and display the data and thus did not view or download the information.