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List of Acronyms

AC&S	Address Canvassing and Sectorization
CAPI	Computer-assisted personal interview
CAWI	Internet-computer-assisted web interview
CCRPL	Central Committee for Population and Housing Census
DPS	Data Processing and Storage
DOP	Deepness of Data Processing
DTS	Territorial Statistics Directorates
EC	European Commission
ESS	European Statistical System
EU	European Union
EUINSPIRE	Infrastructure for Spatial Information in the European Community
GEOLOC	Geographical Location Software Application
GIS	Geographical Information System
GPS	The Global Positioning System
INS	National Institute of Statistics
IP	Internet Protocol
MAI	Ministry of Internal Affairs
PES	Post Enumeration Survey
PHC2021	Population and Housing Census in Romania 2021 round
RAS	Reimbursable Advisory Services
SPA	Special Purpose Application
STS	Special Telecommunication Service
SuSo	Survey Solutions
UCIR	Unit for Census Coordination and Implementation
UJIR	County Unit for Census Implementation
WB	World Bank

Executive Summary

The purpose of this report is to present the piloting process for the PHC2021 in the context of preparing the census for roll-out and production stage in 2022 (March-July), based on the European and national legal framework for the 2021 round. This is part of the deliverables under the Reimbursable Advisory Services (RAS) Agreement on *Romania Capacity Building for Statistics (P167217).* The project is implemented by the National Institute of Statistics (INS) with support from the World Bank.

This report is directly related to the reports delivered under Output 3b[1], 3c[2] and 4.1c[3] under the same agreement and was prepared following the discussions with the management and senior staff from the INS, including the President and those who are principal actors in the organization and implementation of the 2021 census.

The purpose of piloting the PHC was to verify, the institutional, organizational and logistical set-up and observe any potential missed functionalities or shortcomings of the census process. With the results of this end-to-end pilot final recommendations for improvement, fixing or maintenance for the final census operations could be made. The piloting process was driven by the four characteristics of PHC2021, which requires optimized instruments, respectively:

i) a fully electronic data collection in two different modes, CAPI and CAWI.
ii) complete geo-referencing of all the collected data.
iii) continuous quality management applied at each stage of the data collection process.
iv) a full enumeration of population, dwellings, housing units and households which exist/live in the pilot's selected census sectors (sample).

The need for a PHC piloting process is substantiated in the requirements for the goal of the actual census, – *to collect and provide quality and comprehensive information in an internationally comparable way for over 114 variables considered in the Romanian legislation of PHC2021*. The PHC is the largest statistical operation conducted by INS for collecting, processing and disseminating data on the structure of the Romanian usual resident population and housing. Given the importance of this operation and since it is only conducted every 10 years, it is a common practice to conduct several simulation exercise and other testing operations during the preparation process, including a full end – to – end pilot as presented in this report.

This document has five (5) sections. The first section provides an overview of PHC piloting process in the view of institutional arrangements, organizational aspects and expected data

[1] Output 3b - Report on advisory services provided to Recipient on the Note on planning, management and implementation of the PHC2021
[2] Output 3c - Report on advisory services provided to the Recipient on the Notes on reviewed legislation for PHC2021 (four (4) draft notes with recommendations, one (1) implementation plan) including the report on two (2) workshops on PHC2021 legislation
[3] Output 4.1c - Report on advisory services provided to Recipient on the Documented plan for the integrated system for PHC2021 implementation (details how the IT infrastructure implementation for PHC2021 will be carried out)

collection and specific variables as an end-to-end process. This section is complemented by the second one on components of piloting process for PHC2021.

The second section includes the designed activities for pilot together with the consistent part of PHC pilot infrastructure (hardware and software), the sectorization and questionnaires put in place. Description of a specific set-up for software operation systems and applications is presented in the annexes (section five) to provide the audience this type of information, if further considered applicable.

Section three (3) is a comprehensive review of the results of the PHC pilot presenting the analytics of data regarding evaluation coverage and completeness, a description of the applications prepared for the quality control process (CAWI and CAPI methods), the perception of respondents and enumerators on census tools and approach, the main problems encountered and expected improvements.

The observations and context of the shortcomings observed during the implementation of the pilot and expected achievements form the basis for recommendations for the actual PHC go-live production, described in section four (4). The section covers the revised and adjusted workflow, the IT infrastructure for a smooth data collection process (servers and operation systems, tablets set-up and configuration, technical call center), the training and the promotion and communication components mandatory for the actual Population and Housing Census.

The annexes referred to in the report constitute the section 5, which is providing complementary information for specialists regarding the configuration and maintenance of PHC solution and the paradata reports from the pilot PHC.

1. The context for PHC 2020 piloting

The census is the only data collection instrument that produces statistical information on structure of population and households at the lowest geographical level. The pilot of PHC has been organized based on decision of CCRPL[4] and fulfilling the statement of GEO 19/2020[5] regarding the organizing and performing the PHC. The period for conducting the PHC pilot was March 2021.

1.1. Objectives of the pilot

The preparation and piloting are intended to follow the recommendations presented in the reports for Output 3b, Output 3c, with focus on CAWI and CAPI data collection process functioning, and the improvements to carry out for the integrated system presented in Output 4.1.c. The scope for the end-to-end pilot was to be carried out in the same way as an actual census[6].

The piloting process was driven by the four characteristics of PHC2021, which requires optimized instruments, respectively: i) a fully electronic data collection; ii) fully geo-referenced of data collected; iii) continuous quality management applied at each stage of the data collection process; iv) a complete coverage of population, dwellings, housing units and households which exist/live in the selected census sectors (sample).

The purpose of piloting the PHC was to verify, on a lower scale, the institutional, organizational and logistics set-up and observe the potential miss functionalities or shortcomings of entire flow and process, in order provide recommendations for improvement, fixing or for maintenance during the go-live production of census.

The statement of objectives was defined by specifying information needs and included:

- target geographical regions for the census,
- the pilot population size based on statistically valid sample sizes/designs, to address all pilot requirements, including testing of the IT infrastructure.
- quality assessment of retrieved data.
- use of administrative sources
- the pilot census preparation in counties (from administrative and organizational point of view)

[4] CCRPL - Decision no. 1 from 4-th of November regarding revision of the Calendar of preparation and carry-out of the 2021 round population and housing census, change of the reference date of the census and other changes related to the revised dates.
[5] OUG 19/2020 on the organization and conduct of the Census of Population and Housing in Romania round2021, amended and approved by Law no. 178/2020
[6] Since this is the only pilot, it is highly recommended to not deviate too much from the census process piloted.

1.2. PHC Organizational aspects

According to Regulation (EC) no 763/2008[7] and GEO no.19/2020, Romania will have to ensure the maximum degree of coverage for population and households during the census round 2021 which will take place in 2022. The role of the pilot PHC is to test the conditions of PHC in 2022. In this view the PHC pilot envisaged 50,000 dwelling and approximatively 120,000 persons distributed in all (41) Romania's counties and four phases of implementation during March 2021:

- Phase 1: until March 9 - preparation of the database with the census variables taken from administrative sources and pre-completion of individual questionnaires.
- Phase 2: March 10-16 - self-enumeration (self-registration in pre-registration form and filling in online questionnaires by people from the sampled households).
- Phase 3: March 17-21 - Identifying addresses that were not enumerated or are partially enumerated and generating address lists for every enumerator (at the date of pilot a dedicated application was not available and by that the phase was not applied accordingly - see details below).
- Phase 4: March 22-31 - field visit by enumerators to collect data from households who did not (properly) fill-out the on-line form.

The PHC pilot - data collection - was conducted by INS (headquarters) with the support of DTS in 41 counties for 21 days (March 10-31) with a total number of 961 enumerators and 202 supervisors. The pilot was not carried out in Ilfov county due to the high number of Covid19 cases.

The instruments and PHC pilot were prepared to verify the compliance of census with the Regulation 763/2008, on all the quality criteria - relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, coherence, quality management, data revision, the methodology and the sampling frame used, institutional mandate, confidentiality, cost and burden.

The uploaded administrative data sources were considered by INS. The structure of the file containing the administrative data, and the data type for the variables are the same as the variables from the SuSo questionnaire. The variables are enumerated in the Annex 1, section 4, subchapter 18, Edit census-self-registration/backend.ini ([Map:Household], [Map:Personal]). Considering that only about of 5% addresses were self-enumerated (CAWI) and the lists with addresses where all or part of the household members self-enumerate themselves were not prepared at the time of the pilot (the collected data are available in the export file from Survey Solutions, and the addresses could be identified based on Webgis database), the entire PHC pilot sample was addressed by the CAPI enumeration.

The institutions involved in piloting the PHC were INS, STS, MAI, other public institutions from central and local level, and they followed the mandate described in the primary and secondary legislation dedicated to PHC implementing and performing.

The INS (headquarter and DTS) was involved in pilot process by covering and implementing the activities related to data collection preparation, sectorization, sampling and testing the Self Registration and Survey Solutions functionalities customized for PHC and data collection.

The STS provided and hosted the IT infrastructure, supported the installation and configuration of it, provided tablets, and communication, cyber security testing and validation for PHC. The installation and configuration of the tablets and installation of SuSo app was made by the territorial statistical offices with the support and consulting of the INS experts.

The central public institutions provided administrative data sources (e.g.: Ministry of Internal Affairs) for uploading into the electronic questionnaires. Local public institutions have been involved in promotion of census and administrative actions in selected localities.

Advisory services for Survey Solutions, Self-registration applications implementation and configuration, transformation of questionnaires in electronic ones, testing and monitoring the PHC pilot, were provided to INS specialists by the experts of World Bank.

1.3. Coverage and variables

The questionnaire prepared for PHC pilot covered all topics which should be collected for census based on EU Regulations[7] and some topics for national purposes.

The categories of variables used during pilot were:

- the variables at household level;
- the variables regarding dwellings;
- the variables regarding housing units;
- the variables regarding family nuclei;
- the variables at person's level;

[7] Most of these variables are included in the EC-provided list and subsequent descriptions.
Regulation (EC) no. 763/2008 of the European Parliament and of the Council of 9 July 2008 on the population and housing census; Commission Implementing Regulation (EU) 2017/543 of 22 March 2017 laying down detailed rules for the application of Regulation (EC) No 763/2008 of the European Parliament and of the Council on the census of population and housing as regards the technical specifications of the subjects and their breakdowns; Commission Regulation (EU) 2017/712 of 20 April 2017 establishing the reference year and the program of statistical data and metadata on the population and housing census provided for in Regulation (EC) No. 763/2008 of the European Parliament and of the Council; Commission Implementing Regulation (EU) 2017/881 of 23 May 2017 implementing Regulation (EC) No. 763/2008 of the European Parliament and of the Council on the population and housing census, as regards the modalities and structure of quality reports, as well as the technical format for data transmission and amending Regulation (EU) No. 1151/2010; Commission Implementing Regulation (EU) 2018/1799 of 21 November 2018 establishing a temporary direct statistical action for the dissemination of selected topics of the 2021 population and housing census, geocoded at 1 km2 grid level.

2. Components of piloting geographical process for PHC2021

The combination proposed for the implementation of PHC2021 in Romania includes a digital questionnaire completed in a CAWI data collection method, as a self-registration process, followed by a face-to-face interviewing, the CAPI data collection method, applied to all non-responded, incomplete or with errors questionnaires during CAWI.

The piloting process tested a set of census components developed until the moment of starting in March 2021, as they are presented further.

2.1. Selection of pilot regions and sample creation

An end-to-end pilot should be a full replication of the actual census and should reflect as much as possible the true situation on the ground. Nevertheless, sampling and grossing-up was not possible for the pilot and an equal number of sectors were tested in every county. Another very important purpose of this pilot is a test from the point of view of:

- the proper functioning of the IT applications,
- the questionnaire,
- the IT infrastructure, and
- the verification and functioning of workflows
- the verification of human capabilities - field staff, supervisors at UCIR and UJIR level, headquarters, additional staff,
- final database, etc.

Through the pilot, the value of the indicators calculated with the data collected by the pilot census was not followed as a purpose.

All the counties /territorial offices were involved in the pilot (except Ilfov county), and all counties were involved to ensure the segmentation of units into equally sized enumeration areas (from the number of dwellings point of view) to maintain similar workloads[8] with available geographic coordinates and/or topology information. Segmentation[9] should be conducted to divide the whole territory of the county into geographical areas equal from the number of dwellings point of view, for logistical and statistical purposes and for verification of the AC&S strategies, complete basic information was required for a certain number of segments.

The GIS coordinates of the buildings have been allocated at enumeration sector using “the cell code of the INSPIRE statistical units’ grid for pan-European usage”.

[8] May include other segmentation criteria

[9] Segmentation for the PHC2021 is conducted based with a target size of 100 dwellings inside the segment. Within the segment, the distribution commonly doesn’t matter, so if it is a single building with 100 dwellings or 100 buildings with 1 dwelling each, was not considered in the segmentation process.

The pilot allowed INS to verify the different Address Canvassing and Sectorization (AC&S) strategies, due to using geographic coordinates derived from an internal address database or any other source (e.g.: Google, Postal services).

The pilot census approach was the following:

a) a full enumeration and geo-referencing including segmentation of the pilot regions.
    - after the segmentation either a sample of enumeration areas or the selected region will be selected for the pilot census.
    - selected regions should represent a similar distribution of census units as it is expected in the main census.
    - the organizational structure at the national and the territorial level should be the same as in the main pilot (i.e., communications & user support, IT support etc.)
b) the pilot frame must be a representative replicate of the actual census frame with respect to final census population and households.
c) production of all quality metrics and creation of final tables.

To test the recommended strategy, ground verification was important for the segmentation purpose.

2.2. Questionnaire Design & Quality Control

In accordance with the selected method and questionnaire plan for the PHC, two questionnaires were developed: the CAWI questionnaire intended for household and person self-enumeration online, and a CAPI questionnaire for the follow up of the households that didn't self-register, or did self-register, but subsequently didn't fill out the self-enumeration interviews. The two questionnaires are applied in different circumstances and correspondingly their structure is different.

The CAWI questionnaire implements a questionnaire, which can be either long (for the household head - the dwelling, the household and the personal questionnaires) or short (for other members of the household - the personal questionnaire). This allows acquiring the dwelling characteristics and family configuration description only once in the long version (entered by the household head), while at the same time it allows the household members to fill out their respective interviews individually and independently.

The CAPI questionnaire is built from a distinct perspective, from the perspective of a visit, during which the enumerator acquires the information of all the household members. This allows for all the household information to be contained within one interview for convenience of data transfer and verification.

There are other differences in implementation of the questionnaires. Some information (such as the PIN numbers) entered in the self-registration form are inherited by the interviews in Survey Solutions and thus are hidden away from the respondent and can no longer be changed in CAWI version of the questionnaire. While in the CAPI version of the questionnaire this information is open, as it must be acquired by the enumerator during the interview. The CAWI version of the

questionnaire need not verify the entered PINs, because they are fully preloaded and can't be changed, but the CAPI version does need to validate the PINs, to prevent accidental typing errors. PINs in the CAWI version will be checked by the pre-registration form.

According to Regulation (EC) no 1799/2018, dissemination of the data for the 2021 population and housing census should be geocoded to a 1 km2 grid. For that reason, the questionnaire includes the GPS location question.

To improve the quality of the collected data and to permit audits for the CAPI the GPS location question also will help to determine the location of the household being enumerated and to establish the fact that the enumerator has visited this location. Considering the problems encountered by most enumerators in the pilot, it should be noted that in the field the tablet GPS had many issues and there is recommended to improve their specifications.

2.3. Resource planning & preparation

A perspective of end-to-end pilot should contain all elements of the actual census, respectively the whole support infrastructure and staff with attributions based on their roles (enumerator, chief enumerator, supervisor, coordinator, headquarter) to use and apply the functionalities of system components. This consisted of staff selection at national (i.e., IT support, census hotline) and territorial office (i.e., local support) and development of training programs and tutorials together with and preparation and set-up of tablets required for CAPI phase (same tablets as for actual census).

The content related training programs was developed and conducted by INS (including correlations and skips). For application, the related training content was developed by WB (available tutorials/materials on Survey Solutions Support Site or YouTube Survey Solutions Channel), and has been conducted by INS.

2.4. IT & Tablet set-up

The set-up for end-to-end PHC pilot replicated the IT infrastructure for data collection and level of structure, functionalities and roles attributed for data collection and validation.
The component included:

- set-up of data collection servers hosted by STS and data processing infrastructure hosted by WB.
- IT infrastructure functionality tests and security.
- establishing the distinct roles of the staff in management of the questionnaires, control and corrections
- management of the tablets at the county level (install of application, configure the tablets) and development of support materials (i.e., tablet set-up instructions, local support manuals). The number of IT tablets used for pilot was smaller than the actual census and the technical specifications similar or identical.

All applications and technical documentation were provided by WB based on Survey Solutions specifics for using in PHC.

2.5. Data Collection

The CAWI and CAPI methods used for PHC pilot consisted in availability and function of Self-registration application and Survey Solutions application for self-enumeration and Survey Solutions application for data collection by enumerators, the latest installed and used on tablets. Since the CAWI method relies on the ability of respondents to connect and follow the instruction for self-registration, and the answering to questionnaire, the CAPI method is more complex and included specific tasks regarding:

- training of field staff to use tablet and questionnaire; the training was conducted in two steps: supervisors were trained by headquarter staff and enumerators were trained by supervisors.
- distribution of workload to enumerators.
- synchronization test of tablets in working with the application installed and IT communication infrastructure
- contact attempts and tracking of enumerator performance
- collection of paradata (incl. geo-spatial)
- close supervision of the whole data collection process
- functioning of available quality control process and support infrastructure
    - methods of measuring, controlling and correcting errors (information included in Survey Solutions platform, and in the respective materials available on the support site of SuSo – they will be improved after pilot)
    - quality assurance
    - quality control
    - analysis of paradata and other process data (incl. retrieval of follow up information)

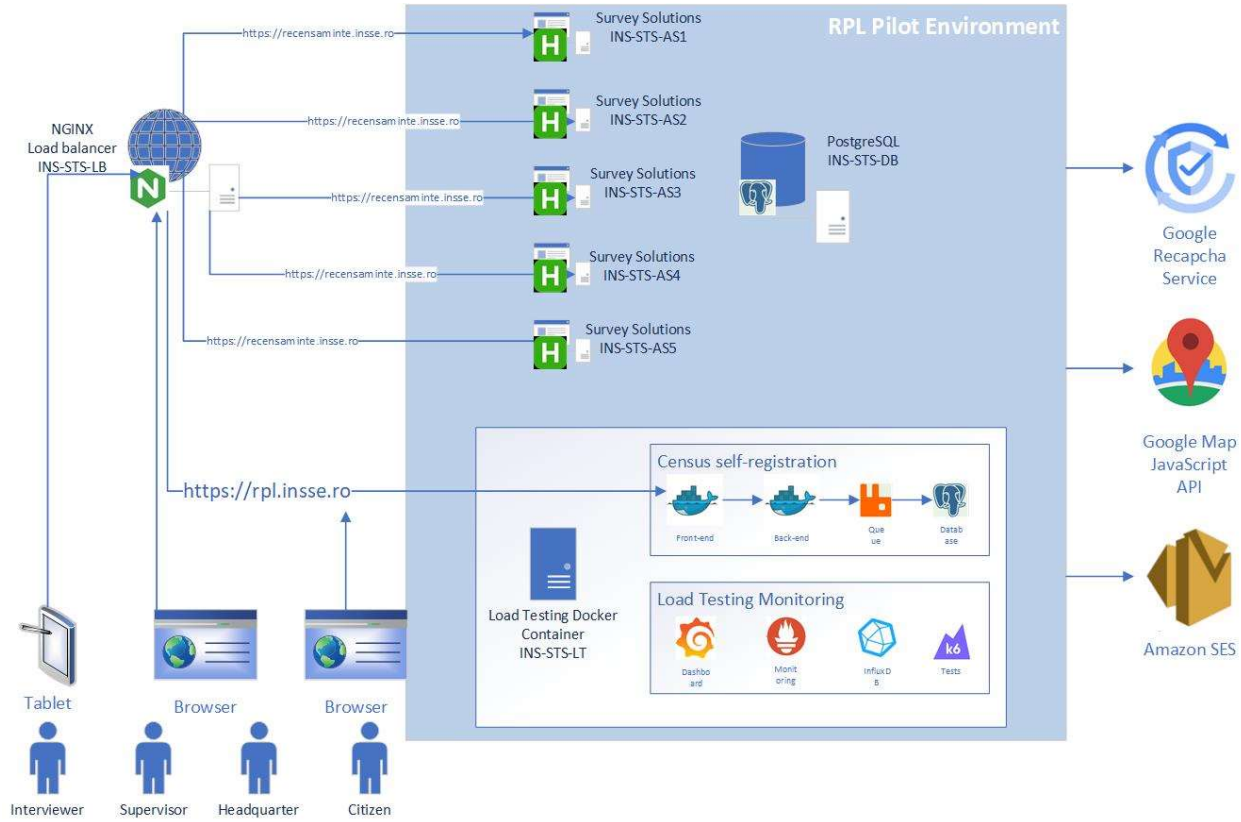
It should be noted that analysis of the census process through paradata (such as duration of interview) was made after the pilot, in particular the paradata analysis (SAP) was available for testing after the end of PHC.

Applications for data collection were tested preliminary to starting the pilot of PHC several times, both at headquarter and in the territorial statistical offices and the final flow and questionnaire have been configured for data collection in field.

2.6. The PHC pilot IT implemented solution

In the process of building PHC pilot environment, the specifications presented in Output 4.1.c[10] were applied. The pilot environment is presented in Figure 1, below.

Figure 1 - PHC pilot environment



Source: Authors

2.6.1. Solution detailed configuration

The detailed configuration of PHC environment is presented in **Annex 1**, covering the load balancing installation log, the data base installation log, the Survey Solutions installation log and the Self-Registration installation log.

2.6.2. Maintenance procedures for PHC environment

To maintain functional testing environment for PHC, some relevant procedures are required and will apply for actual census, respectively: the initializing the environment, patching and updating WB software when functional issues are addressed in the source code, and Monitoring the environment. Detailed instructions are presented in **Annex 2.**

[10] Output 4.1.c – Report on documented plan for the integrated system for PHC2021 implementation (details how the IT infrastructure implementation for PHC2021 will be carried out)

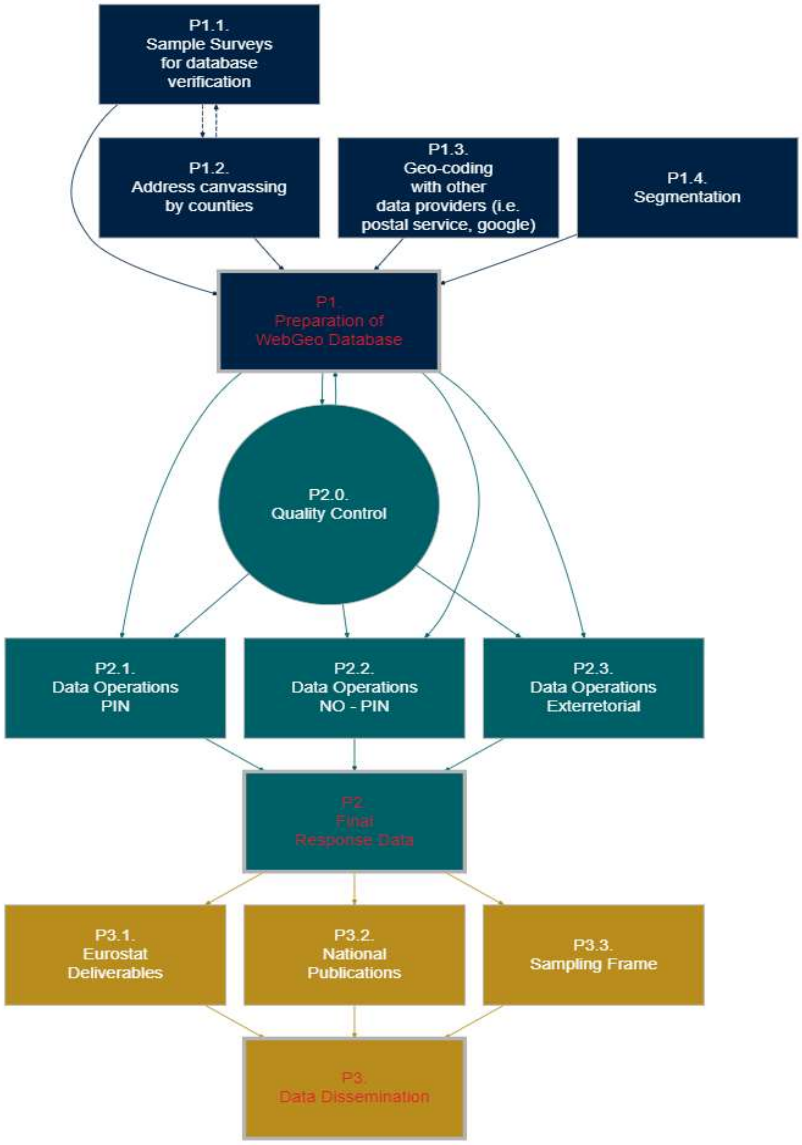
3. Results of PHC piloting

The results of pilot could be summarized as achieving the purpose, respectively the functioning of IT infrastructure and applications, the validation of questionnaire and testing the behavior of respondents in using the CAWI and CAPI data collection methods.

3.1. Final Census Process

Figure 2 shows the complete census process separated into all its main process groups. These process groups are then divided into sub-processes itself which are described in the corresponding reference document.

Figure 2 - Final Census Process



All the major process groups had been tested, except the process group for data dissemination (P3.1 and P3.2). The latter will subsequently be tested with existing data. However, since this was not time bound, was spared this process group for later. The extraterritorial operations were skipped during pilot, but the process described refers to all eligible census respondents not in Romania. By that will be used two servers for this operation, and the one for Romania has the IP blocked. In preparing the actual census, supplementary information about structure will be presented, considering the amelioration/ improvement of collected data as part of P2 - Final Response Data. Optionally, the structure above could be presented as a separate one preceding the preparation of census outputs (Eurostat deliverables and national publication), which will be done by statistical imputation and application of statistical modeling. In observing the above structure, the P3 - Data Dissemination is composed by and integrates processes P3.1, P3.2, P3.3.

3.2. Analytics of DATA – by means of standardized results

During the census paradata is automatically collected by the system and has been made available through the provided quality control tools. However, since this was the first pilot, the collected paradata will now be used by the corresponding working groups to optimize the corresponding instrument and to define relevant thresholds and interventions. A complete description of the calculation of the indicators will be available for actual census.

CAWI method - self-enumeration by completing the online questionnaire was used by 2300 households (4,6%) and 5200 people representing 4,33% of target population of pilot – the method was used for the first time in Romania. The average duration of completing an individual questionnaire was 26 minutes in the long form of it for a single person household, comprising dwelling, household and personal information (the average duration is calculated for individual questionnaires).

CAPI method - by using tablets, data were collected from 49,200 households (98,4%) and about 68,800 people (57,33%). The average duration of the completion of an individual questionnaire, single person household, comprising dwelling, household and personal information, by the enumerator was 18 minutes. The table below presents average interview duration based on the available paradata at the level of the section for a single person household as well as the total[11].

Table 1 - Response Time by Section for single person household without specification of occupational status

Section	CAWI	CAPI
1	1.76	2.72
2	1.26	3.44
3	4.21	5.06
4	10.88	4.29
5	7.44	2.36
Overall	25.55	17.87

[11] Given the different structure of the questionnaire between modes a meaningful comparison between CAPI and CAWI can only be done for a single person household.

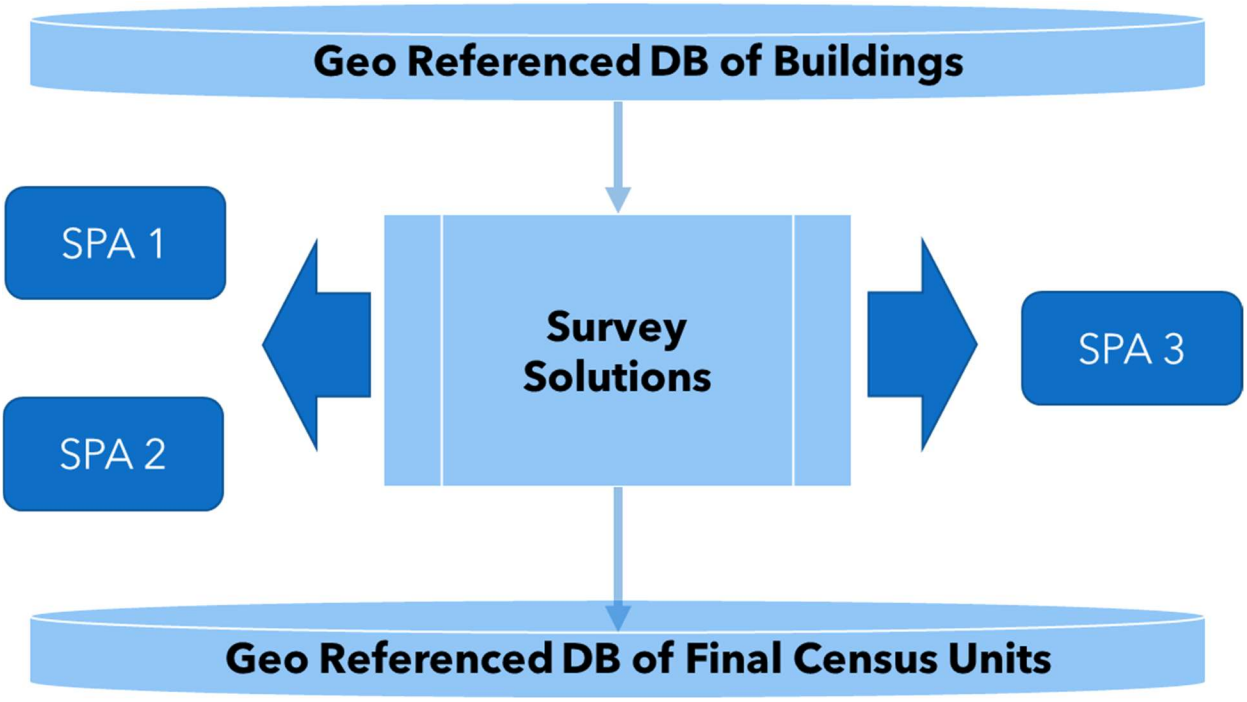
3.3. Special Purpose Applications – use and functioning

The PHC2021 will use Special Purpose Applications (SPA) in support of data collection, monitoring, evaluation, and statistical production (more detailed specifications regarding calculation of indicators will be provided for the purpose of actual census). The SPAs are tools available on Survey Solutions at https://apps4dev.mysurvey.solutions/phc21_censustools/ and are envisaging different layers, respectively:

- National (Paradata for questionnaires & interviewers & segments, https://apps4dev.mysurvey.solutions/phc21_censustools/phc_paradata/)
- Counties (summary county by segment/interviewer, https://apps4dev.mysurvey.solutions/phc21_censustools/phc_country/)
- Segments (summary segment by building location, https://apps4dev.mysurvey.solutions/phc21_censustools/phc_segments/)

The SPAs places into the applications' schema are presented in figure below.

Figure 3 - Main Data Stream and SPAs



Source: Authors

SPAs (Special Purpose Applications) are built on top, and follow all conventions defined by the main data stream:

- connect through the API
- are located on different server
- require the main SUSO flow, since they are calibrated to it
- Survey Solutions does not require them.

The data stream consists of:

- Geo-referenced DB of buildings constitutes the starting point.

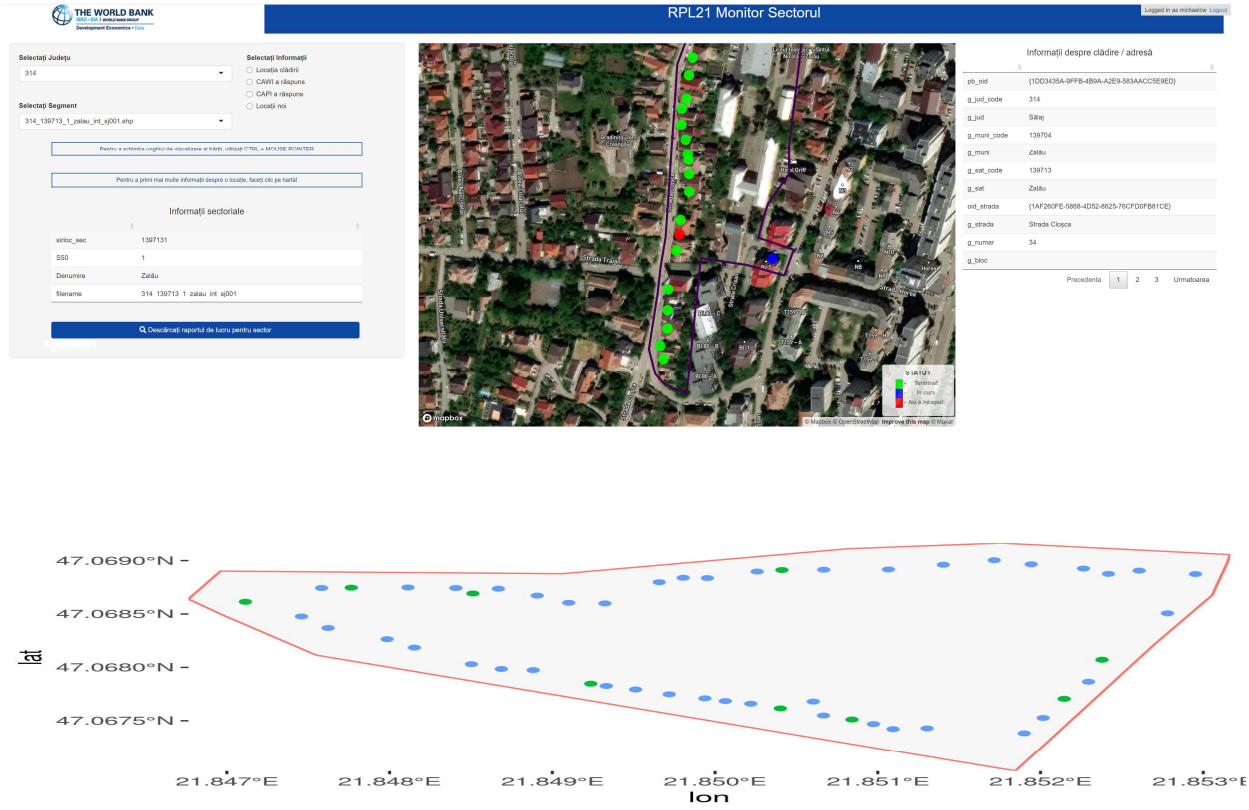
- all location-based standards and classifications need to be maintained (i.e., SIRUTA Codes)
- all spatial ID variable names ('schema') need to be harmonized and are frozen (i.e., no spontaneous changes) until after the census - maintaining this standard in subsequent years is recommended.
- a fully geo-referenced DB of final census units is the result

For the actual census, detailed specifications regarding calculation of indicators will be available.

Exemplifications of SPAs are presented further.

a) Tools Directory **../phc_segments** - support the reports for a selected segment regarding interviews collected via web-mode, via tablet, count the addresses and dwellings in the database - see figure below.

Figure 4 - Segment tool



Report from **../phc_segment**

.	N_adresa	N_locuinte	CAPI	CAWI	TOTAL
TOTAL	51	51	42	1	43

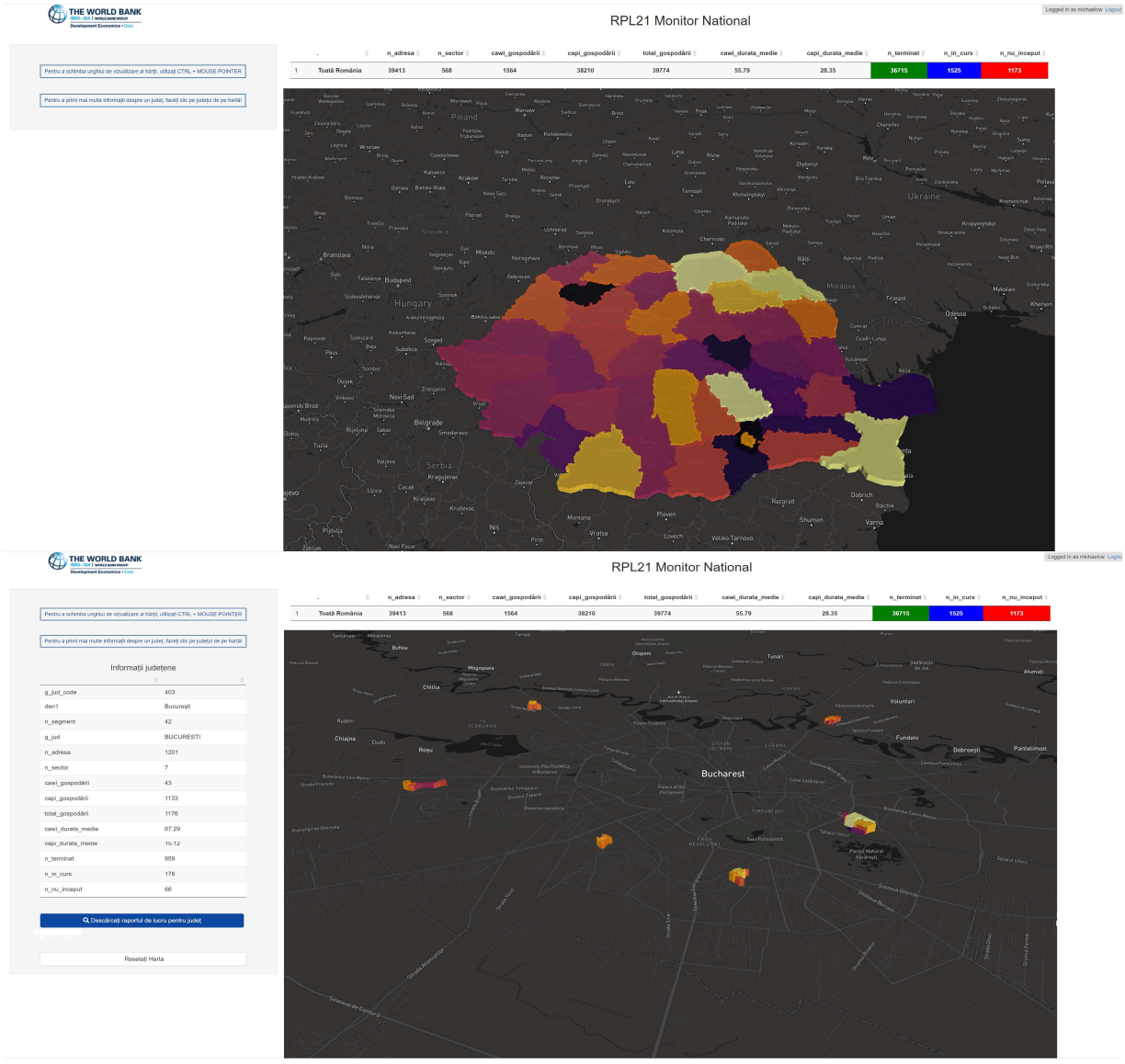
srn	adresa	N_locuinte	CAPI	CAWI	TOTAL	STATUT
1	Strada Sintandrei 375	1	1	0	1	Terminat

Explanation:

N_adresa	Count of addresses in the database for the selected segment
N_locuinte	Count of dwellings in the database for the selected segment
CAWI	Count of INTERVIEWS collected via web-mode
CAPI	Count of INTERVIEWS collected via tablet
STATUT	Status of the building, one of not-started/in progress/completed

b) Tools Directory **../phc_country -** support the reports on sum of count of addresses and dwellings in segment files, count the interviews collected via web-mode and via tablet (sums), and average duration in the segment – see the figure below.

Figure 5 – Country and county level detail



Reports from **../phc_country**

tempgr	N_adresa	N_locuinte	CAPI	CAWI	TOTAL
TOTAL	1201	2051	1133	43	1176

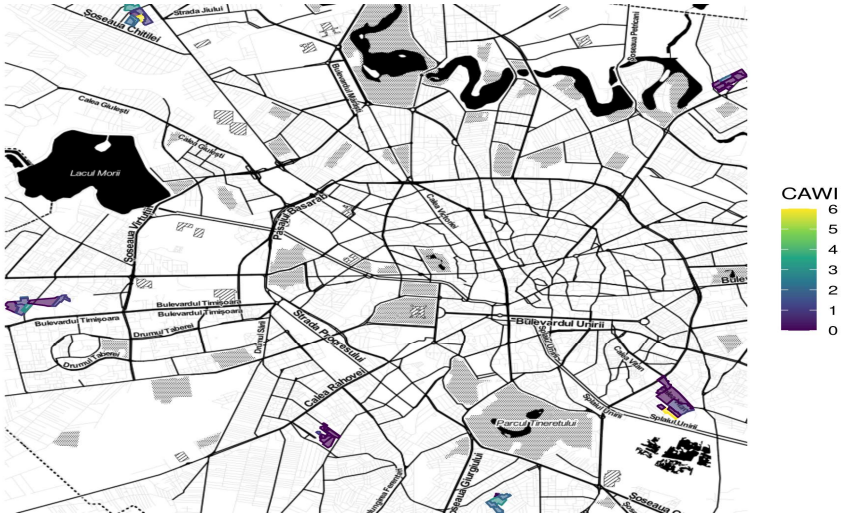
g_jud_code	sector	g_sat_code	N_adresa	N_locuinte	CAPI	CAWI	TOTAL
403	1	179141	1201	54	40	3	43

responsible	g_jud_code	sector	g_sat_code	CAWI_dur	CAPI_dur	Terminat	In_curs	Nu_inceput
int_s1001	403	1	179141	24.00	3.57	30	10	0

Explanations:

N_adresa	SUM of Count of addresses in segment files
N_locuinte	SUM of Count of dwellings in segment files
CAWI	Count of INTERVIEWS collected via web-mode (sums)
CAPI	Count of INTERVIEWS collected via tablet (sums)
T../In../Nu	Count of the building, one of not-started/in progress/completed

Figure 6 - CAWI/CAPI average duration in the segment



Explanations:

CAWI_dur - Average duration in the segment

CAPI_dur - Average duration in the segment

c) Tools Directory **../phc_paradata -** is supporting the paradata reports which contain the exact calculation of duration etc. based on the individual response timings in seconds (from the questionnaire paradata). See figures below.

Figure 7 - Load data into SPA

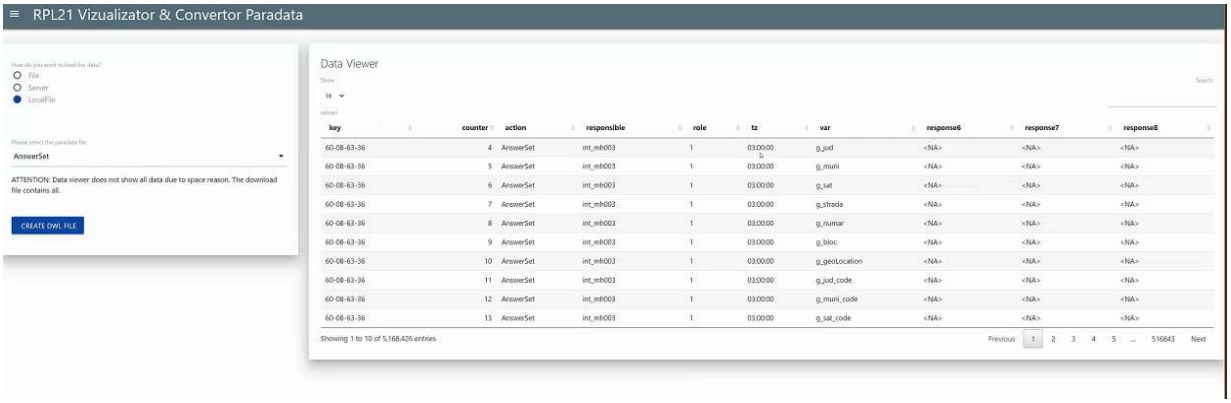


Figure 8 - Paradata Questionnaire/Question details

Figure 9 - Paradata Enumerator details

Reports from **../ phc_paradata**

.	mean_duration	mean_durationNOBREAK	mean_startHour	mean_RespTime	N_obs
Toată România	59.82	11.32	10.68158	5.58	961

Explanations:

mean_duration (min) - mean duration of interview, calculated from 1st ANSWER SET TO LAST

mean_durationNOBREAK (min) - mean duration of interview, calculated from 1st ANSWER SET TO LAST but without BREAKS (breaks as signalled by tablet, or when response time >3min), where both long questionnaire and short questionnaires are included.

mean_startHour (24h) - mean of the hour when most of the interviews did their first question

mean_RespTime (sec) - mean of the average response time to all questions in seconds

N_obs - total number of enumerators

responsible	mean_duration	mean_durationNOBREAK	mean_startHour	mean_RespTime	N_obs
int_bt008	46.84	7.50	13	3.78	56

Explanations:

responsible - enumerators's username

N_obs - total number of interviews completed by the enumerators

.	Av_ResponseTime	Av_Duration	N_questions
Toată România	8.190066	8.190066	151

Explanations:

Av_ResponseTime (sec) - average response time in the segment (excludes breaks)

Av_Duration (sec) - average duration time in the segment

N_questions - count of represented questions

counterMedian	var	Av_ResponseTime	Av_Duration	N_obs	tot
152.5	AA_ALM	13.28	11.96	1075	Toată România

Explanations:

counterMedian - position in the interview process for the median of interviews. (explanation of calculation: not all questions are asked 1, 2, 3, 4. in every interview, for various reason. To get a common ranking, was taken the position it represented in 50% of the interviews. This is also in the questionnaire analytics graph from above, Figure 8 and 9. All data is updated continuously with every new data read.)

var - the name of the variable

Av_ResponseTime (sec) - average response time in the segment (excludes breaks)

Av_Duration (sec) - average duration time in the segment

N_obs - how many answers received for this variable in the survey process

3.4. Enumerators and respondents' perception and observations

The paradata reports contain the exact calculation of duration based on the individual response timings in seconds from the questionnaire paradata. The report it is presented in Annex 3 – *A comparison of CAWI and CAPI at the question level and for a single person household*.

For example, the question on occupation takes 11.85 seconds to respond, in CAWI method, and 100.56 seconds (about 1 minute 40 and a half seconds) in CAPI method.

Variable Name	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
OCUP	5	127	NA	P86. Ocupația	11.851	100.559	1429	2109

Also, based on paradata available for CAWI and CAPI, the following table shows the differences between the methods, at the level of the five sections of the questionnaire. The duration was calculated based on a questionnaire containing one single person, for comparability reasons.

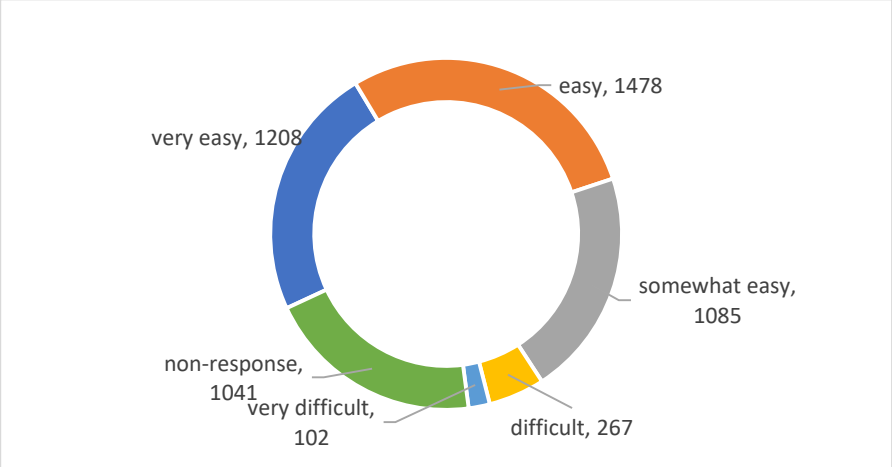
Table 2 - CAWI-CAPI time spent/section

Section	CAWI (minutes)	CAPI (minutes)
1	1.76	2.72
2	1.26	3.44
3	4.21	5.06
4	10.88	4.29
5	7.44	2.36

3.4.1. With respect to CAWI

To measure the respondent's behavior/attitude, specific questions were included at the end of the questionnaire. First one is: *How was the questionnaire completed?* (P99). The variable is measured using an ordinal scale with 5 levels (*very easy, easy, somewhat easy, difficult, very difficult*).

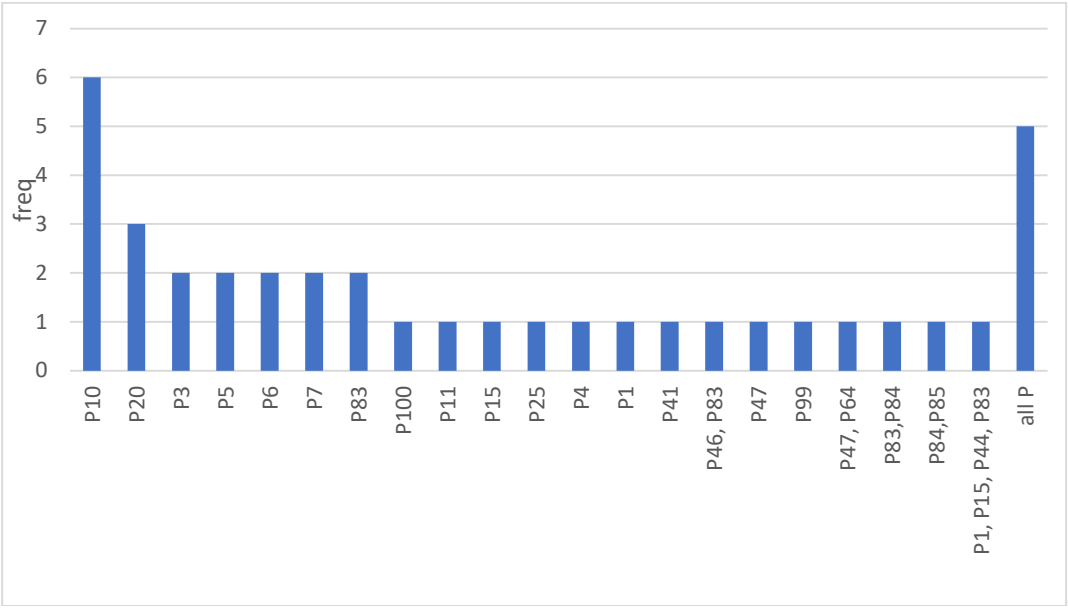
Figure 10 - How was the questionnaire completed?



Most respondents have had a positive behavior/attitude regarding the filling of the questionnaire, 72.8% of them considering this action being *very easy* (23.3%), *easy* (28.5%) or *somewhat easy* (20.9%). Only 7.2% considered it difficult (5.2%) or *very difficult* (2.0). The response rate of the question was 79.9%.

For the respondent who considered the questionnaire *very difficult* (102 persons), a second question with detailed answer was required: *Specify the number of the question that you encountered the most difficulty of answering* (P100).

Figure 11 - The distribution of respondents by the most difficulty question



Only 5 respondents considered that to "all the questions" is *very difficult* to answer. The response rate of the question was 68.6%.

This question has also a free comments section (free-response question). There were recorded 47.1% free comments coming from respondents who considered the questionnaire *very difficult* and filled the Q100. Some of the comments are relevant and useful to be implemented into the questionnaire.

One problem in this respect is the high number (1041) of item non-response for this question. It constitutes the third largest group among the respondents, and requires further investigation, as outlined in Section 4.

For the CAPI questionnaire we also included questions, as to identify the reason for non-response during self-registration. The included question was "P99. Why haven't you self-registered?", with four available options. The responses had been recorded in the presented order, resulting in the choices below.

1 - the questionnaire was too long.
2 - the questionnaire was too complicated.
3 - the questionnaire did not work on my computer/tablet/phone.
4 - I did not have access to a computer/tablet/phone.

The obtained figures are presented in the next table. From a total of over 49,200 completed questionnaires, 28,495 accepted the interview and provide data for household, buildings, their living home and the persons from the household (value of `REZULTAT` variable is "1").

Table 3 – Reasons for non-response

	1-the questionnaire was too long	**2-the questionnaire was too complicated**	**3-the questionnaire did not work on my computer/ tablet/ phone**	**4-I did not have access to a computer/ tablet/ phone**
First Choice	19372	17230	9622	22120
Second Choice	944	4659	374	539
Third Choice	41	72	408	202
Fourth Choice	12	4	25	212
no reason	48465	46869	58405	45761
Total	68834	68834	68834	68834

These 28,495 questionnaires contain data for 68,834 persons. Out of the total of 68,834 persons for whom they accepted the CAPI interview, about a third stated that the CAWI questionnaire was too long or too complicated, causing them not to complete it. However, given the fact that only about 5,181 persons registered for self-review, of which only 4,672 completed the questionnaire (in CAWI), it could be said that they abandoned self-registration process, without seeing the

questionnaire. This may be a result of not having sufficient information about the interview process and needs to be addressed as further down below.

3.4.2. With respect to CAPI

The mean durations of complete the questionnaire on CAPI method approved by HQ, consisting in total time spent by the interviewer to each answered question, without any breaks between questions, grouped by the number of persons included in the questionnaire, are presented in the following table.
Note: First person/head of household is completing the entire questionnaire (dwelling, household, personal questionnaire)

Table 4 - Mean durations of complete the questionnaire on CAPI method

No of persons	No of questionnaires	Mean durationNOBREAK (minutes)	Mean durationNOBREAK (minutes)/person
1	8290	10.98	10.98
2	9679	16.21	8.12
3	4786	21.50	7.16
4	3337	25.40	6.35
5	1355	29.50	5.90
6	636	33.38	5.61
7	195	37.54	5.36
8	91	39.57	4.91
9	79	48.71	5.41

The CAPI questionnaire includes a question "*Describe the reaction of the person who responded to the interview. The person was:*", with 4 possible answers: 1-cooperative and friendly; 2-less cooperative; 3-not at all cooperative; 4-refused the interview or did not cooperate at all. The results are presented in the next table.

Table 5 -The reaction of the person who responded to the interview

Answer	No of responses
1- cooperative and friendly	25,759
2-less cooperative	2,385
3-not at all cooperative	305
4-refused the interview or did not cooperate at all	27
no response (NA)	20747

3.5. Main working areas for improvements

3.5.1. Geo-referencing of building units and dwelling identification

A proper organization of actual census and data collection requires the finalization and connection of **Database Infrastructure** to Data actuality improves and Load/(Pre-)Processing decreases

- street names directly from database, instead of flat file (→requires connection, either https or VPN at the earliest)
- SPAs can use postgres (INS database) or API (Survey Solutions).
- SPAs act as interface between SuSo and INS postgres infrastructure.

Extension of coverage checks beyond the standard approach (includes sampling for precision):

- through statistical/ML approaches we create expected values E(N) for a grid of 1 square km grid cells. Estimates are based on results from different models. Inputs are mainly of spatial nature, like i.e., remote sensing data. Other direct or indirect data on census units and distribution can also be use.
- through continuous updates and retraining before/during census via sample surveys, predictive capacity is improved.
- model can be used to contribute to future updates of census population. Required sample surveys can be designed smaller due to more efficient sampling strategies.
- an automatic generation of lists with addresses/dwellings where self-enumeration was not done (totally or partially) at county and sector's level to avoid enumerator's visits of the dwellings/households who self-enumerate itself, and could be considered for the actual census.

3.5.2. Harmonization of coding, nomenclature etc.

Besides performance of CAWI and CAPI flows and possibility of using tablets in the field, a specific issue occurs when specking a better performance, respectively the dimensions and length of nomenclatures. The education nomenclature will request appropriate coding for a proper use during actual census. Improvements could be considered for occupation nomenclature and its coding.

3.5.3. Recommendations on Communications

Data integrated with communication strategy could be applied, respectively:

- during census, by monitoring of response during CAWI, targeted messaging/communication strategies to increase response (i.e., data from /phc_segment app).
- social media can be tested (i.e., Twitter, Facebook) via localization or by other filter, (though or probably limited in rural, but i.e., church day in villages to distribute flyers, local village gatherings etc.) and inform field staff, who can help people for self-registration
- communication strategy should be data driven.

4. Recommendations for actual PHC go-live production (2022)

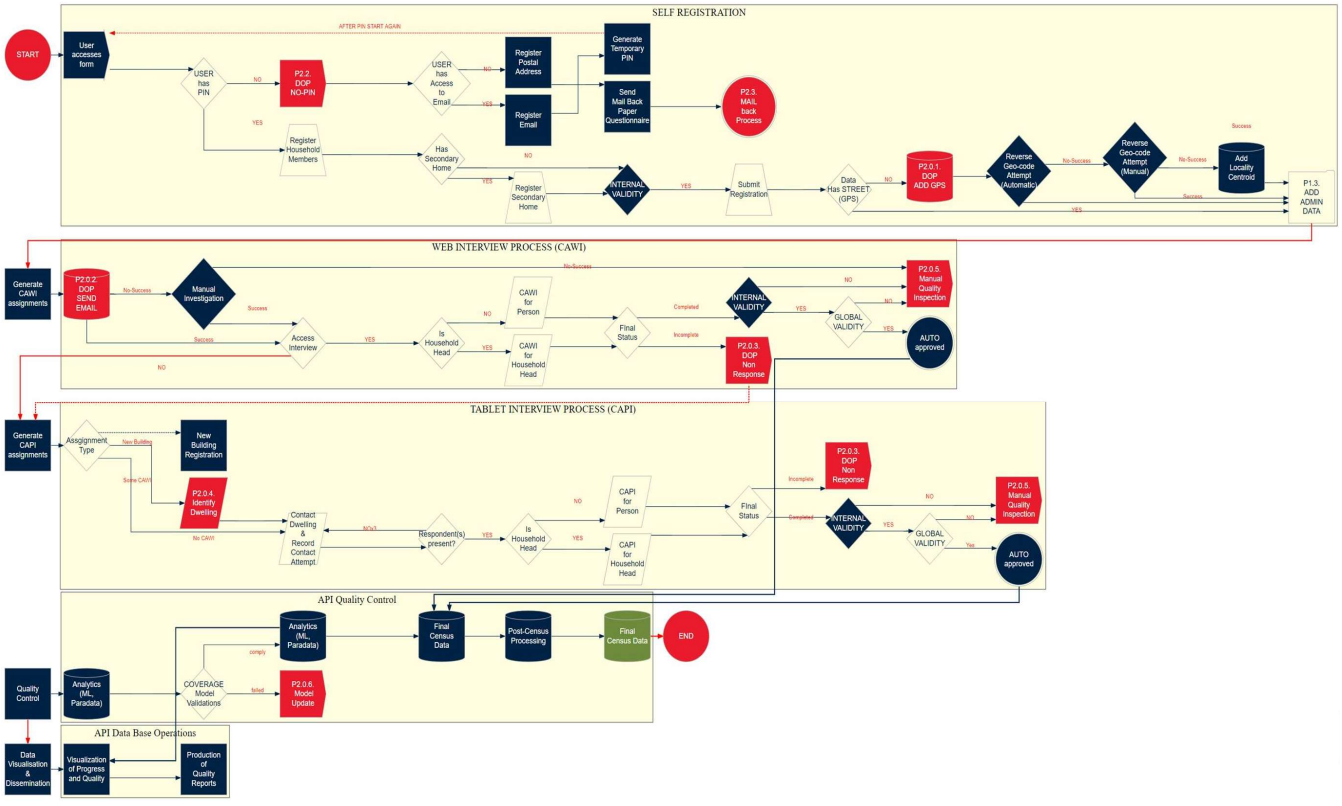
4.1. Go-live PHC workflow

Based on the data retrieved from the 2021 pilot census, an initial model was defined, and subsequently verified through corresponding sample surveys. To further increase the precision of this model, we will also use data throughout the census, to update the model. This is the process group covering the actual data collection process. It can again be separated into 4 major sub-groups:

1. Self - Registration
2. Web Interview Process (CAWI)
3. Tablet Interview process (CAPI)
4. API Quality Control (including DB operations)

The completely integrated workflow for this process group is depicted in the following process diagram:

Figure 12 - Integrated workflow



The integrated workflow will be revised for applying it in the conditions of actual census and parts of the flow will be adjusted, like for:

- Self-registration – the user has access to email if for him is already in the process and this is not considered a condition;
- Send mail back paper questionnaire - this solution is not considered an option for actual census (is possible as alternative but will not be applied)
- Secondary home – since during the pilot was not applicable, its introduction as function will end as reconsidering the workflow
- CAPI process will be adjusted to reflect situations generated by the coverage of self-registration process (list of addresses/persons); or by the new building registration process.
- delimitation in naming the two different databases as Final Census Data, to mark the fact of having different content.

4.2. Working Groups

To best cover the remaining areas, working groups are formed. The working groups proposed below are the result of the remaining open areas in the preparation of the census. Those working groups are essential for the final developments. All working groups will contain members from INS and the World Bank. Besides the direct impact of developing the final solutions for the respective topic, they are also intended to indirectly build up capacity at INS by requiring a stronger involvement. Their main tasks are presented below.

1. **Database verification and spatial resources (covers P2.0.1 & P2.0.6.)**

It is envisaged the development of sampling approaches based on INS resources, and to be used in data base verification and coverage checks, thus also replacing a PES. The sampling approaches developed in this area, will subsequently be used in the intercensal period for surveys and updates. These sampling designs should incorporate spatial information to verify coverage estimates. Testing of other geo spatial resources to be used, including google, Bing etc. Model updates iteratively, so coverage estimates will improve during data collection.
Amongst the most important other spatial resources is also the process of segmentation, which this working group will deal with, since its quality is a direct result of the database quality.

2. **Database harmonization (this will reduce addresses with no GPS, so it helps P2.0.1.)**

It has the purpose to make database connections from INS databases (in particular Geo) available for the survey solution registration and other operations (integration/harmonization), to develop a method to aggregate the CAPI and CAWI databases, and to make sure, that all classifications, Identifiers etc are harmonized, Address database fully connected, to insure that all nomenclatures are functional on tablets, as it was fount in the pilot that extensive education nomenclatures could not be opened by the tablets. etc.

3. **CAPI questionnaire and Dwelling Identification inside building (covers P2.0.4.)**

It is envisaged the optimizing of the process of dwelling identification & data collection by incorporating relevant information retrieved from paradata and other sources. New rules of validation/ acceptance of questionnaires in the data base are needed, in order not to accept questionnaires with item non-responses for critical questions.
A very important task of this group is also to develop clear guidelines for dwelling identification.

4. **CAWI questionnaire and Self Registration (covers P2.2. & P2.0.2.)**

Will focus on making CAWI and Self Registration questionnaire as user friendly and practical as possible. This is on the one hand based on the available paradata, but on the other hand also on any qualitative investigations into the response process, with either focus groups or cognitive interviews. This group should also have the task to establish how the household will be constructed from all the questionnaires filled in by separate members of the household (that will have different interview IDs)

5. **Paradata and global Validations (covers P2.0.5., *Analytics* and in parts also influences P2.0.6.)**

It envisages the creation of a global validation framework based on para- and other -data, to assess quality/reliability.

6. **Non-response (CAWI & CAPI, covers P2.0.3)**

It envisages the development of a non-response framework & imputation etc.

4.3. Questionnaire

Overall, both questionnaires worked well and were technically up to the expected level. However, both require improvements, which will be dealt with in the subsequent months and by the responsible working groups outlined under section 4.2.

In both cases a strong involvement of (potential) respondents and field staff is highly recommended.

- The PHC questionnaire contains marital information both in personal section and in family configuration section, which may present redundancy for the interviews with household heads or potentially result in contradictive information specified in different parts of the interview. The responsible working group should find a method for restructuring the questionnaire to eliminate the redundancy like for allowing the use of information collected in one section to another question (year of consensual union). If there are constrains related to some type of object, they could be taken in consideration for changing the approach in SuSo designer.
- Overall, the approach does not allow to easily discover the unreported households without visits to all dwellings because the initial information about the number of the households in structures is less than perfect.
- Given that the backbone of the whole data operation is provided by the geo-referenced database of buildings as outlined in Figure 3. it is also important, to completely harmonize the classification in both database and questionnaire.
- Given that the European Grid System will be applied in several instances, the grid codes should be preloaded into the questionnaire.

4.3.1. CAWI

Based on the experience the from PHC Pilot, on the CAWI method, the main aspects which should be taking into consideration for go-live production, are detailed here. These results will be changed or extended further during the analysis of the paradata and the results of the working groups.

- The CAWI questionnaire must be well tested with different types of respondents and from various socio-economic backgrounds.
- Some questions need to be rewritten to match the terms used in PHC, but also to be clearer to respondents.
- The way of asking the questions could still be in an official note, but be more friendly, by using a language suitable for all respondents.
- The questions about education and occupation were the ones that had the longest answers, in seconds, could be rewritten.
- The entire sub-section for education should be restructured to be answered more efficient in number of questions and the difficulty.
- Some questions should accept also free text, along with fixed answers (example: occupation). However this may require additional machine learning based classification after. This will create the need for manual coding of occupations by the specified persons after data collection. If code or free text is allowed, it is expected that almost everyone will write free text instead of searching for the code, which will create a massive coding problem.
- Some participants reported self-registering, but not receiving invitation emails for the main CAWI census questionnaire. These reports need to be investigated to determine whether they were caused by unclear instructions for self-registration or individual's mailbox configuration problems (mailbox full, message received, but classified as spam, etc.).
- Current implementation of the self-registration does not allow enumeration of persons without a Romanian PIN number, which necessitates follow up of these households by interviewers with a CAPI questionnaire. During collection of the data by interviewers the current CAPI implementation necessitates that interviewers make up artificial PIN numbers for these persons bearing a real birthdate to enable birthday-based logic to work in the questionnaire, but otherwise distinctly fake to be discarded during the data processing stage. A solution for registering persons without a Romanian PIN should be proposed and discussed during the responsible WGs outlined in section 4.2. It is recommended a very basic approach which does not massively alter the default workflow. One such approach could be the provision of a temporary pin number from a call center assistant. In this way, the respondent can still participate in the regular workflow, and no further changes are required. However, the provision of this temporary PIN should not be made too easy, so that it may not be abused. In addition to this we also recommend considering the possibility of mail out and mail back questionnaires on request through the same call center.
- According to the intent, the CAWI enumeration process must finish with issuing a certificate that proves self-registration (currently no certificate was mailed to the user). It should be noted that the certificate will be used to obtain a day off from the working place (acc to law). For the pilot this couldn't be done as this rule was not valid for the pilot. The issuing of a certificate would have been confusing.
- The information about the building structure was found repetitive and redundant for multiple dwellings within the same building A technical solution should be implemented in SuSo to avoid this.
- The custom design of the self-registration portal allows to block form submission until certain conditions (completeness, correctness, uniqueness) are satisfied. Yet for the main

census form in CAWI there is currently no possibility to block submission of forms with some conditions not fulfilled.

- The PHC questionnaire contains marital information both in personal section and in family configuration section, which may present redundancy for the interviews with household heads or potentially result in contradictive information specified in different parts of the interview.
- Overall, the approach does not allow to easily discover the unreported households without visits to all dwellings because the initial information about the number of the households in structures is less than perfect.

4.3.2. CAPI

Regarding the PHC Pilot, CAPI method, some of recommendations are similar with the ones from CAWI but should be correlated with the structure of the CAPI questionnaires. Considerations for go-live production, are the following:

- Some questions need to be rewritten to match the terms used in PHC, but also to be clearer to enumerator, including the text read to the respondent.
- The way of asking the questions should take into consideration that the questionnaire is completed by an interviewer and could be more precise without too many explanatory texts, because this text is written in the dedicated methodology of the Census, for enumerators.
- The questions about education and occupation were the ones that had the longest answers, in seconds, could be rewritten.
- The entire sub-section for education should be restructured in a similar manner to the CAWI to be answered more efficient in number of questions and the difficulty.
- Some questions should accept also free text, along with fixed answers (example: occupation, address). However, INS must be aware, that this may require additional data processing later. From our side we recommend using machine learning approaches to address this problem in an efficient way, as i.e., outlined in Savic et al., 2021[12].

Also, as in the case of CAPI these findings are by far from final and may change and be extended over time.

4.4. IT infrastructure for actual PHC

4.4.1. Hardware in place – servers and operation systems

Since the final IT infrastructure has not been available for the pilot due to delays in the procurement process, we strongly relied on the infrastructure provided by STS, and in the same configuration as designed for the actual PHC (data collection and data production) and already provided under Output 4.1b[13].

Specialized staff of STS and experts of WB will guide and assist the INS specialists to perform the installation and configuration of the servers. This approach will ensure the knowledge transfer

[12] Savic, N., Bovio, N., Gilbert, F., Paz, J., & Guseva Canu, I. (2021). Procode: A Machine-Learning Tool to Support (Re-) coding of Free-Texts of Occupations and Industries. Annals of Work Exposures and Health.

[13] Output 4.1.b – includes recommendations for specifications of integrated IT system of INS for (GAC, PHC, SICCA, inter-census surveys, etc), delivered in September 2020

by hands-on training and coaching. The phases of this process start well ahead of the actual census and require strong involvement of INS staff.

4.4.2. Tablet set-up and configuration

For the preparation of the actual PHC and for a smooth and safe configuration process for 25,000 tablets, several requirements and specific actions must be considered and performed ahead of the census.

The average number of tablets to be configured per county is 650.

Most of the tablets used for the pilot were an old model (Lenovo Tab2) with Android 5.0 that do not support any upgrade of the system and faced a systematic problem with the GPS. The recommendation for tablet devices is to avoid old tablets used with Android 5.0 which are currently in service at STS, however if possible, the minimum configuration should be:

- Version of Android OS: Android 8.0 or better (only from this version onwards large-scale remote management can be integrated into Survey Solutions, otherwise manual set-up will be required)
- RAM: Minimum 1.5GB
- Storage: 16GB of flash memory storage (for the option to use satellite maps)
- 3G/4G connectivity module is required for continuous synchronization from the field.

A correlation must exist between period necessary for tablets configuration and the training period of enumerators at county level. By that the following should be applied:

a) Restrictions/requirements:
   - all tablets to be configured only once, including:
     i. tablet configuration (Owner and Interviewer user accounts on Android + restriction of using limited number of applications) (user rights of using SuSo app and internet browser if it's necessary).
     ii. SuSo Interviewer app download from https://rpl.insse.ro server and installation,
     iii. SuSo Interviewer app configuration: synchronization server link (https://rpl.insse.ro) and the application access credentials (Interviewer username and password provided to county level from INS).
   - starting tablets configuration during February 2022 considering the number of the tablets.
   - possibilities for 25,000 enumerators to have some testing before the real PHC.
   - the testing for the enumerators should be made with test credentials
   - the configurations are to be made with final credentials.
   - instructions are to be provided to DTS for tablets configuration and indicate the https://rpl.insse.ro as URL synchronization server and all the other information for a complete configuration.

b) Actions in preparing the tablets for actual census (deadlines to be decided in due time):
    1. Upgrade the rpl.insse.ro SuSo server to the latest version available and freezing the app deployment of new version.
    2. Creating the credentials for the following roles: Interviewers, Supervisors, HQ, Observers.
    3. Import the latest version of the questionnaire.
    4. Creating the assignments for the interviewers.
    5. Tablets configuration [Territorial offices].
    6. Testing the tablets and the questionnaire [Territorial offices].

c) Actions required for go-live production (actual PHC):
    1. Installing the latest version of SuSo on new infrastructure.
    2. Lock the updates of the app on the server during the census.
    3. Creating the credentials Interviewers, Supervisors, HQ, Observers.
    4. Import the latest version of the questionnaire.
    5. Creating the assignments for the interviewers.
    6. Shutting down the actual infrastructure of PHC pilot.
    7. Starting the new infrastructure as the https://rpl.insse.ro address.
    8. Testing the tablets on new infrastructure.

4.4.3. Technical Call Centre

INS and STS will collaborate to have in place and functional the Technical Call Centre as a recommendation and a requirement of a good practice from previous censuses. Moreover, the CAPI process will generate situations when the missing coverage of mobile data could generate reasonable questions to enumerators, and they will be more conformable to appeal a call-center.

4.5. Training

The training of enumerators, supervisors, headquarters, and observers is critical in performing the actual PHC. By that, the training plan proposed under Output 3b. is recommended for applying and structured on the specifics of territory (number of census staff, availability of premises, pandemic situation and restrictions applicable at local level). Hands-on training (using the tablets in direct training) will ensure the learning of application features and use. The following recommendations should be applied:

- At training, the tablets configured with final credentials and with a link to the rpl.insse.ro server are handed over to enumerators.
- The trainings must be done in groups of max 25 participants, according to the legislation in force (reason for a min 3-4 weeks necessary to train all staff).
- Tablets are handed over during training to avoid repeated travel within the county (for health security reasons). In the period between the training date and one week before CAPI is starting, the enumerator can practice on tablet & questionnaire.
- In the last week before starting CAPI, the access to the rpl.insse.ro server is to be forbidden/restricted.
- Training is to be done on the rpl.insse.ro server (according to instructions already provided for configuration and trainings).

An action plan must be in place for starting the activities one month before the moment of actual PHC is launched proposed action plan is presented in the Figure 13, below.

Figure 13 - Action plan for training of census staff

Date Start	Date End	Activity	Responsible
tbd	tbd	Creation and upload of final credentials for enumerators, supervisors, HQ and observers on the rpl.insse.ro server recensaminte.insse.ro	INS
tbd	tbd	Association credential with census sections and sectors (preloading information); additional verifications	INS
tbd	tbd	Training of trainers (200 persons from DTS)	INS, WB
tbd	tbd	Configuration of tablets for enumerators on the rpl.insse.ro server	DTS
tbd	tbd	Upload questionnaires with preloaded information and assignments	INS, WB
tbd	tbd	Training of enumerators, using configured tablets, with final credential, on the rpl.insse.ro server.	DTS

In considering the training delivery, the localized tutorials must be in place, as desirable as possible, or at least translations of actual Survey Solution tutorials.

4.6. Promotion and communication campaign

4.6.1. Promotion campaign

As mentioned in Output 3b, census promotion campaign is an essential element of the PHC in the new method of data collection CAWI and CAPI and can be considered not optional. Despite of these, some limitations determined by budget constrains is expected to effect of totally determine the missing of promotion campaign. Is to reiterate that it can play a critical role in enhancing data quality through increased respondent participation. By that the advertising/announcement campaign should use the proper information means and channels to reach the target audience - population consists of all the individuals having their usual residence in the country for at least 12 months before the census reference date or having the intention to remain at least 12 months in the country.

4.6.2. Call Centre for respondents

The call-center for respondents constitutes a critical element in the main census process, which we were unfortunately not able to test during the pilot process. This call center has the following tasks:

- To assist respondents during the registration process.
- To assist respondents during the CAWI process.
- To support all nonstandard operations, like No-Pin operation or requesting a mail questionnaire.

It is recommended to train call center operators in advance or to hire a professional call center agency and inform them about main topics of census, being able, enabling them to familiarize with operations and anticipate questions and needed answers from respondents.

The call center is dedicated to respondents only and may also be used in the Non- Pin operation as outlined above.

This should not be mixed up with the technical call center, which should provide enumerators with support when requiring assistance. While the call center agents must be different, the technical infrastructure can certainly be the same.
The experience of collaboration and support from STS, corroborated with the provisions of GEO 19/2020 on mandatory actions, including the call center, could ensure its operation.

5. Annexes

Annex 1 – PHC Solution detailed Configuration

The most accurate description of the PHC configuration of all system(s) components is to provide the installation logs, which are presented below.

1. Load Balancer installation log

Steps performed in configuring load balancing server:

1. Enable name resolution – edit /etc/resolv.conf with Google public DNS services[14]:

```
nameserver 8.8.8.8

nameserver 8.8.8.4
```

2. Install yum-utils, gcc:

```
# yum -y install epel-release yum-utils gcc
```

3. Download nginx-1.18 stable release, openssl-1.1.1c and nginx-sticky-module-ng into /home/admin:

```
$ wget https://nginx.org/download/nginx-1.18.0.tar.gz

$ wget https://www.openssl.org/source/openssl-1.1.1c.tar.gz

$ wget https://bitbucket.org/nginx-goodies/nginx-sticky-module-ng/get/08a395c66e42.zip
```

4. Decompress the archives and change current user to root:

```
$ gunzip nginx-1.18.0.tar.gz

$ tar -xvf nginx-1.18.0.tar

$ gunzip 08a395c66e42.zip

$ cd nginx-1.18.0

$ su
```

5. Install nginx from source:

```
# yum install nginx

#           ./configure           --sbin-path=/usr/local/nginx/nginx           --conf-
path=/usr/local/nginx/nginx.conf      --pid-path=/usr/local/nginx/nginx.pid      --with-
http_ssl_module          --add-module=/home/admin/nginx-goodies-nginx-sticky-module-ng-
08a395c66e42    --with-http_gunzip_module    --with-http_gzip_static_module    --with-
http_stub_status_module --with-openssl=/home/admin/openssl-1.1.1c

# make

# make install
```

6. Configure nginx as a service. Edit /etc/systemd/system/nginx-1.18.0.service:

[14] The use of high-performance services as DNS, offered by Google does not impact the GDPR in any way.

```
[Unit]
Description=nginx 1.18.0
After=syslog.target network.target

[Service]
Type=forking
EnvironmentFile=/etc/sysconfig/nginx-1.16.0
ExecStart=/usr/local/nginx/nginx $CLI_OPTIONS
ExecReload=/usr/local/nginx/nginx -s reload
ExecStop=/usr/local/nginx/nginx -s quit

[Install]
WantedBy=multi-user.target
```

7. Reload daemons:

```
# systemctl daemon-reload
```

8. Edit /etc/sysconfig/nginx-1.18.0

```
# Command line options to use when starting nginx
#CLI_OPTIONS=""
```

9. Edit NGINX configuration file (/usr/local/nginx/nginx.conf) as follows:

```
user  nginx;
worker_processes  1;

error_log  /var/log/nginx/error.log warn;
pid        /var/run/nginx.pid;



events {
    worker_connections  1024;
}



http {
    include /usr/local/nginx/mime.types;
    default_type  application/octet-stream;

    log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
                      '$status $body_bytes_sent "$http_referer" '
```

```
                      '"$http_user_agent" "$http_x_forwarded_for"';

    access_log  /var/log/nginx/access.log  main;

    sendfile        on;
    #tcp_nopush     on;

    keepalive_timeout  65;

    gzip  on;

    include /etc/nginx/conf.d/*.conf;
    map $http_upgrade $connection_upgrade {
        default Upgrade;
        ''      close;
    }
    upstream backend {
        sticky;
       server xxx.xxx.xx.xx:xxxx;
       server xxx.xxx.xx.xx:xxxx;
       server xxx.xxx.xx.xx:xxxx;
       server xxx.xxx.xx.xx:xxxx;
       server xxx.xxx.xx.xx:xxxx;
    }
}
```

10. Edit /etc/nginx/conf.d/default.conf:

```
server {
    server_name  recensaminte.insse.ro;

    #charset koi8-r;
    access_log  /var/log/nginx/host.access.log  main;

    location / {
            proxy_pass http://backend;
            proxy_read_timeout 90;
```

```
            proxy_http_version 1.1;
            proxy_set_header   Upgrade $http_upgrade;
            proxy_set_header   Connection $connection_upgrade;
            proxy_set_header   Host $host;
            proxy_cache_bypass $http_upgrade;
            proxy_set_header   X-Forwarded-For $proxy_add_x_forwarded_for;
            proxy_set_header   X-Forwarded-Proto $scheme;
    }

    location /metrics {
            deny all;
    }

    listen 443 ssl; # managed by Certbot
    ssl_certificate    /etc/letsencrypt/live/recensaminte.insse.ro/fullchain.pem;    # managed by Certbot
    ssl_certificate_key   /etc/letsencrypt/live/recensaminte.insse.ro/privkey.pem;   # managed by Certbot
    include /etc/letsencrypt/options-ssl-nginx.conf; # managed by Certbot
    ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed by Certbot


}


server {
    if ($host = recensaminte.insse.ro) {
        return 301 https://$host$request_uri;
    } # managed by Certbot



    listen       80;
    server_name  recensaminte.insse.ro;
    return 404; # managed by Certbot


}
```

11. Edit /etc/nginx/conf.d/rpl.conf:

```
server {
    server_name  rpl.insse.ro;
```

```
    #charset koi8-r;
    access_log  /var/log/nginx/rpl.access.log  main;

    location / {
           proxy_pass http://xxx.xxx.xx.xx:xxxx;
            proxy_read_timeout 90;
            proxy_http_version 1.1;
            proxy_set_header   Upgrade $http_upgrade;
            proxy_set_header   Connection $connection_upgrade;
            proxy_set_header   Host $host;
            proxy_cache_bypass $http_upgrade;
            proxy_set_header   X-Forwarded-For $proxy_add_x_forwarded_for;
            proxy_set_header   X-Forwarded-Proto $scheme;
    }

    location /metrics {
            deny all;
    }




    listen 443 ssl; # managed by Certbot
    ssl_certificate  /etc/letsencrypt/live/rpl.insse.ro/fullchain.pem;  #  managed  by
Certbot
    ssl_certificate_key  /etc/letsencrypt/live/rpl.insse.ro/privkey.pem;  #  managed  by
Certbot
    include /etc/letsencrypt/options-ssl-nginx.conf; # managed by Certbot
    ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed by Certbot


}


server {
    if ($host = rpl.insse.ro) {
        return 301 https://$host$request_uri;
    } # managed by Certbot
```

```
    server_name  rpl.insse.ro;
    listen 80;
    return 404; # managed by Certbot



}
```

12. Edit /etc/nginx/conf.d/stub_status.conf

```
server {
    server_name  stub;

    #charset koi8-r;
    access_log  /var/log/nginx/stub.access.log  main;

    listen 8080;

    location / {
            stub_status;
           allow xxx.xxx.xx.xx:xxxx; #only allow requests from monitoring server
            deny all;           #deny all other hosts
    }
}
```

13. Start Enable nginx when system boots:

```
# systemctl start nginx-1.18.0
# systemctl enable nginx-1.18.0
```

14. Install CertBot Let's Encrypt client:

```
# yum install certbot-nginx
```

15. Install Let's encrypt SSL certificates:

```
#     certbot     --nginx     --nginx-server-root     /usr/local/nginx     --nginx-ctl
/usr/local/nginx/nginx -d recensaminte.insse.ro
#     certbot     --nginx     --nginx-server-root     /usr/local/nginx     --nginx-ctl
/usr/local/nginx/nginx -d rpl.insse.ro
#     certbot     --nginx     --nginx-server-root     /usr/local/nginx     --nginx-ctl
/usr/local/nginx/nginx -d rpl.insse.ro
```

16. Set up SSL certificate auto-renewal by editing crontab

```
#crontab -e
15 3 * * * /usr/bin/certbot renew --quiet
```

17. Add node_exporter repository

```
#       curl       -Lo       /etc/yum.repos.d/_copr_ibotty-prometheus-exporters.repo
https://copr.fedorainfracloud.org/coprs/ibotty/prometheus-exporters/repo/epel-
7/ibotty-prometheus-exporters-epel-7.repo
```

18. Install node_exporter

```
# yum install node_exporter
```

19. Start and enable node_exporter as a service

```
# systemctl start node_exporter

# systemctl enable node_exporter
```

20. Start and enable firewall:

```
# systemctl start firewalld

# systemctl enable firewalld
```

21. Enable firewall rules:

```
# firewall-cmd --permanent --zone=public --add-service=http

# firewall-cmd --permanent --zone=public --add-service=https

# firewall-cmd --permanent --zone=public --add-port=8080/tcp

# firewall-cmd --permanent --zone=public --add-port=9100/tcp

# firewall-cmd
```

2. Database installation log

Steps performed in configuring database server:

1. Enable name resolution – edit /etc/resolv.conf with Google public DNS services:

```
nameserver 8.8.8.8

nameserver 8.8.8.4
```

2. Install yum-utils:

```
# yum -y install epel-release yum-utils
```

3. Add PostgreSQL repository:

```
#   yum   -y   install   https://download.postgresql.org/pub/repos/yum/reporpms/EL-7-x86_64/pgdg-redhat-repo-
latest.noarch.rpm

# rpm -qi pgdg-redhat-repo

Name        : pgdg-redhat-repo

Version     : 42.0

Release     : 12

Architecture: noarch

Install Date: Wed 09 Sep 2020 01:18:27 PM EEST

Group       : Unspecified

Size        : 10878

License     : PostgreSQL
```

```
Signature   : DSA/SHA1, Fri 28 Aug 2020 11:07:05 AM EEST, Key ID 1f16d2e1442df0f8
Source RPM  : pgdg-redhat-repo-42.0-12.src.rpm
Build Date  : Fri 28 Aug 2020 11:07:03 AM EEST
Build Host  : koji-centos7-x86-64-pgbuild
Relocations : (not relocatable)
Vendor      : PostgreSQL Global Development Group
URL         : https://yum.postgresql.org
Summary     : PostgreSQL PGDG RPMs- Yum Repository Configuration for Red Hat / CentOS
Description : This package contains yum configuration for Red Hat Enterprise Linux,
CentOS, and also the GPG key for PGDG RPMs.
```

4. Install PostgreSQL 12 client and server:

```
# yum install postgresql12-server postgresql12
```

5. Initialize PostgreSQL 12 database:

```
# /usr/pgsql-12/bin/postgresql-12-setup initdb
```

6. Enable PostgreSQL service:

```
# systemctl enable --now postgresql-12
```

7. Set max connections setting (max_connections = 1000) and server ip (listen_addresses = 'xxx.xxx.xx.xx') in /var/lib/pgsql/12/data/postgresql.conf
8. Restart postresql-12 service:

```
# systemctl restart postgresql-12
```

9. Install prerequistes for postgresql tuner tool:

```
#yum install -y perl-DBD-Pg perl-DBI perl-Term-ANSIColor perl-Memoize
```

10. As postgres user, change default password:

```
$ psql
psql (12.4)
Type "help" for help.


postgres=# alter user postgres with password '??????????';
```

11. As postgres user, download and run postgresql tuner:

```
$ wget -O postgresqltuner.pl postgresqltuner.pl
$ chmod +x postgresqltuner.pl
$ ./postgresqltuner.pl --host=/var/run/postgresql
```

12. Follow basic recommendations from postgresql tuner and change vm.overcommit_memory=2 in vi /etc/sysctl.conf then apply change:

```
# sysctl -p /etc/sysctl.conf
```

13. Follow basic recommendations from postgresqltuner and change enable_partitionwise_join = on, enable_partitionwise_aggregate = on in /var/lib/pgsql/12/data/postgresql.conf

14. Modify /var/lib/pgsql/12/data/pg_hba.conf in order to allow connections from application server network – add this line:

```
host    postgres,SurveySolutions postgres  xxx.xx.xx.x/xx       scram-sha-256
```

15. Modify user encryption method on /var/lib/pgsql/12/data/postgresql.conf:

```
password_encryption = scram-sha-256     # md5 or scram-sha-256
```

16. Restart PostgreSQL in order to apply the changes:

```
# systemctl restart postgresql-12
```

17. Add node_exporter repository

```
#       curl        -Lo       /etc/yum.repos.d/_copr_ibotty-prometheus-exporters.repo
https://copr.fedorainfracloud.org/coprs/ibotty/prometheus-exporters/repo/epel-
7/ibotty-prometheus-exporters-epel-7.repo
```

18. Install node_exporter

```
# yum install node_exporter
```

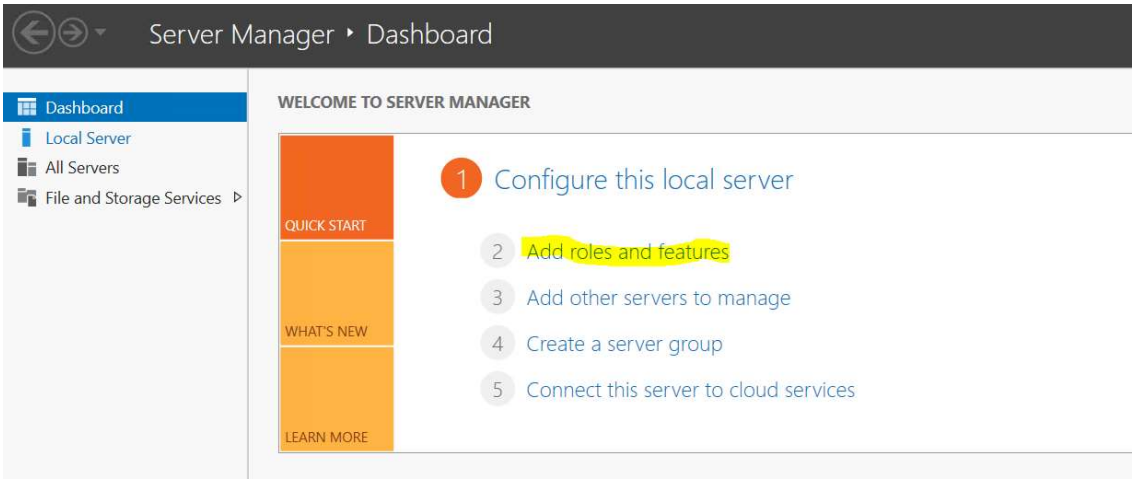
19. Start and enable node_exporter as a service

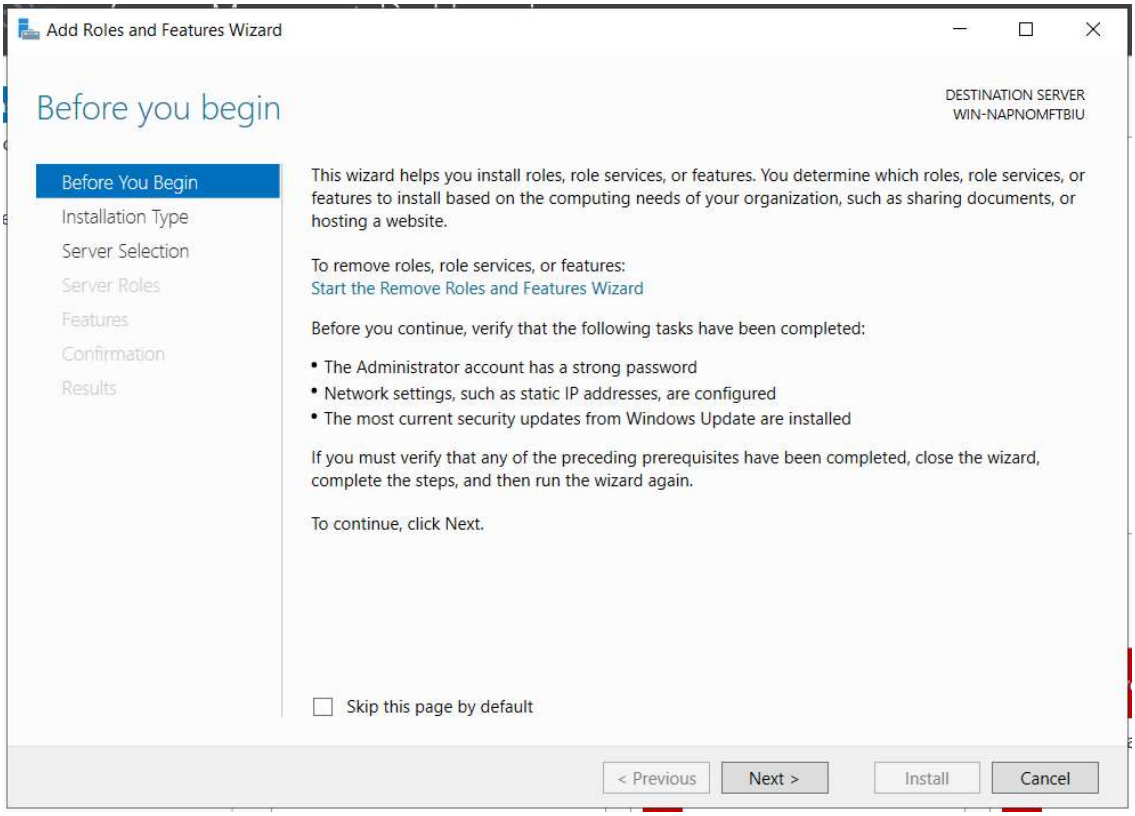
```
# systemctl start node_exporter

# systemctl enable node_exporter
```

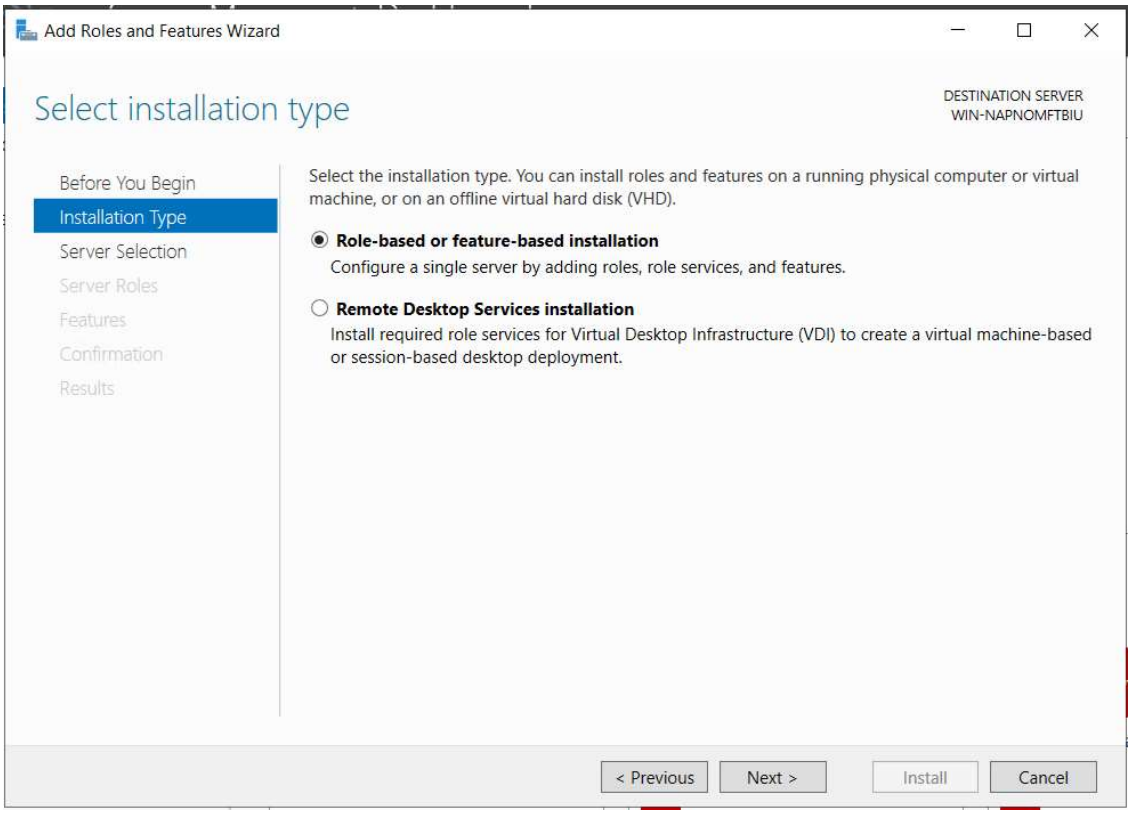
3. Survey Solutions application installation log

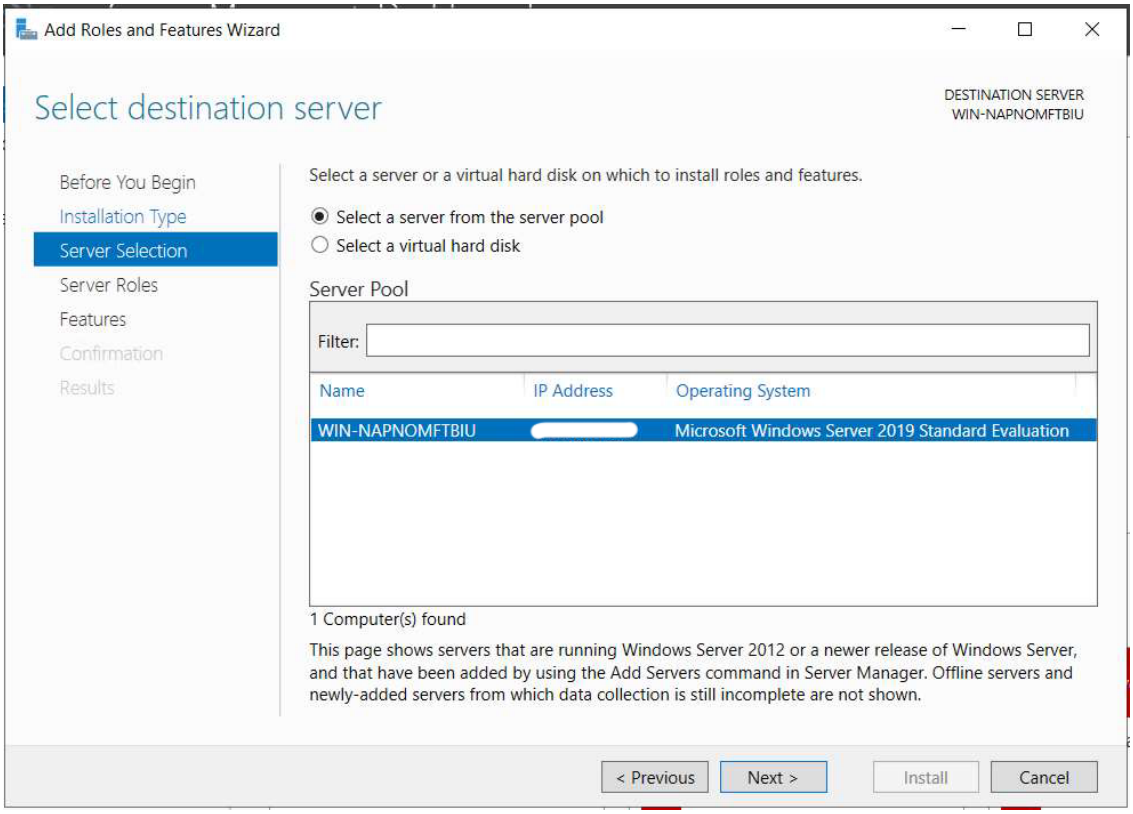
Steps performed in configuring application server nodes:

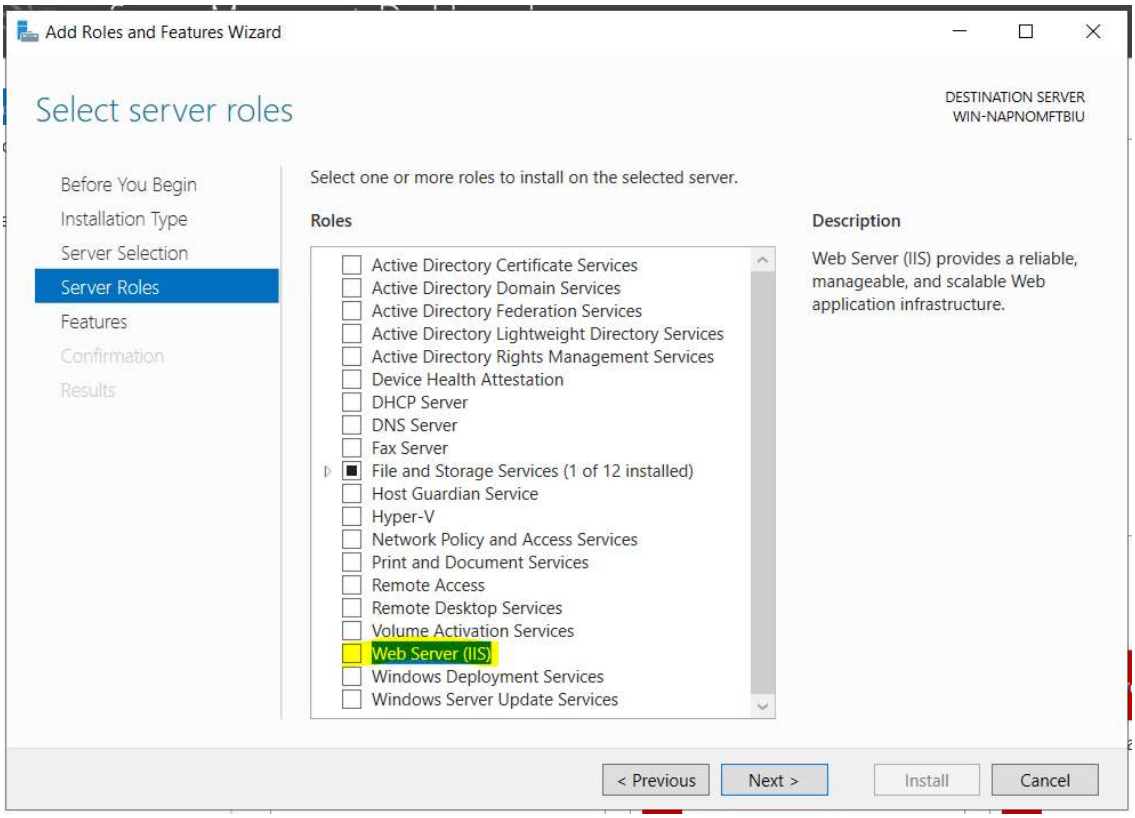
1. Add Web Server role and telnet client feature to the node:

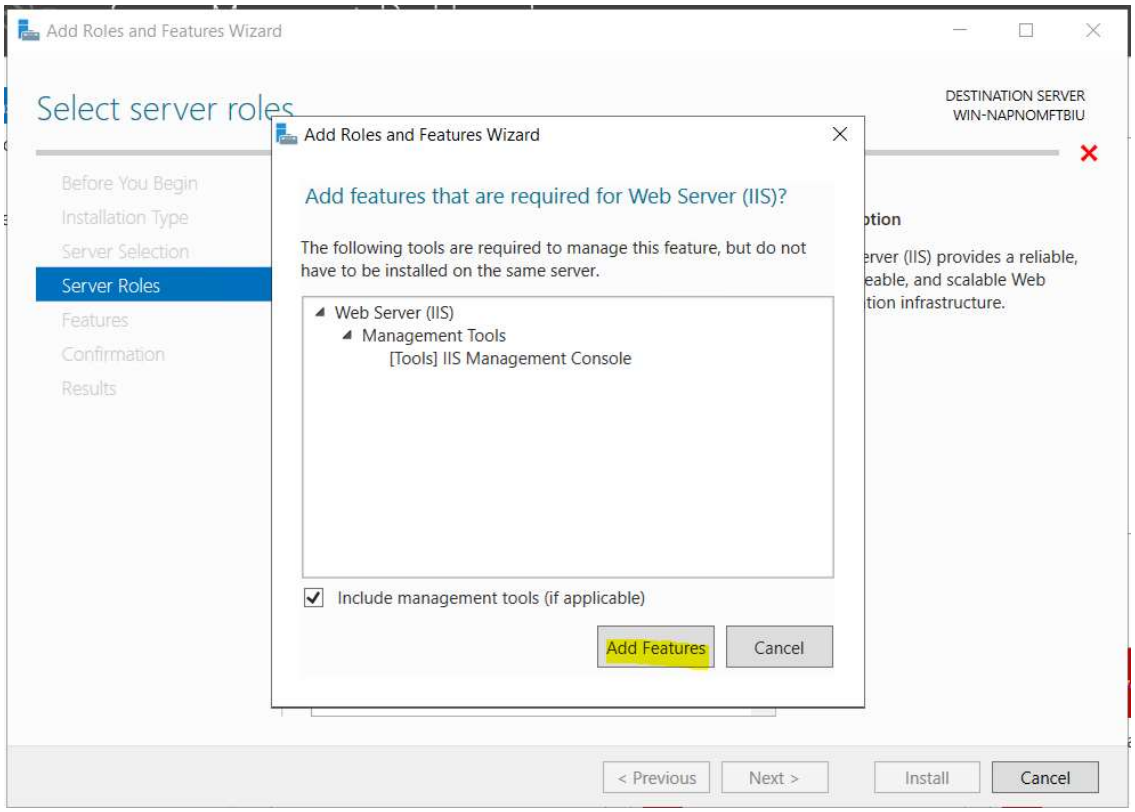


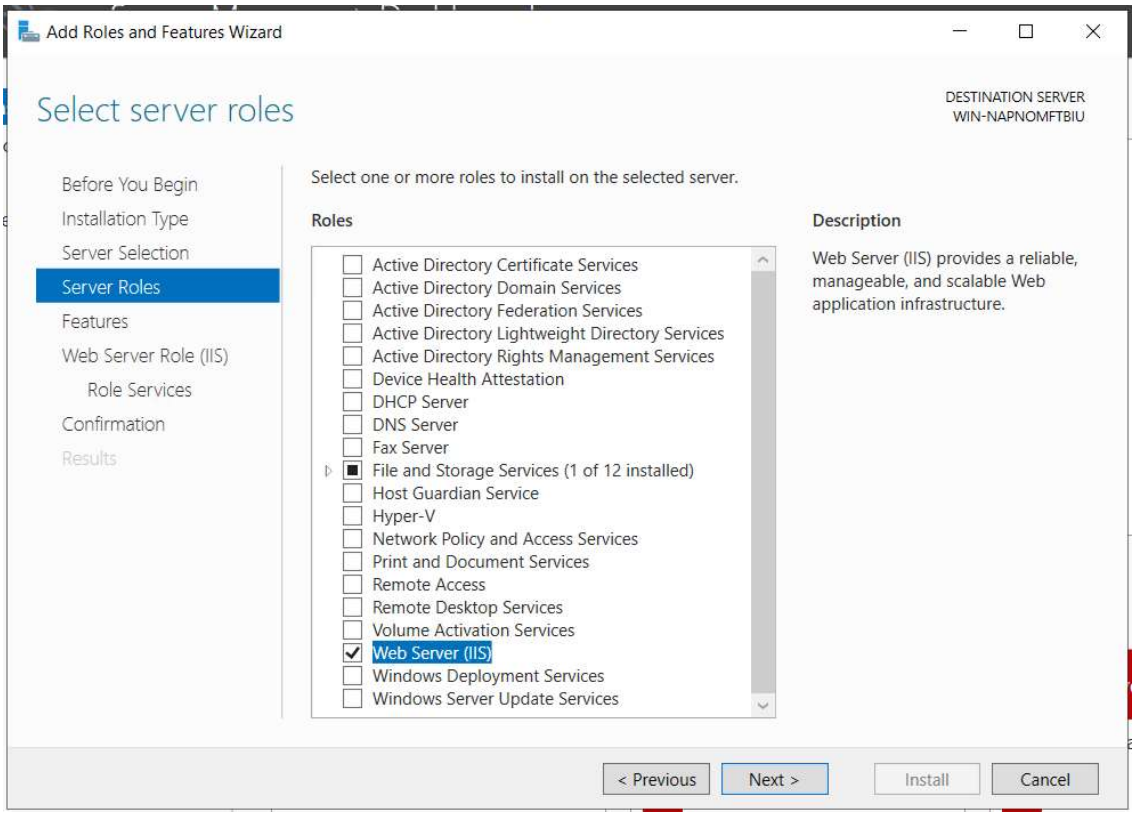

Add Roles and Features Wizard
Before you begin
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
This wizard helps you install roles, role services, or features. You determine which roles, role services, or features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.
To remove roles, role services, or features:
Start the Remove Roles and Features Wizard
Before you continue, verify that the following tasks have been completed:
• The Administrator account has a strong password
• Network settings, such as static IP addresses, are configured
• The most current security updates from Windows Update are installed
If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again.
To continue, click Next.
Skip this page by default
< Previous
Next >
Install
Cancel

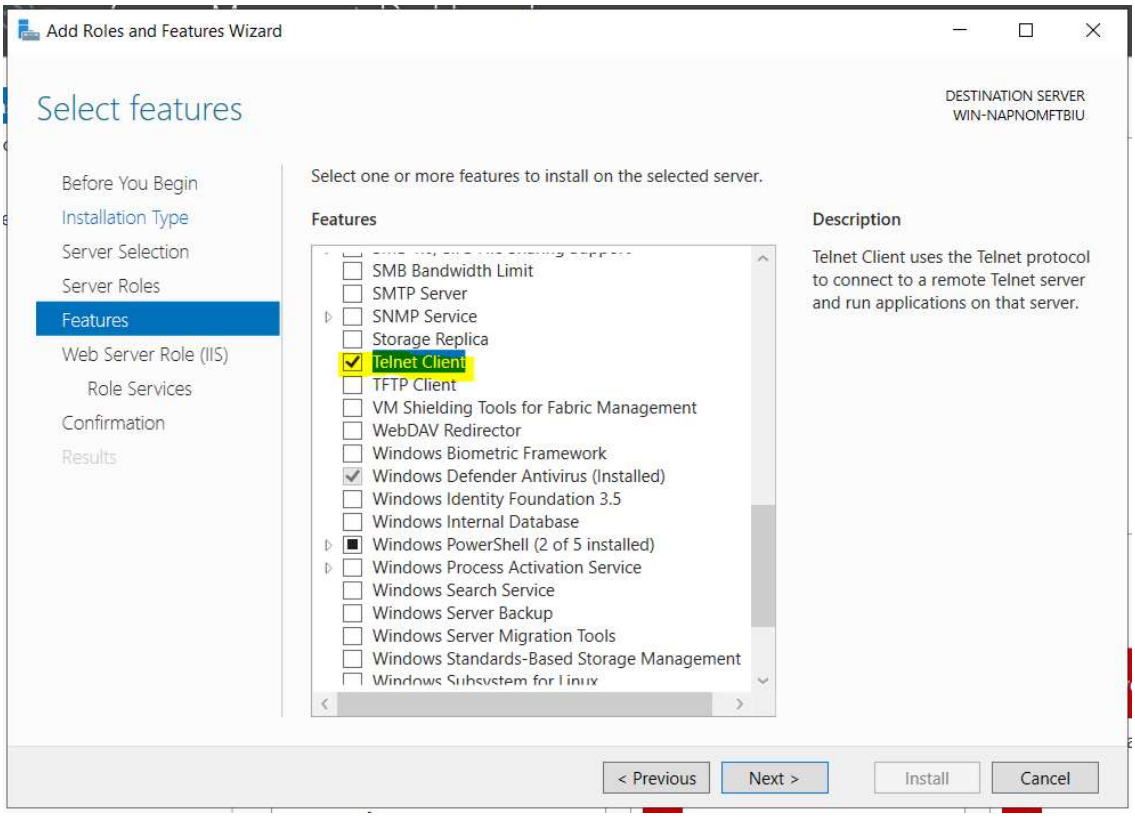

Add Roles and Features Wizard
Select installation type
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).
Role-based or feature-based installation
Configure a single server by adding roles, role services, and features.
Remote Desktop Services installation
Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.
< Previous
Next >
Install
Cancel

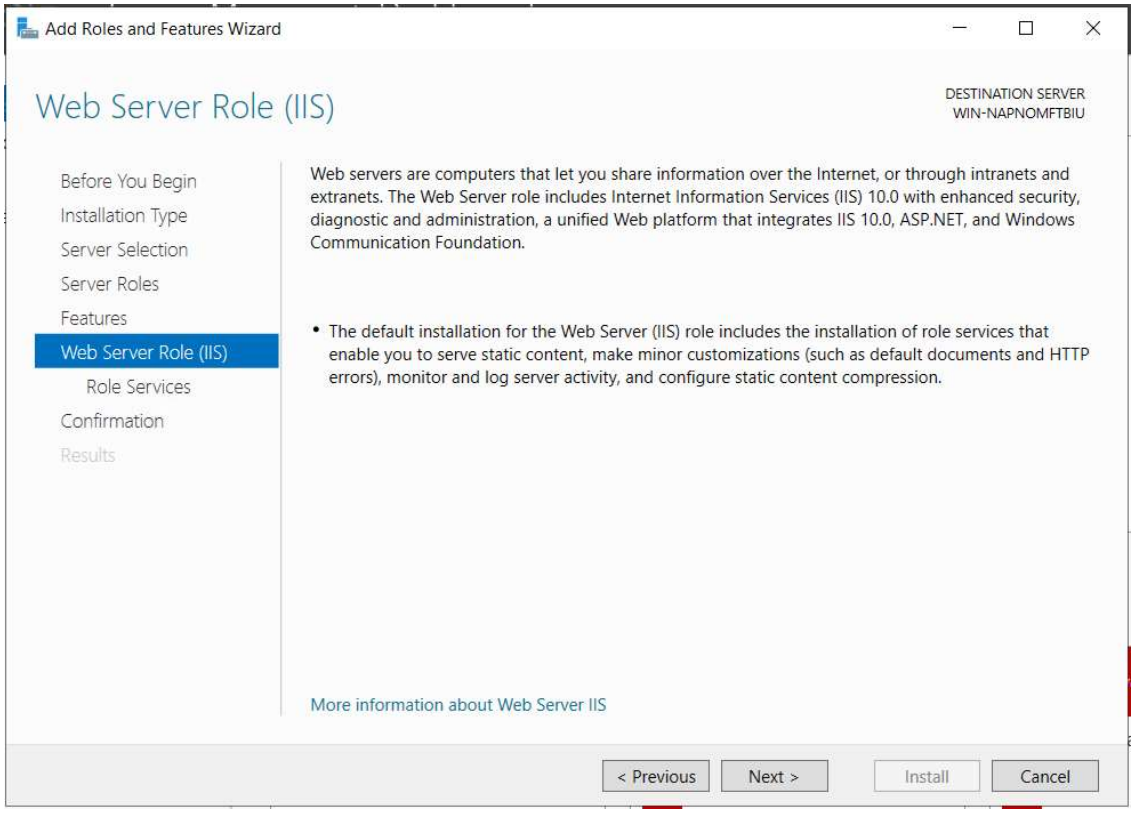

Add Roles and Features Wizard
Select destination server
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select a server or a virtual hard disk on which to install roles and features.
Select a server from the server pool
Select a virtual hard disk
Server Pool
Filter:
Name
IP Address
Operating System
WIN-NAPNOMFTBIU
Microsoft Windows Server 2019 Standard Evaluation
1 Computer(s) found
This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.
< Previous
Next >
Install
Cancel

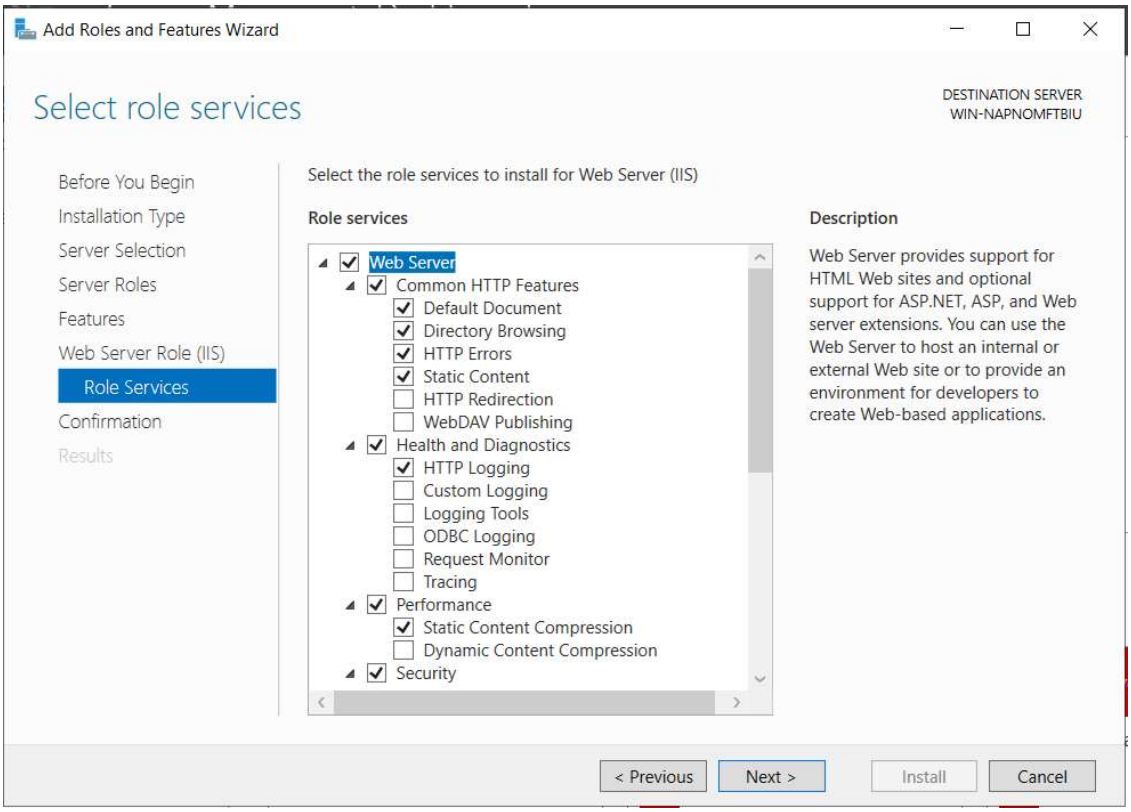

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Certificate Services
Active Directory Domain Services
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Device Health Attestation
DHCP Server
DNS Server
Fax Server
File and Storage Services (1 of 12 installed)
Host Guardian Service
Hyper-V
Network Policy and Access Services
Print and Document Services
Remote Access
Remote Desktop Services
Volume Activation Services
Web Server (IIS)
Windows Deployment Services
Windows Server Update Services
Description
Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.
< Previous
Next >
Install
Cancel

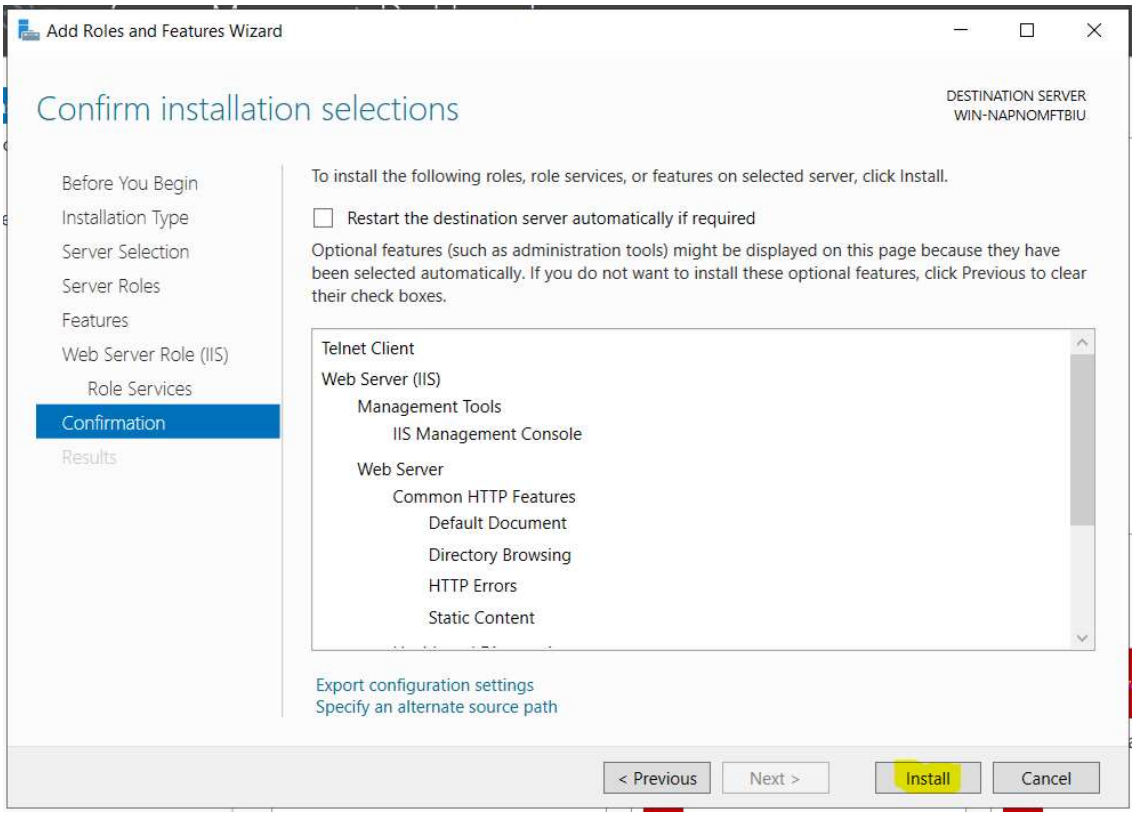

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Add Roles and Features Wizard
Add features that are required for Web Server (IIS)?
The following tools are required to manage this feature, but do not have to be installed on the same server.
Web Server (IIS)
Management Tools
[Tools] IIS Management Console
Include management tools (if applicable)
Add Features
Cancel
< Previous
Next >
Install
Cancel

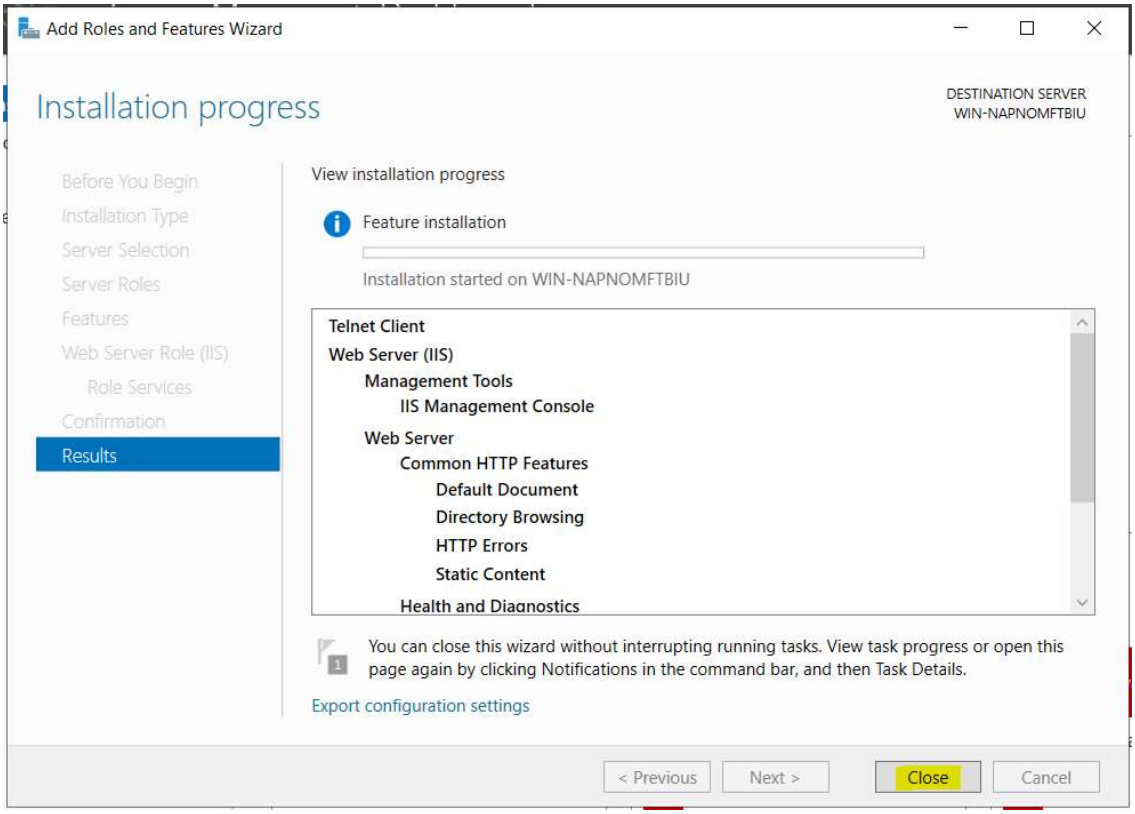

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Web Server Role (IIS)
Role Services
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Certificate Services
Active Directory Domain Services
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Device Health Attestation
DHCP Server
DNS Server
Fax Server
File and Storage Services (1 of 12 installed)
Host Guardian Service
Hyper-V
Network Policy and Access Services
Print and Document Services
Remote Access
Remote Desktop Services
Volume Activation Services
Web Server (IIS)
Windows Deployment Services
Windows Server Update Services
Description
Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.
< Previous
Next >
Install
Cancel


Add Roles and Features Wizard
Select features
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Web Server Role (IIS)
Role Services
Confirmation
Results
Select one or more features to install on the selected server.
Features
SMB Bandwidth Limit
SMTP Server
SNMP Service
Storage Replica
Telnet Client
TFTP Client
VM Shielding Tools for Fabric Management
WebDAV Redirector
Windows Biometric Framework
Windows Defender Antivirus (Installed)
Windows Identity Foundation 3.5
Windows Internal Database
Windows PowerShell (2 of 5 installed)
Windows Process Activation Service
Windows Search Service
Windows Server Backup
Windows Server Migration Tools
Windows Standards-Based Storage Management
Description
Telnet Client uses the Telnet protocol to connect to a remote Telnet server and run applications on that server.
< Previous
Next >
Install
Cancel

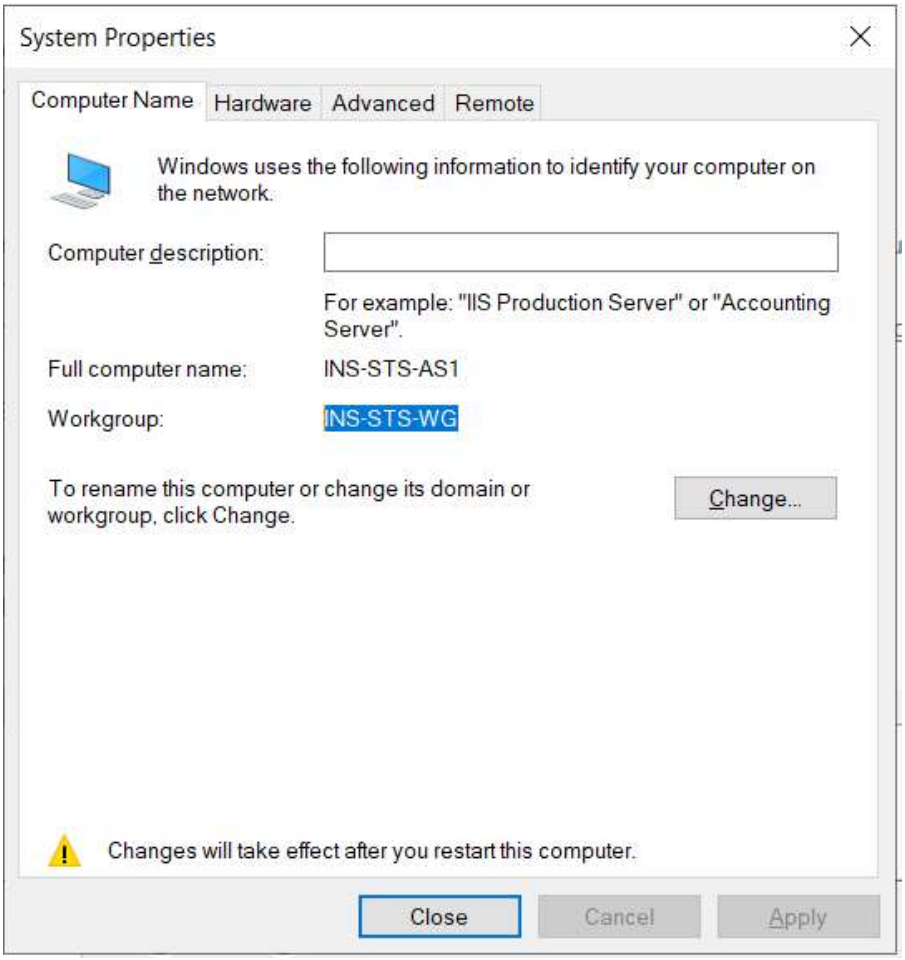

Add Roles and Features Wizard
Web Server Role (IIS)
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Web Server Role (IIS)
Role Services
Confirmation
Results
Web servers are computers that let you share information over the Internet, or through intranets and extranets. The Web Server role includes Internet Information Services (IIS) 10.0 with enhanced security, diagnostic and administration, a unified Web platform that integrates IIS 10.0, ASP.NET, and Windows Communication Foundation.
• The default installation for the Web Server (IIS) role includes the installation of role services that enable you to serve static content, make minor customizations (such as default documents and HTTP errors), monitor and log server activity, and configure static content compression.
More information about Web Server IIS
< Previous
Next >
Install
Cancel


Add Roles and Features Wizard
Select role services
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Web Server Role (IIS)
Role Services
Confirmation
Results
Select the role services to install for Web Server (IIS)
Role services
Web Server
Common HTTP Features
Default Document
Directory Browsing
HTTP Errors
Static Content
HTTP Redirection
WebDAV Publishing
Health and Diagnostics
HTTP Logging
Custom Logging
Logging Tools
ODBC Logging
Request Monitor
Tracing
Performance
Static Content Compression
Dynamic Content Compression
Security
Description
Web Server provides support for HTML Web sites and optional support for ASP.NET, ASP, and Web server extensions. You can use the Web Server to host an internal or external Web site or to provide an environment for developers to create Web-based applications.
< Previous
Next >
Install
Cancel

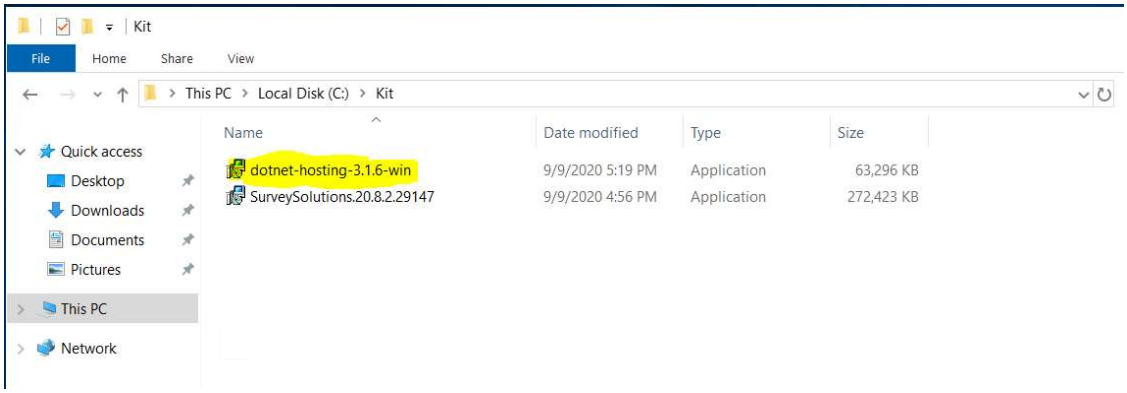

Add Roles and Features Wizard
Confirm installation selections
DESTINATION SERVER
WIN-NAPNOMFTBIU
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Web Server Role (IIS)
Role Services
Confirmation
Results
To install the following roles, role services, or features on selected server, click Install.
Restart the destination server automatically if required
Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.
Telnet Client
Web Server (IIS)
Management Tools
IIS Management Console
Web Server
Common HTTP Features
Default Document
Directory Browsing
HTTP Errors
Static Content
Export configuration settings
Specify an alternate source path
< Previous
Next >
Install
Cancel

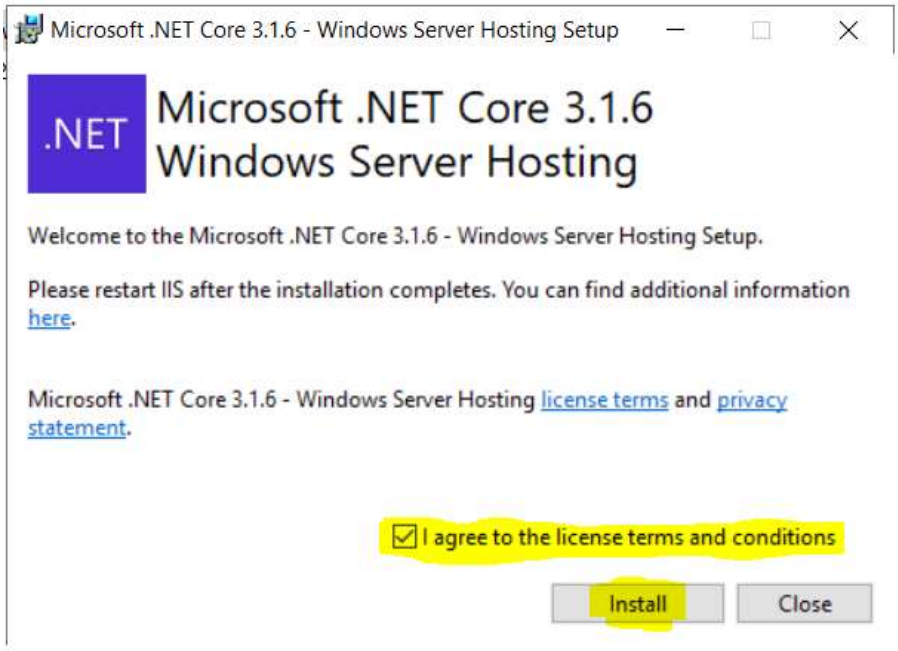


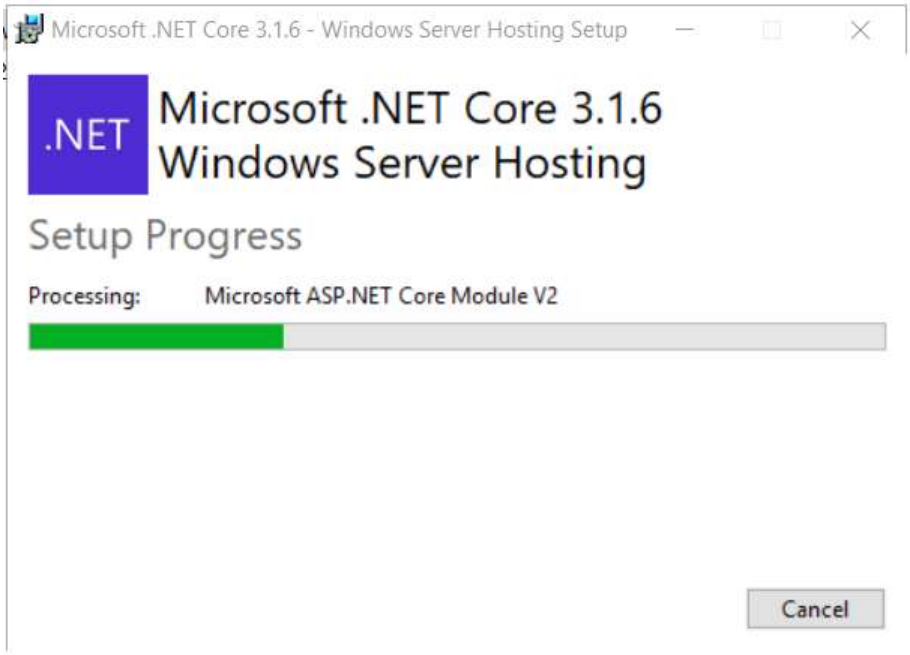
2. Change the name of the nodes to INS-STS-AS1 … INS-STS-AS5 and workgroup to INS-STS-WG and restart the nodes:

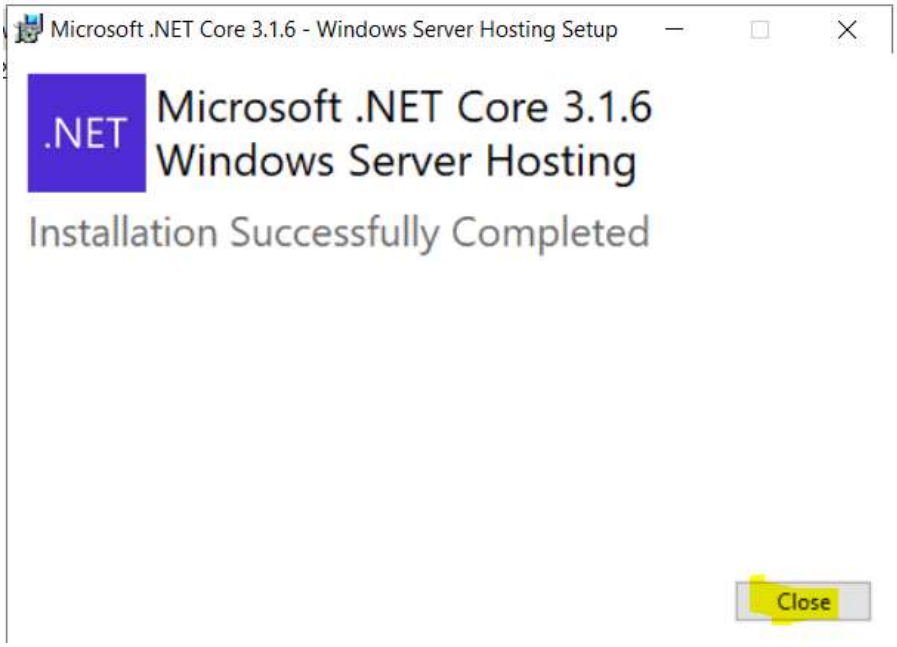


3. Install Microsoft .NET Core Runtime 3.1.6:

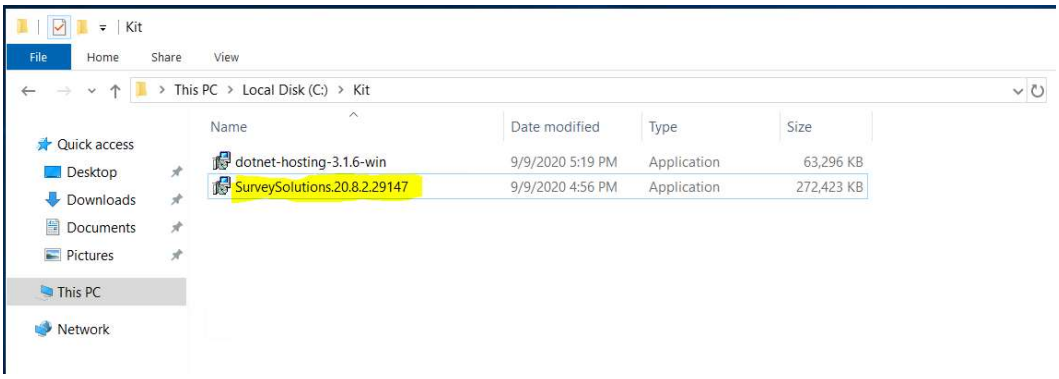


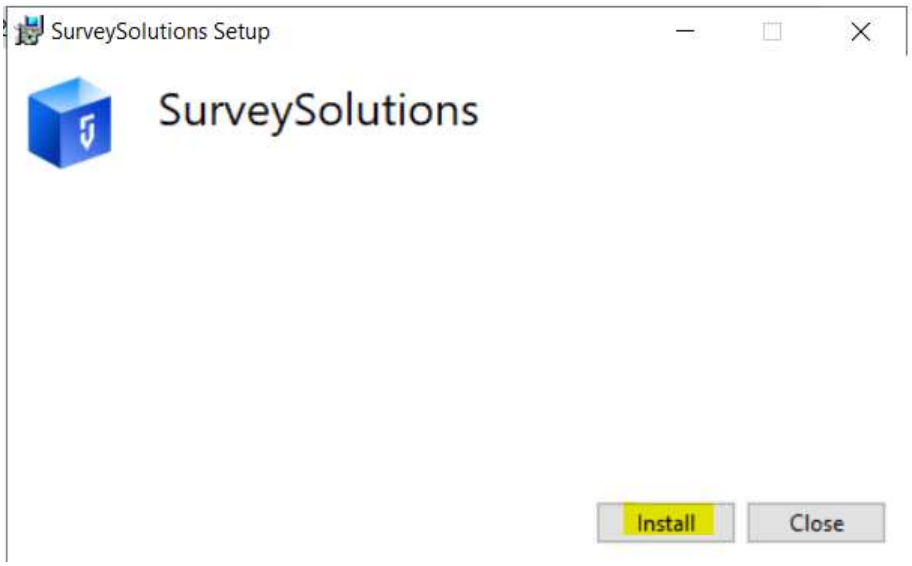

Microsoft .NET Core 3.1.6 - Windows Server Hosting Setup
.NET
Microsoft .NET Core 3.1.6
Windows Server Hosting
Welcome to the Microsoft .NET Core 3.1.6 - Windows Server Hosting Setup.
Please restart IIS after the installation completes. You can find additional information here.
Microsoft .NET Core 3.1.6 - Windows Server Hosting license terms and privacy statement.
I agree to the license terms and conditions
Install
Close

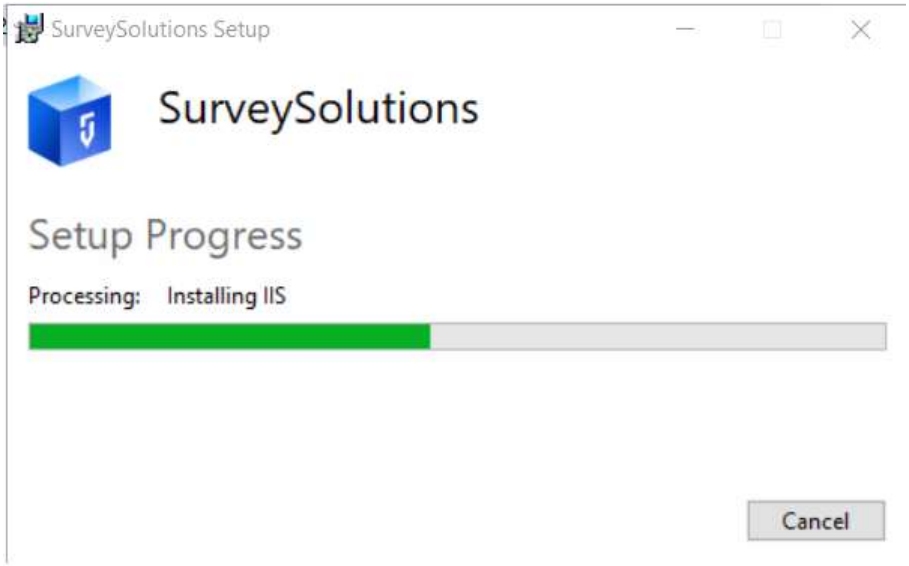

Microsoft .NET Core 3.1.6 - Windows Server Hosting Setup
.NET
Microsoft .NET Core 3.1.6
Windows Server Hosting
Setup Progress
Processing: Microsoft ASP.NET Core Module V2
Cancel

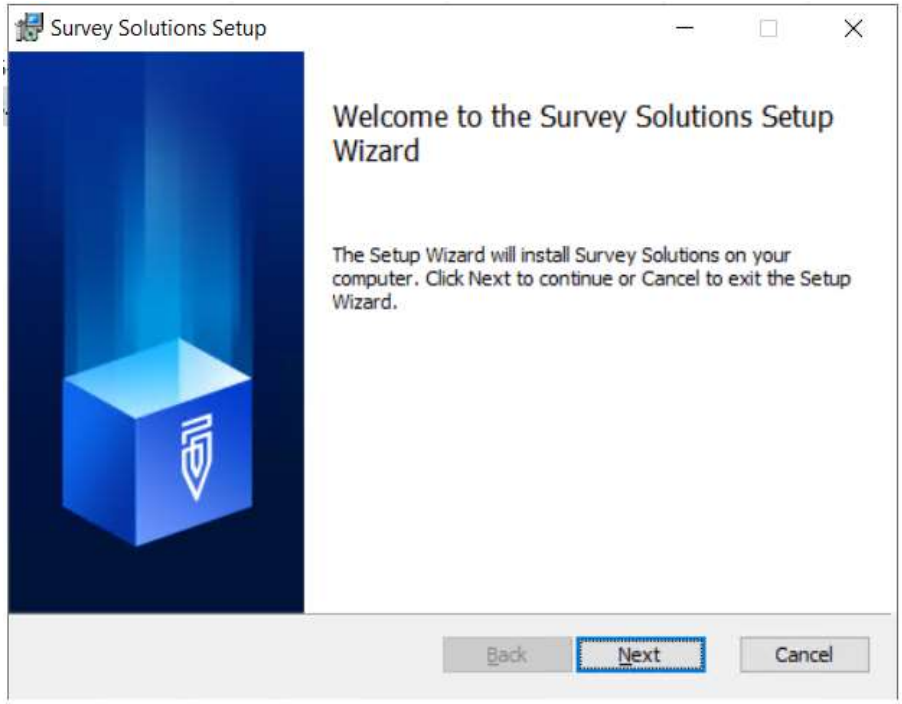


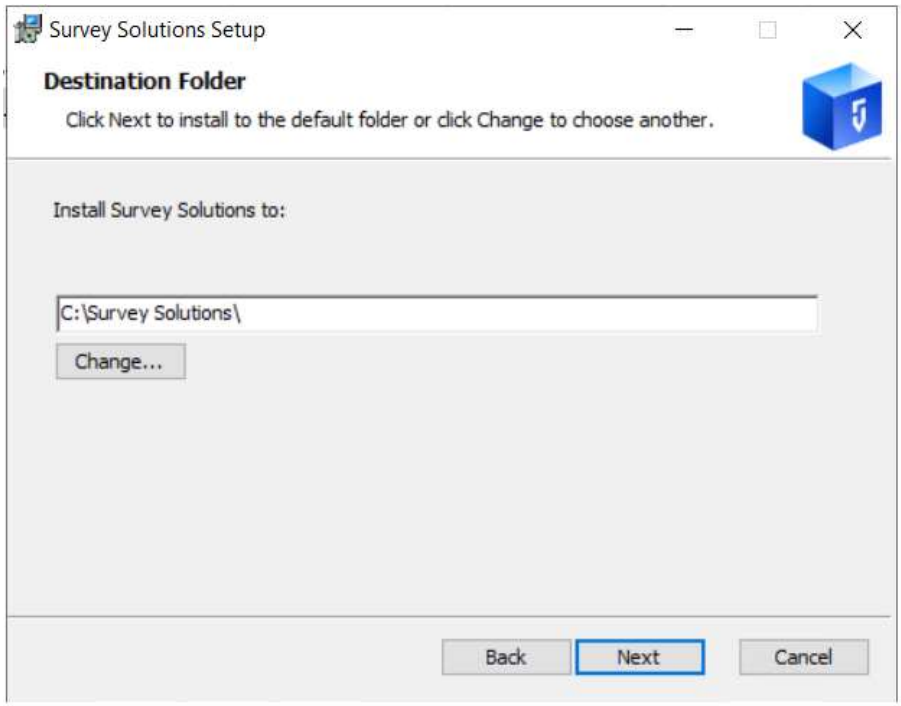
4. Install Survey Solutions 20.8.2.29147:

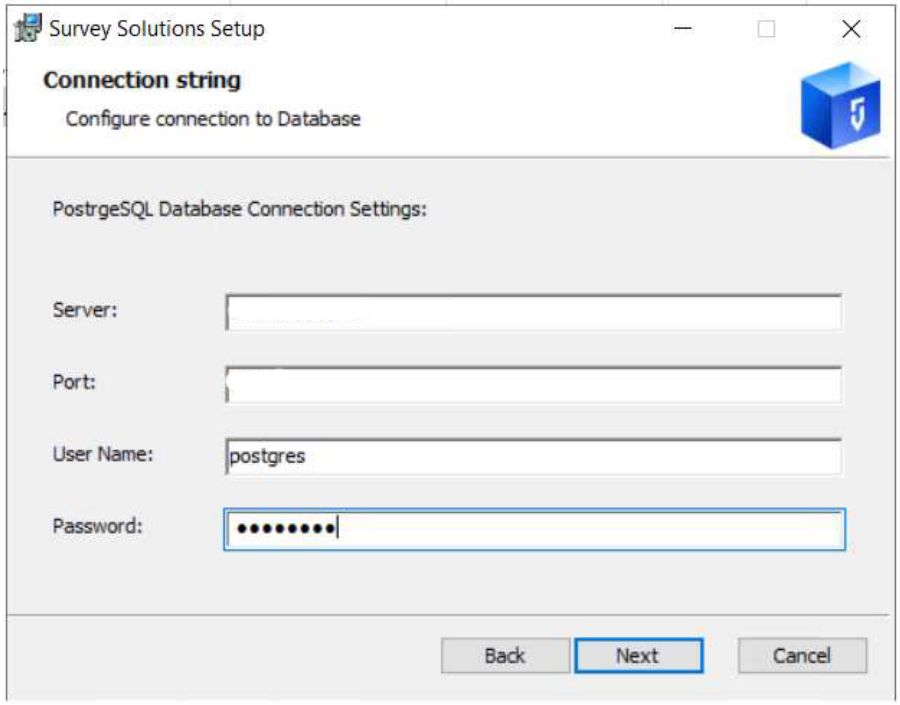


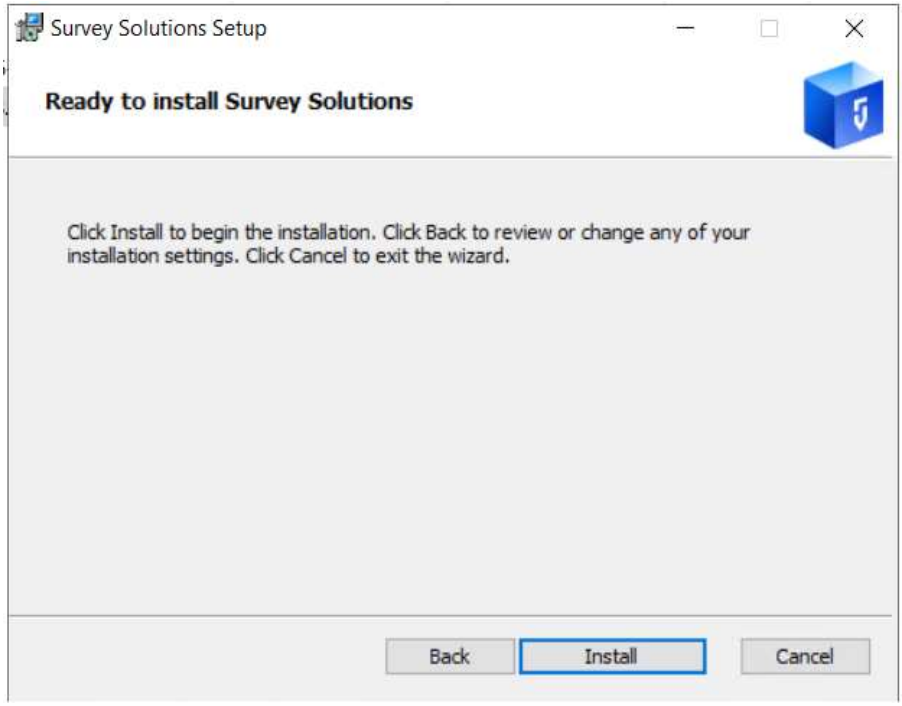


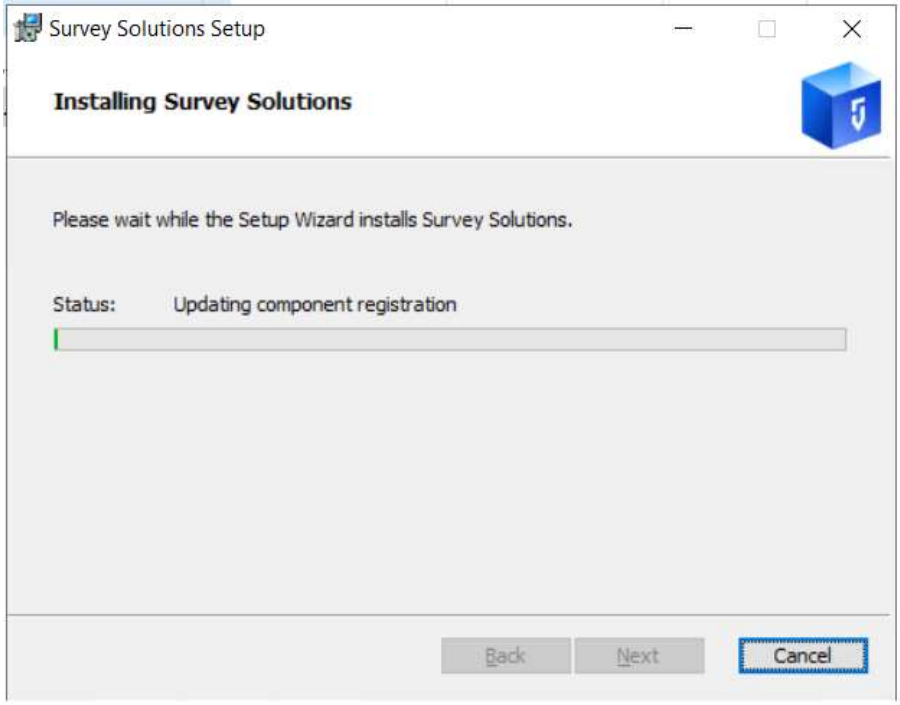

SurveySolutions Setup
SurveySolutions
Setup Progress
Processing: Installing IIS
Cancel

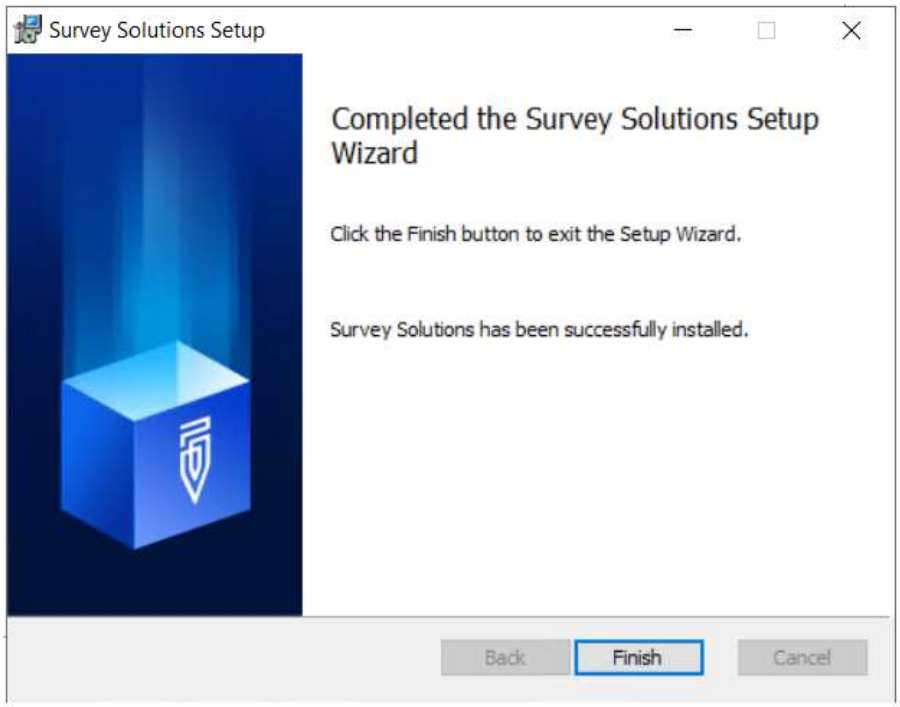

Survey Solutions Setup
Welcome to the Survey Solutions Setup Wizard
The Setup Wizard will install Survey Solutions on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
Back
Next
Cancel

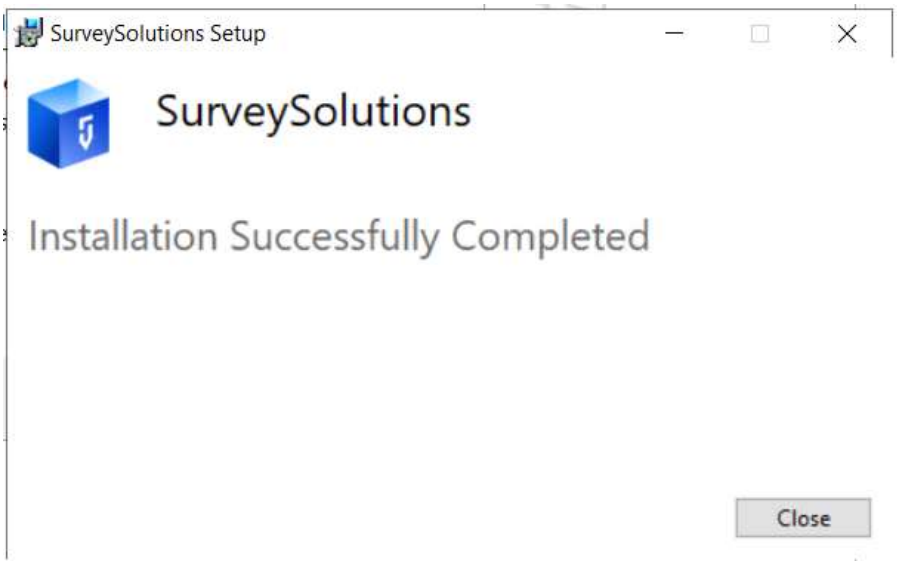

Survey Solutions Setup
Destination Folder
Click Next to install to the default folder or click Change to choose another.
Install Survey Solutions to:
C:\Survey Solutions\
Change...
Back
Next
Cancel


Survey Solutions Setup
Connection string
Configure connection to Database
PostrgeSQL Database Connection Settings:
Server:
Port:
User Name:
postgres
Password:
Back
Next
Cancel


Survey Solutions Setup
Ready to install Survey Solutions
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
Back
Install
Cancel


Survey Solutions Setup
Installing Survey Solutions
Please wait while the Setup Wizard installs Survey Solutions.
Status: Updating component registration
Back
Next
Cancel



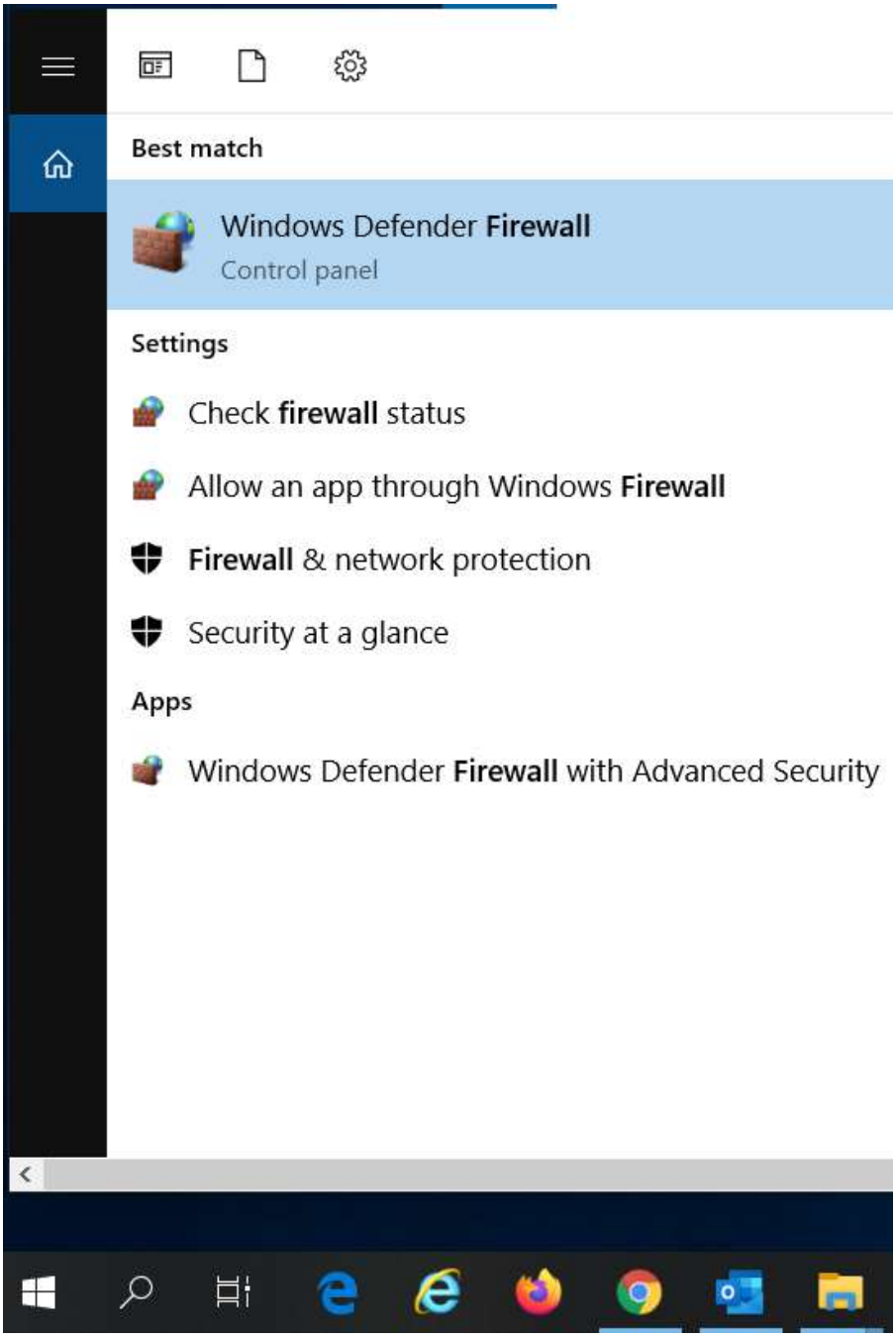


5. Install monitoring node software. Run this command on each node from an elevated command prompt:

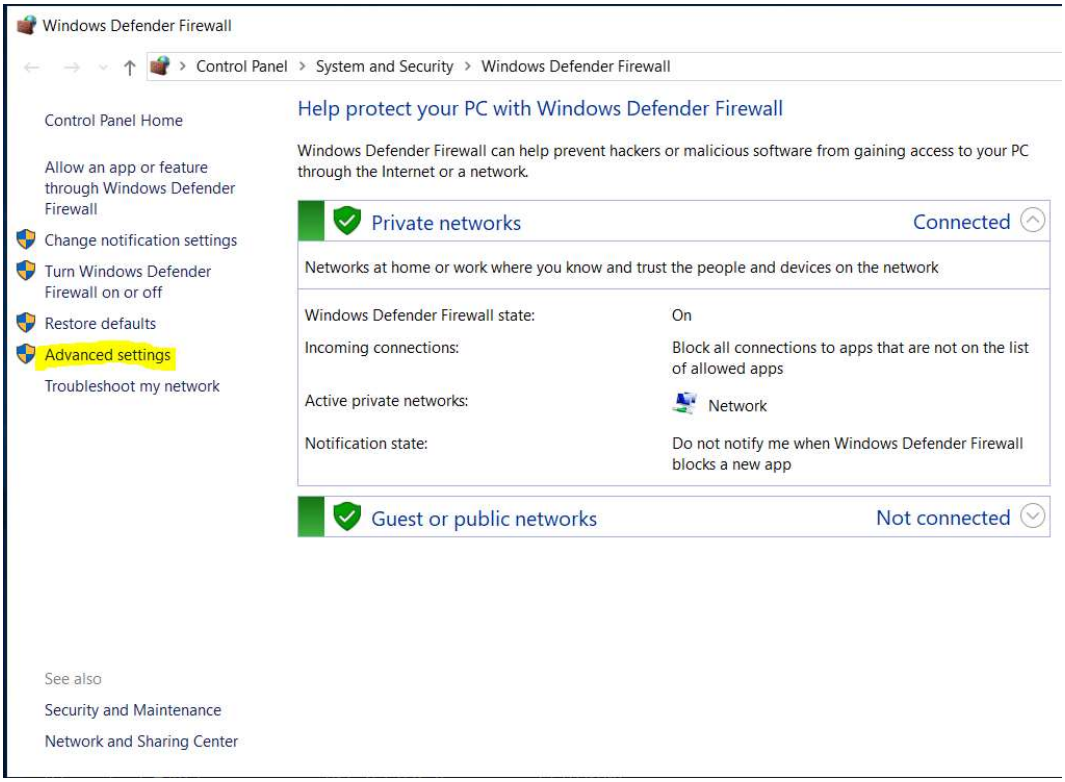
```
>msiexec                    /i                    c:\Kit\windows_exporter-0.14.0-amd64.msi
ENABLED_COLLECTORS=cpu,cs,iis,logical_disk,net,os,system,vmware
```

6. Allow communication from load balancer by adding firewall rules:

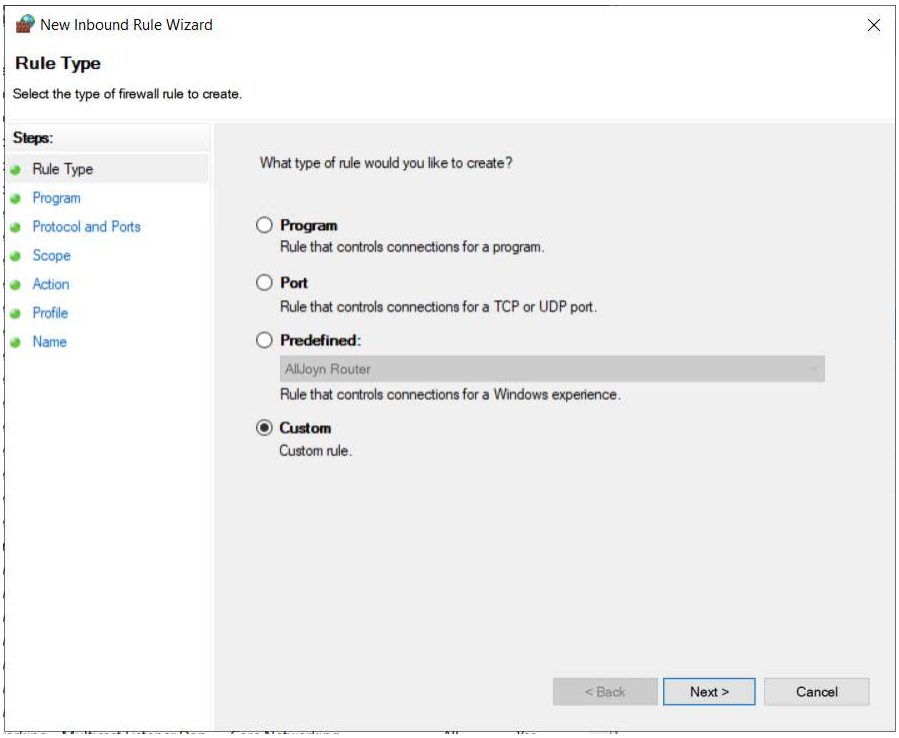
Open Windows Defender Firewall

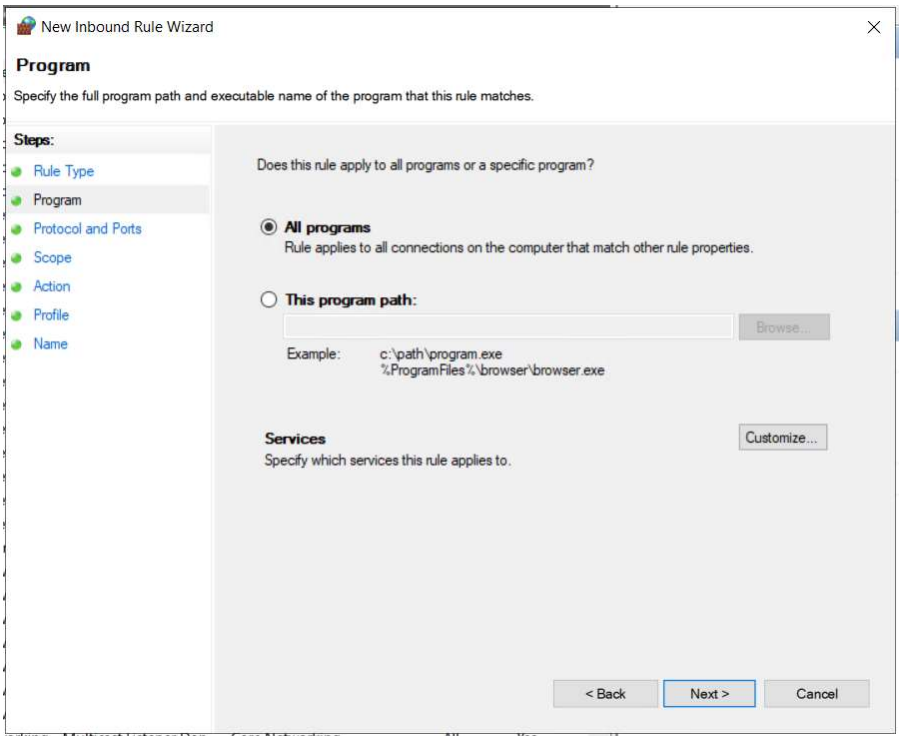


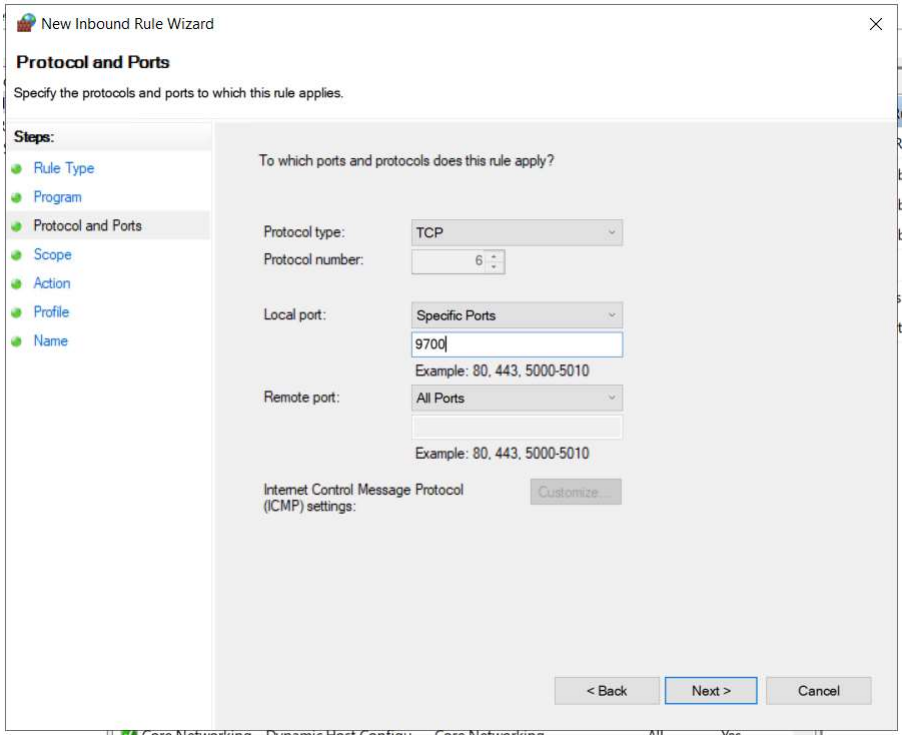
Go to “Advanced settings”

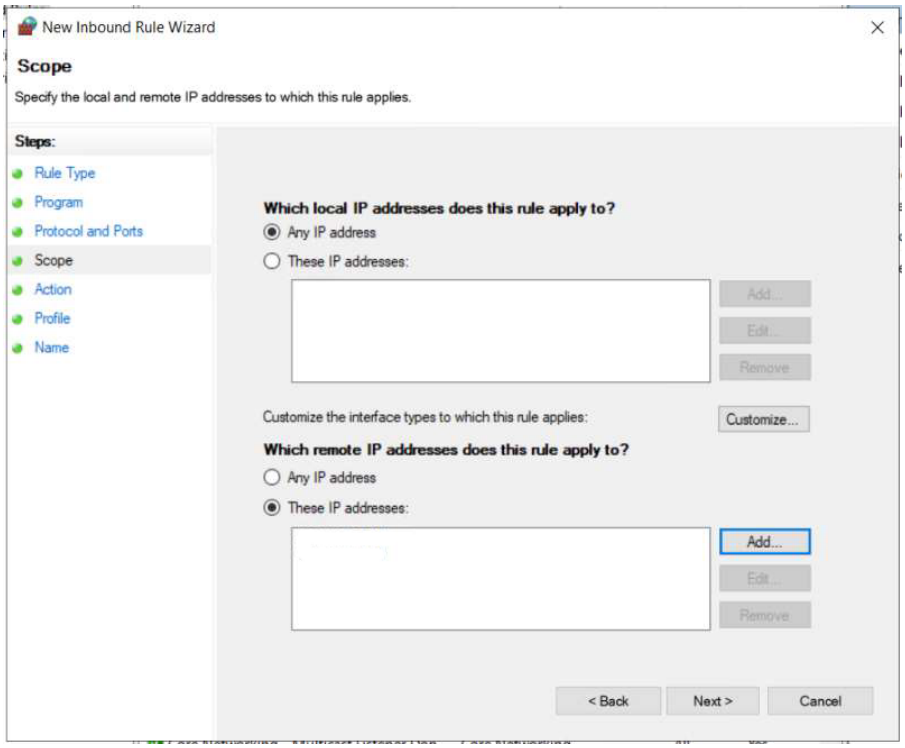


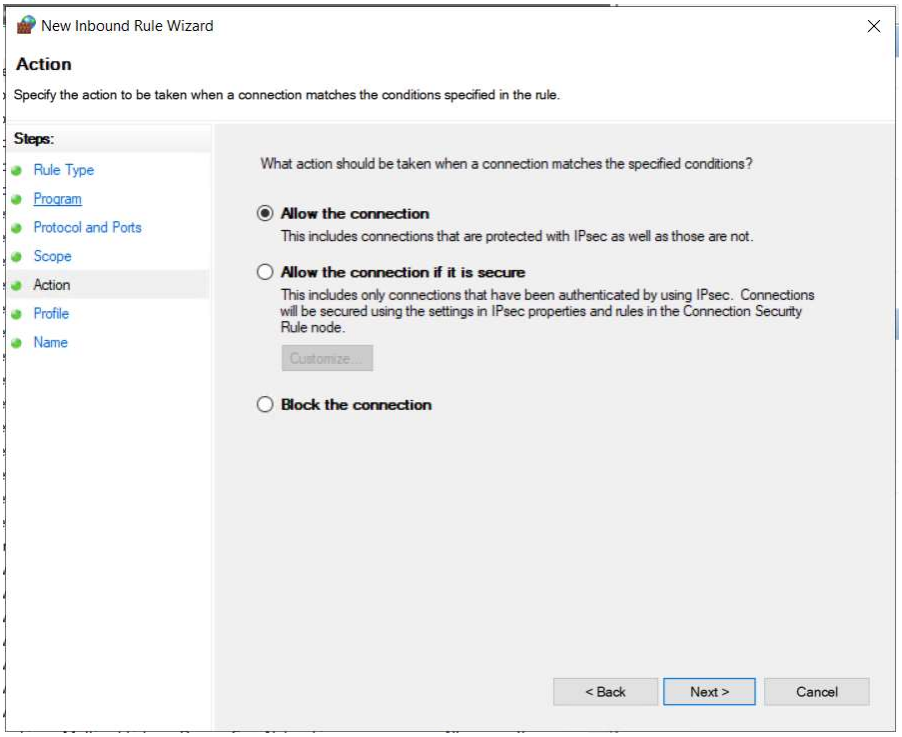
Create a new inbound rule by left clicking on the “Inbound Rules”-> “New rule …”

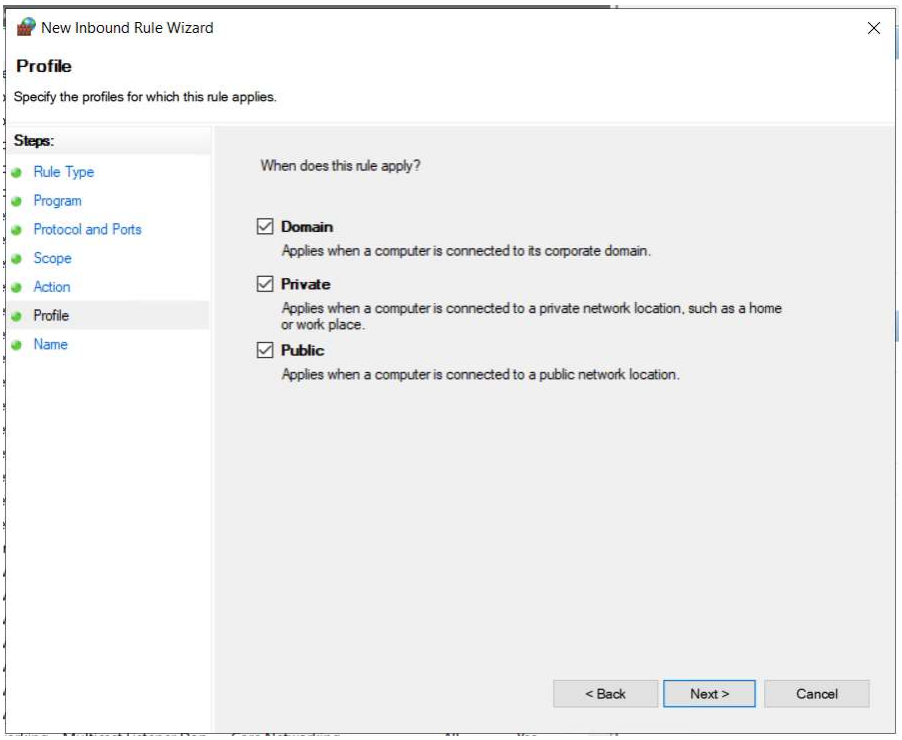


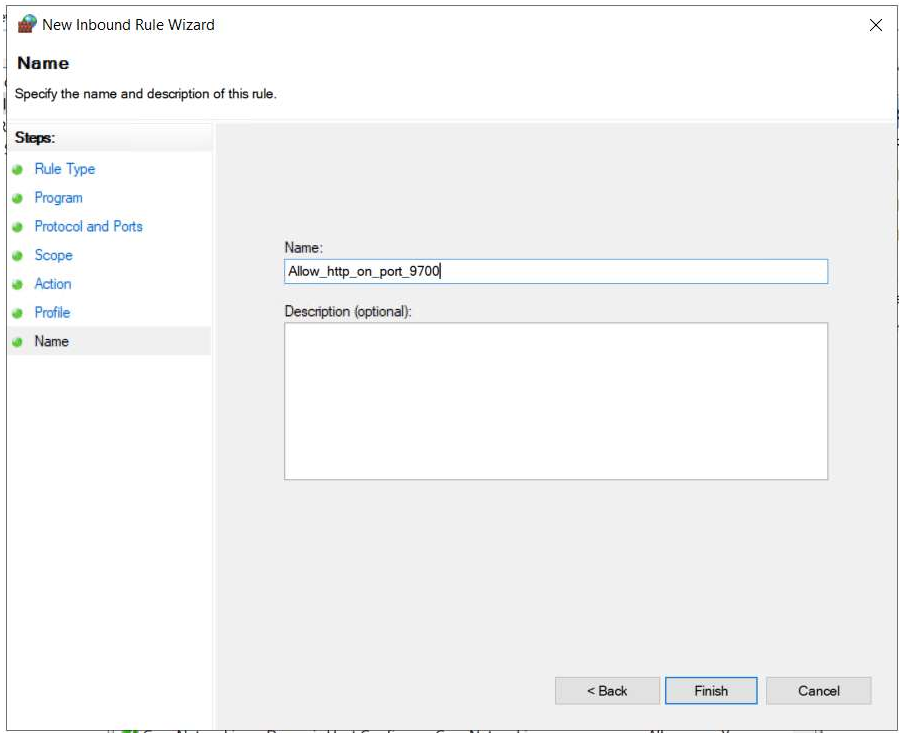

New Inbound Rule Wizard
Program
Specify the full program path and executable name of the program that this rule matches.
Steps:
Rule Type
Program
Protocol and Ports
Scope
Action
Profile
Name
Does this rule apply to all programs or a specific program?
All programs
Rule applies to all connections on the computer that match other rule properties.
This program path:
Browse...
Example: c:\path\program.exe
%ProgramFiles%\browser\browser.exe
Services
Specify which services this rule applies to.
Customize...
< Back
Next >
Cancel


New Inbound Rule Wizard
Protocol and Ports
Specify the protocols and ports to which this rule applies.
Steps:
Rule Type
Program
Protocol and Ports
Scope
Action
Profile
Name
To which ports and protocols does this rule apply?
Protocol type:
TCP
Protocol number:
6
Local port:
Specific Ports
9700
Example: 80, 443, 5000-5010
Remote port:
All Ports
Example: 80, 443, 5000-5010
Internet Control Message Protocol (ICMP) settings:
Customize...
< Back
Next >
Cancel


New Inbound Rule Wizard
Scope
Specify the local and remote IP addresses to which this rule applies.
Steps:
Rule Type
Program
Protocol and Ports
Scope
Action
Profile
Name
Which local IP addresses does this rule apply to?
Any IP address
These IP addresses:
Add...
Edit...
Remove
Customize the interface types to which this rule applies:
Customize...
Which remote IP addresses does this rule apply to?
Any IP address
These IP addresses:
Add...
Edit...
Remove
< Back
Next >
Cancel


New Inbound Rule Wizard
Action
Specify the action to be taken when a connection matches the conditions specified in the rule.
Steps:
Rule Type
Program
Protocol and Ports
Scope
Action
Profile
Name
What action should be taken when a connection matches the specified conditions?
Allow the connection
This includes connections that are protected with IPsec as well as those are not.
Allow the connection if it is secure
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.
Customize...
Block the connection
< Back
Next >
Cancel





Edit C:\Survey Solutions\Site\appsettings.production as follows and restart IIS. Note that PostgreSQL password is masked and Capcha and GoogleMap sections contains settings tied to a personal Google subscription, so should be replaced with INS Google subscription keys:

[Headquarters]

BaseUrl=https://rpl.insse.ro

TenantName=hq

[Apks]

ClientApkPath=Client

[Designer]

DesignerAddress=https://designer.mysurvey.solutions

[DataExport]

ExportServiceUrl=http://xxx.xxx.xx.xx:xxxx;

[FileStorage]

AppData=..\Data_Site

TempData=..\Data_Site

[ConnectionStrings]

DefaultConnection=Persist Security Info=true;Server=xxx.xxx.xx.xx;Port=xxxx;User Id=postgres;Password=*******;Database=SurveySolutions

[Metrics]

Pushgateway endpoint location where HQ should report metrics data

PushGatewayEndpoint = http://localhost:9091/metrics

Should HQ use Pushgateway to report metrics data

UsePushGateway = true

Should HQ expose metrics data via '/metrics' endpoint

UseMetricsEndpoint = true

[Scheduler]

InstanceId=hq1

IsClustered=true

[Captcha]

CaptchaType=Recaptcha

SecretKey=6LefktQZAAAAAJIIId24movW7-9kfc74O5qSzD5e

SiteKey=6LefktQZAAAAACHBtdRE3AbDbAlBGwa-MvGZE4AK

Version=v2

[GoogleMap]

ApiKey=AIzaSyCrg8h3FK1rfiNWQFK3M-fBnWaCr0wI760

ApiBaseUrl=https://maps.googleapis.com

BaseUrl=https://google.com

4. Load Testing machine installation log

Steps performed in configuring load testing server:

1. Enable name resolution – edit /etc/resolv.conf with Google public DNS services:

```
nameserver 8.8.8.8

nameserver 8.8.8.4
```

2. Install yum-utils:

```
# yum -y install epel-release yum-utils
```

3. Add Docker repository and install Docker:

```
# yum-config-manager     --add-repo      https://download.docker.com/linux/centos/docker-ce.repo

# yum install docker-ce docker-ce-cli containerd.io
```

4. Start Docker:

```
# systemctl start docker
```

5. Install git:

```
# yum install git
```

6. Install docker-composer:

```
#  curl -L "https://github.com/docker/compose/releases/download/1.27.0/docker-compose-
$(uname -s)-$(uname -m)" -o /usr/bin/docker-compose

# chmod +x /usr/bin/docker-compose
```

7. Add Docker permissions to admin user:

```
# usermod -aG docker admin
```

8. As admin user, clone surveysolutions/loadtest repository:

```
$ git clone https://github.com/surveysolutions/loadtest
```

9. Modify loadtest/docker-compose.yml file as follows:

```
version: '3.8'


services:
```

```
grafana:
  build: grafana
  ports:
    - 80:3000
  restart: always
  environment:
    # Change according to https://grafana.com/docs/grafana/latest/auth/overview/ doc
    - GF_AUTH_ANONYMOUS_ENABLED=true
    - GF_AUTH_ANONYMOUS_ORG_ROLE=Admin

influxdb:
    image: influxdb
    ports:
      - 8083:8083
      - 8086:8086
      - 8090:8090
    environment:
      - INFLUXDB_DATA_ENGINE=tsm1
      - INFLUXDB_REPORTING_DISABLED=true
      - INFLUXDB_DB=k6db
    volumes:
      - influx_data:/var/lib/influxdb

prometheus:
  image: prom/prometheus
  volumes:
    - ./prometheus:/etc/prometheus
    - prometheus_data:/prometheus
  command:
    - '--config.file=/etc/prometheus/prometheus.yml'
    - '--storage.tsdb.path=/prometheus'
    - '--web.console.libraries=/usr/share/prometheus/console_libraries'
    - '--web.console.templates=/usr/share/prometheus/consoles'
  ports:
    - 9090:9090
  restart: always
```

```
  postgres_exporter:
    image: wrouesnel/postgres_exporter:latest
    environment:
      -
DATA_SOURCE_NAME=postgresql://postgres:*********@xxx.xxx.xx.xx:xxxx;/postgres?sslmode=d
isable
    ports:
      - 9187:9187
    restart: always


  nginx_exporter:
    image: nginx/nginx-prometheus-exporter:latest
   entrypoint: [/usr/bin/exporter, -nginx.scrape-uri, http://xxx.xxx.xx.xx:xxxx]
    ports:
      - 9113:9113
    restart: always


volumes:
  prometheus_data: {}
  influx_data: {}


networks:
  monitoring:
  default:
    name: monitoring
```

10. Modify loadtest/Prometheus/Prometheus.yml as follows:

```
# my global config
global:
  scrape_interval:     1s # By default, scrape targets every 15 seconds.
  evaluation_interval: 1s # By default, scrape targets every 15 seconds.


scrape_configs:


- job_name: 'hq'
```

```
  file_sd_configs:
    - files:
      - targets.yml
#      - targets.json

- job_name: 'win-exporter'
  static_configs:
  - targets:
    - xxx.xxx.xx.xx:xxxx
    labels:
      instance: hq1
  - targets:
      - xxx.xxx.xx.xx:xxxx
    labels:
      instance: hq2
  - targets:
      - xxx.xxx.xx.xx:xxxx
    labels:
      instance: hq3
  - targets:
      - xxx.xxx.xx.xx:xxxx
    labels:
      instance: hq4
  - targets:
      - xxx.xxx.xx.xx:xxxx
    labels:
      instance: hq5

- job_name: 'postgresql-exporter'
  static_configs:
  - targets:
    - xxx.xxx.xx.xx:xxxx
    labels:
      instance: db1

- job_name: 'lb-exporter'
  static_configs:
```

```
  - targets:
    - xxx.xxx.xx.xx:xxxx
    labels:
      instance: lb1
  - targets:
    - xxx.xxx.xx.xx:xxxx
    labels:
      instance: lb1

- job_name: 'db-exporter'
  static_configs:
  - targets:
    - xxx.xxx.xx.xx:xxxx
    labels:
      instance: db1
```

11. Install and run surveysolutions/loadtest images:

```
$ cd loadtest/
$ docker-compose up -d
```

12. Enable and start firewall (as root):

```
# systemctl enable firewalld
# systemctl start firewalld
```

13. As admin user from home directory, clone surveysolutions/census-self-registration repository

```
$ git clone https://github.com/surveysolutions/census-self-registration
```

14. Modify census-self-registration/docker-compose.yml file as follows:

```
version: "3.4"


services:
  selfregistration.web:
#                                   image:         ghcr.io/surveysolutions/census-self-registration/selfregistration.web:latest
    image: selfregistration.web:latest
```

```
    depends_on:
      - selfregistration.backend
    environment:
      - ASPNETCORE_ENVIRONMENT=Production
      - CENSUS_Backend__Endpoint=http://selfregistration.backend
    ports:
      - 8080:80
    volumes:
      - ~/.aspnet/https:/root/.aspnet/https:ro
      - ~/.microsoft/usersecrets:/root/.microsoft/usersecrets:ro
      - ./web.ini:/app/appsettings.dev.ini:ro
  selfregistration.backend:
#                                   image:         ghcr.io/surveysolutions/census-self-registration/selfregistration.backend:latest
    image: selfregistration.backend:latest
    depends_on:
      - postgres
    extra_hosts:
      - "recensaminte.insse.ro:xxx.xxx.xx.xx:xxxx"
    environment:
      - ASPNETCORE_ENVIRONMENT=Production
      - CENSUS_Bus__RabbitMqEndpoint=amqp://guest:guest@rabbitmq
      -                                 CENSUS_ConnectionStrings__db=Server=postgres;User Id=postgres;Password=postgres;Database=entry;
      - CENSUS_Headquarters__ApiUser=reg_api
      - CENSUS_Headquarters__ApiPassword=********
      - CENSUS_Headquarters__Responsible=interviewer
      - CENSUS_Headquarters__Endpoint=https://recensaminte.insse.ro
      - CENSUS_EmailTemplates__SenderAddress=
      - CENSUS_EmailTemplates__ReplyAddress=
      - CENSUS_EmailTemplates__Deadline=2020-12-31
    ports:
      - 6500:6500
    volumes:
      - ~/.aspnet/https:/root/.aspnet/https:ro
      - ~/.microsoft/usersecrets:/root/.microsoft/usersecrets:ro
      - ~/.aws/credentials:/root/.aws/credentials
```

```
      - ./backend.ini:/app/backend.dev.ini:ro
  postgres:
    image: postgres
    environment:
      - POSTGRES_USER=postgres
      - POSTGRES_DB=entry
      - POSTGRES_PASSWORD=********
    ports:
      - 5432:5432
  rabbitmq:
    # A RabbitMQ image, with management and delayed exchange plugins enabled.
    image: masstransit/rabbitmq
    environment:
      - RABBITMQ_DEFAULT_USER=guest
      - RABBITMQ_DEFAULT_PASS=guest
    ports:
      - 5672
      - 4369
      - 5671-5672
      - 15691-15692
      - 25672
```

15. Build the images locally:

```
$cd src
$ docker-compose build
$ cd ..
```

16. Compose the containers:

```
$ docker-compose up -d
```

17. Edit census-self-registration/web.ini

```
[RecaptchaSettings]
SecretKey=6LefktQZAAAAAJIIId24movW7-9kfc74O5qSzD5e
SiteKey=6LefktQZAAAAACHBtdRE3AbDbAlBGwa-MvGZE4AK
```

```
[Logging]

File=/app/selfregistrationweb.log

Console=true
```

18. Edit census-self-registration/backend.ini

```
[Headquarters]

ApiUser=reg_api # api user credentials for assignment creation https://support.mysurvey.solutions/headquarters/api/survey-solutions-api/

ApiPassword=xxxxxxxxxx

Responsible=interviewer # interviewer to whom web assignments are going to be assigned to

Endpoint=https://recensaminte.insse.ro # URL of Headquarters application where assignments are created

Questionnaire_Personal=56300d7dec5d4775925565edf0b429f2$2 # questionnaire identity for the personal assignment (should be already imported on HQ)

#Questionnaire_Household=9c1833cc-21bc-40ad-9274-0e620d04ba68$1 # questionnaire identity for the household assignment (should be already imported on HQ)


[Map:Household]

personalId=member.personalId

# county = address.county

# locality = address.locality


[Map:Personal]

# personalId=member.personalId

# household_assignment = assignment.householdAssignmentId

# isHead = member.isHead

g_hhid=registration.id

CNP_persona=member.personalId

g_jud = address.countytitle

g_jud_code = address.county

g_muni = address.localitytitle

g_muni_code = address.locality
```

```
g_sat = address.satultitle

g_sat_code = address.satul

g_strada = address.street

g_strada_code = address.streetCode

g_numar = address.streetNumber

g_bloc = address.buildingNumber

g_scara = address.entrance

g_etaj = address.floor

g_apart = address.apartmentNo

g_telefon = address.phoneNumber

g_email = assignment.email

GOSP = address.householdcount

firstName = assignment.firstName

lastName = assignment.lastName


[AWS]

Region=eu-central-1


[Logging]

File=/app/selfregistrationbackend.log

Console=true
```

19. Restart backend and web containers:

```
$docker container restart census-self-registration_selfregistration.backend_1

$docker container restart census-self-registration_selfregistration.web_1
```

20. As root, enable ports 8080, 9113 and 9187:

```
# firewall-cmd --permanent –zone=public –add-port=8080/tcp

# firewall-cmd --permanent --zone=public --add-port=9113/tcp

# firewall-cmd --permanent --zone=public --add-port=9187/tcp
```

21. Restart firewall

```
# systemctl restart firewalld
```

Annex 2 – Maintenance procedures for PHC environment

In order to maintain the load testing environment for PHC, some relevant procedures are required. Those procedures consist in:

- Initializing the environment after each load test
- Patching and updating WB software when performance or functional issues are addressed in the source code
- Monitoring the environment

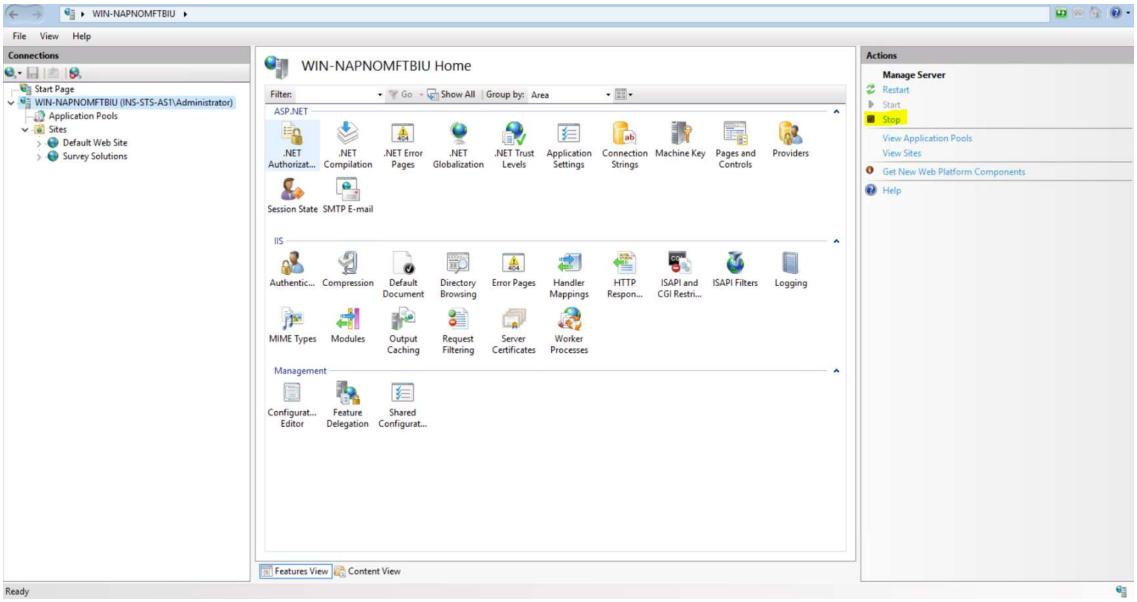
In order to be able to run those procedures, a VPN connection is required to the PHC environment, hosted by STS.

1. PHC environment initialization

In order to initialize PHC environment, the most suitable way is to clear the database. Since some settings are encoded in database, additional steps are required in order to prepare the environment for subsequent load tests.

The whole procedure is described here:

1. Access INS-STS-AS1 … INS-STS-AS5 and stop IIS service (Start->Windows Administrative Tools->Internet Information Service (IIS) Manager):



2. Access INS-STS-DB and access psql command line tool (as postgres)

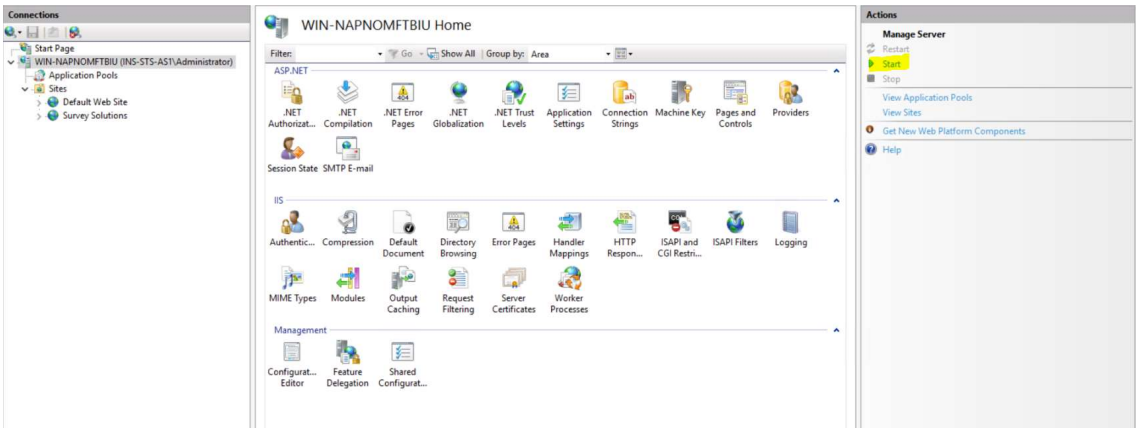
```
# su – postgres

[postgres@bm-ins-db ~]$ psql
```

```
psql (12.4)
Type "help" for help.
postgres=#
```

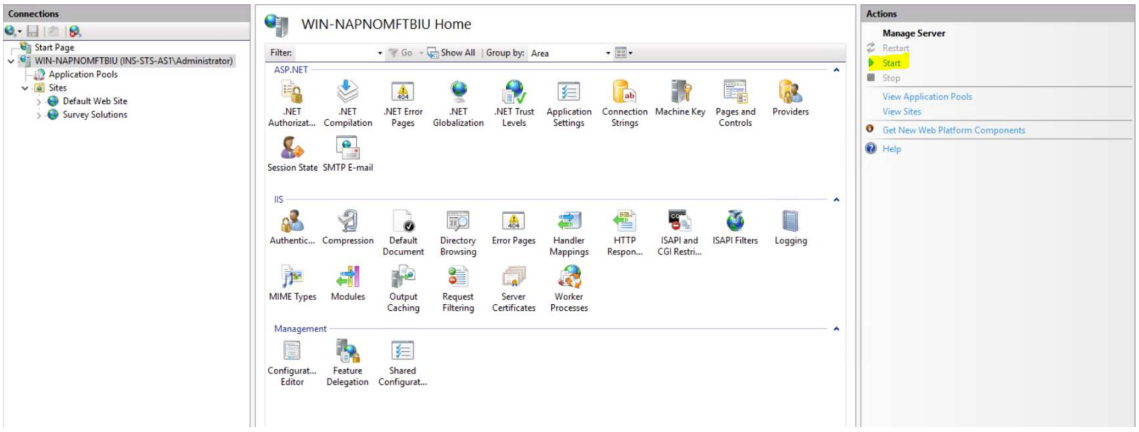
3. Simply drop the database “SurveySolutions”:

```
postgres=# drop database "SurveySolutions";
```

4. Access INS-STS-AS1 and start IIS service (Start->Windows Administrative Tools->Internet Information Service (IIS) Manager):



5. On INS-STS-AS1, click on Survey Solution icon on the desktop and provide default administrator credentials
6. Access INS-STS-AS2 … INS-STS-AS5 and start IIS service (Start->Windows Administrative Tools->Internet Information Service (IIS) Manager):



7. Setup Survey Solution application as recommended by WB:

- Create minimal set of users (headquarter, supervisor, interviewer)

- Import questionnaire from Survey Solution Designer
- Assign questionnaire to interviewer user in web mode and start web mode
- Take assignment identification and use it in load testing script

2. Patching and updating WB software

WB software components consist in:

- Survey Solution Headquarter application installed on INS-STS-AS1 … INS-STS-AS5
- Monitoring and load testing Docker environment, saved as a GitHub project on INS-STS-LT
- CENSUS self-registration portal Docker environment, saved as a GitHub project on INS-STS-LT

For patching and updating Survey Solution application, the steps below must be executed:

1. Consult https://support.mysurvey.solutions/release-notes/ and decide if new release should be deployed.
2. In case there will be a deployment, copy C:\Survey Solutions\Site\appsettings.production in a safe location for all nodes INS-STS-AS1 … INS-STS-AS5
3. On INS-STS-AS1 uninstall Survey Solutions application, restart the node and install new release from https://mysurvey.solutions/en/index.html#download-section.
4. On INS-STS-AS1, copy appsettings.production from the safe location in C:\Survey Solutions\Site\appsettings.production and restart IIS.
5. Repeat the steps 3 – 4 for INS-STS-AS 2 … INS-STS-AS5

For patching monitoring and load testing Docker environment, you need to execute the steps below:

1. Access INS-STS-LT as admin via WinSCP and copy loadtest/docker-compose.yml and loadtest/Prometheus/prometheus.yml in a safe location
2. Pull the project from web source:

```
$ cd loadtest

$ git pull origin master
```

3. Copy back from safe location loadtest/docker-compose.yml and loadtest/Prometheus/prometheus.yml.
4. Compose the containers:

```
$ docker-compose up -d
```

For patching and monitoring and load testing Docker environment, you need to execute the steps below:

1. Access INS-STS-LT as admin via WinSCP and copy census-self-registration/docker-compose.yml, census-self-registration/web.ini and census-self-registration/backend.ini in a safe location
2. Pull the project from web source:

```
$ cd census-self-registration

$ git pull origin master
```

3. Copy back from safe location census-self-registration/docker-compose.yml, census-self-registration/web.ini and census-self-registration/backend.ini.
4. Build the images locally:

```
$cd src

$ docker-compose build

$ cd ..
```

5. Compose the containers:

```
$ docker-compose up -d
```

3. Monitor PHC environment

In order to monitor PHC environment, you can use existing Headquarters monitoring dashboard on Grafana. Once you are connected via VPN, you can access Grafana at http://xxx.xxx.xx.xx. The Headquarter dashboard is accessible at http://xxx.xxx.xx.xx/d/headquarters/headquarters?orgId=1&refresh=5s. This monitoring dashboard is intended to monitor load on existing infrastructure and does not provide application level logs. Also, the monitoring of the CENSUS self-registration portal components is excluded from infrastructure monitoring scope.

Application level logs can be consulted for each component:

- For INS-STS-AS1 … INS-STS-AS5 those are available in C:\Survey Solutions\logs
- For Docker container components, logs can be consulter via Docker command as admin user:

```
$ docker logs <container_name>
```

A full list of running and stopped containers is available via Docker command (as admin user):

```
$docker container ps -a
```

4. Perform PHC load testing

In order to perform PHC load testing, you need to login as “admin” on INS-STS-LT machine and run the K6 script, but before that you need to set some environment variables which are used as parameters for different load tests.

```
$ cd loadtest
$ export K6_HOST=https://recensaminte.insse.ro:443
$ export K6_WEBINTERVIEW=93ALNFLC
$ export K6_MAXVU=100
$ export K6_LONGESTRUN=5m
$ export K6_WARMUP=10
$ make run
```

Note that K6_WEBINTERVIEW should be initialized with the id of the web interview, step 7.

The K6_MAXVU represent the maximum generated virtual users, and K6_LONGESTRUN is the duration of the load test. The K6_WARMUP variable is the test warmup duration during VU grow.

Proposed value is around 20-50vu per second, default value is 10.

As for applications logs, those are available in C:\Survey Solutions\logs.

Annex 3 – A comparison of CAWI and CAPI at the question level and for a single person household

A comparison of CAWI and CAPI at the question level and for a single person household. This is unfortunately the only reliable way to do a one-to-one comparison, due to the different questionnaire structure. For the questions in the person questionnaire the comparison should be possible for all person. However, even with careful adjustments, we do not expect to receive results much different from the results presented here. In addition, some of the slow response times in CAPI may also be the result of the already old tablets. This is only an initial evidence based on the available data, however we may need to require investigating further for final conclusions and required adaption. One way to facilitate workload on old devices is to keep the complexity of the questionnaire as low as possible, so that the system operations i.e. validation checks are only limited to most essential ones.
For the explanation of headers of the table see section 3.3. A detailed mode of calculation will be available for actual census.

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
g_jud	1	5	NA	A1. Județul	NaN	2106.689	3314	8256
g_muni	1	6	NA	A2. Localitatea: Municipiul / Orașul / Comuna	0.000	4.431	3314	8262
g_sat	1	7	NA	A3. Localitatea componentă a municipiului/orașului - sau <u>Satul</u>	0.000	2.684	3314	8264
g_strada	1	8	NA	A4. Strada	0.000	8.821	3314	8267
g_numar	1	9	NA	A5. Număr	0.000	7.926	3314	8269
g_bloc	1	10	NA	A6. Bloc	10.971	3.248	1070	8201
g_scara	1	11	NA	A7. Scara	1.223	665.780	1031	7565
g_etaj	1	12	NA	A8. Etaj	0.845	64.047	1120	7685
g_apart	1	13	NA	A9. Apartament	1.342	39.378	1250	7704
g_telefon	1	14	NA	Telefon	0.000	154.006	3314	7157
curDate	1	15	NA	VĂ RUGĂM SĂ APĂSAȚI ACEST BUTON PENTRU A ÎNCEPE AUTORECENZAREA!	65.914	410.694	3872	10540
g_hhid	2	2	NA	Household ID	0.000	NA	3314	NA
g_jud_code	2	4	NA	A1. Județul code	0.000	0.000	3314	7762
g_muni_code	2	5	NA	A2. Localitatea code.	0.000	0.000	3314	7762
g_sat_code	2	6	NA	A3. Satul code	0.000	0.000	3314	7762
g_strada_code	2	7	NA	A4. Strada code	0.000	NA	3314	NA
g_email	2	8	NA	Email	0.000	NA	3314	NA

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
GOSP	2	14	NA	Numărul de ordine al gospodariei in cadrul locuintei	0.000	NA	3314	NA
CNP	2	16	NA	LISTA CNP-URILOR PERSOANELOR DIN GOSPODĂRIE (AUTO-ÎNREGISTRATE) 	0.000	237.499	3314	10416
CNP_persona	2	17	NA	CNP-UL persoanei din secțiunea Chestionar pentru recenzarea persoanelor	0.000	41.869	3314	8819
NRPG	2	19	NA	G01. Numărul persoanelor din gospodărie (prezente și temporar absente)	35.768	32.805	3284	8730
NRPPI	2	20	NA	G02. Numărul persoanelor plecate pentru o perioadă îndelungată	19.237	27.016	1833	8479
NRTP	2	21	NA	G03. Numărul persoanelor temporar prezente	12.674	26.051	1794	8450
MembersNick	3	5	1	G04. Persoana este denumită:	45.649	73.806	1625	8774
SIREC	3	7	2	G05. Situația persoanei la recensământ (la data de 1 Martie 2021)	32.390	36.434	575	8543
GRUD	3	7	3	G06. Care este gradul de rudenie a lui %MembersNick% cu capul gospodăriei?	13.547	6.228	909	8717
live_nsot	3	7	19	G07. Sotul/Sotia lui "%MembersNick%" locuiește în această gospodărie?	20.207	36.750	420	1480
SOPA	3	7	20	G08. Cine este soțul/soția lui "%MembersNick%"?	11.411	4.894	296	66
live_npart	3	7	21	G09. Partenerul/partenera lui "%MembersNick%" locuiește în această gospodărie?	7.530	5.868	87	605
PARTA	3	7	22	G10. Cine este partenerul/partenera lui "%MembersNick%"?	4.571	2.600	35	5
live_tat	3	7	23	G11. Tatăl lui "%MembersNick%" locuiește în această gospodărie?	7.474	20.802	396	1215
TA	3	7	24	G12. Cine este tatăl lui "%MembersNick%"?	28.714	4.696	7	23
live_mam	3	7	25	G13. Mama lui "%MembersNick%" locuiește în această gospodărie?	4.556	3.828	390	1197

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
MA	3	7	26	G14. Cine este mama lui "%MembersNick%"?	8.912	6.410	34	39
TITLU	4	1	NA	LC01. TITLUL SUB CARE GOSPODĂRIA OCUPĂ LOCUINȚA	21.146	44.790	677	9046
NRGOSP	4	2	NA	LC02. Numărul gospodăriilor din locuință	16.671	14.722	668	8770
TILOC	4	3	NA	LC03. Tipul locuinței	12.679	15.301	613	8531
STLOC	4	4	NA	LC04. Statutul locuinței	6.035	13.913	574	8487
OCUP_L	4	5	NA	LC05. Situația ocupării locuinței	8.105	10.981	573	8414
POZLOC	4	6	NA	LC06. Poziția locuinței în clădire	13.184	24.744	938	8919
POZLOC_etaj	4	7	NA	LC06bis. Etajul:	12.936	46.347	179	1677
NIVLOC	4	8	NA	LC07. Câte niveluri are locuința ?	19.928	39.906	673	9136
FPRO	4	9	NA	LC08. Forma de proprietate	4.733	5.268	578	8502
NCAL	4	11	NA	LC09. Număr	25.291	21.385	639	8841
SCAL	4	12	NA	LC10. Suprafața camerelor de locuit <i>(în metri pătrați, fără zecimale)</i>	67.817	48.279	700	8836
NCALP	4	14	NA	LC11. Număr	13.825	8.229	552	8668
SCALP	4	15	NA	LC12. Suprafața camerelor folosite în scop profesional <i>(în metri pătrați, fără zecimale)</i>	24.517	14.647	29	184
BUC	4	17	NA	LC13. Are bucătărie / chicinetă situată:	12.125	7.565	572	8578
SBUC	4	18	NA	LC14. Suprafața <i>(în metri pătrați, fără zecimale)</i>	30.076	14.338	592	8372
BAIE	4	19	NA	LC15. Baie (cu cadă și/sau duș)	7.304	9.446	540	8682
CLO	4	20	NA	LC16. Closet cu apă (WC)	9.529	7.212	553	8767
APA	4	21	NA	LC17. Sistemul de alimentare cu apă (răspuns multiplu)	10.809	12.905	1450	36574
apacal_select	4	22	NA	LC18. Instalație de alimentare cu apă caldă	16.080	8.161	565	8781
apacal_da	4	23	NA	LC19. Are instalație de alimentare cu apă caldă	13.119	16.153	598	6773
apacal_da_colect	4	24	NA	LC20. Suprafața panourilor solare termice plane cu colectori	183.000	30.000	1	3

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
apacal_da_tub	4	25	NA	LC21. Suprafața panourilor solare termice cu tuburi vidate	23.000	4.000	1	1
apacal_nu	4	26	NA	LC22. Nu are instalație de alimentare cu apă caldă, încălzirea apei se face cu:	19.244	17.644	43	2683
CAN	4	27	NA	LC23. Instalație de canalizare	13.305	17.314	538	9114
ELE	4	28	NA	LC24. Instalație electrică	4.537	5.256	538	8527
panou	4	29	NA	LC25. Utilizează panouri solare fotovoltaice ?	4.293	3.689	538	8342
panou_nr	4	30	NA	LC26. Număr panouri	15.842	8.138	19	58
panou_arie	4	31	NA	LC27. Arie totală	29.091	33.500	11	54
panou_putere	4	32	NA	LC28. Putere totală instalată	18.222	19.925	9	53
eolian	4	33	NA	LC29. Utilizează un sistem eolian ?	4.027	2.489	538	8344
consum	4	35	NA	LC31. Gospodăria dvs. dispune de aparate mari consumatoare de energie electrică ?	6.786	5.678	2686	43655
COMB	4	36	NA	LC32. Combustibilul folosit pentru gătit (răspuns multiplu)	6.793	8.152	1538	34998
INC	4	37	NA	LC33. Modul de încălzire a locuinței	12.737	7.857	558	9230
inc_are	4	38	NA	LC34. Are încălzire centrală	16.406	6.589	524	5310
inc_nu	4	39	NA	LC35. Nu are încălzire centrală, încălzirea se face cu	21.224	9.681	69	3733
FER	4	40	NA	LC36. Ferestre cu tâmplărie din	12.761	7.679	592	8776
TERM	4	41	NA	LC37. Reabilitarea termică	9.086	7.527	601	8764
MODT	4	42	NA	LC38. Reabilitarea termică a locuinței a fost realizată prin	10.260	8.186	635	8525
NRLOC	4	43	1	LC39. Numărul locuințelor din clădire	57.569	11.248	221	5367
TIPC	4	43	2	LC40. Tipul clădirii	9.239	10.432	211	5340
PERC	4	43	3	LC41. Anul construirii clădirii	27.722	17.278	208	5324
ETC	4	43	4	LC42. Numărul de etaje ale clădirii	10.097	41.455	226	5355
MATC	4	43	5	LC43. Materialul de contrucție al pereților exteriori ai clădirii	14.259	10.435	244	5687
LOCC	4	43	6	LC44. Localizarea cădirii	17.990	10.967	199	5180
SIREC_p	5	3	NA	Vă rugăm să furnizați statutul dvs. la reședința	25.859	10.257	3075	8547

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
				obișnuită (la data de 1 Martie 2021)				
STCIV	5	21	NA	P1. Starea civilă legală	0.597	23.457	3504	8862
ANC1	5	22	NA	P2. Anul primei căsătorii	30.195	18.337	986	341
ANC2	5	23	NA	P3. Anul căsătoriei actuale	12.548	4.826	1004	322
STFAP	5	24	NA	P5. Starea civilă de fapt Trăiți în uniune consensuală ?	5.337	6.244	2678	7444
ACUC	5	25	NA	P6. Anul constituirii uniunii consensuale	24.459	14.221	102	122
COPII	5	26	NA	P7. Numărul copiilor născuți-vii	15.340	14.368	1506	5017
plecat	5	28	NA	P8. Pentru câte luni ați plecat din localitatea de recenzare ?	28.544	23.766	83	77
ULPP_xx	5	29	NA	P9. Unde locuiți în prezent ?	10.884	19.471	45	70
ULPP_jud	5	30	NA	P10. În altă localitate din județul:	21.333	12.056	30	36
ULPP_loc	5	31	NA	P11. Localitatea: Municipiul / Orașul / Comuna	9.120	9.143	25	35
ULPP_sat	5	32	NA	P12. Localitatea componentă a municipiului/orașului - sau <u>Satul</u>	11.160	5.400	25	35
ULPP_Tara	5	33	NA	P13. În altă țară:	23.692	13.739	13	23
MOTABS	5	34	NA	P14. Motivul absenței din localitatea de recenzare	12.658	9.119	38	59
LOC_xx	5	35	NA	P15. Locul nașterii	13.715	23.014	3013	9009
LOCN_jud	5	36	NA	P16. În altă localitate din județul:	0.170	13.282	3265	2883
LOCN_loc	5	37	NA	P17. Localitatea: Municipiul / Orașul / Comuna	25.930	11.730	1429	3018
LOCN_sat	5	38	NA	P18. Localitatea componentă a municipiului/orașului - sau <u>Satul</u>	13.521	6.427	1261	2907
LOCN_Tara	5	39	NA	P19. În altă țară:	16.488	12.974	43	39
DOM_xx	5	40	NA	P20. Domiciliul	10.085	4.261	2811	8370
DOM_jud	5	41	NA	P21. În altă localitate din județul:	0.000	8.280	3168	286
DOM_loc	5	42	NA	P22. Localitatea: Municipiul / Orașul / Comuna	12.161	8.201	116	304
DOM_sat	5	43	NA	P23. Localitatea componentă a municipiului/orașului - sau <u>Satul</u>	7.673	5.137	111	292
DOM_Tara	5	44	NA	P24. În altă țară:	48.833	10.667	6	12

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
ALTARES	5	45	NA	P25. Aţi avut vreodată o altă reşedinţă decât cea de recenzare ?	4.841	7.833	4996	9364
RESA_xx	5	46	NA	P26. Reşedinţa anterioară	8.892	5.286	1369	3374
RESA_jud	5	47	NA	P27. În ţară, în altă localitate din judeţul:	15.390	10.637	1199	3141
RESA_loc	5	48	NA	P28. Localitatea: Municipiul / Oraşul / Comuna	11.493	13.792	1190	3215
RESA_sat	5	49	NA	P29. Localitatea componentă a municipiului/oraşului - sau <u>Satul</u>	7.560	13.615	1152	3150
RESA_tara	5	50	NA	P30. În altă ţară:	12.508	11.944	67	71
RESAT	5	51	NA	P31. Aţi avut vreodată reşedinţa în altă ţară ?	0.122	15.213	3328	3314
TARAR	5	52	NA	P32. În ce ţară ?	18.966	12.937	29	63
AA_URR	5	54	NA	P33. Anul stabilirii ultimei reşedinţe în România	61.528	22.223	36	103
LL_URR	5	55	NA	P34. Luna stabilirii ultimei reşedinţe în România	8.000	12.750	3	20
AA_SLR	5	57	NA	P35. Anul stabilirii în localitatea de recenzare	34.620	24.348	1410	3276
LL_SLR	5	58	NA	P36. Luna stabilirii în localitatea de recenzare	8.000	6.632	2	19
MOT	5	59	NA	P37. Motivul stabilirii în localitatea de recenzare	8.581	17.300	1374	3327
CET1	5	60	NA	P38. Cetăţenia	0.300	13.663	3313	8172
CETx	5	61	NA	P39. Aveţi mai mult decât o cetăţenie ?	10.373	5.509	1130	3263
CET2	5	62	NA	P40. Care este a doua cetăţenie pe care o aveţi?	22.818	13.009	57	112
ET	5	65	NA	P41. Cărei etnii consideraţi că aparţineţi ?	20.562	15.040	2559	8293
LIM	5	66	NA	P42. Care este limba dvs. maternă ?	6.246	4.215	2490	8216
REL	5	67	NA	P43. Cărei religii consideraţi că îi aparţineţi?	8.133	6.841	2452	8277
PFI	5	69	NA	P44. Folosiţi Internetul ?	5.799	15.098	2824	8628
sca_filtru	5	71	NA	P45. Până la momentul de referinţă al recensământului, aţi absolvit/terminat o formă de educaţie?	7.759	9.335	2975	8670
SCA	5	72	NA	P46. Care este cel mai înalt nivel de educaţie absolvit/terminat până la momentul de referinţă al recensământului?	14.157	8.668	3092	8641
year	5	73	NA	P47. În ce an aţi absolvit/terminat nivelul de educaţie declarat anterior?	35.365	NA	2917	NA

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
city	5	74	NA	P48. În ce localitate se afla sediul central al instituției de învățământ?	22.589	NA	890	NA
country	5	75	NA	P49. În ce țară se afla instituția de învățământ?	17.950	NA	20	NA
DEN_PDRA	5	77	NA	P50. Selectați din listă denumirea instituției de învățământ superior la care ați absolvit studiile universitare de postdoctorat	16.750	NA	4	NA
DOM_PDRA	5	78	NA	P51. Selectați din listă domeniul de studii postdoctorale absolvite	10.250	NA	4	NA
DOMS_PDRA	5	79	NA	P52. Precizați programul de studii (specializarea) absolvit(ă) în străinătate	8.000	NA	1	NA
DEN_DRA	5	81	NA	P53. Selectați din listă denumirea instituției de învățământ superior la care ați absolvit studiile universitare de doctorat	15.429	NA	35	NA
DOM_DRA	5	82	NA	P54. Selectați din listă domeniul de studii doctorale absolvite	13.583	NA	36	NA
DOMS_DRA	5	83	NA	P55. Precizați programul de studii (specializarea) absolvit(ă) în străinătate	6.000	NA	1	NA
DEN_MASTA	5	85	NA	P56. Selectați din listă denumirea instituției de învățământ superior la care ați absolvit studiile universitare de masterat (inclusiv studii postuniversitare / studii aprofundate și programele de studii de licență cu 5-6 ani: medicină și arhitectură)	15.686	NA	214	NA
DOM_MASTA	5	86	NA	P57. Selectați din listă domeniul de studii de masterat absolvite (nu specializarea)	22.990	NA	220	NA
DOMS_MASTA	5	87	NA	P58. Precizați programul de studii (specializarea) absolvit(ă) în străinătate	28.000	NA	9	NA
DEN_SCA	5	89	NA	P59. Selectați din listă denumirea instituției de învățământ superior la care ați absolvit studiile universitare de licență	17.854	NA	555	NA
DOM_SCA	5	90	NA	P60. Selectați din listă domeniul de studii de licență absolvite (nu specializarea)	26.462	NA	548	NA

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
DOMS_SCA	5	91	NA	P61. Precizați programul de studii (specializarea) absolvit(ă) în străinătate	50.375	NA	8	NA
DEN_COLT	5	94	NA	P62. Selectați denumirea colegiului absolvit (studii superioare de scurtă durată efectuate în perioada 1995-2008)	26.179	NA	39	NA
DOM_COLT	5	95	NA	P63. Selectați din listă domeniul de studii absolvite	16.111	NA	36	NA
LICEU	5	97	NA	P64. Ce tip de liceu ați absolvit?	9.036	NA	665	NA
ALFA	5	98	NA	P65. Știți să scrieți și să citiți ?	10.111	6.707	56	372
scu_filtru	5	100	NA	P66. La momentul de referință al recensământului urmați vreo formă de învățământ?	7.444	5.484	2531	8412
SCU	5	101	NA	P67. Ce nivel de educație urmați la momentul de referință al recensământului?	5.728	6.130	656	207
city_a	5	102	NA	P68. În ce localitate se afla sediul central al instituției de învățământ?	9.551	NA	153	NA
country_a	5	103	NA	P69. În ce țară se afla instituția de învățământ?	20.700	NA	10	NA
DEN_DRU	5	109	NA	P73. Selectați din listă denumirea instituției de învățământ superior la care urmați studiile universitare de doctorat	6.500	NA	4	NA
DOM_DRU	5	110	NA	P74. Selectați din listă domeniul de studii de doctorat urmate	5.000	NA	4	NA
DEN_MASTU	5	113	NA	P76. Selectați din listă denumirea instituției de învățământ superior la care urmați studiile universitare de masterat (inclusiv studii postuniversitare / studii aprofundate și programele de studii de licență cu 5-6 ani: medicină și arhitectură)	14.261	NA	23	NA
DOM_MASTU	5	114	NA	P77. Selectați din listă domeniul de studii de masterat urmate	21.800	NA	25	NA
DOMS_MASTU	5	115	NA	P78. Precizați programul de studii (specializarea) urmat(e) în străinătate	13.000	NA	1	NA
DEN_SCU	5	117	NA	P79. Selectați din listă denumirea instituției de învățământ superior la care	13.362	NA	122	NA

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
				urmați studiile universitare de licență				
DOM_SCU	5	118	NA	P80. Selectați din listă domeniul de studii de licență urmate	26.687	NA	121	NA
DOMS_SCU	5	119	NA	P81. Precizați programul de studii (specializarea) urmat(e) în străinătate	32.545	NA	11	NA
LICEU_U	5	121	NA	P82. Ce tip de liceu urmați la momentul de referință al recensământului?	11.221	NA	137	NA
STATUT	5	123	NA	P83. Statutul activității curente <i>(desfășurate în săptămâna de referință)</i>	10.947	18.213	3316	9310
TIMPL	5	125	NA	P84. Numărul total de ore efectiv lucrate în săptămâna de referință (22-28 Februarie 2021)	32.773	12.038	2710	8457
TIMPLP	5	126	NA	P85. din care în activitatea principală	17.999	16.144	1157	2138
OCUP	5	127	NA	P86. Ocupația	11.851	100.559	1429	2109
STAP	5	128	NA	P87. Statutul profesional	4.544	22.885	1398	2056
ACT_341	5	130	NA	P88. Denumirea completă a unității, respectiv a subunității la care sunteți angajat(ă)	47.090	79.470	1141	2284
ACT	5	131	NA	P89. Activitatea principală a unității/subunității la care sunteți angajat(ă)	23.525	107.996	1261	2133
LOCM_xx	5	132	NA	P90. Localizarea geografică a locului de muncă	17.334	12.958	1043	1994
LOCM_jud	5	133	NA	P91. În altă localitate din județul:	11.816	8.376	297	418
LOCM_loc	5	134	NA	P92. Localitatea: Municipiul / Orașul / Comuna	9.350	6.349	288	421
LOCM_sat	5	135	NA	P93. Localitatea componentă a municipiului/orașului - sau <u>Satul</u>	9.126	6.278	266	410
LOCM_Tara	5	136	NA	P94. În altă țară:	14.000	9.286	6	14
acons	5	137	NA	P95. Produsele obținute din activitatea agricolă pe cont propriu sunt folosite pentru consumul propriu în proporție de cel puțin jumătate (peste 50%)?	4.000	8.309	1	55
AA_ALM	5	139	NA	P96. Anul	37.189	12.373	37	166

VariableName	section	sub_section	sub_sub_section	QuestionText	CAWI	CAPI	n_cawi	n_capi
LL_ALM	5	140	NA	P97. Luna	12.280	4.852	25	176
FPSS	5	141	NA	P98. Forma de protecție socială a șomerilor pe care o primiți	8.438	9.975	32	159
a	5	142	NA	P99. Cum s-a derulat completarea acestui chestionar?	10.053	NA	3125	NA
b	5	143	NA	P100. Precizați numărul întrebării la care ați întâmpinat cele mai mari dificultăți în a răspunde:	75.655	NA	57	NA

Annex 4 – Enumerator Paradata Report PHC2021 Pilot

1. Pilot Summary

.	Total Interview Process Duration (including introduction, small talk, explanations etc.)	Effective Interview process	Mean hour of the day when an interview was started	Mean response time per question	Number of enumeration areas
Toată România	59.82 minutes	11.32 minutes	11 a.m.	5.58 seconds	961

2. Enumerator Summary

For the explanation of headers of the table see section 3.3. A detailed mode of calculation will be available for actual census.

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bt008	46.84	7.50	13	3.78	56	Toată România
int_s5001	9.91	9.30	9	4.43	53	Toată România
int_bc014	61.97	6.23	11	5.84	55	Toată România
int_db007	98.19	13.24	11	6.24	44	Toată România
int_tr007	59.19	11.71	15	5.75	47	Toată România
int_mm020	35.25	10.91	10	4.75	48	Toată România
int_mm013	34.23	6.61	10	4.02	58	Toată România
int_bv004	78.00	8.85	9	5.66	50	Toată România
int_ot023	97.81	9.93	8	5.50	51	Toată România
int_sv011	120.63	10.71	4	5.65	64	Toată România
int_gl012	26.71	6.46	6	6.59	59	Toată România
int_db011	56.72	7.97	10	4.65	49	Toată România
int_mh003	22.55	13.63	10	6.30	56	Toată România
int_s1001	4.27	3.48	11	3.50	69	Toată România
int_il010	143.64	9.04	9	5.12	35	Toată România
int_nt020	69.40	9.38	15	4.63	50	Toată România
int_cl004	53.30	19.04	6	7.39	60	Toată România
int_sb019	172.87	17.59	6	7.06	50	Toată România
int_nt010	46.73	10.86	13	5.14	60	Toată România
int_sm019	191.96	17.49	14	6.49	50	Toată România
int_gl025	15.92	14.96	7	7.07	53	Toată România
int_cl009	33.57	11.91	14	5.45	54	Toată România
int_bt006	85.42	11.64	11	5.33	56	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_db002	134.05	14.71	6	5.71	54	Toată România
int_il014	71.26	13.50	10	5.15	44	Toată România
int_vn014	29.48	13.00	14	5.86	52	Toată România
int_tr006	22.04	11.98	12	5.60	48	Toată România
int_ag011	45.47	9.30	15	4.68	44	Toată România
int_vl004	35.97	16.19	16	6.28	46	Toată România
int_nt024	81.13	8.83	14	4.57	50	Toată România
int_s5002	24.57	8.22	15	4.18	47	Toată România
int_db010	37.22	10.96	12	5.21	53	Toată România
int_sv026	91.67	13.11	5	5.82	47	Toată România
int_cs010	37.72	20.52	8	7.80	54	Toată România
int_cl005	140.29	13.78	12	5.54	60	Toată România
int_is005	38.07	11.28	10	4.97	65	Toată România
int_tr005	9.42	7.09	9	3.55	48	Toată România
int_sm022	20.41	13.22	7	6.56	50	Toată România
int_ct027	120.79	9.47	6	4.82	53	Toată România
int_gl002	48.14	10.47	12	6.13	52	Toată România
int_ph013	130.11	6.48	11	3.27	49	Toată România
int_sb014	19.53	8.12	6	6.20	55	Toată România
int_bn016	32.76	15.79	11	5.80	49	Toată România
int_tm027	15.00	2.70	9	2.65	104	Toată România
int_sv024	39.04	17.73	7	8.09	51	Toată România
int_sj009	65.97	9.62	10	5.20	50	Toată România
int_bt012	42.31	10.29	13	5.48	52	Toată România
int_vs004	53.37	8.00	8	4.50	56	Toată România
int_ph006	89.23	12.24	10	5.55	48	Toată România
int_sv022	108.10	12.99	13	6.06	49	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ar013	83.62	9.96	9	5.66	60	Toată România
int_bt005	69.63	12.39	12	5.99	50	Toată România
int_ms021	42.59	13.64	12	7.17	49	Toată România
int_ct028	175.95	7.62	3	4.47	49	Toată România
int_vn011	25.44	11.77	14	6.19	51	Toată România
int_vn013	17.70	6.73	10	4.13	80	Toată România
int_cs014	42.50	13.02	7	5.36	50	Toată România
int_cj010	34.55	10.82	12	5.50	39	Toată România
int_vl015	210.60	22.14	6	10.50	67	Toată România
int_gj015	139.27	19.65	6	6.30	52	Toată România
int_mh016	48.65	16.68	12	7.28	48	Toată România
int_db024	96.40	10.13	5	4.92	57	Toată România
int_ct019	72.84	13.11	6	4.93	48	Toată România
int_ab015	15.38	11.86	12	6.05	50	Toată România
int_cs008	43.71	20.44	10	8.09	49	Toată România
int_ph018	17.59	10.84	8	4.72	59	Toată România
int_gl026	28.34	10.79	15	4.85	51	Toată România
int_bz019	12.40	11.36	11	4.28	57	Toată România
int_gl004	10.06	5.64	12	4.21	61	Toată România
int_ph015	18.31	10.37	13	5.24	57	Toată România
int_tl010	35.98	11.31	16	5.52	51	Toată România
int_bn005	81.45	13.21	7	6.18	57	Toată România
int_nt012	70.45	17.68	6	6.97	58	Toată România
int_tr018	50.74	15.43	12	5.97	50	Toată România
int_vs007	38.09	6.88	6	4.06	57	Toată România
int_il011	96.84	12.22	5	6.23	31	Toată România
int_sj006	32.70	10.98	10	5.60	56	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bt021	29.84	7.06	11	4.57	51	Toată România
int_nt005	145.52	18.56	6	8.32	41	Toată România
int_bn010	92.07	14.58	7	6.74	54	Toată România
int_ag020	27.59	17.59	13	6.66	50	Toată România
int_bv015	16.53	8.50	6	4.25	51	Toată România
int_dj008	11.99	9.48	10	4.69	57	Toată România
int_ar004	28.33	17.73	13	7.76	48	Toată România
int_s2002	35.42	10.85	14	4.72	49	Toată România
int_il013	68.63	12.53	9	6.83	35	Toată România
int_hd013	9.19	8.43	16	4.10	52	Toată România
int_ct026	62.40	7.87	15	3.72	45	Toată România
int_il009	62.70	25.18	12	11.77	43	Toată România
int_vs019	8.84	7.71	8	4.19	57	Toată România
int_sv029	80.03	15.23	10	7.27	48	Toată România
int_cl008	166.10	16.72	5	6.74	53	Toată România
int_il004	107.24	13.71	6	6.42	52	Toată România
int_vs002	41.91	9.77	20	5.00	56	Toată România
int_gj011	393.56	13.38	10	7.20	57	Toată România
int_vs010	38.07	9.94	12	4.94	57	Toată România
int_bn009	23.25	14.17	14	6.39	62	Toată România
int_bv024	13.81	11.14	15	4.17	52	Toată România
int_s4003	55.16	14.33	6	5.38	40	Toată România
int_mm016	55.91	10.04	13	4.74	44	Toată România
int_bn003	15.91	9.72	12	4.22	52	Toată România
int_sb020	47.20	15.18	15	6.00	47	Toată România
int_tr003	12.44	9.63	11	5.28	55	Toată România
int_bt020	11.06	9.35	9	4.56	42	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ot019	73.94	15.52	11	8.19	46	Toată România
int_bn019	9.92	7.07	8	3.26	52	Toată România
int_cj011	9.07	7.22	9	4.24	41	Toată România
int_dj016	30.79	6.41	12	3.87	46	Toată România
int_hd020	32.06	15.13	13	7.31	51	Toată România
int_cj019	55.59	7.44	9	4.42	57	Toată România
int_s5006	32.24	8.98	8	4.71	52	Toată România
int_br012	120.02	16.82	15	7.34	53	Toată România
int_br001	12.86	8.07	11	4.65	69	Toată România
int_ot022	113.71	16.60	7	7.59	52	Toată România
int_gj021	171.14	19.12	8	8.07	49	Toată România
int_ms011	15.08	8.76	13	4.97	54	Toată România
int_cs018	101.48	23.86	7	9.03	50	Toată România
int_bh012	65.56	16.07	10	6.93	41	Toată România
int_tm014	13.64	11.97	7	5.04	57	Toată România
int_vn019	37.96	11.38	16	5.21	53	Toată România
int_s4006	94.09	15.20	10	5.80	51	Toată România
int_s1004	12.58	7.86	8	4.29	50	Toată România
int_bc013	113.02	7.61	6	5.30	67	Toată România
int_is003	45.50	8.98	9	5.24	58	Toată România
int_bv019	52.27	12.29	13	4.96	54	Toată România
int_ot008	80.73	11.21	10	5.82	50	Toată România
int_bc026	39.61	13.19	9	6.02	62	Toată România
int_bn018	105.38	14.46	16	5.48	51	Toată România
int_ab021	41.60	15.67	14	5.49	55	Toată România
int_mm009	19.13	6.83	9	3.90	43	Toată România
int_bz008	15.91	8.27	16	5.26	40	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_db004	152.56	10.94	7	5.74	54	Toată România
int_ar012	9.11	8.07	12	5.03	63	Toată România
int_ph003	171.74	12.14	8	4.95	62	Toată România
int_vs015	154.87	8.85	10	5.38	60	Toată România
int_is006	67.02	10.71	9	4.90	62	Toată România
int_gl023	89.91	12.72	14	5.61	49	Toată România
int_hd021	25.13	9.53	10	4.98	39	Toată România
int_vs013	175.39	10.78	17	5.23	57	Toată România
int_s6001	181.69	15.87	14	6.10	56	Toată România
int_cs020	91.08	14.04	10	5.15	50	Toată România
int_mh006	17.18	9.78	6	4.87	45	Toată România
int_cv002	14.72	5.75	12	3.24	57	Toată România
int_cl002	197.09	11.34	6	4.79	58	Toată România
int_dj021	300.74	9.87	6	3.97	50	Toată România
int_bv023	87.20	17.55	6	9.36	61	Toată România
int_s4007	27.98	7.73	12	4.32	47	Toată România
int_ct029	62.89	8.63	12	4.12	57	Toată România
int_nt017	42.90	13.77	12	5.77	54	Toată România
int_mm005	15.93	8.34	15	4.07	61	Toată România
int_db016	104.39	9.76	8	5.23	56	Toată România
int_vl018	111.61	17.32	9	6.83	44	Toată România
int_ag002	54.15	7.52	13	4.97	42	Toată România
int_ag013	45.75	15.38	10	5.65	55	Toată România
int_is020	14.25	7.93	14	5.15	50	Toată România
int_bv018	24.20	11.91	9	4.89	48	Toată România
int_bt003	21.43	9.54	14	5.22	50	Toată România
int_cs005	70.16	13.32	12	6.26	57	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_il006	28.60	16.45	10	6.85	49	Toată România
int_ab020	99.61	16.04	12	6.01	53	Toată România
int_cs012	59.17	16.75	10	7.52	53	Toată România
int_br002	34.00	13.90	9	6.56	52	Toată România
int_ph005	81.04	11.77	12	5.44	46	Toată România
int_cj005	12.95	8.41	15	4.76	42	Toată România
int_gl020	87.03	11.26	5	5.15	52	Toată România
int_mm022	46.23	8.51	13	4.70	52	Toată România
int_is004	19.73	11.12	11	5.42	56	Toată România
int_ag016	20.43	14.78	11	5.65	51	Toată România
int_sv017	77.43	15.54	7	7.52	60	Toată România
int_bc012	48.13	9.82	9	7.05	52	Toată România
int_nt002	108.07	17.94	9	6.37	48	Toată România
int_bn004	22.18	10.88	8	5.43	54	Toată România
int_ot003	8.98	8.07	8	4.97	47	Toată România
int_cj024	16.24	12.43	14	5.99	43	Toată România
int_cv005	8.68	8.40	12	4.47	40	Toată România
int_s4001	172.59	15.67	10	6.74	40	Toată România
int_bh013	20.52	8.77	17	4.45	62	Toată România
int_cj027	37.87	8.96	12	4.89	42	Toată România
int_ct015	74.35	4.55	15	3.29	46	Toată România
int_nt003	116.83	12.78	8	5.59	46	Toată România
int_sb009	32.72	8.99	9	4.82	59	Toată România
int_cs002	61.54	20.89	11	8.21	45	Toată România
int_br010	86.78	19.93	6	7.97	63	Toată România
int_vs023	34.27	8.05	13	4.11	51	Toată România
int_nt026	191.66	8.27	8	3.75	51	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_gr006	187.41	15.79	8	6.12	46	Toată România
int_s4005	26.18	10.83	9	4.46	53	Toată România
int_sv012	60.37	10.59	15	6.40	60	Toată România
int_dj010	135.66	8.85	9	4.27	49	Toată România
int_cl003	164.96	16.43	6	6.36	60	Toată România
int_ph008	98.32	15.14	7	7.65	51	Toată România
int_ar010	19.52	14.43	11	7.39	40	Toată România
int_db021	151.67	9.06	7	4.20	43	Toată România
int_sv016	17.92	8.10	10	4.42	50	Toată România
int_vl016	116.53	13.07	9	7.04	46	Toată România
int_bt017	68.86	10.28	10	4.95	55	Toată România
int_is017	56.61	14.95	10	6.47	51	Toată România
int_bn017	20.70	12.25	12	5.20	53	Toată România
int_dj017	53.56	10.81	11	4.59	51	Toată România
int_gj016	113.06	13.60	13	5.52	45	Toată România
int_s2004	8.45	8.26	14	4.04	49	Toată România
int_tm011	26.74	13.57	15	6.17	47	Toată România
int_vs001	55.61	15.25	10	7.07	50	Toată România
int_hd019	25.80	12.82	11	6.08	47	Toată România
int_tl001	67.85	8.28	8	4.58	58	Toată România
int_sj008	33.47	8.35	7	4.88	59	Toată România
int_ph009	114.60	11.16	15	5.56	60	Toată România
int_is001	34.99	9.89	11	7.05	43	Toată România
int_bz020	32.48	11.90	8	5.52	56	Toată România
int_gr011	39.40	22.56	16	9.62	43	Toată România
int_bn020	9.12	8.22	9	3.60	50	Toată România
int_cl013	15.84	12.01	12	5.84	49	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_nt011	204.47	13.79	5	6.90	45	Toată România
int_tl011	61.03	20.08	10	8.16	49	Toată România
int_gl014	7.46	6.29	16	4.23	48	Toată România
int_vl003	85.56	10.34	9	5.64	54	Toată România
int_dj024	83.68	11.46	9	5.38	50	Toată România
int_gj012	103.92	10.26	13	4.94	57	Toată România
int_ar019	31.57	11.86	11	5.39	55	Toată România
int_ar020	41.61	13.48	12	5.55	55	Toată România
int_ph027	7.89	6.70	16	3.78	51	Toată România
int_bz003	77.94	9.96	16	5.25	58	Toată România
int_tr016	10.69	9.59	11	5.62	46	Toată România
int_sv021	46.63	18.56	9	7.63	51	Toată România
int_cl012	31.82	12.63	14	5.94	61	Toată România
int_bc016	43.95	9.97	9	5.73	55	Toată România
int_s4002	49.63	9.10	7	4.80	40	Toată România
int_bc027	23.20	4.34	9	4.02	51	Toată România
int_ag003	44.72	6.22	14	5.13	50	Toată România
int_hd001	48.84	12.18	7	6.49	39	Toată România
int_ab012	69.52	12.50	9	6.41	59	Toată România
int_sj002	37.37	14.50	7	6.14	58	Toată România
int_db003	99.86	11.61	10	6.00	57	Toată România
int_sm018	34.33	16.27	14	6.44	51	Toată România
int_gr007	156.54	13.47	16	6.30	40	Toată România
int_mh007	13.25	9.53	12	5.15	25	Toată România
int_vl019	265.70	20.82	9	6.98	60	Toată România
int_br006	107.40	8.53	14	5.46	41	Toată România
int_cl015	25.64	12.35	8	5.09	54	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ct009	79.58	12.35	7	5.75	50	Toată România
int_cs001	98.28	22.66	7	9.27	53	Toată România
int_sv001	12.32	8.85	10	4.85	47	Toată România
int_gj022	181.56	14.10	6	6.28	48	Toată România
int_sv009	23.03	8.35	12	3.77	59	Toată România
int_vl022	171.98	16.52	7	6.70	61	Toată România
int_gl015	6.81	4.47	14	3.91	44	Toată România
int_vn017	65.48	12.31	5	6.01	46	Toată România
int_ab004	13.91	12.61	9	6.01	53	Toată România
int_bt004	14.57	9.87	6	5.31	60	Toată România
int_vl021	176.37	11.19	11	5.22	50	Toată România
int_ag014	22.19	12.61	8	5.33	55	Toată România
int_gl013	7.06	6.84	8	4.54	50	Toată România
int_db019	33.37	11.92	15	5.49	50	Toată România
int_vn010	121.70	26.17	10	9.60	51	Toată România
int_br019	41.26	18.71	12	7.20	49	Toată România
int_is011	5.96	4.11	13	3.79	55	Toată România
int_gr002	111.80	15.42	9	7.37	41	Toată România
int_s6007	248.47	10.20	13	4.87	52	Toată România
int_s2001	35.39	15.80	13	6.08	47	Toată România
int_sm015	20.20	10.56	10	4.89	56	Toată România
int_is024	22.39	8.53	13	4.57	58	Toată România
int_cl006	173.17	17.05	2	6.38	55	Toată România
int_gl016	26.78	7.73	14	4.70	58	Toată România
int_dj002	16.35	10.34	15	5.20	57	Toată România
int_ph014	155.01	7.22	6	3.95	48	Toată România
int_mh009	132.53	18.84	10	8.04	51	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bc001	32.85	9.37	11	5.61	44	Toată România
int_ot015	27.09	10.92	10	5.96	41	Toată România
int_cl001	215.00	16.58	11	6.23	54	Toată România
int_bz002	15.07	13.38	10	7.02	44	Toată România
int_nt018	13.38	11.30	13	4.95	53	Toată România
int_sb006	7.45	6.53	10	4.88	55	Toată România
int_bt010	117.77	9.68	11	5.68	40	Toată România
int_ct023	91.55	11.22	11	4.56	49	Toată România
int_ms024	20.87	11.38	9	5.30	50	Toată România
int_sm005	65.53	16.27	7	9.01	59	Toată România
int_bv002	61.27	7.23	15	3.81	48	Toată România
int_bv010	9.75	7.73	9	5.21	56	Toată România
int_sv014	39.69	10.73	12	5.50	52	Toată România
int_bt013	46.29	8.75	10	4.17	50	Toată România
int_gj002	385.20	15.32	7	7.08	54	Toată România
int_gl010	10.03	7.60	13	4.34	59	Toată România
int_nt015	60.12	14.46	7	6.88	44	Toată România
int_db022	128.78	10.54	6	4.64	52	Toată România
int_tm005	69.04	11.26	8	6.94	58	Toată România
int_tl007	105.00	24.39	10	9.26	51	Toată România
int_bv021	23.70	9.24	14	4.18	82	Toată România
int_vn005	11.28	8.52	11	7.04	36	Toată România
int_cj025	8.49	4.97	14	5.48	57	Toată România
int_bh004	85.93	12.01	11	6.34	54	Toată România
int_ar025	34.89	18.13	8	7.25	49	Toată România
int_bn012	36.25	14.55	6	6.59	62	Toată România
int_mm018	11.76	5.21	11	3.01	47	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_cj002	13.49	12.12	14	5.11	56	Toată România
int_gj019	204.35	15.91	7	7.00	46	Toată România
int_sm023	42.13	14.83	12	5.66	53	Toată România
int_ct005	210.52	10.80	9	4.35	57	Toată România
int_sv019	41.87	11.05	12	4.61	51	Toată România
int_ph007	143.99	13.39	7	5.68	51	Toată România
int_bz014	46.13	9.13	8	5.16	60	Toată România
int_mm014	110.01	9.80	6	4.31	51	Toată România
int_vs003	88.66	11.88	6	5.46	53	Toată România
int_mm012	19.59	10.16	14	6.21	48	Toată România
int_bc020	81.39	22.93	5	8.31	49	Toată România
int_hr008	9.68	9.01	14	4.81	50	Toată România
int_ar018	20.12	15.93	11	6.65	48	Toată România
int_ot001	104.26	10.61	7	7.29	52	Toată România
int_bz009	15.04	9.92	14	5.55	60	Toată România
int_ct004	208.33	9.90	9	4.11	47	Toată România
int_cj004	34.20	7.36	13	4.63	44	Toată România
int_br009	63.07	13.92	8	6.18	50	Toată România
int_ct002	17.59	12.58	14	5.81	48	Toată România
int_ab010	131.98	12.01	9	5.98	38	Toată România
int_ot024	60.33	10.26	11	6.19	52	Toată România
int_tr010	35.20	10.25	15	4.99	46	Toată România
int_vs024	30.39	11.06	10	6.87	51	Toată România
int_cl007	38.43	11.58	9	5.33	56	Toată România
int_ct020	90.62	13.25	15	5.92	51	Toată România
int_ct010	61.11	8.47	15	4.70	60	Toată România
int_gj014	172.32	13.51	12	5.79	50	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ag024	101.86	15.86	11	6.35	50	Toată România
int_ar011	7.05	6.41	12	4.27	60	Toată România
int_bz022	31.84	11.35	13	5.23	45	Toată România
int_hr002	14.53	7.99	11	4.03	55	Toată România
int_br004	67.82	17.40	8	7.64	42	Toată România
int_bc005	58.03	10.90	8	5.62	40	Toată România
int_ot007	24.88	9.78	12	5.12	47	Toată România
int_bh007	37.22	9.47	10	4.18	43	Toată România
int_il003	18.96	10.16	9	4.61	53	Toată România
int_bc024	8.15	7.86	14	4.96	52	Toată România
int_sv027	34.86	11.90	9	5.38	53	Toată România
int_il005	74.88	12.57	7	5.11	47	Toată România
int_is023	22.39	15.88	15	7.93	48	Toată România
int_s5004	78.14	9.72	7	6.87	57	Toată România
int_bz015	17.20	9.94	10	6.57	71	Toată România
int_sm013	21.86	11.59	13	5.01	55	Toată România
int_cs009	29.27	13.17	10	6.11	55	Toată România
int_ar017	38.88	13.86	9	6.37	52	Toată România
int_dj026	99.74	7.45	6	4.47	51	Toată România
int_bc019	61.14	8.15	8	4.56	49	Toată România
int_mh015	76.57	15.99	8	7.41	51	Toată România
int_ot009	33.40	12.05	12	5.50	43	Toată România
int_s1006	14.54	2.95	15	3.60	53	Toată România
int_sj007	55.72	14.91	14	6.73	50	Toată România
int_hr004	35.36	9.33	13	4.69	56	Toată România
int_sb021	50.70	18.63	10	8.14	53	Toată România
int_ag022	48.45	15.27	16	5.94	50	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_tr002	27.99	7.56	15	4.67	49	Toată România
int_sm008	15.14	10.36	12	5.60	54	Toată România
int_ar023	32.06	15.27	10	6.75	52	Toată România
int_vl008	120.49	13.94	12	5.47	49	Toată România
int_db020	201.12	10.49	6	5.18	55	Toată România
int_nt021	86.30	12.13	10	5.26	54	Toată România
int_s6006	24.33	12.33	9	4.84	44	Toată România
int_hd016	8.07	7.12	12	5.48	49	Toată România
int_ag023	92.72	17.78	7	6.85	54	Toată România
int_mm017	26.50	11.21	11	5.24	55	Toată România
int_ph028	34.81	16.40	9	6.85	44	Toată România
int_ag018	37.75	11.64	13	5.61	51	Toată România
int_nt004	202.32	14.47	11	6.85	45	Toată România
int_gj013	86.55	10.82	14	6.07	58	Toată România
int_nt025	102.09	8.66	8	3.86	49	Toată România
int_ab001	36.87	12.04	16	5.89	56	Toată România
int_dj003	46.69	8.60	14	5.07	51	Toată România
int_bt018	63.52	8.50	8	4.37	47	Toată România
int_bh018	50.07	17.71	13	6.64	49	Toată România
int_tm029	19.84	12.54	10	5.24	59	Toată România
int_gj010	29.74	7.03	11	4.64	40	Toată România
int_bz016	10.67	10.22	7	4.96	56	Toată România
int_bz013	13.21	12.08	11	4.99	46	Toată România
int_bz004	27.50	11.06	5	6.21	50	Toată România
int_bz017	29.27	12.12	6	6.89	43	Toată România
int_bn013	17.99	11.04	12	5.84	51	Toată România
int_ph012	143.41	8.61	6	4.29	49	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bt015	53.86	7.45	9	4.12	54	Toată România
int_dj014	122.54	11.14	6	5.21	52	Toată România
int_cs017	75.41	17.94	7	6.71	50	Toată România
int_is018	47.09	10.88	12	5.39	50	Toată România
int_ar007	16.25	11.63	8	5.76	42	Toată România
int_cj028	50.27	13.84	11	7.26	47	Toată România
int_tr012	5.84	4.26	13	3.53	48	Toată România
int_ag015	18.22	9.17	12	6.55	56	Toată România
int_mm001	38.26	8.65	13	4.96	60	Toată România
int_sb001	24.00	12.79	17	6.17	66	Toată România
int_db025	32.96	13.36	12	5.13	49	Toată România
int_vn007	47.79	14.25	6	7.12	41	Toată România
int_sb015	27.06	12.17	16	6.50	46	Toată România
int_cs016	15.85	13.82	8	6.49	50	Toată România
int_vs008	24.79	10.83	14	5.60	64	Toată România
int_gr004	20.86	16.27	15	6.30	42	Toată România
int_vs018	38.43	9.10	10	5.59	53	Toată România
int_mh017	28.42	16.58	14	6.48	50	Toată România
int_bc023	19.34	11.27	14	5.18	55	Toată România
int_tm023	26.00	11.49	10	6.57	41	Toată România
int_vl005	219.98	16.87	4	7.49	44	Toată România
int_gj007	103.48	13.88	6	6.56	55	Toată România
int_db013	99.36	19.06	16	8.47	48	Toată România
int_tr017	33.02	9.44	8	5.74	47	Toată România
int_ct012	38.35	14.82	11	5.65	50	Toată România
int_ct024	46.76	14.37	15	5.85	52	Toată România
int_ag021	78.62	19.61	9	7.64	48	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_sb016	39.89	13.41	9	6.86	51	Toată România
int_gj003	174.07	19.85	7	7.82	58	Toată România
int_bz011	39.83	19.28	10	8.19	58	Toată România
int_hr001	36.59	15.51	14	6.91	52	Toată România
int_mm023	70.90	14.74	11	5.71	52	Toată România
int_db017	86.50	14.76	10	6.99	56	Toată România
int_cl014	10.47	10.19	17	4.70	47	Toată România
int_cj018	27.56	10.62	13	5.66	51	Toată România
int_bz010	31.83	10.39	13	5.99	58	Toată România
int_db006	154.61	12.48	10	6.18	60	Toată România
int_ph021	32.47	12.19	6	5.91	53	Toată România
int_vs014	215.41	13.03	8	6.08	57	Toată România
int_bh009	60.56	13.48	11	6.80	50	Toată România
int_sv004	8.54	7.96	9	4.22	43	Toată România
int_ms017	47.78	7.27	15	5.24	49	Toată România
int_db012	78.09	14.73	6	7.88	54	Toată România
int_ot011	30.96	6.46	15	4.46	57	Toată România
int_s5005	25.72	13.06	14	7.06	48	Toată România
int_vl023	185.74	14.21	1	6.39	55	Toată România
int_sb003	21.56	9.95	14	5.22	55	Toată România
int_gl009	94.37	10.86	10	7.66	50	Toată România
int_bn001	32.67	8.87	14	4.30	57	Toată România
int_tr015	16.72	9.91	8	5.05	40	Toată România
int_gl008	11.43	6.67	7	4.71	51	Toată România
int_sv006	56.27	5.29	12	3.87	53	Toată România
int_s3005	29.99	3.04	9	2.61	51	Toată România
int_gj017	227.16	23.32	11	8.50	48	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ab007	38.27	11.23	12	5.52	54	Toată România
int_nt006	9.90	5.49	13	4.09	53	Toată România
int_sj004	71.54	10.14	12	5.36	58	Toată România
int_ph024	24.43	14.62	14	6.19	48	Toată România
int_hr011	46.29	15.20	13	6.80	49	Toată România
int_bh003	47.44	11.40	12	5.34	56	Toată România
int_ct001	24.84	7.14	9	3.76	47	Toată România
int_vs005	19.47	10.16	6	5.42	56	Toată România
int_ag012	68.98	12.00	5	7.86	63	Toată România
int_ph001	96.53	8.28	7	4.94	60	Toată România
int_tm021	120.72	13.26	13	4.35	52	Toată România
int_vn018	43.31	13.72	11	5.95	50	Toată România
int_ph011	159.03	20.28	10	7.59	44	Toată România
int_ct006	137.49	16.56	15	6.38	58	Toată România
int_vn021	167.86	15.50	14	6.83	44	Toată România
int_bt024	27.74	8.03	8	5.23	51	Toată România
int_bn002	86.70	11.50	12	6.09	59	Toată România
int_vn015	41.95	18.62	9	7.18	38	Toată România
int_ot021	44.76	16.02	6	7.09	49	Toată România
int_tm019	82.48	14.78	7	4.56	60	Toată România
int_ms019	12.72	12.34	7	5.92	50	Toată România
int_ms013	83.11	7.73	8	4.41	60	Toată România
int_ab014	18.66	16.09	17	6.19	40	Toată România
int_hr013	68.83	13.71	15	5.66	44	Toată România
int_is016	45.34	11.55	16	6.43	43	Toată România
int_is015	86.59	5.44	9	2.80	58	Toată România
int_bc008	37.06	10.74	11	6.22	57	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bh023	28.08	12.36	15	5.54	68	Toată România
int_cj001	24.23	10.33	13	4.56	49	Toată România
int_bc028	46.12	8.89	8	5.15	68	Toată România
int_dj025	61.81	9.01	6	4.16	55	Toată România
int_gl006	12.91	4.96	9	3.44	50	Toată România
int_bv026	43.89	8.79	12	4.37	59	Toată România
int_nt019	65.83	7.35	6	3.95	49	Toată România
int_bc022	8.23	7.05	11	4.46	55	Toată România
int_ph022	62.07	7.50	8	3.67	44	Toată România
int_ab003	14.67	14.25	13	6.81	53	Toată România
int_vs017	17.38	11.56	17	6.42	54	Toată România
int_ar008	58.03	11.90	15	6.40	53	Toată România
int_s6003	28.27	8.34	7	4.52	48	Toată România
int_mh002	14.77	12.15	10	6.44	39	Toată România
int_sv023	70.97	12.43	6	6.27	47	Toată România
int_ct022	80.24	9.13	10	4.79	50	Toată România
int_bn014	34.24	13.17	7	4.98	51	Toată România
int_bz012	17.52	11.55	10	5.87	57	Toată România
int_hd002	47.36	8.91	9	5.72	54	Toată România
int_ms004	60.08	10.54	9	4.89	43	Toată România
int_sj010	63.49	17.88	14	7.18	50	Toată România
int_ot016	61.77	9.73	6	5.78	41	Toată România
int_ar006	11.81	7.40	14	5.12	58	Toată România
int_gj008	68.11	16.02	7	7.51	56	Toată România
int_ms015	18.10	9.27	13	5.20	53	Toată România
int_gj004	201.85	19.08	7	7.62	57	Toată România
int_ph020	23.83	17.92	11	7.01	45	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ph010	120.58	11.60	15	5.86	55	Toată România
int_ag025	188.13	21.45	5	6.79	50	Toată România
int_ag017	18.94	14.22	10	5.99	50	Toată România
int_hr006	11.67	8.26	14	4.42	52	Toată România
int_ct011	14.13	9.00	13	4.14	50	Toată România
int_bn007	86.77	17.25	9	7.74	63	Toată România
int_br005	37.29	15.54	14	7.39	43	Toată România
int_nt007	81.36	6.54	12	4.44	48	Toată România
int_ab011	53.36	17.96	8	6.74	48	Toată România
int_ar002	28.41	10.51	11	5.55	60	Toată România
int_ot013	58.31	7.86	8	5.34	60	Toată România
int_sm021	20.34	10.18	8	4.68	53	Toată România
int_sv005	47.10	8.81	11	4.73	62	Toată România
int_gj006	110.19	18.84	13	6.76	47	Toată România
int_sv010	55.99	9.93	8	4.63	59	Toată România
int_br007	100.46	13.97	7	5.90	52	Toată România
int_hr012	31.90	18.42	12	7.14	50	Toată România
int_vl006	192.94	10.75	13	4.87	49	Toată România
int_ag005	12.91	11.82	14	5.50	46	Toată România
int_mh004	20.40	13.84	6	5.92	57	Toată România
int_cs004	105.40	13.46	8	6.39	48	Toată România
int_ab002	24.05	11.99	16	5.60	53	Toată România
int_gr005	18.14	9.59	9	4.54	49	Toată România
int_bv011	22.60	6.72	6	3.85	59	Toată România
int_sv028	55.70	10.43	13	5.08	48	Toată România
int_cj006	11.93	10.62	12	5.55	42	Toată România
int_s3003	2.63	2.29	16	3.74	45	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_nt023	100.13	9.56	14	5.27	58	Toată România
int_ag019	86.58	14.40	13	4.85	51	Toată România
int_il008	60.15	13.48	12	7.17	23	Toată România
int_sv013	50.07	10.35	8	4.91	52	Toată România
int_mm010	43.18	12.22	11	6.13	50	Toată România
int_sj011	28.69	14.50	8	6.70	51	Toată România
int_bc006	62.16	8.88	5	4.70	60	Toată România
int_s3004	1.82	1.77	14	2.79	54	Toată România
int_is008	50.85	9.66	10	5.87	46	Toată România
int_sb010	76.29	10.90	6	6.00	60	Toată România
int_gj009	210.07	18.78	8	7.63	48	Toată România
int_dj006	235.02	11.42	11	5.29	57	Toată România
int_dj012	129.79	11.81	9	4.55	43	Toată România
int_mm007	43.21	9.94	17	3.96	46	Toată România
int_dj020	154.68	14.10	11	5.06	51	Toată România
int_sj003	33.65	9.47	12	5.07	62	Toată România
int_ab013	15.47	12.59	10	4.80	40	Toată România
int_ot012	198.67	14.73	10	7.17	55	Toată România
int_ct017	110.72	9.19	8	3.90	51	Toată România
int_br003	113.41	15.70	10	8.13	49	Toată România
int_vl017	137.49	9.92	15	5.82	53	Toată România
int_bc021	13.00	11.64	10	5.19	56	Toată România
int_nt022	124.79	12.08	15	5.97	55	Toată România
int_sm020	39.86	15.02	14	7.52	50	Toată România
int_tr001	88.26	10.82	13	5.13	59	Toată România
int_vl013	70.79	13.36	6	6.65	59	Toată România
int_vl012	56.76	11.06	8	5.94	45	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_cv012	16.72	15.47	12	5.54	47	Toată România
int_sv020	24.73	12.14	10	6.33	52	Toată România
int_ph026	29.30	14.47	15	5.81	54	Toată România
int_bh001	101.14	12.19	6	6.76	50	Toată România
int_ms008	14.08	8.71	8	4.45	53	Toată România
int_is002	18.53	7.46	10	4.53	58	Toată România
int_vl020	342.76	17.92	4	6.88	56	Toată România
int_hd011	90.08	15.22	7	6.13	52	Toată România
int_tr004	54.14	10.88	15	5.65	60	Toată România
int_sb025	93.59	25.06	9	8.72	50	Toată România
int_hr019	21.28	18.42	15	6.99	48	Toată România
int_dj022	43.46	14.19	7	4.51	50	Toată România
int_is025	12.52	12.11	11	4.88	57	Toată România
int_sj005	47.05	15.41	14	6.70	47	Toată România
int_vn004	15.87	9.07	17	5.34	51	Toată România
int_nt001	97.52	15.40	12	6.02	54	Toată România
int_vs006	41.32	6.33	8	3.89	59	Toată România
int_cj016	25.03	13.81	14	7.03	52	Toată România
int_tl004	88.89	10.92	9	4.88	56	Toată România
int_tm020	10.36	8.59	11	5.41	54	Toată România
int_bn015	54.07	10.74	9	5.45	57	Toată România
int_bc017	101.80	7.16	10	4.45	66	Toată România
int_dj023	138.61	14.86	8	6.07	40	Toată România
int_is029	66.30	9.53	11	5.21	57	Toată România
int_hd017	26.32	7.26	6	4.36	40	Toată România
int_bh019	34.82	21.60	14	7.12	24	Toată România
int_il001	95.15	13.83	8	6.39	46	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bn008	51.73	19.20	11	7.11	64	Toată România
int_sb004	22.51	4.42	15	4.18	62	Toată România
int_bv027	18.99	12.19	14	4.94	58	Toată România
int_tm012	133.54	10.86	7	4.85	54	Toată România
int_ms010	42.10	7.00	7	4.35	56	Toată România
int_br015	35.14	12.05	15	6.72	44	Toată România
int_tm002	18.16	6.00	6	3.75	54	Toată România
int_hd022	17.94	15.66	17	6.42	46	Toată România
int_is028	39.96	7.06	14	4.32	57	Toată România
int_hd023	30.37	11.54	15	6.55	52	Toată România
int_db014	42.99	11.28	6	5.26	47	Toată România
int_ot010	96.34	9.70	13	4.90	44	Toată România
int_db005	47.83	12.85	16	6.06	50	Toată România
int_mm011	49.29	8.01	15	4.24	48	Toată România
int_bv008	49.50	9.97	10	6.26	65	Toată România
int_vl002	86.71	19.34	6	9.03	44	Toată România
int_cv010	15.04	11.38	17	4.87	46	Toată România
int_ms022	11.02	7.00	11	3.98	49	Toată România
int_tm009	10.35	7.14	16	4.26	48	Toată România
int_ms002	64.41	7.31	6	4.22	57	Toată România
int_ct013	98.22	12.31	14	6.04	48	Toată România
int_bh021	36.38	25.83	11	8.35	48	Toată România
int_gl005	78.01	8.17	12	4.73	60	Toată România
int_ct018	19.48	8.14	14	3.98	50	Toată România
int_tm026	20.26	14.24	18	7.08	52	Toată România
int_bv007	9.68	8.41	8	4.58	53	Toată România
int_is013	24.58	5.19	7	4.33	59	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ab008	29.55	15.07	7	5.78	45	Toată România
int_cj003	8.92	8.54	9	4.31	48	Toată România
int_cs011	45.62	20.89	9	7.20	53	Toată România
int_ms005	41.57	7.72	9	4.77	48	Toată România
int_tm013	130.29	10.55	9	4.81	43	Toată România
int_bc025	59.12	13.16	8	6.56	65	Toată România
int_bz007	36.71	10.77	18	6.23	41	Toată România
int_ph004	60.24	8.62	12	4.45	50	Toată România
int_db018	45.45	9.68	10	5.30	51	Toată România
int_bh017	22.07	15.67	9	7.30	45	Toată România
int_cj017	33.17	13.79	10	7.60	48	Toată România
int_ms007	13.22	4.02	15	3.03	51	Toată România
int_bh005	25.86	12.60	14	6.59	54	Toată România
int_mm015	88.37	11.71	12	4.65	47	Toată România
int_cs006	123.87	17.57	8	6.85	55	Toată România
int_sm006	66.92	14.39	13	7.06	50	Toată România
int_sm010	21.80	6.38	10	3.69	43	Toată România
int_ar024	35.83	12.07	12	6.30	49	Toată România
int_hr005	16.80	8.28	14	5.06	53	Toată România
int_ag010	79.54	10.42	6	4.78	53	Toată România
int_mh008	29.62	18.70	10	7.54	43	Toată România
int_bh024	61.83	19.74	13	7.90	52	Toată România
int_gr012	75.89	16.91	9	7.48	52	Toată România
int_vn003	52.07	14.14	11	7.57	51	Toată România
int_vn012	67.23	9.86	13	4.80	40	Toată România
int_gj005	185.07	13.24	10	6.12	62	Toată România
int_tl006	53.52	12.49	12	5.55	46	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ms023	17.15	16.59	16	6.05	51	Toată România
int_bc018	12.11	7.28	12	5.04	66	Toată România
int_gl018	25.84	13.55	11	5.89	51	Toată România
int_bh026	13.04	11.60	9	4.80	53	Toată România
int_ph019	50.81	14.43	5	7.11	49	Toată România
int_ct008	39.44	7.57	10	4.93	61	Toată România
int_s2003	12.75	10.38	12	5.43	57	Toată România
int_cs007	196.13	18.47	9	7.97	50	Toată România
int_ms014	48.16	20.85	13	7.52	60	Toată România
int_gl011	120.64	10.51	12	6.75	59	Toată România
int_cj026	14.49	8.26	13	4.71	47	Toată România
int_mh012	26.46	17.61	8	8.66	51	Toată România
int_tm006	221.23	5.20	9	3.50	54	Toată România
int_cv009	12.39	12.09	16	5.02	42	Toată România
int_mm004	22.65	6.52	9	4.43	48	Toată România
int_tl009	109.91	16.91	8	7.83	46	Toată România
int_il007	119.22	16.69	10	6.16	49	Toată România
int_br008	144.35	16.01	13	6.56	49	Toată România
int_sb012	74.05	6.19	15	5.29	43	Toată România
int_gr003	185.79	11.99	7	5.65	43	Toată România
int_ar009	14.74	13.34	13	7.19	56	Toată România
int_s5003	11.29	6.40	10	3.44	53	Toată România
int_mm003	43.95	11.20	7	5.49	46	Toată România
int_tm016	96.56	7.48	6	3.91	51	Toată România
int_cj022	18.57	13.45	6	6.19	59	Toată România
int_gr008	185.25	12.91	11	7.41	38	Toată România
int_il002	169.95	17.63	12	7.14	44	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_bv014	31.62	7.19	9	4.33	83	Toată România
int_vn022	403.24	15.92	12	6.84	45	Toată România
int_cj014	15.62	7.06	8	3.75	46	Toată România
int_gl019	10.30	9.34	11	5.09	50	Toată România
int_ms001	60.65	8.95	8	6.48	60	Toată România
int_dj011	251.88	16.65	8	6.69	55	Toată România
int_hd014	6.07	2.73	12	3.64	56	Toată România
int_ph029	17.58	6.74	12	3.60	55	Toată România
int_s6002	33.21	13.74	12	6.83	52	Toată România
int_bn006	30.00	14.52	11	6.41	55	Toată România
int_br011	120.04	11.68	15	5.20	61	Toată România
int_sv002	6.96	6.70	9	4.09	46	Toată România
int_cj007	27.25	14.37	14	6.13	53	Toată România
int_sm017	56.94	24.90	12	9.40	54	Toată România
int_is009	52.16	5.21	14	3.65	47	Toată România
int_tm024	24.76	10.30	10	5.51	46	Toată România
int_cl016	46.47	14.07	12	6.21	50	Toată România
int_bn011	17.75	14.77	16	6.62	49	Toată România
int_tl003	63.49	16.43	13	6.49	51	Toată România
int_s3007	50.13	10.42	17	6.01	40	Toată România
int_cv004	49.30	13.74	14	7.14	50	Toată România
int_cj012	43.18	12.64	6	6.02	60	Toată România
int_bh006	43.05	10.22	15	4.29	54	Toată România
int_br014	35.50	9.35	14	4.62	42	Toată România
int_bz005	105.27	11.02	10	5.83	40	Toată România
int_ct007	171.65	17.71	6	7.56	62	Toată România
int_ms026	23.65	10.12	6	5.08	51	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_tm025	23.50	9.83	11	5.33	55	Toată România
int_is022	5.34	3.47	16	2.47	53	Toată România
int_gl001	11.92	2.65	7	2.94	50	Toată România
int_vl007	129.05	8.59	12	5.13	47	Toată România
int_bh020	45.54	20.87	12	7.87	35	Toată România
int_bv017	35.25	7.37	7	4.95	55	Toată România
int_hd010	28.97	4.86	9	3.64	62	Toată România
int_bc015	4.66	4.27	16	4.11	55	Toată România
int_tm018	13.93	4.10	13	2.84	53	Toată România
int_ar021	57.36	7.75	10	4.62	50	Toată România
int_bc009	87.35	9.96	11	5.92	61	Toată România
int_nt014	256.61	6.84	14	3.54	49	Toată România
int_sv015	21.58	4.74	11	3.30	51	Toată România
int_tr019	44.86	12.81	10	5.45	53	Toată România
int_br016	46.82	8.92	6	4.54	57	Toată România
int_ms018	74.62	10.40	13	4.81	49	Toată România
int_bh002	94.13	12.29	6	6.85	47	Toată România
int_mm025	88.20	11.07	7	5.17	44	Toată România
int_sv008	29.36	9.24	7	5.17	53	Toată România
int_hr020	43.27	16.71	7	6.83	44	Toată România
int_ar003	18.00	10.71	12	5.69	52	Toată România
int_is019	9.48	8.21	10	4.34	42	Toată România
int_bz018	25.19	13.77	15	5.60	45	Toată România
int_sj012	75.54	18.52	16	7.91	50	Toată România
int_mh011	82.97	21.04	5	8.39	49	Toată România
int_sm003	83.67	6.71	9	4.41	47	Toată România
int_is007	22.36	5.35	15	3.20	54	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_mm024	17.34	11.35	8	5.68	50	Toată România
int_sb024	89.69	20.89	8	9.91	50	Toată România
int_mh001	18.20	13.85	13	6.66	48	Toată România
int_bv012	10.97	7.79	9	4.79	58	Toată România
int_vn009	32.85	10.61	15	5.92	59	Toată România
int_db008	8.49	7.34	14	5.13	51	Toată România
int_cj008	10.56	9.01	12	5.02	44	Toată România
int_ab017	39.56	8.86	14	3.75	60	Toată România
int_cv001	13.32	9.09	14	4.73	50	Toată România
int_cl011	43.88	14.22	11	5.99	52	Toată România
int_bh016	40.90	11.77	15	6.34	47	Toată România
int_bh015	67.69	10.98	14	5.96	46	Toată România
int_bh010	170.97	13.42	9	7.48	50	Toată România
int_tm015	42.59	4.41	14	2.75	58	Toată România
int_vs009	78.87	10.65	12	4.73	60	Toată România
int_ar014	81.36	9.94	7	5.72	60	Toată România
int_hd018	23.63	11.84	12	6.96	48	Toată România
int_sv025	22.07	16.63	13	7.44	49	Toată România
int_gr010	122.89	13.60	7	5.95	46	Toată România
int_hd015	46.12	7.78	12	4.36	52	Toată România
int_dj019	194.32	13.90	15	5.11	49	Toată România
int_cl017	17.04	11.74	14	6.29	51	Toată România
int_dj018	92.45	12.00	14	5.87	51	Toată România
int_hr016	27.93	20.54	17	8.73	49	Toată România
int_ar015	53.15	14.92	13	8.69	30	Toată România
int_hd004	60.18	7.85	11	4.91	37	Toată România
int_cv011	21.31	19.70	14	7.59	48	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_mm019	27.58	12.44	6	5.45	48	Toată România
int_s2005	43.81	13.29	15	6.57	45	Toată România
int_bc002	15.27	6.44	9	4.85	49	Toată România
int_hr007	18.08	11.96	17	6.78	45	Toată România
int_vn006	29.39	7.13	7	4.39	42	Toată România
int_tm022	29.32	17.39	10	6.40	52	Toată România
int_sm004	29.97	10.91	16	6.12	50	Toată România
int_gl024	19.81	9.81	10	4.56	50	Toată România
int_br021	15.86	12.80	8	5.59	50	Toată România
int_s6005	53.35	6.82	15	4.33	53	Toată România
int_bh025	43.37	26.32	17	10.37	46	Toată România
int_gr001	80.49	13.93	7	6.04	51	Toată România
int_ct025	34.43	8.57	14	4.66	45	Toată România
int_bh008	54.15	13.65	5	6.74	45	Toată România
int_ab016	38.03	17.02	11	5.48	51	Toată România
int_ab009	8.46	8.25	9	3.82	52	Toată România
int_ph025	14.20	13.43	8	6.16	46	Toată România
int_vs025	19.52	7.09	16	4.40	53	Toată România
int_cv008	25.71	17.93	12	7.60	41	Toată România
int_is010	10.62	8.45	18	4.63	65	Toată România
int_tr009	24.23	5.32	10	4.32	57	Toată România
int_cl010	40.06	5.71	15	3.91	59	Toată România
int_s3001	11.05	9.31	9	5.23	47	Toată România
int_bv003	7.73	6.26	7	4.00	55	Toată România
int_bv016	38.05	9.03	7	5.15	71	Toată România
int_bv013	28.06	10.81	8	5.86	56	Toată România
int_vs016	77.25	10.90	8	5.78	53	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_hd024	16.86	9.05	14	5.06	60	Toată România
int_br020	36.06	14.76	5	6.30	58	Toată România
int_ar005	11.42	7.08	14	4.16	56	Toată România
int_hd012	20.47	8.02	11	3.45	45	Toată România
int_sv007	16.07	9.20	13	4.07	50	Toată România
int_sb018	17.46	12.13	13	7.93	53	Toată România
int_gl017	9.08	8.47	9	5.15	52	Toată România
int_sj001	53.09	16.84	15	7.78	52	Toată România
int_vn024	57.44	13.00	13	6.33	47	Toată România
int_tm001	164.77	6.68	7	4.01	48	Toată România
int_hd008	48.27	6.58	11	4.22	44	Toată România
int_sm012	21.19	15.83	12	7.67	51	Toată România
int_ot005	12.74	8.41	9	4.55	44	Toată România
int_sm009	6.84	6.51	17	4.91	49	Toată România
int_ab019	39.86	11.39	9	4.60	49	Toată România
int_bv001	13.33	7.63	8	4.63	55	Toată România
int_db023	166.75	7.82	7	4.62	54	Toată România
int_ms006	43.63	9.42	8	5.17	43	Toată România
int_cv003	7.99	5.84	5	3.44	60	Toată România
int_cj013	40.82	13.10	14	6.76	59	Toată România
int_sm007	27.86	13.79	13	7.66	51	Toată România
int_sm024	30.98	18.05	12	6.83	50	Toată România
int_bt023	37.93	14.54	9	6.90	51	Toată România
int_sb022	66.84	21.94	5	7.61	52	Toată România
int_ab005	13.52	9.59	10	5.40	44	Toată România
int_ph023	43.14	14.51	12	6.01	47	Toată România
int_s2006	14.77	13.31	16	6.81	50	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_hr014	89.16	17.42	12	6.76	51	Toată România
int_ms025	6.71	6.40	12	3.62	50	Toată România
int_sb005	95.00	6.89	9	6.71	49	Toată România
int_cj021	25.80	7.85	16	4.45	53	Toată România
int_cj023	30.99	6.97	9	4.40	61	Toată România
int_ag006	47.87	7.76	10	6.53	52	Toată România
int_sb002	36.24	13.78	13	6.26	55	Toată România
int_ag001	25.97	8.79	14	5.65	44	Toată România
int_cl018	12.01	11.01	7	5.22	50	Toată România
int_db001	161.89	13.95	4	6.23	54	Toată România
int_ag008	20.69	6.59	9	3.95	52	Toată România
int_hd006	13.84	6.61	17	4.21	61	Toată România
int_bt001	13.75	7.19	8	3.54	61	Toată România
int_mm008	127.08	12.65	11	6.11	45	Toată România
int_ot017	29.26	8.50	7	4.79	38	Toată România
int_ar016	46.13	25.43	14	9.89	43	Toată România
int_hr018	24.57	15.82	10	5.75	51	Toată România
int_nt013	152.04	6.69	6	3.62	55	Toată România
int_ct016	54.59	10.26	12	4.18	50	Toată România
int_tm004	56.44	5.62	7	3.97	40	Toată România
int_ot002	145.22	13.69	6	6.77	46	Toată România
int_tm017	143.53	6.39	10	4.08	47	Toată România
int_ag026	55.62	23.56	9	7.63	51	Toată România
int_vs011	79.08	13.83	6	5.99	60	Toată România
int_ot006	28.81	10.75	14	5.05	42	Toată România
int_cs003	153.82	14.85	9	7.61	44	Toată România
int_sb011	46.98	8.22	15	5.09	54	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_sv003	34.47	10.76	5	4.84	42	Toată România
int_db009	48.89	11.21	11	6.78	46	Toată România
int_cj015	8.08	6.99	11	3.67	41	Toată România
int_vl024	184.15	12.46	13	6.89	54	Toată România
int_ab018	86.67	12.83	9	5.15	49	Toată România
int_ct003	212.63	8.11	9	4.10	48	Toată România
int_bh011	27.43	17.24	13	8.06	39	Toată România
int_mh005	14.47	11.99	17	6.01	49	Toată România
int_tl008	63.42	9.56	12	4.90	47	Toată România
int_cj020	21.98	5.79	16	3.67	48	Toată România
int_ot014	55.42	8.72	8	4.95	43	Toată România
int_nt016	30.56	2.88	15	3.40	44	Toată România
int_bv006	85.75	6.71	17	3.84	61	Toată România
int_bc004	31.42	7.03	6	4.79	48	Toată România
int_hr010	27.43	9.89	17	5.07	41	Toată România
int_bt019	8.20	8.12	11	3.54	43	Toată România
int_tl002	175.59	14.89	10	6.59	52	Toată România
int_ab006	61.67	12.48	16	5.58	41	Toată România
int_gl007	7.58	3.97	10	4.08	51	Toată România
int_dj004	72.15	9.28	14	5.04	49	Toată România
int_s5007	9.99	9.54	12	5.26	48	Toată România
int_tr021	16.39	14.55	9	6.89	50	Toată România
int_vl011	134.62	8.69	8	4.60	47	Toată România
int_bv020	76.61	14.54	10	6.11	57	Toată România
int_bz006	70.44	9.16	7	5.74	40	Toată România
int_gr009	51.59	24.31	17	8.88	48	Toată România
int_hd009	37.41	7.79	8	4.29	54	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_sm016	32.44	9.05	7	4.55	50	Toată România
int_sb007	50.15	7.57	15	7.93	51	Toată România
int_s3002	16.85	6.61	9	4.04	62	Toată România
int_hd003	19.91	7.09	14	4.03	53	Toată România
int_tr013	15.00	11.15	16	6.11	48	Toată România
int_bt007	45.86	6.88	13	3.87	47	Toată România
int_ag004	25.26	12.22	16	5.47	47	Toată România
int_is027	13.11	10.44	14	4.71	51	Toată România
int_bc011	120.97	12.72	9	7.49	51	Toată România
int_dj001	79.67	6.69	12	3.85	48	Toată România
int_hd007	8.94	6.58	16	3.99	54	Toată România
int_bt016	26.20	11.62	9	5.76	52	Toată România
int_il012	131.45	21.33	6	8.33	35	Toată România
int_ot018	56.27	12.15	9	6.07	47	Toată România
int_s3006	56.00	5.93	6	4.86	53	Toată România
int_hd005	71.85	8.17	7	5.30	49	Toată România
int_tr011	33.28	3.46	8	4.35	45	Toată România
int_ms009	10.63	2.88	10	2.56	52	Toată România
int_bt014	62.23	12.72	13	5.05	51	Toată România
int_cv007	26.04	12.62	14	5.30	44	Toată România
int_sb017	47.27	9.40	9	8.24	67	Toată România
int_bz001	70.91	13.24	8	7.04	56	Toată România
int_sb008	6.21	5.99	14	3.96	48	Toată România
int_hr009	23.06	7.68	14	6.13	44	Toată România
int_vl001	54.01	10.42	13	6.40	45	Toată România
int_ms016	26.88	8.48	12	5.67	51	Toată România
int_tm010	10.67	4.80	13	3.54	46	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_sb023	73.22	9.01	17	5.34	49	Toată România
int_tl012	180.99	13.68	7	6.29	49	Toată România
int_bv025	21.48	10.53	10	4.88	55	Toată România
int_tm003	48.26	7.02	12	4.58	31	Toată România
int_bc007	118.61	5.10	8	4.28	70	Toată România
int_mm006	52.10	7.50	13	4.11	58	Toată România
int_vn023	175.95	12.28	10	5.26	49	Toată România
int_vn016	68.58	17.74	10	8.02	51	Toată România
int_cj009	32.51	9.15	5	4.48	46	Toată România
int_bv022	107.26	15.56	15	6.76	41	Toată România
int_s4004	25.29	8.81	12	4.55	57	Toată România
int_s1003	7.21	1.63	14	2.13	58	Toată România
int_ph017	4.88	4.56	13	4.46	53	Toată România
int_ms003	67.09	6.25	14	3.59	40	Toată România
int_vn020	44.50	13.49	12	5.97	44	Toată România
int_nt008	85.06	10.02	13	4.21	46	Toată România
int_bh022	57.98	15.06	6	6.42	43	Toată România
int_ct021	14.30	8.23	7	4.93	50	Toată România
int_bv005	94.90	7.37	9	4.78	59	Toată România
int_tm007	113.56	5.45	10	3.33	45	Toată România
int_ct014	41.70	4.00	13	2.72	45	Toată România
int_br017	107.56	10.27	10	4.96	51	Toată România
int_ar022	69.68	9.32	8	4.79	59	Toată România
int_s6004	12.08	5.80	12	4.16	51	Toată România
int_is012	13.91	5.55	14	3.16	57	Toată România
int_cl019	26.36	12.95	14	6.70	48	Toată România
int_mh013	44.13	12.01	18	4.98	49	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_ms012	15.18	4.84	6	3.87	52	Toată România
int_br013	50.26	11.21	10	5.09	55	Toată România
int_tm008	13.69	4.59	8	3.39	47	Toată România
int_tr008	16.33	3.78	11	4.37	57	Toată România
int_sm011	12.72	6.93	7	4.88	42	Toată România
int_dj027	170.17	6.73	2	3.98	47	Toată România
int_mm002	24.15	8.82	13	6.11	51	Toată România
int_vs021	39.10	7.38	9	5.46	52	Toată România
int_ph002	22.04	6.92	13	4.44	57	Toată România
int_vs022	35.69	6.12	14	5.18	51	Toată România
int_gj020	141.88	16.99	1	6.65	47	Toată România
int_bt022	13.83	11.95	15	5.02	62	Toată România
int_ar001	57.58	8.47	14	5.43	54	Toată România
int_vl014	124.98	15.21	11	8.12	49	Toată România
int_mh014	59.32	18.23	12	6.24	46	Toată România
int_tl005	92.88	13.88	7	5.93	48	Toată România
int_gl003	6.35	5.55	13	3.86	55	Toată România
int_ag007	22.03	7.34	9	5.47	66	Toată România
int_s2007	7.17	4.94	16	3.23	53	Toată România
int_vs020	41.37	6.88	11	4.91	51	Toată România
int_cs013	129.13	14.54	10	6.71	41	Toată România
int_dj007	60.68	7.37	12	5.43	51	Toată România
int_bv009	22.58	9.54	6	5.22	50	Toată România
int_cs019	93.28	32.01	8	16.01	50	Toată România
int_gl021	8.36	7.42	12	4.26	50	Toată România
int_bc010	24.44	4.17	11	4.06	56	Toată România
int_sm002	11.26	7.03	15	5.97	52	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_dj013	25.02	9.38	11	4.75	51	Toată România
int_bc003	126.87	5.20	6	4.64	57	Toată România
int_cv006	11.48	10.97	12	5.21	47	Toată România
int_is026	43.33	3.98	9	3.77	51	Toată România
int_nt009	15.25	8.66	15	6.18	56	Toată România
int_is021	18.23	7.18	11	4.13	47	Toată România
int_gj018	232.61	19.51	7	7.55	46	Toată România
int_sm001	24.75	4.82	8	3.74	46	Toată România
int_s1007	3.19	2.80	8	3.13	46	Toată România
int_tr020	52.14	11.91	6	6.20	51	Toată România
int_dj005	219.85	5.49	15	3.57	55	Toată România
int_dj009	276.15	11.39	8	5.29	49	Toată România
int_vl009	243.32	11.14	6	5.31	41	Toată România
int_mm021	18.05	6.76	7	4.60	49	Toată România
int_ms020	37.55	5.87	13	3.57	49	Toată România
int_ph016	13.85	5.44	10	4.46	57	Toată România
int_hr017	48.99	18.15	8	8.73	42	Toată România
int_dj015	110.92	8.55	10	5.24	58	Toată România
int_hr015	74.11	13.06	15	5.19	47	Toată România
int_vs012	110.82	8.05	7	5.21	58	Toată România
int_mh010	28.33	18.71	5	9.63	57	Toată România
int_bt011	92.97	9.33	13	5.38	48	Toată România
int_sb013	13.48	4.93	10	4.45	55	Toată România
int_hr003	8.08	8.03	16	4.75	50	Toată România
int_tm028	4.21	4.02	13	5.32	42	Toată România
int_gl022	12.51	10.58	11	6.05	50	Toată România
int_bt002	22.19	6.65	15	4.66	58	Toată România

responsible	mean_duration	mean_durationNOBREAK	startHour	mean_RespTime	N_obs	tot
int_sm014	34.01	9.08	14	4.34	49	Toată România
int_bz021	11.25	9.01	10	4.54	50	Toată România
int_is014	74.08	5.35	8	3.92	56	Toată România
int_br018	94.81	10.45	11	5.30	53	Toată România
int_vn002	18.09	7.65	12	5.82	45	Toată România
int_db015	70.36	6.53	6	4.32	59	Toată România
int_vn008	4.52	1.77	14	1.94	56	Toată România
int_bt009	105.83	6.67	14	5.79	58	Toată România
int_sv018	19.06	3.38	13	4.03	55	Toată România
int_bh014	49.29	12.41	14	8.30	62	Toată România
int_ot020	61.58	9.31	9	6.23	46	Toată România
int_cs015	83.33	18.04	10	7.04	50	Toată România
int_bz024	121.25	7.92	8	4.12	51	Toată România
int_ot004	10.11	2.47	12	3.29	43	Toată România
int_vl010	114.37	9.39	2	6.07	41	Toată România
int_bz023	119.42	6.81	9	4.00	53	Toată România
int_tr014	20.74	9.99	8	6.02	46	Toată România
int_s1005	0.91	0.73	15	1.65	49	Toată România
int_ag009	3.05	1.10	9	4.83	57	Toată România
int_s1002	0.56	0.56	14	1.90	60	Toată România

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