

Cloud Readiness Toolkit Assessment Instruction Guide

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Disclaimer

The Toolkit is a diagnostic and planning tool intended to provide recommendations for action based on existing good practice. It does not constitute technical or legal advice and no inference should be drawn as to the completeness, adequacy, accuracy or suitability of the underlying assessment or recommendations. Without limitation to the immunities and privileges of the Bank under its Articles of Agreement and other applicable laws, the Bank shall not be liable for any loss, cost, damage or liability of any kind as a result of this Toolkit or its use.

Introduction

This document provides detailed instruction on how to complete the country assessment and application and infrastructure assessment.

Scope

The purpose of the assessments is to help countries determine how ready they are to move to a cloud platform, both at a country level and at an application level. By completing the Government Cloud Readiness Toolkit, government agencies will gain an understanding of their current information technology (IT) landscape and the feasibility to migrate to a cloud platform. This toolkit is meant to be a conversation starter and provide a country a high level overview of where they are and some recommendations around migrating to a cloud platform.

The assessments are designed to assist countries by:

- Identifying policy and regulatory gaps
- Providing recommendations around next steps to take towards implementation of a cloud computing system that meets a country's specific needs
- Recommending a deployment model (private, hybrid, public, or local public)
- Providing recommendations around applications that might be good candidates for migrating to the cloud

These assessments **are not** designed to:

- Replace an in depth assessment or business case
- Provide steps for building a private data center or selecting a public cloud provider
- Provide estimates for migrating to the cloud
- Provide guidance on budgeting for migrating to the cloud
- Recommend a specific cloud provider
- Recommend a service model

Both the country assessment and the application and infrastructure assessment provide recommendations on multiple factors. The country assessments evaluates the following:

- Overall readiness

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- Private cloud readiness
- Hybrid cloud readiness
- Public cloud readiness
- Local public cloud readiness

The application and infrastructure assessment evaluates the following:

- Cloud fitness
- Migration effort
- Recommended platform

Assessment Scoring

The scoring approach across both assessments is very similar. Each question has the following attributes:

- A weight
- A category
- Possible responses

Weight

Each question has a maximum possible score. It is always possible to get the maximum score for a question. Each question has a drop down containing the possible responses. Each response has a value for each attribute being evaluated. For example, a response to a question in the country assessment has a score for overall readiness, a separate score for private cloud readiness, etc. These scores have been assigned based on market and industry research and standard practices and have been extensively reviewed by both the World Bank and global companies with extensive experience providing cloud services. The score for an individual question cannot be updated.

For many questions, an answer of unknown is an option. However, this option should be selected as infrequently as possible. Unknowns typically result in an average score. Having a large number of unknowns might lead to a score that is higher than it should be, thus hiding a lack of readiness or other areas of weakness. Such a score would thus decrease the overall value of the resulting recommendations. The more complete the questionnaire, the more accurate the recommendations and the final score.

There are some responses that make a particular approach impossible. In these situations the readiness score on the assessment tab is highlighted in red to emphasize that the approach is not feasible. The question is also identified on the recommendations tab in case the answer should be re-evaluated.

Category

Questions have been grouped into categories. The country assessment has seven categories:

- General

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- Resources
- Security
- Regulations
- Governance of Information and Communications Technology (ICT) Systems
- Data
- Infrastructure

The application and infrastructure assessment has four categories:

- Architecture
- General
- Operation Optimization
- Security

The sum of the scores for all questions within a category adds up to 100%.

Customization

The categories have a default weight, but can be customized based on the needs of the country. In both assessments, **the total weight across all categories must equal 100%**. The weight takes into account a country's priorities and focus for migrating to a cloud environment. While it is recommended to keep the defaults, the weight can be customized and curtailed to the individual government in country assessment. Please keep in mind that any adjustment to the weight of the categories will alter the results and recommendation of the assessment to varying degrees.

Country Assessment

Weights can be changed on the 'assessment' tab. The weights that are highlighted in gray are the only values that can be adjusted to fit the country's priorities.



General	75%	75%	75%	78%	77%	5%
Resources	44%	46%	46%	55%	52%	15%
Cloud Migration	38%	44%	44%	60%	56%	5%
Cloud Security	40%	34%	34%	34%	34%	5%
Training	65%	70%	70%	80%	75%	5%
Security	60%	81%	81%	67%	70%	15%
General	33%	77%	77%	67%	67%	5%
Data	71%	83%	83%	67%	71%	5%
Regulations	83%	86%	86%	88%	88%	15%
General	83%	90%	90%	95%	95%	5%
Cybercrime	67%	67%	67%	67%	67%	5%
Data Protection	100%	100%	100%	100%	100%	5%
Governance of ICT Systems	35%	45%	43%	36%	36%	20%

Application and Infrastructure Assessment

Driver

The primary reason for moving to the cloud is very important information when making decisions regarding which applications to move to the cloud. In this toolkit, this reason to consider the cloud is referred to as the “driver”. The driver is used to weight the application and infrastructure assessment categories.

Drivers Defined

Faster Development of Applications

Cloud computing allows applications to be created and implemented faster. For many governments and organizations it can take weeks, if not longer, to order new servers, set them up, and then build a new application. A cloud system would enable resources to be available within hours instead of weeks.

Cost Saving

Infrastructure is expensive to purchase, to operate and to maintain. Cloud services are typically pay as you go, or “on-demand”, which allows end-users to utilize IT resources as needed. It maximizes the utilization of resources and reduces the operation and maintenance costs especially during non-peak times. Cost savings are impacted by current IT expenditure and which deployment model is chosen.

Improve Operations (Agility and Scalability)

Limited computing resources can prevent applications from running as quickly as they could or from running at all if the resources are needed for other applications. For example, say that a government has a processor intensive census program that runs once every ten years and runs on the same server as an application that shows who is eligible to vote. It may not be possible

to generate a list of voters and process the census results at the same time. The cloud can help with that by automatically supplying additional resources during heavy system use.

Growth can also exceed a system's capabilities. Perhaps in the past most citizens went to their local government office to apply for benefits or get a driver's license, but with the growth of mobile phones, they can now reach these applications online. This sudden spike of usage may require more processing power than was originally planned for or purchased. Without the cloud, such a spike of usage might cause the system to crash or become inaccessible. With the cloud, additional resources are added as needed and removed when no longer required.

Disaster Recovery and High Availability

Many public cloud service providers have data centers located in multiple locations. This provides a failover location in the event that the primary location becomes unavailable due to a security event, natural disaster, or human error. This capability keeps the government operating seamlessly.

Modernization

Many governments have servers with a variety of software components on them. There may be multiple versions of Linux or Windows operating systems, the same for different versions of databases, or even programming languages. Moving to the cloud typically gives governments the opportunity to standardize their technology architecture across the government or across department. This increases the ease of maintenance and the ability to add additional features and functionality to applications going forward.

Technological Advantage or Competition

Governments have a mandate to provide services to their citizens. As part of pursuing this mandate, government may consider implementing a cloud strategy. Alternatively, a government may consider implementing a cloud strategy in order to gain or maintain a perceived technical advantage. This advantage could be in either the public or private sector. A government may work to build demand or skills in the area of cloud computing in order to encourage the development of certain skills or products in the private sector.

Security

Major public cloud service providers have their own security protections against internal and external threats. They also support top-line security protocols commonly used. While anything you put on a public server is at higher risk than a computer not connected to an external network, public cloud service providers have security expertise, operation expertise, and are typically up to date on the latest security technologies.

Private clouds have a certain level of security, especially if they are directly connected to the users they serve rather than accessed via the Internet. However, organizations using private clouds generally have a smaller skilled security team than a public cloud provider would.

Changing the Weight

The driver is first identified in the country assessment (question 12). Once this has been answered, the identified driver will be used as part of the application and infrastructure assessment. The driver can be changed within the application and infrastructure assessment by going to the ‘assessment’ tab. Once a new driver is selected, the weights in the red highlighted column will change and the assessment’s results and recommendations will be adjusted accordingly.



These values can also be customized, but **must add up to 100%**.

Tips

General

1. When considering who should complete the questionnaire, keep in mind that it is important to make sure responders understand the importance of completing the questionnaires as accurately and completely as possible. Responders should make sure there is plenty of uninterrupted time available to complete the survey.
 - a. The critical resources for getting the best results from the assessment are likely to be:
 - i. IT Director (or equivalent)
 - ii. Application owners
 - iii. Infrastructure leads
 - b. Incomplete or inaccurate responses will skew the results. As a result, the roadmap and recommendations provided by the toolkit may not be applicable.
2. There are two possible approaches to completing the questionnaire. Which approaches works best will vary by country.
 - a. Mass Distribution:

[RECOMMENDED] Each responder gets a blank assessment. The responder then completes their section and returns the assessment. This approach requires the identification of a key individual to facilitate the distribution, completion, and consolidation of the multiple assessment documents.
 - b. Round Robin:

Once a responder completes their section they pass the partially completed assessment on to the key contact who will pass the assessment on to the next

responder. Alternatively, the partially completed assessment could be directly passed to the next responder as long as the key contact is informed.

Scoring

1. 'N/A' and 'Unknown' have different impacts on the final recommendations. "Unknown" should only be chosen if the responder is unsure of the answer and cannot find out the answer. If the question is not applicable or not relevant to the current government situation, then 'N/A' or 'not applicable' should be chosen.
 - a. For example, in the case of the question 'For a packaged solution, do you have customization that must be maintained?', choose 'N/A' if the application is custom and choose 'unknown' if you don't know if the packaged application was customized.
 - b. Both the country assessment and application and infrastructure assessment can be reviewed for completeness by looking at the 'assessment' tab.

Completing the Assessment

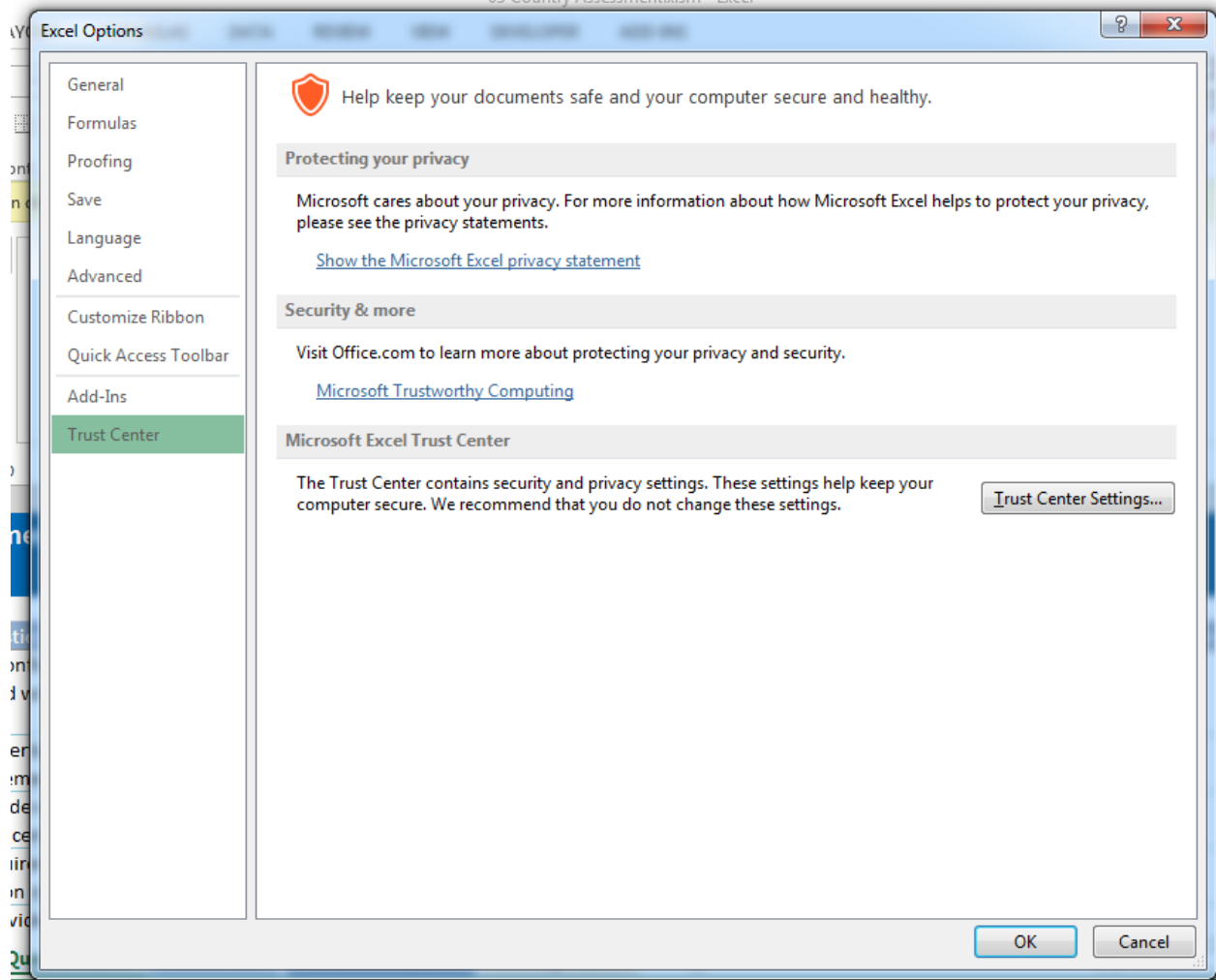
1. In the application and infrastructure assessment, an **application must have an application name and an application ID**. An application ID is a unique number tied to the application used for tracking and reporting purposes. If application IDs are not used by the government, for the purpose of this toolkit, please create a unique ID for each application. For example, the first application listed would be application ID 1001 and each subsequent application be assigned the next value (1002, 1003, etc.).
 - a. For the application and infrastructure assessment, make sure you're mapping the 'application ID' correctly between the applications and servers
2. To respond to a question, use the drop down feature within Excel. This enforces data validation and allow the assessment to be scored.

57	Are there encryption requirements in place for certain types of data?	20%	▼
58	Are any of the encryption requirements unique or do they follow international encryption		<div style="border: 1px solid black; padding: 2px;"> Yes No Unknown </div>

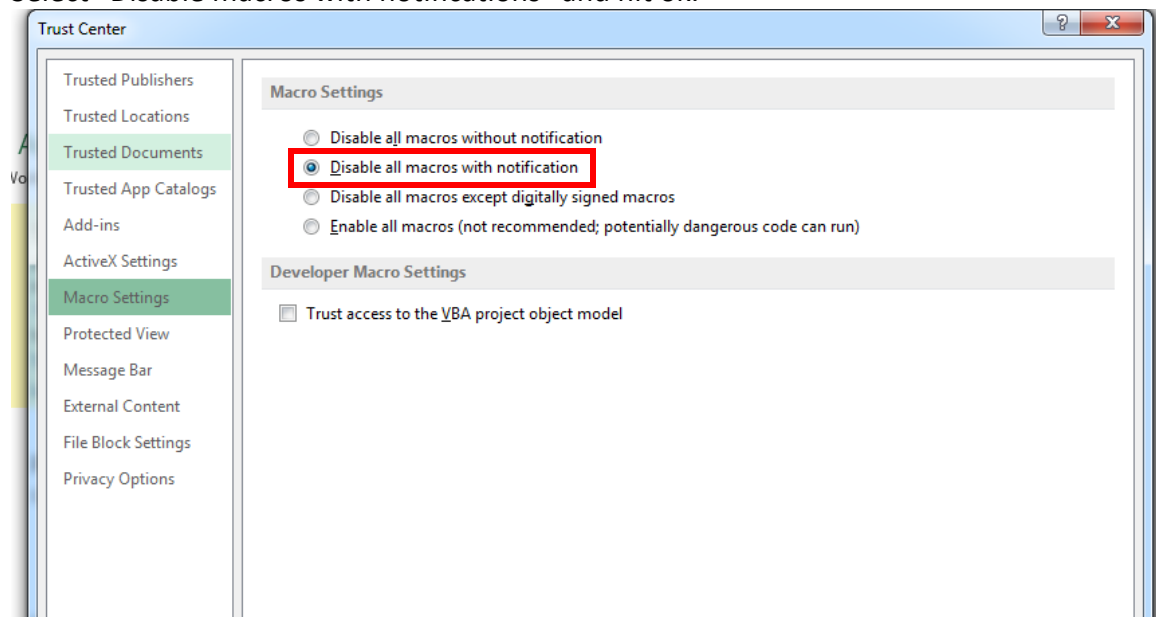
3. If there are not enough columns for applications or servers, right click on column G and select 'insert'.

Enabling the Macro

There is a macro in the country assessment which generates the Recommendation tab. This macro is compatible with Microsoft Office 2010 and later. To enable the macro, go to File -> Options -> Trust Center and click Trust Center Settings.

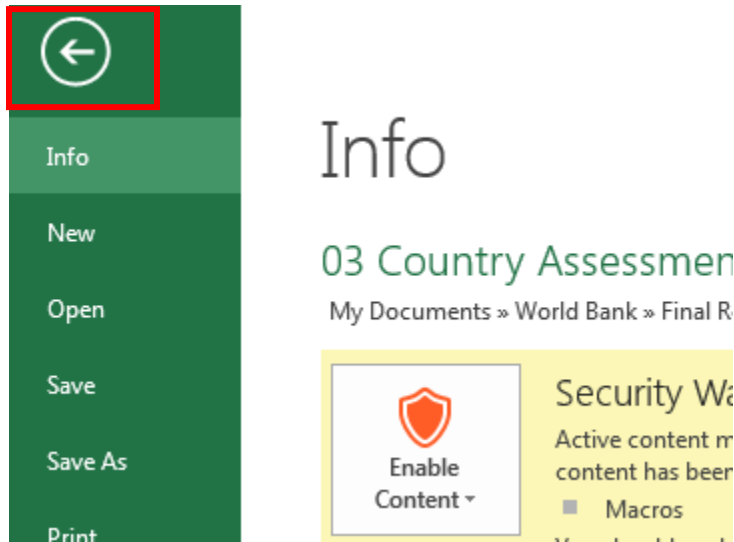


Select "Disable macros with notifications" and hit ok.

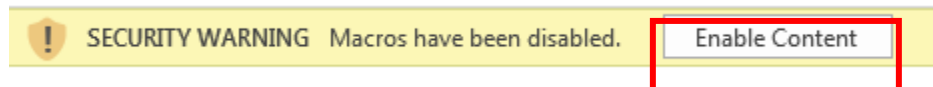


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Select the back button



Enable the content (i.e. macro)



NOTE: Be careful whenever you see this notice and only enable when you trust the source of the document. After using this document, you can follow the steps in reverse to set your Excel settings back to what they previously were.

Mass Distribution Approach

Overview

This section outlines the high level process for completing the assessments using the mass distribution approach. More detailed instructions can be found for each assessment in the subsequent sections.

1. Identify a key individual to facilitate the distribution, completion and consolidation of the multiple assessment documents.
2. Identify the assessment responders
3. Provide each responder with a blank copy of the assessment(s).
4. Responders will complete the relevant sections.
5. Responders will return their questionnaire to the key contact with their section completed.
6. The key contact will copy and paste (as values) the answers into a master copy of the assessments.

Country Assessment

The purpose of the country assessment is to identify gaps in a country’s policies, regulations, or current IT infrastructure that would impact a migration to the cloud or prevent a country from fully realizing the benefits of such a migration. This section explains how to complete the assessment.

The percent of the questionnaire completed can be seen at the top right of the ‘questionnaire’ tab.

Instructions

1. Identify a key contact, to track completion of the entire assessment.
 - a. This individual can be the same as the key contact for the application and infrastructure assessment or can be a different individual
1. Identify all the appropriate individuals who should complete each section in the country assessment. The recommendation is:

Section	Best Person to Complete
General	IT Director or Equivalent
Resources	IT Director or Equivalent
Security	IT Director or Equivalent
Regulations	Legal
Governance of ICT Systems	IT Director or Equivalent
Data	IT Director or Equivalent
Infrastructure	Ministry or Department of Telecommunications

2. Distribute the questionnaire to all identified responders. Provide the responders with the below instructions:
 - a. Go to the ‘questionnaire’ tab and fill in the questions as accurately as possible. If you cannot find the exact answer in the list then select the closest answer. If the answer is not known, please attempt to identify an individual who might know the answer.
 - b. Some questions have multiple parts. For those questions, the answer to the initial question determines whether additional questions need to be answered. All of the additional questions must be answered for the entire question to be counted as complete.
 - If the additional questions do NOT need to be answered, they will change color to black and there is no need to answer the question.
 - If additional questions need to be answered, the questions will change color to yellow.
 - c. Once completed, return the assessment to the **[INSERT KEY CONTACT NAME], [INSERT KEY CONTACT EMAIL]**.

3. The key contact will track the responses received and facilitate the identification of additional responders as needed.
4. The key contact will copy and paste the answers into a master copy of the assessment.
5. When all answers have been entered, click on the recommendation tab to run the macro and generate the recommendations.

Application and Infrastructure Assessment

The application and infrastructure assessment is a questionnaire used to assess the government’s overall application landscape. The assessment helps determine the feasibility, effort and recommended deployment type for each application by incorporating both server and application level information.

The questions in the assessment cover both functional, application level questions, as well as in depth infrastructure, server level questions. It is important to have individuals who can understand and fully answer the questions complete the questionnaire. If individuals only moderately familiar with the applications completes the questionnaire, the results and the final roadmap will be of limited value.

The key contact can validate completeness using the “assessment” tab.

Instructions

1. Identify a key contact, to track completion of the entire assessment.
 - This individual can be the same as the key contact for the country assessment or can be a different individual
2. Identify all the appropriate application owners and infrastructure leads required to complete the entire assessment. The recommendation is:

Section	Best Person to Complete
Application	Application Owner(s) (May be multiple individuals)
Infrastructure	Infrastructure Lead(s) (May be multiple individuals)

3. Send the questionnaire to each identified application owner and infrastructure lead. Ask them to fill out the appropriate tab with the following instructions:

Application Owners

- a. Go to the ‘application’ tab and fill in the answers for each application that is being considered for migration to the cloud.
- b. Enter the internally used application ID. If you have no application ID then start with 1000 and increment it by value of 1 for each subsequent application.
- c. Fill in the questions as accurately as possible. If you cannot find the exact answer from the list then select the closest answer.
- d. If you need additional columns for applications, simply select the last column with the gray section headers. Right click. Select “Insert”.

- e. Once completed, return the assessment to the **[INSERT KEY CONTACT NAME]**, **[INSERT KEY CONTACT EMAIL]**.

Infrastructure Leads

- a. Go to the Infrastructure tab and fill in the answers for each server associated with the applications being considered for migration to the cloud.
 - b. Fill in the server host name and the application ID of the application hosted by the server. This should be the same ID found on the Application tab.
 - c. If a server has more than one application on it, please list it multiple times, once for each application. Alternatively, if an application is located on more than one server, please list every server associated with that application.
 - d. Fill in the questions as accurately as possible. If you cannot find the exact answer from the list then select the closest answer.
 - e. If you need additional columns for servers, simply select the last column with the gray section headers. Right click. Select "Insert".
 - f. Once completed, return the assessment to the **[INSERT KEY CONTACT NAME]**, **[INSERT KEY CONTACT EMAIL]**.
4. Track the assessment's completion and facilitate the distribution.
 5. The key contact will copy and paste the answers into a master copy of the assessment.

Round Robin

Overview

This section outlines the high level process for completing the assessments using the round robin approach. More detailed instructions can be found for each assessment in the subsequent sections.

1. Identify a key individual to facilitate the distribution and completion of the assessment documents. There are two options:
 - a. The key contact will pass the assessment onto the next responder.
 - b. The key contact will facilitate the distribution of the assessment by indicating who each responder should send the assessment to next.
2. One version (master copy) of the assessments.
3. The master copy will be sent to a responder who will complete the relevant section(s).
4. Based on the decision in step 1:
 - a. The responder will send the assessment to the key contact who will then send the partially completed assessment on to the next responder.
 - b. The responder will send the partially completed assessment to the next identified responder and notify the key contact.

5. The key contact will review the finished assessment to confirm the assessments' completeness.

Country Assessment

Once a responder completes their section they pass the partially completed assessment on to the key contact who will pass the assessment on to the next responder. Alternatively, the partially completed assessment could be directly passed to the next responder as long as the key contact is informed.

Instructions

1. Identify a key contact, to track completion of the entire assessment.
 - a. This individual can be the same as the key contact for the application and infrastructure assessment or can be a different individual
2. Identify all the appropriate individuals who should complete each section in the country assessment. The recommendation is:

Section	Best Person to Complete
General	IT Director or Equivalent
Resources	IT Director or Equivalent
Security	IT Director or Equivalent
Regulations	Legal
Governance of ICT Systems	IT Director or Equivalent
Data	IT Director or Equivalent
Infrastructure	Ministry or Department of Telecommunications

3. Determine the order of responders
4. Provide the responders with the below instructions:
 - a. Go to the 'questionnaire' tab and fill in the questions as accurately as possible. If you cannot find the exact answer in the list then select the closest answer. If the answer is not known, please attempt to identify an individual who might know the answer.
 - b. Some questions have multiple parts. For those questions, the answer to the initial question determines whether additional questions need to be answered. All of the additional questions must be answered for the entire question to be counted as complete.
 - If the additional questions do NOT need to be answered, they will change color to black.
 - If additional questions need to be answered, the questions will change color to yellow.
 - c. Once completed, return the assessment to the **[INSERT CONTACT NAME]**, **[INSERT CONTACT EMAIL]**.
5. The key contact will track the assessment's completion and facilitate the distribution to subsequent responders.

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6. When all answers have been entered, click on the recommendation tab to run the macro and generate the recommendations.

Application and Infrastructure Assessment

The application and infrastructure assessment is a questionnaire used to assess the government’s overall application landscape. The assessment helps determine the feasibility, effort and recommended deployment type for each application by incorporating both server and application level information.

The questions in the assessment cover both functional, application level questions, as well as in depth infrastructure, server level questions. It is important to have individuals who can understand and fully answer the questions complete the questionnaire. If individuals only moderately familiar with the applications completes the questionnaire, the results and the final roadmap will be of limited value.

The key contact can validate completeness using the “assessment” tab.

Instructions

1. Identify a key contact, to track completion of the entire assessment.
 - This individual can be the same as the key contact for the country assessment or can be a different individual
2. Identify all the appropriate application owners and infrastructure leads required to complete the entire assessment. The recommendation is:

Section	Best Person to Complete
Application	Application Owner(s) (May be multiple individuals)
Infrastructure	Infrastructure Lead(s) (May be multiple individuals)

3. Determine the order of responders
4. Provide the responders with the below instructions:
 - Application Owners**
 - a. Go to the ‘application’ tab and fill in the answers for each application that is being considered for migration to the cloud.
 - b. Enter the internally used application ID. If you have no application ID then start with 1000 and increment it by value of 1 for each subsequent application.
 - c. Fill in the questions as accurately as possible. If you cannot find the exact answer from the list then select the closest answer.
 - d. If you need additional columns for applications, simply select the last column with the gray section headers. Right click. Select “Insert”.
 - e. Once completed, return the assessment to the **[INSERT CONTACT NAME], [INSERT CONTACT EMAIL]**.

Infrastructure Leads

- a. Go to the Infrastructure tab and fill in the answers for each server associated with the applications being considered for migration to the cloud.
 - b. Fill in the server host name and the application ID of the application hosted by the server. This should be the same ID found on the Application tab.
 - c. If a server has more than one application on it, please list it multiple times, once for each application. Alternatively, if an application is located on more than one server, please list every server associated with that application.
 - d. Fill in the questions as accurately as possible. If you cannot find the exact answer from the list then select the closest answer.
 - e. If you need additional columns for servers, simply select the last column with the gray section headers. Right click. Select “Insert”.
 - f. Once completed, return the assessment to the **[INSERT CONTACT NAME]**, **[INSERT CONTACT EMAIL]**.
5. The key contact will track the assessment’s completion and facilitate the distribution to subsequent responders.

Updating Application and Infrastructure Assessment Graphs

High Level Graphs

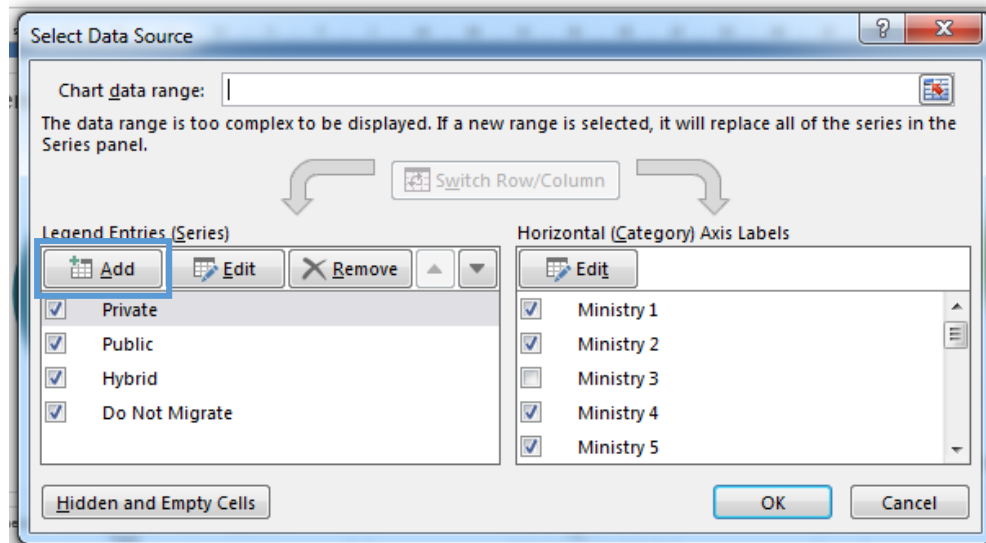
Recommended Cloud Deployment Model Graph (Radar Graphs)

To simplify the chart, you can remove the department/ministries that are not applicable. In order to do so, right-click on the graph and click ‘Select Data’. In the ‘Horizontal (category) Axis Labels’ (right side), deselect the ministries that are not applicable.

To add department/ministries, right-click on the graph and click ‘Select Data’. In the ‘Horizontal (category) Axis Labels’ (right side) and select the ministries applicable.

If a ministry needs to be added and is not on the list, right-click on the graph and click ‘Select Data’. Select “Add” and provide the relevant data points via cell referencing.

- Series Name: Go to the Metrics tab and find the corresponding cloud environment table. For example, if you are wanting to add to the ministry graph, that is the Ministry table in C10 whereas the platform table is in C45. Select the header for the Deployment model desired as the series name.
 - o Deployment model graphs data can be found in columns J:I.
 - o Effort graphs data can be found in column AG.
 - o Fitness graphs data can be found in column V.
- Series Values: Go to the Metrics tab and find the corresponding cloud environment table (same as above). If you wanted to add another deployment model for the Platform graph in the example above, the series values would start in row 45 and end in row 50.
- Repeat this for as many ministries as necessary



To simplify the chart, you can remove the applications that are not applicable. In order to do so, right-click on the graph and click 'Select Data'. In the 'Legend Entries (Series)' (left side), deselect the applications that are not applicable.

To add applications to the chart, right-click on the graph and click 'Select Data'. Click the 'Add' button on the right side (i.e. 'Legend Entries (Series)'). Click add and then use the follow for the data series:

- Series Name: Go to the Assessment tab and select the application in column C
- Series X Values: Go to the Assessment tab and select the fitness % in column D that corresponds to the application
- Series Y Values: Go to the Assessment tab and select the effort % in column D that corresponds to the application
- Repeat this for as many applications as necessary

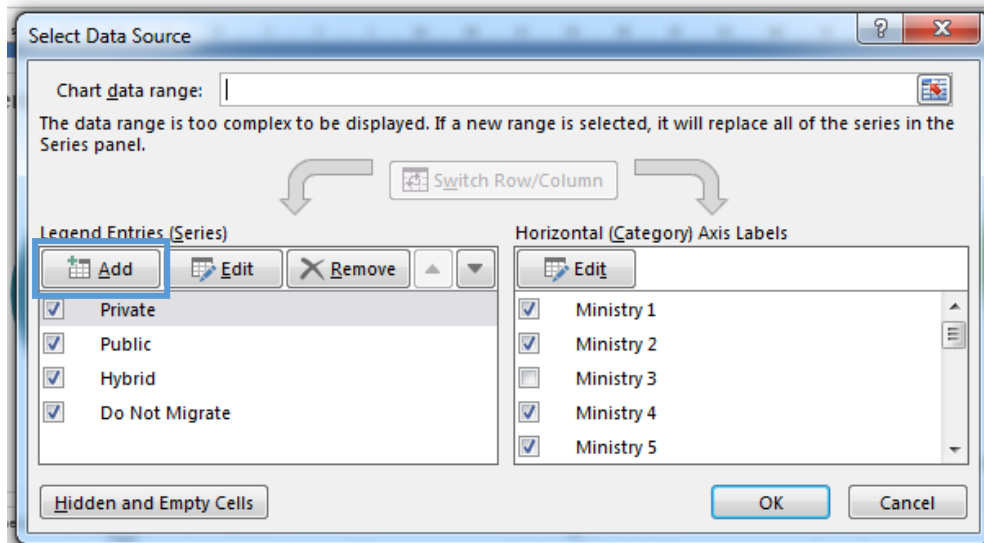
Deployment Model, Effort and Fitness Graphs (Pie Charts)

To simplify the individual deployment model charts, you can remove the department/ministries that are not applicable. In order to do so, right-click on the graph and click 'Select Data'. In the 'Horizontal (category) Axis Labels' (right side), deselect the ministries that are not applicable.

To add department/ministries, right-click on the graph and click 'Select Data'. In the 'Horizontal (category) Axis Labels' (right side) and select the ministries applicable.

If a ministry needs to be added and is not on the list, right-click on the graph and click 'Select Data'. Select "Add" and provide the relevant data points via cell referencing.

- Series Name: N/A
- Series Values: Go to the Metrics tab and find the corresponding overview tables. See the notes below for which tables have the data relevant data.
 - o Deployment model graphs data can be found in columns J5:I6.
 - o Fitness graphs data can be found in column N6:T6.
 - o Effort graphs data can be found in column Y6:AE6.
- Repeat this for as many applications as necessary.



Ministry Level Graphs

There are graphs for the following:

- Recommended Cloud Deployment Model
- Breakdown of Cloud Environment
- Fitness
- Effort

To create the graphs, you need to select the department/ministries that are applicable for each requested graph. In order to do so, right-click on the graph and click 'Select Data'. In the 'Legend Entries (series) Axis Labels' (right side), select the requested ministries. As many or as few options can be selected as needed.

Glossary

There are many terms that may be unfamiliar to the individuals completing the questionnaire. The following list, which can also be found in the application and infrastructure assessment on the ‘glossary’ tab, should assist with any questions.

Category	Term	Definition
General	Multitenancy	The concurrent use of shared computing resources by multiple users, also known as tenants
General	Private Cloud	A private cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple users (i.e. departments). It may be owned, managed, and operated by the organization, a third party, or some combination, and it may exist on or off the premises.
General	Public Cloud	A public cloud infrastructure is provisioned for use by any organization that wishes to pay for computing resources. It may be owned, managed, and operated by a business, academic institution, government organization, or some combination. The infrastructure exists on the premises of the cloud provider rather than the users.
General	Hybrid Cloud	A hybrid cloud infrastructure consists of two or more distinct cloud infrastructures (private, community, or public) that remain separate, but are bound together by standardized or proprietary technology which enables data and application portability. Normally, it is a combination of public and private.
General	Community Cloud	The community cloud is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (i.e., mission, security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.
General	IaaS	Provides the capability to request (provision) processing, storage, networks, and other fundamental computing resources, but the requester is able to deploy and run anything they want, including operating systems and applications.
General	PaaS	Provides the capability to deploy onto the cloud infrastructure, consumer-created or owned applications created using programming languages, libraries, services, and tools supported by the provider.
General	SaaS	Provides the capability to use the provider’s applications running on a cloud infrastructure. The applications are accessible from various client devices through either an interface, such as a web browser (i.e., web-based email), or a program interface (i.e. Office 365). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage.

Category	Term	Definition
General	High Capacity Link	Also known as an internet gateway, this is a primary or backbone link outside of a country to the Internet.
General	Internet Service Provider (ISP)	An organization that provides services for accessing, using, or participating in the Internet.
General	Public server	A server that is owned by a third party and accessible via a public network, such as the internet (i.e. AWS or Azure).
Application	Criticality	<p>Critical - the application cannot afford to have more than 2 hours of downtime and there is no alternative for this application. Also, application that is classified as 'critical' by internal policy</p> <p>High - the application cannot afford to have more than 4 hours of downtime and there is alternatives for this application (i.e. manual entries)</p> <p>Moderate - the application can cannot have more than 12 hours of downtime</p> <p>Low - the application can have more than 24 hours of downtime</p>
Application	Single Tier	Single tier, sometimes called one-tier, architecture involves putting all of the required components for a software application or technology on a single server or platform. The alternative is multi-tiered architecture or the three-tier architecture that is used for some web applications and other technologies where various presentation, business and data access layers are housed separately.
Application	Static Attribute	Any source code component that has been hard coded (i.e. hard coded IP address and hostnames).
Data	Personally Identifiable Information	Personal information is data that can be used to identify the individual (i.e. name, passport number, phone number).
Data	Sensitive data	Sensitive data refers to data that is deemed sensitive by the owner of the data (i.e. classified government documents).
Data	User Information	User information is data that belongs to an individual but cannot be used to identify them without additional information (i.e. ID, position).
Functional	Service Level Agreement (SLA)	An agreement that sets maximum or minimum targets for various metrics. For example there may be a service level agreement in regards to how quickly technology support must respond to defects of various severities.
Infrastructure	Demilitarized Zone (DMZ)	A physical or logical subnetwork that contains and exposes an organization's external-facing services to a larger and untrusted network, usually the Internet.
Infrastructure	End of Service (EOS)	The expected retirement date of a server based on internal policy or other methods.

Category	Term	Definition
Infrastructure	Input / Output Operations Per Second (IOPS)	A common performance measurement used to benchmark computer storage devices such as hard disk drives (HDD), solid state drives (SSD), and storage area networks (SAN)
Infrastructure	Virtual Machine (VM)	An emulation of a particular computer system. Operates based on the computer architecture and functions of a real or hypothetical computer, and its implementations may involve specialized hardware, software, or a combination of both.
Technical Architecture	Central Processing Unit (CPU)	The electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output (I/O) operations specified by the instructions.
Technical Architecture	Horizontal scaling	Ability of an application to function across multiple instances or nodes.
Technical Architecture	Vertical scaling	Ability of an application to take advantage of additional computing power, when added (i.e. CPU, memory).
Technical Architecture	Hypervisor	A piece of computer software, firmware or hardware that creates and runs virtual machines. Sometimes called a virtual machine monitor (VMM).
Technical Architecture	Loose Coupling	Refers to designing a system in which each of its components has, or makes use of, little or no knowledge of the definitions of other separate components.
Technical Architecture	Random Access Memory (RAM)	A form of computer data storage. Stored information is lost if power is removed (computer is shut down).