Attachment 5 - Application and System Summary							
Interface Number	**Interface Name**	**Current Agency**	**Interface Description**	**Inbound**	**Outbound**	**Average Data Load/Volume**	**Interface Technology**
1	Modernized Electronic Filing (MeF)	Iowa Department of Revenue (IDR)/Internal Revenue Service (IRS)	MeF is the system for electronic filing of taxes. MeF is an Enterprise Application Integration solution; it communicates with the IRS to pull State of Iowa Tax Returns. This solution is designed on request-response messaging patterns to pull the tax data every hour, process the data, and send the acknowledgement (rejection/acceptance per file) to the IRS. IDR has many request types to pull all types of tax returns. This process runs 24x7 and stores all processed data into Structured Query Language (SQL) database for further processing. BizTalk, a service hosted by the Office of the Chief Information Officer (OCIO), manages the interfaces for MeF.	Retrieves Iowa submissions from the IRS; Retrieves reconciliation reports from the IRS	Communicates with IRS MeF system; Sends Iowa acknowledgements to the IRS	Individual Income Tax Fillings Per Year 1.51 million MeF submissions, volumes peak at 50 - 70 thousand submissions/day during mid-April. Business Income Tax Filings Per Year 130,000 MeF submissions (combined) for Fiduciary Tax and Corporate Income Tax.	BizTalk processes using Windows Communication Foundation (WCF) Services secured by Security Assertion Markup Language (SAML) token and certificate; Saves in SQL database; Hypertext Transfer Protocol Secure (HTTPs) Application Program Interface (API) web service inbound and outbound connections.
1	Modernized Electronic Filing (MeF)	Iowa Department of Revenue (IDR)/Internal Revenue Service (IRS)	MeF is the system for electronic filing of taxes. MeF is an Enterprise Application Integration solution; it communicates with the IRS to pull State of Iowa Tax Returns. This solution is designed on request-response messaging patterns to pull the tax data every hour, process the data, and send the acknowledgement (rejection/acceptance per file) to the IRS. IDR has many request types to pull all types of tax returns. This process runs 24x7 and stores all processed data into SQL database for further processing. BizTalk, a service hosted by OCIO, manages the interfaces for MeF.		On-demand reporting of MeF Gateway processing activity	Individual Income Tax Fillings Per Year 1.51 million MeF submissions, volumes peak at 50 - 70 thousand submissions/day during mid-April. Business Income Tax Filings Per Year 130,000 MeF submissions (combined) for Fiduciary Tax and Corporate Income Tax.	Structured Query Language Server Reporting Services (SSRS) Packages
1	Modernized Electronic Filing (MeF)	Iowa Department of Revenue (IDR)/Internal Revenue Service (IRS)	MeF is the system for electronic filing of taxes. MeF is an Enterprise Application Integration solution; it communicates with the IRS to pull State of Iowa Tax Returns. This solution is designed on request-response messaging patterns to pull the tax data every hour, process the data, and send the acknowledgement (rejection/acceptance per file) to the IRS. IDR has many request types to pull all types of tax returns. This process runs 24x7 and stores all processed data into SQL database for further processing. BizTalk, a service hosted by OCIO, manages the interfaces for MeF.		Interfaces to Data Warehouse three times daily; ad-hoc transmission of data to Data Warehouse can occur throughout the year.	Individual Income Tax Fillings Per Year 1.51 million MeF submissions, volumes peak at 50 - 70 thousand submissions/day during mid-April. Business Income Tax Filings Per Year 130,000 MeF submissions (combined) for Fiduciary Tax and Corporate Income Tax.	Structured Query Language Server Integration Services (SSIS) Packages
1	Modernized Electronic Filing (MeF)	Iowa Department of Revenue (IDR)/Internal Revenue Service (IRS)	MeF is the system for electronic filing of taxes. MeF is an Enterprise Application Integration solution; it communicates with the IRS to pull State of Iowa Tax Returns. This solution is designed on request-response messaging patterns to pull the tax data every hour, process the data, and send the acknowledgement (rejection/acceptance per file) to the IRS. IDR has many request types to pull all types of tax returns. This process runs 24x7 and stores all processed data into SQL database for further processing. BizTalk, a service hosted by OCIO, manages the interfaces for MeF.		Interfaces to file server; Batches MeF submissions into files nightly for next-day mainframe processing; Collects document locator number (DLN)/Submission ID cross-references provided the next day by the mainframe and loads them to SQL database for iView; Collects MeF payment detail provided the next day by the mainframe and loads it to SQL database for Accounting.	Individual Income Tax Fillings Per Year 1.51 million MeF submissions, volumes peak at 50 - 70 thousand submissions/day during mid-April. Business Income Tax Filings Per Year 130,000 MeF submissions (combined) for Fiduciary Tax and Corporate Income Tax.	SSIS Packages
1	Modernized Electronic Filing (MeF)	Iowa Department of Revenue (IDR)/Internal Revenue Service (IRS)	MeF is the system for electronic filing of taxes. MeF is an Enterprise Application Integration solution; it communicates with the IRS to pull State of Iowa Tax Returns. This solution is designed on request-response messaging patterns to pull the tax data every hour, process the data, and send the acknowledgement (rejection/acceptance per file) to the IRS. IDR has many request types to pull all types of tax returns. This process runs 24x7 and stores all processed data into SQL database for further processing. BizTalk, a service hosted by OCIO, manages the interfaces for MeF.		Mainframe Daily mainframe jobs retrieve batched MeF submission files from the file server via file transfer protocol (FTP), transform eXtensible Markup Language (XML) submissions into flat records (transactions), and route transactions to various back-end mainframe systems, including Tax Processing, for processing of returns and payments. Creates DLN/Submission ID cross-reference file and payment detail file and sends them to the file server via FTP.	Individual Income Tax Fillings Per Year 1.51 million MeF submissions, volumes peak at 50 - 70 thousand submissions/day during mid-April. Business Income Tax Filings Per Year 130,000 MeF submissions (combined) for Fiduciary Tax and Corporate Income Tax.	FTP
2	Streamlined Sales Tax - Registration	Office of the Chief Information Officer (OCIO)	IDR's technology partner, OCIO, developed the latest Iowa system that integrates with the Streamlined Sales Tax Registration System (SSTRS) hosted by Streamlined Sales Tax Governing Board, Inc. (SSTGB). The SSTGB hosts web services for states, service providers, and sellers http //www.streamlinedsalestax.org/. Iowa is a "Full Member" of Streamlined Sales Tax http //www.streamlinedsalestax.org/uploads/images/maps/Map%20of%20States%201-1-17.pdf. Through this, sellers register with Iowa.	Registration data from the SSTGB	Registration acknowledgments are returned to the SSTGB. Registrations are collected, batched and sent to a file share where the Mainframe retrieves the batched file. Streamlined Sales Tax - Registration references Tax Processing to check for duplicate registrations.	Registration data from the SSTGB is pulled once every Tuesday. Data volumes for registrations are less than one hundred per week, on average, with no peaks or valleys of volume. Approximately 6,500 total registrations for any given year.	SSIS Packages, FTP
2	Streamlined Sales Tax - Simplified Electronic Return (SER) & Payments	Office of the Chief Information Officer (OCIO)	IDR's technology partner, OCIO, developed and hosts the latest State of Iowa system that collects SER & Payment transactions transmitted to the State of Iowa by Certified Service Providers (CSP), acknowledges the transmissions, and passes transactions to the IDR backend systems via web services that run 24x7.	Returns from Certified Service Providers (CSPs).	Acknowledgments sent back to Certified Service Providers (CSPs).	Web services run 24x7; low volume, but activity increases monthly around the 20th of each month (monthly sales filing/pay due date); data volumes per week are less than one thousand on average; data volumes per month are approximately 2,000 on average with approximately 24,000 returns in any given year, staying steady throughout the year - no peak months with approximately 1,100 amended returns in any given year.	SSIS Packages, FTP, Web Services
2	Streamlined Sales Tax - Simplified Electronic Return (SER) & Payments	Office of the Chief Information Officer (OCIO)	IDR's technology partner, OCIO, developed and hosts the current State of Iowa system that collects SER & Payment transactions transmitted to the State of Iowa by Certified Service Providers (CSP), acknowledges the transmissions, and passes transactions to the IDR backend systems via web services that run 24x7.		SER & Payment information is extracted from a SQL database, batched and sent to a file share where the Mainframe retrieves the batched file, formats, and loads into Tax Processing and Department of Administrative Services State Accounting Enterprise (DAS-SAE).	Process runs once per day; data volumes per day are on average less than one thousand	SSIS Packages, FTP
3	Business Taxpayer Web 1	Office of the Chief Information Officer (OCIO)	The Business Taxpayer Web 1 online application is used to administer the following business permitting processes apply for a new permit, update the information associated with an existing permit, or cancel a permit. There are seven permit types State Sales Tax, Withholding Tax, Use Tax, Automobile Rental Tax, Hotel/Motel Tax, and Water Service Excise Tax. In the permit application or the permit update process, the following information is collected business information, ownership type, responsible party, permit details, and signature and submission. Businesses must notify IDR if there are changes in business name, physical location, mailing address, partner, corporate office, or Responsible Party. Neither of the system modules are currently integrated with the tax processing system that stores all permit data. All online permit applications, as well as permit information updates and cancellations, are validated by employees who then manually make updates in the tax processing system.		Sends registration information to Tax Processing; Checks to see if registrant exists.	Online registrations are steady with no peaks or valleys. There are approximately 42,000 registrations in any given year. This figure includes the Streamlined Sales Tax eRegistrations, a subset of all eRegistrations.	SSIS Packages, Interfaces to FileServer. Files picked up by Mainframe via FTP

Interface Number	Interface Name	Current Agency	Interface Description	Inbound	Outbound	Average Data Load/Volume	Interface Technology
4	Business Taxpayer Web 2	Third Party hosted application	Business Taxpayer Web 2 is a web application available for businesses to file tax returns corresponding to IDR issued tax permits and for remitting Automated Clearing House (ACH) debit payment. Users of Business Taxpayer Web 2 include business owners, CPA firms, and payroll service providers. Filings served include - Withholding Tax deposits, returns, and payments – via key & send and file upload. - Withholding Tax Verified Summary of Payment (VSP) – via key & send and file upload. - W-2 – via file upload only. - 1099 – via file upload only. - Sales Tax (including direct pay, Hotel/Motel Tax, Automobile Rental Tax, Construction, Prepaid phone) deposits, returns, and payments – via key & send and file upload. - Use Tax deposits, returns, and payments – via key & send and file upload. - Water Service Excise Tax – via key & send only. - Liquefied Petroleum Gas (LPG) Tax returns and payments – via key & send and file upload. - Motor Fuel Tax deposits, returns, schedules, and payments – via key & send, file upload, and EDI-format file upload. - Corporation Income Tax payments (final and estimated payments, no tax returns) – via key & send only. - Individual Income Tax payments (final and estimated payments, no tax returns) – via key & send only.	Taxpayer filing and making payment online key & send via browser screens and bulk file upload whereby a user's own software maps data into files according to specified formats and uploads files.	The Third Party exchanges data with Tax Processing and IDR's bank via file transfers. Data is dropped to a file share server. The Data Warehouse picks up the batched file.	For any given year approximately 772,000 payments. Approximately 930 returns on average monthly.	FTP
5	Imaging 1	Iowa Department of Revenue (IDR)	A custom application built to capture data from Individual Income tax returns that are filed on paper and imaged using IDR's OPEX scanners. The images are indexed and stored in Image Management 2. The data is stored in the 2D table. The returns keyed in using Imaging 1 are returns that do not contain a 2D bar code or bar code did not scan properly. The software enables image retrieval and display to users allowing them to key specified fields. Captured returns data are formatted in Imaging 2 and loaded into Tax Processing.	The Data Warehouse returns full name, address, and limited tax return information from prior years. Data displays in Imaging 1 fields.	Imaging 1 calls the Data Warehouse - validates social security number and name. The user keys in the information.	For any given year, approximately 135,000 Individual Income Tax returns scanned. Of those, 77,000 have some or all data manually keyed using Imaging 1.	Web API on Imaging 1 side; Stored procedure on Data Warehouse side.
5	Imaging 1	Iowa Department of Revenue (IDR) custom application	A custom application built to capture data from Individual Income tax returns that are filed on paper and imaged using IDR's OPEX scanners. The images are indexed and stored in Image Management 2. The data is stored in the 2D table. The returns keyed in using Imaging 1 are returns that do not contain a 2D bar code or for which the bar code did not scan properly. The software enables image retrieval and display to users allowing them to key specified fields. Captured returns data are formatted in Imaging 2 and loaded into Tax Processing.	Images indexed and stored in Image Management 2 are retrieved and displayed to users allowing the users to key specific fields.	Keyed fields populate the 2D table.	For any given year, approximately 135,000 Individual Income Tax returns scanned. Of those, 77,000 have some or all data manually keyed using Imaging 1.	Image Management 2 web service; SQL database, 2D table, and .exe files
6	Imaging 2	Third Party software	Proprietary visual basic software used to capture data (keyed in) from Corporation Income Tax returns and Utility assessment valuations that are filed on paper. It also reformats data captured in Imaging 1 and creates the file extract to be consumed by Tax Processing. Imaging 2 is used in conjunction with the Vista Capture application to collect data.	The Data Warehouse returns full name, address, and limited tax return information from prior years.	Imaging 2 calls the Data Warehouse - validates FEIN and name. The Data Warehouse returns full name, address, and limited tax return information from prior years.	Utility Assessments - approximately 300 per year, received and processed in September. This number is expected to decrease to roughly 60 assessments by 2022. Corporate Income Tax returns - Approximately 15,000 per year; steady all year with peak times in April and September.	Web API on Imaging 1 side; stored procedure on Data Warehouse side.
6	Imaging 2	Third Party software	Proprietary visual basic software used to capture data (keyed in) from Corporation Income Tax returns and Utility Assessment valuations that are filed on paper. It also reformats data captured in Imaging 1 and creates the file extract to be consumed by Tax Processing. Imaging 2 is used in conjunction with the Vista Capture application to collect data.	For Corporate Income Tax returns and Utility Assessments - data is keyed in using Imaging 2. Data captured in Imaging 1 (keyed fields are formatted in Imaging 2 and loaded into Tax Processing).	Files placed in specific folders on a secured drive to be processed by .exe files and then loaded into the Mainframe to be consumed by Tax Processing	Utility Assessments - approximately 300 per year, received and processed in September. This number is expected to decrease to roughly 60 assessments by 2022. Corporate Income Tax returns - Approximately 15,000 per year; steady all year with peak times in April and September.	SQL database, 2D table, and .exe files
7	Fairfax	Third Party software	Fairfax is a suite of proprietary information capture and check processing (Check 21) software. Business rules exist to address specific processing needs. Through the use of Quick Modules Studio (QMS) an integrated forms processing software program, the Administrator has a palette of tools available with which to create new document processing workflows, edit existing workflows, test workflows before they are in production, and deploy specific business rules – all in one location. This centralized location for creation and editing speeds up the process of defining and managing criteria for the system. Fairfax also reads W2/1099s and vendor substitute forms, electronic check presentment, including Check 21 processing, and complete tracking from the mailroom to taxpayer account posting. All payments and tax documents, with the exception of Individual Income Tax paper returns, Corporate Income Tax returns and Utility Assessment valuations, are processed through Fairfax. Data captured in the application are extracted into a file that is consumed by the Mainframe. All payments, regardless of method, are managed in a single encrypted SQL database to streamline statement reconciliation, back-end accounting functions, research, and reporting. Check 21 features contain - image retrieval quality assurance, - business rules to ensure no duplicate checks are processed, - ability to correct data prior to posting, and - secure transmission to and from the depositing institution. Imaging and Recognition features contain - ability to process any form, - common workflow and architecture, - recognition engines for automated data capture, - paper as well as electronic files processing, and - modular design.	Images from OPEX, paper and electronic forms, and payment information.	Images are stored in Image Management 2. Data is stored in a SQL database. Data is cached in appropriate files. Files are transformed into a flat file and transferred to the Mainframe.	Fairfax manages all payments for the State of Iowa, including but not limited to Individual Income Tax, Corporate Income Tax, Sales Tax and other payments. These payments are deposited multiple times each day to IDR bank accounts. For FY 18, approximately 2 million images, 1 million transactions, and $2 billion in payments were processed.	Fairfax uses Microsoft Internet Information Services (IIS.NET) on Windows Servers, a front end web server, two app servers, SQL server, SSRS Server and a dedicated File Server. Fairfax uses Active Directory (AD) Security Groups and multiple applications to monitor and log access.

Interface Number	Interface Name	Current Agency	Interface Description	Inbound	Outbound	Average Data Load/Volume	Interface Technology
8	OPEX	Third Party hardware and software	OPEX is IDR's software and hardware for scanning tax documents. There are six OPEX machines which open and extract mail, as well as capture images of the mail contents. The equipment is used for nearly all of the front-end mail receipt processes. The imaging component of OPEX is the first step of the imaging workflow, followed by a step in Fairfax. OPEX has the ability to read barcodes which will assign form level indexes to documents to be used later in the workflow. If there are errors after the documents are scanned (blurry documents, checks rejected by banks, etc.), selected staff use a shared workstation to rescan and make corrections. This workstation is connected to a Universal Serial Bus (USB) scanner and USB check scanner.	Paper Tax Documents	Documents are scanned to a network location to be used and consumed by applications like Fairfax, BizTalk, and other IDR applications.	OPEX is used heavily all year round. Given current staffing, the average daily image capacity is 57,000 images. Approximately 1.1 million documents were scanned during the most recent period. Each document contains multiple pages. The prior years data shows 25,000 as the average number of pages imaged daily; peak times mid April through mid May with as many as 68,000 pages imaged in a single day; 6.2 million pages imaged for the year.	Documents are scanned to a network location to be used and consumed by applications like Fairfax, BizTalk, and other IDR applications. Network locations are security via AD Security Groups with monitoring via OCIO Information Security Division resources.
9	Image Management 3	Iowa Department of Revenue (IDR)/Office of the Chief Information Officer (OCIO) custom application	Image Management 3 is a browser-based application that was developed in-house for the purpose of rendering tax forms populated with data mapped from XML documents e-filed by taxpayers. The targeted documents are Iowa MeF and federal income tax returns and schedules (Individual Income Tax, Fiduciary Tax, Corporate Income Tax (C-Corporation, S-Corporation, and Partnership) and Streamlined Sales Tax registrations and returns. Image Management 3 maps federal income tax return data to forms via stylesheets published by the IRS and installed by OCIO. Image Management 3 also maps Iowa data to Iowa tax forms via XML Path Language (XPATH) to portable document format (PDF) fields and cross-reference defined in SQL database. Mapping requirements vary by tax year resulting in predictable maintenance as subsequent tax years add new versions of tax forms. Access to Image Management 3 is limited to internal staff and is controlled by tax type using AD. It also has the functionality to restrict user access to returns filed by certain high-profile individuals. Image Management 3 tracks user activity, calls the Data Warehouse, and stores logs in real time via API to push the activity logs to the Data Warehouse for purposes of administering IDR's browsing policy.	Provider Database; MeF Database; Streamlined Sales Tax Registration Database; Streamlined Sales Tax Returns Database	Image Management 3 calls the Data Warehouse and stores security logs in real time via API to push to the Data Warehouse.	Exact data volumes unknown. However, the application is used heavily all year round. User activity is logged.	Data - SQL Client to databases; Security logs - Data Warehouse Client to audit database
10	Image Management 2	Third Party Commercial Off-The-Shelf (COTS)	Image Management 2 is a COTS system that allows IDR applications to store and view images. All incoming scanned documents, imaged by OPEX, are stored in Image Management 2, which makes Image Management 2 an extensively used application throughout IDR for all scanned images. Various applications also utilize the Image Management 2 web service to access scanned images. Image Management 2 makes use of indexed documents to increase efficiency.	OPEX/Fairfax	Numerous applications use the Image Management 2 web service to access files. The indexed file information is stored in a database that can be accessed by various applications to provide not only images of the original documents, but also indexed data related to the specific file. Imaging 1, Image Management 1, and Fairfax.	The Image Management 2 web service access various types of images; Iowa Income Tax returns, Individual Tax payment information, Corporate Tax payment information, and Sales Tax payment information. Millions of images are stored each year.	Image Management 2 web service
11	Image Management 1	Iowa Department of Revenue/Office of the Chief Information Officer custom application	An internally-developed software to access images of scanned documents. Image Management 1 bridges the data indexes stored in SQL database to retrieve the requested image from Image Management 2. Image Management 1 has embedded security and traceability to limit the accessibility of images at the user level by tax type.	Image Management 2	Image Management 1 calls the Data Warehouse and stores security logs in real time via API to push to the Data Warehouse.	Exact data volumes unknown. However, application is used heavily all year round. User activity is logged.	Access Image Management 2 via web service; SQL Client access to database; Security logs - Data Warehouse Client to audit database.
12	Tax Processing	Iowa Department of Revenue (IDR)/Office of the Chief Information Officer (OCIO)	Tax Processing is IDR's primary tax processing system and a database of information regarding every entity registered with IDR. In order to understand Tax Processing, it is important to understand the reasons for integrating. Although Tax Processing provides many benefits, some not apparent to the user, the primary reason to integrate is to provide users with a total picture of a taxpayer. This is seen in the Registration component, where all tax activity by a taxpayer and all locations where the tax activity is carried on is identified. Tax Processing consists of nine components, defined by the functions and needs of IDR. -Registration The Registration Component captures all information necessary to register entities, issue permits and mail returns. This component serves as the core of the system, around which all other components operate. Special rules apply to streamline processing. -Transaction Taxpayer-initiated returns, IDR-initiated transactions, payment, and refund information for all tax types are in the Transaction Component. Special rules apply to streamline processing. -Distributions/certifications Money distributed from Individual Income Tax, State Sales Tax, and State-wide Property Tax to various local government institutions like county, city, and school districts, in accordance with the law. Processes include estimates, collections, reconciliations, and maintaining county logistics. -Case Management This component tracks communication with the taxpayer, including correspondence, summary of protests, requests for exemption, and other information documenting taxpayer communication. -Audit/Multi-Purpose Processing (MPP) Audit selection, results, creation of taxpayer profiles, and summary information are managed in this component. MPP is used to create ad hoc transactions to process refunds/billings within Tax Processing itself. -Accounts Receivable/Accounts Payable Included here is information traditionally carried in accounts receivable; however, integrated accounts payable functions are also included here. -Tax Definition This component presents online documents which help set tax policy, such as the Iowa Code, Iowa Administrative Code, court cases, declaratory rulings, orders, etc. -External Sources/Interfaces This component captures information obtained from sources other than the taxpayer. This includes other states, the IRS, banks, withholding agents, etc. This information is used primarily in Audit Manager. This system also creates data extracts for the Data Warehouse, SAS, Web, Offset 1, Revenue and Taxpayer Accounting, Offset 2, State Auditor's Office, outside vendors (e.g. FDGS, Streamline, etc.) and others.	Inbound data from many of the other systems.	Many of the systems use data stored in Tax Processing database	The following are approximate numbers for each tax type Individual Income Tax - 1,800,000 returns per year Corporate Income Tax - 40,000 returns per year S-Corporation and Limited Liability Corporation - 80,000 returns per year Partnerships - 30,000 to 40,000 returns per year Sales & Use Taxes - 450,000 returns per quarter Withholding Tax - 400,000 returns per quarter Rent Reimbursement Tax - 30,000 to 40,000 returns per year Motor Fuel Tax (Refund & Collections) - 8,000 to 8,500 returns per year All other taxes - 25,000 returns per year	The data is usually sent using FTP; Secure File Transfer Protocol (SFTP); BizTalk transfer process. The Data Warehouse, Offset 1, Offset 2, and Audit Manager interface systems consumes the mainframe files itself. API to the Data Warehouse.
13	Data Warehouse	Iowa Department of Revenue (IDR)	The Data Warehouse platform is a Teradata IntelliBase 1.0 Performance Node. It has over 8 TB of usable data space. This platform houses over 10 years of State and federal tax information. It houses Accounting and Collections databases. It is the platform used in conjunction with the Business Intelligence (BI) reporting tool, Analytics Tool 2, along with the SAS. Several other agencies are storing data on the platform as well, including Department of Human Services and Iowa Department of Criminal & Juvenile Planning. The Data Warehouse also houses the auditing case management tool, Audit Manager. There are numerous "web services" queries that obtain taxpayer data from it. The platform also serves as the fraud detection system for incoming State tax returns. The Data Warehouse platform has become the primary source of information IDR uses for decision-making.	Inbound data from many of the other systems SAS; Axeda Policy Server; Production and Test Audit Manager; Production, Test, and Development Tax Calculations; Production and Test Analytics Tool 2; Production and Test Fairfax Lookup; Production Imaging 1; Motor Fuel Batch Job; MeF; Mainframe; Image Management 3; Image Management 1; Collections; Federal extracts; State Extracts; Geomapping; I3; direct query of database by select users	Many of the systems use data stored in the Data Warehouse Tax Processing; Collections; SAS; Tax Credit; Axeda Policy Server; Production and Test Audit Manager; Production, Test, and Development Tax Calculations; Production and Test Analytics Tool 2; Production and Test Fairfax Lookup; Production Imaging 1; Motor Fuel Batch Job; MeF; Mainframe; Image Management 3; Image Management 1; Department of Inspection and Appeals; federal extracts; Early Warning; direct input of data into database by select users	The Data Warehouse contains 10 years of State and federal tax information and non-tax data utilizing 4 TB of space.	File loads from mainframe; APIs; FTP; SFTP; Mainframe to Mainframe; Load to the database from desktop computer (8 users have permissions); 19 users have rights to query database directly.

Interface Number	Interface Name	Current Agency	Interface Description	Inbound	Outbound	Average Data Load/Volume	Interface Technology
14	Revenue and Taxpayer Accounting	Iowa Department of Revenue (IDR) custom application	Revenue and Taxpayer Accounting is the system of record for debits, credits, and payments made on past due tax liabilities. It has multiple interfaces for other systems and processes, including but not limited to, Tax Processing, Audit Manager, and Collections. The system was designed to record and maintain information regarding the status of tax owed to IDR. It permits tracking of taxpayer liability and payment history, the issuance of required notices, and staging of the account through the collection cycle. Data are transferred to Revenue and Taxpayer Accounting from the following sources - Interface with Tax Processing and Audit Manager. Transactions are initiated when accounts are billed in Audit Manager, Transaction Tax Processing Resolution, or the Tax Processing Multi-Purpose Panel (MPP). - Manual data capture data entry operators key-in information directly from MPP documents, prepared by revenue examiners. Automatic MPP transactions originate on Tax Processing and interface with Revenue and Taxpayer Accounting similarly to the Audit Manager process. They constitute approximately 1% percent of all system transactions. When information is originally entered in Revenue and Taxpayer Accounting, it is assigned a specific status code. The system automatically moves the account through the collection cycle statuses based on established timeframes. This process may be accelerated, if necessary, by an examiner. When changing a status code, an examiner fills out a "Status Change Form" which is given to a data entry operator to be keyed. During the billing process, taxpayers are mailed coupons to send in with their payment. All incoming checks/payments are processed through Fairfax. An output file is created and loaded nightly into the system. An Activity Register is generated from the system. The Activity Register details all payments recorded. Accounting clerks use it to reconcile coupons and vouchers, including adjustments) to what was actually recorded on the system.	Tax Processing, Audit Manager, Collections	Tax Processing, Audit Manager, Collections	For any given year, approximately 203,000 accounts and 575,600 payments.	SFTP
15	Offset 1	Iowa Department of Revenue (IDR) /Department of Administrative Services (DAS) /Office of the Chief Information Officer (OCIO) custom process	The Offset 1 process is a debt collection avenue for money owed to the State. The Iowa Code directs DAS-SAE to establish and maintain a procedure to collect against any claim owed to a person by a State agency, and then apply the money owed to the person against the debt owed by the person to the State of Iowa. Taxpayers that qualify for a tax return that owe the State of Iowa will be in a "wait" state until all offsets have been applied. Files are exchanged between IDR systems and DAS Offset 1 system. IDR provides a file of pending refunds to DAS, Offset 1 matches the records against their records with balances due. A response file is generated as a result of the match which is sent back to IDR. IDR uses the data in the response file to offset taxpayer tax refunds and update taxpayer records. There are two parts State Offset and Vendor Offset.	Data is inbound from Tax Processing, the Federal government, and DAS-SAE.	Pending returns sent to DAS-SAE; data sent back to Tax Processing.	Average monthly data load/volume is 13,500 liabilities; with 50,000 at peak time.	SFTP
16	Offset 2	Iowa Department of Revenue/Office of the Chief Information Officer (OCIO) custom process	Offset 2 process is a debt collection avenue for outstanding Iowa State tax liabilities to be collected from federal refunds. There are rules that are applied on the debt data before debt will become eligible for federal refund offset from taxpayers. Files are exchanged between IDR systems and DAS Offset 2 System. IDR provides a file of pending refunds to DAS. Offset 2 matches the records against their records with balances due. A response file is generated as a result of the match which is sent back to IDR. IDR uses the data in the response file to offset taxpayer tax refunds and update taxpayer records. Payments are processed in Revenue and Taxpayer Accounting and reflect the balance in Offset 2 System. Liability balance can go up and down. USPS Confirmation numbers are saved on the Postal Manifest files to track the communication to the taxpayers about offsetting their refund toward the Iowa State tax Liability.	Data is inbound from Tax Processing, the Federal government and DAS-SAE.	Pending returns sent to DAS-SAE; data sent back to Tax Processing.	Each year, there are nearly 35,000 tax liabilities sent Federal Offset System. Historical data shows nearly 404,000 Offset 2 Liabilities were in the flat files.	SFTP
17	Collections	Third Party system	Collections is IDR's current tax collection system. The existing version, v. 3.5.2, of the software is nearing its end-of-life. All versions 3.7 or higher are cloud-based. Collections is the system of record for all tax debt collections activities, including but not limited to - Responsible Party assessments, - payment plans creation and maintenance, - taxpayer correspondence management (e.g. assessment notices), - State Sales Tax revocations, - professional license sanctions, - auto-billing of non-filed State Sales and Withholding Taxes, - wage garnishments, and - administrative levies. Collections creates a customer account based on initial taxpayer information found in IDR's accounting system, Revenue and Taxpayer Accounting, where taxpayers may have multiple accounts. For example, an account is created in Revenue and Taxpayer Accounting for different tax debt, such as State Sales Tax debt, Withholding Tax debt, etc. of the same taxpayer. This creates a constraint for Collections, which has the ability to manage multiple tax debts in a single taxpayer account. Therefore, IDR is not capitalizing on Collections' full functionality. Note IDR is currently using a vendor for non-tax debt collections activities. FACS is the system of record for non-tax debt. It is hosted and maintained by the vendor.	Revenue and Taxpayer Accounting to get collection cases; data from Data Warehouse and Tax Processing	File sent to LexisNexis for skip tracing; File sent to Livevox for Auto Dialer; data sent to Data Warehouse	518,900 individual payments, 373,500 accounts	SFTP

Interface Number	Interface Name	Current Agency	Interface Description	Inbound	Outbound	Average Data Load/Volume	Interface Technology
18	SAS	Third Party system	SAS is a powerful tool used across IDR to conduct statistical analysis and present data visually for leadership. The tool kit includes Enterprise Guide, a graphical user interface for the analytical software, and Visual Analytics, a tool for creating interactive dashboards. The former accesses data from MeF, Tax Credit, and Data Warehouse, as well as numerous extracts from Tax Processing that are transferred via secure protocol to the SAS server on a regular schedule. The SAS server contains decades of historical tax data used by the Research and Analysis staff to answer questions from taxpayers and legislators. Staff in Property Tax, Business Services, and Tax Management also use Enterprise Guide, while leadership across all divisions access Visual Analytics. Enterprise Guide is a flexible and robust application that can serve multiple purposes in addition to its analytical capabilities. It can interface with multiple sources (Excel, CSV, TXT files, etc.) and easily consume the data stored in those files. Enterprise Guide can organize data, allowing the user to create repeatable process flow steps that are saved for later use. Research and Analysis staff have developed many models using SAS code to complete fiscal estimates and revenue forecasts. These include the Individual Income Tax micro model, the Corporate Income Tax micro model, Iowa economic forecast models, revenue forecasting models for all tax types, and the Iowa Leading Indicators Index. Projects have been developed to assist the security team in identifying risky employee behavior and to assist accounting by tracking deposits on a daily basis, particularly helpful during the accrual period. Dashboards covering IDR budgets by division, human resource measures, individual income tax processing, and other key performance measures have been developed. The Property Tax staff uses Enterprise Guide to work with data from Declaration of Value forms (DOV), calculate the Business Property Tax Credit (BPTC), and integrate with Data Repository software. The SAS tools are prepackaged software with an annual license fee. IDR also recently signed a Remote Managed Services agreement with the vendor to shift the burden of maintenance from OCIO to the vendor. IDR is in the process of upgrading the software and servers used for Enterprise Guide and Visual Analytics.	Accesses data from many sources of data within IDR systems. Data transferred via secure protocol to the SAS server on a regular schedule; weekly, quarterly, annually, and ad hoc. Manual download of data from third party sources to shared files on server.	Reports can be downloaded or exported as commonly used file types, including Excel, CSV, TXT, and PDF formats.	Data transferred via secure protocol to the SAS server on a regular schedule; weekly, quarterly, annually, and ad hoc. SAS is used daily, weekly, monthly, and annually depending on task and time of year. Peak times January through May; two weeks every March, October and December; and every first week of the month.	File transfers from Mainframe via secure protocol to the SAS server on a regular schedule; Open Database Connectivity (ODBC) connections to Data Warehouse and SQL servers; Access is controlled by AD groups and SAS Management Console Application. Data transfer from SAS Business Intelligence (BI) server to SAS Visual Analytics server via libraries and autoload.
19	Analytics Tool 2	Third Party system	Analytics Tool 2 is the Business Intelligence (BI) tool used to query data from the Data Warehouse. Analytics Tool 2 is managed by a Third Party vendor. IDR has a license to use the software. Currently, there are 50 universes and 1,256 reports used by approximately 250 end users. The Analytics Tool 2 reports query State and federal tax information, along with Accounting and Collections data. Multiple reports are used by leadership to track taxpayer audits, and determine return on investment for audit programs. Select staff from other State agencies can access custom-coded Analytics Tool 2 reports. For them Analytics Tool 2 is a self-help option in performing their core functions.	Accesses data from the Data Warehouse	Not Applicable	Not Applicable	Not Applicable
20	Audit Manager	Custom Third Party system	Audit Manager is IDR's case management system used for the administration of audits, revised audits, and protests. It supports the business need of roughly 180 end users from multiple functional areas. It facilitates - applicable tax due calculations, - applicable penalty and interest calculations, - taxpayer correspondence issuance, - attachment of taxpayer documentation to corresponding records, - staff time tracking, - reporting, - tracking of audit assignment/reassignment and progress/status, etc.	The Audit Manager application (web service) connects to the Data Warehouse where it pulls and stores data. The application connects to file server where correspondence is stored and accessed. It connects to the Tax Calculation application and the Tax Processing system.	The Audit Manager application (web service) connects to the Data Warehouse where it pulls and stores data. The application connects to file server where correspondence is stored and accessed. It connects to the Tax Calculation application and the Tax Processing system.	For FY18, 84,500 audits processed, 6,400 revise audits, 500 protests processed	Audit Manager and all interfaces, including the Data Warehouse, communicate via secured Intra-net network. Users access IDR's network by validating credentials with Windows AD. Audit Manager utilizes Windows AD authentication to validate user. Access has to be setup in the Audit Manager application before they can log-in. User access logs are stored in the Data Warehouse where IDR Security will query using SAS. The vendor, The Sartell Group, uses virtual private network (VPN) access.
21	Tax Calculations	Office of the Chief Information Officer (OCIO) custom application	The Tax Calculations application was developed by IDR's technology partner OCIO. It is also hosted and maintained by OCIO. Calculations for the following tax types can be created from this application Withholding Tax, Fiduciary Tax, Corporate Income Tax, Franchise Tax, Retail Sales Tax, Use Tax, Motor Vehicle One-Time Registration Fee, Fuel Tax (Returns & Refunds), Cigarette Tax, Tobacco Products Tax, Inheritance Tax, and Rent Reimbursement. The application pulls data from Audit Component's database, Data Warehouse, and sends the tax calculation results back to Audit Component. Audit Component then sends the results to Tax Processing for a MPP setup.	The Tax Calculations application (web service) connects to the Data Warehouse, used to receive data from Audit Manager and Tax Processing databases and to SQL database.	The Tax Calculations application (web service) connects to the Data Warehouse (Tax Calculations database to send data to Audit Component database) and to SQL database.	Tax Calculations receives records from Audit Manager and provides tax calculations back to Audit Manager for eleven tax types. Peak times coincide with the tax season.	Web services and SQL database processes.
22	Tax Credit	Office of the Chief Information Officer (OCIO) custom application	Tax Credit was initiated in 2014 by IDR in conjunction with OCIO with the objective of developing a web-based system to consolidate all income tax credit administration within the State of Iowa in one modernized and centralized location. The system includes external facing tools to allow tax credit applicants to complete paperless tax credit applications and submit those directly to the administering agency. Tools were developed for the agency to move those applications smoothly through the review process, in accordance with the Iowa Code and Iowa Administrative Code. In many cases, the review process includes internal scoring and ranking by the agencies, or in cases of first-come, first-served award systems or credits with strict deadlines, tracking by application date. If approved, the system generates tax credit certificates for the successful applicants that are saved in the system and can be printed and mailed to the awardees. Applicant and award information is stored in a database for consumption by the administering agency and IDR. In addition, every income tax credit claim received by IDR since tax year 2006 is available in the system. Award data are used for tax credit administration, including the tax credit transfer process, if applicable, and for matching to historical and current claims to verify eligibility and identify errors that require billings. Award and claim data are also used for tax credit evaluation, including data analysis for fiscal estimates of the impacts of proposed changes to any tax credit, and extensive studies of the economic impact of the tax credits. During 2014-2017, the following tax credit award programs were developed in cooperation with the Department of Cultural Affairs, the Iowa Utilities Board, and the Iowa Economic Development Authority (IEDA) Historic Preservation Tax Credit (HPTC), Innovation Fund and Angel Investor Venture Capital Tax Credits, Solar Energy System Tax Credit, Redevelopment Brownfield/ Grayfield Tax Credit, Renewable Energy and Wind Energy Production Tax Credits, Farm to Food Donation Tax Credit, Renewable Chemical Production Tax Credit, and the High Quality Jobs Program as part of the Business Reporting Management System for IEDA. Remaining programs include the School Tuition Organization (STO) Tax Credit, administered by 12 STOs across the State, and Agricultural Assets Transfer Tax Credit, administered by the Iowa Finance Authority (IFA). In addition, two tax credit programs, administered by IEDA through IowaGrants.gov, need to be integrated into Tax Credit to ensure complete and accurate award information is available for IDR claims verification. Tax Credit is integrated with MeF, the Data Warehouse and Tax Processing. Tax Credit pulls all tax credit claims (from the IA 148) and auxiliary forms (ex. IA 128, IA 138, IA 177) from every MeF return, across all tax types, as the data are loaded into other IDR systems. That claim information is then run through the Tax Processing claim verification rules including checking the math on the auxiliary forms. Nightly, the Data Warehouse sends return-level data on paper returns that report positive numbers in the tax credit fields on the IA 1040; this directs Agency Staff to access those paper returns and manually capture the claim details from the IA 148 and relevant auxiliary forms. For corporate returns, if Tax Processing has a return in a pre-bill or overpay-pending status where there is a positive tax credit claim on the return, the return is first sent to Tax Credit and held until the system approves the claims as correct. If it is a paper	Tax Credit is integrated with MeF, the Data Warehouse, and Tax Processing. Tax Credit pulls all tax credit claims from the IA 148 and auxiliary forms (ex. IA 128, IA 138, IA 177) from every MeF return, across all tax types, as the data are loaded into other IDR systems. The claim information is then run through the Tax Credit claim verification rules including checking the math on the auxiliary forms. Nightly, the Data Warehouse sends return-level data on paper returns that report positive numbers in the tax credit fields on the IA 1040 to Tax Credit; this directs Agency Staff to access those paper returns and manually capture the claim details from the IA 148 and relevant auxiliary forms. For corporate returns, if Tax Processing has a return in a pre-bill or overpay-pending status, where there is a positive tax credit claim on the return, the return is first sent to Tax Credit and held until the system approves the claims as correct. If it is a paper return, Agency Staff must enter the claim information into Tax Credit for verification. If there is a tax credit error on a corporate return, Agency Staff can review that error and adjust the billing or refund accordingly in Audit Manager. Tax Credit also tracks payments by pulling necessary data from Data Warehouse. That data are used to adjust claims downward to ensure the most accurate claim information is used in any IDR analysis of a tax credit. There is a daily API between Tax Credit and IowaGrants that sends new and or updated award information for the Workforce Housing Tax Incentive Program (WHTIP) and Endow Iowa tax credit programs. There is currently work being done to create a new API with IowaGrants that will be sending application and award data for the HPTC program to Tax Credit. There is also an API being set up	Tax Credit is integrated with MeF, the Data Warehouse, and Tax Processing. Tax Credit pulls all tax credit claims (from the IA 148) and auxiliary forms (ex. IA 128, IA 138, IA 177) from every MeF return, across all tax types, as the data are loaded into other IDR systems. That claim information is then run through the Tax Credit claim verification rules including checking the math on the auxiliary forms. Nightly, the Data Warehouse sends return-level data on paper returns that report positive numbers in the tax credit fields on the IA 1040; this directs Agency Staff to access those paper returns and manually capture the claim details from the IA 148 and relevant auxiliary forms. For corporate returns, if Tax Processing has a return in a pre-bill or overpay-pending status where there is a positive tax credit claim on the return, the return is first sent to Tax Credit and held until the system approves the claims as correct. If it is a paper return, Agency Staff must enter the claim information into Tax Credit for verification. If there is a tax credit error on the corporate return, Agency Staff can review that error and adjust the billing or refund accordingly in Audit Manager. Tax Credit also tracks payments by pulling necessary data from Data Warehouse. That data are used to adjust claims downward to ensure the most accurate claim information is used in any IDR analysis of a tax credit. There is a daily API between Tax Credit and IowaGrants that sends new and or updated award information for the WHTIP and Endow Iowa tax credit programs. There is currently work being done to create a new API with IowaGrants that will be sending application and award data for the HPTC program to Tax Credit. There is also an API being set up between Tax Credit and IFA to send application and	Tax Credit pulls all tax credit claims from the IA 148 and auxiliary forms (ex. IA 128, IA 138, IA 177) from every MeF return, across all tax types. Nightly, the Data Warehouse sends return-level data on paper returns that report positive numbers in the tax credit fields on the IA 1040. Peak times coincide with the tax season.	API

Interface Number	Interface Name	Current Agency	Interface Description	Inbound	Outbound	Average Data Load/Volume	Interface Technology
23	Portal	Office of the Chief Information Officer (OCIO) custom application	Portal is a portal application designed to launch multiple applications and provide internal and external interfaces. As a host, it uses A&A authentication for user roles and can maintain those internal and external roles for these multiple applications from a single administration point. Current applications housed under Portal are Declarations of Value (DOV), DOV Sales Lists for external users, BPTC Geographic Information System (GIS) Audit parcel and data submissions, Replacement Claim, and audit review interface for external users. Utility Replacement Tax module is under development and soon it is going to be part of Portal.	Portal is a gateway to other property tax information. No inbound/outbound traffic.	Portal is a gateway to other property tax information. No inbound/outbound traffic.	Portal does not store any critical or any private information. It stores only login information of the user who logged into Portal. The applications under Portal also do not store any private data. All data stored are public data. DOV applications receives around 80,000 records per year and BPTC around 10,0000 records per year.	No API or any other interface used on this as Portal is just a gateway to different property tax applications. However the applications hosted by Portal use file storage, API calls etc.
24	Data Repository	Office of the Chief Information Officer (OCIO)	The Data Repository is a centralized repository for State agencies to access commonly used, authoritative datasets, and for the State to house centralized applications. Examples of data include Road Centerlines (Iowa Department of Transportation), Parcel Data (IDR), State Parks and Recreational Land (Iowa Department of Natural Resources), and Economic Development Areas (Iowa Economic Development Authority). A centralized application example is the State Geocoder which converts street addresses into point coordinates on a map. OCIO also maintains an address geocoder, available for all State agencies for converting street addresses to a coordinate (longitude (x), latitude (y)). OCIO and IDR use ESRI ArcGIS Enterprise Platform to deliver data in a variety of standardized ways. Enterprise platform components being implemented include ArcGIS Server, Portal, and ArcGIS Online for Organizations. Data is available in a variety of geospatial data formats or accessible by a Representational State Transfer (REST) API, or Simple Object Access Protocol (SOAP). A traditional Data Repository desktop client or other analytics software could consume the data in one of several geospatial data formats, from a database, or use the REST or SOAP endpoints. Scripting languages and web applications would typically use the REST or SOAP endpoints to access data, geoprocessing functions and geocoding APIs. IDR applications using location data Portal - Tax Mapper Applications (Local Option Sales Tax and Hotel/Motel Tax) - geocoding services, governmental units(city and counties), hotel/motel tax districts Portal - BPTC - geocoding services, statewide parcel data services School surtax data processing - bulk geocoding services, school district boundary data services Streamlined Sales Tax data processing- bulk geocoding services, governmental unit data, and postal address range product to generate Streamlined Sales Tax rate and boundary file Multi-agency Retail Sales Inspection - geospatial data services and mobile devices to collect and share data across agencies Tax district boundary data processing - utilize local parcel data to generate approximate local tax district boundaries.	Request for coordinates based on an address batch (single request with multiple addresses) via JavaScript Object Notation (JSON) or SOAP; A single address look up via API.	Coordinates for the address batch (single request -multiple addresses) is returned via JSON, Hypertext Markup Language (HTML) or XML; Coordinates for a single address request are returned via API or consumed and used by the Portal mapping API to return map location.	Data Repository is used daily, weekly, or monthly depending on unit and task needs. Data is currently stored in PostgreSQL for data available through the Web APIs . Data also is stored in SQL Server where in database spatial queries are needed. Spatial data can be stored and accessed using SQL Server, Oracle, Data Warehouse, Systems Applications and Product High-performance Analytic Appliance (SAP HANA) and other database management system.	OCIO and IDR use ESRI ArcGIS Enterprise Platform to deliver data in a variety of standardized ways. Enterprise platform components being implemented include ArcGIS Server, Portal and ArcGIS Online for Organizations. Data are available in a variety of geospatial data formats or accessible by a REST API, or SOAP. A traditional Data Repository desktop client or other analytics software could consume the data in one of several geospatial data formats, from a database, or use the REST or SOAP endpoints. Scripting languages and web applications would typically use the REST or SOAP endpoints to access data, geoprocessing functions and geocoding APIs.