Analytical and other software on the Secure Research Environment

The Research Environment runs with the operating system: Microsoft Windows Server 2016 DataCenter edition. The environment is based on the Microsoft Data Science virtual machine template and includes the following software:

- R Version 4.0.2 (2020-06-22), as part of Microsoft R Open
- R Studio Desktop 1.3.1093 working with R 4.0.2
- Anaconda 3, including an environment for Python 3.8.5
- Python, 3.8.5 as part of the Anaconda base environment
- Jupyter Notebook, as part of the Anaconda3 environment
- Microsoft Office 2016 Standard edition, including Word, Excel, PowerPoint, and OneNote (Access not included)
- JuliaPro 0.5.1.1 and the Juno IDE for Julia
- PLINK
- JAGS
- WinBUGS
- OpenBUGS
- stan and rstan
- Apache Spark 2.2.0
- SparkML and pySpark
- Apache Drill 1.11.0
- MAPR Drill driver
- VIM 8.0.606
- TensorFlow
- MXNet, MXNet ModelServer
- Microsoft Cognitive Toolkit (CNTK)
- Weka
- Vowpal Wabbit
- xgboost
- Team Data Science Process (TDSP) Utilities
- VOTT (Visual Object Tagging Tool) 1.6.11
- Microsoft Machine Learning Server
- PowerBI
- Docker version 10.03.5, build 2ee0c57608
- SQL Server Developer Edition (2017), including Management Studio and SQL Server Integration Services (SSIS)
- Visual Studio Code 1.17.1
- Nodejs
- 7-zip
- Evince PDF Viewer
- Acrobat Reader
- Microsoft Photo Viewer
- PowerShell
And in the Premium research environments:

- STATA 16.1
- SAS 9.4, m4 (academic license)

Users also have the ability to bring in additional software if the software was specified in the data request, the software runs in the operating system described above, and the user can provide Vivli with any necessary licensing keys. Software licenses must be validated by the software only at installation or setup: software that validates the license on each invocation will not work. Users must attest that the license agreements they need for any of the software they want to bring in can be used in the Vivli research environment.

**R Packages included in the Research Environment:**

- abind
- acepack
- AnnotationDbi
- AnnotationFilter
- askpass
- assertthat
- backports
- base
- base64enc
- BBmisc
- BH
- bindr
- bindrcpp
- Biocbase
- BiocGenerics
- BiocManager
- BiocParallel
- BiocVersion
- biomaRt
- Biostrings
- biovizBase
- bit
- bit64
- bind
- bitops
- clisymbols
- Cubist
- bit64enc
- boot
- brglm
- brms
- base
- brew
- cbind
- brio
- base64enc
- BSgenome
- b.Skip
- cairoDevice
- BH
- callr
- car
- bindrcpp
- carData
- caret
- BiocGenerics
- cTools
- caret
- BiocManager
- cellranger
- BiocParallel
- checkmate
- BiocVersion
- checkpoint
- biomaRt
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- Biostrings
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- bit64
- clipr
- cluster
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- codetools
- coin
- colorspace
- combinat
- commonmark
- compiler
- conquer
- corporcor
- corrplot
- covr
- cowplot
- credentials
- crayon
- crrp
- crrstep
- crskdiag
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- DBI
- dbplyr
- DelayedArray
- devtools
- desc
- DiagrammeR
- dichromat
- diffobj
- digest
- doParallel
- downloader
- dplyr
- drat
- DT
- e1071
- earth
- ebal
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Version 1.2
Python Packages included in the Research Environment:

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anaconda-client
anaconda-navigator
anaconda-project
applicationinsights
argh
argon2-cffi
asn1crypto
astroid
astropy
async-generator
atomicwrites
attrs
autopep8
azure-batch
azure-cli-nsPKG
azure-common
azure-core
azure-datalake-store
azure-graphrbac
azure-keyvault
azure-keyvault-certificates
azure-keyvault-keys
azure-keyvault-secrets
azure-mgmt-advisor
azure-mgmt-applicationinsights
azure-mgmt-authorization
azure-mgmt-batch
azure-mgmt-batchai
azure-mgmt-billing
azure-mgmt-cdn
azure-mgmt-cognitiveservices
azure-mgmt-commerce
azure-mgmt-compute
azure-mgmt-consumption
azure-mgmt-containerinstance
azure-mgmt-containerregistry
azure-mgmt-containerservice
azure-mgmt-core
azure-mgmt-cosmosdb
azure-mgmt-datafactory
azure-mgmt-datalake-analytics
azure-mgmt-datalake-nspkg
azure-mgmt-datalake-store
azure-mgmt-datamigration
azure-mgmt-devspaces
azure-mgmt-devtestlabs
azure-mgmt-dns
azure-mgmt-documentdb
azure-mgmt-eventgrid
azure-mgmt-eventhub
azure-mgmt-hanaonazure
azure-mgmt-iotcentral
azure-mgmt-iot hub
azure-mgmt-iot hubprovisioningservices
azure-mgmt-keyvault
azure-mgmt-logic
azure-mgmt-loganalytics
azure-mgmt-machinelearningcompute
azure-mgmt-managementgroups
azure-mgmt-managementpartner
azure-mgmt-maps
azure-mgmt-marketplaceordering
azure-mgmt-media
azure-mgmt-monitor
azure-mgmt-ml
azure-mgmt-network
azure-mgmt-notificationhubs
azure-mgmt-nsPkg
azure-mgmt-policyinsights
azure-mgmt-powerbiembedded
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azure-mgmt-recoveryservices
azure-mgmt-recoveryservicesbackup
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azure-mgmt-relay
azure-mgmt-reservations
azure-mgmt-resource
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azure-mgmt-search
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azure-mgmt-signaler
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azure-servicemanagement-legacy
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Bottleneck
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cycler
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cytoolz
dask
datashape
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diff-match-patch
distlib
distributed
docutils
dropbox
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fastcache

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This document describes the software contained on Research Environments provisioned after March 6, 2021.