Release Notes – MatrikonOPC Tunneller

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These are notes that are added to and sent with each release of MatrikonOPC Tunneller.

Notes:

- 2.3.1 or higher versions of MatrikonOPC Tunneller are not backwards-compatible with versions below 2.3.1 of this product.
- Version 3.0 is compatible with version 2.3.1 or higher.
- Full testing of Tunneller is done with one, two, and three connections. Partial testing is done with more than three connections.

Release Notes for MatrikonOPC Tunneller Version 3.2.3.0 (November 9, 2009)

Resolved Issues:

- **0014786:** Tunneller does not support the NotifyWhenOnlyTimestampChanges registry option, which enables transmitting updates when just the timestamp has changed.
- **0014150, 0014522:** Tunneller hardware licensing is not compatible with 64-bit operating systems.
- **0014017:** Hardware licensing driver may cause the computer to freeze.

- **0013495:** DCOM hyperlink in the *User's Manual* points to old support site and does not find DCOM documentation.

Known Outstanding Issues:

- **0014498**: If a server, to which Tunneller is connected, writes multiple times to the same tag in very quick succession (i.e., in the same millisecond), Tunneller may transmit the writes out of order.
- **0014917**: The hardware licensing drivers do not install on Windows 2000 SP3 or SP4.

Release Notes for MatrikonOPC Tunneller Version 3.2.0.0 (March 11, 2009)

New Features and Enhancements:

- The following configuration options are passed from CSC to SSC to provide consistent behaviour of SSC and CSC, especially on unreliable communication networks:

Client-Side Component option	Server-Side Component option.
Communication Timeout	Timeout.
Retry Attempts	Retries.
Processing Timeout	No matching option on SSC configuration utility GUI.
ReconnectTime	Session timeout.
ConnectDelay	No matching option on SSC configuration utility GUI.

- The start-up type of CSC services (MatrikonOPC Tunneller CSC and MatrikonOPC HDA Tunneller CSC) is changed from Automatic to Manual.
- Logging is improved (some log message texts are modified and more detail logging is added for some cases).
- *User's Manual* is updated.

Resolved Issues:

- Synchronous HDA update history requests now return the same HRESULT code as returned by remote OPC server.
- Connection – reconnection algorithms are revised to provide more reliable communication on different network configurations.
- Detecting of application instance that is already running, is improved
- Shutdown request sent by remote OPC server is handled properly.
- Client-Side and Server-Side Gateway Configuration Utilities are modified to warn the user if configuration changes disallow further communications.
- ProgId for Tunnelled OPC servers can be renamed without losing of functionality (on Client-Side Gateway configuration utility).
- Error handling is improved to inform the user of cases when configuration files cannot be read or written, or access to the system registry fails.
- Upgrading/repairing issues are resolved to keep existing configuration settings.
- Client-Side Gateway Configuration tool now detects connection failures faster, within the period defined by Communication Timeout option. An additional log file is created to diagnose connection failures.

Release Notes for MatrikonOPC Tunneller Version 3.1.2.1 (January 20, 2009)

New Features and Enhancements:

- Logging is available in the Client-Side Gateway Configuration tool. For more information, please refer to the Problems and Solutions - *Unable to browse remote OPC Server message displayed* section in the *MatrikonOPC Tunneller User's Manual*.

Resolved Issues:

- **0012138:** Client-side cannot connect to Server-side on some network configurations.
    - Connection between the Client-side gateway and Server-side Gateway is established via the Internet (with different Internet service providers), via router, using port forwarding, etc.

Known Outstanding Issues:

- **0012285**: Tag Security for the Simulation server cannot be launched from OPC Explorer if .Net is not already installed on the machine.
    - **Workaround:** Install Windows .Net 1.1 from the Microsoft website.

Release Notes for MatrikonOPC Tunneller Version 3.1.2.0 (August 15, 2008)

New Features and Enhancements:

- Integration with MatrikonOPC Security Gateway is implemented. If Security Gateway is installed and licensed on a remote (server-side) box, then Tunneller Server-Side Component exposes only Security Gateway and allows connections only to it.

Resolved Issues:

- **0011117:** Client-side Gateway Key Manager - web link on the **About** window does not work.
- **0010672:** If the end OPC server restarts, items stop being updated.
- **0011006**: Impersonation changes do not trigger the **Apply** button to save the changes (SSC configuration panel).
- **0010909:** An error message appears when trying to add an impersonation to the server-side gateway.

Known Outstanding Issues:

- When Tunneller is installed on the same box as its previous version, the existing configuration settings are overwritten by default settings. Therefore, after upgrading Tunneller, the configuration settings should be re-set.

Release Notes for MatrikonOPC Tunneller Version 3.1.1.0 (March 12, 2008)

Resolved Issues:

- **0008692:** Installer does not work on NT4.
- **0009601**: Expired license causes Tunneller to generate random data.
- **0009580:** Cannot list OPC servers on encrypted connection.
- **0009570:** Cable pull results in perpetual reconnect attempts from CSC even though it connects to SSC.
- Communication retries default value is changed to 0 on Server-Side Component.

- **0009541:** NT install needs "browse registry" checked to be able to browse, but this is not enabled by default.
- **0009558:** Do not log "browse delimiter" option on SSC – unused option logging is eliminated.
- Default value for option *DeactivateGroupWhileAddingfOfItems* is changed to 1 in the *tunneller.ini* configuration file.
- Minor GUI changes on Client-Side Key Manager and Server-Side Configuration Tool.
- **0009647**: OPC Group or Item Deactivate/Activate causes extra callback with bad quality.
- **0009724:** TunnellerOpts.INI should specify Reconnect Time as being in sec, not msec.

Known Outstanding Issues:

- *Retry Attempts* option configured using Client-Side Gateway Configuration Tool logged in log file as *Retries* and its value is incremented by 1.

Release Notes for MatrikonOPC Tunneller Version 3.1.0.0 (February 26, 2008)

New Features and Enhancements:

- Modified Server-Side Key Manager (renamed to Server-Side Gateway Configuration Tool) is used to configure all settings for the Server-Side Component including impersonation and restriction of the access to OPC servers in conjunction with encryption settings. Additional **Advanced** tab allows the user to configure settings stored in the *tunneller.ini* file.
- Added user impersonation functionality. Tunneller SSC now has the ability to connect to the end OPC server using a certain local user account depending on the user of the OPC client process on client side. Configuration of impersonation settings can be performed using the Server-Side Gateway Configuration Tool.
- Added functionality to restrict access to OPC servers. Now only part of OPC servers installed on the Server-Side host can be reachable for the Remote client. For each Remote client (which can be authenticated by its IP address, host name or domain\user name or by a combination of them) the list of accessible OPC servers can be configured using Server-Side Gateway Configuration tool.
- Revised communication algorithm. Now the Server-Side Component can send Keep-Alive messages periodically if the execution time for a request takes a long time. In this connection, two timeout parameters are used on the Client-Side Component: *Communication Timeout* and *Processing Timeout*, instead of the *Network Timeout* parameter. *Timeout* parameter used on Server-Side Component has the same meaning as *Communication Timeout*.
    - *Communication Timeout* should be configured to the value higher than the time required to send the largest message over the network. Its default value is ***3*** seconds. *Processing Timeout* should be set to the value higher than the time required to execute a request taking the longest time. Its default value is ***60*** seconds.
    - If there are any requests being processed, the time interval between messages sent to Client-Side (Keep-Alive messages or regular communication messages) will be no longer than half of *Timeout*.
    - If Client-Side sends a request to Server-Side and does not get any response (neither normal response nor Keep-Alive message) from it during the time more than 1.5 of

the value set by *Communication Timeout* parameter, it detects communication failure and disconnects.

- If there are no requests being processed, Server-Side does not send Keep-Alive messages.
- *Processing Timeout* and *Communication Timeout* are configured using the Client-Side Gateway Configuration Tool on the Client-Side component. On the Server-Side Component, the corresponding timeout parameter is stored in the *tunneller.ini* file and can be configured using the Server-Side Gateway Configuration Tool.

  Note: On the Server-Side Component, timeout should be set to the value equal to or less than the minimum value of the *Communication Timeout* parameter configured on all clients.

- Modified license checking algorithm.
- *User's Manual* is revised.
- Socket error codes are logged.
- If DA data updates, received by *OnDataChange* call-back from the OPC DA server, have a failed error code, the error code is logged on both Client and Server-Side Components.

Resolved Issues:

- **0007074:** Tunneller still tries to browse end server when no browse is available. Handling of the case when end OPC server does not support browsing functionality is improved. Now the Client-Side Component returns the E_NOTIMPL return code to OPC client's browsing calls quickly. Moreover, once it is detected, that end OPC server does not support browsing and the Client-Side Component does not send more browsing requests to the Server-Side.
- **0008081:** Delay after connection is longer than configured by the *PostConnectDelay* parameter.
- **0008286:** Log file shows message that error occurred setting process affinity mask. Now Client-Side Component by default does not try to set process affinity mask, so what CPUs will be used will be defined by system settings. If *ProcessAffinity* is set on system registry (see *Troubleshooting* section of the *User's Manual* for information about how to set this parameter), it will be set only if system does support it and setting does not match with current setting.
- **0007997:** Tunneller does not respond to CoCreateInstanceEx calls. Now OPC clients can use CoCreateInstanceEx function as well as *CoCreateInstance* to connect to the Tunneller Client-Side Component. **Note:** Un-registering of OPC servers using Client-Side Gateway Configuration Tool and re-registering them again is recommended if previous version of Tunneller was upgraded to this version.
- **0008287:** *IOPCHDASyncRead -> ReadAttribute* call causes exception if number of values higher than number of attributes.
- **0008310:** If items are added during an attempt to reconnect after a communication failure, they are not updated after reconnection. If items are added by the OPC client during an attempt to reconnect, their initial qualities are set to "*bad, non-specific*". At this point, item syntax was invalid, but after reconnection its quality is changed to "*bad, bad configuration*".

  Note: During a reconnection attempt, items that were added before the communication failure will not update values or qualities. Requests made during the reconnection attempts (including *GetStatus* requests) will fail.

- **0008598:** Installation on WinNT – Tunneller can be installed on Windows NT 4, Service Pack 6.
- **0009180:** Tunneller Server-Side component does not call RemoveGroup to remove OPCGroup.
- **0008545:** Log file displays AppID instead of ProgID
- **0009404:** CoCreateInstance for connection to the end OPC server first should be called as for Local server.
- **0009448:** Tunneller CSC does not create log files until the logging settings are changed.
- **0009447:** Tunneller still has Tunnneller2_2 in Tunneller Config INI file entries.
- **0009481:** Config file has two copies of port number.
- **0009449:** IOPCHDA_SyncRead::ReadRaw returns E_INVALIDARG when bBounds==TRUE and dwNumValues==1. Passing of Start and End Time arguments through Tunneller is modified additionally; now one of them can have an empty value.
- **0009455:** IOPCHDA_SyncRead::ReadAttribute returns E_FAIL instead of E_INVALIDARG. Passing of End Time argument through Tunneller is modified additionally; empty time is allowed if the Start Time is equal to "NOW", so current values for attributes are read correctly.
- **0009451:** PostConnect Delay not logged.
- **0009476:** All Tunneller components should log their start-up parameters on level LOG_ALWAYS. Logging of options is revised and now all configuration options are logged into a log file on both Client-Side and Server-Side Components. Unused options are removed from *TunnellerOpts.ini* file.
- **0009504:** Subnet mask algorithm should be changed to industry standard (Encryption settings).
- Maximum size of log file increased to 500 Mb on Server-Side Component.
- When the Server-Side Component service is registered by the "TunnellerServer /Install" command, failure actions are set to "Restart the Service".
- Potential exception causes are eliminated on *GetItemAttrubutes* and *ReadAttribute* calls to the end OPC HDA server.
- Default value for option *DeactivateGroupWhileAddingfOfItems* is changed to 0 in the *tunneller.ini* configuration file.

Known Outstanding Issues:

- **0009570:** When using compression, Tunneller will fail to reconnect to an existing session. It will reconnect by starting a new session after the *ReconnectTime* time.

Release Notes for MatrikonOPC Tunneller Version 3.0.4.0 (November 16, 2007)

New Features and Enhancements:

- Support for licensing on Stratus boxes has been added. At installation, the user should select option defining if Tunneller is being installed on a Stratus box (default value of the option – non Stratus box).
  Note: On the Stratus box, only software licensing is supported. Please contact MatrikonOPC Support if support of a hardware license key is required.

Release Notes for MatrikonOPC Tunneller Version 3.0.2.0 (August 15, 2007)

New Features and Enhancements:

- New parameter is added (*DeleteDuplicateSessionsOnNewConnection* under TCConnection section) on *tunneller.ini* configuration file. If this parameter is set to ***1***, only one session and connection to the end OPC server will be created for each combination of "CSC IP address/OPC server ProgId". So, when SSC receives the request to create a new session from CSC, first it will find and delete all sessions which belong to the same combination of CSC IP address, and OPC server ProgID and category. If its value is ***0***, checking and deletion of duplicate sessions will not be performed.
- The default value is ***1***. If all connections to server side component are initiated from Tunneller client side components running under Windows operating system, this parameter should not be set to ***0***.

Release Notes for MatrikonOPC Tunneller Version 3.0.1.0 (August 1, 2007)

Resolved Issues:

- **0007038:** Dual-NICs are not handled correctly. Tunneller CSC or Client Gateway Configuration Tool can not establish more than one connection.

Release Notes for MatrikonOPC Tunneller Version 3.0.0.0 (March 9, 2007)

New Features and Enhancements:

- Optional encrypted communication between the Client-Side Component (CSC) and Server-Side Component (SSC) using shared key encryption.
- Addition of a Key Manager to manage encryption keys for both CSC and SSC.
- Optional compression of communication messages between CSC and SSC added to reduce network traffic.
- HDA support is enhanced and now it is fully compliant with the OPC Historical Data Access Specification Version 1.20. Note that some optional methods are not implemented.
- Handling of operations that require a long time for execution (with large number of items and/or data) is improved. If execution of operation time-out is detected on CSC, but later SSC sends response for that operation, an additional message with level 2 logging appears in the CSC log file:
  TIMEOUT WARNING: Probably the network timeout parameter should be increased by %d seconds.
- New configuration parameter *DelayAfterAddItems* is added for CSC.

Resolved Issues:

- **0005287** – Tunneller does not connect to IP Addresses. When user enters IP address or host name on Client-Side Gateway Configuration tool, its value is stored as entered by the user.
  Note: Two entries can be open for the same host, both IP address and by host name.
- **0005168** – "*Invalid Retry Parameter Specified*" – when retry set to forever and after Client-Side Configuration tool is closed and re-opened.
- **0005026** – SSC does not close connection to OPC server when HDA client disconnects from CSC. Now connection to the end OPC server from SSC will be closed if no more clients are connected to the CSC for more than configurable time interval.

(NoClientsDisconnectionDelay parameter in TSConnectDelay section of TunnellerOPts.ini file). Some modifications are also made to minimize the number of connections to the end OPC server.

- **0005075** – Tunneller server Private bytes ramps to ~1.7GB and declines with concurrent established connections. The algorithm of updating DA values on SSC and sending messages to the CSC is modified. If CSC cannot process all update messages sent to it (due to high CPU load on the machine where CSC is running, or due to slow network communication speed), SSC stores updated Value/Quality/Timestamps in its cache and sends them to the CSC when the message queue allows them to be sent. In other words, the message queue is limited by a configurable number.
- **0005006** – Application log showing missing event descriptions for HDA CSC.
  The way events were logged on Window Event Logging system is modified. The new file EventLogger.dll is included into install package which contains event IDs.
- **0005386** - Tunneller does not pass HRESULT 80070057 (invalid parameter) to end OPC client. Now Tunneller HDA returns to the OPC client, the original return code that was returned by the remote OPC server.
- **0005071** - Once licensing expires - log files are spammed with excessive messages (40 per minute). Frequency of license checking is changed from every 3 seconds to every minute on SSC.
- **0006381 -** TunnellerOpts.ini does not have all Options specified in configuration.
  Both TunnellerOpts.ini and tunneller.ini files are modified and include all configuration options.
- **0005168** - "Invalid Retry Parameter Specified." - When retry is set to forever and after Client-Side Configuration tool is closed and reopened. Now the value of "*Retry Attempts*" parameter is stored separately even if "*Retry Forever*" check box is on.
- **0006480** - Logging: Failed with DSResult: 8300000A.
  On Tunneller HDA wrong messages are eliminated from tunneller.log file:
  - COPCClient::LocalActivateItems ERROR - DA is not supported based on Tunneller client request
  - COPCClient::SyncItemStates Failed with DSResult: 8300000A
- **0005011 -** There are no descriptions for any of the Tunneller Services.
- **0003630 -** Executable names should represent their function. Now all Tunneller services are registered with Windows-format path to executables and with description.
- Spelling error on log files are corrected (bugs 5279 and 6405).
- **0005215 -** "Class not Registered" error if you try to run OPCTunneller.exe (Client-Side) if Tunneller client service is not running. A warning message appears when Tunneller is configured to run as a service, but was attempted to be run as a regular application is made, it is modified to: "*Could not register class factories. Probably Tunneller CSC is configured to run as service.*"
- **0003343** - Failure to connect to server does not save server name. If connection with SSC can't be established or fields are not validating, then dialog window will not be closed keeping current field values. (Add Remote Tunneller Connection dialog window of Client-Side Gateway Configuration Tool.)
- **0004165 -** Tunneller gives buffer overflow errors when accessing tunneller.ini.
  Filemon tool from Sysinternals was showing buffer overflow messages. The way Tunneller

accesses tunneller.ini and TunnellerOPts.ini files is modified so now there are no more buffer overflow messages.

- **0004562** - Would like log file to show local computer name. IP address and host name for both local and remote computers are logged on CSC and SSC.
- **0004050 -** Adding multiple items causes present items to go bad. The reason qualities of items were changing to bad, is that the SSC was deactivating OPC Groups before the adding of items and activating after adding. The new *DeactivateGroupWhileAddingfOfItems* parameter is added on tunneller.ini file to control activation of group while adding of items.
- Issues, causing memory growth and high CPU usage on CSC and SSC, are resolved in cases when large number of items and/or data is processed or error conditions happen (for example communication errors, connection to remote OPC server errors).

Known Outstanding Issues:

- Browsing large numbers of tags under one branch may not show all the tags.
- Unable to install on the Windows NT 4.0 operating system unless Service Pack 6 is installed first.
- If there is a network failure while a browse command is being executed, the end OPC client and the CSC may need to be restarted.
- If a client is rapidly connecting and disconnecting in succession, the SSC may exhibit a steady increase in memory.
- If the SSC service is active when Tunneller is uninstalled, it may not be removed from its install location.
- Error browsing to the Tunnelled HDA program ID in Data Access Client. Although Tunneller registers remote OPC servers on local computer using correct OPC categories, among with DA servers also HDA servers also can be listed on DA OPC Client. If attempt to establish DA connection with that server is made, client encounters run-time error, because Tunneller exposes remote HDA servers separately from DA servers, and they does not implement DA interfaces.
- Tunneller writes log messages to Window events when there are some encryption related communication issues. For example, if encryption key on client side does not match with the key on server side, excessive event messages can be logged into Windows events system. As a result event log can reach its limit.
- Tunneller can throw exceptions if there is no more free space on hard disk.
- If the remote OPC server does not respond to the SSC's call during a long period of time, there is no guarantee that memory leak will not occur. Because in this case, the SSC's thread which executes that call, can be terminated without releasing of memory allocated to run that call. Termination of thread is accompanied by the message "*CThreadPool::Stop Terminating Worker Thread*" in log file (level 3).
- Tunneller 3.0 still does not support "dead-banding" functionality.
- When Tunneller transfers arrays, it converts them to 0-based arrays.
- If the compression option is changed while Tunneller has active connections the changes will not be applied and may cause Tunneller to produce an error and need to be restarted.
- When transferring large HDA queries over Tunneller memory usage may grow rapidly and remain high for extend periods of time.

- Trying to pass more information through Tunneller than can be actively passed through Tunneller due to network or the end OPC server throughput can cause a memory bloat as Tunneller queues the incoming requests.

Other Changes:

- Only one instance of Tunneller SSC, CSC and CSC HDA can be running at the same time. If an attempt to launch another instance is made, applications show warning message and terminate.
  Note: SSC terminates not immediately but after some delay (about 1 minute).
- Default value for *MaxAddMessage* parameter (in TunellerOpts.ini) is changed from 3000 to 1000.
- Default value for *Session Timeout* parameter (tunneller.ini file) is changed from 120 to 0 which corresponds to its pair on CSC (*ReconnectTime* parameter with default value 0).
- New parameter DeactivateGroupWhileAddingfOfItems is added for SSC (tunneller.ini file). Its default value is 0, that means don't deactivate OPC Group before adding item, so OPC Group's state is not changed while adding of items. It differs from previous version (2.4.0.0) when OPC Group was always deactivated before adding of items and activated after.
- Implementation of AddItems functionality is reviewed. Configurable number of retries is introduced on CSC, which is used on AddItems call to the end OPC server. (AddItemRetries and AddItemDelay parameters in *TunellerOpts.ini* file.) It should eliminate issues when starting some end OPC servers that take a long time, and attempting to add items can immediately fail after starting though GetStatus call receives Running status.

Release Notes for MatrikonOPC Tunneller Version 2.4.0.0 (December 15, 2006)

New Features and Enhancements:

- When a command is sent from the CSC to the SSC, and if it takes an extended period of time to complete, the SSC will send "*still processing*" messages back to the CSC. This allows timeouts to be reduced while allowing long commands to execute to completion.
- New Option to control when items are validated.
- The GetStatus call now returns a failed code until a running code is retrieved from the end OPC server.

Resolved Issues:

- When installed on Windows NT, the SSC can now retrieve the Program IDs (ProgIDs) of the local OPC servers.
- The Client Configuration Tool (CCT) can now run on Windows NT and collect ProgIDs of remote OPC servers.
- On multi-processor computers, the HAD CSC would not detect a valid software license.
- Communication problems when changing the state of a group when the TCP session is broken. All async communication would fail.
- The CCT can now run on Windows NT and collect remote ProdIDs.
- Memory leak in the SSC when polling has been fixed.
- ReadAttribute (HDA Data Type) now correctly returns the data type of the item.
- When two OPC clients attempt to connect at the same time, a deadlock may occur.

- Resolved deadlock that could happen when setting the client name.
- The CSC now allows the use of two CPUs by default.
- A memory leak in the SSC has been fixed when adding invalid DA items.

Known Outstanding Issues:

- Trying to pass more information through Tunneller than can be actively passed through Tunneller due to network or the end OPC server throughput can cause a memory bloat as Tunneller queues the incoming requests.
- Browsing large numbers of tags under one branch may not show all the tags.
- Unable to install on the Windows NT 4.0 operating system unless Service Pack 6 is first installed.
- If there is a network failure while a browse command is being executed, the end OPC client and the CSC may need to be restarted.
- Tunneller may not detect network status when using dual NICs.
- If a client is connecting and disconnecting rapidly in succession, the SSC may exhibit a steady increase in memory.
- If the SSC service is active when Tunneller is uninstalled, it may not be removed from its install location.

Release Notes for MatrikonOPC Tunneller Version 2.3.1.0 (March 9, 2006)

New Features and Enhancements:

- Added an option in CSC to allow/disallow items that have never had at least one update from the end OPC server to be included in updates to the end client.
- Added an option in SSC to have a configurable delay after connecting to the end OPC server.

Resolved Issues:

- Slow memory leak removed when calling remote GetStatus.
- License fix for Multi-Processor Computers.
- Internal changes to isolate OPC clients in the SSC and improve communications when heavily loaded.

Known Outstanding Issues:

- Unable to install on the Windows NT 4.0 operating system unless Service Pack 6 is first installed.
- If there is a network failure while a browse command is being executed, the end OPC client and the CSC may need to be restarted.
- Tunneller may not detect network status when using dual NICs.
- If a client is connecting and disconnecting rapidly in succession, the SSC may exhibit a steady increase in memory.
- If the SSC service is active when Tunneller is uninstalled, it may not be removed from its install location.

Release Notes for MatrikonOPC Tunneller Version 2.3.0.0 (January 31, 2006)

Release notes updated with HDA interfaces supported February 2, 2006.

New Features and Enhancements:

- Added HDA support via an additional HDA-only CSC.
- Supported HDA interfaces and methods:
    - IOPCCommon
    - IOPCHDA_Server
        - All but GetAggregates does not return a complete list of aggregates
    - IOPCHDA_Browser
    - IOPCHDA_SyncRead
        - ReadRaw
        - ReadProcessed
    - IOPCHDA_SyncUpdate
        - Insert
        - Replace
        - Insert/Replace
- Support for connecting to OPC servers that are DA 1.0 only.

Resolved Issues:

- Tunnelled ProgIDs are now registered only under the OPC category they are registered under on the remote machine.
- Only items that have had at least one update from the end OPC server are included in updates to the end client.
- GetStatus returns the status in the field of the status structure when the connection to the SSC has failed.
- Connections made by DA 1.0 clients can now get string arrays in the subscribed updates.
- Changes to have any updates sent out (subscribed, polled) have a bad quality before they are updated from the end OPC server.
- Validating an item no longer adds the item.
- Increased COM marshalling efficiency.
- Fixed browsing for OPC servers that only support flat browsing.
- Fixed reconnect code when the SSC needs to reconnect to a failed OPC server.
- Changed how we load the Tunneller COM object for more reliable object creation.

Known Outstanding Issues:

- Unable to install on the Windows NT 4.0 operating system unless Service Pack 6 is first installed.
- If there is a network failure while a browse command is being executed, the end OPC client and the CSC may need to be restarted.
- Tunneller may not detect network status when using dual NICs.

- If a client is connecting and disconnecting rapidly in succession, the SSC may exhibit a steady increase in memory.
- If the SSC service is active when Tunneller is uninstalled, it may not be removed from its install location.

Release Notes for MatrikonOPC Tunneller Version 2.2.2.0 (November 4, 2005)

New Features and Enhancements:

- Added configurable delay describing the minimum amount of time Tunneller will wait between initiating a TCP connection.
- All non-OPC item types are returned as bad items.
- Tunneller will now first try to reconnect to the same session (maintained state) on the SSC before trying a full connect and rebuilding the state.
- Connecting the TCP link now re-establishes the connection by re-adding the items in bulk calls. The number of items in one call is configurable.
- Implemented Tunneller client-side and server-side session reconnection.
- Added option to not overwrite the SSC log on start-up.
- CCT now lets the user un-register all the connections to a single computer at once.
- Hardware for CSC and SSC is now implemented.

Resolved Issues:

- Items no longer become inactive when they are expected to be active.
- Add/Validate fix for not validating any items when any bad items exist.
- Resolved issues which resulted in memory leaks when not connected.
- Clients no longer block on calls when Tunneller is trying to connect.
- Resolved SSC crash issue.
- Mixed mode install logging will work for both Tunneller 1.5.0 and 2.2.2.0 at the same time.
- The CCT now clears bad entries and replaces them with default values.
- The networked computers dropdown list in the CCT no longer appends to the list every time it is opened.
- IOPCSyncIO read call no longer misaligns data when some of the items are returned with E_FAIL.
- Hardware licensing is now working for both SSC and CSC.
- If the enumeration of remote ProgIDs fails, the SSC will now retrieve the list of servers from the registry directly.
- “Remote” GetStatus call now propagates a failed code to the end OPC client.

Known Outstanding Issues:

- Unable to install on the Windows NT 4.0 operating system unless service pack 6 is first installed.
- AddItems and ValidateItems are both called when either one is called by the end OPC client.

- If there is a network failure while a browse command is being executed the end OPC client and the CSC many need to be restarted.
- Tunneller may not detect network status when using dual NICs.

Release Notes for MatrikonOPC Tunneller Version 2.2.1.0 (September 19, 2005)

New Features and Enhancements:

- Service names have been changed to allow easier identification of components:
  - Client-Side Component (CSC)
  - Server-Side Component (SSC)
- Installation package allows for mixed install of Tunneller 1.x and 2.2.1.
- Tunneller 2.2 has backward compatibility with Tunneller 2.1.1 and 2.1.0.
- New communications options added.
- All OPC data types now supported (including currency and arrays).
- DA 2.05 compliance with latest release of OPC Foundation test tool.
- Updated Client Configuration Tool to allow user all available options at connection creation.

Resolved Issues:

- AddItems changed to allow multiple adds in a single call.
- Resolve issues regarding concurrent client browsing.
- Numerous changes to increase stability.
- Resolved issues which resulted in memory leaks under certain situations.
- Increased robustness of TCP communication.
- OPC Shutdown message is now passed back to the OPC client.
- True asynchronous communication across TCP Link.

Known Outstanding Issues:

- SHLWAPI.DLL and ATL.DLL requirements not detected by install. If the Windows OS does not contain these two files Tunneller will not operate correctly.
- Inability to enumerate servers on NT 4.0 platform causes Tunneller to function incorrectly.

Release Notes for MatrikonOPC Tunneller Version 2.1.1.0 (February 21, 2005)

Note: Tunneller v2.1.1 is not backwards compatible with 1.x versions of this product. The installation package now offers customers the ability to install Tunneller 2.1.1 and Tunneller 1.x versions on the same machine.

New Features and Enhancements:

- Support for side-by-side install with Tunneller 1.x.

Resolved Issues:

- Locking issue fixed where a Tunneller client reconnecting to a Tunneller server would lockup-up and not respond.

Release Notes for MatrikonOPC Tunneller Version 2.1.0.0 (December 20, 2004)

Note: Tunneller v2.1 is not backwards compatible with 1.x versions of this product. Tunneller 2.1 and Tunneller 1.x versions cannot be installed on the same machine. Tunneller 2.1 and Tunneller 1.x versions cannot communicate with each other. Any customers currently running Tunneller 1.x must upgrade ALL Tunneller nodes in the system to version 2.1.0.0.

New Features and Enhancements:

- Tunneller Server-Side Gateway now runs as a service.
- Robustness and stability of Tunneller has been significantly improved.
- When uninstalling Tunneller all Tunneller specific program IDs are now removed.
- Added version information reporting to the Tunneller server log file.
- Made the “Matrikon.OPC.Tunneller” ProgID transparent to OPC clients.

Resolved Issues:

- Fixed bug: DA browsing aliases and multiple levels that required OPC_BROWSE_TO recursively browsed from the root of the browse tree.
- Fixed bug: memory leaks related to DA Device Read() and Write().
- Fixed bug: Modified DA Write() and Device Read() to return E_FAIL during network connection loss.
- Fixed bug: Disabled unsupported OPC interfaces DA 3.0, A&E 1.1.
- Fixed bug: during network failure DA item qualities change to OPC_QUALITY_COMM_FAILURE.
- Fixed bug: Removed MTKTPC.exe support tool from the install package.
- Fixed bug: arrays of type smaller than int (Boolean, Short, etc…) were not read or written correctly.
- Fixed bug: DA flat browsing causes memory leaks.
- Fixed bug: DA browsing appears slow.

Known Outstanding Issues:

- Tunneller does not support the currency data type.
- Clients hang when network is disconnected during DA browsing.
- Items will validate when Tunneller server-side gateway is unavailable.
- TunnellerServer.exe not removed during uninstall if running.
- After reconnect, DA values periodically go 'GOOD' but values do not change.
- SHLWAPI.DLL and ATL.DLL requirements not detected by install. If the Windows OS does not contain these two files Tunneller will not operate correctly.
- Inability to enumerate servers on NT 4.0 platform causes Tunneller to function incorrectly.
- Product is not fully DA2.05a compliant.

Release Notes for MatrikonOPC Tunneller Version 2.0.0.0 (May 6, 2004)

Notes:

- Tunneller v2.0 is not backwards compatible with 1.x versions of this product. Tunneller 2.0 and Tunneller 1.x versions cannot be installed on the same machine. Tunneller 2.0 and Tunneller 1.x versions cannot communicate with each other. Any customers currently running Tunneller 1.x must upgrade ALL Tunneller nodes in the system to version 2.0.0.0.
- The override registry keys available in 1.x versions are no longer supported in 2.x versions.

Release Notes for MatrikonOPC Tunneller Version 1.5.0.1_ER (December 4, 2003)

New Features and Improvements:

- Three new override registry keys were added, and the previous three were moved so they are all now server-specific. You can put the 'Overrides' key under any Tunnelled ProgID now, instead of the main Matrikon.OPC.Tunneller ProgID, which would make the override enabled or disabled on ALL Tunnelled servers. This is the latest list of overrides. (Note that you will replace "**PROGID**" with the Tunnelled ProgID that you wish to add the override to): **HKCR**PROGID**\OPC\Overrides**
    - ***DisableValidation*** (DWORD key) - This override was to allow servers that do not implement the ValidateItems call the ability to add items.
    - ***ItemsPerBundle*** (DWORD key) - This override was put in to support slow OPC servers.
    - ***ReadWriteFailsDropConnection*** (DWORD key) - this override was put in for clients who are using Tunneller with an OPC server that needs to force the Tunneller server to restart if that OPC server goes down.
    - ***AddTimeout*** (DWORD key) - this override was put in to support OPC servers that are slow to Add. It allows you to specify a different timeout for adding items then for reading/writing to items.
    - ***ReconnectDelay*** (DWORD key) - the default value for a reconnect delay is 5 seconds. This key allows you to change that.
    - ***UseAlternateProgID*** (String key) - this key allows you to specify a different ProgID to connect to on the remote machine. This is used when you change the Tunnelled ProgID.

Resolved Issues:

- Fixed a problem with Tunneller server stability.
- Added flat browsing capability.
- Improved server registry browsing.

Release Notes for MatrikonOPC Tunneller Version 1.5.0 (November 4, 2003)

New Features and Improvements:

- Three override registry keys were added: **HKCR**PROGID**\OPC\Overrides**
    - ***DisableValidation*** (DWORD key) - this override was to allow servers that do not implement the ValidateItems call the ability to add items.

- ***ItemsPerBundle*** (DWORD key) - this override was put in to support slow OPC servers.
- ***ReadWriteFailsDropConnection*** (DWORD key) - this override was put in for clients who are using Tunneller with an OPC server that needs to force the Tunneller server to restart if that OPC server goes down.

Resolved Issues:

- Includes all fixes in the ER releases described below.
- All TCP/IP calls will now timeout within the time specified in the client configuration.
- Increased overall stability with Tunneller connections.
- Tunneller Server-Side can now handle individual OPC servers dropping without affecting the connection to the client.
- Also note that Tunneller does not remove items from the Tunneller client if the OPC client disconnects. This is to allow for fast reconnection to those items in the case of client reconnection.

Known Outstanding Issues:

- Cannot process Array or Money data types.
- Client Configuration Utility may return multiple ProgIDs for single server (i.e., Matrikon.OPC.Simulation and Matrikon.OPC.Simulation.1) when using DA 3.0 servers. If this occurs please use the version INDEPENDENT (without the trailing ".1") ProgID.
- When running the Tunneller server as a service, the icon in the system tray may not show a tool tip of "server" as specified in the manual.

MatrikonOPC no longer supports version prior to v1.5.0.