



NVIDIA TensorRT

API Migration Guide | NVIDIA Docs

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Chapter 1. Python

1.1. Python API Changes

Table 1. Allocating Buffers and Using a Name-Based Engine API

TensorRT 8.x	TensorRT 10.0
<pre>def allocate_buffers(self, engine): """ Allocates all buffers required for an engine, i.e. host/device inputs/ outputs. """ inputs = [] outputs = [] bindings = [] stream = cuda.Stream() # binding is the name of input/ output for binding in engine: size = trt.volume(engine.get_binding_shape(binding) * engine.max_batch_size dtype = trt.nptype(engine.get_binding_dtype(binding) # Allocate host and device buffers host_mem = cuda.pagelocked_empty(size, dtype) # page-locked memory buffer (won't swapped to disk) device_mem = cuda.mem_alloc(host_mem.nbytes) # Append the device buffer address to device bindings. # When cast to int, it's a linear index into the context's memory (like memory address). bindings.append(int(device_mem))</pre>	<pre>def allocate_buffers(self, engine): """ Allocates all buffers required for an engine, i.e. host/device inputs/ outputs. """ inputs = [] outputs = [] bindings = [] stream = cuda.Stream() for i in range(engine.num_io_tensors): tensor_name = engine.get_tensor_name(i) size = trt.volume(engine.get_tensor_shape(tensor_name)) dtype = trt.nptype(engine.get_tensor_dtype(tensor_name)) # Allocate host and device buffers host_mem = cuda.pagelocked_empty(size, dtype) # page-locked memory buffer (won't swapped to disk) device_mem = cuda.mem_alloc(host_mem.nbytes) # Append the device buffer address to device bindings. # When cast to int, it's a linear index into the context's memory (like memory address). bindings.append(int(device_mem)) # Append to the appropriate input/output list.</pre>

TensorRT 8.x	TensorRT 10.0
<pre># Append to the appropriate input/output list. if engine.binding_is_input(binding): inputs.append(self.HostDeviceMem(host_mem, device_mem)) else: outputs.append(self.HostDeviceMem(host_mem, device_mem)) return inputs, outputs, bindings, stream</pre>	<pre>if engine.get_tensor_mode(tensor_name) == trt.TensorIOMode.INPUT: inputs.append(self.HostDeviceMem(host_mem, device_mem)) else: outputs.append(self.HostDeviceMem(host_mem, device_mem)) return inputs, outputs, bindings, stream</pre>

Table 2. Transition from enqueueV2 to enqueueV3 for Python

TensorRT 8.x	TensorRT 10.0
<pre># Allocate device memory for inputs. d_inputs = [cuda.mem_alloc(input_nbytes) for binding in range(input_num)] # Allocate device memory for outputs. h_output = cuda.pagelocked_empty(output_nbytes, dtype=np.float32) d_output = cuda.mem_alloc(h_output.nbytes) # Transfer data from host to device. cuda.memcpy_htod_async(d_inputs[0], input_a, stream) cuda.memcpy_htod_async(d_inputs[1], input_b, stream) cuda.memcpy_htod_async(d_inputs[2], input_c, stream) # Run inference context.execute_async_v2(bindings=[int(d_in) for d_inp in d_inputs] + [int(d_output)], stream_handle=stream.handle) # Synchronize the stream stream.synchronize()</pre>	<pre># Allocate device memory for inputs. d_inputs = [cuda.mem_alloc(input_nbytes) for binding in range(input_num)] # Allocate device memory for outputs. h_output = cuda.pagelocked_empty(output_nbytes, dtype=np.float32) d_output = cuda.mem_alloc(h_output.nbytes) # Transfer data from host to device. cuda.memcpy_htod_async(d_inputs[0], input_a, stream) cuda.memcpy_htod_async(d_inputs[1], input_b, stream) cuda.memcpy_htod_async(d_inputs[2], input_c, stream) # Setup tensor address bindings = [int(d_inputs[i]) for i in range(3)] + [int(d_output)] for i in range(engine.num_io_tensors): context.set_tensor_address(engine.get_tensor_name(i), bindings[i]) # Run inference context.execute_async_v3(stream_handle=stream.handle) # Synchronize the stream stream.synchronize()</pre>

Table 3. Engine Building, use only build_serialized_network

TensorRT 8.x	TensorRT 10.0
<pre>engine_bytes = None try:</pre>	<pre>engine_bytes = self.builder.build_serialized_network(self.network, self.config)</pre>

TensorRT 8.x	TensorRT 10.0
<pre> engine_bytes = self.builder.build_serialized_network(self: self.config) except AttributeError: engine = self.builder.build_engine(self.network, self.config) engine_bytes = engine.serialize() del engine assert engine_bytes </pre>	<pre> if engine_bytes is None: log.error("Failed to create engine") sys.exit(1) </pre>

1.2. Added Python APIs

Types

- ▶ APILanguage
- ▶ ExecutionContextAllocationStrategy
- ▶ IGpuAsyncAllocator
- ▶ InterfaceInfo
- ▶ IPluginResource
- ▶ IPluginV3
- ▶ IStreamReader
- ▶ IVersionedInterface

Methods and Properties

- ▶ ICudaEngine.is_debug_tensor()
- ▶ ICudaEngine.minimum_weight_streaming_budget
- ▶ ICudaEngine.streamable_weights_size
- ▶ ICudaEngine.weight_streaming_budget
- ▶ IExecutionContext.get_debug_listener()
- ▶ IExecutionContext.get_debug_state()
- ▶ IExecutionContext.set_all_tensors_debug_state()
- ▶ IExecutionContext.set_debug_listener()
- ▶ IExecutionContext.set_tensor_debug_state()
- ▶ IExecutionContext.update_device_memory_size_for_shapes()
- ▶ IGpuAllocator.allocate_async()
- ▶ IGpuAllocator.deallocate_async()
- ▶ INetworkDefinition.add_plugin_v3()
- ▶ INetworkDefinition.is_debug_tensor()

- ▶ `INetworkDefinition.mark_debug()`
- ▶ `INetworkDefinition.unmark_debug()`
- ▶ `IPluginRegistry.acquire_plugin_resource()`
- ▶ `IPluginRegistry.all_creators`
- ▶ `IPluginRegistry.deregister_creator()`
- ▶ `IPluginRegistry.get_creator()`
- ▶ `IPluginRegistry.register_creator()`
- ▶ `IPluginRegistry.release_plugin_resource()`

1.3. Removed Python APIs

Table 4. Removed Python APIs and their Suggested Superseded API

Python API	Superseded API
<code>BuilderFlag.ENABLE_TACTIC_HEURISTIC</code>	Builder optimization level 2
<code>BuilderFlag.STRICT_TYPES</code>	Use all three flags: <ol style="list-style-type: none"> 1. <code>BuilderFlag.DIRECT_IO</code> 2. <code>BuilderFlag.PREFER_PRECISION_CONSTRAINTS</code> 3. <code>BuilderFlag.REJECT_EMPTY_ALGORITHMS</code>
<ol style="list-style-type: none"> 1. <code>EngineCapability.DEFAULT</code> 2. <code>EngineCapability.kSAFE_DLA</code> 3. <code>EngineCapability.SAFE_GPU</code> 	<ol style="list-style-type: none"> 1. <code>EngineCapability.STANDARD</code> 2. <code>EngineCapability.DLA_STANDALONE</code> 3. <code>EngineCapability.SAFETY</code>
<code>IAlgorithmIOInfo.tensor_format</code>	The strides, data type, and vectorization information is sufficient to uniquely identify tensor formats.
<code>IBuilder.max_batch_size</code>	Implicit batch is no longer supported.
<code>IBuilderConfig.max_workspace_size</code>	<ol style="list-style-type: none"> 1. <code>IBuilderConfig.set_memory_pool_limit()</code> with <code>MemoryPoolType.WORKSPACE</code> 2. <code>IBuilderConfig.get_memory_pool_limit()</code> with <code>MemoryPoolType.WORKSPACE</code>
<code>IBuilderConfig.min_timing_iterations</code>	<code>IBuilderConfig.avg_timing_iterations</code>
<ol style="list-style-type: none"> 1. <code>ICudaEngine.binding_is_input()</code> 2. <code>ICudaEngine.get_binding_bytes_per_component()</code> 3. <code>ICudaEngine.get_binding_components_per_element()</code> 	<ol style="list-style-type: none"> 1. <code>ICudaEngine.get_tensor_mode()</code> 2. <code>ICudaEngine.get_tensor_bytes_per_component()</code> 3. <code>ICudaEngine.get_tensor_components_per_element()</code>

Python API	Superseded API
<ul style="list-style-type: none"> 4. ICudaEngine.get_binding_dtype() 5. ICudaEngine.get_binding_format() 6. ICudaEngine.get_binding_format_desc() 7. ICudaEngine.get_binding_index() 8. ICudaEngine.get_binding_name() 9. ICudaEngine.get_binding_shape() 10. ICudaEngine.get_binding_vectorized_dimensions() 11. ICudaEngine.get_location() 12. ICudaEngine.get_profile_shape() 13. ICudaEngine.get_profile_shape_input() 14. ICudaEngine.has_implicit_batch_dimension() 15. ICudaEngine.is_execution_binding() 16. ICudaEngine.is_shape_binding() 17. ICudaEngine.max_batch_size() 18. ICudaEngine.num_bindings() 	<ul style="list-style-type: none"> 4. ICudaEngine.get_tensor_dtype() 5. ICudaEngine.get_tensor_format() 6. ICudaEngine.get_tensor_format_desc() 7. No name-based equivalent replacement 8. No name-based equivalent replacement 9. ICudaEngine.get_tensor_shape() 10. ICudaEngine.get_tensor_vectorized_dimensions() 11. ITensor.location 12. ICudaEngine.get_tensor_profile_shape() 13. ICudaEngine.get_tensor_profile_values() 14. Implicit batch is no longer supported 15. No name-based equivalent replacement 16. ICudaEngine.is_shape_inference_io() 17. Implicit batch is no longer supported 18. ICudaEngine.num_io_tensors()
<ul style="list-style-type: none"> 1. IExecutionContext.get_binding_shape() 2. IExecutionContext.get_strides() 3. IExecutionContext.set_binding_shape() 	<ul style="list-style-type: none"> 1. IExecutionContext.get_tensor_shape() 2. IExecutionContext.get_tensor_strides() 3. IExecutionContext.set_input_shape()
IFullyConnectedLayer	IMatrixMultiplyLayer
<ul style="list-style-type: none"> 1. INetworkDefinition.add_convolution() 2. INetworkDefinition.add_deconvolution() 3. INetworkDefinition.add_fully_connected() 4. INetworkDefinition.add_padding() 5. INetworkDefinition.add_pooling() 6. INetworkDefinition.add_rnn_v2() 7. INetworkDefinition.has_explicit_precision() 8. INetworkDefinition.has_implicit_batch_dimension() 	<ul style="list-style-type: none"> 1. INetworkDefinition.add_convolution_nd() 2. INetworkDefinition.add_deconvolution_nd() 3. INetworkDefinition.add_matrix_multiply() 4. INetworkDefinition.add_padding_nd() 5. INetworkDefinition.add_pooling_nd() 6. INetworkDefinition.add_loop() 7. Explicit precision support is removed in 10.0 8. Implicit batch is no longer supported
IRNNv2Layer	ILoop
<ul style="list-style-type: none"> 1. NetworkDefinitionCreationFlag.EXPLICIT_BATCH 2. NetworkDefinitionCreationFlag.EXPLICIT_PRECISION 	<p>Support is removed in 10.0</p>
<ul style="list-style-type: none"> 1. PaddingMode.CAFFE_ROUND_DOWN 	<p>Caffe is not supported since 9.0</p>

Python API	Superseded API
2. <code>PaddingMode.CAFFE_ROUND_UP</code>	
1. <code>PreviewFeature.DISABLE_EXTERNAL_TACTICS_3005</code> 2. <code>PreviewFeature.FASTER_DYNAMIC_SHAPES_0805</code>	1. External tactics are always disabled for core code 2. This flag is on by default
1. <code>ProfilingVerbosity.DEFAULT</code> 2. <code>ProfilingVerbosity.VERBOSE</code>	1. <code>ProfilingVerbosity.LAYER_NAMES_ONLY</code> 2. <code>ProfilingVerbosity.DETAILED</code>
ResizeMode	Use <code>InterpolationMode</code> , alias is removed
SampleMode.DEFAULT	SampleMode.STRICT_BOUNDS
SliceMode	Use <code>SampleMode</code> , alias is removed

Chapter 2. C++

2.1. C++ API Changes

Table 5. Transition from enqueueV2 to enqueueV3 for C++

TensorRT 8.x	TensorRT 10.0
<pre>// Create RAII buffer manager object. samplesCommon::BufferManager buffers(mEngine); auto context = SampleUniquePtr<nvinfer1::IExecutionContext>::createExecutionContext(); if (!context) { return false; } // Pick a random digit to try to infer. srand(time(NULL)); int32_t const digit = rand() % 10; // Read the input data into the managed buffers. // There should be just 1 input tensor. ASSERT(mParams.inputTensorNames.size() == 1); if (!processInput(buffers, mParams.inputTensorNames[0], digit)) { return false; } // Create CUDA stream for the execution of this inference. cudaStream_t stream; CHECK(cudaStreamCreate(&stream));</pre>	<pre>// Create RAII buffer manager object. samplesCommon::BufferManager buffers(mEngine); auto context = SampleUniquePtr<nvinfer1::IExecutionContext>(mEngine- >createExecutionContext()); if (!context) { return false; } for (int32_t i = 0, e = mEngine- >getNbIOTensors(); i < e; i++) { auto const name = mEngine- >getIOTensorName(i); context->setTensorAddress(name, buffers.getDeviceBuffer(name)); } // Pick a random digit to try to infer. srand(time(NULL)); int32_t const digit = rand() % 10; // Read the input data into the managed buffers. // There should be just 1 input tensor. ASSERT(mParams.inputTensorNames.size() == 1); if (!processInput(buffers, mParams.inputTensorNames[0], digit)) { return false; } // Create CUDA stream for the execution of this inference.</pre>

TensorRT 8.x	TensorRT 10.0
<pre> // Asynchronously copy data from host input buffers to device input buffers buffers.copyInputToDeviceAsync(stream); // Asynchronously enqueue the inference work if (!context- >enqueueV2(buffers.getDeviceBindings().data, stream, nullptr)) { return false; } // Asynchronously copy data from device output buffers to host output buffers. buffers.copyOutputToHostAsync(stream); // Wait for the work in the stream to complete. CHECK(cudaStreamSynchronize(stream)); // Release stream. CHECK(cudaStreamDestroy(stream)); </pre>	<pre> cudaStream_t stream; CHECK(cudaStreamCreate(&stream)); // Asynchronously copy data from host input buffers to device input buffers buffers.copyInputToDeviceAsync(stream); // Asynchronously enqueue the inference work if (!context->enqueueV3(stream)) { return false; } // Asynchronously copy data from device output buffers to host output buffers. buffers.copyOutputToHostAsync(stream); // Wait for the work in the stream to complete. CHECK(cudaStreamSynchronize(stream)); // Release stream. CHECK(cudaStreamDestroy(stream)); </pre>

2.2. 64-Bit Dimension Changes

The dimensions held by Dims changed from `int32_t` to `int64_t`. However, in TensorRT 10.0, TensorRT will generally reject networks that actually use dimensions exceeding the range of `int32_t`. The tensor type returned by `IShapeLayer` is now `DataType::kINT64`. Use `ICastLayer` to cast the result to tensor of type `DataType::kINT32` if 32-bit dimensions are required.

Inspect code that bitwise copies to and from Dims to ensure that it is correct for `int64_t` dimensions.

2.3. Added C++ APIs

Enums

- ▶ `ActivationType::kGELU_ERF`
- ▶ `ActivationType::kGELU_TANH`
- ▶ `BuilderFlag::kREFIT_IDENTICAL`
- ▶ `BuilderFlag::kSTRIP_PLAN`
- ▶ `BuilderFlag::kWEIGHT_STREAMING`
- ▶ `Datatype::kINT4`
- ▶ `LayerType::kPLUGIN_V3`

Types

- ▶ `APILanguage`
- ▶ `Dims64`
- ▶ `ExecutionContextAllocationStrategy`
- ▶ `IGpuAsyncAllocator`
- ▶ `InterfaceInfo`
- ▶ `IPluginResource`
- ▶ `IPluginV3`
- ▶ `IStreamReader`
- ▶ `IVersionedInterface`


Methods and Properties

- ▶ `getInferLibBuildVersion`
- ▶ `getInferLibMajorVersion`
- ▶ `getInferLibMinorVersion`
- ▶ `getInferLibPatchVersion`
- ▶ `ICudaEngine::createRefitter`
- ▶ `IcudaEngine::getMinimumWeightStreamingBudget`
- ▶ `IcudaEngine::getStreamableWeightsSize`
- ▶ `ICudaEngine::getWeightStreamingBudget`
- ▶ `IcudaEngine::isDebugTensor`
- ▶ `ICudaEngine::setWeightStreamingBudget`
- ▶ `IExecutionContext::getDebugListener`
- ▶ `IExecutionContext::getTensorDebugState`
- ▶ `IExecutionContext::setAllTensorsDebugState`
- ▶ `IExecutionContext::setDebugListener`
- ▶ `IExecutionContext::setOutputTensorAddress`
- ▶ `IExecutionContext::setTensorDebugState`
- ▶ `IExecutionContext::updateDeviceMemorySizeForShapes`
- ▶ `IGpuAllocator::allocateAsync`
- ▶ `IGpuAllocator::deallocateAsync`
- ▶ `INetworkDefinition::addPluginV3`
- ▶ `INetworkDefinition::isDebugTensor`
- ▶ `INetworkDefinition::markDebug`
- ▶ `INetworkDefinition::unmarkDebug`

- ▶ `IPluginRegistry::acquirePluginResource`
- ▶ `IPluginRegistry::deregisterCreator`
- ▶ `IPluginRegistry::getAllCreators`
- ▶ `IPluginRegistry::getCreator`
- ▶ `IPluginRegistry::registerCreator`
- ▶ `IPluginRegistry::releasePluginResource`

2.4. Removed C++ APIs

Table 6. Removed C++ APIs and their Suggested Superseded API

C++ API	Superseded API
<code>BuilderFlag::kENABLE_TACTIC_HEURISTIC</code>	Builder optimization level 2
<code>BuilderFlag::kSTRICT_TYPES</code>	Use for all three flags: <ol style="list-style-type: none"> 1. <code>kREJECT_EMPTY_ALGORITHMS</code> 2. <code>kDIRECT_IO</code> 3. <code>kPREFER_PRECISION_CONSTRAINTS</code> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: When removing enum members (for all enums in this list) we will be changing enumeration in the enum to have sequential numbers. </div>
<ol style="list-style-type: none"> 1. <code>EngineCapability::kDEFAULT</code> 2. <code>EngineCapability::kSAFE_DLA</code> 3. <code>EngineCapability::kSAFE_GPU</code> 	<ol style="list-style-type: none"> 1. <code>EngineCapability::kSTANDARD</code> 2. <code>EngineCapability::kDLA_STANDALONE</code> 3. <code>EngineCapability::kSAFETY</code>
<code>IAlgorithm::getAlgorithmIOInfo()</code>	<code>IAlgorithm::getAlgorithmIOInfoByIndex()</code>
<code>IAlgorithmIOInfo::getTensorFormat()</code>	The strides, data type, and vectorization information is sufficient to uniquely identify tensor formats.
<ol style="list-style-type: none"> 1. <code>IBuilder::buildEngineWithConfig()</code> 2. <code>IBuilder::destroy()</code> 3. <code>IBuilder::getMaxBatchSize()</code> 4. <code>IBuilder::setMaxBatchSize()</code> 	<ol style="list-style-type: none"> 1. <code>IBuilder::buildSerializedNetwork()</code> 2. <code>delete ObjectName</code> 3. Implicit batch is no longer supported 4. Implicit batch is no longer supported
<ol style="list-style-type: none"> 1. <code>IBuilderConfig::destroy()</code> 	<ol style="list-style-type: none"> 1. <code>delete ObjectName</code>

C++ API	Superseded API
<ul style="list-style-type: none"> 2. <code>IBuilderConfig::getMaxWorkspaceSize()</code> 3. <code>IBuilderConfig::getMinTimingIterations()</code> 4. <code>IBuilderConfig::setMaxWorkspaceSize()</code> 5. <code>IBuilderConfig::setMinTimingIterations()</code> 	<ul style="list-style-type: none"> 2. <code>IBuilderConfig::getMemoryPoolLimit()</code> with <code>MemoryPoolType::kWORKSPACE</code> 3. <code>IBuilderConfig::getAvgTimingIterations()</code> 4. <code>IBuilderConfig::setMemoryPoolLimit()</code> with <code>MemoryPoolType::kWORKSPACE</code> 5. <code>IBuilderConfig::setAvgTimingIterations()</code>
<ul style="list-style-type: none"> 1. <code>IConvolutionLayer::getDilation()</code> 2. <code>IConvolutionLayer::getKernelSize()</code> 3. <code>IConvolutionLayer::getPadding()</code> 4. <code>IConvolutionLayer::getStride()</code> 5. <code>IConvolutionLayer::setDilation()</code> 6. <code>IConvolutionLayer::setKernelSize()</code> 7. <code>IConvolutionLayer::setPadding()</code> 8. <code>IConvolutionLayer::setStride()</code> 	<ul style="list-style-type: none"> 1. <code>IConvolutionLayer::getDilationNd()</code> 2. <code>IConvolutionLayer::getKernelSizeNd()</code> 3. <code>IConvolutionLayer::getPaddingNd()</code> 4. <code>IConvolutionLayer::getStrideNd()</code> 5. <code>IConvolutionLayer::setDilationNd()</code> 6. <code>IConvolutionLayer::setKernelSizeNd()</code> 7. <code>IConvolutionLayer::setPaddingNd()</code> 8. <code>IConvolutionLayer::setStrideNd()</code>
<ul style="list-style-type: none"> 1. <code>ICudaEngine::bindingIsInput()</code> 2. <code>ICudaEngine::destroy()</code> 3. <code>ICudaEngine::getBindingBytesPerComponent()</code> 4. <code>ICudaEngine::getBindingComponentsPerElement()</code> 5. <code>ICudaEngine::getBindingDataType()</code> 6. <code>ICudaEngine::getBindingDimensions()</code> 7. <code>ICudaEngine::getBindingFormat()</code> 8. <code>ICudaEngine::getBindingFormatDesc()</code> 9. <code>ICudaEngine::getBindingIndex()</code> 10. <code>ICudaEngine::getBindingName()</code> 11. <code>ICudaEngine::getBindingVectorizedDim()</code> 12. <code>ICudaEngine::getLocation()</code> 13. <code>ICudaEngine::getMaxBatchSize()</code> 14. <code>ICudaEngine::getNbBindings()</code> 15. <code>ICudaEngine::getProfileDimensions()</code> 16. <code>ICudaEngine::getProfileShapeValues()</code> 17. <code>ICudaEngine::hasImplicitBatchDimension()</code> 18. <code>ICudaEngine::isExecutionBinding()</code> 19. <code>ICudaEngine::isShapeBinding()</code> 	<ul style="list-style-type: none"> 1. <code>ICudaEngine::getTensorIOMode()</code> 2. <code>delete ObjectName</code> 3. <code>ICudaEngine::getTensorBytesPerComponent()</code> 4. <code>ICudaEngine::getTensorComponentsPerElement()</code> 5. <code>ICudaEngine::getTensorDataType()</code> 6. <code>ICudaEngine::getTensorShape()</code> 7. <code>ICudaEngine::getTensorFormat()</code> 8. <code>ICudaEngine::getTensorFormatDesc()</code> 9. Name-based methods 10. Name-based methods 11. <code>ICudaEngine::getTensorVectorizedDim()</code> 12. <code>ITensor::getLocation()</code> 13. Implicit batch is no longer supported 14. <code>ICudaEngine::getNbIOTensors()</code> 15. <code>ICudaEngine::getProfileShape()</code> 16. <code>ICudaEngine::getShapeValues()</code> 17. Implicit batch is no longer supported 18. No name-based equivalent replacement 19. <code>ICudaEngine::isShapeInferenceIO()</code>

C++ API	Superseded API
<ol style="list-style-type: none"> 1. <code>IDeconvolutionLayer::getKernelSize()</code> 2. <code>IDeconvolutionLayer::getPadding()</code> 3. <code>IDeconvolutionLayer::getStride()</code> 4. <code>IDeconvolutionLayer::setKernelSize()</code> 5. <code>IDeconvolutionLayer::setPadding()</code> 6. <code>IDeconvolutionLayer::setStride()</code> 	<ol style="list-style-type: none"> 1. <code>IDeconvolutionLayer::getKernelSizeNd()</code> 2. <code>IDeconvolutionLayer::getPaddingNd()</code> 3. <code>IDeconvolutionLayer::getStrideNd()</code> 4. <code>IDeconvolutionLayer::setKernelSizeNd()</code> 5. <code>IDeconvolutionLayer::setPaddingNd()</code> 6. <code>IDeconvolutionLayer::setStrideNd()</code>
<ol style="list-style-type: none"> 1. <code>IExecutionContext::destroy()</code> 2. <code>IExecutionContext::enqueue()</code> 3. <code>IExecutionContext::enqueueV2()</code> 4. <code>IExecutionContext::execute()</code> 5. <code>IExecutionContext::getBindingDimensions()</code> 6. <code>IExecutionContext::getShapeBinding()</code> 7. <code>IExecutionContext::getStrides()</code> 8. <code>IExecutionContext::setBindingDimensions()</code> 9. <code>IExecutionContext::setInputShapeBinding()</code> 10. <code>IExecutionContext::setOptimizationProfile()</code> 	<ol style="list-style-type: none"> 1. <code>delete ObjectName</code> 2. <code>IExecutionContext::enqueueV3()</code> 3. <code>IExecutionContext::enqueueV3()</code> 4. <code>IExecutionContext::executeV2()</code> 5. <code>IExecutionContext::getTensorShape()</code> 6. <code>IExecutionContext::getTensorAddress()</code> or <code>getOutputTensorAddress()</code> 7. <code>IExecutionContext::getTensorStrides()</code> 8. <code>IExecutionContext::setInputShape()</code> 9. <code>IExecutionContext::setInputTensorAddress()</code> or <code>setTensorAddress()</code> 10. <code>IExecutionContext::setOptimizationProfileAsync()</code>
<code>IFullyConnectedLayer</code>	<code>IMatrixMultiplyLayer</code>
<code>IGpuAllocator::free()</code>	<code>IGpuAllocator::deallocate()</code>
<code>IHostMemory::destroy()</code>	<code>delete ObjectName</code>
<ol style="list-style-type: none"> 1. <code>INetworkDefinition::addConvolution()</code> 2. <code>INetworkDefinition::addDeconvolution()</code> 3. <code>INetworkDefinition::addFullyConnected()</code> 4. <code>INetworkDefinition::addPadding()</code> 5. <code>INetworkDefinition::addPooling()</code> 6. <code>INetworkDefinition::addRNNv2()</code> 7. <code>INetworkDefinition::destroy()</code> 8. <code>INetworkDefinition::hasExplicitPrecision()</code> 9. <code>INetworkDefinition::hasImplicitBatchDimension()</code> 	<ol style="list-style-type: none"> 1. <code>INetworkDefinition::addConvolutionNd()</code> 2. <code>INetworkDefinition::addDeconvolutionNd()</code> 3. <code>INetworkDefinition::addMatrixMultiply()</code> 4. <code>INetworkDefinition::addPaddingNd()</code> 5. <code>INetworkDefinition::addPoolingNd()</code> 6. <code>INetworkDefinition::addLoop()</code> 7. <code>delete ObjectName</code> 8. Explicit precision support is removed in 10.0 9. Implicit batch support is removed
<code>IOnnxConfig::destroy()</code>	<code>delete ObjectName</code>
<ol style="list-style-type: none"> 1. <code>IPaddingLayer::getPostPadding()</code> 	<ol style="list-style-type: none"> 1. <code>IPaddingLayer::getPostPaddingNd()</code>

C++ API	Superseded API
<ol style="list-style-type: none"> 1. <code>IPaddingLayer::getPrePadding()</code> 2. <code>IPaddingLayer::getPostPadding()</code> 3. <code>IPaddingLayer::setPrePadding()</code> 	<ol style="list-style-type: none"> 1. <code>IPaddingLayer::getPrePaddingNd()</code> 2. <code>IPaddingLayer::getPostPaddingNd()</code> 3. <code>IPaddingLayer::setPrePaddingNd()</code>
<ol style="list-style-type: none"> 1. <code>IPoolingLayer::getPadding()</code> 2. <code>IPoolingLayer::getStride()</code> 3. <code>IPoolingLayer::getWindowSize()</code> 4. <code>IPoolingLayer::setPadding()</code> 5. <code>IPoolingLayer::setStride()</code> 6. <code>IPoolingLayer::setWindowSize()</code> 	<ol style="list-style-type: none"> 1. <code>IPoolingLayer::getPaddingNd()</code> 2. <code>IPoolingLayer::getStrideNd()</code> 3. <code>IPoolingLayer::getWindowSizeNd()</code> 4. <code>IPoolingLayer::setPaddingNd()</code> 5. <code>IPoolingLayer::setStrideNd()</code> 6. <code>IPoolingLayer::setWindowSizeNd()</code>
<code>IRefitter::destroy()</code>	<code>delete ObjectName</code>
<ol style="list-style-type: none"> 1. <code>IResizeLayer::getAlignCorners()</code> 2. <code>IResizeLayer::setAlignCorners()</code> 	<ol style="list-style-type: none"> 1. <code>IResizeLayer::getAlignCornersNd()</code> 2. <code>IResizeLayer::setAlignCornersNd()</code>
<ol style="list-style-type: none"> 1. <code>IRuntime::deserializeCudaEngine(void const* blob, std::size_t size, IPluginFactory* pluginFactory)</code> 2. <code>IRuntime::destroy()</code> 	<ol style="list-style-type: none"> 1. Use <code>deserializeCudaEngine</code> with two parameters 2. <code>delete ObjectName</code>
<code>IRNNv2Layer</code>	<code>ILoop</code>
<code>kNV_TENSORRT_VERSION_IMPL</code>	<pre>#define NV_TENSORRT_VERSION_INT(major, minor, patch) ((major) *10000L + (minor) *100L + (patch) *1L)</pre> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: TensorRT version encoding was changed to accommodate a two digit minor version. </div>
<ol style="list-style-type: none"> 1. <code>NetworkDefinitionCreationFlag::kEXPLICIT_BATCH</code> 2. <code>NetworkDefinitionCreationFlag::kEXPLICIT_PRECISION</code> 	Support is removed in 10.0
<ol style="list-style-type: none"> 1. <code>NV_TENSORRT_SONAME_MAJOR</code> 2. <code>NV_TENSORRT_SONAME_MINOR</code> 3. <code>NV_TENSORRT_SONAME_PATCH</code> 	<ol style="list-style-type: none"> 1. <code>NV_TENSORRT_MAJOR</code> 2. <code>NV_TENSORRT_MINOR</code> 3. <code>NV_TENSORRT_PATCH</code>
<ol style="list-style-type: none"> 1. <code>PaddingMode::kCAFFE_ROUND_DOWN</code> 2. <code>PaddingMode::kCAFFE_ROUND_UP</code> 	Caffe is not supported since 9.0

C++ API	Superseded API
<ol style="list-style-type: none"> 1. <code>PreviewFeature::kDISABLE_EXTERNAL_TACTICS</code> 2. <code>PreviewFeature::kFASTER_DYNAMIC_SHAPES</code> 	<ol style="list-style-type: none"> 1. External tactics are always disabled for core code 2. This flag is on by default
<ol style="list-style-type: none"> 1. <code>ProfilingVerbosity::kDEFAULT</code> 2. <code>ProfilingVerbosity::kVERBOSE</code> 	<ol style="list-style-type: none"> 1. <code>ProfilingVerbosity::kLAYER_NAMES_ONLY</code> 2. <code>ProfilingVerbosity::kDETAILED</code>
<code>ResizeMode</code>	Use <code>InterpolationMode</code> , alias is removed
<ol style="list-style-type: none"> 1. <code>RNNDirection</code> 2. <code>RNNGateType</code> 3. <code>RNNInputMode</code> 4. <code>RNNOperation</code> 	RNN related data structures are removed
<code>SampleMode::kDEFAULT</code>	<code>SampleMode::kSTRICT_BOUNDS</code>
<code>SliceMode</code>	Use <code>SampleMode</code> , alias is removed

2.5. Removed C++ Plugins

Table 7. Removed C++ Plugins and their Suggested Superseded Plugin

C++ Plugin	Superseded Plugin
1. <code>createAnchorGeneratorPlugin()</code>	1. <code>GridAnchorPluginCreator::createPlugin()</code>
2. <code>createBatchedNMSPlugin()</code>	2. <code>BatchedNMSPluginCreator::createPlugin()</code>
3. <code>createInstanceNormalizationPlugin()</code>	3. <code>InstanceNormalizationPluginCreator::createPlugin()</code>
4. <code>createNMSPlugin()</code>	4. <code>NMSPluginCreator::createPlugin()</code>
5. <code>createNormalizePlugin()</code>	5. <code>NormalizePluginCreator::createPlugin()</code>
6. <code>createPriorBoxPlugin()</code>	6. <code>PriorBoxPluginCreator::createPlugin()</code>
7. <code>createRegionPlugin()</code>	7. <code>RegionPluginCreator::createPlugin()</code>
8. <code>createReorgPlugin()</code>	8. <code>ReorgPluginCreator::createPlugin()</code>
9. <code>createRPNROIPlugin()</code>	9. <code>RPROIPluginCreator::createPlugin()</code>
10. <code>createSplitPlugin()</code>	10. <code>INetworkDefinition::addSlice()</code>
<code>struct Quadruple</code>	Related plugins are removed

2.6. Removed Safety C++ APIs

Table 8. Removed Safety C++ APIs and their Suggested Superseded Safety API

Safety C++ API	Superseded Safety API
1. <code>safe::ICudaEngine::bindingIsInput()</code>	1. <code>safe::ICudaEngine::tensorIOMode()</code>
2. <code>safe::ICudaEngine::getBindingBytesPerComponent()</code>	2. <code>safe::ICudaEngine::getTensorBytesPerComponent()</code>
3. <code>safe::ICudaEngine::getBindingComponentsPerElement()</code>	3. <code>safe::ICudaEngine::getTensorComponentsPerElement()</code>
4. <code>safe::ICudaEngine::getBindingDataType()</code>	4. <code>safe::ICudaEngine::getTensorDataType()</code>
5. <code>safe::ICudaEngine::getBindingDimensions()</code>	5. <code>safe::ICudaEngine::getTensorShape()</code>
6. <code>safe::ICudaEngine::getBindingIndex()</code>	6. <code>safe::name-based methods</code>
7. <code>safe::ICudaEngine::getBindingName()</code>	7. <code>safe::name-based methods</code>
8. <code>safe::ICudaEngine::getBindingVectorizedDim()</code>	8. <code>safe::ICudaEngine::getTensorVectorizedDim()</code>
9. <code>safe::ICudaEngine::getNbBindings()</code>	9. <code>safe::ICudaEngine::getNbIOTensors()</code>
10. <code>safe::ICudaEngine::getTensorFormat()</code>	10. <code>safe::ICudaEngine::getBindingFormat()</code>
1. <code>safe::IExecutionContext::enqueueV2()</code>	1. <code>safe::IExecutionContext::enqueueV3()</code>
2. <code>safe::IExecutionContext::getStrides()</code>	2. <code>safe::IExecutionContext::getTensorStrides()</code>

Chapter 3. trtexec

3.1. trtexec Flag Changes

Table 9. Changes to flag workspace and minTiming

TensorRT 8.x	TensorRT 10.0
<pre>trtexec \ --onnx=/path/to/model.onnx \ --saveEngine=/path/to/engine.trt \ --optShapes=input:\$INPUT_SHAPE \ --avgTiming=1 \ --workspace=1024 \ --minTiming=1</pre>	<pre>trtexec \ --onnx=/path/to/model.onnx \ --saveEngine=/path/to/engine.trt \ --optShapes=input:\$INPUT_SHAPE \ --avgTiming=1 \ --memPoolSize=workspace:1024</pre>

3.2. Removed trtexec Flags

Table 10. Removed trtexec Flags and their Suggested Superseded Flag

trtexec Flag	Superseded Flag
<code>--minTiming</code>	<code>avgTiming</code>
<code>--preview=features options:</code> <ul style="list-style-type: none">▶ <code>disableExternalTacticSourcesForCore0805</code>▶ <code>fasterDynamicShapes0805</code>	N/A
<code>--workspace=N</code>	<code>--memPoolSize=poolspec</code>

3.3. Deprecated trtexec Flags

Table 11. Deprecated trtexec Flags

trtexec Flag
<code>--buildOnly</code>
<code>--explicitPrecision</code>
<code>--heuristic</code>
<code>--nvtxMode</code>

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